PROGRAM AS OF 9:00 AM EASTERN TIME, JANUARY 2 2026

Sunday

Sunday, 11 January 2026

PAW-01 8:00 a.m. - 6:30 p.m.	7th AIAA Propulsion Aerodynamics Workshop	Barrel Spring I

PAW Objectives: Assess the numerical prediction capability (meshing, numerics, turbulence modeling, high-performance computing requirements, etc.) of current-generation CFD technology/codes for inlets, diffusers, and nozzles and their propulsion-specific boundary conditions. Develop practical modeling guidelines for CFD prediction of propulsion flow fields. Determine the elements of propulsion aerodynamics that are critical for modeling to enable the development of more accurate prediction methods and tools. Enhance CFD prediction capability for practical propulsion aerodynamic design and optimization. Promote education and mentoring of the next generation of propulsion CFD engineers. General Information: PAW is patterned after the Drag Prediction Workshop (DPW) series. Participation in the propulsion workshop studies is not required to attend the workshop; everyone is welcome. Open, unbiased forums are included in the workshop to discuss the results and promote cross-pollination of best practices. The PAW7 test case is a commercial-style inlet with a rotating fan and ingested ground vortex. Top presentations will be invited to submit papers for special conference session in 2027. Please visit https://paw.larc.nasa.gov/ for further workshop details and test cases.

Sunday, 11 January 2026

AIAA-02 2:00 - 5:00 p.m.	AI and Autonomy in Catastrophic Wildfire Response Workshop	Plaza Ballroom E

This workshop will use the INCOSE Project Wildfire scenario as a foundation to explore systems engineering (SE) challenges and approaches for AI and autonomous systems in high-stakes, socio-technical contexts. The focus is not on identifying AI/Autonomy technologies and applications, but on the SE implications of these kinds of technologies and identifying how SE methods must evolve to address integration, resilience, human–system collaboration, and validation challenges.

Sunday, 11 January 2026

AIAA-01 7:30 - 8:00 p.m.	SciTech 101	Plaza Ballroom F

Discover how you can make the most of your first week at AIAA SciTech Forum while meeting fellow attendees. This orientation is ideal for first-time attendees, but all are welcome!

Monday

Monday, 12 January 2026

SP-01 7:30 - 8:00 a.m.	Technical Paper Session Prep	Session Rooms

Authors presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute prep on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s).

Monday, 12 January 2026

PLN-01 8:00 - 9:00 a.m.	Plenary	Windermere Ballroom

Peggy Whitson - Astronaut, Vice President Human Spaceflight - Axiom Space

Monday, 12 January 2026

NW-01 9:00 - 9:30 a.m.	Networking Coffee Break	Regency Rotunda

Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.

Monday, 12 January 2026

AMT-01	AMT Rising Stars	Orlando Ballroom N

Chaired by: M. GRAGSTON, University of Tennessee and D. CARTER, Illinois Institute of Technology

9:30 a.m. 4355694 Invited: Hydrogen-Atom Concentration Measurements in Premixed NH_3/H_2 Flames Using Quenching Independent Femtosecond Two-Color, Two-Photon Polarization Spectroscopy M. Hay, W. Kulatilaka, Texas A&M University, College Station, TX	9:50 a.m. 4354505 Invited: Optical Measurements of Hypersonic Transitional Flow Fields N. Webber, The University of Tennessee Space Institute, Tullahoma, TN	10:10 a.m. 4353968 Invited: Advanced Flow Visualization for Hypersonic Wind Tunnel Testing J. Hill, RH Technologies, LLC, Daytona Beach, FL	10:30 a.m. 4354402 Invited: Development of High-Resolution, Volumetric Wavelet-based Optical Flow Velocimetry W. Page, The Ohio State University, Columbus, OH	10:50 a.m. 4356089 Invited: Hypersonic Ground Testing for Aeroelastic Stability Characterization B. Diaz Villa, The University of Texas at Austin, Austin, TX	11:10 a.m. 4356119 Invited: Enhancing Pressure Probe Calibration and Data Reduction through Advanced Machine Learning Techniques D. Jeong, Pennsylvania State University, State College, PA

Monday, 12 January 2026

AMT-02	Droplet Diagnostics	Blue Spring I

Chaired by: T. WANSTALL, University of Dayton and Y. MAZUMDAR

9:30 a.m. AIAA-2026-0001 Water Droplet Breakup Experiments using Acoustic Levitator at Upper Atmospheric Conditions in a Shock Tube A. Aguilera, S. Briggs, M. Lindsay, B. Suarez, S. Vasu, University of Central Florida, Orlando, FL; M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL; et al.	9:50 a.m. AIAA-2026-0002 Multi-depth Holographic Cross-correlation Elimination Technique for Velocity Characterization E. Douglas, A. Zheng, A. Marsh, S. Menon, Y. Mazumdar, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-0003 Multi-Diagnostic Shockwave Generation Research (MSGR) Facility Development for Analysis of Droplet Demise J. Pearson, J. Harbers, L. Carvalho, T. Meyer, Purdue University, West Lafayette, IN; B. W, S. Roy, Spectral Energies, Beavercreek, OH; et al.	10:30 a.m. AIAA-2026-0004 Fuel Droplet Sizing in a Reacting Lean Prevaporized Premixed Combustor Environment A. Stevens, I. Obi, A. Jain, S. Wonfor, J. Juergensmeyer, S. Wehe, Georgia Institute of Technology, Atlanta, GA; et al.	10:50 a.m. AIAA-2026-0005 X-Ray and Visible Imaging of Dynamic Agent Defeat Sprays J. Pearson, J. Harbers, T. Meyer, Purdue University, West Lafayette, IN; B. W, M. Gomez, K. Rein, Spectral Energies, Beavercreek, OH; et al.	11:10 a.m. AIAA-2026-0006 Morphological Transitions in Droplet Breakup Under Shock-Induced Flows J. Kastner, S. Gunasekaran, University of Dayton, Dayton, OH; T. Wanstall, The University of Alabama, Tuscaloosa, AL

Monday, 12 January 2026

AMT-03	Velocimetry and Flow Characterization I	Plaza Ballroom E

Chaired by: E. BENITEZ, Air Force Research Laboratory and F. SIDDIQUI, Texas A&M University

9:30 a.m. AIAA-2026-0007 Simulated Focused Laser Differential Interferometry of Mixed First- and Second-Mode Instabilities in Hypersonic Flow E. Benitez, M. Borg, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; S. Dungan, C. Brehm, University of Maryland, College Park, MD; J. Jewell, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-0008 Implementation of Focused Laser Differential Interferometry for Measurements in Supersonic and Hypersonic Facilities at VKI. L. Saenz, D. Kovács, G. Grossir, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium	10:10 a.m. AIAA-2026-0009 Application of Self-Aligned Focusing Schlieren for Flowfield Characterization in a Transonic Diffuser Flow Path C. Running, A. Alabi, University of North Dakota, Grand Forks, ND; S. Benton, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; R. Anthis, University of Arizona, Tucson, AZ; B. Keller, R. Miller, RH Technologies LLC, Daytona Beach, FL; et al.	10:30 a.m. AIAA-2026-0010 Time-Resolved Self-Aligned Focusing Schlieren Applied to a Transonic Turbine Cascade E. Zammit, A. D'Aguanno, A. Halby, G. Di Lucia, S. Lavagnoli, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium	10:50 a.m. AIAA-2026-0011 Plenoptic Self-Aligned Focusing Schlieren at the Probe Calibration Tunnel J. Weisberger, T. Fahringer, W. Page, A. Leidy, B. Bathel, NASA Langley Research Center, Hampton, VA	
Monday, 12 January 2026					
AMT-04	PSP/TSP I				Blue Spring II
Chaired by: H. SAKAUE, University of Notre Dame					
9:30 a.m. AIAA-2026-0012 Development of a Two-Component PSP for Short-Duration Hypervelocity Wind Tunnels D. Surujhlal, C. Klein, B. Dimond, D. Yorita, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Göttingen, Germany; D. Kurihara, N. Slusher, University of Notre Dame College of Engineering, Notre Dame, IN; et al.	9:50 a.m. AIAA-2026-0013 Development of Photostable Two-Color Pressure-Sensitive Paints With Organic Luminophores for Unsteady Pressure Measurements Y. Egami, N. Yoshii, Aichi Kogyo Daigaku Kogakubu, Toyota, Japan; Y. Matsuda, Waseda Daigaku, Shinjuku, Japan	10:10 a.m. AIAA-2026-0014 Visualization of Unsteady Flow on a Micro-Structured Cylindrical Surface Using Temperature-Sensitive Paint R. Imai, H. Nagano, N. Sekine, SUBARU Corporation Automotive Business Gunma Plant Main Plant, Ota, Japan; T. Koyama, T. Iwase, Gunma University Graduate School of Science and Technology, Ota, Japan; D. Kurihara, University of Notre Dame College of Engineering, Notre Dame, IN; et al.	10:30 a.m. AIAA-2026-0015 Turbocharger-Airflow Noise Using Temperature-Sensitive Paint M. Oba, S. Toshiyuki, Kabushiki Kaisha SUBARU Tokyo Jigyosho, Mitaka, Japan; N. Sekine, SUBARU Corporation Automotive Business Gunma Plant Main Plant, Ota, Japan; D. Kurihara, H. Sakaue, University of Notre Dame, Notre Dame, IN; K. Morikawa, Chiba Daigaku, Chiba, Japan; et al.	10:50 a.m. AIAA-2026-0016 Development of Fast-Responding Pressure-Sensitive Paint for Cryogenic Conditions Y. Egami, K. Nagao, Aichi Kogyo Daigaku Kogakubu, Toyota, Japan	
Monday, 12 January 2026					
APA-01	Applied Computational Fluid Dynamics I				Manatee Spring II
Chaired by: M. GHOREYSHI, United States Air Force Academy					
9:30 a.m.	9:50 a.m.	10:10 a.m.			

AIAA-2026-0018 Unveiling the Unsteadiness: Modeling Dragonfly's Descent With an Aerodynamic Trajectory Framework K. Gruber, M. Regan, K. Trubelja, Sikorsky Aircraft Corp, Stratford, CT; G. Perrotta, E. Tang, C. Boss, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; et al.	AIAA-2026-0019 Aerodynamic Effects of Wind Tunnel Mounting on the High-Lift Common Research Model A. Clark, K. Goc, The Boeing Company Commercial Airplanes Everett, Everett, WA	AIAA-2026-0020 Large Eddy Simulations of High-Lift Common Research Model in the NTF Wind Tunnel at Flight Scale Reynolds Numbers A. Ghate, J. Angel, G. Kenway, M. Wong, C. Kiris, Volcano Platforms Inc, Palo Alto, CA			
Monday, 12 January 2026					
APA-03/FD-02	Hypersonic Aerodynamics I				Peacock Spring
Chaired by: H. BEN-GIDA, Technion - Israel Institute of Technology and C. PECK, Sandia National Laboratories					
9:30 a.m. AIAA-2026-0021 Development of Diamond Roughness Elements for Boundary-Layer Transition Experiments in Mach-6 Quiet Flow B. Price, B. Chynoweth, J. Jewell, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-0022 Wall-Modeled Large-Eddy Simulation of Hypersonic Boundary Layer Transition over a Cone-Cylinder-Flare N. Hoffmann, Technion Israel Institute of Technology, Haifa, Israel; A. Chamarthi, California Institute of Technology, Pasadena, CA; S. Bokor, A. Davidson, H. Chandravamsi, S. Frankel, Technion Israel Institute of Technology, Haifa, Israel	10:10 a.m. AIAA-2026-0023 Effect of Wall Temperature on Hypersonic Boundary Layer Transition over a Compression Ramp N. Hoffmann, Technion Israel Institute of Technology, Haifa, Israel; A. Chamarthi, California Institute of Technology, Pasadena, CA; S. Bokor, A. Davidson, H. Chandravamsi, S. Frankel, Technion Israel Institute of Technology, Haifa, Israel	10:30 a.m. AIAA-2026-0024 Numerical Investigation on the Aerothermoelastic Response of Compliant Panels Under Hypersonic Shock Impingement N. Poudel, S. Gewali, S. Bhattrai, Tribhuvan University Institute of Engineering, Patan, Nepal		
Monday, 12 January 2026					
APA-04	Propeller/Rotorcraft/Wind Turbine Aerodynamics I				Rock Spring I & II
Chaired by: J. RAULEDER, Georgia Institute of Technology and J. AHUJA, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-0025 Experimental Analysis of Thrust Efficiency and Noise Characteristics of Toroidal Propellers for Fixed-Wing UAVs K. Bowers, Iowa State University of Science and Technology, Ames, IA; S. Rovani, Clarkson University,	9:50 a.m. AIAA-2026-0026 Experimental Investigation of a Variable Collective Pitch Propeller in Near Edgewise Flight S. Parlett, University of Dayton, Dayton, OH; J. Cai, Worcester Polytechnic Institute, Worcester, MA; M. OL, California State	10:10 a.m. AIAA-2026-0027 A Numerical Study of In-Ground Effect Aerodynamics and Sediment Entrainment for the Dragonfly Lander J. Asiatico, M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-0028 Mid-Fidelity Ship--Rotor Interactional Aerodynamic Simulations Using GPU-Accelerated Lattice-Boltzmann Method With a New Actuator Line Method Rotor Model		

Potsdam, NY; J. Hrynuk, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD; H. Hu, Iowa State University of Science and Technology, Ames, IA	Polytechnic University Pomona, Pomona, CA; S. Gunasekaran, University of Dayton, Dayton, OH		D. Waanders, J. Rauleder, Georgia Institute of Technology, Atlanta, GA		
Monday, 12 January 2026					
APA-06	Special Session: Validation Dialog Between Turbulence Modelers and Turbulence Measurers				Coral Spring II
Chaired by: N. TAYLOR, MBDA UK Limited and R. DECKER, USAF Academy					
9:30 a.m. AIAA-2026-0029 Facilitating Mutual Accountability & Validation Dialog in order to Advance CFD Validation N. Taylor, MBDA UK Ltd, Bristol, United Kingdom	9:50 a.m. AIAA-2026-0030 Fluid Dynamics for Virtual Molecules:An Engineering Guide to the Principles & Assumptions Underpinning Turbulence Modelling. Part 1: RANS X. Yang, The Pennsylvania State University, University Park, PA; T. Knopp, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; B. Smith, Lockheed Martin Corporation, Bethesda, MD; G. Coombes, N. Taylor, MBDA UK Ltd, Bristol, United Kingdom	10:10 a.m. AIAA-2026-0031 Optical Velocimetry: Principles & Practice – An Introduction N. Taylor, MBDA UK Ltd, Bristol, United Kingdom; P. Zachos, Cranfield University, Cranfield, United Kingdom; M. Gragston, The University of Tennessee Space Institute, Tullahoma, TN	10:30 a.m. AIAA-2026-0032 Turbulence Modelling and Turbulence Measuring: Implications for CFD Validation - A Succinct Account of a Panel Session Held at AVIATION 2025 B. Smith, Lockheed Martin Corporation, Bethesda, MD; X. Yang, The Pennsylvania State University, University Park, PA; M. Gragston, The University of Tennessee Space Institute, Tullahoma, TN; P. Zachos, Cranfield University, Cranfield, United Kingdom; N. Taylor, MBDA UK Ltd, Bristol, United Kingdom		
Monday, 12 January 2026					
APS-01	Novel Power Generation, Storage and Management Systems				Celebration 11
Chaired by: Z. ADAMSON, Air Force Research Laboratory and Z. CARNER, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0033 Mass-Based Optimization Studies for Sizing and Optimal Control of Hybrid Fuel Cell-Battery System for Commercial Airliners D. Kunwar, Nernst Energy System LLP, Chennai, India; Y. Pochareddy, A. Dicholkar, J.	9:50 a.m. AIAA-2026-0034 Exploratory Analysis of Strain-Derived Features for Machine-Learning Estimation of State of Health in 18650 Lithium-Ion Cells M. Flemming, G. Anthony, R. Limbaugh, A. Downey,	10:10 a.m. AIAA-2026-0035 Strain-based Investigation of Current Imbalance and Lithium Intercalation Stages in Parallel-Connected Lithium-Ion Cells G. Anthony, M. Flemming, A. Weng, A. Downey, R. White, K. Sado, University of South	10:30 a.m. AIAA-2026-0487 Design and Performance Evaluation of Hybrid Electric Propulsion Systems for UAVs A. Saha, A. Rahman, B. Jo, Tennessee Tech University, Cookeville, TN	10:50 a.m. AIAA-2026-0488 Spoiler-Integrated Micro-Wind-Turbine Array for Energy Harvesting G. Nino, D. Kim, R. Breidenthal, University of Washington, Seattle, WA	11:10 a.m. AIAA-2026-0489 Laser-Based Power Beaming Technologies for Enhanced sUAS Endurance N. Aubut, R. Wainner, Physical Sciences Inc, Andover, MA; R. France, National Renewable Energy Laboratory, Golden, CO; R.

Hjelm, Danmarks Tekniske Universitet, Lyngby, Denmark	University of South Carolina, Columbia, SC	Carolina System, Columbia, SC			Wilson, Physical Sciences Inc, Andover, MA; D. Friedman, National Renewable Energy Laboratory, Golden, CO; M. Aviram, Physical Sciences Inc, Andover, MA; et al.

Monday, 12 January 2026

AS-01	Adaptive Structures Concepts for Morphing I				Bayhill 27
Chaired by: A. ARRIETA, Purdue University and R. BEBLO, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0036 Manned Test Flights of Morphing Flaps for High-Dynamic Direct Lift Control M. Holzer, Turbulence Solutions FlexCo, Vienna, Austria; R. Gaggl, T.I.P.S. Messtechnik GmbH, Villach, Austria; S. Maltsev, T. Schulz, S. Zendegan, A. Galffy, Turbulence Solutions FlexCo, Vienna, Austria	9:50 a.m. AIAA-2026-0037 Multifunctional Wing Concept for Small UAS Radar Remote Sensing R. Duwady, E. Arnold, The University of Kansas Institute for Information Sciences, Lawrence, KS	10:10 a.m. AIAA-2026-0038 A Novel Elastomeric Composite Skin for Polymorphing Wing Applications O. Mamoun, R. Ajaj, Y. Zweiri, Khalifa University, Abu Dhabi, United Arab Emirates	10:30 a.m. AIAA-2026-0039 Comparative Study of Aerodynamic Performance in Baffled and Cellular Inflatable Wings R. Allamraju, J. Jacob, Oklahoma State University, Stillwater, OK	10:50 a.m. AIAA-2026-0040 Characterizing Morphing Wing States via Stochastic Functional Models for Fly-by-Feel Aircraft C. August, F. Kopsaftopoulos, P. Zhou, Rensselaer Polytech Institute School of Engineering, Troy, NY	

Monday, 12 January 2026

CAP-01 9:30 - 10:15 a.m.	Career Accelerator Program Opening Keynote	Regency Ballroom O-P
Buckle up—this session is your launchpad into one of the most exciting and impactful industries in the world. Aerospace tackles big challenges and high-stakes complex problems—it's also where bold thinkers and curious innovators shape the future. Join Emmy award–winning design leader and storyteller Hillary Coe of VAST as she shares how she claimed her place in aerospace and how you can too. In this industry, the greatest lift doesn't come from rockets or wings, it comes from the resilience inside you.		

Monday, 12 January 2026

CFD2030-01	Development of AI/ML for CFD Applications				Silver Spring I
Chaired by: M. MALIK, NASA-Langley Research Center and A. CARY, Boeing Technology Innovation					
9:30 a.m. AIAA-2026-0041 Effect of Far-field Boundary on PINN Solutions for NACA0012 Airfoil at Moderate Reynolds Number S. Athkuri, National Institute of Technology Calicut, Kozhikode, India; M. Nived, Indian Institute of Technology	9:50 a.m. AIAA-2026-0042 High-Fidelity CFD Data Generation for HiLiftAeroML using Solution-Adapted WMLES N. Ashton, NVIDIA Ltd, Reading, United Kingdom; A. Clark, Boeing Commercial Airplanes, Renton, WA; C. Ivey, L. Heidt, S. Bose,	10:10 a.m. AIAA-2026-0043 A Kernel-based Resource-efficient Neural Surrogate for Multi-fidelity Prediction of Aerodynamic Field A. Sarker, R. Batley, D. Sarojini, S. Saha, Virginia Polytechnic Institute and State University, Blacksburg, VA	10:30 a.m. AIAA-2026-0044 Kolmogorov-Arnold Networks for Predicting Dense Gas Thermodynamics S. Bun, J. Jimenez, J. Zeng, A. Sarshar, California State University Long Beach, Long Beach, CA	10:50 a.m. AIAA-2026-0045 Generative Deep Learning Models for Supersonic and Hypersonic Flow Fields P. Gutierrez Cascales, W. Harris, Massachusetts Institute of Technology, Cambridge, MA; C. Cantwell, Imperial	

Hyderabad, Hyderabad, India	Cadence Design Systems, Santa Clara, CA; R. Ranade, NVIDIA Corp, Santa Clara, CA; et al.			College London, London, United Kingdom	
Monday, 12 January 2026					
DE-01/AS-02/STR-01	Advanced Manufacturing and Composite Structure Design				Bayhill 26
Chaired by: A. BAETEN, Technical University of Applied Sciences Augsburg and G. ROTH, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0046 Support-Free Additive Manufacturing via Multi-Axis Digital Light Processing Z. Liu, University of Michigan-Dearborn, Dearborn, MI	9:50 a.m. AIAA-2026-0047 Processing Strategy for Reinforcing Ti6Al4V Alloy Using Laser Powder Bed Fusion A. Ganesh Ram, ASML, Wilton, CT; A. Alptug Tanrikulu, Tusas-Turk Havacilik ve Uzay Sanayii AS, Ankara, Turkey; O. Valdez Loya, P. Davidson, A. Ameri, The University of Texas at Arlington, Arlington, TX	10:10 a.m. AIAA-2026-0048 Investigating Ohmic Heating as a Method of 3D-Printing Freestanding Thermoset Composites K. Williams, M. Allen, C. Goodnight, C. Schwartz, H. Song, L. Chen, Embry-Riddle Aeronautical University, Daytona Beach, FL; et al.	10:30 a.m. AIAA-2026-0049 Determining Optimal Slicer Settings for Enhanced Mechanical Performance in FDM Printing L. Moore, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	10:50 a.m. AIAA-2026-0050 Development and Testing of an Ultra-Lightweight Carbon Fiber Rotor for an Aviation Grade 250-kW Axial Flux Motor B. Patel, D. Coleman, M. Benedict, Texas A&M University System, College Station, TX	
Monday, 12 January 2026					
ECS-01	Energetic Components and Systems				Celebration 6
Chaired by: J. BAGLINI, Raytheon Missile Systems Co and J. GUADARRAMA, Lockheed Martin Space Systems					
9:30 a.m. AIAA-2026-0051 An Investigation of the Sensitivities of Neyer D-Optimal Testing to User Inputs and Test Population Characteristics S. Seyler, Northrop Grumman Corp, Chandler, AZ	9:50 a.m. AIAA-2026-0052 A Single-Phase Model for Simulation of Exploding Bridge Wire Ignition J. Leff, J. Braun, NC State University, Raleigh, NC; A. Webb, C. Fugger, Spectral Energies, Beavercreek, OH; T. Meyer, Purdue University, West Lafayette, IN	10:10 a.m. AIAA-2026-0053 Mechanical Failure of Ammonium Perchlorate Composite Propellants for the Development of Computational Mechanical Models K. Hollis-Brau, J. Plotzke, Purdue University, West Lafayette, IN; L. Gates, B. Runnels, Iowa State University of Science and Technology, Ames, IA; M. McClain, Purdue University, West Lafayette, IN	10:30 a.m. AIAA-2026-0054 Characterizing Oxidizer Chemistry in Metallic Additives for Polymer-Bound Explosives L. Bansal, S. Valluri, University of Illinois Urbana-Champaign, Urbana, IL; E. Dreizin, New Jersey Institute of Technology, Newark, NJ; D. Dlott, University of Illinois Urbana-Champaign, Urbana, IL	10:50 a.m. AIAA-2026-0056 Energetics Performance Variability Estimation Utilizing Stochastic Modeling J. Kozmic, H. Lee, Chemring Energetic Devices, Downers Grove, IL	
Monday, 12 January 2026					
EDU-01	Advancing Aerospace Education I				Bayhill 33
Chaired by: R. FREDERICK, UAH Propulsion Research Center and S. JAYARAM, Saint Louis University					
9:30 a.m.	9:50 a.m.	10:10 a.m.	10:30 a.m.	10:50 a.m.	11:10 a.m.

AIAA-2026-0057 Project Northstar J. Winkelhoch, R. LeBeau, S. Jayaram, A. Xantiago Oxales, M. Mutskyi, C. Meyer, Saint Louis University, St. Louis, MO	AIAA-2026-0058 Student-Faculty Research on the Combustion of Paraffin Wax Enriched With Aluminum Powder in the Lab-Scale Hybrid Propellant Rocket Motor V. Naoumov, N. Al-Masoud, Q. Cotton, D. Bartunek, R. Portal, H. Collins, Central Connecticut State University, New Britain, CT; et al.	AIAA-2026-0059 Experimentally Backed Bubbly Mixing Model for CNTR Using AI Analysis R. Frederick, M. Schroll, The University of Alabama in Huntsville, Huntsville, AL	AIAA-2026-0060 Graduate Student Project to Analyze Increase the Range of a Tactical Missile R. Frederick, O. Williams, P. Berg, UAH Propulsion Research Center, Huntsville, AL	AIAA-2026-0061 Propulsion Research and Academic Programs at UAH, Space Nuclear Propulsion Focus – 2025 R. Frederick, D. Thomas, UAH Propulsion Research Center, Huntsville, AL; G. Nelson, The University of Alabama in Huntsville Mechanical and Aerospace Engineering Department, Huntsville, AL	AIAA-2026-0062 History of the Cal Poly Pomona LRL Program F. Chandler, California State Polytechnic University Pomona, Pomona, CA
Monday, 12 January 2026					
EP-01	Modeling Activities				Celebration 1
Chaired by: C. CUI, University of Virginia					
9:30 a.m. AIAA-2026-0063 GPU-Accelerated MPI-Parallelized Grid-Based Vlasov Simulations of Collisionless Plasmas in Electric Propulsion Modeling: Preliminary Progress J. Robertson, University of Southern California, Los Angeles, CA; C. Cui, University of Virginia, Charlottesville, VA; J. Wang, University of Southern California, Los Angeles, CA	9:50 a.m. AIAA-2026-0064 The Effects of High-energy Tail Electrons in Magnetic Nozzle Plasma Flow: Preliminary Results from Fully Kinetic PIC Simulations J. Castillo-Cruz, K. Peng, C. Cui, University of Virginia, Charlottesville, VA	10:10 a.m. AIAA-2026-0065 Progress on the Implementation of a First-Principles Model of the Anomalous Momentum and Heat-Transfer in Hall2De I. Mikellides, A. Lopez Ortega, V. Chaplin, Jet Propulsion Laboratory, Pasadena, CA	10:30 a.m. AIAA-2026-0066 Bayesian Calibration of a Multi-Component Model of the SPT-140 Hall Thruster C. Whittaker, T. Marks, A. Gorodetsky, University of Michigan, Ann Arbor, MI	10:50 a.m. AIAA-2026-0067 Characterization of Krypton Ion Sputtering of Spacecraft Materials Using Electric Propulsion E. Cummines, N. Nagarajan, N. Ginga, The University of Alabama in Huntsville, Huntsville, AL	11:10 a.m. AIAA-2026-0068 Plasma Behavior in Classical Versus Rod-Bounded Coaxial Gun Geometries K. Boehm, R. Reuben, K. Xu, The University of Alabama in Huntsville, Huntsville, AL
Monday, 12 January 2026					
EXPL-01	AIAA Undergraduate Space Design Competition: Enable Human Exploration				Celebration 14
Chaired by: C. GATTIS, NASA Marshall Space Flight Center and S. BANERJEE, Apple Inc					
9:30 a.m. AIAA-2026-0069 Mars Exploration Surveyors to Enable Human Exploration R. Vazquez, E. Cascio, J. Tomlinson, C. Camara, L. McGarity, B. Mota, California State Polytechnic University Pomona, Pomona, CA; et al.	9:50 a.m. AIAA-2026-0070 MOSAIC: Mars Orbital Survey and Imaging Cartographer A. Arora, O. Caper, S. Churi, C. Fang, K. Griswell, C. Halverson, Georgia Institute of Technology, Atlanta, GA; et al.	10:10 a.m. AIAA-2026-0071 Advanced Reconnaissance and Exploration System A. Ravi, A. Ahmadi, E. Sequeria, E. Perez, J. LaPier, K. Beros, Toronto Metropolitan University, Toronto, Canada; et al.	10:30 a.m. Audience Q&A		
Monday, 12 January 2026					

EXPL-02	Enabling Technologies I				Celebration 13
Chaired by: S. BANERJEE, Apple Inc and M. DIAZ, NASA Marshall Space Flight Center					
9:30 a.m. AIAA-2026-0072 Kirigami/Origami Actuators for Solar Sail Attitude Control H. Jo, M. Sincer, C. Le, C. Chan, A. Davoyan, University of California Los Angeles, Los Angeles, CA	9:50 a.m. AIAA-2026-0073 Advancing Pool Boiling Bubble Growth and Detachment for Extraterrestrial Applications Through Parabolic Flight Testing E. Hoffman, E. Gordon, S. Nelson, A. Whizin, S. Green, K. Supak, Southwest Research Institute, San Antonio, TX	10:10 a.m. AIAA-2026-0074 Validation of Stanton Number Correlation for Jet Mixing and Its Extension to Microgravity H. Yang, CFD Research Corporation, Huntsville, AL; J. Brodnick, B. Richardson, NASA Marshall Space Flight Center, Huntsville, AL	10:30 a.m. AIAA-2026-0075 A Generalized Pressure Load Model on Anti-Slosh Baffle at Different Fill Depths and Slosh Wave Heights H. Yang, CFD Research Corporation, Huntsville, AL; M. Sansone, Amentum Services Inc, Huntsville, AL; J. Brodnick, B. Williams, NASA Marshall Space Flight Center, Huntsville, AL	10:50 a.m. AIAA-2026-0076 Optimal Search and Coverage in Swarm Robotics Using the Reptile Search Algorithm F. Gul, Air University, Islamabad, Pakistan; I. Mir, National University of Sciences and Technology, Islamabad, Pakistan; M. Abbas, J. Masud, Air University, Islamabad, Pakistan; M. Safdar, University of Maryland, College Park, MD	

Monday, 12 January 2026		
F360-01 9:30 - 10:30 a.m.	Celebrating 100 Years of Rocketry	Windermere Ballroom
In this session celebrating 100 years of rocketry, we honor the vision, audacity, and relentless dedication of the scientists, engineers, and pioneers whose groundbreaking work propelled humanity beyond the confines of Earth. Their legacy of innovation and courage now challenges us to build upon their achievements and shape the next century of exploration.		

Monday, 12 January 2026					
FD-01/APA-02	Flow Control: Methods and Applications I				Barrel Spring II
Chaired by: P. VIJGEN					
9:30 a.m. AIAA-2026-0077 Attached Decelerating Turbulent Boundary Layers over Riblets B. Savino, University of Mississippi, University, MS; A. Rouhi, Nottingham Trent University, Nottingham, United Kingdom; W. Wu, University of Mississippi, University, MS	9:50 a.m. AIAA-2026-0078 Relating Skin-Friction Drag Reduction to Riblet Tip Radius C. Camobreco, R. Baidya, Y. Xia, N. Hutchins, D. Chung, The University of Melbourne, Melbourne, Australia; M. Quinn, MicroTau, Sydenham, Australia; et al.	10:10 a.m. AIAA-2026-0079 Modulation of Near-Wall Turbulence by Textured Surfaces for Drag Control S. Kossery Prakasan, U. Sasidharan, FAMU-FSU College of Engineering, Tallahassee, FL	10:30 a.m. AIAA-2026-0080 Scale Modulations in the Zero-Pressure-Gradient Turbulent Boundary Layer Using Staggered Roughness Elements A. Kumara, B. Tuna, R. Kumar, FAMU-FSU College of Engineering, Tallahassee, FL	10:50 a.m. AIAA-2026-0081 An Experimental Investigation on High Frequency Laser Energy Deposition for Hypersonic Active Flow Control on a Flared Cone J. Vijayakumar, N. Tichenor, Texas A&M University, College Station, TX	11:10 a.m. AIAA-2026-0082 Frequency and Heated Region Shape Effects on the Physics of Mach 2 Flow Over a Hemisphere Cylinder K. Joseph, N. Kianvashrad, Wichita State University, Wichita, KS

Monday, 12 January 2026		
FD-03	Instability and Transition I	Coral Spring I
Chaired by: A. BERGER, Florida State University and L. PAQUIN, North Carolina State University		

9:30 a.m. AIAA-2026-0083 DNS of Hypersonic Boundary Layer Transition in the BOLT II Side A Descent Trajectory C. Vu, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	9:50 a.m. AIAA-2026-0084 Measurements on BOLT and Flat-BOLT in Mach-6 Quiet and Conventional Flow C. Butler, J. Jewell, Purdue University System, West Lafayette, IN	10:10 a.m. AIAA-2026-0085 Direct Numerical Simulation of Wall Cooling on Hypersonic Boundary-Layer Transition N. Little, M. Schuabb, L. Duan, The Ohio State University, Columbus, OH; N. Bisek, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; A. Scholten, National Institute of Aerospace, Hampton, VA; P. Paredes, NASA Langley Research Center, Hampton, VA	10:30 a.m. AIAA-2026-0086 Hypersonic Boundary Layer Instability Calculations for Complex Geometries Using Curved, High-Order Adaptive Meshes C. Kiefer, D. Cook, J. Nichols, University of Minnesota Twin Cities, Minneapolis, MN	10:50 a.m. AIAA-2026-0288 Analysis of Heat Flux Prediction Capabilities Across Multi-Fidelity Simulations of Hypersonic Inflatable Aerodynamic Decelerators R. Zapp, I. Bermejo-Moreno, University of Southern California Viterbi School of Engineering, Los Angeles, CA	
Monday, 12 January 2026					
FD-04/AA-01	Machine Learning for Fluid Dynamics and Aeroacoustics I				Manatee Spring I
Chaired by: X. YANG, Penn State University and L. UKEILEY					
9:30 a.m. AIAA-2026-0087 Machine Learning Reconstruction of Compressible Turbulent Bluff-Body Flow S. Salauddin, A. Morales, N. Walters, K. Ahmed, University of Central Florida, Orlando, FL	9:50 a.m. AIAA-2026-0088 The Effect of Discretization Error on Training of Machine-Learned Turbulence Models J. Gonzales, C. Roy, Virginia Polytechnic Institute and State University, Blacksburg, VA; D. Stelter, Spectral Sciences Inc, Burlington, MA	10:10 a.m. AIAA-2026-0089 Learning Parameterized Coarse Mesh Dynamics of a Confined Cylinder Flow With Graph Neural Networks B. Ramos, W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil; S. Dawson, Illinois Institute of Technology, Chicago, IL	10:30 a.m. AIAA-2026-0090 Uncovering Dynamically Significant Coherent Structures in Wing Turbulence through Explainable Deep Learning S. Molina-Casino, Office National d'Etudes et de Recherches Aerospatiales, Toulouse, France; A. Cremades, S. Hoyas, Universitat Politecnica de Valencia, Valencia, Spain; J. Cardesa, F. Chedevergne, Office National d'Etudes et de Recherches Aerospatiales, Toulouse, France; R. Vinuesa, University of Michigan, Ann Arbor, MI		
Monday, 12 January 2026					
FD-05	Second Uncertainty Challenge Problem in Fluid Dynamics I				Plaza Ballroom F
Chaired by: J. SCHAEFER, The Boeing Company and P. HRISTOV, GATE Institute					
9:30 a.m. AIAA-2026-0091	9:50 a.m. AIAA-2026-0092	10:10 a.m. AIAA-2026-0093	10:30 a.m. AIAA-2026-0094	10:50 a.m. AIAA-2026-0095	

Summary of the Second AIAA Uncertainty Quantification Challenge Problem for Aerodynamics A. Cary, Boeing Research and Technology, Saint Louis, MO; M. Rumpfkeil, University of Dayton, Dayton, OH; P. Hristov, GATE Institute, Sofia, Bulgaria; J. Schaefer, Boeing Research and Technology, Saint Louis, MO	Uncertainty Propagation With Model Form Error Estimation Using Surrogate Models for Airfoil Aerodynamics M. Stradtner, J. Parekh, P. Bekemeyer, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	Boeing Contributions to the Second AIAA Uncertainty Quantification Challenge Problem for Aerodynamics M. Santos, J. Schaefer, A. Cary, The Boeing Company, St. Louis, MO; M. Khurana, Boeing Commercial Airplanes, Renton, WA	Multi-Fidelity Kriging Surrogate Models Applied to the Second UQ Challenge Problem M. Rumpfkeil, University of Dayton, Dayton, OH	Uncertainty Quantification via Latent Gaussian Process Surrogates for the Second AIAA Fluid Dynamics UQ Challenge Problem G. Davis, A. Renganathan, Pennsylvania State University, University Park, PA	

Monday, 12 January 2026

FD-07/APA-05	Special Session: BOLT-1B Flight Experiment I				Barrel Spring I
Chaired by: B. WHEATON, Johns Hopkins University Applied Physics Laboratory and J. GÖSER, DLR-German Aerospace Center					
9:30 a.m. AIAA-2026-0096 Overview of the BOLT-1B Flight Experiment B. Wheaton, G. McKiernan, C. Butler, T. Wolf, P. Kathrotiya, P. Kutty, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; et al.	9:50 a.m. 4343784 BOLT 1B Preflight Testing and Mission Design J. Göser, T. Röhr, M. Hörschgen-Eggers, R. Kirchhartz, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Weßling, Germany	10:10 a.m. AIAA-2026-0097 Optical Diagnostics of the BOLT-1B Flight Experiment A. Lock, University of Southern Queensland, Springfield, Australia; D. Buttsworth, University of Southern Queensland, Toowoomba, Australia; M. van Hoffen, F. Hack, I. Jahn, University of Southern Queensland, Springfield, Australia; T. Sopek, University of Southern Queensland, Toowoomba, Australia; et al.			

Monday, 12 January 2026

FD-08	Turbulence Modeling I: LES				Plaza Ballroom D
Chaired by: F. ZABALETA, Center for Turbulence Research, Stanford University and S. JAIN, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-0098 Cartesian Grid Method for Wall-Modeled Large-Eddy Simulations of Moving Boundary Flows S. Kawai, S. Kawai, Tohoku Daigaku, Sendai, Japan	9:50 a.m. AIAA-2026-0099 Wall-Modeled LES with a Transition Sensor for External Aerodynamic Flows M. Hussain, C. Brehm, J. Larsson, University of Maryland, College Park, MD	10:10 a.m. AIAA-2026-0100 Wall-Modeled Unstructured Single-Step and Simplified Lattice Boltzmann Method for Turbulent Flows in Curved Boundaries A. Delgado-Gutiérrez, M. Candon, P. Marzocca, RMIT University Sir Lawrence	10:30 a.m. AIAA-2026-0101 Analysis of Transonic Pitching Airfoil Flows at $Re_c=1.2\times10^7$ Using Wall-Modeled LES H. Sashida, S. Kawai, S. Kawai, Tohoku Daigaku, Sendai, Japan	10:50 a.m. AIAA-2026-1739 A Graph Attention Neural Network for Subgrid Stress Modeling A. Wu, S. Lele, Stanford University, Stanford, CA	11:10 a.m. AIAA-2026-1740 Revisiting Implicit Large Eddy Simulation for Discontinuous High Order Methods A. Pandey, Z. Wang, University of Kansas, Lawrence, KS

		Wackett Defence and Aerospace Centre, Bundoora, Australia; L. Tian, RMIT University STEM College, Melbourne, Australia			
Monday, 12 January 2026					
FT-01	Flight Testing I				Rainbow Spring II
Chaired by: S. KESHMIRI, The University of Kansas and J. PETERSON, University of Nevada Reno					
9:30 a.m. AIAA-2026-0102 Revisiting Stall Speed for the Turn-Back Maneuver: Insights From Flight Tests With the EMBRAER-312 Tucano F. Assis, J. Zanette, Instituto de Pesquisas e Ensaios em Voo (IPEV), São José dos Campos, Brazil; F. Cardoso-Ribeiro, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; M. Preisighe Viana, R. dos Santos Sampaio, Instituto de Pesquisas e Ensaios em Voo (IPEV), São José dos Campos, Brazil	9:50 a.m. AIAA-2026-0103 Takeoff Chart Development for a Homebuilt Airplane by Numerical Simulation R. Erb, K. Major, USAF Test Pilot School, Edwards AFB, CA	10:10 a.m. AIAA-2026-0104 Simplified Takeoff Model for a Homebuilt Airplane R. Erb, K. Major, USAF Test Pilot School, Edwards AFB, CA	10:30 a.m. AIAA-2026-0105 The Aerothermal, and Structural Design of the Common Front End Flight Vehicle J. Smith, D. Handford, H. van Pelt, A. Neely, University of New South Wales Canberra at ADFA, Canberra, Australia; S. Brown, University of New South Wales, Sydney, Australia	10:50 a.m. AIAA-2026-0106 The Common Front End: Integrated Avionics, Diagnostics, and Standardised Measurement Interface for Hypersonic Flight Experiments H. Pelt, M. Eldrige, D. Handford, A. Neely, University of New South Wales, Canberra, Australia	
Monday, 12 January 2026					
GNC-01	Control Theory for Aerospace Applications I				Bayhill 29
Chaired by: T. POLLACK, Delft University of Technology					
9:30 a.m. AIAA-2026-0107 Toward Co-Design Theory of Plant and Adaptive Control with Aerospace Applications R. Chhetri, S. Jetawatthana, T. Khamvilai, Texas Tech University, Lubbock, TX	9:50 a.m. AIAA-2026-0108 Duality Between Incremental Nonlinear Dynamic Inversion and Transformation-Based Quasi-Linear Parameter-Varying Control T. Pollack, S. Theodoulis, X. Wang, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	10:10 a.m. AIAA-2026-0109 Effect of Quantization on Data-Driven Model Predictive Control of Quadcopters M. Heil, S. Ataei, D. Goswami, The Ohio State University, Columbus, OH; D. Maity, UNC Charlotte, Charlotte, NC	10:30 a.m. AIAA-2026-0110 Auction-Based Task Allocation Under Untruthful Agents D. Kim, M. Akella, The University of Texas at Austin, Austin, TX	10:50 a.m. AIAA-2026-0111 Robust 6-DOF State Estimation for Spacecraft Proximity Operations Using Zonotopic Set Membership Based Kalman Filtering J. Patel, K. Subbarao, The University of Texas at Arlington, Arlington, TX	
Monday, 12 January 2026					
GNC-02	Distributed, Cooperative, and Multi-Vehicle Guidance, Navigation, and Control I				Bayhill 28

Chaired by: J. LANGELAAN, Pennsylvania State University and L. POLLINI, University of Pisa and Y. NAKKA, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-0112 Cucker-Smale Flocking Applications to Aerospace Vehicles: From Quadcopters to Fixed Wing Configurations M. Yadipour, I. Faruque, Oklahoma State University, Stillwater, OK	9:50 a.m. AIAA-2026-0113 Optic Flow Embodiments of Cucker-Smale Flocking Model M. Yadipour, I. Faruque, Oklahoma State University, Stillwater, OK	10:10 a.m. AIAA-2026-0114 Ship Deck Tracking in High Sea States via Distributed Estimation D. Zimmerschied, A. Jue, J. Horn, J. Langelaan, The Pennsylvania State University, University Park, PA	10:30 a.m. AIAA-2026-0115 Trajectory Optimization for Cooperative Navigation Applications M. Wojciechowski, Worcester Polytechnic Institute, Worcester, MA; M. Steffens, The Charles Stark Draper Laboratory Inc, Cambridge, MA; R. Cowlagi, Worcester Polytechnic Institute, Worcester, MA	10:50 a.m. AIAA-2026-0116 Graph Diffusion-Based Satellite Swarm Deployment for Curse-of-Dimensionality Mitigation Y. Takahashi, Institute of Science Tokyo and Interstellar Technologies, Meguro-ku, Japan; S. Sakai, Japan Aerospace Exploration Agency, Sagamihara, Japan	11:10 a.m. AIAA-2026-0117 Performance Evaluation of Multi-Agent Debris Monitoring Using Parametrized Relative Motion Guidance F. Salzo, Università di Pisa, Pisa, Italy; P. Ferrara, Leonardo S.p.A., Samarate, Italy; G. Bucchioni, Università di Pisa, Pisa, Italy
Monday, 12 January 2026					
GNC-03/AFM-01	Entry, Descent and Landing Technology I: Overviews				Orlando Ballroom L
Chaired by: J. CARSON, NASA and S. DUTTA, NASA Langley Research Center					
9:30 a.m. EDL Keynote with Miguel San Martin: The History of NASA Robotic Landings on Mars	10:10 a.m. AIAA-2026-0118 A Comprehensive Look at the "Test Like You Fly" Approach to the Griffin Mission One GNC System J. Shaffer, C. Owens, T. Klein, A. Horchler, Z. Mattis, R. Schwartz, Astrobotic Technology Inc, Pittsburgh, PA; et al.	10:30 a.m. AIAA-2026-0119 Active Terrain Relative Navigation With Surface Mapping Sensors D. Adams, NASA Johnson Space Center, Houston, TX; V. Patel, Stanford University, Stanford, CA; I. Rowe, Aerodyne Industries – Amentum JETS II Contract, Houston, TX	10:50 a.m. AIAA-2026-0120 Improving End-to-End 6-DOF Trajectory Optimization for High-Mass Mars Landings M. Sagliano, Universita degli Studi di Bologna, Forlì, Italy; P. Lu, San Diego State University, San Diego, CA		
Monday, 12 January 2026					
GNC-05/IS-01	Guidance, Navigation and Control in Intelligent Systems I				Bayhill 31
Chaired by: M. MCFARLAND, Raytheon					
9:30 a.m. AIAA-2026-0121 Impact Time Guidance to Capture Moving Targets in the Presence of Multiple Obstacles A. Sinha, University of Cincinnati, Cincinnati, OH; R. Nanavati, S. Kumar, Indian Institute of Technology Bombay, Mumbai, India	9:50 a.m. AIAA-2026-0122 Observability-Aided Target Interception Using Bearing-Only Measurements via Cooperative Estimation R. Boyinine, A. Sinha, University of Cincinnati, Cincinnati, OH	10:10 a.m. AIAA-2026-0123 Sensing and Hazard Detection in Autonomous Mine Rescue D. Vosbein, S. Bunning, H. Khaniani, M. Razavi, N. Mojtabai, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	10:30 a.m. AIAA-2026-0124 Autonomous Soft Landing of Unmanned Aerial Vehicles (UAVs) on Unmanned Surface Vessels (USVs) Using Model Predictive Control (MPC) J. Estupinan, R. Prazenica, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:50 a.m. AIAA-2026-0125 Rapid Three Dimensional Path Planning for Fixed Wing Aircraft Using Closed Loop Prediction and Constraint Relaxation S. Deal, A. Mazumdar, Georgia Institute of Technology, Atlanta, GA	11:10 a.m. AIAA-2026-0126 Monocular Depth Estimation Using Rhaznoff Maneuver H. Uslu, A. Catak, E. Koyuncu, Istanbul Teknik Universitesi, Istanbul, Turkey

Monday, 12 January 2026					
GT-01	Measurements in Challenging Environments				Florida Ballroom C
Chaired by: T. DEAN, Raytheon and J. PEHRSON					
9:30 a.m. AIAA-2026-0127 Point FLEET Measurements in the Freestream of the Mach 4 Nozzle Flow in the ONR-UTA Arc Jet Facility N. Chander, L. Maddalena, The University of Texas at Arlington, Arlington, TX	9:50 a.m. AIAA-2026-0128 On the Challenges Associated With the Application of FLEET Measurements in the Shock Layer in Arc-Jet Flows N. Chander, A. Gieder, L. Maddalena, The University of Texas at Arlington, Arlington, TX	10:10 a.m. AIAA-2026-0129 A Laser Absorption Spectroscopy Sensor Suite for High-Speed Measurements in a Model Solid Fuel Ramjet: Thermometry With Inlet H_2O and Exhaust CO Concentrations J. Vandervort, J. Santos, O. Trimble, C. Strand, R. Hanson, Stanford University, Stanford, CA; B. Bojko, US Naval Research Laboratory, Washington, D.C.; et al.	10:30 a.m. AIAA-2026-0130 Characterization of NO Absorption Transitions for Magnetohydrodynamic Experiments at NASA HyMETS F. Ahmed, J. McGaunn, L. Vest, S. Vasu, University of Central Florida, Orlando, FL		

Monday, 12 January 2026					
IS-02	Space Trusted Autonomy I				Celebration 15
Chaired by: S. PHILLIPS, Air Force Research Laboratory and C. HAYS, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0131 Multi-Agent Reinforcement Learning for Swarm Planetary Exploration A. Menor de Oñate, E. Van Kampen, Technische Universiteit Delft, Delft, The Netherlands	9:50 a.m. AIAA-2026-0132 Reinforcement Learning with Hybrid Action Representation for Autonomous Strip Imaging Task Scheduling in Super-Agile Satellites A. Cheval, H. Schaub, University of Colorado Boulder, Boulder, CO	10:10 a.m. AIAA-2026-0133 Guidance and Control of an Autonomous Snake Robot for Space Exploration O. Samir, A. Chakravarthy, The University of Texas at Arlington, Arlington, TX	10:30 a.m. AIAA-2026-0134 On-Orbit Mass Property Estimation of Combined Spacecraft with Sparse Identification of Nonlinear Dynamics J. Dionida, M. Ayoubi, Santa Clara University, Santa Clara, CA	10:50 a.m. AIAA-2026-0135 Autonomous Task Rescheduling in a Heterogeneous LEO Satellite Constellation Using Reinforcement Learning A. Reliford, D. Reid, S. Smith, A. Andy, M. Alfred, Research Institute for Tactical Autonomy, Wahington, D.C.; S. Phillips, Air Force Research Laboratory Space Vehicles Directorate, Kirtland AFB, NM	11:10 a.m. AIAA-2026-0136 Simulating Lunar Conditions for Autonomous Power and Thermal Management in the Endurance Rover K. Patterson, Eidgenossische Technische Hochschule Zurich, Zürich, Switzerland; T. Hasseler, T. Del Sesto, S. Bandyopadhyay, Jet Propulsion Laboratory, Pasadena, CA; L. Werner, M. Hutter, Eidgenossische Technische Hochschule Zurich, Zürich, Switzerland; et al.

Monday, 12 January 2026					
MAT-01	3D Woven Composite Materials and Structures				Bayhill 20
Chaired by: D. ZHANG, Purdue University and E. PAPON, The University of Alabama					
9:30 a.m.	9:50 a.m.	10:10 a.m.			

AIAA-2026-0137 Preliminary Mechanical Analysis of Carbon-Carbon Composites Exposed to High-Temperature Flow E. Alunno, T. Wagner, A. La Sorsa, S. Smith, J. Sprunger, K. Ahmed, University of Central Florida, Orlando, FL	AIAA-2026-0138 Effect of Brief High-Enthalpy Exposure on Subsequent High-Temperature Mass Loss in a 3D Carbon–Carbon Composite T. Wagner, E. Alunno, A. La Sorsa, S. Smith, Z. Monem, J. Sprunger, University of Central Florida, Orlando, FL; et al.	AIAA-2026-0139 Modeling of the Resin Infusion Process using Multiphase Lattice Boltzmann for Predicting Voids in Textile Composites D. Patel, R. Salazar-Tio, Dassault Systemes Americas Corp, Waltham, MA			
Monday, 12 January 2026					
MAT-02	Multifunctional Materials				Bayhill 23
Chaired by: R. LI, Aurora Flight Sciences, A Boeing Company and G. SEIDEL, Virginia Polytechnic Institute and State Universit					
9:30 a.m. AIAA-2026-0140 Experimental Determination of Thermal Expansion Behavior in PBEs Using Digital Image Correlation Techniques V. Talluru, S. Shah, A. Austria, G. Seidel, Virginia Polytechnic Institute and State University, Blacksburg, VA	9:50 a.m. AIAA-2026-0141 Machine Learning-Driven Discovery of Stable Vanadium Oxide Compositions for Aerospace Applications D. Ebrahimzadeh, S. Sharif, Y. Banad, University of Oklahoma, The University of Oklahoma, Norman, OK, US, academic, Norman, OK	10:10 a.m. AIAA-2026-0142 Performance Metrics for Structures-based Electrical ImpedanceTomography Measurements J. Wertz, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; L. Homa, University of Dayton Research Institute, Dayton, OH	10:30 a.m. AIAA-2026-0143 Review of Characterization Techniques for Multifunctional Polymer and Composite Piezoelectric Materials: A Poly (Vinylidene Fluoride) (PVDF) N. Ahbab, S. Naz, T. Xu, Old Dominion University, Norfolk, VA	10:50 a.m. AIAA-2026-0144 In-Situ Detection of Thermal Hot Spots in Polymer-Bonded Energetic Materials via Multiwalled Carbon Nanotube Networks V. Talluru, S. Shah, A. Austria, G. Seidel, Virginia Polytechnic Institute and State University, Blacksburg, VA	11:10 a.m. AIAA-2026-0145 Topology-Dependent Permeability in Lattice Structures: Simulation and Analysis O. Hafeez, M. ElSayed, Carleton University, Ottawa, Canada; P. Rajakareyar, Calian Antenna Solutions, Vaudreuil-Dorion, Canada; M. Reid, General Dynamics Mission Systems, Ottawa, Canada
Monday, 12 January 2026					
MDO-01	Aerodynamic Design Optimization				Bayhill 17
Chaired by: C. LUPP, Air Force Research Laboratory and R. LIEM, Imperial College London - Access Management					
9:30 a.m. AIAA-2026-0146 Computational Fluid Dynamics for Optimization Using a Summation-by-Parts Discretization and Automatic Differentiation B. Burke, G. Kennedy, Georgia Institute of Technology, Atlanta, GA; J. Hicken, Rensselaer Polytechnic Institute, Troy, NY	9:50 a.m. AIAA-2026-0147 Developing A Framework for Gradient-Based Aerodynamic Optimization Using Parametric CAD F. Kong, C. Perron, D. Mavris, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-0148 Efficient Design of Airfoil Shapes Using Surface Pressure–Informed Bayesian Optimization A. Dikshit, L. Leifsson, Purdue University, West Lafayette, IN	10:30 a.m. AIAA-2026-0149 Enforcement of Traction Boundary Conditions to Improve Shape Sensitivity of Plate Response A. Coffing, R. Canfield, Virginia Polytechnic Institute and State University, Blacksburg, VA		
Monday, 12 January 2026					

MDO-02/STR-03	Structural and Topology Optimization Applications for Air and Space I				Bayhill 21
Chaired by: V. BALABANOV, Boeing Commercial Airplanes and J. DEATON, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0150 Scalable Multigrid Methods for Nonlinear Shell Problems on GPUs: Performance and Locking Mitigation S. Engelstad, G. Kennedy, Georgia Institute of Technology, Atlanta, GA	9:50 a.m. AIAA-2026-0151 Multidisciplinary Design Optimization of Shape Programmable Space Structures S. Lalisani, I. Diaz, H. Chan, K. Khanal, Cornell University, Ithaca, NY; M. Haji, University of Michigan, Ann Arbor, MI; F. Royer, Cornell University, Ithaca, NY	10:10 a.m. AIAA-2026-0152 Surrogate-Based Optimization for Thin-Walled Deployable Propeller Blades B. Li, K. Kwok, Purdue University, West Lafayette, IN			

Monday, 12 January 2026					
MVCE-01/APA-07/CFD2030-02	Visualization and Knowledge Extraction of Large Data Sets				Bayhill 30
Chaired by: Y. LEFEBVRE, Tecplot, Inc.					
9:30 a.m. AIAA-2026-0153 Online Monitoring of Data Fusion Results in Wind Tunnel Applications A. Barklage, E. Yilmaz, P. Bekemeyer, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany	9:50 a.m. AIAA-2026-0154 Automatic Flow Feature Detection Using Convolutional Neural Networks A. Földes, G. Pullan, University of Cambridge, Cambridge, United Kingdom	10:10 a.m. AIAA-2026-0155 Efficient Streaming Lossy Compressor Design for Unsteady Cfd on Distributed Meshes J. Hoy, Air Force Research Laboratory Aerospace Systems Directorate, Edwards Air Force Base, CA	10:30 a.m. AIAA-2026-0156 Visualisation of Aerospace Simulations - A Navigation Approach G. Pullan, University of Cambridge, Cambridge, United Kingdom	10:50 a.m. AIAA-2026-0157 Physics-Based Feature Learning for Efficient Data-Driven Compression of Scientific Datasets A. Khan, R. Deshmukh, University of Central Florida, Orlando, FL; H. Ganti, B. O'Neill, RNET Technologies Inc., Dayton, OH	11:10 a.m. AIAA-2026-0158 Compression and Ray-March Rendering Using Implicit Neural Representations of Data Values and Domain Extent R. Sales, G. Pullan, University of Cambridge, Cambridge, United Kingdom

Monday, 12 January 2026					
OPS-01	Space Debris				Celebration 2
Chaired by: K. WALTERS, Johns Hopkins University Applied Physics Laboratory					
9:30 a.m. AIAA-2026-0159 Space Sustainability Implications of Combining Space Environment Pathways With Shared Socioeconomic Pathways N. Puri, P. Verkhovodova, M. Hartigan, T. St. Francis, T. Roberts, Georgia Institute of Technology, Atlanta, GA; I. Brownhall, University College	9:50 a.m. AIAA-2026-0160 Advancing Conjunction Analysis in SDA Through Hypothesis Reasoning and Analytical Fusion R. Silva, J. Magalhaes, K. Feigh, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-0592 Compact High-Pressure Compressor for Efficient Gas Transfer in Space M. Izenson, N. Kattamis, C. Passow, Creare LLC, Hanover, NH	10:30 a.m. AIAA-2026-0593 Time-Sensitive Medicine Dissolution in a Microgravity Environment Emulated by Acoustic Levitation H. Wan, Pine Creek High School, Colorado Springs, CO		

London, London, United Kingdom					

Monday, 12 January 2026

PC-01	Propulsion and Energy Group Technical Plenary: Reusable Rocket Propulsion: Stoke Space's Andromeda and Zenith Engines	Florida Ballroom B

Chaired by: A. STEINBERG, Georgia Institute of Technology and B. RANKIN, Air Force Research Laboratory

Speakers: Andy Lapsa (Stoke Space) Stoke Space has developed two new rocket engines as part of its fully and rapidly reusable Nova launch vehicle. Andromeda, a 25-klbf thrust Hydrogen-Oxygen upper stage engine, has an integrated metallic heat shield that's actively cooled to provide robust protection of the vehicle through the intense heat of re-entry. Zenith, a 100-klbf thrust LNG-Oxygen booster engine, is the industry's second full-flow staged combustion engine. Together, the engines give Nova best-in-class performance while maintaining moderate internal operating conditions, leading to high reliability, rapid reuse, and long life. Fully and rapidly reusable rockets will bring space access out of a production-rate-limited paradigm, thereby improving the cost and availability of space transport by an order of magnitude or more. During this fireside chat, Stoke Space CEO Andy Lapsa will explain why he decided to tackle the challenge of 100% reusability; how he and his team created a novel solution; and what he predicts the future of propulsion and rocketry will look like. Andy Lapsa is the co-founder and CEO of Stoke Space, a company focused on scaling the space economy by providing lower-cost, on-demand access to, through, and from space. Lapsa began his career at Blue Origin, developing the BE-4 engine before leading the BE-3 and BE-3U engine programs. He co-founded Stoke with Tom Feldman to develop Nova, a fully and rapidly reusable medium-lift rocket expected to launch in 2026. In the five years since closing its Seed Funding, Stoke has developed two state-of-the-art rocket engines, successfully flown a full-scale reusable upper stage prototype, re-activated Space Launch Complex 14 (SLC-14) in Cape Canaveral, and raised over $1B in capital. Lapsa holds a PhD in Aerospace Engineering from the University of Michigan and a BS in Mechanical and Aerospace Engineering from Cornell University.
Disciplines: Propulsion and Energy Group (PEG), Propellants and Combustion (PC), Pressure Gain Combustion (PGC), Gas Turbine Engines (GTE), Liquid Propulsion (LP), High Speed Air Breathing Propulsion (HSABP), Electric Propulsion (EP)

Monday, 12 January 2026

PDL-01	Plasma-assisted Ignition and Combustion I				Rainbow Spring I
Chaired by: S. YANG, University of Minnesota and C. DUMITRACHE, Colorado State University					
9:30 a.m. AIAA-2026-0161 Exploring the Impact of Voltage and Frequency Modulation on Flame Kernel Development for Bursts of Nanosecond Discharges K. Opacich, National Academies of Sciences Engineering and Medicine, Washington, D.C.; T. Ombrello, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	9:50 a.m. AIAA-2026-0162 Modeling of Plasma Ignition of Low Cetane Fuels in an Aerial Internal Combustion Engine P. Johnson, P. Pavalavanni, S. Narayanan, Z. Sun, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN; K. Kim, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD; et al.	10:10 a.m. AIAA-2026-0163 Experimental Characterization of a Natural Gas Burner Stabilized Using Nanosecond Pulsed Discharges Z. Kinzler, M. Sharma, C. Dumitrache, Colorado State University, Fort Collins, CO	10:30 a.m. AIAA-2026-0164 A Modular Flat-Flame Experimental Platform for Mechanistic Studies of Plasma-Assisted Ammonia/Methane Combustion M. Cherry, Massachusetts Institute of Technology School of Engineering, Cambridge, MA; S. Shanbhogue, A. Ghoniem, Massachusetts Institute of Technology Department of Mechanical Engineering, Cambridge, MA; C. Guerra-Garcia, Massachusetts Institute of Technology School of Engineering, Cambridge, MA	10:50 a.m. AIAA-2026-0165 NRPD-Enabled Swirl-Stabilized Combustor Design for Premixed CH_4/NH_3/air: Impact on NO Emissions and Flow Structures S. Shanbhogue, M. Cherry, R. Soulier, C. Guerra-Garcia, A. Ghoniem, Massachusetts Institute of Technology, Cambridge, MA	

Monday, 12 January 2026					
SAR-01	In-Space and On-Orbit Assembly and Manufacturing Robotics				Florida Ballroom A
Chaired by: D. SEUBERT, NASA Langley Research Center and C. SULLIVAN, Redwire Space and C. GUARINIELLO, Purdue University					
9:30 a.m. AIAA-2026-0166 Structural Sizing for the Lightweight Surface Manipulation System (LSMS) Architecture D. Seubert, W. Doggett, J. Martin, NASA Langley Research Center, Hampton, VA	9:50 a.m. AIAA-2026-0167 Energy-based MOR for Flexible Space Robotic Systems J. Luna, R. Robles, The University of Texas at El Paso, El Paso, TX; E. Blasch, Air Force Research Laboratory, Rome, NY; J. Bird, A. Flores-Abad, The University of Texas at El Paso, El Paso, TX	10:10 a.m. AIAA-2026-0168 The Climbing Collaborative Mobile Manipulator for Outfitting Truss Structures J. Merila, J. Neubert, University of North Dakota, Grand Forks, ND			

Monday, 12 January 2026					
SAT-01	Society and Aerospace Technology				Celebration 3
Chaired by: H. STROUD, Sandia National Lab and J. HAYS, Hays Research, LLC					
9:30 a.m. AIAA-2026-0169 Ensuring Responsible AI Governance for Autonomous Military Aircraft A. Kadhiresan, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-0170 Modeling Safety-Zone Interactions and Resource Access in Lunar South-Pole PSRs L. Paulson, T. Roberts, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-0171 Perceptions of a Crewed Mission to Mars: Appraising General Public and Industry Support C. Yeara, J. Dias Garcia, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-0172 *From Science Fiction to Strategic Foresight: A Cultural Blueprint for Innovation in Aerospace* L. Vadjina, Universitaet Tuebingen Fachbibliothek Mathematik und Physik, Tübingen, Germany		

Monday, 12 January 2026					
SATS-01/GNC-04	Guidance, Navigation, and Control of Small Sattelites				Celebration 9
Chaired by: M. MCFARLAND, Raytheon and M. SWARTWOUT, Saint Louis University					
9:30 a.m. AIAA-2026-0173 Optical Deep Space Navigation and Sensor Alignment with an Adaptive Cascade Filter for Small Satellites A. Perruci, D. Lee, O. Abdelkhalik, S. Servadio, Iowa State University of Science and Technology, Ames, IA	9:50 a.m. AIAA-2026-0174 Printed Circuit Magnetorquer for a PocketQube Satellite A. Rawat, N. Kulkarni, A. McGrellis, N. Hogge, A. Bashensky, H. Young, Virginia Polytechnic Institute and State University, Blacksburg, VA; et al.	10:10 a.m. AIAA-2026-0175 Small Satellite Attitude Estimation Using Complementary Photodiode Arrays in the Presence of Residual Spatial Jitter C. Xu, R. Bevilacqua, E. Rojas, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-0176 Long-Range Approach for Monitoring of Non-Cooperative Objects Using Differential Drag K. Watanabe, T. Chujo, Y. Yatsu, Tokyo Kagaku Daigaku, Meguro, Japan	10:50 a.m. AIAA-2026-0177 Emulating SmallSat Missions With UAVs: Remote Sensing and Formation Flying Testbeds L. Awasthi, A. Bhandari, A. Pan Du, N. Sajjad, A. Hein, H. Voos, Universite du Luxembourg Departement Ingenierie, Luxembourg City, Luxembourg	11:10 a.m. AIAA-2026-0178 A Low-Cost Air Bearing based ADCS Calibration System K. Foo, S. Goh, National University of Singapore, Singapore, Singapore; C. Yang, Harbin Institute of Technology Shenzhen, Shenzhen, China; Y. Wei, Northwestern Polytechnical University, Xi'an, China; S.

					Tissera, A. Rai, National University of Singapore, Singapore, Singapore
Monday, 12 January 2026					
SCS-01	Spacecraft Antennas, Reflectors, and Other Optical Apertures				Bayhill 24
Chaired by: F. ROYER, Cornell University and K. KWOK, Purdue University					
9:30 a.m. AIAA-2026-0179 Improvement of Shape Recovery Rate of CF-CNT-SMP and Consideration for Antennaization A. Torisaka, H. Ogatsu, R. Ueda, Tokyo Toritsu Daigaku, Hachioji, Japan	9:50 a.m. AIAA-2026-0180 Self-Aware Deployable RF Antennas With Integrated Shape Sensing Using Neural Networks and Temperature Sensors A. Lopez, S. Jeon, S. Gillmer, Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA; Z. Cordero, Massachusetts Institute of Technology, Cambridge, MA	10:10 a.m. AIAA-2026-0181 Stiffness and Stability of Spiral-Wrapped Doubly Curved Shells A. Haraszti, Stanford University, Stanford, CA; I. Krida, H. Nassar, T. Chen, University of Houston, Houston, TX; M. Arya, Stanford University, Stanford, CA	10:30 a.m. AIAA-2026-0182 Kirigami Film Reflector for Deployable Space Antennas G. Aldan, H. Love, M. Campbell, F. Aflatouni, I. Bargatin, University of Pennsylvania, Philadelphia, PA	10:50 a.m. AIAA-2026-0183 Design and Manufacture of Fan-Fold Deployable Reflector for X-Band Satellite SAR T. Masuoka, S. Ozawa, K. Shintate, Japan Aerospace Exploration Agency, Tsukuba, Japan; T. Kuhara, Y. Yamagata, N. Minami, Technosolver Corporation, Fujisawa, Japan; et al.	11:10 a.m. AIAA-2026-0184 Solid Underconstrainted Multi-Frequency (SUM) Deployable Antenna: Built, Measured, and Deployed to Tens of Microns J. Sauder, G. Hanes, J. Mejia-Ariza, F. Di Carli, M. Roman, D. Rafaat, Jet Propulsion Laboratory, Pasadena, CA; et al.
Monday, 12 January 2026					
SD-01	Reduced-Order Modeling and Machine Learning				Bayhill 18
Chaired by: J. BLACK, Northrop Grumman Space Systems and M. CANDON, Royal Melbourne Institute of Technology					
9:30 a.m. AIAA-2026-0185 Reduced-Order Modeling of Unsteady Aerodynamics Using Constrained Optimization and Random Input T. Gazit, M. Freydin, Technion Israel Institute of Technology, Haifa, Israel	9:50 a.m. AIAA-2026-0186 Data-Driven Aerodynamic Kernel Functions for Boundary Element Flows B. Preston, U. Fasel, R. Palacios, Imperial College London, London, United Kingdom; A. Castrichini, Airbus UK, Filton, United Kingdom	10:10 a.m. AIAA-2026-0187 Data-Driven Parametric Aeroelastic Modeling of the Pazy Wing M. Sinani, R. Palacios, U. Fasel, A. Wynn, Imperial College London, London, United Kingdom	10:30 a.m. AIAA-2026-1246 Aeroelastic Uncertainty Quantification of Flexible Wing Nonlinear Dynamics Using Reduced Order Models D. Clifford, G. Morichetti, A. Da Ronch, University of Southampton, Southampton, United Kingdom		
Monday, 12 January 2026					
SD-02/FD-06	Special Session: Advances in High-Speed Fluid-Thermo-Structural Interaction I				Bayhill 22
Chaired by: L. PICCOLO SERAFIM, Duke University and E. BLADES, ATA Engineering, Inc. (SRO)					
9:30 a.m. AIAA-2026-0188 Large Deformation Correction for Linearized	9:50 a.m. AIAA-2026-0189 Panel Thermal Buckling and Snap-Through Under	10:10 a.m. AIAA-2026-0190 Numerical Investigation of the Aeroelastic Response	10:30 a.m. AIAA-2026-0414	10:50 a.m. AIAA-2026-0415 Experiments on Supersonic Fluid-Structure	

Time-domain Unsteady Aerodynamics for a Cantilevered Plate L. Piccolo Serafim, Georgia Institute of Technology, Atlanta, GA; E. Dowell, Duke University, Durham, NC	Mach 6 Turbulent Boundary Layer E. Kenyon, V. Shinde, Mississippi State University, Mississippi State University, MS	of a CFCF Compliant Panel in Hypersonic Flow M. Cabral, W. Harris, Massachusetts Institute of Technology, Cambridge, MA; E. Dowell, Duke University, Durham, NC	Coupled Fluid-Structure Simulations of Panel Flutter at High Speed B. Reimann, M. Franze, S. Jack, F. Barz, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany	Interaction in Transient Flow Fields D. Daub, S. Willems, P. Gruhn, A. Guelhan, DLR, Cologne, Germany; T. Beberniss, K. Brouwer, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; et al.	
Monday, 12 January 2026					
SE-01	Digital Engineering and Model-Based Systems Engineering (MBSE)				Bayhill 25
Chaired by: M. FRENCH, Northrop Grumman Aeronautics Systems					
9:30 a.m. AIAA-2026-0191 Model-Based Interoperability with OSLC and SysMLv2 J. Schmeink, S. Reitenbach, M. Siggel, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; C. Mayr, MTU Aero Engines AG, Munich, Germany	9:50 a.m. AIAA-2026-0192 An Integrated MDAO Enabled MBSE Approach for Sizing Lunar Power Systems S. Sambath Ramkumar, M. Balchanos, D. Mavris, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-0193 MBSE-Driven MDAO in Co-Architecture and Concurrent Engineering Workflows for Aircraft Development S. Baskaran, Airbus India Private Limited, Bangalore, India; J. Camacho Casero, Airbus SAS, Blagnac, France; B. Bagdatli, D. Mavris, Georgia Institute of Technology, Atlanta, GA	10:30 a.m. AIAA-2026-0194 Implementation of a Physics-Based Behavioral System Model for an Airborne Cryogenic Cooling System S. Barm, Technische Hochschule Augsburg, Augsburg, Germany		
Monday, 12 January 2026					
SFM-01	Attitude Dynamics, Determination, and Control I				Plaza Ballroom I
Chaired by: D. GUZZETTI, Auburn Universtiy					
9:30 a.m. AIAA-2026-0197 Control of Decommissioned Satellites and Space Debris Using CubeSats with Ion Electrospray Engines F. Biertümpfel, P. Seiler, University of Michigan, Ann Arbor, MI; P. Lozano, Massachusetts Institute of Technology, Cambridge, MA; H. Pfifer, Technische Universitat Dresden, Dresden, Germany	9:50 a.m. AIAA-2026-0198 Passive Solar Homing Control Using an Angle-Responsive Tunable Optical-Property Device K. Kimura, M. Sato, Japan Aerospace Exploration Agency, Sagamihara, Japan; T. Senoue, Japan Aerospace Exploration Agency, Ibaraki, Japan; S. Kawasaki, Japan Aerospace Exploration Agency, Sagamihara, Japan; S. Tsuji, Japan Aerospace Exploration Agency, Ibaraki, Japan; C. Hirose, Japan	10:10 a.m. AIAA-2026-0199 Constrained Stable Inverse Control of Discrete-Time Non-Minimum Phase MIMO Systems J. Fritch, Columbia University, New York, NY; J. Juang, National Cheng Kung University, Tainan City, Taiwan; N. Chbat, Columbia University, New York, NY	10:30 a.m. AIAA-2026-0200 Generalized Predictive Control Using Second-Order Hold Discretization J. Fritch, Columbia University, New York, NY; J. Juang, National Cheng Kung University, Tainan City, Taiwan; N. Chbat, Columbia University, New York, NY	10:50 a.m. AIAA-2026-0632 Spacecraft Attitude Control without Prior Modeling Using Predictive Cost Adaptive Control S. Auerbach, R. Dunk, J. Vander Schaaf, D. Bernstein, University of Michigan, Ann Arbor, MI	

	Aerospace Exploration Agency, Sagamihara, Japan; et al.				
Monday, 12 January 2026					
SFM-02	Space Situational Awareness (SSA) Conjunction Analysis and Collision Avoidance				Plaza Ballroom J
Chaired by: K. DEMARS, Texas A&M University					
9:30 a.m. AIAA-2026-0201 A Determination and Reduction of Collision Probability for Satellites Using a Metalog Distribution M. Tender, The Ohio State University, Columbus, OH; H. Dumm, Air Force Research Laboratory Space Vehicles Directorate, Kirtland AFB, NM	9:50 a.m. AIAA-2026-0202 Generative Maneuver Inference for Non-Cooperative Objects in Cislunar Space During Optical Blackouts Using Diffusion Models T. Arai, Sogo Kenkyu Daigakuin Daigaku, Sagamihara, Japan; N. Ozaki, Uchu Koku Kenkyu Kaihatsu Kiko, Sagamihara, Japan	10:10 a.m. AIAA-2026-0203 Inference on the Miss Distance in a Conjunction J. Carpenter, NASA Goddard Space Flight Center, Greenbelt, MD; A. Davison, Ecole polytechnique federale de Lausanne, Lausanne, Switzerland; S. Elkantassi, Universite de Lausanne, Lausanne, Switzerland; H. Morris, M. Hejduk, The Aerospace Corporation Chantilly, Chantilly, VA	10:30 a.m. AIAA-2026-0204 A Refined Approach to Resident Space Object Identification in Unresolved Optical Space Imagery A. Miller, A. Lovell, Embry-Riddle Aeronautical University, Daytona Beach, FL		
Monday, 12 January 2026					
SOF-01	Testing and Simulation Methods for Complex Systems				Celebration 16
Chaired by: B. SCHMUKI, Lockheed Martin Aeronautics					
9:30 a.m. AIAA-2026-0205 Mixed-Reality Simulation for Testing Complex UAS Missions in Safe Environments T. Bornscheuer, L. Leferenz, R. Schmidt, J. Rüter, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Brunswick, Germany	9:50 a.m. AIAA-2026-0206 Evaluation of Methods for Distance Estimation to an Aerial Coupling Device using a Single RGB Image J. Rüter, P. Davydov, U. Durak, J. Dauer, Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Flugsystemtechnik, Brunswick, Germany	10:10 a.m. AIAA-2026-0207 QuickSAT/Test (QS_TEST), a Framework for Automated Testing, and Support for Validation and Verification With Artifact Tracking for Autonomous and Complex Systems A. Santangelo, Sci_Zone Inc, Holland, MI	10:30 a.m. AIAA-2026-0208 Automated Scenario Generation to Maximize Coverage of an Operational Design Domain for AI-Based Aviation Systems S. Gupta, M. Nana Mbouendeu, L. Kamdem Kountchou, Technische Universitat Clausthal, Clausthal-Zellerfeld, Germany; U. Durak, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany	10:50 a.m. AIAA-2026-0209 Data-Driven Aviation Scenario Generation using Generative Adversarial Networks M. Jedeni, Technische Universitat Clausthal, Clausthal-Zellerfeld, Germany; S. Gupta, U. Durak, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany	11:10 a.m. AIAA-2026-0210 Context-Aware Input Selection Using Operational Design Domain C. Torens, S. Schirmer, U. Durak, Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Flugsystemtechnik, Brunswick, Germany
Monday, 12 January 2026					
STE-01	Space Tethers I				Celebration 4

Chaired by: G. ZHU, York University					
9:30 a.m. AIAA-2026-0211 Space Net Deployment Experiment via Air-Bearing Satellite Simulators W. Zhu, Nanjing University of Science and Technology, Nanjing, China; G. Zhu, York University, Toronto, Canada	9:50 a.m. AIAA-2026-0212 Model Reference Adaptive Control for Net-Based Debris Towing A. Boonrath, E. Botta, University at Buffalo School of Engineering and Applied Sciences, Buffalo, NY	10:10 a.m. AIAA-2026-0213 Validation of the Attitude Determination and Control System of a Deorbit Device Equipped with an Electrodynamic Tether Using Hardware in the Loop Testing G. Sharifi, S. Garcia, G. Sanchez-Arriaga, Universidad Carlos III de Madrid Escuela Politecnica Superior, Leganés, Spain	10:30 a.m. AIAA-2026-0214 A Flight Model of a Deorbit Device and a Green Mobility Module Based on Electrodynamic Tether Technology G. Sanchez-Arriaga, G. Sharifi, J. Simón-Aznar, Universidad Carlos III de Madrid Escuela Politecnica Superior, Leganés, Spain; A. Velasco, D. Cruces, SENER Aeroespacial, Madrid, Spain; J. Wulfkuehler, Technische Universitat Dresden, Dresden, Germany; et al.	10:50 a.m. AIAA-2026-0215 Near Force-Free Space Elevator by Magnetic Inflation S. Carpenter, MarsB.space Collaboration, Cupertino, CA; S. Mao, Massachusetts Institute of Technology, Cambridge, MA; K. Lu, Carnegie Mellon University, Pittsburgh, PA; M. Qi, University of California Berkeley, Berkeley, CA; A. Lu, Carnegie Mellon University, Pittsburgh, PA	
Monday, 12 January 2026					
STR-02	AI/ML and Advanced Structural Computational Techniques				Bayhill 19
Chaired by: V. GOYAL, Lockheed Martin Aeronautics and Y. LI, University of Illinois at Urbana-Champaign					
9:30 a.m. AIAA-2026-0216 A Digital Twin Framework for Real-Time Damage Localization and Stress Field Prediction in Plate Structures C. Driggs, A. Holley, D. Monge, R. Montano, Z. Sotoudeh, California State Polytechnic University Pomona, Pomona, CA	9:50 a.m. AIAA-2026-0217 Enhancing Artificial Bird (Simulated Projectiles) Development Using AI/ML for Bird Strike Analysis A. Byar, T. DePauw, Boeing Commercial Airplanes, Everett, WA	10:10 a.m. AIAA-2026-0218 On the Accuracy of Standard and Stress-Driven Reissner's Mixed Variational Theorems Assessed via Functional Error Analysis L. Demasi, San Diego State University, San Diego, CA	10:30 a.m. AIAA-2026-0219 Porosity-Dependent Free Vibration Characteristics of Functionally Graded Plates Modeled via a Non-Polynomial Higher-Order Shear Deformation Theory S. Sahoo, A. Yadav, Indian Institute of Technology Kharagpur, Kharagpur, India; S. Verma, Indian Institute of Technology (BHU) Varanasi, Varanasi, India; B. Singh, Indian Institute of Technology Kharagpur, Kharagpur, India	10:50 a.m. AIAA-2026-0220 SPH Initialization Strategy for Wave Propagation in Plate Structures L. Esposito, V. Memmolo, F. Ricci, Universita degli Studi di Napoli Federico II, Naples, Italy; S. Turteltaub, Technische Universiteit Delft, Delft, The Netherlands; C. Bisagni, Politecnico di Milano, Milan, Italy	11:10 a.m. AIAA-2026-0221 Thermal Conductivity Modeling and Optimization of Ceramic Matrix Composite Spinodoids S. Yildiz, P. Acar, Virginia Polytechnic Institute and State University, Blacksburg, VA
Monday, 12 January 2026					
SUST-01	Systems Approaches to Sustainable Aviation				Plaza Ballroom K
Chaired by: J. BLANTON, Classic Engineering, LLC and H. SMITH, Aurora Flight Sciences					
9:30 a.m. AIAA-2026-0222 Decision-Driven Scenario Generation for Zero-	9:50 a.m. AIAA-2026-0223 A Theoretical Foundation, Methodology, and	10:10 a.m. AIAA-2026-0224 Future Scenario Development Framework	10:30 a.m. AIAA-2026-0225 Technoeconomic and Energy Life Cycle		

Impact Aviation: A Multi-Stakeholder Collaborative Framework J. Alewine, C. Heraudet, N. Lévy, K. Navaneetha Krishnan, B. Bagdatli, D. Mavris, Georgia Institute of Technology, Atlanta, GA	Framework for Aircraft Life Cycle Sustainability Assessment E. Waddington, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL	for Novel 2050 Transport Aircraft A. Mahseredjian, P. Vascik, Electra, Manassas, VA	Assessments of Wind Energy Systems for Regional Hybrid Electric Aircraft A. Kennedy, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL		
Monday, 12 January 2026					
TES-01	Fuels and Combustion I				Celebration 8
Chaired by: D. MICHAELS, Technion-Israel Institute of Technology and L. JIANG, Lulin Jiang					
9:30 a.m. AIAA-2026-0226 Shock-Wave/Boundary-Layer Interactions in Rotating Detonation Combustors T. Hsieh, T. Shih, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-0227 Flow and Heat Transfer About the Blade Tip in a 1.5-Stage Turbine A. Shishodia, A. Agarwal, T. Shih, Purdue University, West Lafayette, IN; K. Bryden, Ames National Laboratory, Ames, IA; R. Dalton, J. Crane, National Energy Technology Laboratory, Pittsburgh, PA	10:10 a.m. AIAA-2026-0228 Detonation Wave Formation in a Modular Turbulator Using Hydrogen-Oxygen Mixtures for Industrial Safety B. Suarez, H. Patel, R. Yuraszeck, N. Berube, S. Vasu, University of Central Florida, Orlando, FL	10:30 a.m. AIAA-2026-0229 Design and Implementation of a Driver Insert to Minimize Non-Ideal Pressure Rise in a High-Pressure Shock Tube B. Venger, M. Fraze, J. Urso, R. Rahman, S. Vasu, University of Central Florida, Orlando, FL	10:50 a.m. AIAA-2026-0230 1D Simulation of Water Boiling in an Electrically Heated Pipe A. Moreno, University of Central Florida, Orlando, FL; M. El-Soueidan, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; Z. Figueroa Pineda, E. Fernandez, University of Central Florida, Orlando, FL; B. Warren, Siemens Energy, Charlotte, NC; M. Otto, University of Central Florida, Orlando, FL; et al.	11:10 a.m. AIAA-2026-0231 Influence of Additives on the Powder Flow of Dry Pinewood K. Burra, V. Ponnamperuma, J. Schmidt, A. Gupta, University of Maryland, College Park, MD
Monday, 12 January 2026					
TP-01	Ablation				Bayhill 32
Chaired by: M. SHARMA PRIYADARSHINI, Virginia Tech and P. VALENTINI, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0232 Modeling the Ablation of Carbon-Based Materials Through Continuous-Wave Lasers B. Tacchi, F. Shireman, A. Yassin, K. Rhoads, A. Martin, S. Poovathingal, University of Kentucky, Lexington, KY; et al.	9:50 a.m. AIAA-2026-0233 Kinetic Parameter Optimization of Nitrogen Reactivity With Carbon Surfaces Using Bayesian Inference J. Murray, Sandia National Laboratories, Albuquerque, NM	10:10 a.m. AIAA-2026-0460 Investigation of the Passive-To-Active Oxidation Transition of SiC via Laser-Induced Fluorescence in an Atmospheric Pressure Inductively-Coupled Plasma Torch G. Kale, The University of Texas at Austin, Austin, TX; J. Murray, S. Kearney, J. Wagner, Sandia National	10:30 a.m. AIAA-2026-0461 Carbon-Carbon Ablation Experiments in the Sandia Hypersonic Shock Tunnel J. Murray, C. Murzyn, E. Mussoni, J. Wagner, Sandia National Laboratories, Albuquerque, NM	10:50 a.m. AIAA-2026-0459 Operational Prediction of Arcjet Model Preheating Within Expansion Tube Facility E. Chang, University of Oxford, Oxford, United Kingdom; H. Gur, University of Kentucky, Lexington, KY; O. Valeinis, J. Steer, M. McGilvray, T. Hermann, University of Oxford, Oxford, United Kingdom; et al.	

		Laboratories, Albuquerque, NM; H. Khalifa, General Atomics Electromagnetic Systems Group, San Diego, CA; N. Clemens, The University of Texas at Austin, Austin, TX; et al.			

Monday, 12 January 2026

UAS-01/TF-01	Air Traffic Management for Advanced Aircraft Concepts				Orlando Ballroom M
Chaired by: M. MCCRINK and G. FERNANDES, Texas Tech University					
9:30 a.m. AIAA-2026-0234 A Game-Theoretic A-Star Method for Multi-UAV Path Planning in Urban Low-Altitude Airspace K. Guo, K. Cai, Y. Zhu, P. Zhao, Beihang University, Beijing, China	9:50 a.m. AIAA-2026-0235 A Hierarchical Game-Theoretic Based Deep Reinforcement Learning Approach for Aircraft Conflict Resolution Z. Jiao, Beihang University, Beijing, China; M. Li, Beijing Information Science and Technology University, Beijing, China; K. Cai, Beihang University, Beijing, China; Y. Zhu, Aviation Data Communication Corporation, Beijing, China; P. Zhao, Beihang University, Beijing, China	10:10 a.m. AIAA-2026-0236 Decentralized Coordination of Autonomous Traffic Through Advanced Air Mobility Corridors J. Aloor, H. Balakrishnan, Massachusetts Institute of Technology, Cambridge, MA	10:30 a.m. AIAA-2026-0237 A Separation Minima Assessment for UAVs Integrating Into Terminal Airspace by Monte Carlo Simulations L. Meng, Z. HY, K. Low, Y. Zhao, Civil Aviation University of China, Tianjin, China		

Monday, 12 January 2026

CAP-02 10:30 - 11:15 a.m.	Level Up Your Game	Regency Ballroom O-P
A moderated panel of recruiters and hiring managers from top firms will give a behind-the-scenes look into how to land your dream job with resume and interview tips.		

Monday, 12 January 2026

F360-02 10:30 - 11:30 a.m.	Boeing Fireside Chat	Windermere Ballroom
Don Ruhmann, Boeing Chief Aerospace Safety Officer, and Todd Citron, Boeing Chief Technology Officer, come together for a strategic conversation about the future of aerospace across commercial aviation, defense, and space. Their combined perspectives bridge cutting-edge technology development and enterprise-level safety stewardship, offering the audience a view of how Boeing aligns ambitious technical roadmaps with the uncompromising safety expectations of regulators, operators, and the flying public.		

Monday, 12 January 2026

CAP-03 12:45 - 1:15 p.m.	Command Your Mission: Resume and Application Workshop	Columbia 35

Choose from four different microsessions that are focused on getting you career-ready with practical and actionable strategies. Join us for an interactive and fast-paced resume workshop designed to help students stand out to employers. Participants will learn effective strategies for applying to internships and jobs. Leave with resume tips and tricks and a clearer plan for navigating the application process with confidence.

Monday, 12 January 2026

CAP-04 12:45 - 1:15 p.m.	Command Your Mission: Transitioning To Work	Columbia 34

Choose from four different microsessions that are focused on getting you career-ready with practical and actionable strategies. Wondering how to be successful in your internship or full-time position from day 1? Join Campus Manager Auriel Scott as she leads a panel discussion of Lockheed Martin team members sharing their own experiences, tips, and tricks in navigating the aerospace and aviation industry and transitioning from student to first day. Learn how to leverage your networks to build a professional presence and how to walk into your new job with confidence.

Monday, 12 January 2026

CAP-05 12:45 - 1:15 p.m.	Command Your Mission: Building Your Brand	Columbia 37

Choose from four different microsessions that are focused on getting you career-ready with practical and actionable strategies. Ignite your future in aerospace with a personal brand that boldly showcases your talents, passions, and mission—making you impossible to miss for internships, research opportunities, and early-career roles. Get the tools to craft a compelling story, boost your visibility, and launch your career into the stratosphere.

Monday, 12 January 2026

CAP-06 12:45 - 1:15 p.m.	Command Your Mission: Leveraging Your Competition Experiences	Discovery 46

Choose from four different microsessions that are focused on getting you career-ready with practical and actionable strategies. Discover how to transform your college competition experiences—whether in rocketry, design/build/fly, or other engineering challenges—into powerful assets that set you apart in the aerospace world. This session reveals how to showcase your hands-on skills, teamwork, and innovation to impress recruiters and accelerate your career trajectory.

Monday, 12 January 2026

AMT-05	Aerodynamic Measurement Technology Award Lecture	Orlando Ballroom N

Chaired by: A. FAGAN, NASA Glenn Research Center and Z. ZHANG, University of Tennessee

In this session, the AMT Award will be presented to **Mark P. Wernet** from NASA, who will give a 1-hour presentation titled "Advancing Facility-Hardened Optical Diagnostics for CFD Validation". The session will end with a Q&A.

Monday, 12 January 2026

APA-09	Applied Computational Fluid Dynamics II	Manatee Spring II

Chaired by: A. ASHLEY, Lockheed Martin Aeronautics and H. BEN-GIDA, Technion - Israel Institute of Technology

1:00 p.m. AIAA-2026-0238 Effects of Inlet Distortion on the Stability of a Transonic Multi-Stage High-Pressure Compressor:	1:20 p.m. AIAA-2026-0239 F-35 CFD Validation via Infrared Thermography Comparisons Using the Lockheed Martin Falcon CFD Solver	1:40 p.m. AIAA-2026-0240 Utilizing CFD Coupled 6DOF to Study the Characterization and Scaling Properties of Tumbling Flight	2:00 p.m. AIAA-2026-0241 Utilizing CFD Coupled 6DOF to Study Separation Induced Tumbling of a Missile Bus Geometry	2:20 p.m. AIAA-2026-0242 Development of a Hybrid Method to Characterize Aerodynamic Performance of Finned Missiles	

A URANS-Validated Body Force Approach C. Crea, Safran Aircraft Engines, Moissy Cramayel, France; J. Marty, R. Barrier, Office National d'Etudes et de Recherches Aerospatiales, Meudon, France; S. Cochon, Safran Aircraft Engines, Moissy Cramayel, France; G. Dufour, ISAE-SUPAERO, Toulouse, France	A. Ashley, P. Wooden, B. Smith, Lockheed Martin Corporation, Fort Worth, TX	H. Dennison, C. Griffin, W. Huebsch, West Virginia University, Morgantown, WV	H. Dennison, W. Huebsch, C. Griffin, West Virginia University, Morgantown, WV	P. Thomas, D. Knight, Rutgers The State University of New Jersey, New Brunswick, NJ	
Monday, 12 January 2026					
APA-12/FD-11	Hypersonic Aerodynamics II				Peacock Spring
Chaired by: T. ARLEDGE, NASA-Ames and B. BORNHOFT, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-0243 Micro-Pitot Traverse System Pressure Measurements for Transverse Jet Injection in Hypersonic Quiet Flow J. Wozniak, A. Bhave, J. Jewell, Purdue University, West Lafayette, IN	1:20 p.m. AIAA-2026-0244 Effects of Cavity Geometry and Thermochemistry on Optical Systems in Hypersonic Vehicles G. Mao, W. Harris, Massachusetts Institute of Technology, Cambridge, MA	1:40 p.m. AIAA-2026-0245 Aerodynamic and Thermal Enhancement of Hypersonic Waveriders via Sonic Jet Injection and Convex Surface Shaping Y. Vohra, L. Deshpande, R. Sharma, S. Rana, Amity Institute of Aerospace Engineering, Noida, India; V. Sanal Kumar, Amity University Noida, Noida, India	2:00 p.m. AIAA-2026-0246 Parametric Study of Forward-Facing Steps in Hypersonic Flow Using STARCCM+ J. Filer, Virginia Polytechnic Institute and State University, Blacksburg, VA		
Monday, 12 January 2026					
APA-13	Propeller/Rotorcraft/Wind Turbine Aerodynamics II				Rock Spring I & II
Chaired by: J. CAI, Worcester Polytechnic Institute and J. RAULEDER, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-0247 Fluid Dynamics of Rotors Through Dynamic Transition J. Dawe, S. Bull, M. Carley, University of Bath, Bath, United Kingdom; J. Evans, GKN Aerospace Services Limited, Bristol, United Kingdom; C. Sangan, University of Bath, Bath, United Kingdom	1:20 p.m. AIAA-2026-0248 Dragonfly Lander Flight Dynamics Model Enhancement Using FLIGHTLAB-Viscous Vortex Particle Method S. Yang, J. Batther, D. Lee, J. Goericke, C. He, Advanced Rotorcraft Technology Inc, Fremont, CA; E. Sutton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; et al.	1:40 p.m. AIAA-2026-0249 Numerical Investigation of the Over-the-Wing Distributed Propeller Aerodynamics Using Potential Flow Panel Method X. Wang, S. Lee, University of California Davis, Davis, CA	2:00 p.m. AIAA-2026-0250 Advancing Rotorcraft Aerodynamics: Multi-Fidelity Approaches for Forward Flight Simulation in Fluent H. Fouladi, Ansys Canada Ltd., Waterloo, Canada; L. Audonnet, ANSYS France, Montigny-le-Bretonneux, France	2:20 p.m. AIAA-2026-0251 A New Rapid Vortex-Based Aerodynamic Model for Propeller-Wing Interaction Z. Li, A. Da Ronch, University of Southampton Faculty of Engineering and Physical Sciences, Southampton, United Kingdom	

Monday, 12 January 2026					
APA-15	Special Session: Drag Reducing Surfaces I				Coral Spring II
Chaired by: J. NAUGHTON, University of Wyoming					
1:00 p.m. AIAA-2026-0252 Riblet Performance Evaluation Using Diameter-Adapted Reference Models in Pipe Flow P. Leitl, bionic surface technologies GmbH, Graz, Austria; S. Mauersberger, Hochschule Mittweida, Mittweida, Germany; A. Flanschger, bionic surface technologies GmbH, Graz, Austria; A. Gruner, Hochschule Mittweida, Mittweida, Germany; R. Benauer, bionic surface technologies GmbH, Graz, Austria; K. Kujawa, Hochschule Mittweida, Mittweida, Germany; et al.	1:20 p.m. AIAA-2026-0253 A Novel Multibeam Mobile Riblet Processing System for Large-Area Applications A. Phillips, E. Acaroglu, Nikon Research Corporation of America, Belmont, CA; T. Takemoto, Nikon Corporation, Tokyo, Japan; V. Solidum, Nikon Research Corporation of America, Belmont, CA; R. Shinozaki, Nikon Corporation, Tokyo, Japan; E. Goodwin, Nikon Research Corporation of America, Belmont, CA; et al.	1:40 p.m. AIAA-2026-0254 Investigation of Riblet Effects on the Surface Roughness Induced Performance Loss of Wind Turbine Blades T. Higashino, N. Yanase, T. Kurashima, S. Tsuchihashi, Nikon corporation, Shinagawa, Japan; T. Yuito, Nikon Advanced Manufacturing Inc., Long Beach, CA; A. Flanschger, Bionic Surface Technologies GmbH, Graz, Austria; et al.	2:00 p.m. AIAA-2026-0255 Investigation of the Use of Direct Laser Writing Riblets on a Container Ship Propeller P. Leitl, M. Garcia de Albeniz, bionic surface technologies GmbH, Graz, Austria; S. Mauersberger, Laserinstitut Hochschule Mittweida, Mittweida, Germany; C. Strasser, Vienna Model Basin Ltd, Wien, Austria; A. Flanschger, bionic surface technologies GmbH, Graz, Austria; A. Gruner, Laserinstitut Hochschule Mittweida, Mittweida, Germany; et al.		

Monday, 12 January 2026					
AS-03	Design and Simulation of Adaptive Systems				Bayhill 27
Chaired by: F. KOPSAFTOPOULOS, Rensselaer Polytechnic Institute and G. REICH, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-0256 Experimental Investigations of a Dual-Mode Skin-Actuated-Camber with Embedded Twist (SACET) Morphing Wing G. Schreyer, G. Selm, J. Pabon, S. Gunasekaran, University of Dayton, Dayton, OH	1:20 p.m. AIAA-2026-0257 Path-dependent Multistable Rotational Hinge for Morphing Applications J. Rivas-Padilla, A. Arrieta, Purdue University, West Lafayette, IN	1:40 p.m. AIAA-2026-0258 Predicting the Performance of Camber Morphing Airfoils Using Machine Learning Techniques A. Saha, P. Saha, A. Rahman, B. Jo, Tennessee Tech University, Cookeville, TN	2:00 p.m. AIAA-2026-0259 Design of A Lightweight Robotic Tensegrity Morphing Airfoil L. Zhao, Clemson University, Clemson, SC; Y. Jiang, C. She, D. Balkcom, Dartmouth College, Hanover, NH; H. Dong, University of Virginia, Charlottesville, VA; M. Chen, University of Houston, Houston, TX	2:20 p.m. AIAA-2026-0490 Development and Comparative Performance of Submersibles With Adaptive Hydrofoils in Simulation C. Coury, J. Kauffman, University of Central Florida, Orlando, FL	2:40 p.m. AIAA-2026-0491 Kirigami Energy Harvesters: On Exploiting Multi-Modal and Multidirectional Vibration in Aerospace Structures Y. Zhang, S. Naskar, T. Mukhopadhyay, University of Southampton Faculty of Engineering and Physical Sciences, Southampton, United Kingdom

Monday, 12 January 2026		
CFD2030-04	CFD Vision 2030: Roadmap Update and Emerging Technologies	Silver Spring I
Chaired by: B. SMITH, Lockheed Martin Aeronautics		

1:00 p.m. 4345395 Recent Progress in Physical Modeling, Algorithms, and High Performance Computing Z. Wang, University of Kansas, Lawrence, KS	1:20 p.m. 4346236 Progress Acheived in the Mesh & Geometry Focal of the CFD Vision 2030 Roadmap N. Wyman, Cadence Design Systems Inc, San Jose, CA	1:40 p.m. 4351001 Uncertainty Quantification Progress and Needs From CFD Vision 2030 A. Cary, The Boeing Company, Saint Louis, MO	2:00 p.m. 4352674 CFD Vision 2030: Multidisciplinary Design Analysis & Optimization N. Wukie, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	2:20 p.m. 4356784 CFD Vision 2030 - Physics Modeling for Aerodynamics: Updates and New Trends G. Iaccarino, Stanford University, Stanford, CA	2:40 p.m. 4356745 CFD Vision 2030: High Performance Computing Update D. McDaniel, US Department of Defense High Performance Computing Modernization Program, Alexandria, VA; A. Wissink, US Army Combat Capabilities Development Command, Moffett Field, CA
Monday, 12 January 2026					
DA-01	Digital Avionics I: Traffic Management and Advanced Air Mobility				Celebration 14
Chaired by: B. KORN, DLR - German Aerospace Center					
1:00 p.m. AIAA-2026-0260 Unpacking Flight Delay Trends for Minneapolis-Saint Paul International Airport P. Acharya, C. Howe, P. Bhandari, Minnesota State University Mankato, Mankato, MN; G. Lavezzi, Massachusetts Institute of Technology, Cambridge, MA; A. Regmi, Pokhara Engineering College, Pokhara, Nepal; B. Bhandari, St. Cloud State University, St Cloud, MN	1:20 p.m. AIAA-2026-0261 Proactive Airport Surface Safety Assurance by Monitoring ATC-Pilot Communications and Ground Traffic Patterns V. Sudarsanan, P. Kostiuk, Cignus Consulting, Leesburg, VA	1:40 p.m. AIAA-2026-0262 Low-Altitude Air-Ground C-Band Channel Measurements for AAM: Initial Results Z. Afroze, University of Maryland Eastern Shore, Princess Anne, MD; D. Matolak, C. Chau, University of South Carolina, Columbia, SC	2:00 p.m. AIAA-2026-0263 A Formation Control Approach for Autonomous Coordinated Separation Management in AAM Operations V. Sudarsanan, Cignus Consulting, Leesburg, VA	2:20 p.m. AIAA-2026-0264 Segmented Independent Parallel Approaches Utilizing Multilateration and Higher Levels of Automation in Air Traffic Control V. Mollwitz, T. Finck, M. Weber, DLR, Braunschweig, Germany	2:40 p.m. AIAA-2026-0265 Anticipatory Control to Support High Density, Mixed Mode Air Traffic S. Landry, The Pennsylvania State University, University Park, PA
Monday, 12 January 2026					
DE-02/EDU-02	Advancements in Design Education and Innovative Pedagogy				Bayhill 26
Chaired by: J. WIDRICK, Northrop Grumman Space Systems and D. STAGGERS, Raytheon					
1:00 p.m. AIAA-2026-0266 An Agile Fuel Tank Loader for F-22 Agile Combat Employment A. Thill, M. Duerk, M. Romines, A. Peckham, T. Terlizzi, M. Anderson, US Air Force Academy, U.S. Air Force Academy, CO; et al.	1:20 p.m. AIAA-2026-0267 Aerospace Engineering Design Education at West Point D. Curriston, S. Chetcuti, United States Military Academy at West Point, West Point, NY	1:40 p.m. AIAA-2026-0268 Expanding the STEM Talent Pipeline Through Cross-Functional Internships: A Systems-Based Approach to K–12 and Postsecondary Workforce Development	2:00 p.m. AIAA-2026-0269 Impacts of Implementing General Education Core Requirements Into Aerospace Senior Design Project Courses II R. LeBeau, S. Jayaram, S. Gururajan, Saint Louis University, St. Louis, MO	2:20 p.m. AIAA-2026-0270 The Development of the Purdue Aeronautics Common Teaching Model T. Guimarães, J. Canino, Purdue University, West Lafayette, IN	2:40 p.m. AIAA-2026-0271 Purdue Aeronautics Common Teaching Model: Improving Knowledge Transfer Across the Aerospace Curriculum J. Canino, T. Guimarães, Purdue University, West Lafayette, IN

		K. Fairfax, University of Dayton Research Institute, Dayton, OH			

Monday, 12 January 2026

DGE-01/CASE-01/SE-03/DE-20	Haven't We Always Been Modeling? Unpacking Resistance in the Shift to Model Based Systems Engineering	Blue Spring II

Chaired by: A. RAVI, Gulfstream Aerospace Corporation

Transitioning from traditional document-based systems engineering to a model-based approach promises improved traceability, collaboration, and efficiency-but organizations often face internal resistance that slows or stalls progress. This panel will dive into the human and organizational factors that challenge MBSE adoption, including cultural inertia, skill gaps, integration hurdles, cost and leadership buy-in. Experts from industry and academia will share real-world experiences, change management strategies, and lessons learned in navigating this transformation. Attendees will gain practical insights into driving adoption, fostering team engagement, and creating a culture ready for model-based success. **Panelists:** 1. Olivia J. Pinon-Fischer – Principal Research Engineer, Georgia Institute of Technology 2. Shaun C. Butts – Deep Space Logistics Fleet Manager, NASA Kennedy Space Center 3. Jayendra Ganguli – Associate Director Model Based Digital Thread (Mfg) & Ind 4.0 Architecture, Pratt & Whitney 4. Brendan McIntyre - Senior Systems Engineer, Model-Based Engineering Adoption; Albers Aerospace

Monday, 12 January 2026

ECS-02	Controlled Explosives in Aerospace Applications…. a Continuing Conversation on Things That Go Boom!	Celebration 9

Chaired by: J. SCOTT, Lockheed Martin Space Systems

So you are thinking of where you want to take your career? Energetic components allow you to touch every portion of space launch, beginning to end….. Energetic components allow you to interact with every portion of high performance aircraft….. Energetic components allow you to expand your skillset to include every imaginable discipline in aerospace.. This is why we love what we do!

Monday, 12 January 2026

EDU-03	Advancing Aerospace Education II	Bayhill 33

Chaired by: M. SCHROLL, University of Alabama, Huntsville

1:00 p.m. AIAA-2026-0272 LaunchLab VR: A Lesson on Launch Vehicles in Virtual Reality M. Johnson, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA	1:20 p.m. AIAA-2026-0273 Beyond Sky – Space Engineering Course for Space Technology Specialisation in National University of Singapore S. Goh, K. Mouthaan, National University of Singapore, Singapore, Singapore	1:40 p.m. AIAA-2026-0274 iVelas Unites Disciplines Across Borders: Rocket Altimeter Design via US–Brazil Virtual Exchange in a Liberal Arts–Infused Engineering Bridge for Transfer Students M. Traum, A. Provost, S. Brixius, A. Peralta Gomez, J. Tran, University of Florida, Gainesville, FL; E. Liberado, Universidade Estadual Paulista Julio de Mesquita Filho, São Paulo, Brazil; et al.	2:00 p.m. AIAA-2026-0275 BURST - Balloon in Upper-Stratosphere Resilience and Survivability Testing E. Nguyen, E. Nuno, A. Quezada III, J. Foley, P. Llanos, H. Castillo, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:20 p.m. AIAA-2026-0276 Challenge-Based Learning in Space Education. The Barcelona ZeroG Challenge. A. Perez-Poch, Universitat Politecnica de Catalunya, Barcelona, Spain	2:40 p.m. AIAA-2026-0277 Evaluating Impact of a Self-Guided CubeSat Project on Tinkering and Design Self-Efficacy E. Simpson, C. Deneus, University of Michigan, Ann Arbor, MI

Monday, 12 January 2026					
EP-02	Air Breathing Electric Propulsion				Celebration 1
Chaired by: S. SHEPARD, Lockheed Martin Space Systems and A. RAISANEN, Johns Hopkins University Applied Physics Laboratory					
1:00 p.m. AIAA-2026-0278 Effect of a Backward-Facing Step on Drag of a VLEO Satellite D. Carroll, CU Aerospace LLC, Champaign, IL; K. Nishii, D. Levin, University of Illinois Urbana-Champaign, Urbana, IL; R. Burton, J. Zimmerman, R. Fox, CU Aerospace LLC, Champaign, IL	1:20 p.m. AIAA-2026-0279 Connecting Ablative and Gas-Fed Propellant Utilization in Electromagnetic Thrusters A. Woodley, R. Heiser, T. Underwood, The University of Texas at Austin, Austin, TX	1:40 p.m. AIAA-2026-0280 Pulse Shaping in Air-Breathing Pulsed Plasma Thrusters P. Schools, A. Woodley, R. Heiser, T. Underwood, The University of Texas at Austin, Austin, TX			

Monday, 12 January 2026					
EXPL-03	Enabling Technologies II				Celebration 13
Chaired by: J. SHEEHY, NASA HQ and C. GATTIS, NASA Marshall Space Flight Center					
1:00 p.m. AIAA-2026-0281 Design and Performance Characterization of a Multi-Sensor Instrument for Stellar–Limb Optical Navigation T. Buteux, N. Bannister, University of Leicester, Leicester, United Kingdom	1:20 p.m. AIAA-2026-0282 A Finite Element Analysis Framework and Failure Analysis for a Microspine Gripper Asteroid Lander M. Akers, M. Michaud, Clarkson University, Potsdam, NY; M. Bazzocchi, York University, Toronto, Canada	1:40 p.m. AIAA-2026-0283 Ballistic Capture Dynamics and Trajectory Optimization for Observation of Enceladus S. Nerella, N. Shetty, Virginia Polytechnic Institute and State University, Blacksburg, VA	2:00 p.m. AIAA-2026-0284 Medium-Scale Mars Cargo Delivery Leveraging Hypersonic Inflatable Aerodynamic Decelerators D. Trent, NASA Marshall Space Flight Center, Huntsville, AL; R. Lugo, J. DiNonno, NASA Langley Research Center, Hampton, VA		

Monday, 12 January 2026		
FD-09	A Commemoration of Dr. Joseph Schetz	Plaza Ballroom E
Chaired by: R. MERITT, Ahmic Aerospace and R. BOWERSOX, Texas A&M University		
This session commemorates the distinguished career of Dr. Joseph Schetz, highlighting his lasting contributions to aerospace engineering and his profound impact as a researcher, educator, and mentor.		

Monday, 12 January 2026					
FD-10/APA-11	Flow Control: Methods and Applications II				Barrel Spring II
Chaired by: W. WU and D. CUPPOLETTI, University of Cincinnati					
1:00 p.m. AIAA-2026-0285	1:20 p.m. AIAA-2026-0286	1:40 p.m. AIAA-2026-0287			

Experimental Investigation of Dynamic Pitching Effects on a Delta Wing with Blown Jet J. Pabon, S. Gunasekaran, University of Dayton, Dayton, OH	Energy-Efficient Active Flow Control for Enhanced Performance of Vertical Axis Wind Turbine L. Souza, R. Miotto, W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil	Fluidic Control of the Flow within a Diffuser with Variable Bend J. Fletcher, S. Li, B. Vukasinovic, J. Mace, A. Glezer, Georgia Institute of Technology, Atlanta, GA; M. Mani, Massachusetts Institute of Technology, Cambridge, MA; et al.			
Monday, 12 January 2026					
FD-13/AA-02	Machine Learning for Fluid Dynamics and Aeroacoustics II				Manatee Spring I
Chaired by: W. WOLF, University of Campinas and C. ROY					
1:00 p.m. AIAA-2026-0289 Estimation of a Time-Resolved Velocity Field Over an Open Cavity via Recurrent Neural Network. N. Compton, L. Ukeiley, University of Florida, Gainesville, FL	1:20 p.m. AIAA-2026-0290 Learning Flux Limiters with Kolmogorov Arnold Networks. J. Kleinpeter, B. Shotorban, The University of Alabama in Huntsville, Huntsville, AL	1:40 p.m. AIAA-2026-0291 Large Language Model Driven Development of Turbulence Models Z. Yang, Peking University, Beijing, China; Y. Bin, Eastern Institute for Advanced Study, Ningbo, China; Y. Shi, Peking University, Beijing, China; X. Yang, The Pennsylvania State University, University Park, PA	2:00 p.m. AIAA-2026-0292 Machine Learning-Based Active Control of Supersonic Twin-Rectangular Jet Flow B. Yeung, O. Schmidt, University of California San Diego, La Jolla, CA	2:20 p.m. AIAA-2026-0293 Discovering Interpretable Dynamic Stall Models from Surface Pressure Data E. Curran, A. Bertolin, T. Haines, S. Bull, University of Bath, Bath, United Kingdom	
Monday, 12 January 2026					
FD-14	Second Uncertainty Challenge Problem in Fluid Dynamics II				Plaza Ballroom F
Chaired by: M. RUMPFKEIL and J. SCHAEFER, The Boeing Company					
1:00 p.m. AIAA-2026-0294 Advancing Model Reliability Through a Generalised Uncertainty Methodology: A Response to the Second AIAA Uncertainty Quantification Challenge Problem for Aerodynamics P. Hristov, V. Nikolov, GATE Institute, Sofia, Bulgaria	1:20 p.m. AIAA-2026-0295 Uncertainty Quantification and Reduction for the AIAA Aerodynamics Challenge Using Sensitivity-Based and Diffusion Model Updating T. Wang, University of Southampton, Southampton, United Kingdom; I. Gal, University of Liverpool, Liverpool, United Kingdom; G. Qiao, S. Bi, University of Southampton, Southampton, United Kingdom; S. Fichera, University of Liverpool,	1:40 p.m. AIAA-2026-0296 Efficient Interval-Based Uncertainty Quantification for Model Validation and Predictive Capability Y. Chen, I. Ioannou, S. Ferson, University of Liverpool, Liverpool, United Kingdom	2:00 p.m. AIAA-2026-0297 Multi-fidelity Gaussian Process for Uncertainty Quantification in Aerodynamic Analysis X. Chen, G. Huang, A. Sharma, A. Riaz, S. Jimeno, Cranfield University, Bedford, United Kingdom	2:20 p.m. "Surrogate-Based Probabilistic Estimation of Airfoil Aerodynamics on Scarce Data" Audrey Gaymann, Juan M. Cardenas, Alireza Doosta, University of Colorado - Boulder	

	Liverpool, United Kingdom; A. Da Ronch, University of Southampton, Southampton, United Kingdom; et al.				
Monday, 12 January 2026					
FD-16/APA-14	Special Session: BOLT-1B Flight Experiment II				Barrel Spring I
Chaired by: T. HUBER, German Aerospace Center (DLR) and C. BUTLER, Johns Hopkins University Applied Physics Laboratory					
1:00 p.m. AIAA-2026-0298 Overcoming Flight Instability in the Boundary Layer Transition Experiments J. Melcher, P. Kutty, C. Butler, B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1:20 p.m. AIAA-2026-0299 The BOLT-1B Flight Experiment: Pre-flight Aerodynamic Modeling C. Butler, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; M. Franze, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany; B. Wheaton, G. McKiernan, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	1:40 p.m. AIAA-2026-0300 Flight Dynamics Design of the Boundary Layer Transition 1B (BOLT-1B) Flight Experiment P. Kutty, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; T. Huber, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Oberpfaffenhofen, Oberpfaffenhofen, Germany; C. Butler, G. McKiernan, J. Melcher, B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	2:00 p.m. AIAA-2026-0301 Post-Flight Flight Dynamics of the BOLT-1B Flight Experiment T. Huber, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; P. Kutty, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	2:20 p.m. AIAA-2026-0302 The Attitude Control and Navigation System onboard the BOLT-1B Flight Experiment L. Kobow, J. Wennemann, J. Ettl, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Wessling, Germany	2:40 p.m. AIAA-2026-0303 Angle of Attack Derived from Pressure Transducer Measurements on the BOLT-1B Flight Experiment B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD
Monday, 12 January 2026					
FT-02	Flight Testing II				Rainbow Spring II
Chaired by: R. CHAUDHARY, United States Department of Air Force and A. FREEBORN, USAF Test Pilot School					
1:00 p.m. AIAA-2026-0307 Comparing Aerothermodynamic Models With Emission Spectroscopy Data From the Atmospheric Reentry of the W-2 Hypersonic Testbed Vehicle A. Rao, J. Crespo, P. Valentini, E. Vaughan, Air Force Research Laboratory, Kirtland Air Force Base, NM; Z. Davis, Utah State University Space Dynamics Laboratory, Albuquerque, NM; C. Johnston, NASA Langley	1:20 p.m. AIAA-2026-0308 Flight Test Reduction via Vibroacoustic Analysis G. Simpson, N. Richardson, M. Herrin, G. Mery, J. Seiler, Lockheed Martin Corporation, Orlando, FL	1:40 p.m. AIAA-2026-0309 Performance of a Deep Neural Network Trained on Professionally Generated Chroma-Key Data for Autonomous Aerial Refueling R. Lowe, University of Maryland, College Park, MD; V. Mwaffo, United States Naval Academy, Annapolis, MD; D. Costello, University of Maryland, College Park, MD			

Research Center, Hampton, VA; et al.					
Monday, 12 January 2026					
GDST-01	Physical Sciences in Reduced Gravity				Blue Spring I
Chaired by: Á. ROMERO CALVO, Georgia Institute of Technology and J. MARCHETTA, University of Memphis					
1:00 p.m. AIAA-2026-0310 Low-Gravity Dynamics of Vortical Interfaces and Sloshing in an Axisymmetric Tank T. St Francis, J. Dietrich, Á. Romero-Calvo, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-0311 The Challenges of Using Drones as a Microgravity Testing Platform K. Wijacinski, B. Parslew, N. Crisp, K. Kabbabe, The University of Manchester, Manchester, United Kingdom	1:40 p.m. AIAA-2026-0312 Equilibrium and Stability of Orbiting Liquid Mirror Telescopes J. Dietrich, Á. Romero Calvo, Georgia Institute of Technology, Atlanta, GA	2:00 p.m. AIAA-2026-0313 Navigating Irregular Gravity: Planning Attitude Control for Near-Earth Asteroid Missions M. Boudreau, P. do Vale Pereira, University of Central Florida, Orlando, FL	2:20 p.m. AIAA-2026-0314 Analysis of Low-Gravity Sloshing in a Spherical Tank L. Silveri, Á. Romero-Calvo, Georgia Institute of Technology, Atlanta, GA	
Monday, 12 January 2026					
GNC-06	Control Theory for Aerospace Applications II				Bayhill 29
Chaired by: N. SINGHASENEE, Arista Residence					
1:00 p.m. AIAA-2026-0315 A Robust LQTI-DOBC Framework for Disturbance Rejection and Command Tracking Using Integral Reinforcement Learning B. Seo, Chungnam National University, Daejeon, South Korea; O. Park, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; J. Suk, S. Kim, Chungnam National University, Daejeon, South Korea	1:20 p.m. AIAA-2026-0316 Large-angle Attitude Maneuver of Spacecraft using Reaction Control System with Consideration of Actuator Dynamics I. Yuichi, Shonan Koka Daigaku, Fujisawa, Japan; Y. Takaku, Tokyo Rika Daigaku, Noda, Japan	1:40 p.m. AIAA-2026-0317 Homogeneity-and Sliding Mode-Based Finite-Time Spacecraft Attitude Control Around Asteroids K. Lee, Catholic Kwandong University, Gangneung-si, South Korea; S. Singh, University of Nevada Las Vegas, Las Vegas, NV	2:00 p.m. AIAA-2026-0318 Robust Sliding Mode Control Design and Experimental Implementation for 4-DOF Underactuated Control Moment Gyroscope S. Barman, B. Prasad, S. Kumar, R. Gupta, Indian Institute of Technology Bombay, Mumbai, India	2:20 p.m. AIAA-2026-0319 Feedforward Control Design of a Rudderless Aircraft with Rotary Horizontal Tail N. Singhasenee, S. Lamon, D. Dabiri, M. Mesbahi, C. Chang, University of Washington, Seattle, WA	2:40 p.m. AIAA-2026-0320 Two-Impulse Trajectory Design in Two-Body Systems With Riemannian Geometry S. Gessow, J. Tseng, E. Zafran, B. Lopez, University of California Los Angeles, Los Angeles, CA
Monday, 12 January 2026					
GNC-07	Distributed, Cooperative, and Multi-Vehicle Guidance, Navigation, and Control II				Bayhill 28
Chaired by: J. LANGELAAN, Pennsylvania State University and L. POLLINI, University of Pisa and Y. NAKKA, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-0321 3D Cooperative Salvo Against a Stationary	1:20 p.m. AIAA-2026-0322 Decentralized Multiagent Trajectory Planning via	1:40 p.m. AIAA-2026-0323 A Distributed Task Bundling Allocation Algorithm for Multi-UAV	2:00 p.m. AIAA-2026-0324 IP^{3}C: Integrated Path Planning and Predictive Control for UAV Swarm	2:20 p.m. AIAA-2026-0325 A Distributed Leader-Follower Consensus	2:40 p.m. AIAA-2026-0326 Preliminary Design of Human-like Decentralised Task Assignment for

Target With Arbitrary Time Consensus R. Tabiyar, DRDL Hyderabad, Hyderabad, India; A. Sinha, University of Cincinnati, Cincinnati, OH; S. Kumar, Indian Institute of Technology Bombay, Mumbai, India	Duality and Biconvex Optimization C. Chang, M. Mesbahi, University of Washington, Seattle, WA	under Non-Ideal Communication Conditions X. Tong, China Telecom Research Institute Beijing, Beijing, China; Y. Cao, China Academy of Aerospace System and Innovation, Beijing, China; N. Li, China Telecom Research Institute Beijing, Beijing, China	Navigation in Cluttered Environment B. Banday, I. Kumar, T. Kurne, R. Majumder, J. Keshavan, S. Sundaram, Indian Institute of Science, Bengaluru, India	Control Approach for Aerial Load Transportation G. Di Monaco, F. Polese, A. Zavoli, G. De Matteis, Universita degli Studi di Roma La Sapienza, Rome, Italy; C. Chauffaut, Y. Brière, ISAE-SUPAERO Departement Conception et Conduite des Vehicules Aeronautiques et Spatiaux, Toulouse, France	Heterogeneous Unmanned Vehicles using Reinforcement Learning G. Gemignani, S. Casini, V. Rosellini, G. Bucchioni, L. Pollini, Universita degli Studi di Pisa, Pisa, Italy
Monday, 12 January 2026					
GNC-08/AFM-02	Entry, Descent and Landing Technology II: Navigation and Hazard Detection				Orlando Ballroom L
Chaired by: G. MENDECK, NASA-Johnson Space Center and J. LIU, Jet Propulsion Laboratory (JPL)					
1:00 p.m. AIAA-2026-0327 Long-Distance Altimetry and Terrain Relative Navigation Capabilities of a Multi-Functional Imaging Lidar for Precision Safe Landing F. Amzajerdian, A. Gragossian, NASA Langley Research Center, Hampton, VA; A. Bulyshev, Coherent Applications, Hampton, VA; P. Brewster, J. Heppler, F. Wilson, NASA Langley Research Center, Hampton, VA; et al.	1:20 p.m. AIAA-2026-0328 Powered Descent Decision Making: A Reachability-Steering Approach K. Tomita, P. Elango, A. Vinod, S. Di Cairano, A. Weiss, Mitsubishi Electric Research Laboratories, Cambridge, MA	1:40 p.m. 4356299 High-Resolution, Real-Time Laser Surface Mapping During Planetary Descent J. Blair, NASA Goddard Space Flight Center, Greenbelt, MD	2:00 p.m. AIAA-2026-0329 Motion Compensation Algorithm for Online Digital Elevation Map Generation Using Scanning LIDAR Data K. Ward, K. Smith, The Charles Stark Draper Laboratory Inc, Houston, TX; G. Mendeck, NASA Johnson Space Center, Houston, TX	2:20 p.m. AIAA-2026-0330 Hazard Detection Flight Software for Processing LIDAR Generated DEM J. Liu, P. Chen, R. Bocchino, G. Vaughan, Jet Propulsion Laboratory, Pasadena, CA; G. Mendeck, NASA Johnson Space Center, Houston, TX	
Monday, 12 January 2026					
GNC-09/IS-03	Guidance, Navigation and Control in Intelligent Systems II				Bayhill 31
Chaired by: M. MCFARLAND, Raytheon					
1:00 p.m. AIAA-2026-0331 AEROS: A Physics-Informed Neural Network Pilot for Real-Time Autonomous Mars Entry and Descent Control D. Trevino, M. Fernandez-Tous, S. Vidhyadharan Nair, University of North Dakota, Grand Forks, ND	1:20 p.m. AIAA-2026-0332 Precision Control of a Firefighting Drone with Extinguisher for Flame Targeting S. Dolatabadi, H. Liu, University of Toronto, Toronto, Canada	1:40 p.m. AIAA-2026-0333 Nonlinear 3D Guidance and Control Strategy for Quadrotor Path Following R. Verma, S. Kumar, H. Arya, Indian Institute of Technology Bombay, Mumbai, India	2:00 p.m. AIAA-2026-0334 Frenet-Serret-Based Trajectory Prediction S. Verma, D. Bernstein, University of Michigan, Ann Arbor, MI	2:20 p.m. AIAA-2026-0335 Imitation Learning of MPC for Fault Tolerant Control Allocation of an Octorotor M. Lira, M. Maximo, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; R. Bertolin, Embraer SA, Sao Jose dos Campos, Brazil	2:40 p.m. AIAA-2026-0336 Flight Control System Clearance using Bayesian Optimised Deep Reinforcement Learning on an Unstable Platform V. Gavra, A. Cook, S. Neumeier, Airbus Defence and Space GmbH, Manching, Germany; J. Ribas

					de Amaral, Airbus Spain, Getafe, Spain
Monday, 12 January 2026					
GTE-01	Turbomachinery I				Celebration 3
Chaired by: K. RYU, Hanyang University and M. OTTO, University of CEntral Florida					
1:00 p.m. AIAA-2026-0337 Utilizing Optimization Tools for Profile Contouring to Reduce Endwall Losses B. Burton, J. Clark, C. Marks, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; M. Wolff, Wright State University College of Engineering and Computer Science, Dayton, OH	1:20 p.m. AIAA-2026-0338 Sensitivity of RANS-Based Transition Models on Compressor Rotor Aerodynamics Y. Bok, J. Jung, A. Abadilla, C. Son, Virginia Polytechnic Institute and State University, Blacksburg, VA	1:40 p.m. AIAA-2026-0339 Effect of Varying Turbulence and Exit Mach Number on Performance of Fluidically Throttled Nozzle Guide Vanes C. Mays, B. Thompson, C. Westrick, J. Bons, The Ohio State University, Columbus, OH	2:00 p.m. AIAA-2026-0340 Iterative Design With Validation and Verification of an Additively Manufactured Stagnation Pressure Probe for a Transonic Axial Compressor J. Ferentinos, W. Smith, A. Gannon, G. Hobson, Naval Postgraduate School, Monterey, CA	2:20 p.m. AIAA-2026-0341 An Engine Mission Simulation Framework for Model-Based Controller Development of Micro Turbojet Engines. V. Freiherr von Süsskind, J. Remiger, S. Huber, M. Stößel, D. Kozulovic, Universitat der Bundeswehr Munchen, Neubiberg, Germany	
Monday, 12 January 2026					
HSABP-01/PGC-01	Ground or Flight Tests on High-Speed Propulsion Systems				Celebration 4
Chaired by: B. RANKIN, Air Force Research Laboratory and J. BRAUN, North Carolina State University - Mechanical and Aerospace Engineering					
1:00 p.m. AIAA-2026-0342 MXOD Flight 1: Program & Experiment Overview S. Smith, A. Kotler, J. Sprunger, S. Keene, A. Shack, J. Koller, University of Central Florida College of Engineering and Computer Science, Orlando, FL; et al.	1:20 p.m. AIAA-2026-0343 MXOD Flight 1: Numerical Pre-Flight Predictions E. Rigney, R. Bielawski, S. Smith, J. Sprunger, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL; N. Michnoff, NC State University, Raleigh, NC	1:40 p.m. AIAA-2026-0344 MXOD Flight 1: Modular Ground Test Article for Pre-Flight Validation E. Alunno, J. Sprunger, S. Smith, E. Fernandez, K. Ahmed, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-0345 MXOD Flight 1: Structural Architecture & Material Selection S. Smith, A. Kotler, A. Zhuchkan, T. Morris, S. Wade, T. Dore, University of Central Florida, Orlando, FL; et al.	2:20 p.m. AIAA-2026-0346 MXOD Flight 1: Feed System and Electronics Architecture J. Koller, A. Shack, A. Kotler, S. Smith, Y. Fuentes, A. Siddiqi, University of Central Florida, Orlando, FL; et al.	
Monday, 12 January 2026					
IS-04	Space Trusted Autonomy II				Celebration 15
Chaired by: C. HAYS, Air Force Research Laboratory and S. PHILLIPS, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-0347 Deep Reinforcement Learning Waypoint Generation for Attitude Station-Keeping With Sun Avoidance	1:20 p.m. AIAA-2026-0348 DreamerVFD: Generating Interpretable Plans With Model-Based Reinforcement Learning	1:40 p.m. AIAA-2026-0349 An Architecture for Trusted Long-Duration Satellite Autonomy J. Ludwig, D. Tuohy, Stottler Henke Associates, Inc., San Mateo, CA; H. Schaub, A.	2:00 p.m. AIAA-2026-0350 Semantic Trajectory Generation for Goal-Oriented Spacecraft Rendezvous		

R. Santos, S. Binz, C. McQuinn, J. Valasek, Texas A&M University, College Station, TX; N. Hamilton, University of Dayton Research Institute, Dayton, OH; K. Hobbs, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; et al.	and Value Function Decomposition J. McCarroll, Matrix Research, Dayton, OH; J. Saurine, N. Hamilton, University of Dayton Research Institute, Dayton, OH; K. Dunlap, K. Hobbs, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	Cheval, University of Colorado Boulder, Boulder, CO; S. Phillips, K. Miller, Air Force Research Laboratory, Kirtland Air Force Base, NM	Y. Takubo, A. Dwivedi, S. Ramkumar, L. Pabon, D. Gammelli, M. Pavone, Stanford University, Stanford, CA; et al.		

Monday, 12 January 2026

LP-01	Green and Non-Toxic Propellants				Celebration 8

Chaired by: S. WILLIAMS, Moog, Inc., Space, Advanced Programs and A. BESNARD, Flight Works, Inc.

1:00 p.m. AIAA-2026-0351 Experimental Investigation of Heated-Tube Wall Ignition in a HAN-Based Green Monopropellant N. Seward, E. Petersen, Texas A&M University, College Station, TX	1:20 p.m. AIAA-2026-0352 Comparison of Ionic Liquid and Sodium Borohydride with Triglyme in Hypergolic Systems with Hydrogen Peroxide C. Soudarin, C. Chabaud, ISAE-ENSMA, Chasseneuil-du-Poitou, France; R. Beauchet, Y. Batonneau, Institut de Chimie des Milieux et Materiaux de Poitiers, Poitiers, France; P. Leroux, CNES, Paris, France; B. Boust, PPrime Institute, Chasseneuil-du-Poitou, France; et al.	1:40 p.m. AIAA-2026-0353 Basic Combustion Research for the Practical Application of Sustainable Rocket Propellant (SRP) T. Takaoka, Tokyo Daigaku, Bunkyo, Japan; R. Nakamura, Nihon Daigaku Seisan Kogakubu, Narashino, Japan; H. Habu, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan	2:00 p.m. AIAA-2026-0354 Testing 3D-Printed Alumina Gyroids for High-Test Peroxide Catalytic Decomposition S. Carlotti, S. Botta, F. Maggi, Politecnico di Milano, Milan, Italy		

Monday, 12 January 2026

LP-02	Introduction to Additive Manufacturing for Propulsion and Energy Systems	Celebration 5

Chaired by: N. ANDREWS, Southwest Research Institute

This is an introductory level tutorial for additive manufacturing. The session will feature industry and government experts describing how to use and properly incorporate additive manufacturing. The tutorial includes lessons learned and worked examples. Repeat session, always well attended.

Monday, 12 January 2026

MAT-03	Materials for Additive Manufacturing				Bayhill 20

Chaired by: E. PAPON, The University of Alabama and P. DAVIDSON, University of Texas, Arlington

1:00 p.m. AIAA-2026-0355 Geometrical Accuracy Analysis of an Additively Manufactured Upper Arm	1:20 p.m. AIAA-2026-0356 Directed Energy Deposition Additive Manufacturing of Stainless	1:40 p.m. AIAA-2026-0357 Effects of Thermal Annealing on the Flexural Properties of 3D-Printed	2:00 p.m. AIAA-2026-0358 Torsional Performance of 3D Printed Nylon Carbon	2:20 p.m. AIAA-2026-0359 Process Modeling of Additively Manufactured	2:40 p.m. AIAA-2026-0360 Impact of Ironing on Structural Integrity and

Link for Space-Based Exoskeleton Applications B. Cyr, Y. Zhou, Embry-Riddle Aeronautical University, Daytona Beach, FL	Steel with Spatially Variable Process Parameters A. Yahyaeian, A. Shakibi, A. Da Silva Mello, Y. Zhou, Embry-Riddle Aeronautical University, Daytona Beach, FL	Polyetherimide (PEI) and Carbon Black (CB)-Reinforced PEI Composites M. Eldemir, R. Yüksel, M. Karabal, A. Yildiz, Istanbul Teknik Universitesi, Istanbul, Turkey	Fiber Reinforced Composites A. Hicks, S. Siddiqui, Florida Polytechnic University, Lakeland, FL	Semi-Crystalline Thermoplastics M. Nagaraj, M. Maiaru, Columbia University, New York, NY	Piezoresistive Properties of 3D Printed Sensor R. Yüksel, M. Karabal, M. Eldemir, A. Yildiz, Istanbul Teknik Universitesi, Istanbul, Turkey
Monday, 12 January 2026					
MAT-04	Multiscale Modeling				Bayhill 23
Chaired by: G. SEIDEL, Virginia Polytechnic Institute and State Universit and D. ZHANG, Purdue University					
1:00 p.m. AIAA-2026-0361 A Coupled Multiphysics and CFD based Curing Model for Predicting Warpage and Residual Stress in Fiber-Reinforced Composites D. Patel, T. Dodge, Dassault Systemes Americas Corp, Waltham, MA	1:20 p.m. AIAA-2026-0362 A Shallow U-Net for Enhancement of Multi-Scale Localization in Fiber Reinforced Polymer Matrix Composite Representative Unit Cells J. Brites Rei, P. Gustafson, Western Michigan University, Kalamazoo, MI	1:40 p.m. AIAA-2026-0363 Multi-Scale ICME to Optimize the Bondline Performance of Adhesive Joints S. TerMaath, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; M. Martinez, Clarkson University, Potsdam, NY; K. Bezem, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; N. Mitra, Washington State University, Pullman, WA; M. Stanfield, Southwest Research Institute, San Antonio, TX; T. Mull, Clarkson University, Potsdam, NY; et al.	2:00 p.m. AIAA-2026-0364 A Mesoscale Modeling Framework for Progressive Damage and Failure Mechanism Analysis of Ceramic Matrix Composites D. Zhang, Purdue University System, West Lafayette, IN; J. Roach, University of Connecticut, Storrs, CT	2:20 p.m. AIAA-2026-0365 A Unified Generative-Predictive Framework for Deterministic Inverse Design R. Batley, S. Saha, Virginia Polytechnic Institute and State University, Blacksburg, VA	
Monday, 12 January 2026					
MDO-03/ACD-01/APA-08	Aerodynamic Design, Analysis, Methodologies, and Shape Optimization				Bayhill 21
Chaired by: R. LIEM, Imperial College London - Access Management and J. MONTORO, Lockheed Martin					
1:00 p.m. AIAA-2026-0366 Theory and Implementation of Shape Sensitivities in a Rapid Hypersonic Impact Method (HI-Mach) L. Freeman, J. Goates, N. Hoch, D. Hunsaker, Utah State University, Logan, UT; M.	1:20 p.m. AIAA-2026-0367 A Bayesian Approach to Multiobjective Aerodynamic Shape Optimization P. Bachman, K. Carlson, A. Renganathan, The Pennsylvania State University, University Park, PA	1:40 p.m. AIAA-2026-0368 OptiWing3D: A Diverse Dataset of Optimized Wing Designs C. Diniz, M. Fuge, Eidgenossische Technische Hochschule Zurich, Zürich, Switzerland	2:00 p.m. AIAA-2026-0369 Hypersonic Vehicle Co-Design for Multi-Stage Mission Planning C. van der Heide, V. Bone, P. Dower, C. Manzie, The University of Melbourne, Melbourne, Australia; I. Jahn, University of Southern		

Galbraith, Massachusetts Institute of Technology, Cambridge, MA			Queensland, Toowoomba, Australia		
Monday, 12 January 2026					
MDO-04	MDO in Aircraft Design				Bayhill 17
Chaired by: A. FELDSTEIN, Aurora Flight Sciences, A Boeing Company and M. HENSON, Lockheed Martin Aeronautics					
1:00 p.m. AIAA-2026-0371 An Approach to Modeling Aeroservoelasticity in MPhys A. Thelen, B. Stanford, K. Jacobson, NASA Langley Research Center, Hampton, VA	1:20 p.m. AIAA-2026-0372 A Multidisciplinary Design Framework for Hydrogen Fuel Cell-Powered Aircraft R. Obasa, F. Di Fiore, R. Hewson, L. Mainini, Imperial College London, London, United Kingdom	1:40 p.m. AIAA-2026-0373 Multidisciplinary Conceptual Design Optimization of Unmanned Aerial Vehicles Using Aviary S. Zoppelt, P. He, Iowa State University of Science and Technology, Ames, IA			
Monday, 12 January 2026					
MVCE-02/APA-10/CFD2030-03	CFD on Large-Scale Meshes for Applied Aerodynamics and HPC				Bayhill 30
Chaired by: M. KAMEL, Aramco Americas and S. JAIN, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-0374 Accelerating Computational Fluid Dynamics with A Multi-GPU Solver for Large Scale Simulations R. Jia, A. Main, ANSYS Inc, Canonsburg, PA	1:20 p.m. AIAA-2026-0375 Scalable Node Clustering for Graph Autoencoders Used in Model-Order Reduction T. Tran, L. Magargal, P. Khodabakhshi, Lehigh University P C Rossin College of Engineering and Applied Science, Bethlehem, PA	1:40 p.m. AIAA-2026-0376 Development of a Mixed-Precision Discontinuous Galerkin Framework for Compressible Flow Calculations B. Yeo, M. Ihme, Stanford University, Stanford, CA	2:00 p.m. AIAA-2026-0377 Processing Unstructured Meshes in Multithreaded Environments With the Help of Hilbert Renumbering and Dynamic Scheduling L. Maréchal, T. Gauchery, Institut National de Recherche en Sciences et Technologies du Numerique, Saclay, France	2:20 p.m. AIAA-2026-0378 libMeshb: a Simple, Fast and Versatile Library to Handle HPC Meshes and Solutions With a Dedicated File Format L. Maréchal, Institut National de Recherche en Sciences et Technologies du Numerique, Saclay, France	
Monday, 12 January 2026					
OPS-02	Beyond Earth Orbit: Space Operations and Support				Celebration 2
Chaired by: K. WALTERS, Johns Hopkins University Applied Physics Laboratory					
1:00 p.m. AIAA-2026-0379 ILP-Based Scheduling Optimization for MMX Landing Site Observations	1:20 p.m. AIAA-2026-0380 A Novel Fault Investigation Toolkit for System Health Management and Crew	1:40 p.m. AIAA-2026-0381 Conceptual Design of a Low-Cost Dual-Satellite Communication Network for the Cislunar Region	2:00 p.m. AIAA-2026-0382 A Systems-of-Systems Framework to Support Decision-Making for Lunar Communication Network	2:20 p.m. AIAA-2026-0383 Stable Routing and Control System Requirements for Lunar	

With Operation Constraints Y. Takeo, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan; T. Nakamura, Tohoku Daigaku, Sendai, Japan; K. Matsumoto, Kokuritsu Tenmondai, Mitaka, Japan; S. Ozawa, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan	Autonomy in Off-World Habitats G. Gorospe, NASA Ames Research Center, Moffett Field, CA; J. Kam, University of California Berkeley, Berkeley, CA; G. Gorospe, NASA Ames Research Center, Moffett Field, CA	M. Ramirez Cisternas, Fuerza Aerea de Chile, Santiago, Chile; R. Derbis, Air Force Institute of Technology Graduate School of Engineering and Management, Wright-Patterson Air Force Base, OH	Design Under Stochastic Disruptions Y. Ait Ammar, A. Goldman, A. Masset, J. Velasquez, J. McNabb, D. Mavris, Georgia Institute of Technology, Atlanta, GA	Optical Communication Networks A. Goldman, J. McNabb, D. Mavris, Georgia Institute of Technology, Atlanta, GA	

Monday, 12 January 2026

PC-02	Combustion I				Celebration 7
Chaired by: J. MEADOWS, Virginia Polytechnic Institute and State University and A. MORALES, University of Central Florida					
1:00 p.m. AIAA-2026-0384 Lean Blowoff Limits and Emissions Measurements in a Lean Premixed Prevaporized Combustor with Variable Reactant Inhomogeneity S. Wonfor, J. Juergensmeyer, A. Stevens, I. Obi, S. Wehe, Y. Mazumdar, Georgia Institute of Technology, Atlanta, GA; et al.	1:20 p.m. AIAA-2026-0385 An Investigation of Fuel Property Influence on Lean Blowout Characteristics in a Swirl Stabilized Gas Turbine Combustor N. Guntapalli, S. Menon, M. Gurunadhan, Louisiana State University, Baton Rouge, LA	1:40 p.m. AIAA-2026-0386 Measured and Estimated Combustion Efficiency in a Full-Annular Partially Premixed Pre-Vaporized Small-Scale Combustor B. Paxton, Innovative Scientific Solutions, Inc., Wright-Patterson Air Force Base, OH; J. Sykes, B. Rankin, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	2:00 p.m. AIAA-2026-0387 Robust Wall-Modeled LES With Flux Reconstruction Scheme Toward Accurate Heat Flux Prediction in Rocket Engine Combustors Y. Okano, T. Haga, Uchu Koku Kenkyu Kaihatsu Kiko Kenkyu Kaihatsu Bumon, Sagamihara, Japan	2:20 p.m. AIAA-2026-0388 Development of a High-Pressure Variable Length Combustor Facility for Investigation of Thermoacoustic Mode Dynamics R. Fly, B. Kerstin, S. Patel, B. Emerson, T. Lieuwen, Georgia Institute of Technology, Atlanta, GA	2:40 p.m. AIAA-2026-0389 Flame Stabilization in Micro-Combustors Using Bluff-Body Geometries: A CFD Study A. Panda, GD Goenka University, Sohna, India; S. Bansal, G. Velidi, UPES, Dehradun, India; R. Yadav, U. Guven, GD Goenka University, Sohna, India

Monday, 12 January 2026

PC-03	Solid Fuels				Celebration 6
Chaired by: C. GEIPEL, U.S. Naval Research Laboratory					
1:00 p.m. AIAA-2026-0390 Equilibrium-Based Aluminum Drop Combustion Modeling T. Voskuilen, A. Egeln, E. Armstrong, J. Hewson, M. Welliver, Sandia National Laboratories, Sandia National Laboratories, Albuquerque, NM, US, academic/govt, Albuquerque, NM; J. Salinas, Sandia National Laboratories California, Livermore, CA; et al.	1:20 p.m. AIAA-2026-0391 Finite-Rate Chemistry Simulations of Aluminum Droplet Ignition M. Rieth, J. Salinas, M. Arienti, Sandia National Laboratories California, Livermore, CA; T. Voskuilen, A. Egeln, M. Welliver, Sandia National Laboratories, Albuquerque, NM	1:40 p.m. AIAA-2026-0392 Multiphase and Non-Equilibrium Effects in Highly Fuel-Rich Solid Fuel Gas Generators J. Forsythe, R. Daigle, R. Gejji, C. Slabaugh, Purdue University, West Lafayette, IN	2:00 p.m. AIAA-2026-0393 Characterization of Solid Particle Reactivity Through Shock Driven Autoignition J. Hearon, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	2:20 p.m. AIAA-2026-0394 Modeling Sub-Surface Processes Within a Solid Fuel Ramjet R. Raj, A. Panchal, S. Menon, Georgia Institute of Technology, Atlanta, GA	

Monday, 12 January 2026					
PDL-02	Plasma-assisted Ignition and Combustion II				Rainbow Spring I
Chaired by: C. GUERRA-GARCIA, Massachusetts Institute of Technology and H. ZHONG, Michigan State University					
1:00 p.m. AIAA-2026-0395 Numerical Study of Nanosecond Pulsed Discharge Effects on Flame Speed and Emissions in Ammonia Flames R. Dijoud, C. Guerra-Garcia, Massachusetts Institute of Technology, Cambridge, MA	1:20 p.m. AIAA-2026-0396 Heated Supersonic Plasma Flow Reactor for Spectroscopic Measurements of Plasma Chemical Reaction Products L. Ting, C. Mays, T. Dundore, M. Young, S. Raskar, I. Adamovich, The Ohio State University, Columbus, OH	1:40 p.m. AIAA-2026-0397 Mixing Enhancement in Supersonic Flow by Oscillating Electrical Discharge I. Sniff, P. Lax, S. Leonov, University of Notre Dame College of Engineering, Notre Dame, IN; E. Braun, T. Ombrello, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	2:00 p.m. AIAA-2026-0398 Active Control Strategies Using NRP Discharges for Thermoacoustic Instability Control in Methane-Air Atmospheric Combustion System A. Anilkumar, L. Sasso, S. Bane, Purdue University, West Lafayette, IN	2:20 p.m. AIAA-2026-0399 Drift-Diffusion Modeling of Non-equilibrium Plasma Streamers with Photoionization G. Shim, P. Johnson, T. Taneja, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	

Monday, 12 January 2026					
PGC-02	PGC Operability and Performance I				Florida Ballroom C
Chaired by: A. BATISTA, Amentum - Air Force Research Laboratory and F. CHACON, General Electric / Innoveering					
1:00 p.m. AIAA-2026-0400 Application of the Continuous- and Cross-Wavelet Transforms to an Experimental Hollow Rotating Detonation Engine A. Centofanti, E. Gutmark, University of Cincinnati, Cincinnati, OH	1:20 p.m. AIAA-2026-0401 Experimental Testing of a 3 Inch Rotating Detonation Engine With Air and Hydrogen P. DeHart, A. Negrette, H. Quinlan, University of Central Florida College of Engineering and Computer Science, Orlando, FL; T. Rezzag-Lebza, K. Ahmed, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-0402 Development of Injector-Coupled and Simplified Zero-Dimensional Performance Models for Rotating Detonation Engines E. Pereira, T. Meyer, Purdue University, West Lafayette, IN	2:00 p.m. AIAA-2026-0403 Geometric Modeling of Channel Height Effects on Detonation Propagation Behavior N. Mignano, Georgia Institute of Technology, Atlanta, GA; E. Genter, Stanford University, Stanford, CA; V. Acharya, Georgia Institute of Technology, Atlanta, GA; J. Crane, R. Paknahad, Queen's University, Kingston, Canada; H. Wang, Stanford University, Stanford, CA; et al.	2:20 p.m. AIAA-2026-0404 Computational Investigation on the Effect of Chamber Length on RDRE Performance M. Harvazinski, M. Ross, Air Force Research Laboratory, Edwards AFB, CA; A. Batista, Amentum Services Inc, Edwards AFB, CA	2:40 p.m. AIAA-2026-0405 Assessment of the Inner Body Configuration Influence on Rotating Detonation Engine Stability G. Bruno, B. Saracoglu, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium

Monday, 12 January 2026					
SAR-02	In-Space and On-Orbit Servicing Robotics				Florida Ballroom A
Chaired by: C. SULLIVAN, Redwire Space and C. GUARINIELLO, Purdue University					
1:00 p.m. AIAA-2026-0406 Trajectory Planning for Robotic Arm Contacting Small Satellites	1:20 p.m. AIAA-2026-0407 MPC for Momentum Counter-Balanced and Zero-Impulse Contact with a Free-Spinning Satellite	1:40 p.m. AIAA-2026-0408 Modeling a Hybrid Control Strategy for Free-Flying Space Manipulator	2:00 p.m. AIAA-2026-0409 Active Vibration Suppression of the Free-Floating In-Orbit Manufacturing System		

M. Krininger, C. Petersen, University of Florida, Gainesville, FL	T. Karampela, Eidgenossische Technische Hochschule Zurich, Zürich, Switzerland; R. Seshadri, Georgia Institute of Technology, Atlanta, GA; F. Dorfler, Eidgenossische Technische Hochschule Zurich, Zürich, Switzerland; S. Li, Georgia Institute of Technology, Atlanta, GA	Systems to Tackle Fixed and Moving Targets N. B, R. Kukillaya, T. Krishna Kumar, Indian Institute of Technology Kanpur, Kanpur, India	Using Computational Control Framework Z. Liu, F. Yao, G. Zhu, York University, Toronto, Canada		
Monday, 12 January 2026					
SCS-02	Spacecraft Structures Test, Analysis, and Correlation				Bayhill 24
Chaired by: M. ARYA, Stanford University and J. SAUDER, Jet Propulsion Laboratory (JPL)					
1:00 p.m. AIAA-2026-0410 Development and Characterization of a Combined Low-Earth Orbit Environment Simulation Facility for Space Materials and Structures Research and Education Y. Yao, X. Ning, University of Illinois Urbana-Champaign, Urbana, IL	1:20 p.m. AIAA-2026-0411 Experiments With a Momentum Exchange Actuator for Ultralight Flexible Spacecraft D. Soni, California Institute of Technology, Pasadena, CA; E. Gdoutos, Proteus Space, Los Angeles, CA; S. Pellegrino, California Institute of Technology, Pasadena, CA	1:40 p.m. AIAA-2026-0412 Folding and Deployment Simulation of Elastically Foldable Flat Arrays Using Refined Beam Finite Elements R. Augello, E. Carrera, Politecnico di Torino, Turin, Italy; S. Pellegrino, California Institute of Technology, Pasadena, CA	2:00 p.m. AIAA-2026-0413 Preliminary Design of a Re-Configurable Transforming 12U CubeSat for Radar Operations P. Figueroa Toledo, Fuerza Aerea de Chile, Santiago, Chile; R. Bettinger, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH		
Monday, 12 January 2026					
SD-04	Special Session: Smart Dynamic Testing and Structural Response in Acoustic Testing				Bayhill 18
Chaired by: D. JOHNSON, NASA Langley Research Center and A. KOLAINI, Jet Propulsion Laboratory (JPL)					
1:00 p.m. AIAA-2026-0416 New Methods for Efficient Mission Assurance Dynamics Testing E. Heyd, D. Schick, Acoustic Research Systems, Shepherdstown, WV; K. Napolitano, M. Yang, ATA Engineering Inc, San Diego, CA	1:20 p.m. AIAA-2026-0417 Assessing Sound Field Diffuseness in Direct Field Acoustic Tests Using Fractional Octave Band Coherence A. Allen, NASA Langley Research Center, Hampton, VA; M. Van Dyke, A. Kolaini, Jet Propulsion Laboratory, Pasadena, CA	1:40 p.m. AIAA-2026-0418 Acoustic Characterization of a Direct Field Acoustic Testing Source A. Allen, M. Galles, NASA Langley Research Center, Hampton, VA; D. Schick, D. Hayes, Acoustic Research Systems, Shepherdstown, WV; E. Kinsella, EM Acoustics, Cranleigh, United Kingdom	2:00 p.m. AIAA-2026-0419 Examining a Multi SISO Acoustic Control Method and Structural Response D. Schick, Acoustic Research Systems, Shepherdstown, WV	2:20 p.m. AIAA-2026-0420 The Importance of Microphone Placement with Respect to the Test Article for Direct Field Acoustic (DFA) Testing – A Case Study M. Underwood, MSI-DFAT, Baltimore, MD	
Monday, 12 January 2026					
SE-02	AI and Machine Learning Applications in Systems Engineering				Bayhill 25
Chaired by: M. VAHAB, Mathworks					

1:00 p.m. AIAA-2026-0422 Evaluation of a Generative AI Methodology for Technical System Development: Case Study of an Aircraft Environmental Control System V. Voth, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany; J. Wade, University of California San Diego, La Jolla, CA; A. Bierig, O. Bertram, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany	1:20 p.m. AIAA-2026-0423 Accelerating Wildfire Spread Prediction for Guidance: A ConvLSTM Deep Learning Approach H. Chakraa, M. Bronz, Ecole Nationale de l'Aviation Civile, Toulouse, France	1:40 p.m. AIAA-2026-0424 Integration of Natural Language Processing and Large Language Models for Automated SysML Generation with Topological Robustness Benchmarking in MBSE A. Muthuparambil Ramachandran, J. Merret, University of Illinois Urbana-Champaign, Urbana, IL	2:00 p.m. AIAA-2026-0425 Detection of Contrail Formation Using Machine Vision A. Papamichou, P. Famellos, L. Szuwalski, E. Kallou, D. Mavris, Georgia Institute of Technology, Atlanta, GA	2:20 p.m. AIAA-2026-0426 Drishti: An Intelligent Assistant for Continuous Compliance N. Shi, NASA Ames Research Center, Moffett Field, CA	
Monday, 12 January 2026					
SEN-02	Applications of AI/ML to Sensing and Fusion				Celebration 12
Chaired by: G. PAPADOPOULOS, GE Aerospace and M. CHOI, MIT Lincoln Laboratory					
1:00 p.m. AIAA-2026-0427 Hierarchical Sensor Fusion Using Dempster-Shafer Theory for Anomaly Detection in Aviation J. Prinzel, Christopher Newport University, Newport News, VA; E. Juarez Garcia, N. Napoli, University of Florida, Gainesville, FL	1:20 p.m. AIAA-2026-0428 Reinforcement Learning Guided Partial-Update Extended Kalman Filter M. Longmire, H. Ramos, University of Florida, Gainesville, FL; K. Brink, Air Force Research Laboratory Munitions Directorate, Eglin Air Force Base, FL	1:40 p.m. AIAA-2026-0429 DeBERTa-AT: A DeBERTaV3 Variant Fine-Tuned on Air Traffic Data R. Yue, D. Nielsen, K. Kalyanam, NASA, Moffett Field, CA	2:00 p.m. AIAA-2026-0430 Sensor Contribution Analysis for Multimodal Estimation in Soft Robotic Actuators J. Pastizzo, G. MacRae, University of Southern California Viterbi School of Engineering, Los Angeles, CA; M. Oflus, Johns Hopkins University Whiting School of Engineering, Baltimore, MD; K. Andreyeva, D. Barnhart, University of Southern California Viterbi School of Engineering, Los Angeles, CA	2:20 p.m. AIAA-2026-0431 Sensor Data Fusion for Adversarial Patch Attack Mitigation D. Sobien, J. Kauffman, J. Krometis, Virginia Polytechnic Institute and State University, Arlington, VA	2:40 p.m. AIAA-2026-0432 Examining Machine-Learning Methods to Develop a Correction Equation for Drone-Mounted PM2.5 Concentrations N. Walton, A. Reliford, C. Cooper, S. Smith, Howard University, Washington, D.C.
Monday, 12 January 2026					
SFM-03	Attitude Dynamics, Determination, and Control II				Plaza Ballroom I
Chaired by: T. ELGOHARY, University of Central Florida					
1:00 p.m. AIAA-2026-0433	1:20 p.m. AIAA-2026-0434	1:40 p.m. AIAA-2026-0435	2:00 p.m. AIAA-2026-0436	2:20 p.m. AIAA-2026-0437	2:40 p.m. AIAA-2026-0634

High-Torque Momentum Control for Spacecraft Docking Dynamics A. Chadwick, M. Peck, Cornell University, Ithaca, NY	Integrated Low-Resource Estimation-Control Architecture for Attitude Regulation of CubeSats H. Thukral, J. Thangavelautham, The University of Arizona College of Engineering, Tucson, AZ	Rigid Body Spacecraft Attitude Synchronization Using Higher Order Interactions With Hypergraphs E. Butcher, M. Maadani, S. Adhikari, University of Arizona, Tucson, AZ	Uncertainty Analysis of Solar Sail Attitude Under High-Fidelity Solar Radiation Pressure Y. Yoshimura, T. Hanada, Kyushu University, Fukuoka, Japan	Spacecraft Six Degrees-of-Freedom Control via Multiple Arm Mounted Thrusters W. Schwend, H. Schaub, University of Colorado Boulder, Boulder, CO	Comparative Analysis of Reinforcement Learning Models for Satellite Attitude Recovery Under Unknown Failures S. Ahmadi, C. Mirji, H. Peng, S. Luo, S. Ahmadi, Embry-Riddle Aeronautical University, Daytona Beach, FL

Monday, 12 January 2026

SOF-02	Advanced Computing Paradigms for Aerospace Systems				Celebration 16
Chaired by: J. CASSADY, NASA Langley Research Center					
1:00 p.m. AIAA-2026-0441 Quantum Computer Programming Languages for Aerospace Applications F. Briggs, Aerospace Systems Consultant, State College, PA	1:20 p.m. AIAA-2026-0442 Implementing the Koopman-von Neumann Approach on Continuous-Variable Photonic Quantum Computers X. Gao, O. Pfister, S. Bekiranov, University of Virginia, Charlottesville, VA	1:40 p.m. AIAA-2026-0443 Accelerating Insertion of Capability using GenAI based Control Synthesis from Video B. Andersson, D. de Niz, Carnegie Mellon University, Pittsburgh, PA	2:00 p.m. AIAA-2026-0444 Context-Based and Event-Driven Multi-Agent Architectures for Large Language Model Assistants in Engineering Environments S. Reitenbach, M. Siggel, M. Bolemant, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany		

Monday, 12 January 2026

STR-04	Composite Structural Analysis, Design, Testing, and Manufacturing II				Bayhill 19
Chaired by: G. RENAUD, National Research Council Canada and S. PETY, Spirit AeroSystems, Inc.					
1:00 p.m. AIAA-2026-0445 An Investigation of Modeling Strategies for the Structural Response and Failure of Composite T-Joints J. Finlay, S. Clay, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; N. Loomis, Booz Allen Hamilton Inc, Beavercreek, OH	1:20 p.m. AIAA-2026-0446 High-Fidelity Progressive Damage Predictions of Composite T-Joints With Seeded Defects in CB^{2}ATA A. Karuppiah, R. Li, Global Engineering & Materials Inc, Princeton, NJ; V. Goyal, Lockheed Martin Aeronautics Company, Marietta, TX; J. Lua, Global Engineering & Materials Inc, Princeton, NJ	1:40 p.m. AIAA-2026-0447 Progressive Damage and Failure Predictions of T-Pull and Side Bend Tests of Composite Joints S. Lin, The University of Texas at Arlington, Arlington, TX; A. Waas, Arizona State University, Tempe, AZ	2:00 p.m. AIAA-2026-0448 Progressive Failure Analysis of Bonded Composite Specimens Under T-Pull and Side-Bend Loadings Using Integrated Discrete-Continuum Damage Models P. Shabani, Carleton University, Ottawa, Canada; L. Li, National Research Council Canada, Ottawa, Canada; J. Laliberte, Carleton University, Ottawa, Canada	2:20 p.m. AIAA-2026-0449 TTCP Blind Analysis Challenge: Simulation of T-Pull Tests using the Power Law and B-K Mixed-Mode Progressive Failure Criteria in ABAQUS S. Roy, S. Aditya, B. Kar, The University of Alabama, Tuscaloosa, AL	2:40 p.m. AIAA-2026-0450 Comparison of Composite Failure Predictions and Experimental Results in a Blind Study B. Soltz, U. Agwu, M. Ghabbour, K. Moore, M. Wang, V. Goyal, The Aerospace Corporation, El Segundo, CA

Monday, 12 January 2026					
SUST-02	Aviation Operations for Sustainability				Plaza Ballroom K
Chaired by: M. LI, University of Michigan, Ann Arbor and E. WADDINGTON, University of Illinois at Urbana-Champaign					
1:00 p.m. AIAA-2026-0451 Developing Discrete Optimisation Methods for a Holistic Airline Scheduling Algorithm With Sustainability as an Objective Function N. Barry, C. Stuart, The University of Dublin Trinity College, Dublin, Ireland	1:20 p.m. AIAA-2026-0452 Data-Driven Aircraft Performance Factor Calculation for Flight Planning M. Kaymaz, A. Çerkezoğlu, R. Tukelturk, B. Baspinar, Istanbul Teknik Universitesi, Istanbul, Turkey; M. Uzun, ALTAY Aeronautics and Space Technologies, Istanbul, Turkey; G. Inalhan, Istanbul Teknik Universitesi, Istanbul, Turkey	1:40 p.m. AIAA-2026-0453 Evaluating Liquid Hydrogen Aircraft for Medium-Range Commercial Aviation: A Techno-Economic and Safety Assessment A. Bihuniak, R. Barrett-Gonzalez, The University of Kansas Institute for Information Sciences, Lawrence, KS			

Monday, 12 January 2026					
TES-02	Alternative Fuels: Production and Utilization				Celebration 11
Chaired by: K. OPACICH, National Academies of Sciences, Engineering and Medicine and P. MOHANTY, The Pennsylvania State University					
1:00 p.m. AIAA-2026-0454 Synthetic Aviation Fuel Production via Chemical Looping A. Laksana, National Renewable Energy Laboratory, Golden, CO; P. Malupillai, Lydian Labs, Cambridge, MA; R. Ghotkar, J. Martinek, National Renewable Energy Laboratory, Golden, CO; B. Bulfin, University College Cork, Cork, Ireland; K. Van Allsburg, Lydian Labs, Cambridge, MA; et al.	1:20 p.m. AIAA-2026-0455 Analysis of Sustainable Aviation Fuel (SAF) Oxidative Stability under Thermal Stressed Condition using a Novel Experiment Methodology C. Wei, B. Khandelwal, The University of Alabama System, Tuscaloosa, AL	1:40 p.m. AIAA-2026-0456 Laser Speciation of Product Gases During Ammonia and Hydrogen Combustion Inside a Shock Tube C. Mills, M. Pierro, B. Katey, S. Klopp, J. Urso, S. Vasu, University of Central Florida, Orlando, FL; et al.	2:00 p.m. AIAA-2026-0457 Domain Adaptation for Fuel Property Prediction Using Vibrational Spectroscopy M. Almomtan, S. Naguez, J. Subburaj, M. Sy, E. Al Ibrahim, A. Farooq, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	2:20 p.m. AIAA-2026-0458 Hybrid Kinetic–RQL Exergy Analysis of a CFM56-7B Turbofan Fueled with Jet-A1 and AtJ-SPK F. Sonmez, H. Cebeci, Istanbul Teknik Universitesi, Istanbul, Turkey	

Monday, 12 January 2026					
UAS-02	Autonomy for Advanced Air Mobility Systems				Orlando Ballroom M
Chaired by: R. STANSBURY, Embry-Riddle Aeronautical University					
1:00 p.m. AIAA-2026-0463	1:20 p.m. AIAA-2026-0464	1:40 p.m. AIAA-2026-0465	2:00 p.m. AIAA-2026-0466	2:20 p.m. AIAA-2026-0467	

Scalable Multimodal Ridesharing for Route and Emission Optimization S. Yang, Purdue University, West Lafayette, IN; A. Li, Cinco Ranch High School, Katy, TX; Y. Dai, Mountain View High School, Mountain View, CA; D. Sun, Purdue University, West Lafayette, IN	NMPC of Novel Quadfoil UAS for Improved Agility and Efficiency J. Massey, K. Kochersberger, Virginia Polytechnic Institute and State University, Blacksburg, VA	A Comparative Study of Vision-Based Detect and Avoid for Urban Air Mobility W. Raza, R. Stansbury, K. Gharami, Embry-Riddle Aeronautical University, Daytona Beach, FL	Risk-Informed Urban Air Mobility Flight Operations in Convective Weather Conditions and Aircraft Constraints Y. Ayalew, H. Saghazadeh, P. Kebria, V. Hemmati, A. Homaifar, North Carolina Agricultural and Technical State University, Greensboro, NC	Evaluation of Conflict Management Services for AAM via Simulation and Flight Test N. Yokoyama, N. Matayoshi, T. Iijima, H. Yoshida, S. Kikkawa, K. Harada, Japan Aerospace Exploration Agency, Mitaka, Japan; et al.	

Monday, 12 January 2026

CAP-08 1:30 - 2:00 p.m.	Launch Into Tomorrow: Surviving Your First Few Months	Discovery 46

Choose from four different microsessions that are focused on the bigger picture with topics that include making your dreams a reality, cultivating an entrepreneurial spirit, breaking into aerospace startups, and surviving your first few months on the job. Step into your career with confidence as a panel of aerospace pros share the real stories, hard-earned lessons, and insider strategies that got them through their first few months on the job. This energetic session gives you the tools to thrive—not just survive—as you transition from university life to the fast-paced world of industry.

Monday, 12 January 2026

CAP-09 1:30 - 2:00 p.m.	Launch Into Tomorrow: Build it. Dream it. Live it.	Columbia 37

Choose from four different microsessions that are focused on the bigger picture with topics that include making your dreams a reality, cultivating an entrepreneurial spirit, breaking into aerospace startups, and surviving your first few months on the job. Join this inspiring fireside chat to hear how Aymette Medina and Joan Marie turned bold ambitions into real-world achievements through passion, persistence, and grit. This motivational session will empower you to chart your own path, break through obstacles, and transform your biggest dreams into tangible reality.

Monday, 12 January 2026

CAP-11 1:30 - 2:00 p.m.	Launch Into Tomorrow: Cultivating Your Entrepreneurial Spirit	Columbia 35

Choose from four different microsessions that are focused on the bigger picture with topics that include making your dreams a reality, cultivating an entrepreneurial spirit, breaking into aerospace startups, and surviving your first few months on the job. Discover how to unlock your entrepreneurial spirit within the world of engineering. In this session, you'll join the founders of BQP, a dual-use quantum-accelerated simulation software company, as they discuss their journey to entrepreneurship and explore the skills and mindset you need to be successful.

Monday, 12 January 2026

CAP-12 1:30 - 2:00 p.m.	Launch Into Tomorrow: The Diplomatic Approach	Columbia 34

Choose from four different microsessions that are focused on the bigger picture with topics that include making your dreams a reality, cultivating an entrepreneurial spirit, breaking into aerospace startups, and surviving your first few months on the job. Discover how to engage confidently with senior leaders in this storytelling-driven session, where real experiences reveal what works, and what doesn't, when communicating upward. You'll learn practical strategies to navigate high-level interactions and leave a lasting, positive impression.

Monday, 12 January 2026

F360-03 1:30 - 2:30 p.m.	The Art of Innovation: Distilling Vision into Design	Windermere Ballroom
This discussion on aerospace art explores the powerful intersection of creativity and science, highlighting how artistic vision has historically inspired and advanced aerospace innovation—from concept sketches of spacecraft to mission-defining visualizations. By embracing imagination as a catalyst for technical problem-solving, we reveal how art continues to shape the future of aerospace by expanding the boundaries of what engineers and scientists believe is possible.		
Monday, 12 January 2026		
AIAA-03 2:00 - 4:00 p.m.	Meet the Employers	Regency Ballroom O-P
Students and young professionals - this is a can't miss opportunity to interact with AIAA corporate members. You won't want to miss meeting colleagues and fellow professionals in this fun, dynamic environment. It's a great opportunity to ask questions about internships, full-time employment opportunities, organizational culture, fascinating company projects, and anything else you want to know. Space is limited to 400 participants.		
Monday, 12 January 2026		
NW-02 3:00 - 3:30 p.m.	Networking Coffee Break	Regency Rotunda
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.		
Monday, 12 January 2026		
AIAA-04 3:30 - 4:30 p.m.	2026 AIAA Durand Lecture for Public Service	Windermere Ballroom
The Durand Lectureship for Public Service, named in honor of William F. Durand, Ph.D., is presented for notable achievements by a scientific or technical leader whose contributions have led directly to the understanding and application of the science and technology of aeronautics and astronautics for the betterment of humanity. Durand was a United States naval officer and a pioneer in mechanical engineering. During his remarkable 99-year life, Durand contributed significantly to the development of aircraft propellers. He was the first civilian chair of the National Advisory Committee for Aeronautics (NACA), the forerunner of NASA. Title: "Aerospace Engineering for Science and Public Safety: Aerial Robots to Explore Tornadogenesis" In 2024, the 30-year average of tornado-related fatalities in the United States stood at 72 fatalities per year. This figure masks episodic tornado outbreaks over just the past 20 years that resulted in 553 fatalities in 2011, and 126 and 104 fatalities, respectively, in 2008 and 2021. Recent studies of tornado warning statistics conclude that from 1986 to 2011 the average tornado warning time in the United States was about 18.5 minutes and has been about 15 minutes since (yes, a decrease). Severe storms researchers seek to understand how storms, particularly supercell thunderstorms, create tornadoes while forecast and warning researchers seek to use that knowledge to increase tornado warning times. In 2010, aerospace engineers from the University of Colorado Boulder (CU) teamed with meteorologists from the University of Nebraska Lincoln (UNL) for the first intercepts of supercell thunderstorms using uncrewed aircraft systems (UAS) during the "Second Verification of the Origins of Rotation in Tornadoes Experiment (VORTEX-2)." Funded by the National Science Foundation (NSF) and NOAA, VORTEX-2 remains the largest study of tornadogenesis to date. The cross-disciplinary CU-UNL team has continued to advance capabilities for increasingly autonomous and collaborative small UAS deployed from highly mobile ground stations, including the 2019 Targeted Observations with Radar and UAS of Supercells (TORUS) field campaign. The research continues through long-term university and agency collaborations that are seeking answers to tornadogenesis—the conditions and processes that create tornadoes. This lecture presents 30 years of research and development of small aerial robots that continue to be deployed to increase knowledge of tornadogenesis while contributing to public safety by supporting advances in accurate and life-saving methods for tornado prediction, detection, and warnings.		
Monday, 12 January 2026		
AMT-06	FLEET Diagnostics	Blue Spring II
Chaired by: W. SENIOR, Sandia National Laboratories		

3:30 p.m. AIAA-2026-0468 FLEET Velocimetry of Near-Wall Hypersonic Flow Phenomena W. Senior, J. Pehrson, R. Bhakta, M. de Zetter, R. Spillers, S. Beresh, Sandia National Laboratories, Albuquerque, NM; et al.	3:50 p.m. AIAA-2026-0469 Velocimetry for Gaseous Detonations Using Femtosecond Laser Electronic Excitation Tagging (FLEET) N. Moore, A. Stevens, M. Christie, Y. Mazumdar, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-0470 FLEET Velocimetry at 100 kHz in a Short-Lived Hypersonic Facility A. Nordstrom, A. Dogariu, Texas A&M University, College Station, TX	4:30 p.m. AIAA-2026-0471 Analysis of Tangent FLEET Velocimetry for High-Speed Axisymmetric Flow-Fields Using CFD Produced Synthetic Data N. Webber, The University of Tennessee Space Institute, Tullahoma, TN; M. Gragston, The University of Tennessee Knoxville, Knoxville, TN	4:50 p.m. AIAA-2026-0472 Application of FLEET Velocimetry in the JAXA 1 m × 1 m Supersonic Wind Tunnel Y. Sugioka, S. Koike, Uchu Koku Kenkyu Kaihatsu Kiko Koku Gijutsu Bumon, Chofu, Japan; T. Honma, IHI AEROSPACE ENGINEERING Co., Ltd., Chofu, Japan	5:10 p.m. AIAA-2026-0473 FLEET Velocimetry Measurements of Boundary Layer Transition on a Hollow Cylinder in Mach 7 Flow N. Webber, The University of Tennessee Space Institute, Tullahoma, TN; N. Reeves, The University of Tennessee Knoxville, Knoxville, TN; S. Edwards, The University of Tennessee Space Institute, Tullahoma, TN; K. Ekici, M. Gragston, The University of Tennessee Knoxville, Knoxville, TN

Monday, 12 January 2026

AMT-07/FD-21/PC-06	Highlighting Careers in Aerospace Sciences	Plaza Ballroom E

Chaired by: A. FAGAN, NASA Glenn Research Center and S. GRAUER, Pennsylvania State University

In this session, invited speakers with different backgrounds (academia, industry, and national lab) will discuss the their career paths and their current research. Each speaker will be given a 10-15 min speaking slot with a longer Q&A at the end to allow the audience to interact with the speakers.

Speakers:

Tamy Guimarães – Penn State University
Elizabeth Benitez – AFRL
Mark Gragston – University of Tennessee
Naibo Jiang – Spectral Energies

Monday, 12 January 2026

APA-16	Applied Computational Fluid Dynamics III	Manatee Spring II

Chaired by: A. ASHLEY, Lockheed Martin Aeronautics and M. GHOREYSHI, United States Air Force Academy

3:30 p.m. AIAA-2026-0474 A Framework for Setting Aircraft and Paratrooper Initial Conditions in High-Fidelity Airdrop Exit Simulations M. Ghoreyshi, US Air Force Academy, Air Force Academy, CO; U. Fraire, U.S. Army Combat Capabilities Development Command Soldier Center, Natick, MA; A. Jirasek, J. Seidel, US Air Force	3:50 p.m. AIAA-2026-0475 IDDES Analysis of Flapped Coflow Jet Airfoil at Low Reynolds Numbers J. Jeon, G. Zha, University of Miami, Coral Gables, FL	4:10 p.m. AIAA-2026-0476 Computational Investigation on Aero-optic Aberrations of a Supersonic Interceptor with Multiple Lateral Jets K. Oh, C. Kim, Seoul National University, Gwanak-gu, South Korea	4:30 p.m. AIAA-2026-0477 A Data-Driven Machine Learning Framework for Aerodynamic Analysis of Next-Generation Aircraft Propulsion Systems K. Asztalos, F. Salucci, N. Prabhakar, Argonne National Laboratory, Lemont, IL	4:50 p.m. AIAA-2026-0478 CFD Simulation of Coandă-Actuated Flight Control With Predictive Cost Adaptive Control E. Stout, K. Fidkowski, D. Bernstein, University of Michigan, Ann Arbor, MI	

Academy, Air Force Academy, CO; K. Desabrais, U.S. Army Combat Capabilities Development Command Soldier Center, Natick, MA					
Monday, 12 January 2026					
APA-19	Propeller/Rotorcraft/Wind Turbine Aerodynamics III				Rock Spring I & II
Chaired by: J. CAI, Worcester Polytechnic Institute and J. AHUJA, Georgia Institute of Technology					
3:30 p.m. AIAA-2026-0479 An Integrated Approach for Aeroacoustic Modeling and Design of Rotors and Propellers V. Kulkarni, L. Sankar, Georgia Institute of Technology, Atlanta, GA	3:50 p.m. AIAA-2026-0480 Design and Use of Roughness-Tolerant Low Drag Airfoils for Wind Turbine and Hydrokinetic Turbine Applications C. Bhatia, L. Sankar, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-0481 Numerical Studies of the NASA Tiltwing Multi-Rotor Conceptual Aircraft S. Shankar, P. Rajan, V. Polepeddi, ANSYS Inc, Lebanon, NH; S. Desai, ANSYS Inc, Boulder, CO; H. Vu, ANSYS Inc, Irvine, CA	4:30 p.m. AIAA-2026-0482 Predicting Laminar-Turbulent Transition on Rotorcraft Airfoil Using Multi-Fidelity Artificial Neural Networks T. Yeung, A. Anand, J. Baeder, University of Maryland, College Park, MD		
Monday, 12 January 2026					
APA-20	Special Session: Drag Reducing Surfaces II				Coral Spring II
Chaired by: J. NAUGHTON, University of Wyoming					
3:30 p.m. AIAA-2026-0483 Development of Laboratory Facilities for Evaluation of Drag-Reducing Surfaces C. Wilkinson, J. Miller, J. Crider, R. Cook, J. Naughton, University of Wyoming, Laramie, WY; F. Mier, New Mexico Institute of Mining and Technology, Socorro, NM	3:50 p.m. AIAA-2026-0484 Development and Implementation of an Elastomeric Force Balance for the Evaluation of Drag Reduction Surfaces C. Wilkinson, Wyoming Instrumentation Development LLC, Laramie, WY; J. Huerta, J. Naughton, University of Wyoming, Laramie, WY	4:10 p.m. AIAA-2026-0485 Riblet Flow Visualization and Drag Reduction Evaluation by Particle Image Velocimetry in Both Air and Water Flows W. Qin, Nikon Research Corporation of America, Oro Valley, AZ	4:30 p.m. AIAA-2026-0486 Wind Turbine Airfoil Optimization With the Use of Riblet Technology P. Leitl, M. Garcia de Albeniz, bionic surface technologies GmbH, Graz, Austria; D. Bogue, Blue Shark Aerospace, Castle Pines, CO; A. Flanschger, J. Garcia Morales, bionic surface technologies GmbH, Graz, Austria		
Monday, 12 January 2026					
CFD2030-05	Development of High-Resolution Aerodynamic Databases, AI/ML and Uncertainty Quantification				Silver Spring I
Chaired by: N. WYMAN, Cadence Design Systems, Inc. and P. BEKEMEYER, German Aerospace Center DLR e.V.					
3:30 p.m. AIAA-2026-0492 Effects of Numerical Dissipation on Wall-	3:50 p.m. AIAA-2026-0493	4:10 p.m. AIAA-2026-0494	4:30 p.m. AIAA-2026-0495 Using Anisotropic Mesh Adaptation to Automate	4:50 p.m. AIAA-2026-0496 Aeroelastic CRM-HL Wind Tunnel Testing for	5:10 p.m. AIAA-2026-0497

modeled Large Eddy Simulation of High Reynolds Number Hypersonic Flows J. Batstone, O. Tobisch, J. Larsson, C. Brehm, University of Maryland, College Park, MD	Observability of Initial States in One-Dimensional Inviscid Flows With Shocks G. Ke, S. Grauer, The Pennsylvania State University, University Park, PA; T. Zaki, Johns Hopkins University, Baltimore, MD	Enhancing Non-Linear PDE Solver Convergence with Learnable Models J. Abras, HPCMP CREATE, Alexandria, VA; J. Sitaraman, U.S. Army Combat Capabilities Development Command Aviation & Missile Center, Moffett Field, CA; N. Hariharan, HPCMP CREATE, Alexandria, VA	Computation of Multifidelity Aerodynamic Databases for Flight-Dynamic Analysis A. Ricciardi, V. Harris, N. Gibbons, E. Blades, ATA Engineering Inc, San Diego, CA; D. Luke, Air Force Research Laboratory Directed Energy Directorate, Kirtland AFB, NM	Verification and Validation Study on Stall Speed Determination by Analysis: Model Design, Tests and Simulations M. Amano, S. Matsuoka, Y. Sawaki, H. Yasuda, Y. Yamauchi, H. Asano, Kawasaki Jukogyo Kabushiki Kaisha, Kakamigahara, Japan; et al.	Sensitivity Analysis of Turbulent Flows Using Adjoint Stabilized March P. Thakur, S. Nadarajah, McGill University, Montreal, Canada
Monday, 12 January 2026					
DA-02	Digital Avionics II: Uncrewed Aircraft Systems				Celebration 14
Chaired by: S. UGAZIO, Ohio University					
3:30 p.m. AIAA-2026-0498 Defining Requirements for Safe, Scalable, and Seamless Surface Navigation for UAS: Challenges and Perspectives S. Ugazio, Ohio University, Athens, OH; M. Joerger, Virginia Polytechnic Institute and State University, Blacksburg, VA; D. Larimer, K. Nagai, Illinois Institute of Technology, Chicago, IL; J. Wilhelm, B. Peters, Ohio University, Athens, OH; et al.	3:50 p.m. AIAA-2026-0499 Uncrewed Aerial System Integration in United States Coast Guard Search and Rescue M. Freeman, United States Coast Guard, Washington, D.C.; A. Pritchett, The Pennsylvania State University, University Park, PA	4:10 p.m. AIAA-2026-0500 Flying an Autonomous Quadcopter on an ARINC424-Like Flight Plan M. Hanna, T. Dautermann, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany	4:30 p.m. AIAA-2026-0501 5G-Based Localization for Unmanned Aerial Vehicles A. Chandak, Arizona State University, Tempe, AZ	4:50 p.m. AIAA-2026-0708 Pilot Task Load Prediction for Human AI Teaming F. Morscheck, C. Niermann, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	
Monday, 12 January 2026					
DE-03/TF-02	Creative Design, Emerging Trends, New Processes, and Novel Aerospace Applications				Bayhill 26
Chaired by: G. ROTH, Air Force Research Laboratory and N. CRANE, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-0502 Back-Pressure Mitigation in Rotating Detonation Rocket Engines Using Tesla Valves K. Haugen, D. Reister, V. Ojo, R. Espin, University of North Dakota College of Engineering & Mines, Grand Forks, ND	3:50 p.m. AIAA-2026-0503 Design of a Variable Vacuum Chamber for Testing Flight Profiles on RDE L. Longas, T. Rezzag-Lebza, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL	4:10 p.m. AIAA-2026-0504 Mechanical Coiled Linear Actuator for Versatile Needs (MCLAVN) R. Morris, S. Dodge, N. Dhanes, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	4:30 p.m. AIAA-2026-0505 Making Early-Stage Design Decisions for New Aerospace Technology in the Absence of Spaceflight-Heritage Data S. Hassanain, NASA Langley Research Center, Hampton, VA	4:50 p.m. AIAA-2026-0506 Roll Control of a Smooth Body Missile M. Allen, T. Brahan, J. Coya, J. Dibb, P. Konecny, S. Hilburn, US Air Force Academy, USAF Academy, CO; et al.	

Monday, 12 January 2026					
FD-19	Applied CFD: Vehicle and Environmental Applications				Peacock Spring
Chaired by: P. MAKSIMOVIC, ANSYS Inc					
3:30 p.m. AIAA-2026-0507 Aerodynamic Drag Reduction Strategies for Box-Shaped Payloads in Delivery Drones: A Multimodal Experimental Study M. González, Universidad Panamericana, Mexico City, Mexico	3:50 p.m. AIAA-2026-0508 Determining Safe Perimeters for Securing Shelters Against Drones R. Lohner, George Mason University, Fairfax, VA; F. Mut, J. Baum, Applied Simulations Inc, McLean, VA	4:10 p.m. AIAA-2026-0509 Investigation of Ignition Overpressure Over a Launch Pad using Open-Source CFD Solvers E. Danisan, M. Duru, T. Ghorbani Iriolya, D. Gundem, S. Eyi, Orta Dogu Teknik Universitesi, Ankara, Turkey	4:30 p.m. AIAA-2026-0510 Reconstructing Dangerous Flow Events Using the Domain of Dependence from Surface Pressure Data L. Gutierrez, Q. Wang, San Diego State University, San Diego, CA		

Monday, 12 January 2026					
FD-20/APA-17	Flow Control: Methods and Applications III				Barrel Spring II
Chaired by: D. CHUNG and A. GOEL, University of Maryland Baltmore County					
3:30 p.m. AIAA-2026-0511 Effect of Control Actuator Frequencies on Transition to Turbulence R. Biswas, University of Florida, Gainesville, FL	3:50 p.m. AIAA-2026-0512 Laminar Boundary Layer Separation Over a Fully Porous Bump G. Bridge, W. Wu, University of Mississippi, University, MS	4:10 p.m. AIAA-2026-0513 Boundary Layer Control With Low-Pitch Spanwise-Swept Wall Injectors C. VanSickle, D. Cuppoletti, University of Cincinnati, Cincinnati, OH; R. Manek, P. Chun, M. DeFore, C. Harris, Northrop Grumman Space Systems, Redondo Beach, CA	4:30 p.m. AIAA-2026-0514 Airfoil Flow Re-energization and Separation Control via Manipulation of Artificial Large-Scale Motions J. Wylie, M. Amitay, Rensselaer Polytechnic Institute, Troy, NY; J. Parks, A. Altman, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH		

Monday, 12 January 2026					
FD-22/APA-18	Hypersonic Experiments				Barrel Spring I
Chaired by: R. KUMAR, FAMU-FSU College of Engineering and K. MCHUGH, AFRL					
3:30 p.m. AIAA-2026-0515 Numerical Assessment of Test Time Characteristics in the Rutgers Expansion Tube Facility O. Tumuklu, M. Koca, Rensselaer Polytechnic Institute, Troy, NY; M.	3:50 p.m. AIAA-2026-0516 Experimental Investigation of Splashes from Hypervelocity Water Entries M. Sendrey, P. Thasu, B. Schmidt, Case Western	4:10 p.m. AIAA-2026-0517 Experimental Measurements on a Planar Wedge With Sharp Nose in Hypersonic Flow D. McGruder, F. Siddiqui, B. Van Poppel, R. Bowersox,			

Shulman, B. Faulseit, T. Carvajal, E. DeMauro, Rutgers The State University of New Jersey, New Brunswick, NJ	Reserve University, Cleveland, OH	Texas A&M University System, College Station, TX			

Monday, 12 January 2026

FD-23	Instability and Transition III	Coral Spring I

Chaired by: C. HADER, University of Arizona and A. BERGER, Florida State University

3:30 p.m. AIAA-2026-0518 Using Information Networks to Understand the Impact of Turbulence on Wake Dynamics P. Mohanty, Pennsylvania State University, University Park, PA; S. Islam, The Pennsylvania State University Outreach, University Park, PA; V. Thazhathattil, Indian Institute of Science, Bengaluru, India; A. Karmarkar, Argonne National Laboratory, Lemont, IL; S. Hemchandra, Indian Institute of Science, Bengaluru, India; J. O'Connor, Pennsylvania State University, University Park, PA	3:50 p.m. AIAA-2026-0519 Prediction and Measurement of the Dynamics of Multi-Element Wake Flows S. Islam, Pennsylvania State University, University Park, PA; V. Thazhathattil, Indian Institute of Science, Bengaluru, India; P. Mohanty, Pennsylvania State University, University Park, PA; S. Hemchandra, Indian Institute of Science, Bengaluru, India; J. O'Connor, Pennsylvania State University, University Park, PA	4:10 p.m. AIAA-2026-0520 Stability Analysis of a Cylinder Wake With applied Harmonic Forcing M. Duran, S. Bhattacharya, University of Central Florida, Orlando, FL	4:30 p.m. AIAA-2026-0521 Analysis of Near Boundary Layer Features in Hypersonic Flow T. Srivastava, L. Paquin, NC State University, Raleigh, NC; A. Hameed, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH		

Monday, 12 January 2026

FD-24	Reduced-Complexity Modeling of Transient Flow Dynamics	Plaza Ballroom F

Chaired by: O. SCHMIDT, University of California, San Diego

This session, organized by the AIAA Discussion Group on Reduced-Complexity Modeling and Analysis of Fluid Flows, focuses on modeling strategies for transient flow phenomena that are inherently non-stationary and evolve over finite timescales. Topics include the prediction, analysis, and control of dynamic stall, start-up processes, flow transitions, and extreme events using reduced-order and data-driven methods. The session aims to highlight innovative approaches that move beyond steady-state or periodic assumptions to capture the full temporal complexity of real-world flow dynamics. **Speakers:** Sam Taira, University of California Los Angeles, "Transient flow analysis with nonlinear autoencoder-based compression" Jane Bae, California Institute of Technology, "Wavelet-based resolvent analysis for non-equilibrium turbulent boundary layers" Sam Otto, Cornell University, "Gradient-Informed Reduced-Order Modeling of Transient Nonlinear Dynamics" Mohammad Farazmand, North Carolina State University, "Shape-morphing modes for reduced-order modeling of unsteady fluid flow" Hessam Babaee, University of Pittsburgh, "Interpolative Tensor Networks for Fluid Mechanics" Amir Hedayat & Karthik Duraisamy, University of Michigan, "Adaptive Non-Intrusive Reduced-Order Models for Transient Flow Predictions"

Monday, 12 January 2026

FD-25	Turbulence Modeling III: Hybrid Methods	Plaza Ballroom D

Chaired by: S. KARPE, Georgia Institute of Technology					
3:30 p.m. AIAA-2026-0306 The Effect of Turbulent Mixing the Combustion Efficiency; Computational Studies Using LES M. Ilie, Georgia Southern University, Statesboro, GA	3:50 p.m. AIAA-2026-0305 Analysis of the CUBRC Hypersonic Large Cone-Flare Dataset G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	4:10 p.m. AIAA-2026-0522 Hybrid Turbulence Model Simulations of Blade Section in Dynamic Stall S. Haramura Bastos, K. Lopez Lopez, A. Gross, New Mexico State University, Las Cruces, NM	4:30 p.m. AIAA-2026-0523 A Simple DDES Shielding Technique to Mitigate Modeled-Stress Depletion and Promote Rapid RANS-to-LES Transition J. Wagner, W. Anderson, L. Wang, V. Vatsa, NASA Langley Research Center, Hampton, VA	4:50 p.m. AIAA-2026-0524 Numerical Simulation of Vortex Formation and Convection of Pitching Airfoils Undergoing Dynamic Stall N. Li, S. Grace, Boston University, Boston, MA; S. Salehian, Cadence Design Systems Inc, Austin, TX	
Monday, 12 January 2026					
FT-03	Flight Testing III				Rainbow Spring II
Chaired by: J. PETERSON, University of Nevada Reno and A. FREEBORN, USAF Test Pilot School					
3:30 p.m. AIAA-2026-0527 PARSE: An Augmented-Reality Yaw-Chair Platform for Evaluating Payload Dynamics and Physiological Stress in Parabolic Flight Profiles P. Llanos, C. Montrose, A. Tjarks, Embry-Riddle Aeronautical University, Daytona Beach, FL	3:50 p.m. AIAA-2026-0528 Long Duration Hypersonic Flight Experiment ATHEAt A. Guelhan, F. Klingenberg, S. Willems, D. Hargarten, A. Haubl, T. Reimer, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; et al.	4:10 p.m. AIAA-2026-0529 Aircraft Trim Condition Detection Using Flight Test Data and Interval Analysis M. Wade, Ecole de technologie superieure, Montreal, Canada; P. Tardif, V. Myrand-Lapierre, CAE, St-Laurent, Canada; G. Ghazi, R. Botez, Ecole de technologie superieure, Montreal, Canada	4:30 p.m. AIAA-2026-0530 Assessing Aircraft Trim Conditions for Anomaly Detection in Flight Test Data I. Rampon, Ecole de technologie superieure, Montreal, Canada; P. Tardif, V. Myrand-Lapierre, G. Ghazi, R. Botez, CAE, St-Laurent, Canada		
Monday, 12 January 2026					
GDST-02	Biological Sciences in Reduced Gravity				Blue Spring I
Chaired by: M. KEARNS-JONKER, Loma Linda University School of Medicine and Á. ROMERO CALVO, Georgia Institute of Technology					
3:30 p.m. AIAA-2026-0531 Computational Model Estimates of Cardiovascular Deconditioning Due to Long-Term Microgravity Exposure in Space Missions A. Perez-Poch, Universitat Politecnica de Catalunya, Barcelona, Spain	3:50 p.m. AIAA-2026-0532 Clinostat-Based Low-Gravity Cultivation of Oyster and Reishi Mushrooms on Lunar Regolith Simulant S. Eaglin, J. Goggins III, J. Benitez, D. Miller, N. Lee, P. Llanos, Embry-Riddle Aeronautical University, Daytona Beach, FL; et al.	4:10 p.m. AIAA-2026-0533 Examination of Molecular Mechanisms on Vascular Formation and Stress Response of Early Zebrafish Embryos in Simulated and Real Microgravity P. Llanos, Embry-Riddle Aeronautical University, Daytona Beach, FL; K. Andrijauskaite, The University of Texas Health Science	4:30 p.m. AIAA-2026-0534 Managing of the Perception of Self-Motion and Depth by Cochlear Implant S. Ghasemi, Oklahoma State Regents for Higher Education, Stillwater, OK	4:50 p.m. "Purdue 1: The First All-Purdue Sub-Orbital Science Mission" presented by Dr. Steven Collicott, Professor at the School of Aeronautics and Astronautics at Purdue University	

		Center at San Antonio, San Antonio, TX			
Monday, 12 January 2026					
GNC-10/AFM-03	Entry, Descent and Landing Technology III: Aerocapture				Orlando Ballroom L
Chaired by: S. DUTTA, NASA Langley Research Center and D. GOCHENAUR					
3:30 p.m. AIAA-2026-0535 Aerocapture Earth Demonstration Design to Support Future Planetary Mission Needs S. Dutta, R. Deshmukh, A. Hinkle, J. Scoggins, E. Shellabarger, J. Shafner, NASA Langley Research Center, Hampton, VA; et al.	3:50 p.m. AIAA-2026-0536 Aerothermal and TPS Analysis of ARRIVAL, an Aerocapture Demonstration at Earth J. Morgan, NASA, Moffett Field, CA; J. Williams, Analytical Mechanics Associates Inc, Hampton, VA; T. White, NASA, Moffett Field, CA; J. Scoggins, A. Hinkle, NASA, Hampton, VA	4:10 p.m. AIAA-2026-0537 Comparison of Earth Small-Sat Aerocapture Demonstration Trajectory Opportunities E. Roelke, A. Pensado, M. Qu, Analytical Mechanics Associates Inc, Hampton, VA; J. Briden, Jacobs Technology Inc Houston, Houston, TX; D. Matz, NASA Johnson Space Center, Houston, TX; R. Deshmukh, NASA Langley Research Center, Hampton, VA; et al.	4:30 p.m. AIAA-2026-0538 Analysis of the Fully Numerical Predictor-corrector Aerocapture Guidance for an Earth-based Demonstration J. Briden, D. Matz, NASA Johnson Space Center, Houston, TX; R. Deshmukh, E. Roelke, S. Dutta, A. Pensado, NASA Langley Research Center, Hampton, VA; et al.	4:50 p.m. AIAA-2026-0539 SmallSat Venus Aerocapture Mission Design and Performance Analysis A. Pertz, Kent State University, Kent, OH; S. Dutta, R. Deshmukh, NASA Langley Research Center, Hampton, VA	5:10 p.m. AIAA-2026-0540 Design Optimization of Lifting Geometries for Aerocapture Maneuvers D. Gochenaur, M. Galbraith, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA
Monday, 12 January 2026					
GNC-12/MST-01	Modeling and Simulation for Autonomous Guidance, Navigation and Control I				Bayhill 31
Chaired by: N. NIGAM, Johns Hopkins University Applied Physics Laboratory and N. GOLI, Supernal and G. FALCONE, University of Michigan, Ann Arbor					
3:30 p.m. AIAA-2026-0541 Optimized Last-Mile Delivery: Integrating Drones With Carrier Vehicles F. Fatima, Indian Institute of Science, Bengaluru, India; P. Sujit, Indian Institute of Science Education and Research, Bhopal., Bhopal, India; D. Ghose, Indian Institute of Science, Bengaluru, India	3:50 p.m. AIAA-2026-0542 UAV Intelligent Control Design : A Flight Control Perspective A. Zubair, Air University, Islamabad, Pakistan; I. Mir, National University of Sciences and Technology, Islamabad, Pakistan; M. Abbas, J. Masud, Air University, Islamabad, Pakistan; M. Safdar, University of Maryland, College Park, MD	4:10 p.m. AIAA-2026-0543 Dynamics, Modeling and Flight Control Design for Autonomous UAVs: A Total Energy Control Architecture A. Zubair, I. Mir, M. Abbas, J. Masud, Air University, Islamabad, Pakistan; M. Safdar, University of Maryland, College Park, MD	4:30 p.m. AIAA-2026-0544 Real-Time Reachable Set-Based Model Predictive Control for Safe Trajectory Tracking of Quadrotors J. Patel, U. Kaya, K. Subbarao, The University of Texas at Arlington, Arlington, TX	4:50 p.m. AIAA-2026-0545 Gaussian Process-Based Extended Kalman Filter for Trajectory Estimation in sUAV Traffic Management A. Khanal, U. Kaya, K. Subbarao, The University of Texas at Arlington, Arlington, TX	5:10 p.m. AIAA-2026-0546 Stall Recovery Method With Optimal Control for T-Tail Transport Aircraft and Evaluation in Monte Carlo Simulation K. Yoshioka, Tokyo Daigaku, Bunkyo, Japan; N. Morita, Nihon Daigaku, Chiyoda, Japan; T. Tsuchiya, Tokyo Daigaku, Bunkyo, Japan
Monday, 12 January 2026					
GNC-13	Nonlinear Dynamic Inversion Techniques and Applications				Bayhill 29
Chaired by: J. KIRKMAN, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-0547	3:50 p.m. AIAA-2026-0548	4:10 p.m. AIAA-2026-0549	4:30 p.m. AIAA-2026-0550	4:50 p.m. AIAA-2026-0551	

Nonlinear Dynamics Inversion (NDI) Control For Electric Vertical Takeoff and Landing (eVTOL) Vehicles In Transition Flight M. Elahi Kahooker, H. Liu, University of Toronto Institute for Aerospace Studies Library, Toronto, Canada	Incremental Nonlinear Dynamic Inversion Based Control of a Generic Hypersonic Vehicle (GHAME) T. Mueller, S. Theodoulis, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands; I. Sarras, ONERA Traitement de l'information et systemes, Palaiseau, France	Hybrid Incremental Nonlinear Dynamic Inversion Control with Flight Envelope Protection for Flying Wing Aircraft T. Traas, D. Atmaca, E. Van Kampen, Technische Universiteit Delft, Delft, The Netherlands	Design and Piloted Simulation of Envelope-Protected Control for Flying Wing Aircraft D. Atmaca, O. Stroosma, E. Van Kampen, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	Multi-Objective Synthesis of Hybrid Incremental Dynamic Inversion Control Laws Using H-Infinity Loop-Shaping L. Encarnação, T. Pollack, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands; G. Looye, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; S. Theodoulis, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	

Monday, 12 January 2026

GTE-02	Advanced Gas Turbine Engines and Cycles	Celebration 2

Chaired by: D. DASGUPTA, Argonne National Laboratory and S. GHOSH, University of Central Florida

3:30 p.m. AIAA-2026-0552 Quantitative Comparison of Two Variable Cycle Engine Concepts K. Van den Borre, G. Bruno, B. Saracoglu, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium	3:50 p.m. AIAA-2026-0553 On the Potential to Eliminate Turbine Cooling in High-Efficiency Gas Turbine Engines Through the Application of Wave Rotor Technology J. Turner, K. Kenkoh, A. Faizulla, G. Vorraro, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; N. Zaghloul, J. Bird, University of Bath, Bath, United Kingdom; et al.	4:10 p.m. AIAA-2026-0554 Development of Reduced-Order Maps of Heat Exchanger Performance for Aerodynamic Applications B. Bates, M. Gamba, University of Michigan, Ann Arbor, MI			

Monday, 12 January 2026

GTE-04	Tutorial: Rotordynamics and Fluid Film Bearings for High-Performance Turbomachinery	Celebration 3

Chaired by: K. RYU, Hanyang University

High-performance turbomachinery operating under extreme conditions demands fluid film bearings that offer superior reliability and durability compared to traditional rolling element bearings. A thorough understanding of bearing operating principles is crucial for the successful design, development, and testing of modern turbomachinery. This tutorial provides a comprehensive introduction to the fundamental principles and classical theory of turbomachinery rotordynamics, alongside novel applications. Attendees will gain valuable insights into the critical aspects of bearing characteristics, empowering them to make informed decisions

for propulsion and power systems. Furthermore, the tutorial explores the essential principles and modern theory of hydrodynamic lubrication as applied to cutting-edge fluid film bearings, seals, and dampers.

Monday, 12 January 2026

HSABP-03	Scramjet and Alternative High-Speed Engine Design, Thermodynamics and Optimization I	Celebration 4

Chaired by: T. OMBRELLO, Air Force Research Laboratory and T. LEE, University of Illinois at Urbana Champaign

3:30 p.m. AIAA-2026-0555 Distributed Pulse Detonation Ignition of a Scramjet Cavity T. Ombrello, C. Carter, C. Tam, Air Force Research Laboratory, Kirtland Air Force Base, NM; K. Hsu, Innovative Scientific Solutions, Inc., Dayton, OH; L. Ma, University of Virginia, Charlottesville, VA	3:50 p.m. AIAA-2026-0556 Investigating the Effect of a Shock Train on Fuel Injection and Entrainment Into a Cavity-Based Flameholder E. Braun, Innovative Scientific Solutions, Inc., Dayton, OH; T. Ombrello, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	4:10 p.m. AIAA-2026-0557 Comparison of Hypermixer Geometries in an Axisymmetric Supersonic Combustion Flowpath A. Beck, N. Kato, M. D'Agostino, K. Kang, I. Gessman, J. Lim, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL; et al.	4:30 p.m. AIAA-2026-0558 The Moving Shocks in the Ethylene Transverse Jets in Supersonic Crossflow Z. Zhang, C. Watson, N. Howell, B. Li, University of Newcastle Auchmuty Library, Callaghan, Australia	4:50 p.m. AIAA-2026-0559 Experimental Investigation of Shock Train Dynamics Under Various Fuel Injection Schemes in a Mach 2.5 Cavity Combustor S. Lonkar, P. Panda, Indian Institute of Science, Bengaluru, India	

Monday, 12 January 2026

INPSI-02/GTE-03/HSABP-02/PGC-03/PC-08/TES-04/ACD-02	Perspectives on Aerospace Propulsion Technology, Challenges and Opportunities	Florida Ballroom B

Chaired by: M. ATKINSON, Johns Hopkins University Applied Physics Laboratory

Speakers:
Michael Winter, Chief Science Officer, RTX
Neal Domel, Fellow, Lockheed Martin Skunk Works
Other Speakers

Expert panel from the aerospace industry, government and academia will share insights on advanced propulsion technology, the latest research, transitions to products, lessons learned and other hot topics.

Topics:
• Propulsion Technology & Innovations evolutionary & revolutionary
• Technical Challenges, Integration Challenges
• Transition of Technologies
• Supply chain
• Opportunities
•Ground Testing

Monday, 12 January 2026

IS-05	Learning, Reasoning, and Data Driven Systems I	Celebration 16

Chaired by: B. WATSON, ERAU and B. BAGDATLI, Georgia Institute of Technology

3:30 p.m. AIAA-2026-0560 Analysis and Adaptation of YOLOv4 for Object Detection in Aerial Images A. Samyal, SkyGrid, Austin, TX; A. K.R., S. Hans, K. A Kotegar, S. Shenoy, Manipal Institute of Technology, Manipal, India	3:50 p.m. AIAA-2026-0561 A Hierarchical Agent-Based Model for Decision Making Under Uncertainty in Tactical Firefighting M. Abyad, B. Bagdatli, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-0562 Airborne Multi-Sensor Dataset for Medical Emergency Response: A Resource for Computer Vision Research T. Slagel, NASA Langley Research Center, Hampton, VA; N. Brown, R. Arteaga, E. Nail, NASA Armstrong Flight Research Center, Edwards Air Force Base, CA; K. Smalling, NASA Langley Research Center, Hampton, VA; B. Ruffridge, NASA Armstrong Flight Research Center, Edwards Air Force Base, CA	4:30 p.m. AIAA-2026-0563 Soft Actor-Critic Reinforcement Learning Approach to Multi-Drone 3D Terrain Scanning and Target Detection in Search and Rescue Operations R. Gracia Otalvaro, B. Watson, Embry-Riddle Aeronautical University, Daytona Beach, FL		
Monday, 12 January 2026					
IS-06	Sensor Fusion and Systems Health Management				Celebration 12
Chaired by: C. KULKARNI, NASA Ames Research Center and A. CAMPBELL, University of Alabama, Tuscaloosa					
3:30 p.m. AIAA-2026-0564 Autonomous Spacecraft Health Management: Results From IM-2 Lunar Mission H. Bennett, M. Rudolph, J. Schumann, Exploration Institute, Cheyenne, WY; J. Burns-Montante, Lonestar Data Holdings Inc, Petersburg, FL; A. Ellis, Exploration Institute, Cheyenne, WY	3:50 p.m. AIAA-2026-0565 Modular Open System Architecture for Low-cost Integrated Avionics (MOSA LINA) S. Johnson, R. Santos, I. Banda, N. Luna, J. Valasek, Texas A&M University, College Station, TX	4:10 p.m. AIAA-2026-0566 Temporal Logic Motion Planning of a UAV-UGV Team in Semantically Unknown Environments A. Taheri, Y. Phalle, D. Aksaray, Northeastern University, Boston, MA			
Monday, 12 January 2026					
LP-03	Modeling and Simulation of Liquid Propulsion Systems, Components, and Processes I				Celebration 8
Chaired by: M. KASSEMI, NASA Glenn Research Center and N. ANDREWS, Southwest Research Institute					
3:30 p.m. AIAA-2026-0567 Validation of Computational Fluid Dynamics Model of Pressure Control in a Flight-scale Liquid	3:50 p.m. AIAA-2026-0568 Validation of Computational Fluid Dynamics Model of Self-pressurization in a Flight-	4:10 p.m. 4348149 CFD Simulations of Liquid Hydrogen Transfer Line Chilldown Using FLUENT J. Hartwig, NASA Glenn Research Center, Cleveland,	4:30 p.m. AIAA-2026-0569 Development of a Gradient Based Phase Change CFD Model and Validation against Zero Boil-Off Tank Experiment	4:50 p.m. AIAA-2026-0570 Application and Evaluation of STAR-CCM+ for Cryogenic Spray Cooling	

Hydrogen Tank using a Spray Bar C. Patel, NASA Marshall Space Flight Center, Huntsville, AL	scale Liquid Hydrogen Tank C. Patel, NASA Marshall Space Flight Center, Huntsville, AL	OH; T. Peterson, Embry-Riddle Aeronautical University, Daytona Beach, FL; D. Ko, University of California Los Angeles, Los Angeles, CA; J. Kannamkulathu Narayanan, M. Kassemi, H. Bui, Case Western Reserve University, Cleveland, OH; et al.	O. Kartuzova, M. Kassemi, Case Western Reserve University, Cleveland, OH; D. Hauser, NASA Glenn Research Center, Cleveland, OH	J. Adams, Oregon State University, Corvallis, OR; B. Patil, C. Sung, University of Connecticut, Storrs, CT; K. Niemeyer, Oregon State University, Corvallis, OR	
Monday, 12 January 2026					
MAT-05/STR-05	AI/ML for Materials and Structures				Bayhill 20
Chaired by: I. GUVEN, Virginia Commonwealth University and B. HEARLEY, NASA Glenn Research Center					
3:30 p.m. AIAA-2026-0571 Micro-CT Based Automated Reconstruction of 3D Textile Composite Microgeometry Using Segmentation-Based Machine Learning Y. Comlek, M. Obispo, A. Bhaduri, A. Mazumder, B. Pidaparthi, L. Wang, GE Aerospace Research, Niskayuna, NY; et al.	3:50 p.m. AIAA-2026-0572 Inverse Design of Composite Laminates Using Neural Networks and Material Informatics K. Scott, S. Miller, The Applied Research Laboratory at Pennsylvania State University, State College, PA	4:10 p.m. AIAA-2026-0573 An Efficient Physics-Constrained Data-Driven Surrogate Model for Anisotropic Damage L. Mackin, University of California San Diego, La Jolla, CA; R. Geelen, Texas A&M University System, College Station, TX; A. Kim, University of California San Diego, La Jolla, CA	4:30 p.m. AIAA-2026-0574 Adaptive Neural Network for Real-World Dynamic Learning Environment Y. Wu, Y. Chi, R. Zi, Y. Li, University of Illinois Urbana-Champaign, Urbana, IL		
Monday, 12 January 2026					
MAT-06	Nanostructured Materials				Bayhill 23
Chaired by: B. WARDLE, Massachusetts Institute of Technology and J. KOO, The University of Texas at Austin					
3:30 p.m. AIAA-2026-0575 Interfacial Debonding of Embedded Particles in Nanocomposite Systems Using Atomic Force Microscopy and Finite Element M. Westby, Arizona State University, Tempe, AZ; W. Bruner, M. Yekani Fard, California Polytechnic State University, San Luis Obispo, CA	3:50 p.m. AIAA-2026-0576 Atomistic Simulation of Mode-I and Mode-II Fracture and Fatigue in Amorphous Carbon S. Roy, S. Aditya, The University of Alabama, Tuscaloosa, AL	4:10 p.m. AIAA-2026-0577 Computational Insights into the Conformational Behaviors and Structure-Property Relationships of Functional Polymers via Coarse-Grained Modeling L. Wang, W. Xia, Iowa State University of Science and Technology, Ames, IA			
Monday, 12 January 2026					

MDO-05	MDO/Sensitivity Analysis with Aeroelasticity/Fluid-Structure Interaction				Bayhill 17
Chaired by: J. MONTORO, Lockheed Martin and A. FELDSTEIN, Aurora Flight Sciences, A Boeing Company					
3:30 p.m. AIAA-2026-0578 Multi-Fidelity Structural Optimization for Shock-Driven Fluid--Structure Interaction Problems A. Narkhede, N. Eilers, E. Rivas, K. Wang, Virginia Polytechnic Institute and State University, Blacksburg, VA	3:50 p.m. AIAA-2026-0579 The Development of Stress Constraints for Aeroelastic Gust Optimization J. Deslich, R. Kolonay, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	4:10 p.m. AIAA-2026-0580 Gradient-Based Structural Optimization Using a JAX-Based Aeroelastic Simulator E. Nakagawa, Tokyo Daigaku Daigakuin Kogakukei Kenkyuka Koku Uchu Kogaku Senko, Bunkyo, Japan; A. Cea, R. Palacios, Imperial College London, London, United Kingdom; T. Yokozeki, Tokyo Daigaku Daigakuin Kogakukei Kenkyuka Koku Uchu Kogaku Senko, Bunkyo, Japan; N. Tsushima, Kyushu Daigaku Kogakubu Daigakuin Kogakufu, Fukuoka, Japan			

Monday, 12 January 2026

MDO-06/STR-08	Structural and Topology Optimization Applications for Air and Space II				Bayhill 21
Chaired by: S. TAYLOR, Gulfstream and L. BORKOWSKI, RTRC					
3:30 p.m. AIAA-2026-0581 A Novel Surrogate-Assisted Structural Optimization Framework for Full-Aircraft Configurations S. Kilimtzidis, Panepistemio Patron, Patras, Greece; G. Dimitriadis, Universite de Liege, Liège, Belgium; V. Kostopoulos, Panepistemio Patron, Patras, Greece	3:50 p.m. AIAA-2026-0582 The Digital Thread for Structural Sizing Applied to a Large Drone J. de Boer, E. Allegaert, A. Carpentier, A. Bosco, M. Lamping, Siemens Digital Industries Software, Leuven, Belgium	4:10 p.m. AIAA-2026-0583 Structural Layout Optimization of AAM Aircraft at Concept Level - A Comparison of Approaches R. Simões, Altair Engineering Inc, Sao Paulo, Brazil; J. Chaussee, Altair Engineering Inc, Montreal, Canada	4:30 p.m. AIAA-2026-0584 Development and Testing of an Innovative Multi-Layer Plate Deployment (MLPD) Mechanism for Compact Aerospace Applications S. Chanda, S. Prendiz, V. Bonilla, E. Ruiz, C. Jaramillo, M. Lujan, The University of Texas at El Paso, El Paso, TX; et al.	4:50 p.m. AIAA-2026-0585 Topology Optimization and Detailed Analysis of a Stability Critical Aerospace Application J. Action, C. McElwain, Lockheed Martin Aeronautics Co Marietta, Marietta, GA; C. Pedersen, A. Jurinic, Dassault Systemes SE, Vélizy-Villacoublay, France	5:10 p.m. AIAA-2026-0586 Parametric Framework for Automated Structural Layout Modelling and Optimisation of Composite Airframe N. Ziakos, A. Cini, Universidad Carlos III de Madrid, Leganés, Spain

Monday, 12 January 2026

MVCE-03/FD-18	AI/ML Assisted Geometry Modeling, Error Estimation, and Mesh Adaptation for CFD				Bayhill 30
Chaired by: Q. WANG					
3:30 p.m. AIAA-2026-0587 Physics-Informed Multi-Fidelity Networks for	3:50 p.m. 4354858 Industrial Deployment of Geometric Deep-	4:10 p.m. AIAA-2026-0588	4:30 p.m. AIAA-2026-0589	4:50 p.m. AIAA-2026-0590 Neural-Network-Based Computational	5:10 p.m. AIAA-2026-0591 Learning Discontinuous Flows: Towards a Neural-

Solving Discontinuous Problems T. Zhang, Z. Xiao, Hangzhou Dianzi University, Hangzhou, China; Y. Xia, Zhejiang University, Hangzhou, China	Learning Surrogates for Rotorcraft Design: Three Applications at Leonardo Helicopters with Neural Concept N. Vallana, A. Costaggiu, A. Scandroglio, Leonardo S.p.A., Varese - Cascina Costa, Italy; A. Margaritis, O. Urquidi, L. Giordano, Neural Concept, Jersey City, NJ	Surrogate Modeling of Flight Behavior With Deep Neural Networks M. Kuehr, M. Carpenter, R. Hartfield, G. DiMaggio, Auburn University, Auburn, AL	Predicting Fillet Stresses from Singular Fields Using Machine Learning Y. Pozhanka, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	Framework for the Variational Theory of Lift A. Elmaradny, A. Vakilimafakheri, A. Abdelrazek, H. Taha, University of California Irvine, Irvine, CA	Network-Based Platform for Variational Simulators A. Elmaradny, A. Atallah, H. Taha, University of California Irvine, Irvine, CA

Monday, 12 January 2026

PC-04	Research and Observations for Safety and Security in a World of Emerging Stratospheric Aerosol Intervention	Celebration 5

Chaired by: M. FORTIN, UCF

As governments and private entities develop technologies for altering the atmosphere, critical monitoring, detection and analysis gaps pose safety and security risks.. This panel addresses observational challenges unique to the stratosphere, gaps in aerosol microphysics and transport modeling, and key research needs for understanding environmental impacts. While U.S. stratospheric science capabilities lead globally, they were not designed for the challenges of deliberate interventions in today's rapidly changing stratosphere. This creates an urgent need for enhanced detection, attribution, and environmental analysis in an era where stratospheric intervention is becoming technically feasible. **Speakers:** Rob McHenry Troy Thornberry Drew Rollins Ken Jucks (NASA) Peter Layshok (NASA) Mark Schoeberl

Monday, 12 January 2026

PC-05	Combustion II	Celebration 7

Chaired by: H. IM, King Abdullah University of Science and Technology and M. SOTERIOU, TheMCS LLC

3:30 p.m. AIAA-2026-0594 Ignition Study of a Full-Annular Small-Scale Combustor B. Ullman, Wright State University, Dayton, OH; B. Paxton, Innovative Scientific Solutions, Inc., Wright-Patterson Air Force Base, OH; B. Rankin, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; M. Wolff, Wright State University, Dayton, OH	3:50 p.m. AIAA-2026-0595 RDE Combustor with Tesla Valve Injectors for Suppression of Back Pressure Oscillations P. Nair, Purdue University, West Lafayette, IN; V. Narayanan, Indian Institute of Technology Gandhinagar, Gandhinagar, India; J. P Gore, Purdue University, West Lafayette, IN	4:10 p.m. AIAA-2026-0596 Characterization of Dual-Mode Scramjet With Distributed Fuel Injection S. Attar, J. van der Lee, R. Kaner, D. Michaels, Technion Israel Institute of Technology, Haifa, Israel			

Monday, 12 January 2026

PC-07/HSABP-19	High-Speed Detonations	Celebration 6

Chaired by: J. SOSA, Naval Research Laboratory and R. HYTOVICK, University of Central Florida

3:30 p.m. AIAA-2026-0597 Rotating Detonation Waves in Scramjet Engines Using Preheated Kerosene for Pressure-Gain Combustion A. Raj, V. Kumar, Amity University Noida, Noida, India	3:50 p.m. AIAA-2026-0598 Three-Dimensional Structures of H_2/Air Oblique Detonation Waves C. Euteneuer, R. Suryanarayan, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	4:10 p.m. AIAA-2026-0599 Stability of Standing Normal Detonation Under Varying Flow Conditions R. Fernandez, S. Abisleiman, V. Raman, University of Michigan, Ann Arbor, MI	4:30 p.m. AIAA-2026-0600 Transverse Waves and Ignition Dynamics in Oblique Detonations of Different Shock-Detonation Transition Types R. Dushe, R. Suryanarayan, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	4:50 p.m. AIAA-2026-0602 Pressure Rise Due to Flame Compressibility in a Cavity-Fueled Scramjet Combustor A. Ranganathan, J. Sprunger, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	
Monday, 12 January 2026					
PDL-03	Plasma and Laser Diagnostics I				Rainbow Spring I
Chaired by: M. SIMENI, University of Minnesota Twin Cities and A. DOGARIU, Texas A&M University					
3:30 p.m. AIAA-2026-0603 Hybrid fs/ps CARS for Measuring Thermal Non-Equilibrium in a Glow Discharge R. Rosser, B. Leonov, A. Dogariu, Texas A&M University System, College Station, TX	3:50 p.m. AIAA-2026-0604 Hybrid fs/ps CARS Measurements of Vibrationally Excited $N_2(v)$ and $H_2(v)$ in DC Glow Discharges Z. Chang, W. Wang, Y. Xu, M. Shneider, Z. Shi, Z. Sun, Princeton University, Princeton, NJ; et al.	4:10 p.m. AIAA-2026-0605 Femtosecond TALIF and Optical Emission Calibration for Quantifying N-Atom Production in RF Plasma Sources M. Sharma, Colorado State University, Fort Collins, CO; S. Polak, Advanced Energy Industries Inc, Fort Collins, CO; C. Dumitrache, Colorado State University, Fort Collins, CO	4:30 p.m. AIAA-2026-0606 High Rate Nitrogen Backward Lasing in Air for Localized Non-Intrusive Diagnostics Y. Bao, C. Limbach, University of Michigan, Ann Arbor, MI	4:50 p.m. AIAA-2026-0607 Thin-Sat Payload for Measuring Spacecraft Charge and Local Ion Number Density T. Scott, K. Lemmer, Western Michigan University College of Engineering and Applied Sciences, Kalamazoo, MI	
Monday, 12 January 2026					
PGC-04	Propellant Mixing Dynamics I				Florida Ballroom C
Chaired by: M. NALIM, Purdue University					
3:30 p.m. AIAA-2026-0610 Influence of Injector Count and Sizing on Rotating Detonation Engine Dynamics T. Kickliter, E. Young, V. Acharya, T. Lieuwen, Georgia Institute of Technology, Atlanta, GA	3:50 p.m. AIAA-2026-0611 Characterization of Combustion Instabilities in 2D Premixed Rotating Detonation Combustors W. Stigliano, J. Grunenwald, J. Braun, NC State University, Raleigh, NC; T. Meyer, V. Athmanathan, Purdue University, West Lafayette, IN; K. Miki, NASA Glenn Research Center, Cleveland, OH; et al.	4:10 p.m. AIAA-2026-0612 Modeling of Rotating Detonation Engine Refreshing Layer in Diverging Inlet Geometries Q. Michalski, R. Aliakbari, RMIT University STEM College, Melbourne, Australia; A. Montanari, M. Grossi, Universita degli Studi di Roma La Sapienza, Rome, Italy; W.	4:30 p.m. AIAA-2026-1828 Simplified 2D Tools for RDRE Doublet Simulations M. McDaniel, W. Stigliano, L. Yale, J. Braun, NC State University, Raleigh, NC		

		Stigliano, J. Grunenwald, NC State University, Raleigh, NC; et al.			
Monday, 12 January 2026					
SCS-03/STR-07/SFM-06	In-Space Servicing, Assembly and Manufacturing (ISAM) I				Bayhill 24
Chaired by: F. ROYER, Cornell University and N. REDDY, Reflect Orbital					
3:30 p.m. AIAA-2026-0613 Advancement of Nondestructive Evaluation in Space: Vision and Experimental Payload Design S. Parthibhan, B. White, A. Dowgiallo, C. Schaal, California State University Northridge, Northridge, CA	3:50 p.m. AIAA-2026-0614 ARAQYS-D2: Towards the First On-Orbit Demonstration of In-Space Manufacturing for Large-Area Solar Arrays A. Pedivellano, K. Nader, J. Finn, D. Cabral, L. Gardella, N. Puvati, Dcubed GmbH, Germering, Germany; et al.	4:10 p.m. AIAA-2026-0615 Energy Efficient In Space Manufacturing of High Performance Composite Longeron Z. Zheng, I. Wu, S. Shin, N. Rasheed, M. Zakoworotny, L. Shanmugam, University of Illinois Urbana-Champaign, Urbana, IL; et al.	4:30 p.m. AIAA-2026-0616 Robotic Self-Assembly Space Telescope --- Overview of Mechanical System H. Kobayashi, T. Chujo, H. Nakanishi, Tokyo Kagaku Daigaku, Meguro, Japan; Y. Miyazaki, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan	4:50 p.m. AIAA-2026-0617 Characterizing Electroadhesion in Vacuum: Experimental and Simulation Frameworks for Space Docking S. Hampl, A. Ghedira, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO; I. Patel, Z. McNulty, InOrbit Aerospace, Torrance, CA; H. Schaub, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	5:10 p.m. AIAA-2026-0618 Mechanical, Thermal, and Chemical Design of The Mission 'Illinois' On-Orbit Fabricator of Composite Longerons N. Rasheed, A. Pawlik, G. Ahnert, S. Shin, Z. Zheng, J. Baur, University of Illinois Urbana-Champaign, Urbana, IL; et al.
Monday, 12 January 2026					
SD-05	Special Session: Aeroelastic Prediction Workshop Update - Large-Deflection Working Group				Bayhill 22
Chaired by: A. SCOTTI, Pilatus Aircraft Ltd and R. GHOSH, University of Central Florida					
3:30 p.m. AIAA-2026-0619 Addressing Harmonic Excitation in Complex Aeronautical Test Cases Using Stochastic Modal Appropriation D. Antonini, G. Coppotelli, Universita degli Studi di Roma La Sapienza, Rome, Italy; M. Abdelghani, Universite de Sousse, Sousse, Tunisia	3:50 p.m. AIAA-2026-0620 Flutter Tests of Swept Very Flexible Wings B. Revivo, D. Raveh, Technion Israel Institute of Technology, Haifa, Israel	4:10 p.m. AIAA-2026-0621 Static and Dynamic Characterization of a Swept Pazy Wing Through Wind Tunnel Testing L. Onofri, D. Antonini, G. Coppotelli, Universita degli Studi di Roma La Sapienza, Rome, Italy; M. Righi, Zurcher Fachhochschule, Zürich, Switzerland; M. Berci, Pilatus Aircraft Ltd, Stans, Switzerland	4:30 p.m. AIAA-2026-0622 Fast Flutter Prediction for Very Flexible Swept Wings B. Preston, U. Fasel, R. Palacios, Imperial College London, London, United Kingdom; A. Castrichini, Airbus UK, Filton, United Kingdom		
Monday, 12 January 2026					
SD-06	Special Session: Prof. Roy R. Craig Memorial Session				Bayhill 18
Chaired by: V. BABUSKA, Sandia National Laboratories and W. SCHNEIDER, Lockheed Martin Aeronautics					

3:30 p.m. AIAA-2026-0623 Nonlinear Substructuring of the Dynamic Substructures Round Robin Structure D. Roettgen, B. Moldenhauer, Sandia National Laboratories, Albuquerque, NM	3:50 p.m. AIAA-2026-0624 The Experimental Modal Craig-Bampton Substructure R. Mayes, Sandia National Laboratories, Albuquerque, NM	4:10 p.m. AIAA-2026-0625 Solving the Over-Constrained Hurty/Craig-Bampton Problem A. Majed, e. Henkel, ASD, Inc., Houston, TX; A. Kolaini, Jet Propulsion Laboratory, Pasadena, CA; D. Johnson, NASA Langley Research Center, Hampton, VA; R. Coppolino, Measurement Analysis Corporation, Torrance, CA	4:30 p.m. AIAA-2026-0626 Primary DOF Selection via QR Pivoting for Physical-Type Dynamic Condensation and Substructuring R. Hagos, S. Lee, J. Han, Korea Advanced Institute of Science and Technology, Daejeon, South Korea		
Monday, 12 January 2026					
SE-04	System Design and Architecture				Bayhill 25
Chaired by: H. KANNAN, The University of Alabama in Huntsville and S. DAM, SPEC Innovations					
3:30 p.m. AIAA-2026-0627 Scoping Literature Review on Bio-Inspired Design in Satellite Systems Engineering Lifecycle S. Nanjamma, B. Watson, Embry-Riddle Aeronautical University, Daytona Beach, FL	3:50 p.m. AIAA-2026-0628 A System-of-Systems Architecting Methodology and Architectural Framework for Evolving Lunar Base Design and Decision-Making H. Helmy, M. Balchanos, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-0629 The Test Like You Fly and Test What You Fly Approach for the Artemis Human Spaceflight Paradigm T. Gill, J. Debruin, C. Gattis, J. Gurecki, NASA, Washington, DC, D.C.; J. Fluhr, Booz Allen Hamilton Inc, McLean, VA; E. Holbert, NASA, Washington, DC, D.C.; et al.	4:30 p.m. AIAA-2026-0630 Leveraging Simulation and Automation for STPA P. Canny, G. Miraglia, M. Bimbi, Mathworks Inc, Natick, MA	4:50 p.m. AIAA-2026-0631 Resilience-Driven Habitability Evaluation Framework for Space Habitation Systems S. Rhee, S. Sinha, B. Jepsen, D. Ziviani, Purdue University, West Lafayette, IN	
Monday, 12 January 2026					
SFM-07	Low-Thrust Trajectories				Plaza Ballroom J
Chaired by: K. SUBBARAO, The Univ. of Texas @ Arlington					
3:30 p.m. AIAA-2026-0635 Efficient Methods for Traversing a Homotopy of Optimal Low-Thrust Trajectories P. O'Connell, J. Hudson, Western Michigan University College of Engineering and Applied Sciences, Kalamazoo, MI	3:50 p.m. AIAA-2026-0636 Constrained Lyapunov Stabilization Based on Gauss Variational Equations: From Spacecraft Orbital Transfers to Rendezvous I. Kolmanovsky, University of Michigan, Ann Arbor, MI; E. Garone, Universite Libre de Bruxelles, Brussels, Belgium; G.	4:10 p.m. AIAA-2026-0637 Analytical Missed Thrust Analyses for Heliocentric Trajectories B. Waldbauer, M. Moretto, NC State University, Raleigh, NC	4:30 p.m. AIAA-2026-1075 Gradient-Informed Monte Carlo Fine-Tuning of Diffusion Models for Low-Thrust Trajectory Design J. Graebner, R. Beeson, Princeton University, Princeton, NJ		

	Touchette, University of Michigan, Ann Arbor, MI				

Monday, 12 January 2026

SOF-03	NASA cFS 2.0 and Beyond	Celebration 15

Chaired by: J. CASSADY, NASA Langley Research Center

The core Flight System (cFS) is the most widely used flight software architecture in the world, powering everything from small instruments at research labs to the Roman Space Telescope. Goddard Space Flight Center is rebuilding the core development team in the branch that originally built it to advance the state of the art in flight software and to better serve the broad cFS community. We present a future-looking evolution of cFS, adding cutting-edge capabilities such as Artificial Intelligence/Machine Learning, Onboard Scripting, and Cybersecurity to its suite of capabilities. We discuss new cFS-based FSW architectures to prepare for the arrival of more capable flight hardware and more complex missions, as we continue to explore the solar system and beyond.

Monday, 12 January 2026

STR-06	Air and Space Structural Design, Analysis, Test	Bayhill 19

Chaired by: I. DUBUC, The University of Texas at Austin and S. VENKATARAMAN, San Diego State University

3:30 p.m. AIAA-2026-0638 Sizing and Design Tool for Triangular and Cubic Tall Lunar Tower K. Song, NASA Langley Research Center, Hampton, VA; M. Mikulas, University of Colorado Boulder, Boulder, CO; J. Cassady, W. Doggett, M. Mahlin, NASA Langley Research Center, Hampton, VA	3:50 p.m. AIAA-2026-0639 Structural Analysis and Testing of TriTruss Module Assembly K. Song, O. Stohlman, B. White, L. Simmons, J. Teter, NASA Langley Research Center, Hampton, VA	4:10 p.m. AIAA-2026-0640 Novel Tube Type Meta-Biomaterials With Enhanced Ductility: A Finite Element Approach A. Nguyen, California Polytechnic State University, San Luis Obispo, CA; J. Villegas Hernandez, Arizona State University, Tempe, AZ; M. Yekani Fard, California Polytechnic State University, San Luis Obispo, CA	4:30 p.m. AIAA-2026-0641 Recent Lessons Learned from Space Structural Anomalies V. Goyal, B. Soltz, J. Klug, The Aerospace Corporation, El Segundo, CA; D. Taylor, NASA, Hampton, VA	4:50 p.m. AIAA-2026-0642 Best Practices in the Qualification and Analysis of Launch Vehicle Payload Fairings V. Goyal, W. Goodman, J. Klug, R. Hill, D. Taylor, The Aerospace Corporation, El Segundo, CA	5:10 p.m. AIAA-2026-0643 Re-Design of Aluminum Honeycomb Panel for RF Compatibility D. Foster, E. Arnold, The University of Kansas Institute for Information Sciences, Lawrence, KS

Monday, 12 January 2026

SUST-03	Sustainable Space Operations and Technologies	Plaza Ballroom K

Chaired by: N. VIOLA, Politecnico di Torino

3:30 p.m. AIAA-2026-0644 Probabilistic Compliance Monitoring for Post-Mission Disposal Guidelines in Low Earth Orbit S. Mehta, T. Jonchay, D. Mavris, Georgia Institute of Technology, Atlanta, GA	3:50 p.m. AIAA-2026-0645 Air-Breathing Electric Propulsion: A Technology to Improve Sustainability on Space Operations J. Alvarez Vallero, The University of Texas at Arlington, Arlington, TX; V. Giannetti, E. Ferrato, T. Andreussi, Scuola Superiore Sant'Anna Istituto di	4:10 p.m. AIAA-2026-0646 Current Developments in Polymer-Based Reactive Materials for Thermite-for-Demise (T4D) Technology F. Maggi, A. Finazzi, J. Domaschio, C. Zanardi, O. Pratola, C. Paravan, Politecnico di Milano, Milan, Italy; et al.			

	Intelligenza Meccanica, Pisa, Italy				
Monday, 12 January 2026					
TES-03	Novel Propulsion Technologies for Alternative Fuels				Celebration 9
Chaired by: R. RANJAN, University of Tennessee at Chattanooga and H. ZHONG, Michigan State University					
3:30 p.m. AIAA-2026-0647 Experimental Study of MHD Power Generation Using Combustion Gases From a Rotating Detonation Combustor A. Kawasaki, K. Noda, Shizuoka Daigaku, Hamamatsu, Japan; K. Higashino, Nets Co., Ltd., Sakado, Japan	3:50 p.m. AIAA-2026-0648 Testing of Solid Oxide Fuel Cells Using Ammonia for Carbonless Aviation Applications D. Schafer, T. Kramer, C. Roberson, T. Matheney, R. Roberts, Tennessee Tech University, Cookeville, TN	4:10 p.m. AIAA-2026-0649 Application of Absorption Spectroscopy Techniques for Rapid Temperature and Speciation Measurements Under Engine-Relevant Conditions A. DeRusha, N. Khanal , M. Etienne, H. Mack, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	4:30 p.m. AIAA-2026-0650 Experimental Setup of a Lightweight Onboard Desulfurizer for SOFC-GT Hybrid Systems Utilizing Logistics Fuels C. Roberson, T. Cannon, D. Schafer, T. Kramer, R. Roberts, Tennessee Tech University, Cookeville, TN	4:50 p.m. AIAA-2026-0651 Clean Dual-Waste Fuel Combustion of Glycerol-Methanol Blend with Simulated Landfill Gas by Utilizing a Novel Fuel-Flexible Injector M. Mishu, O. Eso, Y. Li, A. Yokochi, L. Jiang, Baylor University, Waco, TX	5:10 p.m. AIAA-2026-0652 Investigation of Effect of Fluid Properties on Near-Field Spray Characteristics of a Two-Phase Swirl Burst Injector M. Ahmed, P. Mogote, Baylor University, Waco, TX; K. Fezzaa, Argonne National Laboratory, Lemont, IL; S. Clark, Argonne National Laboratory Advanced Photon Source, Lemont, IL; L. Jiang, Baylor University, Waco, TX
Monday, 12 January 2026					
TP-03	Multiphase Flows				Bayhill 32
Chaired by: M. GOSMA, University of Illinois at Urbana-Champaign and B. DIAS, NASA Ames Research Center					
3:30 p.m. AIAA-2026-0653 An Experimental Investigation on Bubble-Induced Heat Transfer Enhancement M. Shohan, J. Wang, H. Hu, Iowa State University of Science and Technology, Ames, IA	3:50 p.m. AIAA-2026-0655 Development of Empirical Model for Solid Melting Process Adjacent to Immiscible Liquid M. Yamazaki, H. Sakaue, University of Notre Dame, Notre Dame, IN	4:10 p.m. AIAA-2026-0656 Development and Application of a Passive Variable Conductance Loop Thermosyphon R. Abdelmaksoud, C. Tarau, K. Lee, S. Rokkam, Advanced Cooling Technologies Inc., Lancaster, PA	4:30 p.m. AIAA-2026-0657 Spreading of a Water Droplet for a Dynamic and Static Impact Surface M. Sanchez, M. Yamazaki, H. Sakaue, University of Notre Dame, Notre Dame, IN	4:50 p.m. AIAA-2026-0654 A Multiphysics Coupling Approach for Particle-Laden High-Speed Flows H. Nam, T. Jeong, S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	
Monday, 12 January 2026					
TP-04	Sensitivity Analysis and Uncertainty Quantification				Bayhill 33
Chaired by: S. POOVATHINGAL, University of Kentucky and M. GROVER, NASA Lyndon B. Johnson Space Center					
3:30 p.m. AIAA-2026-0658 Stochastic Uncertainty Quantification of Radiative Heating in	3:50 p.m. AIAA-2026-0659 Model Error Effects on Hypersonic Ground-To-Flight Extrapolation	4:10 p.m. AIAA-2026-0660 Mutual Information and Sensitivity Analysis of a T6 Expansion Tunnel Experiment			

Hypersonic Atmospheric Entry T. Jeong, S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	A. del Val, M. Das, University of Minnesota Twin Cities, Minneapolis, MN	T. Aiken, I. Boyd, University of Colorado Boulder, Boulder, CO; O. Paxton, M. McGilvray, University of Oxford, Oxford, United Kingdom			

Monday, 12 January 2026

UAS-03	Systems Design and Optimization for Uncrewed/Autonomous System				Orlando Ballroom M

Chaired by: M. ANDERSON, United States Air Force Academy

3:30 p.m. AIAA-2026-0661 Real-Time, Onboard, Model-based Wind Estimation and Control for Multirotor UAVs Flying in Winds B. Chen, X. Han, P. Wei, University of California Davis, Davis, CA; J. González-Rocha, University of California Santa Cruz, Santa Cruz, CA; Z. Kong, University of California Davis, Davis, CA	3:50 p.m. AIAA-2026-0662 Energy-Efficient Trajectory Planning and Spectrum Management for AAVs-Based ISAC in Urban Aerospace Applications M. Prantik, Z. Zhang, Beihang University School of Electronic and Information Engineering, Beijing, China; L. Zhao, Aviation Data Communication Corporation, Beijing, China; K. Cai, Z. Jiao, P. Zhao, Beihang University School of Electronic and Information Engineering, Beijing, China	4:10 p.m. AIAA-2026-0663 Multidisciplinary Optimization of Propeller Design for eVTOL Vehicles Using CHARM and Genetic Algorithms N. Rong, S. Bhandari, T. Sherman, California State Polytechnic University Pomona, Pomona, CA	4:30 p.m. AIAA-2026-0664 Performance Improvements of an Unmanned Aerial System (UAS) with the use of an Aerodynamically Optimized Aeroshell A. Khalid, A. Balakrishnan, L. Bagley, J. Huffman, D. Moore, P. Porter, Kennesaw State University, Kennesaw, GA; et al.	4:50 p.m. AIAA-2026-0665 A Robust Framework for Aerodynamic Trajectory Generation B. Swaminathan, Indian Institute of Technology Madras, Chennai, India	5:10 p.m. AIAA-2026-0666 Resilient Collaborative Target Tracking Using BAG-aware Distributed Kalman Filtering Under Stealthy FDI Attacks S. Chaulagain , K. Subbarao, The University of Texas at Arlington College of Engineering, Arlington, TX

Monday, 12 January 2026

CAP-13 4:00 - 5:00 p.m.	Level Up Your Comms	Plaza Ballroom H

Discover how the art of storytelling can transform complex aerospace engineering ideas into powerful, memorable narratives that captivate any audience. Join this high-impact session to learn practical techniques to communicate your innovations with clarity, confidence, and creativity.

Monday, 12 January 2026

AIAA-05 4:30 - 6:00 p.m.	Meet the Universities	Regency Ballroom O-P

Considering graduate school? Meet with representatives from some of the top aerospace research universities and hear all about how you can advance your education and research goals.

Monday, 12 January 2026

AIAA-06 5:30 - 7:00 p.m.	AIAA Awards Recognition Ceremony	Windermere Ballroom

AIAA is honored to honor you—the very best! A primary goal of the Institute is to recognize those who are making earthshaking achievements that make us stand up from our seats and cheer.

Monday, 12 January 2026					
TP-23	Thermal Protection Systems IV				Bayhill 32
Chaired by: R. MACDONALD, University of Colorado Boulder					
1:00 p.m. AIAA-2026-2941 Ground Observations of radiation from the OSIRIS-REx Sample Return Capsule during Earth Return H. Takayanagi, S. Nomura, H. Tanaka, Japan Aerospace Exploration Agency Research and Development Directorate, Kanagawa, Japan; S. Noguchi, Uchu Koku Kenkyu Kaihatsu Kiko Koku Gijutsu Bumon, Chofu, Japan; T. Yamada, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan	1:20 p.m. AIAA-2026-2942 Spectral Measurements of Atomic Oxygen and Nitrogen During the OSIRIS-REx Re-entry B. Birch, F. Zander, J. Moran, University of Southern Queensland, Toowoomba, Australia	1:40 p.m. AIAA-2026-2943 System Design and Preliminary Analysis of the University of Queensland Spectroscopy Data From the OSIRIS-REx Re-Entry Observation Mission C. James, S. Lock, N. Lu, T. van den Herik, R. Morgan, The University of Queensland, Brisbane, Australia; F. Zander, University of Southern Queensland, Toowoomba, Australia; et al.	2:00 p.m. AIAA-2026-2944 The Australian-German Contributions to the OSIRIS-REx Re-Entry Capsule Observation F. Zander, A. Lock, B. Birch, J. Moran, D. Buttsworth, G. Armstrong, University of Southern Queensland, Toowoomba, Australia; et al.		

Tuesday

Tuesday, 13 January 2026		
HUB-22 2:00 - 2:30 p.m.	Cooling Is the System: Rethinking Orbital Data Centers	the HUB in the Expo Hall

Discussions of orbital data centers often overlook a critical point: in the vacuum of space, thermal management quickly becomes the dominant architectural constraint. This session examines how radiator area, geometry, and system integration drive orbital designs, reframing the landscape around a simple truth: cooling is not an implementation detail; it is the system. Rob DeMillo, CEO and Co-Founder of Sophia Space, will show how Sophia's modular 'tile' design integrates compute and thermal management, creating scalable orbital platforms that can ease terrestrial data bottlenecks and deliver faster, more resilient processing for corporate intelligence, national security, and emergency preparedness. Speaker: Rob DeMillo, CEO and Co-Founder, Sophia Space

Tuesday, 13 January 2026		
HUB-23 2:30 - 3:00 p.m.	Flexcompute	the HUB in the Expo Hall

Tuesday, 13 January 2026		
SAR-03	Advancing Robotic Autonomy for ISAM	Florida Ballroom A
Chaired by: C. GUARINIELLO, Purdue University		

The panel will focus on how best to get robotic autonomy and automation adopted for missions. There is an increasing need for autonomous robotic operations in the ISAM community and a lack of trust in space robotic automation outside of said community. The panel will bring various viewpoints from on-orbit servicing, in-space assembly, surface logistics, and manufacturing to discuss how best to overcome this hurdle.

Tuesday, 13 January 2026		
AIAA-98 6:30 - 7:15 a.m.	Aerospace Fun Run	Hotel Lobby
6:15 AM - Meet in Hotel Lobby Need to get your fitness in while you're in town for SciTech? Craving an opportunity to get to know some of your fellow attendees outside of the walls of the conference? Join us for an Aerospace Fun Run! This run will be hosted by an AIAA Staff Member and is open to all ability levels. This run will be less than 3 miles long and should take no more than one hour. Meet in the lobby at 6:15 AM by the hotel check in desk to sign a waiver and join in the fun!		
Tuesday, 13 January 2026		
SP-02 7:30 - 8:00 a.m.	Technical Paper Session Prep	Session Rooms
Authors presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute prep on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s).		
Tuesday, 13 January 2026		
PLN-02 8:00 - 9:00 a.m.	Plenary	Windermere Ballroom
Formula 1: Arbi Karapetian - Director Technology & Innovation		
Tuesday, 13 January 2026		
NW-03 9:00 - 9:30 a.m.	Networking Coffee Break	Regency Rotunda
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.		
Tuesday, 13 January 2026		
AMT-09	PSP/TSP II	Blue Spring I
Chaired by: J. LI, Metis Technology Solutions and A. PANDEY, University of South Florida		

9:30 a.m. AIAA-2026-0667 Fast Pressure-Sensitive Paint on Adhesive Film for Improved Test Preparation Efficiency C. Smith, S. Lindorfer, S. Edwards, M. Gragston, K. Mizell, The University of Tennessee Space Institute, Tullahoma, TN	9:50 a.m. AIAA-2026-0668 Separation of Vortex Shedding Tones and Broadband Signals using SPOD of uPSP Measurements in NASA Ames Wind Tunnel Test J. Li, Metis Technology Solutions, Moffett Field, CA; E. Lash, K. Lyons, D. Murakami, N. Roozeboom, M. Shaw-Lecerf, NASA Ames Research Center, Moffett Field, CA; et al.	10:10 a.m. AIAA-2026-0669 Application of DP-AA-PSP to Unsteady Shock Wave Phenomena Under Ultra-Short Exposure Conditions D. Numata, Y. Kawamata, T. Kawashima, Tokai Daigaku Kogakubu Daigakuin Kogaku Kenkyuka, Hiratsuka, Japan	10:30 a.m. AIAA-2026-0670 Event-Based Cameras for Data Acquisition in Time-Resolved Pressure-Sensitive Paint Measurements C. Klein, D. Yorita, U. Henne, B. Dimond, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	10:50 a.m. AIAA-2026-0671 A Study on Enhancing Luminescence Intensity of Dye-Painted Anodized-Aluminum PSP for Application To Unsteady Hypersonic Shock Wave Phenomena Y. Kawamata, T. Kawashima, D. Numata, Tokai Daigaku Kogakubu Daigakuin Kogaku Kenkyuka, Hiratsuka, Japan	

Tuesday, 13 January 2026

AMT-10	Recent Developments and Applications of Molecular Tagging Velocimetry for High-Speed Flow Measurements				Plaza Ballroom E
Chaired by: S. BIDWAI, Iowa State University and M. GRAGSTON, University of Tennessee					
9:30 a.m. 4354897 Invited: Tagging Velocimetry for Understanding Hypersonic Turbulence B. Segall, T. Keenoy, N. Parziale, Stevens Institute of Technology, Hoboken, NJ	9:50 a.m. 4346520 Invited: Nitric-Oxide Ionization Induced Flow Tagging and Imaging (NiiFTI) for High-Repetition-Rate Velocimetry in Hypersonic Flows B. Leonov, Texas A&M University, College Station, TX	10:10 a.m. 4344175 Invited: Recent Developments in FLEET Velocimetry D. Carter, Illinois Institute of Technology, Chicago, IL	10:30 a.m. 4354823 Invited: Hypersonic Wake Measurements using Molecular Tagging Velocimetry N. Rodrigues, NASA Langley Research Center, Hampton, VA	10:50 a.m. AIAA-2026-0672 Recent Developments and Applications of Molecular Tagging Velocimetry for High-Speed Flow Measurements D. Carter, Illinois Institute of Technology Armour College of Engineering, Chicago, IL; M. Gragston, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; B. Leonov, Texas A&M University, College Station, TX; N. Parziale, Stevens Institute of Technology, Hoboken, NJ; N. Rodrigues, NASA Langley Research Center, Hampton, VA	11:10 a.m. AIAA-2026-0673 Extending LaITER Molecular Tagging Velocimetry to Subatmospheric Pressure S. Bidwai, Auburn University, Auburn, AL; F. Reinbacher, Creare LLC, Hanover, NH; J. Michael, Auburn University, Auburn, AL
Tuesday, 13 January 2026					
AMT-11	Spectroscopic Techniques I				Blue Spring II
Chaired by: J. MURRAY, Sandia National Laboratories and H. HU, University of Alabama, Huntsville					
9:30 a.m. AIAA-2026-0674 Localized Photothermal Detection by Mach-Zehnder Interferometry R. Constantin, S. Feltis, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN	9:50 a.m. AIAA-2026-0675 Femtosecond Laser Absorption Spectroscopy for Simultaneous Temperature and NH Concentration Measurements in An Ammonia/Hydrogen Flame Z. Sun, Z. Chang, L. Ji, B. Mei, W. Wang, Y. Ju, Princeton University, Princeton, NJ	10:10 a.m. AIAA-2026-0676 Characterization of Magnetic Field in Hypersonic Flow Using Tunable Diode-Laser Absorption Spectroscopy T. Muramatsu, K. Shimamura, A. Kakami, Tokyo Toritsu Daigaku, Hachioji, Japan; H. Katsurayama, Tottori Daigaku, Tottori, Japan; D. Gildfind, The University of Queensland, Brisbane, Australia	10:30 a.m. AIAA-2026-0677 Laser Absorption Spectroscopy Measurements of Air Mass Flow Rate in a Model Scramjet Isolator via Ambient CO_2 D. Londrico, J. Gilvey, C. Goldenstein, Purdue University, West Lafayette, IN; M. Chern, R. Rockwell, C. Dedic, University of Virginia, Charlottesville, VA; et al.		
Tuesday, 13 January 2026					
APA-21	Airfoil/Wing/Configuration Aerodynamics I				Coral Spring II

Chaired by: T. CARVAJAL and B. RIDER, The Boeing Company					
9:30 a.m. AIAA-2026-0678 A Parametric Computational Fluid Dynamics Investigation of Classical Aircraft Winglet Performance H. Tummala, M. Ciarcia, J. Turner, Colorado State University, Fort Collins, CO	9:50 a.m. AIAA-2026-0679 Aerodynamic Effects of Thickness on 75° Delta Wings I. Metha, J. Shergill, P. Slaboch, University of Hartford College of Engineering Technology and Architecture, West Hartford, CT	10:10 a.m. AIAA-2026-0680 Effect of Aspect Ratio on Aerodynamic Characteristics of Wavy Leading-Edge Wing Y. Hyodo, M. Kashitani, M. Taguchi, Boei Daigakko, Yokosuka, Japan; T. Miyaguni, S. Nakao, Y. Miyazato, Kitakyushu Shiritsu Daigaku, Kitakyushu, Japan	10:30 a.m. AIAA-2026-0681 The Effect of Planform Shapes on the Evolution of Bound Circulation of a Finite Wing Near an Interface D. Polidoro, S. Bhattacharya, University of Central Florida College of Engineering and Computer Science, Orlando, FL		
Tuesday, 13 January 2026					
APA-22	Applied Computational Fluid Dynamics IV				Manatee Spring II
Chaired by: R. DJEDDI, Cadence Design Systems, Inc. and B. POMEROY, NASA Langley Research Center					
9:30 a.m. AIAA-2026-0682 Mixed Lagrangian-Eulerian Data Assimilation for Turbulent Channel Flows L. Gutierrez, Q. Wang, San Diego State University, San Diego, CA	9:50 a.m. AIAA-2026-0683 A Multi-Physics Simulation of Heat Transfer in Iced Airfoils under Realistic Icing Conditions F. Zabaleta, Stanford University Center for Turbulence Research, Stanford, CA; B. Bornhoft, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; S. Jain, Georgia Institute of Technology, Atlanta, GA; S. Bose, Cadence Design Systems Inc, San Jose, CA; P. Moin, Stanford University Center for Turbulence Research, Stanford, CA	10:10 a.m. AIAA-2026-0684 Gap, Stagger, and Offset in Distributed Lift Aircraft A. Rousseau, The Ohio State University, Columbus, OH; S. Sherer, M. Mongin, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	10:30 a.m. AIAA-2026-0685 Design and Development of Modular Cargo Casings for Lightweight Drones D. Sanjaya, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; K. Karman-Shoemake, Cadence Design Systems Inc, San Jose, CA; A. Lay, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; T. Burwell, University of Colorado Boulder, Boulder, CO; C. Bunterngsook, City University of Hong Kong, Hong Kong, Hong Kong; M. Sutton, Tennessee Tech University, Cookeville, TN; et al.		
Tuesday, 13 January 2026					
APA-25	Special Session: Applied Surrogate Modeling I				Manatee Spring I
Chaired by: N. HARIHARAN, HPCMP CREATE and P. BEKEMEYER, German Aerospace Center DLR e.V.					
9:30 a.m. AIAA-2026-0686 A Multi-Fidelity Double-Delta Wing Dataset and	9:50 a.m. AIAA-2026-0687 Physics-Conditioned Transformer for Surrogate	10:10 a.m. AIAA-2026-0688	10:30 a.m. AIAA-2026-0689 Comparison of Surrogate Model Architectures Using	10:50 a.m. AIAA-2026-0690 Feature Importance Analysis for Building an	

Empirical Scaling Laws for GNN-based Aerodynamic Field Surrogates Y. Shen, J. Alonso, Stanford University, Stanford, CA	Modelling of Aerofoil Pressure Distribution M. Anhichem, V. Tagarielli, Imperial College London, London, United Kingdom; F. Montomoli, Scuola Superiore Sant'Anna, Pisa, Italy; S. Timme, University of Liverpool, Liverpool, United Kingdom	Benchmarking Neural Networks Architecture for Airfoil Database A. Anand, M. Thakur, M. Safdar, K. Marepally, J. Baeder, University of Maryland, College Park, MD	NASA-CRM Benchmark Aerodynamic Dataset A. Way, A. Sescu, Mississippi State University, Mississippi State University, MS; I. Dettwiller, E. Hall, US Army Engineer Research and Development Center, Vicksburg, MS	Accurate and Efficient Surrogate Model for Airfoil Performance Prediction B. Thompson, R. Haehnel, J. Ross, L. Kubiak, U.S. Army Engineer Research and Development Center, Vicksburg, MS	

Tuesday, 13 January 2026

APA-27/FD-34	Special Session: HLFC Technology and Prediction Methods				Rock Spring I & II
Chaired by: P. VIJGEN and G. SCHRAUF					
9:30 a.m. 4354108 HLFC Technology: History, Status and Prospects (Part 1) P. Vijgen, Retired - SME/Consultant, Everett, WA; G. Schrauf, Retired - SME, Bremen, Germany	9:50 a.m. 4354239 HLFC Technology: History, Status and Prospects (Part 2) G. Schrauf, P. Vijgen, Retired - SME/Consultant, Everett, WA	10:10 a.m. AIAA-2026-1698 Advancements in Aerodynamic Shape Optimization with Hybrid Laminar Flow Control for Infinite Swept and Finite Wings at Cruise Conditions J. Pascual, D. Zingg, University of Toronto Institute for Aerospace Studies, Toronto, Canada	10:30 a.m. 4348581 Overview of Recent HLFC Experiments: Impedance Effect on Boundary Layer Stability F. Mery, Office National d'Etudes et de Recherches Aerospatiales, Toulouse, France	10:50 a.m. AIAA-2026-0691 Recent Wind Tunnel Tests With HLFC Flat Plate R. von Soldenhoff, H. Lüdeke, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany; K. Thamm, Technische Universitat Braunschweig, Brunswick, Germany	11:10 a.m. AIAA-2026-0692 Wind Tunnel Measurements of a Swept-Wing With Active Suction L. Fohlmeister, J. Kube, Technische Universitat Braunschweig, Brunswick, Germany; S. Helm, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; A. Prasannakumar, Technische Universitat Braunschweig, Brunswick, Germany; C. Hühne, C. Grabe, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; et al.

Tuesday, 13 January 2026

AS-05	Adaptive Metamaterials for Aerospace Applications				Bayhill 27
Chaired by: S. NASKAR, University of Southampton and R. GHOSH, University of Central Florida					
9:30 a.m. AIAA-2026-0695 Bioinspired Interlocking Cells - A Programmable and Assemblable Lightweight Materials Platform O. Bateniparvar, F. Farahmand, R. Ghosh, University of Central Florida, Orlando, FL	9:50 a.m. AIAA-2026-0696 Tuning Resonance Using Programmable Multistable Metastructures S. Srikanth, A. Arrieta, Purdue University, West Lafayette, IN	10:10 a.m. AIAA-2026-0697 Meta-structures for Aircraft Morphing Wing Design B. Sherrow, Embry-Riddle Aeronautical University, Daytona Beach, FL; A. Hassen, Oak Ridge National Laboratory, Oak Ridge, TN; S. Farhangdoust, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. 4356710 Broadband Stabilization of Flow Perturbations by a Coiled Phononic Subsurface With Multiple Structural Connectivity A. Harris, A. Kianfar, University of Colorado Boulder, Boulder, CO; D. Roca, D. Yago, Centre Internacional de Metodes Numerics a	10:50 a.m. AIAA-2026-0698 Self-Healing Constitutive Behaviour of Poroelastic Architected Matter: A New Regime in Smart Aerospace Structural Design S. Mondal, T. Mukhopadhyay, S. Naskar, University of Southampton Faculty of Engineering and Physical	

			l'Enginyeria, Barcelona, Spain; C. Brehm, University of Maryland, College Park, MD; M. Hussein, University of Colorado Boulder, Boulder, CO	Sciences, Southampton, United Kingdom	

Tuesday, 13 January 2026

ASE-01	Atmospheric and Space Environments I	Peacock Spring

Chaired by: J. ORTEGA, Missouri University of Science and Technology and R. BHAGWAT, Florida State University

9:30 a.m. AIAA-2026-0699 Atmospheric Waves Experiment (AWE) Thermal Control System Review of On-Orbit Thermal Performance M. Ralphs, M. Holt, Utah State University Space Dynamics Laboratory, North Logan, UT	9:50 a.m. AIAA-2026-0700 Mercury's Projected Magnetopause Positions in Proton Density-Velocity Space From 1996-2025 S. Carpenter, R. Zhang, MarsB.space, Cupertino, CA; B. Quo, Carnegie Mellon University, Pittsburgh, PA; E. Yu, M. Tang, E. Yu, MarsB.space, Cupertino, CA; et al.	10:10 a.m. AIAA-2026-0701 Spacecraft Speedometer: Enabling Precision Orbit Determination for Satellite Traffic Management in the GPS-Denied Regime C. Maldonado, K. Moran, P. Fernandes, K. Potter, R. Ulrich, Los Alamos National Laboratory, Los Alamos, NM	10:30 a.m. AIAA-2026-0702 A Semi-Empirical Model of the Heatshield Separation: Application to Titan E. Clutter, University of Central Florida, Orlando, FL; M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL; P. do Vale Pereira, University of Central Florida, Orlando, FL		

Tuesday, 13 January 2026

CFD2030-06	CFD on Large-Scale Meshes and Development of Testing Techniques	Silver Spring I

Chaired by: D. MAVRIPLIS, University of Wyoming

9:30 a.m. AIAA-2026-0703 Dynamic Adaptive Mesh Refinement for WMLES on Complex Configurations D. Mavriplis, Z. Yang, A. Kirby, Scientific Simulations LLC, Steamboat Springs, CO	9:50 a.m. AIAA-2026-0705 A GPU-Accelerated Sharp Interface Immersed Boundary Solver for Large Scale Flow Simulations S. Kumar, Johns Hopkins University, Baltimore, MD; J. Romero, NVIDIA Corp, Santa Clara, CA; J. Seo, Johns Hopkins University, Baltimore, MD; M. Fatica, NVIDIA Corp, Santa Clara, CA; R. Mittal, Johns Hopkins University, Baltimore, MD	10:10 a.m. AIAA-2026-0706 Aerodynamic Mesh-Adaptive Simulations of the Common Research Model - High Lift Wind Tunnel Experiment F. Alauzet, M. Maunoury, Institut National de Recherche en Sciences et Technologies du Numerique, Palaiseau, France; S. Mouton, ONERA Le Fauga-Mauzac, Mauzac, France	10:30 a.m. AIAA-2026-0707 Totally Analytical for All Re Pertinent CFD Vision 2030 Formulation A. Baker, J. Freels, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN		

Tuesday, 13 January 2026

DE-04	Designing with Intelligence: Exploring the Promise and Challenges of Generating Business Value	Bayhill 21

Chaired by: G. ROTH, Air Force Research Laboratory and I. MARKS, Northrop Grumman

The aerospace industry, as most industries today, continues to be heavily influenced by recent advances in Artificial Intelligence and Machine Learning – often at an exponential rate. AI/ML engineering applications now include a wide spectrum covering most everything from initial ideation and requirements formulation to product reuse, maintenance, and retirement. These technological advances hold potential to enhance the knowledge lifecycle, encompassing the capture, formation, retention, and reuse of information and models. By enabling engineers and their teams to readily access vast data repositories and available knowledge bases, AI/ML advancements power insights for future designs of products, processes, and other possibilities. The objective of this technical panel is to further discussions centered around the business value human-machine teaming brings to aerospace design, knowledge continuity, and the impact on training future team members with a design focus. Especially relevant for this panel is connecting previous plans and aspirations for achieving business value through leveraging technologies like AI/ML to bring about profitable human-machine teaming and integration with approaches like digital engineering and model-based systems engineering. **Panelists** 1. Anirban Chaudhuri - Research Scientist Oden Institute for Computational Engineering and Sciences, University of Texas at Austin 2. Timoleon Kipouros - Research Professor Department of Engineering, University of Cambridge 3. John Whittenbury - Research & Advanced Design Director, Northrop Grumman, AIAA associate fellow

Tuesday, 13 January 2026

DE-05/HMT-01/TF-03	Innovative Design and Decision-Making in Aerospace				Bayhill 23
Chaired by: J. WIDRICK, Northrop Grumman Space Systems and D. STAGGERS, Raytheon					
9:30 a.m. AIAA-2026-0712 Application of EEA to Test Policy Robustness for Orbital Debris Count Containment Using MOCAT-SSEM A. Ross, D. Hastings, Massachusetts Institute of Technology, Cambridge, MA	9:50 a.m. AIAA-2026-0709 Reducing the Induced Drag: Experimental Comparison of the Bell-Shaped and Elliptical Lift Distributions T. Sheridan, L. Chavez, C. Erskine, S. Ramos-Assam, M. Tanigaki, University of Michigan, Ann Arbor, MI	10:10 a.m. AIAA-2026-0710 Automated Satellite Servicing Engineering Toolkit (ASSET) J. Colangelo, S. McClure, D. Tansey, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-0711 User-centered Design of Unmanned Aerial System Ground Control Station Interface for Multi-Vehicle Operations X. Sun, K. Carmody, M. Namukasa, G. Peng, A. Wood, Florida Institute of Technology, Melbourne, FL; M. Politowicz, NASA Langley Research Center, Hampton, VA; et al.	10:50 a.m. AIAA-2026-0713 Unified Framework for Scalable Vertiport Allocation with Heterogeneous Fleet Sizing S. Veldhuizen, M. Ribeiro, L. Lima Periera, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	11:10 a.m. Interdisciplinary Capstone Course Pedagogy for Aerospace Design--Dr. Cameron Coates, Kennesaw State University

Tuesday, 13 January 2026

EAT-01	Thermal Management				Bayhill 31
Chaired by: J. NAIRUS, US Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0714 Thermal Architecture Trade Studies for Integrated Aircraft Design M. Miller, P. McCarthy, PC Krause and Associates, Indianapolis, IN; P. Abolmoali, S. Patnaik, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	9:50 a.m. AIAA-2026-0715 Reliability Challenges for Electrical and Electronics Components in Electrified Aircraft and Aerospace G. Montanari, S. Myneni, M. Shafiq, Florida State University, Tallahassee, FL	10:10 a.m. AIAA-2026-0716 Thermal Performance and Pre-Integration Tests of a Dual-Side Inverter and Stator for an Electric Propulsion Cooling System Y. Khakpour, A. Alahyari, R. Regan, K. Saviers, J. Tangudu, Raytheon Technologies Research Center, East Hartford, CT	10:30 a.m. AIAA-2026-0717 Feasibility Study on Liquid Hydrogen-Cooled Superconducting Motors for Zero-Emission Aviation S. Sakurai, Y. Yoshida, Akita Daigaku, Akita, Japan; T. Terauchi, S. Yoshinaga, H. Oyori, Kabushiki Kaisha IHI, Koto, Japan; n. amemiya, Kyoto Daigaku, Kyoto, Japan	10:50 a.m. AIAA-2026-0718 Experimental Validation of a Solid-State Thermal Management System of a MW-Scale Electric Aircraft R. Abdelmaksoud, C. Tarau, J. Diebold, K. Lee, Advanced Cooling Technologies Inc., Lancaster, PA; L. Rodriguez, R. Dyson, NASA Glenn Research Center, Cleveland, OH	11:10 a.m. AIAA-2026-0719 Thermal Performance of Passive Cooling in 2170 Cylindrical Battery Modules B. Stiehl, Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik, Neubiberg, Germany; N. Sorokina, W. Bliemetsrieder, Universitat der Bundeswehr Munchen, Neubiberg,

					Germany; X. Hu, ANSYS Inc, Canonsburg, PA; L. Zigan, Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik, Neubiberg, Germany

Tuesday, 13 January 2026

EDU-04	Insights for New Faculty Joining Aerospace Engineering Departments	Bayhill 33

Chaired by: D. GEBRE EGZIABHER

This session focused on the challenges and opportunities faced by new faculty entering aerospace engineering departments. The panel offered practical advice, shared experiences, and highlighted support mechanisms for those beginning academic careers in the discipline.

Tuesday, 13 January 2026

EXPL-05	Humans in Space Logistics, Medical issues, Bio-Research	Celebration 13

Chaired by: D. HOLLAND, Human Systems Integration and M. SCHMIDT, University of Maryland, College Park

9:30 a.m. AIAA-2026-0720 Decompression-Induced Microbubble Choking in Blood: Acoustic Softening, Sanal Flow Choking, and Spaceflight Implications V. Sanal Kumar, Amity University Noida, Noida, India; D. Panchal, R. Sharma, Y. Vohra, S. Rana, V. Dekkala, Amity Institute of Aerospace Engineering, Noida, India; et al.	9:50 a.m. AIAA-2026-0721 Analog Astronaut Omics Library Project: A Longitudinal, Multi-Fidelity Study of Analog Crews for Biopsychosocial and Preventative Countermeasures in I.C.E. Missions S. Jewell, MMAARS, Los Angeles, CA	10:10 a.m. AIAA-2026-0722 Issues Faced by Astronauts in the Field: The Mitigation of the Disruption of Circadian Rhythms D. Yu, A. Adepu, V. Hsu, Bergen County Academies, Hackensack, NJ			

Tuesday, 13 January 2026

FD-27	Session Honoring Dr. Roger Kimmel	Florida Ballroom C

Chaired by: K. GROOT, University of Wyoming and J. JEWELL, Purdue University

This session invites 10- to 20-minute talks to honor the retirement of Dr. Roger Kimmel. Although we intend to invite several speakers, up to same-day submissions to the primary contact are intended to be accepted in order to enable people to say something without explicit invitation.

Tuesday, 13 January 2026

FD-28/APA-23	Flow Control: Methods and Applications IV	Barrel Spring II

Chaired by: U. SASIDHARAN, Florida State University and C. HARRIS

9:30 a.m. AIAA-2026-0723 Chemical Impulse Actuation for	9:50 a.m. AIAA-2026-0724 Closed-Loop Dynamic Stall Control Using Plasma	10:10 a.m. AIAA-2026-0725 Feedforward and Model-Predictive Extensions to			

Aerodynamic Flow Control E. Benghiat, T. Crittenden, Georgia Institute of Technology, Atlanta, GA; W. Lin, S. Whalen, G. Young, Virginia Polytechnic Institute and State University, Blacksburg, VA; A. Glezer, Georgia Institute of Technology, Atlanta, GA	Actuation and Trailing Edge Pressure Sensing for Goman-Khrabrov State Prediction M. Mongin, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; D. Greenblatt, Technion Israel Institute of Technology, Haifa, Israel; M. McCrink, The Ohio State University, Columbus, OH	Feedback Control for Dynamic Force Objectives on an Airfoil S. Stahl, C. Barnes, D. Garmann, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH			
Tuesday, 13 January 2026					
FD-30	Instability and Transition IV				Coral Spring I
Chaired by: E. BENITEZ, Air Force Research Laboratory and A. BERGER, Florida State University					
9:30 a.m. AIAA-2026-0726 Response of a Transitioning Axisymmetric Hypersonic Boundary Layer to Sequential Laser-Surface Interactions S. Ledbetter, N. Webber, The University of Tennessee Space Institute, Tullahoma, TN; M. Gragston, The University of Tennessee Knoxville, Knoxville, TN	9:50 a.m. AIAA-2026-0727 Effects of Distributed-Roughness on Hypersonic Boundary Layer Instabilities C. Kumar, The Ohio State University, Columbus, OH; S. Kossery Prakasan, U. Sasidharan, Florida State University, Tallahassee, FL; D. Gaitonde, The Ohio State University, Columbus, OH	10:10 a.m. AIAA-2026-0728 Effects of Grooved Walls on High-Speed Boundary Layer Transition on a Slender Cone — Simulations and Experiments F. Omrane, C. Klauss, University of Maryland, College Park, MD; S. Miller, Purdue University, West Lafayette, IN; E. Cutright, Case Western Reserve University, Cleveland, OH; J. Jewell, Purdue University, West Lafayette, IN; B. Schmidt, Case Western Reserve University, Cleveland, OH; et al.	10:30 a.m. AIAA-2026-0729 Control of Laminar-to-Turbulent Transition in Hypersonic Boundary Layer with Porous Surface M. Jeong, S. Cho, S. Jee, Gwangju Institute of Science and Technology, Gwangju, South Korea		
Tuesday, 13 January 2026					
FD-32	Multiphase Flows: Numerical Methods				Plaza Ballroom F
Chaired by: S. JAIN, Georgia Institute of Technology and C. CHEN, Texas Tech University					
9:30 a.m. AIAA-2026-0730 A 3D Arbitrary Lagrangian Eulerian Adaptive Mesh Refinement Framework for Simulating Hypersonic Raindrop Impacts	9:50 a.m. AIAA-2026-0731 Strictly Entropy-Conserving Seven-Equation Based Keep Scheme Coupled With Phase-Field Method for	10:10 a.m. AIAA-2026-0732 Simulation Strategies for Compressible Multiphase Flows Using a Conservative Discretization Scheme	10:30 a.m. AIAA-2026-0733 A Robust Seven-Equation Formulation for Compressible Two-Phase Flows for High-Speed Applications	10:50 a.m. AIAA-2026-0734 A Sharp-Interface Approach Based on Ghost Fluid Method for Compressible Two-Phase Flows	11:10 a.m. AIAA-2026-0735 Numerical Simulations of Two-Phase Shear Layers A. Gopalakrishnan, L. Hatashita, S. Jain, Georgia Institute of Technology, Atlanta, GA

D. Eder, University of Hawai'i at Manoa, Honolulu, HI; C. Parisuana, Stanford University, Stanford, CA; A. Fisher, University of Hawai'i at Manoa, Honolulu, HI; P. Yip, T. Schwartzentruber, Regents of the University of Minnesota, Minneapolis, MN; A. Koniges, University of Hawai'i at Manoa, Honolulu, HI	Compressible Two-Phase Flows S. Yoshida, S. Kawai, S. Kawai, Tohoku Daigaku, Sendai, Japan	C. Lee, O. Desjardins, Cornell University, Ithaca, NY	L. Hatashita, T. Samanta, S. Jain, Georgia Institute of Technology, Atlanta, GA	H. Song, H. Hwang, P. Moin, Stanford University Center for Turbulence Research, Stanford, CA	

Tuesday, 13 January 2026

FD-33/APA-26	Special Session: BOLT-1B Flight Experiment III	Barrel Spring I

Chaired by: G. MCKIERNAN, Johns Hopkins University Applied Physics Laboratory

9:30 a.m. AIAA-2026-0736 Measurements of Boundary-Layer Transition During the BOLT-1B Flight Experiment G. McKiernan, D. Berridge, Z. Johnston, C. Butler, B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	9:50 a.m. AIAA-2026-0737 Hypersonic Boundary Layer Transition of BOLT-1B at Flight Conditions Z. Johnston, N. Bitter, G. McKiernan, B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	10:10 a.m. AIAA-2026-0738 Thermal and Structural Analysis of BOLT-1B Flight Geometry Including Joint Step Estimates C. Luo, R. Stevens, B. Wheaton, G. McKiernan, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	10:30 a.m. AIAA-2026-0739 Design and Measurements of the BOLT-1B Joint Steps G. McKiernan, T. Wolf, J. Warner, B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; S. Berry, NASA Langley Research Center, Hampton, VA; J. Brown, Analytical Mechanics Associates Inc, Hampton, VA	10:50 a.m. AIAA-2026-0740 BOLT-1B Roughness Side Flight Results S. Berry, F. Turbeville, J. Brown, NASA Langley Research Center, Hampton, VA; B. Wheaton, G. McKiernan, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	

Tuesday, 13 January 2026

FT-04	Beyond the Horizon: Pioneering Innovative Research in Aerospace Test and Evaluation at the DAF Test Pilot School	Celebration 3

Chaired by: R. KINARD, Air Force Research Lab

Innovations in Aerospace Research for Developmental Test, Discussions on the Future of Test, Development of Test & Evaluation Metrics for AI/ML technologies, Test Methods & Best Practices for overcoming the Valley of Death in transition of technology from R&D to T&E.

Tuesday, 13 January 2026

GNC-14	GNC Technical Plenary Lecture and Social	Orlando Ballroom N

Chaired by: P. SINGLA, Penn state University

Astrodynamics in the Cislunar Era: GNC Challenges and Opportunities
Professor Kathleen C. Howell
As evidenced by the Global Exploration Roadmap, international interest exists in a new era of exploration throughout the solar system. But there is also a local focus as the space domain in our vicinity encompasses near-Earth activities as well as plans for the region throughout the Earth-Moon neighborhood. The commercial sector also plays a role in support of further space exploration and any expansion likely depends upon building up a space economy. It is now apparent, however,

that accomplishment of such broad goals necessitates a multipurpose infrastructure in near-Earth and cislunar space as a prerequisite for ambitious long-term, sustainable scenarios for space exploration, exploitation and development. Thus, space infrastructure in the Earth-Moon neighborhood must enable a multitude of missions that can leverage it to satisfy critical needs such as transportation, communications, energy, water, and waste management; much effort is already directed toward in-space capabilities including assembly, manufacturing and servicing. All space sectors, i.e., civil, commercial, and national security, share common needs for space infrastructure, thus, such development should be designed for broad applicability, beyond a single mission, a single agency, or even a single country. Space infrastructure involves software as well as hardware capabilities, but it all requires a keen understanding of the pathways, that is a roadmap throughout cislunar space, i.e., an orbital infrastructure and 'cislunar highway system'. NASA, for example, is currently focused on positioning and maintaining a future inhabited facility in a long-term and relatively stable orbit in the lunar vicinity that can serve as a hub for other activities. Various other types of orbits are proposed for a broad range of services, e.g., propellant storage, supplies for lunar missions, as well as locations for space-based facilities to support future crewed and robotic translunar missions to destinations beyond the lunar orbit. A view into the challenges and opportunities in the development of an orbital infrastructure to support the next steps is offered.

Tuesday, 13 January 2026

GT-02	Advanced Facilities for Propulsion Testing				Rainbow Spring II
Chaired by: J. VOGEL, Pratt & Whitney and M. LYNCH, Amentum					
9:30 a.m. AIAA-2026-0741 Characterization of Ejector Effect-Induced Flow Dynamics in Semi-Enclosed Engine Test Cells J. Ruud, South Dakota School of Mines and Technology, Rapid City, SD; M. Oliver, NASA Glenn Research Center, Cleveland, OH; J. Thalakkottor, South Dakota School of Mines and Technology, Rapid City, SD	9:50 a.m. AIAA-2026-0742 An Overview of Testing Capabilities at SwRI's High Energy Annex Test (HEAT) Facility J. Thomas, S. Bartholomew, M. Rodriguez Chavez, J. Cole, S. Cunningham, A. Jones, Southwest Research Institute, San Antonio, TX; et al.	10:10 a.m. AIAA-2026-0743 HyperReact: Facility Capabilities and Configurations J. Sprunger, E. Fernandez, E. Alunno, N. Dreyer, K. Ahmed, University of Central Florida, Orlando, FL	10:30 a.m. AIAA-2026-0744 The H.A.D.E.S. Wind Tunnel Facility: Experimental Capabilities and Operating Envelope E. Fernandez, J. Sprunger, N. Dreyer, E. Alunno, T. Wagner, J. Villegas, University of Central Florida College of Engineering and Computer Science, Orlando, FL; et al.		

Tuesday, 13 January 2026

GT-04/APA-24/AMT-08/FD-31/CFD2030-07	Meet the Turbulence Modelers II	Plaza Ballroom D
Chaired by: R. DECKER, USAF Academy		

According to Feynman, "Turbulence is the most important unsolved problem of classical physics." How turbulence is modeled is a key aspect of many Computational Fluid Dynamics (CFD) processes: understanding how turbulence models should be used is central to the task of CFD validation. The language of turbulence modeling can become very mathematical, which can be a barrier toward its effective use. To help address this problem, this session will consist of a series of informal presentations made by Subject Matter Experts (SME) to outline the state-of-the-art for scale-resolving simulations (Hybrid LES) in a manner that may be understood by Turbulence Measurers (and others in the CFD stakeholder community, too). These presentations will be followed by facilitated interactive discussion.

Tuesday, 13 January 2026

GTE-05	Combustion Systems				Celebration 2
Chaired by: R. GHORPADE and M. MURUGAN					
9:30 a.m.	9:50 a.m.	10:10 a.m.			

AIAA-2026-0745 Design, Simulation and Virtual Certification Assessment of a Medium Range Aeroengine Combustor P. Vauquelin, Lunds Universitet, Lund, Sweden; J. Donndorf, F. Lo Presti, F. di Mare, Ruhr-Universitat Bochum, Bochum, Germany; X. Bai, C. Fureby, Lunds Universitet, Lund, Sweden	AIAA-2026-0748 Characteristics of Hydrogen-Piloted, Premixed Ammonia/Air Flames in a Swirl-Stabilized Gas Turbine Can Combustor: A Numerical Study M. Das Chaudhury, S. Ekkad, NC State University, Raleigh, NC	AIAA-2026-0749 Laminar Burning Speed Measurements of Ammonia/Natural Gas Mixtures in a Spherical Chamber at 5 atm J. Kim, A. Safdari, R. Rahman, S. Vasu, University of Central Florida College of Engineering and Computer Science, Orlando, FL			
Tuesday, 13 January 2026					
ICC-01	Mission Engineering and Decision Support in Command-and-Control (C2) Systems				Celebration 5
Chaired by: R. HILLIARD and A. RAZ, George Mason University					
9:30 a.m. AIAA-2026-0750 Interceptor Swarms for Naval Defense: A Simulation-Based Evaluation of Hierarchical Swarm-Vs.-Swarm Strategies T. Yuan, D. Lovell, K. Pister, University of California Berkeley, Berkeley, CA	9:50 a.m. AIAA-2026-0751 Distributed Command and Control Systems with Intent-based Networking: Mission Path Formation A. Talukder, S. Alam, George Mason University, Fairfax, VA; R. Hilliard, V. Omelko, Air Force Research Laboratory, Rome, NY; D. Maxwell, KadSci LLc, Fairfax, VA; A. Raz, George Mason University, Fairfax, VA	10:10 a.m. AIAA-2026-0752 Distributed Command and Control Systems with Intent-Based Networking: Effectiveness and Evaluation C. Vaseghi, George Mason University College of Engineering and Computing, Fairfax, VA; V. Omelko, R. Hilliard, Air Force Research Laboratory, Rome, NY; D. Maxwell, KaDSci, Fairfax, VA; A. Raz, George Mason University College of Engineering and Computing, Fairfax, VA	10:30 a.m. AIAA-2026-0753 Unsupervised Clustering of Solid Propellant Missile Systems Using Performance Parameters and Telemetry Data P. Evans, M. Carpenter, R. Hartfield, Auburn University, Auburn, AL		
Tuesday, 13 January 2026					
IS-07	Energy Aware and Energy Efficient Aircraft Autonomy				Celebration 16
Chaired by: J. BIRD, The University of Texas at El Paso and J. LANGELAAN, Pennsylvania State University					
9:30 a.m. AIAA-2026-0754 Integrating Optimal Control and Machine Learning for Energy-Efficient UAV Flight V. Dobrokhodov, M. Karpenko, K. Jones, J.	9:50 a.m. AIAA-2026-0755 *Digital Twin of Fixed-Wing Aircraft Powertrain Performance* M. Karpenko, V. Dobrokhodov, K. Jones, J. Herman, Naval Postgraduate School, Monterey, CA	10:10 a.m. AIAA-2026-0756 Simultaneously Learning UAS Aerodynamic and Propulsion Performance Models S. Perez-Rodriguez, J. Bird, The University of Texas at El	10:30 a.m. AIAA-2026-0757 Multi-Point Trajectory Optimization for Minimum-Energy UAV Routing Z. Michael, M. Karpenko, V. Dobrokhodov, Naval Postgraduate School, Monterey, CA	10:50 a.m. AIAA-2026-0758 Energy-Optimal Patterns of Dynamic Soaring in Nocturnal Low-Level Jets X. Chen, Shanghai Jiao Tong University School of Aeronautics and Astronautics, Shanghai,	11:10 a.m. AIAA-2026-0759 Trajectory Planning for Autonomous Dynamic Soaring Using Fuzzy Logic A. Zwenig, F. Holzapfel, Technische Universitat Munchen School of Engineering and Design,

Herman, Naval Postgraduate School, Monterey, CA		Paso College of Engineering, El Paso, TX		China; Z. Shen, University of Science and Technology of China Department of Modern Mechanics, Hefei, China; A. Zwenig, Technische Universitat Munchen, Munich, Germany; L. Liu, University of Science and Technology of China Department of Modern Mechanics, Hefei, China; F. Holzapfel, Technische Universitat Munchen, Munich, Germany; H. Hong, Shanghai Jiao Tong University School of Aeronautics and Astronautics, Shanghai, China	Munich, Germany; J. Ben-Asher, Technion Israel Institute of Technology, Department of Aerospace Engineering, Haifa, Israel

Tuesday, 13 January 2026

IS-36	Aircraft Certification Principles and Pathways for AI/ML Components	Celebration 4

Chaired by: N. NEOGI, NASA Langley Research Center

The intended goal of aircraft certification, including those aircraft with Artificial Intelligence and/or Machine Learning (AI/ML) components, is to provide assurance of safety: specifically, ensuring that systems perform their intended, safe functions and that unintended functions are highly improbable under all foreseeable operating conditions. In this session, we will get a broad set of perspectives from both industry representatives who currently have certification applications in the works and regulators such as the FAA. Issues such as principles underpinning the certification process, verification and validation (V&V), data quality, requirements traceability, leveraging existing industry standards and frameworks, and others will be explored through presentations and interactions with the attendees.

Tuesday, 13 January 2026

MAT-07	Materials Postdoc and R&D Early-Career Mentorship: Academia, Government, and Industry Insights	Bayhill 20

Chaired by: R. KOPP, ATA Engineering, Inc.

This panel brings together experienced professionals from academia, government labs, and industry to share guidance and insights for postdoctoral researchers and early-career scientists in materials R&D. Panelists will discuss career pathways, mentorship strategies, and the skills needed to thrive in diverse research environments. Topics will include transitioning from postdoc to permanent roles, navigating interdisciplinary projects, building professional networks, and aligning personal goals with institutional missions. Attendees will gain valuable perspectives on how to shape a successful and fulfilling career in the evolving landscape of materials science and engineering.

Tuesday, 13 January 2026

MDO-08	Special Session: MDO Benchmarks for Aircraft Design	Bayhill 17

Chaired by: G. KENNEDY, Georgia Institute of Technology and M. HENSON, Lockheed Martin Aeronautics

9:30 a.m. AIAA-2026-0760 Towards Incorporating Aerodynamic Flow Separation Constraints	9:50 a.m. AIAA-2026-0761 Aeroelastic Optimization Benchmark Investigations	10:10 a.m. AIAA-2026-0762 Comparisons of Results for a High-fidelity Aeroelastic	10:30 a.m. AIAA-2026-0763 Establishing a Joint Research-Industry MDO Benchmark Based on the	10:50 a.m. AIAA-2026-1009 Multi-Fidelity Gradient-based Approach to the Aerostructural	11:10 a.m. AIAA-2026-1010 Aerostructural Optimization of the Simple Transonic Wing

into Aero-Structural Wing Optimization F. Volle, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany; Ö. Petersson, Airbus Defence and Space GmbH, Manching, Germany; M. Widhalm, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany	Using ESP, FUN3D,TACS, and FUNtoFEM D. Sandler, University of Dayton Research Institute, Dayton, OH; N. Novotny, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	Optimization Benchmark Problem A. Gray, J. Martins, University of Michigan, Ann Arbor, MI; F. Volle, DLR Institute of Aerodynamics and Flow Technology, Braunschweig, Germany; B. Burke, S. Engelstad, G. Kennedy, Georgia Institute of Technology, Atlanta, GA	DLR-F25 Aircraft Configuration M. Abu-Zurayk, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany; A. DeBlois, Bombardier Inc, Montreal, Canada; J. Brezillon, Airbus SAS, Blagnac, France; B. Phillips, NASA Glenn Research Center, Cleveland, OH; Ö. Petersson, Airbus Defence and Space GmbH, Manching, Germany; R. Ilamas, Airbus SL, Getafe, Spain; et al.	Optimization Benchmark Problem M. Rumpfkeil, University of Dayton, Dayton, OH; P. Beran, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	Considering Buffet and Takeoff Performance A. Gray, J. Martins, University of Michigan, Ann Arbor, MI

Tuesday, 13 January 2026					
MVCE-04	High-Order Mesh Adaptation / Visualization and Knowledge Extraction of Large Ensembles of Simulation and Model Results				Bayhill 30
Chaired by: N. WYMAN, Cadence Design Systems, Inc. and N. BHAGAT, University of Dayton					
9:30 a.m. AIAA-2026-0764 Trust-Region Approaches for High-Order Node Movement D. Sanjaya, T. Scott, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; C. Ollivier-Gooch, The University of British Columbia, Vancouver, Canada	9:50 a.m. AIAA-2026-0765 High-Fidelity, Low-Dissipation/Symmetry-Preserving Numerical Scheme for Solving the Euler Equations with Unstructured, Metric-Based Mesh Adaptation K. Doetsch, R. Glasby, J. Erwin, N. Nutter, W. Shoemake, D. Stefanski, Oak Ridge National Laboratory, Oak Ridge, TN; et al.	10:10 a.m. 4346306 Cloud-based Ensemble Analysis and Physics AI M. Larsen, W. Usher, J. Alonso, Luminary Cloud, San Mateo, CA	10:30 a.m. AIAA-2026-0766 Catalyst: Expanding In Situ Analysis and Visualization Workflows forExascale Computing J. Lee, C. Wetterer-Nelson, C. Tsolakis, B. Geveci, Kitware Inc, Clifton Park, NY		

Tuesday, 13 January 2026					
NDA-01/MDO-07	Design Under Uncertainty				Bayhill 26
Chaired by: T. WEST, NASA Langley Research Center					
9:30 a.m. AIAA-2026-0767 A Novel High-Dimensional Gradient-Based Robust Optimization Framework Applied to Adjoint-Based CFD Applications	9:50 a.m. AIAA-2026-0768 A Stochastic Framework for Multiaxial Fatigue Analysis of Composite Structures Under Variable Amplitude Loading	10:10 a.m. AIAA-2026-0769 Uncertainty Quantification of Homogenization-Based Micromechanical Properties of Fiber Reinforced Composites	10:30 a.m. AIAA-2026-0770 Efficient Uncertainty Quantification for Aircraft Conceptual Design Using Polynomial Chaos Expansion	10:50 a.m. AIAA-2026-0771 Global Sensitivity Analysis of Discontinuous Responses Using Domain Decomposition M. Thapa, Clarkson University, Potsdam, NY; S. Mulani, The	

I. Fadli, J. Brezillon, Airbus Operations SAS, Toulouse, France; J. Jouhaud, CERFACS, Toulouse, France	J. Pilakkadan, M. Thapa, S. Mulani, The University of Alabama System, Tuscaloosa, AL	T. Senhaji, M. Thapa, S. Mulani, The University of Alabama, Tuscaloosa, AL	C. Campbell, S. Mulani, M. Thapa, S. Olcmen, The University of Alabama, Tuscaloosa, AL	University of Alabama, Tuscaloosa, AL	
Tuesday, 13 January 2026					
NFF-01	Nuclear Thermal Rockets				Celebration 6
Chaired by: J. CASTRO, L3Harris and G. MEHOLIC, The Aerospace Corporation					
9:30 a.m. AIAA-2026-0772 A Numerical Framework for Analyzing the Multidimensional Effects of Inhomogeneous Heating in Nuclear Thermal Propulsion Reactors V. Barbato, Universita degli Studi di Roma La Sapienza, Rome, Italy; M. Pizzarelli, Agenzia Spaziale Italiana, Rome, Italy; F. Nasuti, Universita degli Studi di Roma La Sapienza, Rome, Italy	9:50 a.m. AIAA-2026-0773 An Engineering-Level Model of Bubble Dynamics in Centrifugal Nuclear Thermal Propulsion P. Drakorn na Ayuthya, J. Cassibry, The University of Alabama in Huntsville, Huntsville, AL	10:10 a.m. AIAA-2026-0774 Shutdown Simulation of the Centrifugal Nuclear Thermal Rocket T. Hampson, Massachusetts Institute of Technology, Cambridge, MA; D. Santana, M. Schroll, The University of Alabama in Huntsville, Huntsville, AL; K. Shirvan, Massachusetts Institute of Technology, Cambridge, MA	10:30 a.m. AIAA-2026-0775 Material Development for the Novel Propulsion Systems mainly within Plasma Systems for Beryllium and Tungsten A. Kulkarni , Ministry of Defence, Govt of India, Pune, India		
Tuesday, 13 January 2026					
OPS-04	Space Debris, Cybersecurity, and Automation in Space Operations in Support				Celebration 1
Chaired by: K. WALTERS, Johns Hopkins University Applied Physics Laboratory					
9:30 a.m. AIAA-2026-0776 A Proposed Taxonomy for Space Policy and Operations Applied to Orbital Debris Mitigation N. Puri, T. Jonchay, D. Mavris, Georgia Institute of Technology, Atlanta, GA	9:50 a.m. AIAA-2026-0777 Threats to Space Mission Command Integrity: A Systemic Analysis of CCSDS Protocol With POC N. Burapanonte, Independent Researcher, Bangkok, Thailand	10:10 a.m. AIAA-2026-0778 Design Space Exploration of a Geostationary Satellite Refueling Architecture Enabling Dynamic Space Operations D. Larrowe, Z. Brinsfield, A. Payan, D. Mavris, Georgia Institute of Technology, Atlanta, GA			
Tuesday, 13 January 2026					
PC-09	Propulsion and Energy Group Technical Plenary: Data Assimilation and Data-Informed Predictions in Propulsion				Florida Ballroom B
Chaired by: R. MUNIPALLI, Air Force Research Laboratory and B. RANKIN, Air Force Research Laboratory					

Speakers: Nathan Kutz (University of Washington), Matthias Ihme (Stanford University), Jeff Eldredge (University of California Los Angeles) Data Assimilation (DA) has grown into a vibrant, multifaceted field fostered by many decades of research pertaining to numerical weather prediction. The field forms an intersection region of machine learning, physics based simulation, and experimental methods – all in pursuit of the best informed estimate of the state of a system. In recent times, great strides are being made in extending DA to aerodynamics and propulsion, improving prediction outcomes by informing model data with experimental observations. This session will begin with a plenary lecture by Prof. Nathan Kutz (UW), followed by a panel discussion including Profs. Nathan Kutz, Matthias Ihme (Stanford), and Jeffrey Eldredge (UCLA). Prof. Kutz's lecture will cover recent research highlights in applying DA to the rotating detonation engine. The panel will field wide ranging questions about the nature of data assimilation, its benefits, recent research, and future prospects in compressible gas dynamics, combustion, and propulsion. Sensing is a universal task in science and engineering. Downstream tasks from sensing include learning dynamical models, inferring full state estimates of a system (system identification), control decisions, data assimilation and forecasting. These tasks are exceptionally challenging to achieve with limited sensors, noisy measurements, and corrupt or missing data. Existing techniques typically use current (static) sensor measurements to perform such tasks and require principled sensor placement or an abundance of randomly placed sensors. In contrast, we propose a SHallow REcurrent Decoder (SHRED) neural network structure which incorporates (i) a recurrent neural network (LSTM) to learn a latent representation of the temporal dynamics of the sensors, and (ii) a shallow decoder that learns a mapping between this latent representation and the high-dimensional state space. By explicitly accounting for the time-history, or trajectory, of the sensor measurements, SHRED enables accurate reconstructions with far fewer sensors, outperforms existing techniques when more measurements are available, and is agnostic towards sensor placement. In addition, it allows for a way to close the SIM2REAL gap by updating the model with real-world measurements when training is done on simulations. This is demonstrated in the context of the multi scale rotating detonation engine dynamics, demonstrating that reality and simulations can be brought into close relationship with the SHRED architecture. **Disciplines:** Propulsion and Energy Group (PEG), Propellants and Combustion (PC), Pressure Gain Combustion (PGC), Gas Turbine Engines (GTE), Liquid Propulsion (LP), High Speed Air Breathing Propulsion (HSABP), Electric Propulsion (EP)

Tuesday, 13 January 2026

PDL-04	Plasma and Laser Diagnostics II				Rainbow Spring I
Chaired by: C. LIMBACH, University of Michigan and S. BANE, Purdue University, School of Aeronautics and Astronautics					
9:30 a.m. AIAA-2026-0779 Investigation of Time-Delayed Probing of Ultrafast Laser Generated Plasma Gratings Using Combined 1D1V Kinetic Modeling and Light Scattering Simulations B. Hassan, C. Limbach, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-0780 Constructive Coherent Microwave Scattering for Studying Femtosecond Filamentation and Tabulating Photoionization Rates K. Reindersma, N. Babusis, A. Patel, Purdue University, West Lafayette, IN; R. Jutas, Technische Universitat Wien, Vienna, Austria; Z. Manzoor, Purdue University, West Lafayette, IN; M. Shneider, Princeton University, Princeton, NJ; et al.	10:10 a.m. AIAA-2026-0781 Electric Field Comparison Between RF and ns-Pulsed Plasmas at the Plasma-Liquid Interface Using Electric Field-Induced Second Harmonic Generation (EFISH) W. O'Brien, Texas A&M University, College Station, TX; E. Oshin, C. Jiang, Old Dominion University, Norfolk, VA; A. Dogariu, Texas A&M University, College Station, TX	10:30 a.m. AIAA-2026-0782 Absolute Spectral Intensities From Near-Surface Measurements in Air Plasma R. Herrmann-Stanzel, I. Ballou, D. Fletcher, University of Vermont, Burlington, VT	10:50 a.m. AIAA-2026-0783 Investigation of Efficiencies for Laser-Sustained Plasma in Argon Seeded with UV-Absorbing Gas S. Riel, A. Côté, G. Dubé, McGill University, Montréal, Canada; E. Duplay, Technische Universiteit Delft, Delft, The Netherlands; J. Loiseau, Royal Military College of Canada, Kingston, Canada; A. Higgins, McGill University, Montréal, Canada	

Tuesday, 13 January 2026

SAR-04	Experimental Testing of Space Robotics Research and Development				Florida Ballroom A
Chaired by: S. HASSANAIN, Home and C. GUARINIELLO, Purdue University					
9:30 a.m. AIAA-2026-0785	9:50 a.m. AIAA-2026-0786	10:10 a.m. AIAA-2026-0787			

Design of Preloaded SMA-Driven Soft Robotic Limb With Onboard Thermal Sensing G. MacRae, J. Pastizzo, K. Andreyeva, J. Piatt, K. Guevara Hernandez, D. Barnhart, University of Southern California, Los Angeles, CA	Mass-Moment Parameter Estimation and Control of Reconfiguring Spacecraft in Attitude Testbed O. Padun, Y. Lu, Worcester Polytechnic Institute, Worcester, MA	Design, Assembly, and Testing of Compliant Spring Tires for Lunar Rovers M. Lu, T. Brown, W. Reid, A. Bouton, H. Nayar, NASA, Washington, D.C.			
Tuesday, 13 January 2026					
SATS-02	Software, Simulations, and Constellations				Celebration 9
Chaired by: S. GOH, National University of Singapore and M. SWARTWOUT, Saint Louis University					
9:30 a.m. AIAA-2026-0788 Multi-Label Fault Detection in Small Satellite ADCS Using Hybrid Random Forest and LSTM Algorithm B. Wang, Yanshan University, Qinhuangdao, China; Y. Zhou, Nanjing University of Science and Technology, Nanjing, China; S. Yuqi, Harbin Institute of Technology Shenzhen, Shenzhen, China; S. Goh, A. Rai, National University of Singapore, Singapore, Singapore	9:50 a.m. AIAA-2026-0789 Reliable Onboard 3D Reconstruction of Unknown Spacecraft via Data Acquisition Guided by Orbital Geometry and Lighting A. Issitt, Florida Institute of Technology, Melbourne, FL; T. Mahendrakar, Technetium Engineering, LLC, Melbourne, FL; R. White, Florida Institute of Technology, Melbourne, FL	10:10 a.m. AIAA-2026-0790 QuickSAT/SHERLOCK, an AI Architecture For Vehicle Health Management, Fault Detection and Fault Management for Small Satellites A. Santangelo, Sci_Zone Inc, Holland, MI	10:30 a.m. AIAA-2026-0791 Optimization Framework for Satellite Constellation Pattern Design Considering Deployment B. Gwon, J. Ahn, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	10:50 a.m. AIAA-2026-0792 Cis-Lunar Object Detection Using Earth-Orbiting Microsatellites M. De Guzman, Universita degli Studi di Roma La Sapienza, Rome, Italy; P. Smith, University of Arizona, Tucson, AZ; G. Fedeli, Universita degli Studi di Roma La Sapienza, Rome, Italy; F. Curti, University of Arizona, Tucson, AZ	11:10 a.m. AIAA-2026-0793 Advancing the SmallSat Digital Twin for Active Debris Removal Simulations S. Zemerick, M. Suder, TMC Technologies of WV Corp., Fairmont, WV; D. Amato, D. Martinelli, H. Lee, West Virginia University, Morgantown, WV
Tuesday, 13 January 2026					
SCS-04/STR-10/SFM-09/EDU-05	In-Space Servicing, Assembly, and Manufacturing (ISAM) II				Bayhill 29
Chaired by: J. ROME, The Aerospace Corporation					
9:30 a.m. AIAA-2026-0794 Designing a Snap-Fit Connection Appropriate for In-Space Servicing, Assembly and Manufacturing (ISAM) E. Matteson, Cornell University, Ithaca, NY; J. Rome, The Aerospace Corporation, El Segundo, CA; A. Pustinger, D. Espalin, The	9:50 a.m. AIAA-2026-0795 Project Daedalus: A Spacecraft Concept for In-Orbit Manufacturing, Assembly, and Inspection of Aluminum Structures T. Vinod, E. Ashley, S. Byun, J. Drake, T. McEvoy, D. Ward, Virginia Polytechnic Institute and State University College	10:10 a.m. AIAA-2026-0796 Conceptual Design for In-Orbit Polymer Recycler V. Goyal, Lockheed Martin Aeronautics Company, Marietta, GA; D. Buitrago, J. Muñoz, Kennesaw State University, Kennesaw, GA	10:30 a.m. AIAA-2026-0797 An Overview of Standards Development to Support Servicing Mobility and Logistics V. Goyal, R. Birk, S. Zirbel, The Aerospace Corporation, El Segundo, CA	10:50 a.m. AIAA-2026-0798 Conceptual Design for Assembly and Storage Platform for In-Orbit Relay Equipment V. Goyal, Lockheed Martin Aeronautics Company, Marietta, GA; D. Abair, Kennesaw State University, Marietta, GA	

University of Texas at El Paso, El Paso, TX; A. Sivess, The Aerospace Corporation, El Segundo, CA	of Engineering, Blacksburg, VA; et al.				
Tuesday, 13 January 2026					
SCS-05	Spacecraft Booms and Trusses				Bayhill 24
Chaired by: F. PALMERI, "Sapienza", University of Rome and T. MITCHELL, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-0799 Bending Stiffness and Strength Testing and Simulation for a Deployable Solar Sail Boom J. Tersigni, J. Tercovich, H. Nakanishi, F. Lopez Jimenez, University of Colorado Boulder, Boulder, CO; D. Browning, J. Sorensen, Opterus R&D, Loveland, CO; et al.	9:50 a.m. AIAA-2026-0800 Thermo-Elastic Behavior of Pristine and Degraded Bistable Ultrathin Composite Booms in Low-Earth Orbits C. Zarader, X. Ning, University of Illinois Urbana-Champaign, Urbana, IL	10:10 a.m. AIAA-2026-0801 Continuum Modeling for Deployable Space Trusses with Collapsible Tubular Masts D. Geiger, C. Nash, R. Ghosh, A. Lee, NC State University, Raleigh, NC; J. Fernandez, NASA Langley Research Center, Hampton, VA	10:30 a.m. AIAA-2026-0802 Performance Comparison of Flattenable and Rollable Booms T. Murphey, D. Hunt, D. Browning, M. Folkers, Opterus, Loveland, CO	10:50 a.m. AIAA-2026-0803 Input Load Estimation for Bistable Spacecraft Booms using System Identification D. Mhadgut, A. Phoenix, S. Gugercin, S. Kenyon, Virginia Polytechnic Institute and State University, Blacksburg, VA; J. Black, Northrop Grumman Corp, Chicago, IL	
Tuesday, 13 January 2026					
SD-07/FD-29	Fluid-Structure Interaction I				Bayhill 18
Chaired by: E. MELLQUIST, The Aerospace Corporation					
9:30 a.m. AIAA-2026-0804 Multi-Output Auto-Regressive Modeling of Transonic Unsteady Aerodynamics R. Efrati, D. Raveh, Technion Israel Institute of Technology, Haifa, Israel	9:50 a.m. AIAA-2026-0805 Coupled Aeroelastic Simulation of Aircraft Tail Buffeting Under Dynamic Maneuvering Conditions M. Rajanna, J. Lua, Global Engineering & Materials Inc, Princeton, NJ; B. Donaldson, N. Phan, Naval Air Systems Command, Patuxent River, MD; M. Hsu, Iowa State University of Science and Technology, Ames, IA	10:10 a.m. AIAA-2026-0806 Ground Structure – Impinging Jet Interaction S. V. S., L. Anzueto, C. Harper, K. Wilson, FAMU-FSU College of Engineering, Tallahassee, FL; A. Heda, Purdue University, West Lafayette, IN; J. Gustavsson, FAMU-FSU College of Engineering, Tallahassee, FL; et al.	10:30 a.m. AIAA-2026-0807 Fluid–Structure Interaction Modeling of Sloshing Dynamics with Flexible Baffles: Design Insights for Aerospace Applications C. Biagioli, F. Serraino, V. Belardi, F. Vivio, Universita degli Studi di Roma Tor Vergata, Rome, Italy		
Tuesday, 13 January 2026					
SD-08	Flutter and Limit-Cycle Oscillations I				Bayhill 22
Chaired by: C. MARSHALL, Gulfstream Aerospace Corporation and C. RISO, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-0808	9:50 a.m. AIAA-2026-0810	10:10 a.m. AIAA-2026-0811	10:30 a.m. AIAA-2026-0812	10:50 a.m. AIAA-2026-0813	11:10 a.m.

Two-Dimensional Aeroelastic Limit Cycle Oscillation Computations for the NASA Benchmark Supercritical Wing Configuration J. Thomas, E. Dowell, Duke University, Durham, NC	A Physical Explanation of Coupled-Mode Flutter Using Forced-Response Networks K. Patel, D. Lefas, University of Cambridge, Cambridge, United Kingdom	Transonic Aeroelastic Flutter Computations With Mesh Adaptation B. Stanford, S. Massey, K. Jacobson, P. Chwalowski, NASA Langley Research Center, Hampton, VA	Sparse Identification of Aeroelastic Reduced-Order Models in Transonic Buffeting Flow M. Candon, P. Marzocca, RMIT University, Melbourne, Australia; E. Dowell, Duke University, Durham, NC	Transonic Aeroelastic Analysis of the X-59 Aircraft Using FUN3D W. Silva, M. Sanetrik, W. Li, S. Lung, B. Park, NASA, Hampton, VA	Transonic Flutter Dip in a Twin-Engine Airplane (Paper - Devesh Kumar, Alex Scalabrin, Eduardo Rodrigues, Sascha Ruegamer)
Tuesday, 13 January 2026					
SD-09	Testing Methodologies and Other Topics in Structural Dynamics				Bayhill 28
Chaired by: V. BABUSKA, Sandia National Laboratories and R. RUSOVICI, NASA					
9:30 a.m. AIAA-2026-0814 Damage Detection for Composite Panels by Frequency-Domain Reverse-Time Migration J. Day, W. Su, The University of Alabama, Tuscaloosa, AL	9:50 a.m. AIAA-2026-0815 Damping Modulation of Dampened Kapton Surfaces S. Esteban, J. Wilson, J. Kauffman, University of Central Florida, Orlando, FL; E. Alif, A. Dickerson, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN	10:10 a.m. AIAA-2026-0816 Predicting the In-Flight Shape of an Aircraft Wing I. Gal, J. Mottershead, S. Fichera, University of Liverpool Faculty of Science and Engineering, Liverpool, United Kingdom; F. Gambioli, Airbus Group SE, Filton, United Kingdom; E. Menga, I. Isnardi, Airbus Group SE, Madrid, Spain	10:30 a.m. AIAA-2026-0817 Very Flexible Aircraft Damping Characterization and the Support System Impact During Ground Vibration Testing B. Sharqi, C. Cesnik, University of Michigan, Ann Arbor, MI	10:50 a.m. AIAA-2026-0818 Design of Elastic Wind Tunnel Models via Level-Set Topology Optimization of Eigenvalue Ratios and Compliance E. Nakagawa, T. Yokozeki, Tokyo Daigaku Daigakuin Kogakukei Kenkyuka Koku Uchu Kogaku Senko, Bunkyo, Japan; N. Tsushima, Kyushu Daigaku Kogakubu Daigakuin Kogakufu, Fukuoka, Japan	
Tuesday, 13 January 2026					
SE-05	Systems Engineering Theory and Applications				Bayhill 25
Chaired by: H. KANNAN, The University of Alabama in Huntsville					
9:30 a.m. AIAA-2026-0820 A Novel Acquisition and Mission Assurance Strategy for Launching Higher Risk Missions for National Security Space Launch V. Goyal, J. Wongchote, J. Gomez, The Aerospace Corporation, El Segundo, CA	9:50 a.m. AIAA-2026-0821 A Data-Driven Model-Based Examination of Mid-Size Lunar Cargo Lander Designs W. Wautlet, M. Sandford, K. Weed, D. Waller, BAE Systems Space & Mission Systems Inc, Broomfield, CO	10:10 a.m. AIAA-2026-0822 *Leveraging Information Theory & Graph Theory to Monitor Communication Networks in Team Settings* C. Sessions, B. Watson, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-0823 Challenges of Retrofitting Existing Aircraft With Next-Generation Powertrains M. Guidotti, S. Shekar, A. Molloy, D. Mehta, A. Cipriani, A. Kolar, University of Illinois Urbana-Champaign, Urbana, IL; et al.		
Tuesday, 13 January 2026					
SEN-03	Applications of Sensing and Information Fusion				Celebration 12
Chaired by: E. CUNEYDI, Lockheed Martin Aeronautics					

9:30 a.m. AIAA-2026-0824 Autonomous Aerial Search Using a Particle Filter and Satellite Imagery M. Wanta, J. Steckenrider, J. Bluman, J. Dorta, United States Military Academy at West Point, West Point, NY	9:50 a.m. AIAA-2026-0825 Cooperative Orbit Determination for Trusted, Autonomous, and Decentralised Satellite Operations B. Probert, R. Clark, University of Strathclyde, Glasgow, United Kingdom; E. Blasch, Air Force Office of Scientific Research, Arlington, VA; M. Macdonald, University of Strathclyde, Glasgow, United Kingdom	10:10 a.m. AIAA-2026-0826 Sensitivity of Adversarial Multi-agent Reinforcement Learning to Operational Sensing Challenges J. Krometis, S. Singh, R. Vuthuri, J. Kauffman, A. Kyer, D. Sobien, Virginia Polytechnic Institute and State University, Blacksburg, VA	10:30 a.m. AIAA-2026-0827 Multi-Satellite Based Passive Localization of Spaceborne Cooperative RF Emitters: Simulation Framework and Impact of Constellation Geometry M. Palescandolo, R. Opromolla, G. Fasano, Universita degli Studi di Napoli Federico II, Naples, Italy; D. Pascale, P. Martufi, C. Ciancarelli, Thales Alenia Space Italia, Roma, Italy	10:50 a.m. AIAA-2026-0828 Improving Aircraft Protection During Airport Ground Operations With Low SWaP Radar Sensing F. Vitiello, P. Veneruso, E. Miccio, F. Causa, R. Opromolla, G. Fasano, Universita degli Studi di Napoli Federico II, Napoli, Italy	11:10 a.m. AIAA-2026-0196 Vision Based Navigation System For An Aircraft in Approach Phase B. Kartikeyan, Boeing Commercial Airplanes, Everett, WA; J. Steck, Wichita State University, Wichita, KS
Tuesday, 13 January 2026					
SFM-08	Atmospheric Entry Guidance and Control				Plaza Ballroom J
Chaired by: A. DUTTA, Wichita State University					
9:30 a.m. AIAA-2026-0829 Uranus Orbiter Guidance: Comparing Numerical Predictive and Machine Learning Approaches for Aerocapture C. Ghiugan, M. Staber, D. Lee, Iowa State University of Science and Technology College of Engineering, Ames, IA	9:50 a.m. AIAA-2026-0830 Robustness Analysis of Huygens Atmospheric Entry Flight Under Uncertain Initial Conditions J. Robens, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Wessling-Oberpfaffenhofen, Germany; F. Biertümpfel, H. Pfifer, Technische Universitat Dresden, Dresden, Germany	10:10 a.m. AIAA-2026-0831 On the Pointing-Constrained Fuel-Optimal Powered Descent Problem N. Nurre, E. Taheri, Auburn University, Auburn, AL	10:30 a.m. AIAA-2026-0832 A Low Atmospheric Density Multiple Aero-Assisted Orbit Transfers Method for Orbit Vehicle H. Sun, Balance Flight Intelligent Technology (Nanjing) Co., Ltd, Nanjing, China; M. Wang, S. Zhang, Beihang University, Beijing, China		
Tuesday, 13 January 2026					
SFM-10	Trajectory/Mission/Maneuver Design and Optimization I				Plaza Ballroom I
Chaired by: C. SHORT, Ansys					
9:30 a.m. AIAA-2026-0833 Robust Interplanetary Trajectory Design for Missed Thrust Events using Reachable Sets with Solar Electric Propulsion and Solar Sail	9:50 a.m. AIAA-2026-0834 Enhanced Low-Thrust Rendezvous with Augmented Q-laws Using Advance Phasing and Proportional-Derivative Control M. Yin, C. Damaren, University of Toronto Institute	10:10 a.m. AIAA-2026-0835 Station-Keeping Approach for Extremely Low Lunar Orbits with Solar Sailing J. Yarndley, The University of Auckland, Auckland, New Zealand; G. Lantoine, Jet Propulsion Laboratory, Pasadena, CA; R. Armellin,	10:30 a.m. AIAA-2026-0633 Model-Free and Real-Time Attitude Stabilization of Satellites and Spacecraft via Extremum Seeking for Vibrational Stabilization Approach R. Palanikumar, A. Elgohary, S. Eisa, University of Cincinnati	10:50 a.m. AIAA-2026-1076 *A Priori* Time of Flight Estimation for the Q-law M. Yin, C. Damaren, University of Toronto Institute for Aerospace Studies, Toronto, Canada	11:10 a.m. AIAA-2026-1077 Mission Design for Deep Space Constellation Deployed on Asteroid Flyby Cyclers N. Ozaki, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan; N. Guy, Fuseki Inc., Tokyo, Japan; K. Oguri,

Y. Arai, T. Chujo, Tokyo Kagaku Daigaku, Meguro, Japan	for Aerospace Studies, Toronto, Canada	The University of Auckland, Auckland, New Zealand	College of Engineering and Applied Science, Cincinnati, OH		Purdue University, West Lafayette, IN
Tuesday, 13 January 2026					
SOF-04	Modern Avionics Architecture and Software Development				Celebration 15
Chaired by: S. LINCOLN, Lockheed Martin Aeronautics and C. MOURNING, Ohio University					
9:30 a.m. AIAA-2026-0836 RISC-V Soft-IP Cores for Custom Avionics System Design P. Noeldeke, T. Winkler, A. Dikarew-Martini, U. Durak, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany; G. Thieu, J. Homann, Technische Universitat Braunschweig, Brunswick, Germany; et al.	9:50 a.m. 4355591 The Engineer Augmented: Integrating AI Agents into Aerospace Development Workflows B. Vetere, Navier AI, San Francisco, CA	10:10 a.m. AIAA-2026-0837 Implementing Rust Language Algorithms for Image Processing E. Lam, C. Leung, I. Khan, H. Nguyen, J. Teano, N. Dzul Chi, RTX Corporation, El Segundo, CA	10:30 a.m. AIAA-2026-0838 Investigating Requirements-Based Test Case Generation With LLMs in Aerospace Applications K. Mendez, J. Lopez, Avionyx, Heredia, Costa Rica		
Tuesday, 13 January 2026					
STR-09	Buckling and Stability of Air and Space Structures				Bayhill 19
Chaired by: B. GAJUS, L3Harris and M. WOLFF, Gulfstream Aerospace Corporation					
9:30 a.m. AIAA-2026-0839 Surrogate-Based Structural Optimization of Composite Shell Cylinder for Launch Vehicles K. Miyoshi, Tokyo Daigaku, Bunkyo, Japan; R. Aoki, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan; N. Nakagawa, N. Akimoto, S. Muramatsu, Innovative Space Carrier Inc., Chuo, Japan; T. Yokozeki, Tokyo Daigaku, Bunkyo, Japan	9:50 a.m. AIAA-2026-0840 Developing a Multiscale Reduced-Order Model for Non-Linear Buckling of Auxetic Sandwich Beams Using Variational Asymptotic Method P. Attada, A. Ravichandran, Indian Institute of Science, Bengaluru, India; V. Sunthareswaran, City University of London, London, United Kingdom; D. Harursampath, Indian Institute of Science, Bengaluru, India; S. Ponnusami, City University of London, London, United Kingdom	10:10 a.m. AIAA-2026-0842 Buckling Optimization of Stiffness Varied Isotropic, Anisotropic, and Sandwich Panels S. Amgai, P. Davidson, The University of Texas at Arlington, Arlington, TX	10:30 a.m. AIAA-2026-0843 Design of a Bi-stable Dome for Lightweight Modular Structures G. Zucco, P. Weaver, University of Limerick, Limerick, Ireland	10:50 a.m. AIAA-2026-0844 Analytic Solutions for Clamped Nonlinear Mindlin Plates to Predict Sandwich Structure Debonding S. Engelstad, Georgia Institute of Technology, Atlanta, GA; V. Goyal, The Aerospace Corporation, El Segundo, CA; G. Kennedy, Georgia Institute of Technology, Atlanta, GA	
Tuesday, 13 January 2026					
SUST-04	Aviation Emissions and Aircraft Environmental Impacts				Plaza Ballroom K

Chaired by: T. ABDEL-SALAM, East Carolina University and C. STUART, The University of Dublin Trinity College					
9:30 a.m. AIAA-2026-0845 Optimized Deployment of Biomass-Derived Sustainable Aviation Fuels for Contrail and Emission Reduction in Transatlantic Aviation S. Arya, Auburn University, Auburn, AL	9:50 a.m. AIAA-2026-0846 Life Cycle Analysis of Power-to-X Aviation Fuels R. Gupta, T. Gralewski, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL	10:10 a.m. AIAA-2026-0847 Contrail Persistence Prediction Using a Probabilistic Deep Neural Network Based Hybrid Modeling Framework R. Krishnan, A. Bhaduri, B. Matthews, S. Ray Majumder, GE Aerospace Research, Niskayuna, NY	10:30 a.m. AIAA-2026-0848 Sustainable Aviation Fuel Effects on Aircraft Engine Particle Emissions Measured During the 2024 Gulfstream Ground Test R. Moore, B. Anderson, J. DiGangi, J. Miech, E. Wiggins, E. Winstead, NASA Langley Research Center, Hampton, VA; et al.	10:50 a.m. 4351181 Estimation of Aircraft Life Cycle Impacts Through GREET-Based Environmental Modeling E. Waddington, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL; K. Shan, J. Kelly, M. Wang, Argonne National Laboratory, Lemont, IL; J. Nie, University of Minnesota Twin Cities, Minneapolis, MN	
Tuesday, 13 January 2026					
TES-05	Renewable Energy, Environment and Green Infrastructure				Celebration 8
Chaired by: E. AVITAL, Queen Mary, University of London					
9:30 a.m. AIAA-2026-0849 A Dual-Rotor Aerodynamic Configuration for Integrated Wind Energy Harvesting and Thrust Production R. Rahman, H. Saini, E. Avital, Queen Mary University of London, London, United Kingdom	9:50 a.m. AIAA-2026-0850 Contrail-Induced Climate Forcing Versus $CO2$ Impacts of Conventional and Low or Non Carbon Fuels for Aviation V. Undavalli, B. Khandelwal, The University of Alabama, Tuscaloosa, AL	10:10 a.m. AIAA-2026-0851 Investigation of the Liquid Breakup Process of Solid Booster Rocket R. Amano, University of Wisconsin-Milwaukee, Milwaukee, WI	10:30 a.m. AIAA-2026-0852 Vertical-Axis Wind Turbine Clusters: Effect of Streamwise Spacing, Number of Blades and Angle of 6-Turbine Clusters P. Banda, D. Prasad, Indian Institute of Technology Kanpur, Kanpur, India; M. Verma, The University of Iowa College of Engineering, Iowa City, IA; A. De, Indian Institute of Technology Kanpur, Kanpur, India	10:50 a.m. AIAA-2026-0853 Design of a Solar Energy Conversion Kit with the EnerghxPlus Platform for Adaptive Accessibility of Organic Materials E. Ogedengbe, J. Shaola, K. Iyanda, I. Agbadaola, I. Ogunmoye, University of Lagos Faculty of Engineering, Yaba, Nigeria	11:10 a.m. AIAA-2026-0854 Digital Conversion of Cow Dung and Biogas Distribution in Deregulated Energy Markets E. Ogedengbe, A. Thanni, T. Hamzat, F. Ogedengbe, University of Lagos Faculty of Engineering, Yaba, Nigeria
Tuesday, 13 January 2026					
UAS-04	Sensors and Data Systems for Uncrewed/Autonomous Systems				Orlando Ballroom M
Chaired by: M. MCCRINK					
9:30 a.m. AIAA-2026-0855 Simultaneous Localization and Mapping using Sensor Fusion for UAV Navigation in GPS-Denied Environments R. Ramirez, T. Lin, D. Kryzia, Z. Luo, N. Faraj, D. Espana,	9:50 a.m. AIAA-2026-0856 Integrity Aware Hybrid Camera LiDAR Trilateration T. Moleski, J. Wilhelm, Ohio University, Athens, OH	10:10 a.m. AIAA-2026-0857 Egg-Inspired Deployable Environmental Sensors for Autonomous Multi-Agent Path Planning for UAV and UGV Systems S. Bunning, H. Khaniani, M. Razavi, N. Mojtabai, New	10:30 a.m. AIAA-2026-0858 Multi-Modality Localization of Autonomous Lighter-Than-Air UAVs in Real-Time A. Meighan, C. Taylor, O. Dantsker, Indiana University, Bloomington, IN	10:50 a.m. AIAA-2026-0859 Multi-Robot Cooperative 3D Frontier Exploration Using Stereo Camera Based Mapping in GPS-Denied Environments	

California State Polytechnic University Pomona, Pomona, CA; et al.		Mexico Institute of Mining and Technology, Socorro, NM; P. Roghanchi, University of Kentucky, Lexington, KY; M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM		R. Yadav, K. Subbarao, The University of Texas at Arlington, Arlington, TX	
Tuesday, 13 January 2026					
WE-02	Wind Rotor and Plant Aerodynamics, Design Optimization, and Monitoring				Celebration 7
Chaired by: D. GRIFFITH, University of Texas at Dallas and T. KIM, Technical University of Denmark					
9:30 a.m. AIAA-2026-0860 Atmospheric Turbulence Modelling for Very Large Wind Turbines N. Dangi, J. Sodja, D. von Terzi, W. Yu, Technische Universiteit Delft, Delft, The Netherlands	9:50 a.m. AIAA-2026-0861 A Mixed Formulation Vorticity-Velocity Formulation using AMReX Framework for Wind Farm Modeling B. Muralidharan, A. Boschitsch, G. Whitehouse, Continuum Dynamics Inc, Ewing Township, NJ	10:10 a.m. AIAA-2026-0862 Adaptive Flow Control for Optimized Wind Turbine Power Generation J. Saavedra Garcia, M. Lucas Jerez, Universidad Rey Juan Carlos, Móstoles, Spain	10:30 a.m. AIAA-2026-0863 Mass Imbalance Identification for a Wind Turbine Rotor Based on Higher-order Modal Dynamics A. Wu, D. Griffith, The University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science, Richardson, TX	10:50 a.m. AIAA-2026-0864 Combined Aero-Structural Optimization of a Φ-Shaped Darrieus Vertical Axis Wind Turbine Operating Under Intracycle RPM Control D. Bouzolin, D. Griffith, The University of Texas at Dallas, Richardson, TX	
Tuesday, 13 January 2026					
AIAA-15 10:00 - 11:30 a.m.	Rising Leaders in Aerospace: Pitching for Young Professionals (Organized by SEDS)				Regency Ballroom O-P
This workshop led by SEDS USA will prepare students and early-career professionals with the tools and strategies needed to build valuable and lasting connections in the space industry. Workshop participants will practice crafting an effective personal pitch, learn to confidently approach industry experts, and gain insight on how to navigate networking events. Participants will leave with actionable feedback on how to better communicate their experience, expand their network, and position themselves as strong candidates for careers and internships across the space sector.					
Tuesday, 13 January 2026					
F360-04 10:00 - 11:00 a.m.	Future of Research Funding				Windermere Ballroom
This session examines the interplay between political priorities, scientific innovation, and the aerospace research community in shaping the future of public and private research funding. The discussion will highlight the impacts of civil, space, and military program requirements—including acquisition reform initiatives and advanced projects—on the evolving landscape of aerospace investment and collaboration.					
Tuesday, 13 January 2026					
ACD-03	Aerodynamic Design				Rock Spring I & II
Chaired by: B. RAABE, Aurora Flight Sciences					
1:00 p.m. AIAA-2026-0865	1:20 p.m. AIAA-2026-0866	1:40 p.m. AIAA-2026-0867	2:00 p.m. AIAA-2026-0868		

FlightStream® Results for Stability & Control Prediction Workshop 2: Stability Derivatives on the NASA CRM V. Ahuja, D. Enriquez, Altair Engineering Inc, Troy, MI	Impact of a Supercritical Airfoil on the Transonic Aerodynamic Performance of an M-Wing M. Gonzalez, M. Ilie, Georgia Southern University, Statesboro, GA; C. Perry, Lockheed Martin Mission Systems and Training, Marietta, GA	Application of a Multi-Objective, Multi-Condition Adjoint Shape Optimization Approach to Reduce Drag for the ADODG CRM Aircraft Model A. Alici, F. Kelecy, H. Vu, ANSYS Inc, Canonsburg, PA	Aerodynamic Shape Optimization of a Transonic Strut-Braced-Wing Regional Jet With Natural Laminar Flow N. Saadeh, University of Toronto, Toronto, Canada; T. Chau, NASA, Mountain View, CA; D. Zingg, University of Toronto, Toronto, Canada		
Tuesday, 13 January 2026					
AMT-12	Hypersonic Test Facility Characterization				Plaza Ballroom E
Chaired by: P. PORTONI, CUBRC, Inc. and T. GUIMARAES BUCALO, Pennsylvania State University					
1:00 p.m. AIAA-2026-0869 Optical Diagnostics Deployment in the LLNL Energy Matter Interaction Tunnel (EMIT) K. Orr, M. Smotzer, S. Jeppson, S. Steinmetz, A. Rousso, E. Busby, Lawrence Livermore National Laboratory, Livermore, CA; et al.	1:20 p.m. AIAA-2026-0870 Characterizing the Mach 6 Flow of Virginia Tech's Hypersonic Wind Tunnel D. Daniels, B. Tomer, G. Hunt, N. Davis, L. Joseph, Virginia Polytechnic Institute and State University, Blacksburg, VA	1:40 p.m. AIAA-2026-0871 Investigating the Shock Wave-Boundary Layer Interaction in High-Enthalpy Hypersonic Flow Over a Cone-Slice-Ramp Geometry J. Rubio, K. Daniel, W. Swain, C. Downing, B. Lyon, J. Wagner, Sandia National Laboratories, Albuquerque, NM	2:00 p.m. AIAA-2026-0872 CUBRC 48" Tunnel Hypersonic Ground Testing of NOSpec A. Plumadore, A. Satija, T. Meyer, R. Lucht, J. Harbers, Purdue University System, West Lafayette, IN; M. Chern, University of Virginia, Charlottesville, VA; et al.	2:20 p.m. AIAA-2026-0873 Review of Hypersonic Wind Tunnel Facilities: Capabilities, Applications, and Facility Comparisons W. Calder, A. Yackoub, S. Rodriguez, X. Liu, San Diego State University, San Diego, CA	2:40 p.m. AIAA-2026-0874 Advancements in Background-Oriented Schlieren (BOS) for NASA Ground-Test Facilities W. Page, J. Weisberger, W. Ripley, B. Bathel, S. Jones, NASA Langley Research Center, Hampton, VA
Tuesday, 13 January 2026					
AMT-14	PSP/TSP III				Blue Spring I
Chaired by: T. JENKINS, MetroLaser Inc and N. RODRIGUES, NASA Langley Research Center					
1:00 p.m. AIAA-2026-0875 Development of Conductive Polymer Temperature-Sensitive Paint T. Ikami, H. Nagai, Tohoku Daigaku Ryutai Kagaku Kenkyujo, Sendai, Japan	1:20 p.m. AIAA-2026-0876 Performance Analysis of Micro Thrust Vector Control for Supersonic Micronozzles With Different Divergent Sections C. Huang, Y. Wu, National Tsing Hua University, Hsinchu, Taiwan	1:40 p.m. AIAA-2026-0877 Active Jet Control of Transonic Backward-Facing Step Flow With Pressure Sensitive Paint Measurements C. Wang, C. Huang, National Tsing Hua University, Hsinchu, Taiwan; K. Chung, National Cheng Kung University, Tainan City, Taiwan	2:00 p.m. AIAA-2026-0878 High-Speed Schlieren and Pressure-Sensitive Paint Visualization of an Impinging Jet T. Hulshof, D. Windisch, A. Pandey, University of South Florida, Tampa, FL		
Tuesday, 13 January 2026					
AMT-15	Spectroscopic Techniques II				Blue Spring II

Chaired by: T. LOWE, Virginia Tech and P. VARGHESE, University of Texas at Austin					
1:00 p.m. AIAA-2026-0879 Velocity-Sensitive Visualization of CO2 Clusters in Underexpanded Jet via Mercury SLIS of UV Rayleigh Scattering R. Binzley, B. Leonov, R. Randolph, R. Miles, Texas A&M University, College Station, TX	1:20 p.m. AIAA-2026-0880 Velocity and Temperature Survey Over a Wind Tunnel Model Using Spectrally Resolved Rayleigh and Mie Scattering E. Crowe, Metis Technology Solutions, Mountain View, CA; J. Panda, NASA Ames Research Center, Moffett Field, CA	1:40 p.m. AIAA-2026-0881 Total Pressure and Temperature Imaging in Non-Reacting Flows Using Filtered Rayleigh Scattering A. Sahoo, V. Narayanaswamy, NC State University, Raleigh, NC	2:00 p.m. AIAA-2026-0882 Demonstration of Doppler Shift Measurements using an Actively Controlled Atomic Vapor Filter R. Randolph, E. Finberg, Texas A&M University, College Station, TX; C. Limbach, University of Michigan, Ann Arbor, MI; R. Miles, Texas A&M University, College Station, TX	2:20 p.m. AIAA-2026-0883 Filtered Rayleigh Scattering With Polarization Separation for Fuel/Air Mixing in a Lean Premixed Prevaporized Combustor U. Malkocoglu, G. Byun, K. Lowe, Virginia Polytechnic Institute and State University, Blacksburg, VA; S. Wonfor, J. Juergensmeyer, A. Steinberg, Georgia Institute of Technology, Atlanta, GA	
Tuesday, 13 January 2026					
APA-28	Airfoil/Wing/Configuration Aerodynamics II				Coral Spring II
Chaired by: T. CARVAJAL and B. RIDER, The Boeing Company					
1:00 p.m. AIAA-2026-0884 The Effect of Wingtip Geometry on Wake Vortex Dynamics for a Low Aspect Ratio Wing J. Deneke, D. Carter, A. Pandya, E. Heisterkamp, NC State University, Raleigh, NC	1:20 p.m. AIAA-2026-0885 Numerical Comparison of the Ground-Effect Aerodynamic Performance of the Fuselage Body Flap as a Lift-Enhancement Device at Varying Ground Heights J. Maglasang, H. Soriano, A. Mugot, H. Tunacao, V. Vergara, R. Galindo, Cebu Technological University, Cebu City, Philippines; et al.	1:40 p.m. AIAA-2026-0886 In-Ground Aerodynamic Performance of a Biplane Wing Configuration With Varying Gap and Stagger J. Maglasang, M. Ceniza, M. Macadato, A. Mugot, V. Bismark, A. Patadlas, Cebu Technological University, Cebu City, Philippines; et al.	2:00 p.m. AIAA-2026-0887 An Experimental Study on the Aerodynamic Performance Degradation of a High-Lift UAV Airfoil Induced by Ice Accretion J. Wang, A. Dhulipalla, H. Hu, Iowa State University of Science and Technology, Ames, IA	2:20 p.m. AIAA-2026-0888 Influence of a Heat Transfer Minimizing Leading Edge on Aerodynamic Performance at Subsonic Speeds for a Generic Delta Wing W. Hinman, A. De Alwis, University of Calgary Schulich School of Engineering, Calgary, Canada; G. Pezzella, A. Viviani, Universita degli Studi della Campania Luigi Vanvitelli, Caserta, Italy	
Tuesday, 13 January 2026					
APA-29	Applied Computational Fluid Dynamics V				Manatee Spring II
Chaired by: B. POMEROY, NASA Langley Research Center and R. DJEDDI, Cadence Design Systems, Inc.					
1:00 p.m. AIAA-2026-0890 Full Potential Calculations With Immersed Boundary Ghost-Cell Method G. Auger, E. Laurendeau, Polytechnique Montreal,	1:20 p.m. AIAA-2026-0891 Mid-Fidelity Numerical Simulation of a Delta Wing-Body from Mach Number 0.24 to 1.7	1:40 p.m. AIAA-2026-0892 A Study on Steady-State Flow Simulation of Aircraft Wake Using Anisotropic Mesh Adaptation	2:00 p.m. AIAA-2026-0893 Coupling of Actuator Line Method with Vortex Lattice Method in a Vortex-based Actuator Lattice Method	2:20 p.m. AIAA-2026-0894 Aerodynamic Impacts of Black-Tipped Wing Coloration on Avian Flight Efficiency: A Bio-Inspired Study	

Montreal, Canada; Y. Hoarau, Universite de Strasbourg, Strasbourg, France	S. Shahjahan, D. Enriquez, V. Ahuja, Altair Engineering Inc, Troy, MI	K. Sugaya, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan	P. Almeida, E. Alva, V. Kleine, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil	M. Orlando, G. Quayson, B. Herkenhoff, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	
Tuesday, 13 January 2026					
APA-31	Special Session: Applied Surrogate Modeling II				Manatee Spring I
Chaired by: P. BEKEMEYER, German Aerospace Center DLR e.V. and A. WISSINK, US Army DEVCOM Technology Development Directorate					
1:00 p.m. AIAA-2026-0895 Airfoil Performance Surrogate Modeling for High-Speed Rotorcraft Using HPCMP CREATE™ Sage R. Healy, SURVICE Engineering Company LLC, Belcamp, MD; P. Anusonti-Inthra, N. Beals, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD	1:20 p.m. AIAA-2026-0896 Residual Neural Networks for Transient Surrogate Modeling using HPCMP CREATE™ Sage K. Owens, A. House, A. Kaminsky, CFD Research Corporation, Huntsville, AL; A. Wissink, US Army DEVCOM Technology Development Directorate, Moffett Field, CA	1:40 p.m. AIAA-2026-0897 Adaptive Multi-Fidelity Sampling Using HPCMP CREATE™ Sage A. Brown, M. Liu, N. Webber, A. Kaminsky, CFD Research Corporation, Huntsville, AL; A. Wissink, US Army DEVCOM Technology Development Directorate, Moffett Field, CA	2:00 p.m. AIAA-2026-0898 Uncertainty Quantification for the HPCMP CREATE Sage Surrogate Modeling Software L. Jensen, M. Liu, A. Brown, A. Kaminsky, CFD Research Corporation, Huntsville, AL; A. Wissink, US Army DEVCOM AvMC, Moffett Field, CA		
Tuesday, 13 January 2026					
AS-07	Special Session: Physically Embodied Computing in Aerospace Systems				Bayhill 27
Chaired by: P. BUSKOHL and P. MUSGRAVE, University of Florida					
1:00 p.m. AIAA-2026-0899 Reduced-Order Modelling of an Airfoil with Fluid-Structure Interactions for Characterizing Physical Reservoir Computing D. Boston, T. Vincent, S. Kiyabu, AV, Inc., Dayton, OH; A. Pankonien, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; P. Buskohl, Air Force Research Laboratory Materials & Manufacturing Directorate, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-0900 Information Processing Dynamics With Perturbed Cylinder-Flap Fluid-Structure Interactions T. Vincent, D. Boston, S. Kiyabu, AV, Inc, Dayton, OH; A. Pankonien, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; P. Buskohl, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1:40 p.m. AIAA-2026-0901 Aerodynamic Physical Reservoir Computer Training Using Oscillating Vortex Generators M. Carvajal, P. Tiwari, R. Smith, B. Tuna, R. Kumar, W. Oates, FAMU-FSU College of Engineering, Tallahassee, FL	2:00 p.m. AIAA-2026-0902 Sensing and Processing of a Shock-Induced Recirculation Bubble Using a Vibratory Physical Reservoir Computer S. He, D. Rautenstrauch, B. Giompalo, L. Ukeiley, P. Musgrave, University of Florida, Gainesville, FL	2:20 p.m. AIAA-2026-0903 Surface Morphing from Pneumatically Actuated Metastrips G. Kosterit, J. Osorio, Purdue University, West Lafayette, IN; D. Boston, AV, Inc., Dayton, OH; M. Grasinger, P. Buskohl, N. Hertlein, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; et al.	

Tuesday, 13 January 2026					
ASE-02	Atmospheric and Space Environments II				Peacock Spring
Chaired by: R. BHAGWAT, Florida State University and E. WIE-ADDO, University of Missouri					
1:00 p.m. AIAA-2026-0904 Combined Remote Sensing Methods for Active Charge Control Using an Electron Beam in a Dynamic Space Environment J. Walker, S. Hampl, H. Schaub, University of Colorado Boulder, Boulder, CO	1:20 p.m. AIAA-2026-0905 Plume Characterization in a Very Low Earth Orbit Wind Tunnel D. Soni, P. Thomas, N. Wijesinghe, S. Berg, Rutgers University New Brunswick, New Brunswick, NJ	1:40 p.m. AIAA-2026-0906 Expansion Characteristics of Jets into Low-ambient Pressures using Kinetic-Continuum Approaches M. Koca, O. Tumuklu, Rensselaer Polytechnic Institute, Troy, NY	2:00 p.m. AIAA-2026-0907 Aerodynamic Ground Tests, IMUs in High Fluxes & Space Environments K. Lutz, Multiplanet University, Arlington, VA; D. Trevino, University of North Dakota, Grand Forks, ND		

Tuesday, 13 January 2026					
DE-06/DGE-03	Design Ecosystems and AI-Enhanced Collaborative Approaches				Bayhill 23
Chaired by: N. JOHNSON, Click Bond and S. JOHNSON, Northrop Grumman Mission Systems					
1:00 p.m. AIAA-2026-0908 Spacecraft Component and Configuration Design with Reinforcement Learning Trained Transformers A. Demagall, D. Selva, Texas A&M University, College Station, TX	1:20 p.m. AIAA-2026-0909 Methodology to Use Failed Optimizer Cases to Achieve Low-Cost Computational Results S. Shirbhate, A. Cox, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-0910 Multi-Agent Reinforcement Learning for Explainable Spacecraft Configuration Design C. Spence, S. Bettadpur, The University of Texas at Austin, Austin, TX	2:00 p.m. AIAA-2026-0911 A Digital Engineering Workbench for Collaborative Air Vehicle Design E. Moerland, J. Jepsen, J. Bussemaker, M. Alder, J. Zamboni, B. Nagel, German Aerospace Center DLR Institute of System Architectures in Aeronautics, Hamburg, Germany		

Tuesday, 13 January 2026					
DGE-02	Collaborative Methods				Silver Spring I
Chaired by: R. YEMAN, Leidos					
1:00 p.m. AIAA-2026-0912 A Proposal for Enhancing Air Transport System Configurations Using Reference Designation Systems, Bayesian Inference, and AI	1:20 p.m. AIAA-2026-0913 Scaling Trust in Industrial Semantic Ecosystems: An Integrated Validation Framework for Interoperable Modeling and Tagging	1:40 p.m. AIAA-2026-0914 Advanced Disaster Relief and Aid Planning Tool J. Thomas, A. Edwards, A. Conroy, C. Surrency, Y. Tan, M. Balchanos, Georgia Institute of Technology College of Engineering, Atlanta, GA; et al.			

T. Kipouros, A. Spinelli, Cranfield University, Cranfield, United Kingdom; K. Hall, Airbus UK, Filton, United Kingdom	M. Sana, F. Canderatz, Y. Chapelle, Digital product simulation, Toulouse, France; P. Vincent, T. Barre, Airbus SAS, Blagnac, France				
Tuesday, 13 January 2026					
EAT-02	Electric Aircraft Design				Bayhill 31
Chaired by: M. CLARKE, University of Illinois					
1:00 p.m. AIAA-2026-0915 Size, Weight and Power Aware Electrical Power System Component Sizing for Aircraft Conceptual Design B. Raczkowski, M. Boyd, M. Johnson, PC Krause and Associates, Inc., West Lafayette, IN; S. Patnaik, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-0916 Updated Performance Impacts of Alternate Energy Sources Applied to Single-Aisle Mild Hybrid Electric Turbofan Propulsion Systems E. Aydin, A. Burrell, J. Kenny, J. Gladin, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-0917 Cost Effects of Hybrid-Electric Propulsion on US Commercial Aircraft Fleet F. Salucci, E. Keke, N. Prabhakar, D. Karbowski, Argonne National Laboratory, Lemont, IL	2:00 p.m. AIAA-2026-0918 Analysis of Parallel Architecture Hybrid Electric Propulsion for Representative Types of Business Aviation Aircraft A. Sarup, University of Illinois Urbana-Champaign, Urbana, IL	2:20 p.m. AIAA-2026-0919 Low-Fidelity Aerostructural Wing Sizing for Battery-in-Wing Electric Commuter Aircraft F. Reuel, Technische Universitat Munchen, Munich, Germany; J. van Wensveen, Vaeridion GmbH, Munich, Germany; D. Lampl, T. Weckenmann, Technische Universitat Munchen, Munich, Germany	2:40 p.m. AIAA-2026-0920 C-Rate Constrained Path Planning for Battery Pack Health Management in Long-Term eVTOL Operations M. Cho, S. Hwang, G. Wu, V. Vijay, S. Byeon, I. Hwang, Purdue University, West Lafayette, IN
Tuesday, 13 January 2026					
EDU-06	Advancing Aerospace Education III				Bayhill 33
Chaired by: R. LEBEAU, Saint Louis University					
1:00 p.m. AIAA-2026-0921 Integrating Efficiency-Driven Aircraft Design Trends Into Undergraduate Aeroelasticity Education C. Riso, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-0922 Unmanned Aerial Systems as a Project-Based Class O. Dantsker, B. Cox, C. Taylor, Indiana University, Bloomington, IN	1:40 p.m. AIAA-2026-0923 Establishing a Graduate Program for DTEVV of Autonomous Systems at UMD: 2025 Autonomy Research and Education Workshop D. Costello, B. Weiss, L. Bacon, H. Pittenger, University of Maryland, College Park, MD	2:00 p.m. AIAA-2026-0924 Designing an Interdisciplinary REU Site in Advanced Air Mobility Around Student-Centered Learning Outcomes D. Sanjaya, Z. Wang, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN	2:20 p.m. AIAA-2026-0925 Pedagogical Foundations of Industry-Academia Collaboration in Engineering Education: An Airworthiness Case Study R. Hefner, California Institute of Technology, Pasadena, CA; S. Cook, Northrop Grumman Space Systems, Redondo Beach, CA	2:40 p.m. AIAA-2026-0926 From Turbomachinery to Takeoff: The Evolution of Aerospace Engineering at the University of Hartford P. Slaboch, University of Hartford College of Engineering Technology and Architecture, West Hartford, CT
Tuesday, 13 January 2026					
EP-04	Diagnostics				Celebration 1
Chaired by: B. JORNS, University of Michigan, Ann Arbor and J. KNOTT, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-0927	1:20 p.m. AIAA-2026-0929	1:40 p.m. AIAA-2026-0928			

Effects of Data Uncertainty on Triple Probe Measurements W. Reinkoester, Florida Institute of Technology, Melbourne, FL; K. Polzin, NASA, Huntsville, AL	Exploration of an In-Situ Hall Thruster Erosion and Plasma Diagnostic Sensor A. Leeming, Y. Jiang, S. Messing, S. Wang, J. Rovey, P. Wang, University of Illinois Urbana-Champaign, Urbana, IL; et al.	Temporal Anti-Aliasing Method for High Speed Imaging of Hall Effect Thrusters M. Liu, University of Michigan, Ann Arbor, MI; W. Huang, M. Baird, NASA Glenn Research Center, Cleveland, OH; B. Jorns, University of Michigan, Ann Arbor, MI			
Tuesday, 13 January 2026					
EXPL-06	Impact of Space Activities on Climate and Atmosphere				Celebration 13
Chaired by: K. ROSENLOF, NOAA Chemical Sciences Laboratory					
1:00 p.m. AIAA-2026-0930 Space Pollution, North Atlantic Anomaly (NAA), Rocket Launches, Re-Entries Melting Polar Ice Caps K. Lutz, Multiplanet University, Arlington, VA	1:20 p.m. AIAA-2026-0931 Prototyping and Testing of a Dust Protection Mechanism for Lunar Docking Applications S. Thengvall, Y. Li, C. Nelson, University of Nebraska-Lincoln, Lincoln, NE	1:40 p.m. AIAA-2026-0932 CFD-DEM Coupled Simulation for Plume Surface Interaction and Soil Erosion During Spacecraft Landing A. Davanlou, N. Bolar, O. Baran, Siemens Digital Industries Software Inc, Lebanon, NH	2:00 p.m. AIAA-2026-0933 Planetary Defense: How to Become Armed and Ready J. Green, Space Science Endeavors, Silver Spring, MD; D. Cooke, Cooke Concepts and Solutions, Gettysburg, PA; A. Beckman, The Boeing Company Defense Space and Security, Arlington, VA; C. Andrews, Andrews Consulting, Washington, D.C.	2:20 p.m. AIAA-2026-0934 A Transformative Dual-Layer Architecture for Global Space Traffic Management W. Kanjumba, Vicillion, Newark, DE	
Tuesday, 13 January 2026					
EXPL-07	Research Results Related to Mission Architectures, Flight Systems and, Infrastructure				Celebration 14
Chaired by: Z. HASNAIN, Texas A&M and A. WEAVER					
1:00 p.m. AIAA-2026-0935 Integrated Network for Commercial Spaceports: A Framework for Global Launch Accessibility and Multinational Collaboration W. Kanjumba, Vicillion, Newark, DE	1:20 p.m. AIAA-2026-0936 Numerical Investigation of Hypersonic Atmospheric ISRU Vehicle Inlet on Mars via a Tuned Navier–Stokes Method J. Ahn, Penn State Harrisburg, Middletown, PA; X. Chai, Convergent Science Inc, Madison, WI; B. Maicke, Penn State Harrisburg, Middletown, PA	1:40 p.m. AIAA-2026-0937 Mars Aerial and Ground Global Intelligent Explorer (MAGGIE): Mission Feasibility Study G. Zha, Y. Ren, M. Anhalzer, CoFlow Jet, LLC, Miami, Florida, FL; M. Mischna, Jet Propulsion Laboratory, Pasadena, CA; M. Sori, Purdue University, West Lafayette, IN			
Tuesday, 13 January 2026					

F360-05 1:00 - 2:00 p.m.	Quantum Revolution in Aerospace	Windermere Ballroom

The quantum revolution is rapidly transitioning from concept to capability, offering aerospace unprecedented opportunities in navigation, sensing, secure communications, and advanced materials. This session will explore how quantum science is charting a path from theory to scalable, real-world solutions, highlighting its potential to sustain and accelerate innovation across civil, defense, and space aerospace domains.

Tuesday, 13 January 2026

FD-35/APA-30	Flow Control: Methods and Applications V				Barrel Spring II
Chaired by: N. KIANVASHRAD, Wichita State University					
1:00 p.m. AIAA-2026-0939 When and Where: Timing and Placement of Pulses for Control of a 2D Separated Flow Over a Cambered Airfoil S. Castiblanco-Ballesteros, San Diego State University, San Diego, CA; A. Heide, M. Hemati, University of Minnesota Twin Cities, Minneapolis, MN; G. Jacobs, San Diego State University, San Diego, CA	1:20 p.m. AIAA-2026-0940 Experimental Investigation of the Flow Control Algorithm Using Fluidic Oscillator Array on NACA 0018 Airfoil K. Mitsumoto, The University of Alabama in Huntsville, Huntsville, AL; T. Vechalapu, Mississippi State University, Mississippi State University, MS; H. Hu, The University of Alabama in Huntsville, Huntsville, AL	1:40 p.m. AIAA-2026-0941 Surrogate Modeling of Fluidic Oscillators J. Henry, R. Maulik, The Pennsylvania State University, University Park, PA	2:00 p.m. AIAA-2026-0942 Co-Flow Jet Crescent-Shaped Airfoil for High-Thrust Wind Propulsion P. Engström, Chalmers tekniska hogskola AB, Gothenburg, Sweden; K. Xu, University of Maine System, Bangor, ME; R. Bensow, Chalmers tekniska hogskola AB, Gothenburg, Sweden	2:20 p.m. AIAA-2026-0943 Comparitive Study of Zero-Net Mass Flux Flow Control Airfoils Using Fluidic Actuators J. Prabahar, G. Zha, University of Miami, Coral Gables, FL	

Tuesday, 13 January 2026

FD-37	Instability and Transition V				Coral Spring I
Chaired by: X. ZHONG and C. HADER, University of Arizona					
1:00 p.m. AIAA-2026-0944 Evaluation of Wall Modeling Approaches for Transition of Hypersonic Boundary Layers P. Mysore, J. Oefelein, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-0945 Wall-Resolved Large-Eddy Simulations of Transitional Supersonic Boundary Layers Over Sinusoidal Roughness Elements A. Krishnan, I. Bermejo-Moreno, University of Southern California, Los Angeles, CA	1:40 p.m. AIAA-2026-0946 Multiphysics Investigation of Hypersonic Boundary Layer Stability by Global Sensitivity Analysis V. Romano, Von Karman Institute for Fluid Dynamics Aeronautics and Aerospace Department, Sint-Genesius-Rode, Belgium; A. del Val, University of Minnesota Twin Cities, Minneapolis, MN; T. Magin, Universite Libre de Bruxelles, Brussels, Belgium; O. Chazot, Von Karman Institute for Fluid Dynamics Aeronautics and Aerospace	2:00 p.m. AIAA-2026-0947 Critical Regions Driving Unsteady Wake Dynamics in Flow Past Multi-Cylinder Arrays V. Thazhathattil, Indian Institute of Science Division of Mechanical Sciences, Bengaluru, India; P. Mohanty, S. Islam, J. O'Connor, The Pennsylvania State University, University Park, PA; S. Hemchandra, Indian Institute of Science Division of Mechanical Sciences, Bengaluru, India		

		Department, Sint-Genesius-Rode, Belgium			
Tuesday, 13 January 2026					
FD-38	Multiphase Flows: Phase Change and Reaction				Plaza Ballroom F
Chaired by: A. KARPETIS, Texas A&M University and Y. LIU, City College of New York					
1:00 p.m. AIAA-2026-0948 Phase Change of Atmospheric Ice Particles in Hypersonic Flows C. Americo, E. Huff, A. Yassin, S. Poovathingal, University of Kentucky, Lexington, KY	1:20 p.m. AIAA-2026-0949 Boiling Liquid Expanding Vapor Explosion (BLEVE) as a Paradigm for Accidents in Non-Equilibrium Fluid Systems D. Ambriz, J. McElrath, E. Jimenez, A. Karpetis, Texas A&M University System, College Station, TX	1:40 p.m. AIAA-2026-0950 Numerical Investigation of Water Injection Effects on Jet Centerline Temperature and Ignition Overpressure by Using OpenFOAM T. Ghorbani Iriolya, S. Eyi, Orta Dogu Teknik Universitesi, Ankara, Turkey; S. Tsutsumi, Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus, Sagamihara, Japan	2:00 p.m. AIAA-2026-0951 Effect of the Gap Thickness Between Two Parallel Plates on Radial Cavitating Flow S. Salunke, I. Gluzman, Technion Israel Institute of Technology, Haifa, Israel	2:20 p.m. AIAA-2026-0952 Numerical Analysis to Understand the Influence of Ventilation Systems on the Thermal Comfort Parameters, Air Quality and Local Sweating R. Pathak, U. Swarnkar, R. Maiti, Indian Institute of Science, Bengaluru, India	2:40 p.m. AIAA-2026-0953 The Micro-Gravity Sediment Trap: A Passive Filtration Device for Spacecraft Pumped Fluid Loops P. Wayne, LoadPath (A Redwire Company), Albuquerque, NM; M. Albrecht, Air Force Research Laboratory, Colorado Springs, CO; G. Blenkush, Air Force Research Laboratory 711th Human Performance Wing, Wright-Patterson Air Force Base, OH; I. Foster, S. Rathbun, Air Force Research Laboratory, Kirtland Air Force Base, NM
Tuesday, 13 January 2026					
FD-39/APA-32	Special Session: BOLT-1B Flight Experiment IV				Barrel Spring I
Chaired by: A. VEERARAGAVAN, The University of Queensland and B. WHEATON, Johns Hopkins University Applied Physics Laboratory					
1:00 p.m. AIAA-2026-0954 Full-Scale BOLT-1B Experiments at Flight Matched Conditions in X3/R M. Trudgian, D. Mee, The University of Queensland, Brisbane, Australia; S. Stennett, D. Smith, Defence Science and Technology Group, Brisbane, Australia; R. Morgan, A. Veeraragavan, The University of Queensland, Brisbane, Australia	1:20 p.m. AIAA-2026-0955 Spectral Analysis of Wall-Pressure Measurements in the BOLT-1B Flight Experiment M. Talluru, D. Petty, A. Khraibut, University of New South Wales Canberra at ADFA, Canberra, Australia	1:40 p.m. AIAA-2026-0956 Spectral Modelling of Transitional Boundary-Layer Coherence Breakdown D. Petty, A. Khraibut, M. Talluru, University of New South Wales Canberra at ADFA, Canberra, Australia	2:00 p.m. AIAA-2026-0957 The BOLT Experiments: Outcomes from a Decade of Fundamental Science in Hypersonic Flight B. Wheaton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; I. Leyva, Texas A&M University, Fort Worth, TX; R. Bowersox, Texas A&M University, College Station, TX; G. Candler, University of Minnesota Twin Cities, Minneapolis, MN; S. Berry, NASA, Hampton, VA; A.		

			Dufrene, CUBRC, Buffalo, NY; et al.		
Tuesday, 13 January 2026					
FD-41	Turbulent Flows I				Plaza Ballroom D
Chaired by: R. SPETH, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-0958 Coherent Structure Inclination Angles and Amplitude Modulation Behavior in the Atmospheric Surface Layer M. Shimoni, A. Clarke, I. Jacobi, Technion Israel Institute of Technology, Haifa, Israel	1:20 p.m. AIAA-2026-0959 Turbulence Coherent Structures Above Vertiports: Insights Into Unsteady Urban Aerodynamics A. Maleki, R. Mankbadi, V. Golubev, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-0960 Flow Characterization over a Modified Boeing Bump N. Aziz, M. Mattei, T. Saxton-Fox, University of Illinois Urbana-Champaign, Urbana, IL	2:00 p.m. AIAA-2026-0961 Generalized Integral Formulations of Turbulent Boundary Layers for Arbitrary Prandtl Power-Law Exponents J. Majdalani, C. Shelton, Auburn University, Auburn, AL		
Tuesday, 13 January 2026					
GNC-15	Autonomy and Artificial Intelligence for Aerospace GNC I				Bayhill 29
Chaired by: G. INALHAN, Cranfield University and R. COWLAGI, Worcester Polytechnic Inst					
1:00 p.m. AIAA-2026-0962 Investigating Multi-UAV Territory Guarding Using Cooperative-Competitive Reinforcement Learning J. Yuvaraja Singam, L. Qian, W. Zhuang, H. Liu, University of Toronto Institute for Aerospace Studies, Toronto, Canada	1:20 p.m. AIAA-2026-0963 An Autonomous Mission Framework for Quadrotor-Based Target Detection, Localization, and Inspection in Indoor Environments A. Ashry, Z. Bortoff, D. Paley, University of Maryland, College Park, MD	1:40 p.m. AIAA-2026-0964 Application of Extreme Learning Machines for Modeling Wind in Energy-Optimal Routing Problems A. Gardner, M. Karpenko, V. Dobrokhodov, Naval Postgraduate School, Monterey, CA	2:00 p.m. AIAA-2026-0965 Deep Reinforcement Learning for Control of a Small-Scale Helicopter F. Polese, A. Zavoli, G. De Matteis, Universita degli Studi di Roma La Sapienza, Rome, Italy	2:20 p.m. AIAA-2026-0966 Stereo YOLO UAV Localization and Tracking Enabling Autonomous Sensor Deployment on Critical Infrastructure Q. Zheng, A. Khan, J. N., K. Adebajo, R. Yount, A. Downey, University of South Carolina, Columbia, SC	
Tuesday, 13 January 2026					
GNC-16/AFM-04	Entry, Descent and Landing Technology IV: Guidance I				Orlando Ballroom L
Chaired by: P. CHADALAVADA, Analytical Mechanics Associates, Inc. and S. MCEOWEN, University of Washington					
1:00 p.m. AIAA-2026-0967 Implementable Epsilon-Propellant-Optimal Powered Descent Guidance P. Lu, San Diego State University, San Diego, CA	1:20 p.m. AIAA-2026-0968 Application and Performance Analysis of a Successive Convexification Algorithm to Mars 2020 Entry Trajectory Design	1:40 p.m. AIAA-2026-0969 Active Continuous-Time Simultaneous Localization & Mapping for Powered Descent Guidance Maneuvers	2:00 p.m. AIAA-2026-0970 Robust Optimal Control for Autonomous Precision Landing via Set-based Dynamic Programming A. Kamath, University of Washington, Seattle, WA; A. Vinod, P. Elango, S. Di	2:20 p.m. AIAA-2026-0971 Auto-Tuned Successive Convexification for Entry Guidance With Continuous-Time Constraint Satisfaction	2:40 p.m. AIAA-2026-0972 Auto-Tuned Primal-Dual Successive Convexification for Powered Descent Guidance

	P. Chadalavada, M. Manwell, Analytical Mechanics Associates Inc, Hampton, VA; A. Hayes, S. Dutta, R. Lugo, NASA Langley Research Center, Hampton, VA	S. Buckner, University of Washington, Seattle, WA; J. Carson, B. Johnson, NASA Johnson Space Center, Houston, TX; B. Acikmese, University of Washington, Seattle, WA	Cairano, A. Weiss, Mitsubishi Electric Research Laboratories, Cambridge, MA	S. Mceowen, C. Morales, University of Washington, Seattle, WA; B. Johnson, NASA Johnson Space Center, Houston, TX; D. Calderone, The University of New Mexico Department of Electrical and Computer Engineering, Albuquerque, NM; E. Cook, University of Washington, Seattle, WA; J. Carson, NASA Johnson Space Center, Houston, TX; et al.	S. Mceowen, C. Morales, University of Washington, Seattle, WA; D. Calderone, The University of New Mexico Department of Electrical and Computer Engineering, Albuquerque, NM; S. Uzun, E. Cook, B. Acikmese, University of Washington, Seattle, WA

Tuesday, 13 January 2026

GT-05	Design and Characterization of Impulse Facilities				Rainbow Spring II
Chaired by: Z. CARR, CUBRC, Inc. and B. DIAZ VILLA, University of Texas at Austin					
1:00 p.m. AIAA-2026-0973 The Ohio State University Large-Area Reflected Shock Tunnel: Overview and Characterization L. Brown, M. Megazzini, N. Webb, R. Mathison, J. Little, The Ohio State University, Columbus, OH	1:20 p.m. AIAA-2026-0974 Initial Shakedown Testing of the Stanford High-Enthalpy Optical Tube/Tunnel T. Schwartz, A. Thoeny, J. Lee, K. Kotsarinis, P. Simha, S. Baird, Stanford University, Stanford, CA; et al.	1:40 p.m. AIAA-2026-0975 Empirical Assessment of Driver-Gas Efficiency in Shock-Tube Flows over a Wide Range of Conditions Z. Ding, M. Sandberg, E. Petersen, Texas A&M University, College Station, TX			

Tuesday, 13 January 2026

GTE-06	Combustors I				Celebration 2
Chaired by: s. PATIL, ANSYS and A. HAZLETT, GE Aerospace					
1:00 p.m. AIAA-2026-0976 Development and Characterization of a Liquid-Fuel-Based Full Annular Ultra-Compact Trapped Vortex Combustor S. Hwang, S. Somappa, J. Yoon, K. Kang, T. Lee, University of Illinois Urbana-Champaign, Urbana, IL; J. Kim, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD; et al.	1:20 p.m. AIAA-2026-0977 High-Fidelity Large Eddy Simulation of a Lifted Hydrogen-Air Flame in a Dual-Swirl Coaxial Injector V. Hasti, University of Central Florida, Orlando, FL; R. Ranjan, The University of Tennessee Chattanooga, Chattanooga, TN	1:40 p.m. AIAA-2026-0978 Characterization of Liquid Sprays in the Pre-Vaporization Tube of a Small-Scaled Annular Combustor A. Natu, A. Fradet, D. Guildenbecher, Purdue University System, West Lafayette, IN	2:00 p.m. AIAA-2026-0979 Investigation of Swirling Kerosene Flame Extinction using Flamelet Generated Manifold Model B. O'Brien, M. Ilie, Georgia Southern University, Statesboro, GA	2:20 p.m. AIAA-2026-0980 Numerical Investigation and Validation of the Pressure-Swirl Circuit of an Aviation Non-Proprietary Atomizer A. Han, A. Karmarkar, B. Sforzo, C. Powell, L. Nocivelli, Argonne National Laboratory, Lemont, IL	2:40 p.m. AIAA-2026-0981 Experimental Investigation on Iron Oxide Catalyst Supported by 2D Functionalized Boron for Selective Catalytic Reduction in Aviation C. Wall, University of Central Florida, Orlando, FL; S. Shahzad, R. Blair, Florida Space Institute, Orlando, FL; A. Menendez, M. Otto, J. Kapat, University of Central Florida, Orlando, FL

Tuesday, 13 January 2026					
GTE-08	Turbomachinery II				Celebration 3
Chaired by: B. KHANDELWAL, University of Alabama, Tuscaloosa and C. MARKS					
1:00 p.m. AIAA-2026-0982 Modeling and Validation of Tongue-Induced Unsteady Loading in Turbocharger Radial Turbine Using a 1D Approach With 3D LES C. Shah, J. Woo, D. Bodony, University of Illinois Urbana-Champaign, Urbana, IL; S. Kang, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD	1:20 p.m. AIAA-2026-0983 Design and Testing of "Marlin", a 5,000 lbf Open-Cycle Kerosene-Oxygen Turbopump Rocket Engine A. Contreras, A. Fontanetta, S. Gudepate, L. Tipton, C. Suffredini, M. Cohen, Purdue University, West Lafayette, IN; et al.	1:40 p.m. AIAA-2026-0984 Experimental Measurements of Bladeless Turbine Power Extraction E. Leite de Moraes, NC State University, Raleigh, NC; A. Montanari, Universita degli Studi di Roma La Sapienza, Rome, Italy; L. Nicol, H. Sabbah, M. Spencer, J. Braun, NC State University, Raleigh, NC	2:00 p.m. AIAA-2026-0985 Experimental Investigation of Annular Twin Cavity Trapped Vortex Combustor J. Kim, E. Mayhew, V. Coburn, E. Schroen, J. Temme, C. Kweon, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD; et al.		

Tuesday, 13 January 2026					
HR-01	Internal Ballistics and Fuel Formulation Modeling - Including AI and Machine Learning				Celebration 9
Chaired by: B. MAICKE, Pennsylvania State University and G. STORY, NASA Marshall Space Flight Center					
1:00 p.m. AIAA-2026-0986 Assessing the Potential and Limitations of LSTM Inverse Models for Hybrid Rocket Throttle Control J. Coen, E. Larsen, S. Dutta, S. Whitmore, Utah State University, Logan, UT	1:20 p.m. AIAA-2026-0987 Regression Modeling and Particle Swarm Optimization for CAMUI Hybrid Rocket Engines G. Cocirla, D. Bianchi, Universita degli Studi di Roma La Sapienza, Rome, Italy; M. Tallo, M. Rotondi, L. Kamps, S. Hirai, Letara Ltd., Sapporo, Japan	1:40 p.m. AIAA-2026-0988 Numerical Simulations of Paraffin–Oxygen Hybrid Rocket Engines With Axial and Vortex Injectors A. Sereno, M. Fabiani, M. Migliorino, D. Bianchi, F. Nasuti, Universita degli Studi di Roma La Sapienza, Rome, Italy; D. Cardillo, Centro Italiano Ricerche Aerospaziali, Capua, Italy; et al.	2:00 p.m. AIAA-2026-0989 A Cold Flow Investigation of Recirculation, Shear-Mixing and Bulk Flow Fields in a Stepped Helix Grain Geometry D. Lyons, B. Maicke, The Pennsylvania State University - University Park Campus, Harrisburg, PA; Z. Bangash, Tuskegee University, Tuskegee, AL	2:20 p.m. AIAA-2026-0990 Theoretical, Numerical, and Experimental Investigation of Paraffin-HTPB Blended Fuels for Hybrid Rocket Applications S. Palateerdham, D. Tortorici, a. Rahman, A. Ingenito, Universita degli Studi di Roma La Sapienza Scuola di Ingegneria Aerospaziale, Rome, Italy	

Tuesday, 13 January 2026					
HSABP-04	Numerical Analysis of Scramjet Engines				Celebration 4
Chaired by: D. PETERSON, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-0991	1:20 p.m. AIAA-2026-0992	1:40 p.m. 4351560	2:00 p.m. AIAA-2026-0993		

Numerical Exploration of the Flame Regimes in a Mach 7 Axisymmetric Combustor Experiment C. Helm, Innovative Scientific Solutions Inc., Dayton, OH; D. Peterson, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	CFD Comparison of Hydrogen and Ethylene Fuel in Hypersonic Scramjets D. Baumberger, T. Marr, J. Doom, South Dakota State University, Brookings, SD	Numerical Investigation of Effects of Changing Cavity Length-to-Depth Ratio on Turbulence and Mixing in Supersonic Flow D. Peterson, E. Braun, T. Ombrello, U.S. Air Force Research Laboratory, WPAFB, OH	Numerical Simulations of Supersonic Multi-Component and Reacting Flows: Towards Combustion in a Supersonic Cavity S. Bokor, Technion Israel Institute of Technology, Haifa, Israel; A. Chamarthi, California Institute of Technology, Pasadena, CA; N. Hoffmann, S. Frankel, Technion Israel Institute of Technology, Haifa, Israel		
Tuesday, 13 January 2026					
ICC-02	AI/ML in Command-and-Control Systems				Celebration 16
Chaired by: A. RAZ, George Mason University					
1:00 p.m. AIAA-2026-0994 Data-Driven Output Regulation From Partial Noisy Measurements: An Adaptive Dynamic Programming Approach S. Rajkumar, D. Goswami, The Ohio State University, Columbus, OH	1:20 p.m. AIAA-2026-0995 QuickSAT/SHERLOCK, an AI Architecture for Vehicle Health Management, Fault Detection and Fault Management and Complex Human-Machine Systems A. Santangelo, Sci_Zone Inc, Holland, MI	1:40 p.m. AIAA-2026-0996 Edge AI Strengthens Computation and Actionable Intelligence in Space Applications R. Grundler, B. Barker, Aitech, Chatsworth, CA			
Tuesday, 13 January 2026					
INPSI-03/GTE-07/EAT-03/ACD-04/PC-11/TES-06	Innovations in Advanced Electric and Hydrogen Aviation Technologies (Invited Session)				Florida Ballroom B
Chaired by: S. DUBOIS, Clean Aviation Joint Undertaking and I. ORISAMOLU, Pratt & Whitney					
1:00 p.m. AIAA-2026-0997 Airbus Cryoprop Demonstrator and Cryogenic Electric Propulsion: Progress Update L. Ybanez, R. Abdouh, E. Nilsson, Airbus UpNext SAS, Blagnac, France; F. Berg, Airbus Defence & Space	1:20 p.m. AIAA-2026-0998 ICEFlight: Powering the Future of Aviation With Cryogenic Innovation in the Netherlands R. Abdouh, Airbus UpNext, Toulouse, France; D. Kierbel, Airbus Netherlands, Leiden, The Netherlands; S. Braunius, GKN Fokker Aerospace B.V.,	1:40 p.m. AIAA-2026-0999 Aircraft Propulsion Motors With Cryogen-Free Superconducting Rotor K. Haran, T. Balachandran, N. Salk, Hynetics, Inc, Champaign, IL	2:00 p.m. AIAA-2026-1000 System Modeling of FLyCLEEN Gas Turbine-Solid Oxide Fuel Cell Aircraft Engine Concept L. Tang, J. Hong, GE Aerospace Research, Niskayuna, NY	2:20 p.m. 4383152 Multi-Fuel Aircraft as a Path for Transitioning to a Hydrogen Future N. Terwilliger, Pratt & Whitney, East Hartford, CT	2:40 p.m. 'Hydrogen and Dual Fuel Combustion Technologies - CAVENDISH Project', Gary Way, Rolls-Royce

GmbH, Taufkirchen, Germany; R. Dorget, M. Ahmed, Airbus UpNext SAS, Blagnac, France; et al.	Papendrecht, The Netherlands; I. Dekker, M. van Put, Airbus Netherlands, Leiden, The Netherlands; A. te Nijenhuis, NLR, Marknesse, The Netherlands; et al.				

Tuesday, 13 January 2026

IS-08/GNC-18/UAS-06	UAVs in 4D: Academia, Government, Industry, and Startups - Which Path is Right for You?	Celebration 15

Chaired by: V. MUVVA, Univerity of Nebraska Lincoln

Uncrewed Aerial Vehicles (UAVs) are revolutionizing aerial autonomy, with research spanning academia, industry, startups, and national labs—each contributing unique advancements and career opportunities. This workshop, "UAVs in 4D", brings together four distinguished experts from these key sectors to discuss cutting-edge research, technological challenges, and career pathways in UAVs. The session will feature four talks (30 minutes each) by the speakers choice, followed by an interactive panel discussion exploring UAV research, career strategies, sector transitions, and future industry trends. Attendees will gain insights into choosing the right career path in UAV research while staying informed on the latest advancements driving the field forward. Designed for graduate students, researchers, and professionals, this workshop provides a unique 4D perspective to navigate UAV research and career growth efficently.

Tuesday, 13 January 2026

LP-04	Liquid Propellant Management Devices - Past, Present, Future	Celebration 5

Chaired by: N. ANDREWS, Southwest Research Institute and J. HARTWIG, NASA Glenn Research Center

This will be an open-discussion session, calling for industry and government experts in liquid propellant management devices to learn with each other and debate the needs and direction of industry and research. Nathan Andrews and Jason Hartwig will sit as moderators to encourage open and moving discussion. Topics may include propellant management techniques, strategies and devices and may span storable and cryogenic fluids. Researchers and designers are encouraged to come and represent various approaches to management, including propellant management devices (PMDs), liquid acquisition devices (LADs), conformal tanks, and bladders/diaphragms for both small satellites and large vehicles. A brief history may also be presented to inform the general audience or stimulate conversation towards addressing challenges.

Tuesday, 13 January 2026

LP-05	Modeling and Simulation of Liquid Propulsion Systems, Components, and Processes II	Celebration 8

Chaired by: K. MAEDA, Purdue University and B. BOUST

1:00 p.m. AIAA-2026-1001 Sensor and Actuator Evaluation for Liquid Rocket Engines Combustion Instability M. Hussein, L. Etzenbach, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA	1:20 p.m. AIAA-2026-1002 Effects of Recess Length on Supercritical Kerosene/Oxygen Combustion in a Bi-Swirl Injector S. Kim, M. Choi, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; I. Lee, Y. Kim, J. Jeong, W. Hyun, Hanwha Aerospace Co Ltd, Jung-gu, South Korea; et al.	1:40 p.m. AIAA-2026-1003 Effect of Shock Strength on the Structure of H_2/O_2 Reactive Shock Waves T. Maurel Oujia, C. Chen, K. Maeda, Purdue University, West Lafayette, IN			

Tuesday, 13 January 2026					
MAT-08	Fatigue and Fracture				Bayhill 20
Chaired by: B. WARDLE, Massachusetts Institute of Technology and E. PINEDA, NASA Glenn Research Ctr					
1:00 p.m. AIAA-2026-1004 Analytical Expression for the J-Integral in Ramberg-Osgood Materials *via* Symbolic Regression C. Zachry, Georgia Institute of Technology, Atlanta, GA; X. Liu, New Jersey Institute of Technology, Newark, NJ; C. Athanasiou, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-1005 Cryogenic Characterisation of Structural Materials for Liquid Hydrogen Conveyancing Systems N. Zaghloul, S. Yang, C. Fallon, A. Rhead, C. Sangan, University of Bath, Bath, United Kingdom	1:40 p.m. AIAA-2026-1006 Peridynamic Analysis of Damage and Failure in Composite Laminates During Open-Hole Compression Test R. Gonuleri, I. Guven, Virginia Commonwealth University, Richmond, VA	2:00 p.m. AIAA-2026-1007 Torsional Fatigue Performance of Material Extruded Additively Manufactured Inconel 718 E. Kozak, S. Siddiqui, Florida Polytechnic University, Lakeland, FL	2:20 p.m. AIAA-2026-1008 A Peridynamic Evaluation of Protective Coating Effects on Glass Bead Impact Damage in Zinc Sulfide A. Howard, U. Can, I. Guven, Virginia Commonwealth University, Richmond, VA	2:40 p.m. 4356191 Investigation of Stress Concentrations on Rapid Prototyping Materials N. Bleakley, M. Madrigal, C. Holmes, L. Walker, W. Roulston, H. Elmer, Embry-Riddle Aeronautical University, Prescott, AZ; et al.

Tuesday, 13 January 2026					
MVCE-05/FD-40/NDA-03	Surrogate Modeling and Mesh Adaptation for Shock-Dominated Flows / Grid Quality, Error Estimation and Uncertainty Quantification for CFD and FEA				Bayhill 30
Chaired by: M. GALBRAITH, Massachusetts Institute of Technology and K. BOOPATHY, ANSYS Inc (Synopsys)					
1:00 p.m. AIAA-2026-1012 Metric-Based Hypersonic Anisotropic Adaptive Mesh Refinement (HAAMR) Using Loci/CHEM and AFLR A. Cornish, E. Blades, ATA Engineering Inc, San Diego, CA; E. Luke, D. Marcum, Mississippi State University, Mississippi State University, MS	1:20 p.m. AIAA-2026-1013 Application of Metric-Based Anisotropic Mesh Adaptation to 3D High-Speed Compressible Flows N. Nutter, Oak Ridge National Laboratory, Oak Ridge, TN; D. Sanjaya, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; R. Glasby, K. Doetsch, W. Shoemake, D. Stefanski, Oak Ridge National Laboratory, Oak Ridge, TN; et al.	1:40 p.m. AIAA-2026-1014 Effectivity of Output-Based Error Estimates for High-Order Aerodynamics Simulations K. Fidkowski, University of Michigan, Ann Arbor, MI			

Tuesday, 13 January 2026		
NDA-02	Non-Deterministic Approaches Lecture	Orlando Ballroom N
Chaired by: A. CHAUDHURI, University of Texas, Austin		

Design for Uncertainty: Classification, Resolvability, and Application to Aerospace Missions and Systems Olivier L. de Weck Apollo Program Professor Department of Aeronautics and Astronautics Massachusetts Institute of Technology Where does uncertainty come from that could affect the future success of my system, product or mission? Can the uncertainty be resolved by simply delaying decisions and waiting until some future time? Can the uncertainty be represented as a random variable or as a discrete future scenario? What modelling approach can be used to quantitatively capture the uncertainty? These questions will be discussed in this

talk, along with methods for classifying, resolving, and explicitly designing for uncertainty. Special emphasis will be placed on the difference between endogenous and exogenous as well as epistemic vs. aleatory uncertainty. Recent advances and applications presented will include oil and gas production on Earth, optimal planning of verification and validation of scientific instruments using Bayesian statistics, long-range UAV flight, as well as robotic and human planetary mission design. *Olivier de Weck is the Apollo Program Professor of Astronautics at the Massachusetts Institute of Technology where he is the Associate Department Head of Aero Astro. His research is in Systems Engineering with a focus on how complex technological systems are designed and how they evolve over time. He is a Fellow of INCOSE and a Fellow of AIAA and serves as Editor-in-Chief of the Journal of Spacecraft and Rockets. His textbook "Technology Roadmapping and Development" received a most promising textbook of 2024 award by TAA.*

Tuesday, 13 January 2026

PC-10/PGC-05	Detonation Fundamentals I				Celebration 6
Chaired by: R. HYTOVICK, University of Central Florida and S. SALAUDDIN, University of Central Florida					
1:00 p.m. AIAA-2026-1015 Detonation Wave Interactions with Stratified Gas Layers C. Junker, R. Daigle, A. Warner, R. Gejji, C. Slabaugh, Purdue University, West Lafayette, IN	1:20 p.m. AIAA-2026-1016 Liquid Fuel Droplet Dynamics in Gaseous Detonations D. Hart, L. Berson, T. Brown, R. Hytovick, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL	1:40 p.m. AIAA-2026-1017 Experimental Analysis of Quasi-2D Detonations at Elevated Initial Pressures M. De La Mora, L. Berson, D. Hart, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-1018 Multiscale Enstrophy Dynamics Behind Detonation Waves G. Sidharth, Iowa State University of Science and Technology, Ames, IA		

Tuesday, 13 January 2026

PC-12	Jets				Celebration 7
Chaired by: C. RISING, The University of Texas at El Paso					
1:00 p.m. AIAA-2026-1019 Effect of Jet Velocity Profiles on Evolution of Wake Structures in Transverse Jets G. Ganesh, A. Velayuthapattnam Shanmugam, V. Acharya, T. Lieuwen, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-1020 Large-Eddy Simulations of Dilution Jet Effects on a Lab-Scale Rich-Quench-Lean Spray Flame S. Karpe, S. Menon, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-1021 FANS-Based Predictions of Jet-Regime Contrail Formation Using a Two-Equation Soot/Ice Aerosol Transport Model I. Jahncke, C. Chelem Mayigue, T. Taddesse, A. Roy, R. Sawanni, Y. Rajan, University of Toronto, Toronto, Canada; et al.	2:00 p.m. AIAA-2026-1022 Transient Flame Stability in a Hydrogen Enriched Reacting Jet-in-Crossflow L. Longas, P. Torres Serrano, M. Fortin, C. Kaliski, A. Ostrowski, K. Chougag, University of Central Florida College of Engineering and Computer Science, Orlando, FL; et al.	2:20 p.m. AIAA-2026-1023 3-D Simulation of Ignition in the Head Vortex of a Reactive Hot Jet Injected into Flammable Mixture S. Ghadiri, M. Nalim, Purdue University, West Lafayette, IN	

Tuesday, 13 January 2026

PDL-05	Plasma and Laser Diagnostics III				Rainbow Spring I
Chaired by: A. SHASHURIN, Purdue University, School of Aeronautics and Astronautics and A. DOGARIU, Texas A&M University					
1:00 p.m. AIAA-2026-1024	1:20 p.m. AIAA-2026-1025	1:40 p.m. AIAA-2026-1026	2:00 p.m. AIAA-2026-1028	2:20 p.m. AIAA-2026-1027	

Detection of Trace Hydrogen by Coherent Anti-Stokes Raman Spectroscopy R. Werner, V. Blanchard, C. Dumitrache, B. Windom, A. Yalin, Colorado State University, Fort Collins, CO	Spatial Reconstruction of Temperature and Molecular Concentration From Path-Integrated Laser Absorption Spectroscopy Measurements M. Mandich, S. Feltis, Z. Zhang, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN	Measurements of Excited Metastable Atoms and Ground State Atoms in a Nonequilibrium Heated Plasma Flow Reactor S. Raskar, K. Tabuchi, M. Berry, I. Adamovich, The Ohio State University, Columbus, OH	Absolute Number Density Measurements of O Atom Over a Catalyzing Surface in Air Plasmas R. Herrmann-Stanzel, J. Schlinder, University of Vermont, Burlington, VT; J. Meyers, University of Illinois Urbana-Champaign, Urbana, IL; D. Fletcher, University of Vermont, Burlington, VT	Spectral Evolution of an Inertial Electrostatic Confinement Discharge with Pressure and Voltage R. Puri, M. Furlin, J. Rovey, G. Miley, E. Ziehm, University of Illinois Urbana-Champaign, Urbana, IL	
Tuesday, 13 January 2026					
PGC-06/AMT-13	Measurement and Diagnostics I				Florida Ballroom C
Chaired by: K. AHMED, University of Central Florida and S. VASU, University of Central Florida					
1:00 p.m. AIAA-2026-1029 Optically Based Temperature Sensing of Rotating Detonation Engine Combustor Internal Wall R. Glennon, C. Brophy, D. Learned, Naval Postgraduate School, Monterey, CA	1:20 p.m. AIAA-2026-1030 Development of an Additively-Manufactured Optical Sensor Interface for Rotating Detonation Flows J. Hernandez-McCloskey, M. Nickell, D. Pineda, The University of Texas at San Antonio, San Antonio, TX	1:40 p.m. AIAA-2026-1031 Toward Dual-Bandhead Laser Absorption of Carbon Dioxide for Time-Resolved Thermometry and Speciation in Detonation Waves K. Corral Martinez, B. Steavenson, K. Fetter, The University of Texas at San Antonio, San Antonio, TX; B. Bigler, Amentum Services Inc., Edwards AFB, CA; J. Burr, AFRL RQRE, Edwards AFC, CA; J. Bennewitz, The University of Alabama in Huntsville, Huntsville, AL; et al.	2:00 p.m. AIAA-2026-1032 Assessing Rotating Detonation Operation With Internal Schlieren Visualization T. Wanstall, The University of Alabama, Tuscaloosa, AL; B. Sell, Innovative Scientific Solutions Inc, Dayton, OH; M. Fotia, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	2:20 p.m. AIAA-2026-1034 Time-Resolved PIV Investigation of Spark-Ignition and Selfignition in a Constant Volume Combustion Chamber C. Runnoo, B. Boust, M. Bellenoue, ISAE-ENSMA, Chasseneuil-du-Poitou, France; Q. Michalski, RMIT University, Melbourne, Australia	
Tuesday, 13 January 2026					
SAR-05	ML and AI for Space Robotics and Automation I				Florida Ballroom A
Chaired by: O. MA, University of Cincinnati and C. SULLIVAN, Redwire Space					
1:00 p.m. AIAA-2026-1035 DreamLander: A 6-DOF World Model Based Reinforcement Learning Planetary Lander G. Nehma, P. Quinn, M. Tiwari, C. Riano-Rios, Florida Institute of Technology, Melbourne, FL	1:20 p.m. AIAA-2026-1036 Machine Learning Approaches to Position Estimation in SMA-Actuated Soft Robotic Systems J. Pastizzo, G. MacRae, University of Southern	1:40 p.m. AIAA-2026-1037 Physics-Enhanced Deep Learning for Instantaneous Prediction of Dynamic Behavior of a Space Vehicle-Robot System	2:00 p.m. AIAA-2026-1038 Dynamic Scene 3D Reconstruction of an Uncooperative Resident Space Object B. Gopu, Florida Institute of Technology, Melbourne, FL; T. Huber, Argotec, Melbourne, FL; G. Nehma, P. Quinn, M.	2:20 p.m. AIAA-2026-1039 Soft Actor–Critic Learning of Finite State Machine Transition Policies for Lunar Rovers R. Rouco-Crenshaw, A. Campbell, G. Money, J. Larson, The University of Alabama, Tuscaloosa, AL	

	California Viterbi School of Engineering, Los Angeles, CA; M. Oflus, Johns Hopkins University Whiting School of Engineering, Baltimore, MD; K. Andreyeva, D. Barnhart, University of Southern California Viterbi School of Engineering, Los Angeles, CA	W. Wiedeman, O. Ma, J. Dong, University of Cincinnati, Cincinnati, OH	Tiwari, Florida Institute of Technology, Melbourne, FL; M. Ueckermann, Creare LLC, Hanover, NH; et al.		
Tuesday, 13 January 2026					
SCS-06	High Strain Composite Materials and Structures				Bayhill 24
Chaired by: F. LOPEZ JIMENEZ, University of Colorado and A. LEE, North Carolina State University					
1:00 p.m. AIAA-2026-1040 Deployable Composite Toroid Holding a Circular Membrane F. Benazzo, G. Popov, California Institute of Technology Division of Engineering and Applied Science, Pasadena, CA; J. Mejia-Ariza, Jet Propulsion Laboratory, Pasadena, CA; S. Pellegrino, California Institute of Technology Division of Engineering and Applied Science, Pasadena, CA	1:20 p.m. AIAA-2026-1041 Performance-Driven Design of Deployment Mechanism for Collapsible Tube Masts F. Palmeri, S. Pellegrino, California Institute of Technology, Pasadena, CA	1:40 p.m. AIAA-2026-1042 Integration of Origami-Inspired Folding into Deployable Composite Shells S. Deardorff, A. Lee, NC State University, Raleigh, NC	2:00 p.m. AIAA-2026-1043 Design and Testing of an Elastically Foldable Flat Structure With Prestressed Diagonals M. Kechri, H. Mallikarachchi, California Institute of Technology, Pasadena, CA; J. Sauder, Jet Propulsion Laboratory, Pasadena, CA; S. Pellegrino, California Institute of Technology, Pasadena, CA	2:20 p.m. AIAA-2026-1044 The Effect of Localized Imperfection Geometry on Thin-Shell Buckling: Imperfection Width Controls Stability, Imperfection Direction Governs Spatial Sensitivity A. Fathi, F. Royer, Cornell University, Ithaca, NY	2:40 p.m. AIAA-2026-1045 Probing Shape Recovery in Deployable Composite Booms With Shape Memory Effect A. Behera, V. Khare, Mississippi State University, Mississippi State University, MS; M. Madhusanka, University of Idaho, Moscow, ID
Tuesday, 13 January 2026					
SCS-07/STR-12/SFM-11/EDU-07	In-Space Servicing, Assembly, and Manufacturing (ISAM) III				Bayhill 21
Chaired by: J. ACTION, Lockheed Martin Aeronautics and S. ENGELSTAD, Aerospace Corporation					
1:00 p.m. AIAA-2026-1046 Compliant Mechanism for Robotic In-Space Assembly and Learning-Based Safety Limit Detection A. Negi, A. Dalvi, University of Southern California, Los Angeles, CA; A. Cheng, The Aerospace Corporation, El Segundo, CA; S. Gupta, University of Southern California, Los Angeles, CA	1:20 p.m. AIAA-2026-1047 Characterizing UV Resin Curing With Additives Under Simulated Microgravity for In-Space Manufacturing P. Jantananont, E. Förster, M. Kinzel, S. Raghavan, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-1048 Driving ISAM Workforce Development with the COSMIC Capstone Challenge J. Rome, J. Heying, V. Goyal, The Aerospace Corporation, El Segundo, CA	2:00 p.m. AIAA-2026-1049 Orbital Factory Concept and Roadmap J. Rome, H. Craft, M. Anderson, V. Goyal, The Aerospace Corporation, El Segundo, CA	2:20 p.m. AIAA-2026-1050 Orbital Manufacturing Design Impacts: Small Satellite Refueler Study J. Heying, J. Rome, V. Goyal, V. Zeltsman, A. Ulin, A. Trujillo, The Aerospace Corporation, El Segundo, CA; et al.	

Tuesday, 13 January 2026					
SD-10/FD-36	Fluid-Structure Interaction II				Bayhill 18
Chaired by: C. BARNES, AFRL/RQVA					
1:00 p.m. AIAA-2026-1051 Numerical Investigation of the Afterbody Effects on Flow-Induced Vibration U. Howlader, N. Sharan, Auburn University, Auburn, AL	1:20 p.m. AIAA-2026-1052 Wall-Modeled Large-Eddy Simulations of Forced Oscillation and Transonic Shock Buffet of Benchmark Supercritical Wing H. Yu, Stanford University Center for Turbulence Research, Stanford, CA; S. Bose, Cadence Design Systems Inc, San Jose, CA; P. Moin, Stanford University Center for Turbulence Research, Stanford, CA	1:40 p.m. AIAA-2026-1053 Reconstructing 3D Flow Around a Flexible Airfoil Using Limited Planar Data M. Kashefi, M. Khazaee Kuhpar, B. Seyed-Aghazadeh, University of Massachusetts Dartmouth, Dartmouth, MA	2:00 p.m. AIAA-2026-1054 Longitudinal Gust Effects on Ship Airwake Characteristics for Helicopter Landing Operations with Correlations to Pilot Workload Factor S. Yon, S. Li, Oklahoma State University, Stillwater, OK	2:20 p.m. AIAA-2026-1055 Performance Study for High-Fidelity Static Aeroelastic Analyses Using the OpenMDAO Framework and the FlowSimulator HPC Ecosystem K. Masilamani, S. Gottfried, A. Büchner, A. Stueck, German Aerospace Center DLR Institute of Software Methods for Product Virtualization, Dresden, Germany	

Tuesday, 13 January 2026					
SD-11	Flutter and Limit-Cycle Oscillations II				Bayhill 22
Chaired by: W. SU, University of Alabama, Tuscaloosa and L. DEMASI, San Diego State University College of Engineering					
1:00 p.m. AIAA-2026-1056 High-Fidelity Aeroelastic Predictions of a Very Flexible Wing M. Candon, S. Tohmuang, A. Delgado-Gutiérrez, P. Marzocca, RMIT University, Melbourne, Australia; D. Antonini, G. Coppotelli, Universita degli Studi di Roma La Sapienza, Rome, Italy; et al.	1:20 p.m. AIAA-2026-1057 Nonlinear Aeroelastic Modeling and Analysis of 3D Highly Flexible Wings H. Tang, S. Jayatilake, F. Healy, J. Ascham, M. Lowenberg, D. Jones, University of Bristol, Bristol, United Kingdom; et al.	1:40 p.m. AIAA-2026-1058 Aeroservoelastic Wind Tunnel Evaluation of H∞ Active Flutter Suppression K. Ting , J. Berg, M. Mesbahi, E. Livne, University of Washington, Seattle, WA	2:00 p.m. AIAA-2026-1059 Freeplay and Preload Effects on the Aeroelastic Behavior of the XDIA Wind Tunnel Model: 2025 Test Results and Insights F. Toffol, E. Roncolini, S. Ricci, Politecnico di Milano, Milan, Italy; E. Livne, University of Washington, Seattle, WA	2:20 p.m. AIAA-2026-1060 Testing of Active Flutter Suppression for Wings Incorporating Floating Wingtips J. Sneddon, F. Healy, M. Lowenberg, J. Cooper, University of Bristol, Bristol, United Kingdom	2:40 p.m. AIAA-2026-1061 Nonlinear Actuator Modeling and Describing Function Analysis for Active Flutter Suppression M. Ghosh, Virginia Polytechnic Institute and State University, Blacksburg, VA; M. Patil, Georgia Institute of Technology, Atlanta, GA

Tuesday, 13 January 2026					
SE-06	Trade Studies in Systems Engineering				Bayhill 25
Chaired by: M. MILLER, Georgia Institute of Technology and S. DAM, SPEC Innovations					
1:00 p.m. AIAA-2026-1062 A Multidisciplinary Variable-Fidelity Framework for the Design of Launch Vehicles	1:20 p.m. AIAA-2026-1063 Design and Test of Dual Deployment Recovery System for Collegiate	1:40 p.m. AIAA-2026-1064 Optimization of Dual-Cryogenic Propellant Collegiate Rockets	2:00 p.m. AIAA-2026-1065 Design Optimization of a Low SWaP Space Debris Satellite Constellation		

M. Fratini, A. Giordani, D. Palma, L. Pirillo, L. Pustina, M. Molinari, Universita degli Studi di Roma La Sapienza Facolta di Ingegneria Civile e Industriale, Rome, Italy; et al.	High-Powered Liquid Rocketry M. Phelps, M. Soriano, E. Ruiz, Students for the Exploration and Development of Space at UC San Diego, La Jolla, CA	D. Geske-Wilson, T. Krumrey, S. Chidambara Ganesh, University of California San Diego, La Jolla, CA	L. Wright, N. Abouyoussef, A. Ahmed, R. Vrbensky, B. Kipp, J. Zeng, Cornell University, Ithaca, NY		
Tuesday, 13 January 2026					
SEN-04	UAS Sensors and Sensing Systems I				Celebration 12
Chaired by: A. RELIFORD, Howard University and J. WADLEY, Lockheed Martin Aeronautics					
1:00 p.m. AIAA-2026-1066 A Behavior Tree-Based Visual Reasoning Architecture for Enhanced UAM Object Recognition J. Lee, S. Cho, Cheongju University, Cheongju-si, South Korea; Y. Jung, Korea Aerospace Research Institute, Daejeon, South Korea	1:20 p.m. AIAA-2026-1067 Practical Motion Estimation for Micro Aerial Vehicles Using Wide-Field-Integration of Optic Flow R. Okabayashi, R. Shirahase, M. Bando, S. Hokamoto, Kyushu Daigaku, Fukuoka, Japan	1:40 p.m. AIAA-2026-1068 Ground Plane Segmentation Based IMU/RGB-D Extrinsic Calibration for UAVs I. Asl Sabbaghian Hokmabadi, M. Bisheban, University of Calgary, Calgary, Canada	2:00 p.m. AIAA-2026-1069 Hybrid Intrinsic–Extrinsic Calibration of Multiple IMUs and Joint Encoders for Accurate End-Effector Trajectory Estimation in Aerial Manipulators I. Asl Sabbaghian Hokmabadi, M. Bisheban, University of Calgary, Calgary, Canada	2:20 p.m. AIAA-2026-1070 Enabling Autonomous Navigation With Radar-Only Perception in GPS-Denied Environments S. Senthil Kumar, H. Chhaya, H. Ramos, M. Longmire, J. Paquet, University of Florida, Shalimar, FL; K. Brink, Air Force Research Laboratory, Eglin Air Force Base, Eglin AFB, FL	2:40 p.m. AIAA-2026-1071 Error Analysis of Extensive Drone Flight Data for Satellite Navigation in Urban Environment V. Donato, G. Giangreco, F. Mattei, C. Conte, G. Rufino, D. Accardo, Universita degli Studi di Napoli Federico II, Naples, Italy; et al.
Tuesday, 13 January 2026					
SFM-12	Orbit Determination and Estimation and Space Debris Management				Plaza Ballroom J
Chaired by: C. NEBELECKY, University at Buffalo					
1:00 p.m. AIAA-2026-1072 Collaborative Navigation of a Crosslink-Augmented Lunar PNT Constellation P. Ghosh, J. Bradfield, W. Fife, R. Olson, R. Schulze, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; S. Stewart, Intuitive Machines, Houston, TX	1:20 p.m. AIAA-2026-1073 Optimization of Thrust Vector Direction for Direct Thrust Estimation Uncertainty Minimization A. Jones, O. Jia-Richards, University of Michigan Department of Aerospace Engineering, Ann Arbor, MI	1:40 p.m. AIAA-2026-1074 Simulation Results of Spaceborne SSA Using a Comprehensive Passive Radar Model C. Gaikwad, F. Senra, A. Lovell, H. Peng, B. Pekoz, T. Yang, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-0438 A Hybrid Framework for Space Debris Mitigation: Combining Feedback Control and Detailed Environment Models M. Rusconi, C. Colombo, Politecnico di Milano, Milan, Italy	2:20 p.m. AIAA-2026-0439 Passive Attitude Control of Dust Particles for Active Debris Removal A. Barona-Mejia, J. Ivarson, D. Guzzetti, Auburn University, Auburn, AL	2:40 p.m. AIAA-2026-0440 Touchless Electrostatic Detumbling of Differentially Charged Spacecraft in Geosynchronous Earth Orbit E. Weber, H. Schaub, University of Colorado Boulder, Boulder, CO
Tuesday, 13 January 2026					
STR-11	Composite Structural Analysis, Design, Testing, and Manufacturing I				Bayhill 19
Chaired by: C. MERRETT, Mississippi State University and S. TAYLOR, Gulfstream					
1:00 p.m. AIAA-2026-1078 Process Optimization for Improved Structural	1:20 p.m. AIAA-2026-1079 Towpreg-wise Modeling for Composite Laminates	1:40 p.m. AIAA-2026-1080 Robotic Kinematic Modeling and	2:00 p.m. AIAA-2026-1081 SMARTCLAVE: A High-Fidelity Digital Twin for	2:20 p.m. AIAA-2026-1082 Numerical Investigation of Gaps and Overlaps in	

Performance of Composite Materials S. Meka, R. Enos, Y. Sun, D. Zhang, Purdue University, West Lafayette, IN	Manufactured via Automated Fiber Placement M. Prince, W. Zhao, Oklahoma State University, Stillwater, OK	Deformation of Composite Laminates via Automated Fiber Placement Manufacturing R. Islam, M. Prince, H. Bai, W. Zhao, Oklahoma State University, Stillwater, OK	Predicting Process-Induced Local Defects and Distortion of Autoclave-Cured Composite Parts K. Shrestha, A. Karuppiah, J. Lua, Global Engineering and Materials Inc., Princeton, NJ; M. Walthers, National Institute for Aviation Research, Wichita, KS; J. Yan, University of Illinois at Urbana-Champaign, Urbana, IL; I. Guay, Naval Air Warfare Center (NAVAIR), Patuxent River, MD; et al.	Variable Stiffness Composites Using Alternative Defect Modeling Approaches G. Demirer, A. Kayran, Orta Dogu Teknik Universitesi, Ankara, Turkey	

Tuesday, 13 January 2026					
SUR-01	Space System Survivability				Bayhill 26
Chaired by: J. KOKKAT, Johns Hopkins University Applied Physics Laboratory and B. LIN, Lockheed Martin Aeronautics					
1:00 p.m. AIAA-2026-1083 Cyber Resilient Attitude Determination and Control for Space Vehicles R. Thummala, G. Falco, Cornell University, Ithaca, NY	1:20 p.m. AIAA-2026-1084 Testing and Validation of High-Speed Imaging for Lunar Plume-Surface Interaction H. Faust, A. Pujols, S. O'Sullivan, D. Lopez, T. Henderson, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-1085 Additive Manufacture, Hypervelocity Testing, and Simulation of Polyetherimide Spacecraft Shielding D. Syed, C. Box, F. Pruitt, J. Stevenson, A. Ruether, J. Christopher, US Air Force Academy, Air Force Academy, CO; et al.	2:00 p.m. AIAA-2026-1086 A Suite of Thermal Switches for Surviving Extreme Thermal Environments in Space M. Ralphs, M. Sinfield, Utah State University Space Dynamics Laboratory, North Logan, UT		

Tuesday, 13 January 2026		
SUST-05	Non-CO2 Engine Emissions and Contrails	Plaza Ballroom K
Chaired by: R. MOORE, NASA Langley Research Center		
Discussion of non-CO2 aviation concerns, contrails, and recent observational and modeling studies. **Panelists:** Prof. Dr. Christiane Voigt, Head of the Cloud Physics Department, DLR – The German Aerospace Center Dr. Florian Allroggen, Executive Director and Research Scientist, MIT Laboratory for Aviation and the Environment Mr. Tyler Robarge, Aviation Operations Lead and Test Pilot, Contrails.org		

Tuesday, 13 January 2026					
UAS-05	Autonomous Mission Management Concepts and Technologies				Orlando Ballroom M
Chaired by: J. PAUNICKA, Boeing Engineering Operations & Technology					
1:00 p.m. AIAA-2026-1087	1:20 p.m. AIAA-2026-1088	1:40 p.m. AIAA-2026-1089	2:00 p.m. AIAA-2026-1090	2:20 p.m. AIAA-2026-1091	

Dynamic Matching and Management Method of Multiple Pilots and UAVs for M-to-N Operations N. Kanekawa, Kabushiki Kaisha Hitachi Seisakusho, Hitachi, Japan	Estimating UAS-To-Crewed Aircraft Collision Risk Using Extreme Value Theory J. Mooney, Wing Aviation, Palo Alto, CA; B. Figuet, SkAI Data Services, Zurich, Switzerland	Probability-Informed UAV Route Generation in a Search and Rescue Context S. Reid, A. Richards, M. Watson, S. Bullock, University of Bristol, Bristol, United Kingdom	Feedforward Model Predictive Control for Quadrotor Rejection of Discrete Gusts C. Murray, Ohio Northern University, Ada, OH; D. Anderson, University of Glasgow, Glasgow, United Kingdom	Coordination and Planning Algorithms for a UAS Fleet in GPS-Denied Environments N. Kumar, R. Ganeshan, S. Rathinam, S. Darbha, Texas A&M University, College Station, TX	

Tuesday, 13 January 2026

HUB-01 1:15 - 2:00 p.m.	Preliminary Data Analysis of the 2023 Boeing ecoDemonstrator Explorer SAF Emissions and Contrail Project	the HUB in the Expo Hall

In October 2023, Boeing and NASA conducted a joint experiment at Paine Field, WA to measure emissions and contrail properties of a Boeing 737-10 using low sulfur Jet A, 100% paraffinic sustainable aviation fuel, and local Jet A fuels. Utilizing the NASA DC-8 as a chase aircraft, the study analyzed particulate and ice particle concentrations under varying atmospheric conditions and fuel types. This experiment also highlighted challenges in particle measurement within contrails, fuel handling logistics, and atmospheric interactions, informing future research on aviation emissions and measurement techniques. Speaker: Rose Miller, Atmospheric Scientist, The Boeing Company

Tuesday, 13 January 2026

SUST-06	The New Space Race: Chances and Challenges for a Sustainable Future	Plaza Ballroom K

Chaired by: S. EGGL, University of Illinois at Urbana-Champaign

The space environment is changing at break-neck speed. National and international actors both public and private are capable of launching constellations of tens of thousands of satellites and compete for shells in Low Earth Orbit as well as bandwidth in the electromagnetic spectrum. The crowding of near-Earth space comes with an increased risk of collisions and could threaten the dark and radio-quiet sky that is essential for astronomy. Is it possible to industrialize space in sustainable way that guarantees access to this vital resource for generations to come? **Panelists:** Diane Howard (Former Director of Commercial Space Policy, National Space Council and Chief Counsel for Space Commerce / UT Austin & McGill University) Carolin Frueh (Harold DeGroff Associate Professor of Aeronautics and Astronautics, Purdue University) Marco Concha (Amazon LEO Head of GNC) Gonzalo Sanchez Arriaga (Professor of Aerospace Engineering, Universidad Carlos III de Madrid / Persei Space)

Tuesday, 13 January 2026

F360-06 2:15 - 3:00 p.m.	30 Years of Design/Build/Fly	Windermere Ballroom

Celebrate 30 years of the world's premier aircraft design and build competition. We will explore the history, successes, and growth of DBF and the students who drive it. Participants from the past, present, and future of aerospace will take the audience through the history of DBF and how it has revolutionized the aerospace industry

Tuesday, 13 January 2026

HUB-02 3:00 - 3:30 p.m.	Astris AI	the HUB in the Expo Hall

AI for regulated businesses and the broader U.S. government must be mission-critical and built for high-assurance environments. Enter Astris AI, a wholly owned subsidiary of Lockheed Martin. Join Greg Forrest, Lockheed Martin Vice President of AI Foundations and Commercialization, on how Astris AI delivers tried, tested, and proven solutions through the AI Factory. Speaker: Greg Forest, VP, AI Foundations and Commercialization, Lockheed Martin

Tuesday, 13 January 2026

NW-04 3:00 - 3:30 p.m.	Networking Coffee Break	Regency Ballroom

Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.

Tuesday, 13 January 2026

ACD-05	Hypersonic Aircraft Design	Rock Spring I & II

Chaired by: A. BERNHARD, Lockheed Martin Aeronautics and D. LEVY

3:30 p.m. AIAA-2026-1092 Development of a Computational Tool for Generating Hypersonic Vehicle Geometries Using an Approximate Solution to the Taylor-Maccoll Equation K. Keely, A. Thombs, Texas A&M University System, College Station, TX; K. Bowcutt, The Boeing Company, Chicago, IL; R. Bowersox, Texas A&M University System, College Station, TX	3:50 p.m. AIAA-2026-1093 Aerodynamic Centers of High L/D Cone-Derived Hypersonic Waveriders Evaluated Using Impact Methods J. Wiberg, D. Hunsaker, Utah State University, Logan, UT	4:10 p.m. AIAA-2026-1094 Hypersonic Vehicle Co-Design for Multi-Stage Mission Planning S. Takahashi, Uchu Koku Kenkyu Kaihatsu Kiko, Kakuda, Japan; T. Nagata, Nagoya Daigaku, Nagoya, Japan; K. Tani, M. Koga, T. Isono, M. Takegoshi, Uchu Koku Kenkyu Kaihatsu Kiko, Kakuda, Japan; et al.	4:30 p.m. AIAA-2026-1095 Towards Selection of a Hypersonic Glide Vehicle Aerothermal Common Research Model Configuration E. Yakubayev, K. Gschwend, S. Robertson, A. Cox, C. Perron, D. Mavris, Georgia Institute of Technology, Atlanta, GA		

Tuesday, 13 January 2026

AIAA-09 3:30 - 4:30 p.m.	2026 AIAA Dryden Lecture in Research	Windermere Ballroom

Active Drag Reduction with Net Power Savings in Turbulent Boundary Layers – Physics and Scaling The AIAA Dryden Lectureship in Research, named in honor of Dr. Hugh L. Dryden in 1967, emphasizes the great importance of basic and applied research to the advancement in aeronautics and astronautics and is a salute to research scientists and engineers. The lecture succeeded the Research Award established in 1960. The lecture examines the realization of a long-sought capability in aeronautics, namely significant turbulent boundary layer net skin friction drag reduction. Laminar flow control can be applied for skin friction reduction on wings, tails, and engines; however, for sizable transports and many other applications, significant turbulent boundary layer drag reduction has long been sought. The new approach, essentially an aerodynamic breakthrough, will utilize plasma aerodynamics to control the turbulence production processes in the boundary layer (sometimes termed "coherent structures") that are linked to viscous drag. The essential control approach is the imposition of a small spanwise mean flow, in a very economically energetic fashion. Experiments thus far indicate excellent net drag reduction performance up to Mach 0.5, with indications of similar performance into supersonic regimes. This turbulence control/large net-drag reduction success has informed the understanding of boundary layer turbulence dynamics. Fuselage turbulent skin friction accounts for 25% of the drag on a conventional transport at cruise. It holds a much greater percentage for advanced designs with greater aspect ratios and laminar flow wings. This technology appears to be capable of reducing the turbulent skin friction of such aircraft by a net 50% amount. The lecture concludes by outlining a plan for an upcoming flight test.

Tuesday, 13 January 2026

AMT-16	Laser Induced Fluorescence Techniques	Blue Spring II

Chaired by: B. LEONOV, Texas A&M University and W. KULATILAKA, Texas A & M University

3:30 p.m. AIAA-2026-1096 Femtosecond LIF Imaging of Reactive Radicals Near Impinging Flame Walls at Low Pressure S. Pias, M. Hay, K. Chang, H. Pan, W. Kulatilaka, Texas A&M University System, College Station, TX	3:50 p.m. AIAA-2026-1097 Planar Fluorescence Imaging of Vibrationally Excited Molecular Oxygen using a Seeded Optical Parametric Oscillator N. Phillips, B. Leonov, A. Dogariu, Texas A&M University, College Station, TX	4:10 p.m. AIAA-2026-1098 Planar Laser-Induced Fluorescence Measurements of Atomic Oxygen in an Inductively Coupled Plasma S. Weston, I. Ballou, W. Burke, M. Clyde, D. Fletcher, University of Vermont, Burlington, VT	4:30 p.m. AIAA-2026-1099 Spanwise OH PLIF Visualization of Flame Structure and Location in a Dual-Mode Scramjet Combustor A. Metro, R. Rockwell, C. Dedic, University of Virginia, Charlottesville, VA; A. Cutler, The George Washington University, Washington, D.C.	4:50 p.m. AIAA-2026-1100 3D Nitric Oxide Imaging by Laser-Induced Fluorescence in a Reacting Flow Using Tunable 5th Harmonic Burst-Mode Nd:YAG C. Grunbok, B. Leonov, R. Miles, Texas A&M University System, College Station, TX	5:10 p.m. AIAA-2026-1101 Burst Mode Dye Laser System for 50 kHz OH-PLIF of Swirl Burner B. McGann, Innovative Scientific Solutions Inc., Dayton, OH; C. Carter, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; T. Lee, M. D'Agostino, University of Illinois Urbana-Champaign, Urbana, IL; B. Leonov, Texas A&M University, College Station, TX

Tuesday, 13 January 2026

AMT-17	PSP/TSP Workshop	Blue Spring I

Chaired by: H. SAKAUE, University of Notre Dame and C. KLEIN, DLR - German Aerospace Center

This is an oral session held after the technical sessions focused on PSP and TSP to discuss current challenges in the PSP/TSP technologies as a group.

Tuesday, 13 January 2026

AMT-18	Recent Advances in Particle Image Velocimetry	Plaza Ballroom E

Chaired by: M. RAFFEL, DLR Göttingen and D. PLEMMONS, National Aerospace Solutions

3:30 p.m. AIAA-2026-1102 Invited: Recent Advances in Particle Image Velocimetry M. Raffel, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Göttingen, Germany	3:50 p.m. 4346255 Invited: 3D Lagrangian Particle Tracking and Data Assimilation in Fluid Mechanincs: Resolving a Wide Range of Flow Scales D. Schanz, A. Schröder, P. Godbersen, M. Novara, S. Gesemann, R. Geisler, German Aerospace Center (DLR), Göttingen, Germany; et al.	4:10 p.m. 4342938 Invited: Adapting PIV From Supersonic to Hypersonic Flows S. Beresh, Sandia National Laboratories, Albuquerque, NM	4:30 p.m. 4342767 Invited: Lensless Particle Image Velocimetry J. Eppink, C. Yao, NASA Langley Research Center, Hampton, VA; N. Antipa, University of California San Diego, La Jolla, CA; H. Choi, Northeastern University, Boston, MA	4:50 p.m. 4356607 Invited: Event-based Imaging Velocimetry - Principles, Applications & Potentials C. Willert, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	

Tuesday, 13 January 2026

APA-33/INPSI-04	Aerodynamics of Inlets and Nozzles	Manatee Spring II

Chaired by: C. NELSON, Siemens Digital Industries Software

3:30 p.m. AIAA-2026-1103	3:50 p.m. AIAA-2026-1104	4:10 p.m. AIAA-2026-1105	4:30 p.m. AIAA-2026-1106		

Turbulence Intensity in the Exit Boundary Layer of Nozzles at Subsonic Conditions K. Zaman, N. Georgiadis, NASA, Cleveland, OH	Multi-Objective Aerodynamics Design of Supersonic Inlet for Laser Propulsion T. Kumazaki, K. Shimamura, Tokyo Toritsu Daigaku, Hachioji, Japan	Volumetric Experimental Characterization and Validation of a Supersonic Dual-Stream Rectangular Jet M. Qualters, K. Laurent, F. Zigunov, Syracuse University, Syracuse, NY	Simulation of Propulsion Integration of Rear Mounted Electric Engine Simulators for Wind Tunnel Testing A. Mojaabi, B. Britto, M. Zeitler, J. Friedrichs, R. Radespiel, P. Scholz, Technische Universitat Braunschweig, Brunswick, Germany		
Tuesday, 13 January 2026					
APA-34	Airfoil/Wing/Configuration Aerodynamics III				Coral Spring II
Chaired by: J. THREADGILL, University of Arizona and B. TUNA, Florida State University					
3:30 p.m. AIAA-2026-1107 Analysis of a Generic T-Tail Transport Using a Surface-Vorticity Panel Method Flow Solver at Low Angles of Attack C. May, R. Hartfield, Auburn University, Auburn, AL; V. Ahuja, Siemens Digital Industries Software Inc, Plano, TX	3:50 p.m. AIAA-2026-1108 Use of Numerical Lifting Line Algorithm to Predict Aerodynamics of Entire Aircraft Z. Jenkins, D. Hunsaker, Utah State University, Logan, UT	4:10 p.m. AIAA-2026-1109 Validation of a Vortex-Panel Method Software for Full-Scale Flying Wing Aerodynamics G. Fernandes, A. Rodriguez, Texas Tech University System, Lubbock, TX; N. Gandur, Embry-Riddle Aeronautical University, Prescott, AZ; V. Maldonado, Texas Tech University System, Lubbock, TX	4:30 p.m. AIAA-2026-1110 Numerical Analysis of Unsteady LSB Under the Pitching Motion S. Keskin, Erciyes Universitesi, Talas, Turkey	4:50 p.m. AIAA-2026-1111 Computational Analysis of Steady State Aerodynamics of Transonic Truss-Braced Wing Configuration in Deep Stall J. Xiong, KBR, Moffett Field, CA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Foster, W. Milholen, NASA Langley Research Center, Hampton, VA	5:10 p.m. AIAA-2026-1112 Inverse Reconstruction of Free-Stream Vortices Using Surface Pressure on a Joukovsky Airfoil Y. Du, University of Michigan, Ann Arbor, MI; Q. Wang, San Diego State University, San Diego, CA
Tuesday, 13 January 2026					
APA-36	Special Session: Applied Surrogate Modeling III				Manatee Spring I
Chaired by: A. WISSINK, US Army DEVCOM Technology Development Directorate and N. HARIHARAN, HPCMP CREATE					
3:30 p.m. AIAA-2026-1113 Application of Projection-Based Reduced-Order Models to the Aerodynamic Test and Evaluation of the T-38 Aircraft M. Chmiel, M. Ghoreyshi, D. Harp, US Air Force Academy, Air Force Academy, CO; C. Farhat, Stanford University, Stanford, CA	3:50 p.m. AIAA-2026-1114 Aerostructural Control with Reduced Sampling Rates Using State-consistent Reduced Order Models C. Sevart, Y. Wang, University of South Carolina, Columbia, SC; A. Kaminsky, J. Simac, CFD Research Corporation, Huntsville, AL	4:10 p.m. AIAA-2026-1115 High-Performance Kriging Surrogate Models Using PyTorch: Accelerating Engineering Analysis and Optimization D. Cox, A. House, A. Kaminsky, CFD Research Corporation, Huntsville, AL	4:30 p.m. AIAA-2026-1116 Application of Multi-Task Learning Architectures to Aerodynamic Surrogate Modeling C. Beardsley, M. Amiraux, C. Stucki, Corvid Technologies, Mooresville, NC	4:50 p.m. AIAA-2026-1117 A Novel Parameterization Framework and Neural Network-Based Surrogate Modeling for Rotorcraft Fuselage Aerodynamic Prediction. M. Thakur, A. Anand, K. Marepally, J. Baeder, University of Maryland, College Park, MD	5:10 p.m. AIAA-2026-1118 Probabilistic Inverse Airfoil Design using the Large Airfoil Model H. Lee, P. Seshadri, J. Rauleder, Georgia Institute of Technology, Atlanta, GA

Tuesday, 13 January 2026					
AS-08	Adaptive Structures Lecture				Orlando Ballroom N
Chaired by: A. ARRIETA, Purdue University					
Dr. Mirko Kovac from École Polytechnique Fédérale de Lausanne					

Tuesday, 13 January 2026					
DE-07/SE-07/TF-04	Novel Design Approaches and Digital Engineering in Aerospace				Bayhill 23
Chaired by: J. CLAUSS and S. DAM, SPEC Innovations and G. ROTH, Air Force Research Laboratory and J. WIDRICK, Northrop Grumman Space Systems					
3:30 p.m. AIAA-2026-1119 Design and Simulation of HyDroQuad: A Drone-Quadruped Hybrid for Lightweight Multi-Modal Locomotion H. Gandhi, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL	3:50 p.m. AIAA-2026-1120 Integrating Machine Learning with Parametric Models for Rapid Cost Trades in Early-Stage Missile Design L. Wattebled, A. Jazzini, A. Cox, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-1121 Facilitating Topological Design Decisions in Early Mission Design Phases With Automated Knowledge Graph Generation by Means of Graph-Based Design Languages F. Löser, M. Riestenpatt gen. Richter, IILS mbH, Trochtelfingen-Steinhilben, Germany; S. Rudolph, Universitat Stuttgart Institut fur Flugzeugbau, Stuttgart, Germany	4:30 p.m. AIAA-2026-1122 Increasing the Efficiency and Value of Tradespace Analysis Through Machine Learning Methods A. LoCricchio, D. Hastings, Massachusetts Institute of Technology, Cambridge, MA; A. Palladino, The Charles Stark Draper Laboratory Inc, Cambridge, MA		

Tuesday, 13 January 2026					
DGE-05	Requirements and Missions				Silver Spring I
Chaired by: W. HAMMOND, University of Central Florida					
3:30 p.m. AIAA-2026-1123 Relative Pose Estimation of an Unmanned Aerial System to a Naval Vessel Using Neural Radiance Fields A. Bernas, N. Jess, L. DeVries, A. Shariati, United States Naval Academy, Annapolis, MD; D. Costello, University of Maryland, College Park, MD	3:50 p.m. AIAA-2026-1124 Digital Mission Engineering for Characterizing System Performance Needs S. Brunetto, Booz Allen Hamilton Inc, McLean, VA	4:10 p.m. AIAA-2026-1125 Approach for Coupled MBSE and MDAO for Military Transports J. Thomas, P. Dumont, H. Haskins, N. Grady, A. Baker, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:30 p.m. AIAA-2026-1126 A Framework for Specifying and Validating Model Based Systems Engineering, Digital Engineering, and Digital Twins R. Noguchi, The Aerospace Corporation, El Segundo, CA		

Tuesday, 13 January 2026					
EP-05	Molecular Propellants				Celebration 1

Chaired by: J. SZABO, Busek Co., Inc.					
3:30 p.m. AIAA-2026-1127 TALIF of Atomic Nitrogen in RF Plasma Source J. Stienike, M. Da Valle, A. Yalin, Colorado State University, Fort Collins, CO	3:50 p.m. AIAA-2026-1128 LIF Diagnostics of Molecular Propellants: A Study of N_2^+ in a Hidden Anode Plasma Source M. Da Valle, M. Morasco, T. Freestone, S. Thompson, J. Williams, A. Yalin, Colorado State University, Fort Collins, CO	4:10 p.m. AIAA-2026-1129 Spectroscopy of the Hydroxyl Ion OH^+ and Line Selection for Laser Induced Fluorescence IVDF Measurements M. Aardema, B. Hassan, C. Limbach, University of Michigan, Ann Arbor, MI			

Tuesday, 13 January 2026		
EXPL-08/LP-19	Cryogenic Fluid Management Technology - Highlights and Recent Developments (Invited Lecture)	Celebration 14
Chaired by: B. WILLIAMS, NASA Marshall Space Flight Center and R. RAMACHANDRAN, Amentum Space Exploration Division		

Pisciotta, Erin S. GRC-MT00) "NASA's Cryogenic Fluid Model Readiness Level Process" Scope: This presentation details a new process for evaluating the accuracy and fidelity of Cryogenic Fluid Models developed at NASA as part of the Cryogenic Fluid Management Portfolio Project. The presenter will outline the criteria used to validate these models against ground and flight test data, describe the Model Readiness Level (MRL) evaluation methodology, and highlight recent MRL assessments conducted at NASA. HQ Yang, Amentum, NASA MSFC "Recent Advances in Interface Turbulence Modeling for CFM Applications" Scope: The invited talk will provide an overview of modeling technologies used for CFM and planned activities. Followed by Q/A and discussion of CFM portfolio

Tuesday, 13 January 2026		
EXPL-09	Space Nuclear Propulsion (SNP) – Enabling Technology for Reducing Transit Time	Celebration 13
Chaired by: M. ALLISON, Marshall Space Flight Center and H. GERRISH, Marshall Space Flight Center		

The SNP panel will discuss significant technology development accomplishments made over the last year for nuclear thermal propulsion and nuclear electric propulsion **Panelists:** Andrew Presby (GRC), Ryan Hon (General Atomics), Brian Ade (Standard Nuclear), Jay Polk (JPL), Christopher Barth (GRC)

Tuesday, 13 January 2026		
FD-42	Applied CFD: Multiscale Physics and Modeling	Peacock Spring
Chaired by: M. KINZEL, Embry-Riddle Aeronautical University		

3:30 p.m. AIAA-2026-1131 Comparative CFD Study of Small-Scale Rocket Nozzles (Bell vs. Conical): Impact of Chemical Species Transport Modeling on Flow Behavior and Performance Predictions N. Jaimes Rincon, O. Lopez Mejía, Universidad de los Andes, Bogotá, Colombia	3:50 p.m. AIAA-2026-1132 Multiscale Computation of Plume Expansion in Continuum and Rarefied Regimes G. Dhungana, N. Sharan, Auburn University, Auburn, AL	4:10 p.m. AIAA-2026-1133 Non-Dissipative Moving Overset Grid Framework for Unsteady Aerodynamics M. Islam, V. Raghav, N. Sharan, Auburn University, Auburn, AL	4:30 p.m. AIAA-2026-1134 Study of RBCC Ejector Jet Mode R. Ito, T. Kanda, Chubu Daigaku, Kasugai, Japan	4:50 p.m. AIAA-2026-1135 Discrete Wavelet Transform Projection Methods in Solving Partial Differential Equations With Multiscale Features M. Holland, K. Bhaganagar, The University of Texas at San Antonio, San Antonio, TX	

Tuesday, 13 January 2026					
FD-43/APA-35	Flow Control: Methods and Applications VI				Barrel Spring II
Chaired by: A. LAKSHMI NARASIMHA PRASAD, Florida State University					
3:30 p.m. AIAA-2026-1136 *An Adaptive Orthogonal Collocation Method for the Optimal Control of Parabolic Partial Differential Equations* A. Davies, S. Pollock, University of Florida, Gainesville, FL; M. Dennis, Air Force Research Laboratory Munitions Directorate, Eglin Air Force Base, FL; A. Rao, University of Florida, Gainesville, FL	3:50 p.m. AIAA-2026-1137 Data-Driven Pressure Recovery Regulation in Diffusers J. Paredes Salazar, A. Goel, University of Maryland, College Park, MD; R. Costich, M. Koca, O. Tumuklu, M. Amitay, Rensselaer Polytechnic Institute, Troy, NY	4:10 p.m. AIAA-2026-1138 The Aerodynamic Inverted Pendulum: Modeling and Stabilization of a Trailing-Edge-Hinged Airfoil Y. Patel, University of Illinois Urbana-Champaign, Urbana, IL; S. Simon, S. Dawson, Illinois Institute of Technology Armour College of Engineering, Chicago, IL	4:30 p.m. AIAA-2026-1139 Real-time Flow Estimation via Limited Sensor Data Using Closed-Loop Neural Networks Observers T. Oliveira, W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil; S. Dawson, Illinois Institute of Technology, Chicago, IL	4:50 p.m. AIAA-2026-1140 Dynamic Modeling of a Thin Airfoil Pitching in Ground Effect T. Isobe, M. Tasnim, University of Virginia, Charlottesville, VA; X. Xu, University of Michigan, Ann Arbor, MI; F. Lagor, University of Virginia, Charlottesville, VA	

Tuesday, 13 January 2026					
FD-45	Hypersonic and High-Speed Flows				Plaza Ballroom F
Chaired by: C. HADER, University of Arizona and L. BRAVO, US Army Research Laboratory					
3:30 p.m. AIAA-2026-1141 An Overset Method for High-Speed Particle/Flowfield Interaction Modeling E. Feist, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN; J. Dietz, H. Johnson, VirtusAero LLC, Minneapolis, MN	3:50 p.m. AIAA-2026-1143 Generalized 5-DoF Model for Hypersonic Boost-Glide Vehicle Trajectory Predictions A. Zope, S. Bhushan, G. Burgreen, K. Kullum, A. Prevette, Mississippi State University, Mississippi State University, MS; E. Hall, US Army Engineer Research and Development Center, Vicksburg, MS; et al.	4:10 p.m. AIAA-2026-1144 The Application of a Complex Equation of State for Hypervelocity Water Entry Simulations J. Smith, M. Sendrey, P. Thasu, Case Western Reserve University, Cleveland, OH; M. Viqueira-Moreira, C. Brehm, University of Maryland, College Park, MD; B. Schmidt, Case Western Reserve University, Cleveland, OH	4:30 p.m. AIAA-2026-1145 On the Effect of Implicit Addition Of Flux Hessian On High Speed Flow Simulations M. Azab, M. Borghi, NASA Glenn Research Center, Cleveland, OH		

Tuesday, 13 January 2026					
FD-46	Instability and Transition VI				Coral Spring I
Chaired by: R. BHAGWAT, Florida State University					
3:30 p.m. AIAA-2026-1146 Solid Particulate Transition Investigation of the HIFLIER Hypersonic Flight Experiment	3:50 p.m. AIAA-2026-1147 Influence of Non-Uniform Surface Temperature Distributions on	4:10 p.m. AIAA-2026-1148 Leading-Edge Bluntness Effect on Intermittency in Hypersonic Boundary	4:30 p.m. AIAA-2026-1149 Hypersonic Boundary Layer Transition to Turbulence on a Spherical Forebody		

S. Dungan, V. Russo, C. Brehm, University of Maryland, College Park, MD	Hypersonic Boundary Layer K. Ozawa, L. Boscagli, G. Rigas, P. Bruce, Imperial College London, London, United Kingdom; M. Gurbuz, O. Ozer, The University of Manchester, Manchester, United Kingdom; et al.	Layer Transition Over a Slender Cone S. Mohanty, Indian Institute of Science, Bengaluru, India; N. Khobragade, Indian Institute of Technology Madras, Chennai, India; A. Krishna, Indian Space Research Organisation, Bengaluru, India; P. Thasu, Case Western Reserve University, Cleveland, OH; S. Duvvuri, Indian Institute of Science, Bengaluru, India	G. Sidharth, Iowa State University of Science and Technology, Ames, IA; A. Dwivedi, University of Minnesota Twin Cities, Minneapolis, MN		

Tuesday, 13 January 2026

FD-47	Memorial Session for Dr. William Saric	Barrel Spring I

Chaired by: K. GROOT, University of Wyoming and J. HOFFERTH, Air Force Research Laboratory and A. CRAIG and A. TUCKER, US Air Force

A celebration of the life and legacy of Dr. William Saric. The session will feature varied invited talks from family, friends, and colleagues. Remote presentations and viewership by non-attendees will be facilitated via Zoom. Please contact co-chairs for the Zoom link or to contribute your remembrances to be shared either at the session or accompanying dinner (RSVP req'd).

Tuesday, 13 January 2026

FD-48	Turbulent Flows II	Plaza Ballroom D

Chaired by: A. GANNON and M. GHARIB

3:30 p.m. AIAA-2026-1150 Computational Investigation of the Thermo-Fluid Mechanisms for Aero-Optical Distortions in a Subsonic Compressible Shear Layer T. DeFoor, A. Oliva, M. Rennie, University of Notre Dame, Notre Dame, IN	3:50 p.m. AIAA-2026-1151 A Priori Tensor Basis Coefficients for Practical Turbulence Modeling via Weighted Regularization J. Wnek, M. Wolff, Wright State University, Dayton, OH; E. Wolf, Ohio Aerospace Institute, Cleveland, OH; C. Schrock, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	4:10 p.m. AIAA-2026-1152 Scale Characterization of Jet Formation of Arrays of Multi-Source Wind Generators With Measurements and Large-Eddy Simulation M. Rahman, The University of Memphis, Memphis, TN; C. Dougherty, Cornell University, Ithaca, NY; D. Robinson, S. Narsipur, C. White, Mississippi State University, Mississippi State University, MS; D. Foti, The University of Memphis, Memphis, TN; et al.	4:30 p.m. AIAA-2026-1153 Large Eddy Simulation of a 45-Degree Expansion-Compression Corner at Mach 3 N. Kianvashrad, Wichita State University, Wichita, KS		

Tuesday, 13 January 2026

FT-05	Flight Testing Measurement Techniques	Rainbow Spring II

Chaired by: C. TWOMEY LAMB, MIT Lincoln Laboratory and J. NICHOLS, Raytheon

3:30 p.m. AIAA-2026-1154 Test Results of an Operability Rating Scale Using a Developmental Aerospace Vehicle P. Uybarreta, University of Canterbury, Christchurch, New Zealand; O. Grant, The University of Auckland, Auckland, New Zealand; N. Kabaliuk, University of Canterbury, Christchurch, New Zealand	3:50 p.m. AIAA-2026-1155 Measuring In-Flight Deflection of Cable Actuated Flaps R. Erb, A. Wenner, USAF Test Pilot School, Edwards AFB, CA	4:10 p.m. AIAA-2026-1156 Flight Test Instrumentation for Loads and Aeroelastic Analyses of a High Altitude, Long Endurance, Solar Electric Aircraft A. Voss, M. Tang, J. Sinske, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Göttingen, Germany	4:30 p.m. AIAA-2026-1157 The Role of Range Safety and Vehicle Limitations in the Design of Optical Diagnostic Systems for High-Speed Flight Experiments S. Keene, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL	4:50 p.m. AIAA-2026-1158 Fiber Bragg Grating Sensor Application for Monitoring of Additively Manufactured High-Temperature Aerostructures D. Handford, G. Wild, J. Smith, H. van Pelt, A. Neely, University of New South Wales Canberra at ADFA, Canberra, Australia	5:10 p.m. AIAA-2026-1159 Model-Based Human Systems Integration for Evaluating Pilot Performance in Simulated Engine Malfunction Emergencies J. Peterson, P. Voulgaris, University of Nevada Reno, Reno, NV; M. Taranto, USAF Test Pilot School, Edwards AFB, CA
Tuesday, 13 January 2026					
GNC-19	Autonomy and Artificial Intelligence for Aerospace GNC II				Bayhill 29
Chaired by: R. COWLAGI, Worcester Polytechnic Inst and G. INALHAN, Cranfield University					
3:30 p.m. AIAA-2026-1160 Fault-Tolerant Model Predictive Control for Spacecraft Formations via Nonlinear Regression E. Yang, General Atomics Aeronautical Systems Inc, Poway, CA; M. Ayoubi, Santa Clara University, Santa Clara, CA	3:50 p.m. AIAA-2026-1161 Reinforcement Learning for Rendezvous and Proximity Operations E. Chang, K. Schroeder, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:10 p.m. AIAA-2026-1162 Investigating Missile Feedback Control: Reinforcement Learning, PID, or Both? R. Taligatos, D. Nguyen, M. Lowenberg, University of Bristol, Bristol, United Kingdom	4:30 p.m. AIAA-2026-1163 Zero-Shot Transfer in Reinforcement Learning for Quasi-Similar Systems via Compensation Dynamics M. Mohiuddin, King Fahd University of Petroleum & Minerals College of Engineering and Physics, Dhahran, Saudi Arabia; I. Boiko, Y. Zweiri, Khalifa University, Abu Dhabi, United Arab Emirates	4:50 p.m. AIAA-2026-1164 Sensitivity-Augmented Iterative Best-Response MPC in a Three Player Orbital Differential Game C. Deresa, M. Kim, S. Kim, H. Choi, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	
Tuesday, 13 January 2026					
GNC-20/AFM-05	Entry, Descent and Landing Technology V: Guidance II				Orlando Ballroom L
Chaired by: B. JOHNSON, NASA Lyndon B. Johnson Space Center					
3:30 p.m. AIAA-2026-1165 Efficient Long-Range Lunar Descent Trajectory Generation with Continuous-Time Sequential Convex Programming T. Cavesmith, Massachusetts Institute of Technology, Cambridge, MA; S. Bhatt, The	3:50 p.m. AIAA-2026-1166 Unifying Lunar Descent Guidance T. Ito, Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus, Sagamihara, Japan	4:10 p.m. AIAA-2026-1167 Koopman-based Modeling for Rocket Landing Guidance Applications F. Cataldo, Politecnico di Milano, Milan, Italy; M. Sagliano, Universita degli Studi di Bologna, Forlì, Italy; F. Topputo, Politecnico di	4:30 p.m. AIAA-2026-1168 Real-time Optimal Entry Guidance Using Koopman Operator Based Dynamics Z. Xu, J. Daniel, R. Dai, Purdue University, West Lafayette, IN	4:50 p.m. AIAA-2026-1169 Neural Projection Operators for Real-Time 6-DoF Powered Descent Guidance J. Choi, D. Lee, J. Kim, Inha University, Michuhol-gu, South Korea	

Charles Stark Draper Laboratory Inc, Cambridge, MA; J. How, Massachusetts Institute of Technology, Cambridge, MA		Milano, Milan, Italy; R. Furfaro, The University of Arizona, Tucson, AZ			
Tuesday, 13 January 2026					
GNC-21/MST-02	Modeling and Simulation for Autonomous Guidance, Navigation and Control II				Bayhill 31
Chaired by: R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory and N. GOLI, Supernal					
3:30 p.m. AIAA-2026-1170 Fine-Tuning Large Language Models for Nonlinear Dynamics: The Lorenz Attractor as a Benchmark for Hypersonic Simulation M. Nixon, G. Turner, Valkyrie Enterprises, Huntsville, AL	3:50 p.m. AIAA-2026-1171 Modeling Unsteady Aircraft Aerodynamics Using Lorenz Attractor: A Reduced-Order Approach for Wing Rock M. Menner, Aurora Flight Sciences Corporation, Cambridge, MA; E. Lavretsky, The Boeing Company, Huntington Beach, CA	4:10 p.m. AIAA-2026-1172 Pivot-Only Azimuthal Control and Attitude Estimation of Balloon-borne Payloads P. Voyer, S. Tartakovsky, S. Benton, W. Jones, Princeton University, Princeton, NJ	4:30 p.m. AIAA-2026-1173 Three Dimensional Hydrodynamic Flow-Based Collision Avoidance for UAV Formations Facing Emergent Dynamic Obstacles S. Sato, K. Subbarao, The University of Texas at Arlington, Arlington, TX		
Tuesday, 13 January 2026					
GNC-22	Navigation, Estimation, Sensing, and Tracking				Bayhill 28
Chaired by: R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory					
3:30 p.m. AIAA-2026-1174 Conceptual Single Launch Lunar PNT Architecture with Sub-Meter Accuracy and Continuous South Pole Coverage for Lunar and Cis-Lunar Operations Y. Pasumarthy, I. Fertig, J. Stollman, A. Alex, M. Bandyopadhyay, A. Tucker, University of Michigan, Ann Arbor, MI; et al.	3:50 p.m. AIAA-2026-1175 Poisson Multi-Bernoulli Mixture Filter for Target Tracking Using a Gimballed Camera B. Allik, L. Wilson, J. Hatlelid, A. Browning, Trillium Engineering, Hood River, OR	4:10 p.m. AIAA-2026-1176 Extended Kalman Filtering with Censoring Statistics for Inertial-Only Navigation under GPS Denial S. Jetawatthana, T. Khamvilai, Texas Tech University, Lubbock, TX	4:30 p.m. AIAA-2026-1177 Robust Vision-Based Range and Bearing Estimation With Minimal Maneuvering C. Evans, J. Liu, R. Beard, Brigham Young University, Provo, UT	4:50 p.m. AIAA-2026-1178 Space Curve Representation and Estimation from Overlapping Time-of-Flight Point Cloud Measurements using Geometric Integration on SE(3) U. Patel, Oklahoma State University, Stillwater, OK; K. Haughn, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD; I. Faruque, Oklahoma State University, Stillwater, OK	
Tuesday, 13 January 2026					
GT-06	High Reynolds Number (Invited Session)				Plaza Ballroom K

Chaired by: H. QUIX, European Transonic Windtunnel and T. WAYMAN, Otto Aerospace					
3:30 p.m. AIAA-2026-1179 Application of Temperature Sensitive Paint for High Altitude Transonic Natural Laminar Flow Design – Part II T. Wayman, Otto Aerospace Inc., Fort Worth, TX; J. Coder, The Pennsylvania State University, University Park, PA; N. Pfeiffer, Pfeiffer Engineering, Wichita, KS	3:50 p.m. 4350088 High Reynolds Number Testing of the High-Aspect Ratio Wing Configuration DLR-F25 S. Geisbauer, DLR - German Aerospace Center, Braunschweig, Germany	4:10 p.m. 4350075 SWiFT2: Test Results From the European Transonic Windtunnel J. Coppin, Defence Science and Technology Laboratory, Salisbury, United Kingdom	4:30 p.m. AIAA-2026-1180 SWiFT2: Steady and Unsteady PSP Measurements on the SWiFT Model in the European Transonic Windtunnel C. Klein, U. Henne, D. Yorita, DLR - German Aerospace Center, Goettingen, Germany; V. Ondrus, FH Muenster, Muenster, Germany		
Tuesday, 13 January 2026					
GTE-09	Combustors II				Celebration 2
Chaired by: R. KANCHERLA, Cadence and V. HASTI, University of Central Florida					
3:30 p.m. AIAA-2026-1181 Advanced CRN Emission Prediction Model for Aircraft Engine Design K. Ziaja, Ruhr University Bochum, Chair of Thermal Turbomachines and Aeroengines, Bochum, Germany; D. Lieder, J. Göing, J. Friedrichs, Technische Universität Braunschweig, Institute of Jet Propulsion and Turbomachinery, Braunschweig, Germany; F. di Mare, Ruhr University Bochum, Chair of Thermal Turbomachines and Aeroengines, Bochum, Germany	3:50 p.m. AIAA-2026-1182 Investigating the Effect of Side Jet Dilution in a Hydrogen-Fuelled Swirl Combustor H. Awad, S. Gkantonas, J. Choe, E. Mastorakos, University of Cambridge, Cambridge, United Kingdom	4:10 p.m. AIAA-2026-1183 Parametric Analysis of Annular Twin Cavity Trapped Vortex Combustor Using Numerical Simulations N. M. S., D. Dasgupta, Argonne National Laboratory, Lemont, IL; K. Kang, C. O'Brien, T. Lee, University of Illinois Urbana-Champaign, Urbana, IL; J. Kim, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD; et al.	4:30 p.m. AIAA-2026-1184 Behavior of Transient Hydrogen Enriched Jet-In-Crossflow A. Ostrowski, P. Torres Serrano, M. Fortin, A. Morales, K. Chougag, L. Longas, University of Central Florida, Orlando, FL; et al.	4:50 p.m. AIAA-2026-1185 NO Sensor for Practical Gas Turbine Engines Using Ammonia Hydrogen Fuel Blends A. Maia, M. Ahmed, G. Barrios Cadenas, O. Valenzuela, A. Elmer-Santiago, A. Thornton, University of Central Florida, Orlando, FL; et al.	5:10 p.m. AIAA-2026-1186 NOx Emission Prediction of a Lean Premixed Hydrogen Combustor via Reactor Network Analysis V. Madonia, L. Folcarelli, A. Ferrero, D. Pastrone, F. Masseni, Politecnico di Torino, Turin, Italy
Tuesday, 13 January 2026					
GTE-10	Data Driven Methods for Manufacturing				Celebration 3
Chaired by: A. HAZLETT, GE Aerospace					

This event will bring together members of the industry, academia and government to talk about data driven methods AL/ML and technology with a focus on the aerospace and defense industry. The panel event will be attended by undergraduate and graduate students as well as industry professionals to aid students in building their professional knowledge related to fields, organizations, and roles. The event will provide an opportunity to inform the professional curiosity and future decisions of students, early career professionals and industry members as they engage with the panelists. The AIAA gas turbine technical committee is particularly

interested in fostering engagement opportunities for members of the aerospace industry to learn more about the AI/ML technologies shaping the future of this industry. The speaker will have to travel to Orlando, Florida in Jan 2026 to support the conference in-person The event will consist of a panel discussion with members of this industry each of whom have an expertise in a specific field. Potential areas include data driven methods (AI/ML) applicable to the aerospace and defense industry in areas of CFD modelling, MRO and sustainment, predictive maintenance, design and analysis etc. Event Goals: 1. Spotlight Industry Trends: Showcase pioneering applications of data-driven methods in digital twins, MRO optimization, and system design. 2. Facilitate Cross-Sectoral Collaboration: Unite academia, industry, and government to share best practices and discuss collaboration possibilities. 3. Empower the Next Generation: Provide students and early-career specialists with a glimpse into new jobs and tools of the digitalization of gas turbines. 4. Identify Opportunities and Challenges: Identify potential barriers to adoption and where additional development or standardization is required. 5. Assist Strategic Engagement: Align with the strategic interest of AIAA gas turbines technical committee in promoting the position of AI/ML and digital engineering in the gas turbine world. 6. Provide students, early career members and industry professionals with an opportunity to build/add to their professional community by interacting with peers and panelists who have common interests in fields, organizations, and roles.

Tuesday, 13 January 2026

HSABP-05	Topics in High-Speed Air-Breathing Propulsion I	Celebration 4

Chaired by: T. HAUGAN, U.S. Air Force Research Laboratory and R. MCGOWAN, U. S. Army Research Laboratory (APG)

3:30 p.m. AIAA-2026-1187 An Aero-Thermodynamic Analysis of Idealized Scramjet Configurations F. Ferguson, M. Dhanasar, J. Kizito, North Carolina Agricultural and Technical State University, Greensboro, NC	3:50 p.m. AIAA-2026-1188 Combined Cycle Propulsion Systems: A Review of Engine Configurations and Performance Considerations R. McGowan, A. Ghoshal, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD	4:10 p.m. AIAA-2026-1189 Turbine-Based Combined Cycle Design and Performance up to Mach 5.0 Z. Ashford, V. Pachidis, S. Prince, Cranfield University, Cranfield, United Kingdom	4:30 p.m. AIAA-2026-1190 Aerothermodynamic Analysis of an RDE-Augmented Scramjet A. La Sorsa, E. Kaminsky, G. Rodriguez, G. Miller, K. Ahmed, University of Central Florida, Orlando, FL	4:50 p.m. AIAA-2026-1191 Virtual Flight Controls for High Speed Flight J. Bulmer, B. Hall, K. Tackett, J. Blue, S. Eddy, C. Kovacs, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	5:10 p.m. AIAA-2026-1192 Utilizing Liquified-Petroleum-Gas (LPG) Fuels and Liquid-H_2 to Improve the Thermal-Lift-Capacity of Aerospace Platforms T. Haugan, U.S. Air Force Research Laboratory, Wright-Patterson AFB, OH; C. Kovacs, Scintillating Solutions LLC, Columbus, OH

Tuesday, 13 January 2026

HUB-03 3:30 - 4:00 p.m.	IQT in Orbit: Accelerating Innovation for the Space Domain	the HUB in the Expo Hall

Tuesday, 13 January 2026

INPSI-05/GTE-11/PC-15/TES-07/ACD-06	Innovations in Hybrid Electric and Ultra-Efficient Aircraft Technologies (Invited Session)	Florida Ballroom B

Chaired by: I. ORISAMOLU, Pratt & Whitney

3:30 - 3:50 PM Todd Spierling, Collins Aerospace "Hybrid Electric Propulsion Briefing" **3:50 - 4:10 PM Fabian Donus**, MTU Aero Engines "SWITCH Project - Advancing Hybrid-Electric Propulsion and Efficiency Technologies" **4:10 - 4:30 PM Gary Way**, Rolls-Royce "Multi-Megawatt Hybrid Electric Propulsion System for Regional Aircraft - HE-ART" **4:30 - 4:50 PM Thierry Rouge-Carrassat**, Safran "Advancing Hybrid-Electric Propulsion, Power, and Thermal Management: Clean Aviation Projects HE-ART, HECATE, and OSYRIS" **4:50 - 5:10 PM Andrea Milli**, GE Avio Aero "From Catalyst to AMBER" **5:10 - 5:30 PM Jean Thomassin**, Pratt & Whitney Canada "Hybrid-Electric Propulsion Technology Development at Pratt & Whitney Canada" (invited talk)

Tuesday, 13 January 2026

IS-09	Learning, Reasoning, and Data Driven Systems II				Celebration 16
Chaired by: J. CHEN, San Diego State University					
3:30 p.m. AIAA-2026-1193 Deep Reinforcement Learning for Irregular Flight Recovery With Chain Connectivity Constraint Y. Wang, Beihang University School of Electronic and Information Engineering, Beijing, China; J. Fang, Aviation Data Communication Corporation, Beijing, China; K. Cai, Beihang University School of Electronic and Information Engineering, Beijing, China	3:50 p.m. AIAA-2026-1194 Intention-Guided Airport Surface Trajectory Forecasting Using a Vision Language Model J. Xiang, X. Chen, J. Chen, San Diego State University, San Diego, CA	4:10 p.m. AIAA-2026-1195 LLM-Powered HFACS Analysis of ASRS Narratives via MCP Bridge for Enhanced Aviation Safety Debriefs A. Ahmadi, S. Sharif, Y. Banad, The University of Oklahoma, Norman, OK	4:30 p.m. AIAA-2026-1197 Integrating Terminal Airspace Weather Profiles Into Machine Learning Models for ETA Prediction Within the Terminal Maneuvering Area (TMA) H. Choi, J. Bhanpato, A. Behere, M. Kirby, D. Mavris, Georgia Institute of Technology, Atlanta, GA		

Tuesday, 13 January 2026

IS-10	Multi-Agent Control and Coordination I				Celebration 15
Chaired by: A. SINHA, University of Cincinnati and R. SHARMA, Air Force Institute of Technology					
3:30 p.m. AIAA-2026-1198 *MagNet:Magnetic Networks for Navigation* B. Blakely, R. Sharma, A. Nielsen, C. Taylor, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH	3:50 p.m. AIAA-2026-1199 Reactive Vehicle Guidance Using Dynamic Maneuvering Cue A. Von Moll, I. Weintraub, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	4:10 p.m. AIAA-2026-1200 Basic Engagement Zone Avoidance Using Pseudospectral Methods Q. Le, Hampton University, Hampton, VA; I. Weintraub, Control Science center, Air Force Research Laboratory Wright-Patterson AFB, Dayton, OH	4:30 p.m. AIAA-2026-1201 Bi-Objective Dynamic Zone Navigation R. Ganeshan, S. Rathinam, S. Darbha, Texas A&M University System, College Station, TX; S. G Manyam, DCS Corporation, Dayton, OH; I. Weintraub, D. Casbeer, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	4:50 p.m. AIAA-2026-1202 Learning-Augmented Adaptive Guidance for Target Interception R. Sharma, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH; A. Sinha, University of Cincinnati, Cincinnati, OH; I. Weintraub, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	5:10 p.m. AIAA-2026-1203 A Future Capabilities Agent for Tactical Air Traffic Control P. Kent, G. De Ath, University of Exeter, Exeter, United Kingdom; B. Carvell, National Air Traffic Services, Fareham, United Kingdom; R. Everson, The Alan Turing Institute, London, United Kingdom; M. Layton, A. Hart, University of Exeter, Exeter, United Kingdom

Tuesday, 13 January 2026

LP-06/PGC-08	Liquid Fueled Rotating Detonation Engines I				Celebration 8
Chaired by: J. THOMAS, Southwest Research Institute and S. WILLIAMS, Moog, Inc., Space, Advanced Programs					
3:30 p.m. AIAA-2026-1204 Self Adaptive Reduced Order Modeling Framework for Rotating	3:50 p.m. AIAA-2026-1205 A Diffuse Interface Framework for Shock-Driven Vaporization in	4:10 p.m. AIAA-2026-1206 Operating Characteristics of Rotating Detonation Engine With High-Vapor-Pressure Liquid Fuel for			

Detonation Engine Simulations A. Mohaghegh, C. Huang, University of Kansas, Lawrence, KS	Compressible Multiphase Systems S. Patel, T. Tryon, University of Colorado Colorado Springs, Colorado Springs, CO; B. Runnels, Iowa State University of Science and Technology, Ames, IA; M. Quinlan, University of Colorado Colorado Springs, Colorado Springs, CO	Sounding Rocket Space Flight in 2027 T. Matsushita, T. Sato, S. Suzuki, K. Matsuoka, N. Itouyama, M. Yasui, Nagoya Daigaku, Nagoya, Japan; et al.			

Tuesday, 13 January 2026

MAT-10/STR-16	Special Session in Honor of Dr. Steven M. Arnold	Bayhill 20

Chaired by: M. MAIARU, Columbia University and E. PINEDA, NASA Glenn Research Ctr

Over 40 Years of Mechanics and Life Prediction at the NASA Glenn Research Center Evan Pineda (NASA Glenn Research Center), Brett Bednarcyk, Trent Ricks, Brandon Hearley, Subodh Mital, Paria Naghipour, Timothy Smith, Steven Arnold Vision 2040: A Roadmap for Integrated, Multiscale Modeling and Simulation of Materials and Systems --- How are we progressing? Xuan Li (Pratt & Whitney), David Furrer Hyper X Software for Aerospace Structural Analysis, Design Optimization, and Vehicle Lightweighting Craig S. Collier (Collier Aerospace) Inverse Design of the Materials and Challenges at the Interface of Structural and Material Disciplinary Boundary Alicia Kim (UC San Diego) Hierarchical Response of Ti-6Al-4V: An Integrated Experimental–Modeling Study Ajit Achuthan (Clarkson), Kavindu Wijesinghe, Chamara Herath, Janith Wanni, Steven M Arnold Dealing with Intermediate Length Scales in Fiber Reinforced Materials Scott Stapleton (U. Mass. Lowell), Jamal Husseini, Eric Carey, Farhad Pourkamali-Anaraki, Evan Pineda, Brett Bednarcyk

Tuesday, 13 January 2026

MDO-11/NDA-04	Model Order Reduction and Surrogate Modeling	Bayhill 17

Chaired by: N. BARTOLI, ONERA and G. KENNEDY, Georgia Institute of Technology

3:30 p.m. AIAA-2026-1207 Physics-Infused Reduced-Order Modeling for Analysis of Multi-Layered Non-Decomposing Ablating Hypersonic Thermal Protection Systems C. Vargas Venegas, D. Huang, The Pennsylvania State University, University Park, PA; P. Blonigan, J. Tencer, Sandia National Laboratories, Albuquerque, NM	3:50 p.m. AIAA-2026-1208 Aerodynamic Uncertainty Analysis of the Common Research Model Wing Using Autoencoders A. Dikshit, L. Leifsson, Purdue University, West Lafayette, IN	4:10 p.m. AIAA-2026-1209 The Impact of Flow-Fields on Uncertain Reduced Order Models B. Willier, C. Perron, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:30 p.m. AIAA-2026-1210 Neural Operator-Enabled Aerodynamic Load Estimation for Hypersonics J. Pham, The University of Texas at Austin, Austin, TX; P. Blonigan, Sandia National Laboratories, Albuquerque, NM; T. O'Leary Roseberry, The Ohio State University, Columbus, OH; O. Ghattas, K. Willcox, The University of Texas at Austin, Austin, TX	4:50 p.m. AIAA-2026-1211 Optimal Takeoff Trajectory Prediction of Electric Drones Based on a Fully Automated Optimal Experimental Design Method J. Wang, Johns Hopkins University, Baltimore, MD; D. Paramkusham, X. Du, Missouri University of Science and Technology, Rolla, MO	5:10 p.m. AIAA-2026-1212 Towards Hyper-Reduced Weighted POD for Large-Scale Aerodynamic Design Optimization S. van Schie, J. Hwang, University of California San Diego, La Jolla, CA

Tuesday, 13 January 2026

MVCE-06/MDO-10	Geometry Modeling and Meshing for MDO, Moving and Deforming Meshes	Bayhill 30

Chaired by: C. WOEBER, Cadence Design Systems, Inc. and D. BRYSON, Air Force Research Laboratory

3:30 p.m. AIAA-2026-1213 Quad-Dominant Surface Meshes for Mid-Fidelity Aerospace Analysis J. Dannenhoffer, R. Haimes, Geocentric Technologies LLC, Albany, NY	3:50 p.m. AIAA-2026-1214 GUDA – A Lightweight Numerical Geometry Evaluation Library for Universal Device Accelerators W. Jones, NASA Langley Research Center, Hampton, VA	4:10 p.m. AIAA-2026-1215 Rapid Generation of Space Object Models with a Blender Add-On N. Quillman, M. Wilmer, XAnalytix Systems, Clarence Center, NY; M. Thurston, University at Buffalo, University at Buffalo, Buffalo, NY, US, academic, Buffalo, NY; C. Nebelecky, CUBRC Inc, Buffalo, NY; A. Biria, Air Force Research Lab, Kihei, HI	4:30 p.m. AIAA-2026-1216 Mesh Adaptation via Local Operations and Local Remeshing for Problems With Large Deformations J. Cai, Hangzhou Dianzi University, Hangzhou, China; S. Zhou, Aero Engine Academy of China, Beijing, China; Z. Xiao, Hangzhou Dianzi University, Hangzhou, China	4:50 p.m. AIAA-2026-1217 Robust Cut-Cell Cartesian Mesh Generation Method for Moving Boundaries P. Mao, Z. Xiao, Y. Xiong, Hangzhou Dianzi University, Hangzhou, China	

Tuesday, 13 January 2026

PC-13	Data-Driven Modeling of Combustion Dynamics	Celebration 5

Chaired by: C. HUANG, University of Kansas and R. MUNIPALLI, Air Force Research Laboratory

Recent advances in data-driven techniques, including model reduction, machine learning, and data assimilation, are transforming how we model and understand complex fluid flow problems. These methods are accelerating simulations, improving predictive accuracy, and unlocking new opportunities in the design, optimization, and control of real fluid-flow systems. This panel session brings together leading experts in computational science and engineering to explore both the promise and the challenges of these approaches. Panelists will: (1) review the current state of data-driven techniques for fluid flows with chemical reactions, shocks, or turbulence; and (2) discuss remaining gaps and potential pathways for developing more robust and effective data-driven techniques for these complex systems. Invited panelists include Profs. Hessam Babaee (University of Pittsburgh), Pierre F.J. Lermusiaux (MIT), Jonathan MacArt (University of Notre Dame), and Romit Maulik (Purdue University)

Tuesday, 13 January 2026

PC-14	Emissions	Celebration 7

Chaired by: D. DASGUPTA, Argonne National Laboratory and R. RAJASEGAR, Sandia National Laboratories

3:30 p.m. AIAA-2026-1218 Using Reactor Networks for Predicting the Impact of Turbine Expansion on Gas Turbine Emissions C. Gregson, Pennsylvania State University, University Park, PA; K. Atomboh, B. Windom, Colorado State University, Fort Collins, CO; J. O'Connor, Pennsylvania State University, University Park, PA	3:50 p.m. AIAA-2026-1219 Mitigating NOx Emissions in Hydrogen Engines Through Fuel Cell-Assisted Oxygen-Diluted Combustion I. Wiesler, D. Diskin, A. Thawko, Technion Israel Institute of Technology, Haifa, Israel	4:10 p.m. AIAA-2026-1220 Fundamental Minimum Emissions and Climate and Air Quality Societal Costs of Conceptual Turbofan Cycles S. Patel, Georgia Institute of Technology, Atlanta, GA; J. Pratdesaba, Purdue University System, West Lafayette, IN; J. Evans, R. McKinney, B. Emerson, T. Lieuwen, Georgia Institute of Technology, Atlanta, GA	4:30 p.m. AIAA-2026-1221 Operability, Emissions, and Optical Measurements of Combustion of Conventional and Alternative Liquid Fuels I. Gupta, S. Patel, B. Emerson, Georgia Institute of Technology, Atlanta, GA		

Tuesday, 13 January 2026

PC-16	Propellants				Celebration 6
Chaired by: J. MURPHY, The Aerospace Corporation					
3:30 p.m. AIAA-2026-1222 The Effects of Fuel-To-Oxidizer Ratio on HAN Based Electric Solid Propellants A. Bryan-Jones, S. Berg, Rutgers The State University of New Jersey, New Brunswick, NJ	3:50 p.m. AIAA-2026-1223 Macroscopic Time-Resolved Study on Reactive Flow Structure in a Gas-Solid Multiphase Cylindrical Rotating Detonation Combustor H. Nishida, N. Itouyama, K. Matsuoka, J. Kasahara, Nagoya Daigaku, Nagoya, Japan	4:10 p.m. AIAA-2026-1224 Manufactured Solid Fuels for Airbreathing Propulsion Applications W. Todd, J. Patten, J. Hearon, N. Padilla, C. Clark, K. Ahmed, University of Central Florida, Orlando, FL	4:30 p.m. AIAA-2026-1225 Mechanistic Model of Polypropylene and Polystyrene Solid Fuel Combustion for Supersonic Propulsion S. Vaidya, S. Nerella, L. Massa, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:50 p.m. AIAA-2026-1226 Plateau Burning of AP/HTPB-Based Solid Rocket Propellants Applying a Copper-Based Metal-Organic Framework Additive T. Swindell, E. Petersen, J. Pantoya, N. Seward, K. Herder, Texas A&M University, College Station, TX	

Tuesday, 13 January 2026

PDL-06	Plasma and Laser Diagnostics IV				Rainbow Spring I
Chaired by: R. MILES, Texas A&M University and S. GORDEYEV, University of Notre Dame					
3:30 p.m. AIAA-2026-1227 Development and Optical Emission Spectroscopy Characterization of a 13.56 MHz RF Plasma Source M. Morasco, M. Da Valle, S. Thompson, A. Yalin, Colorado State University, Fort Collins, CO	3:50 p.m. AIAA-2026-1228 O Atom Generation and Decay in O_2-Ar Mixtures Dissociated by a Ns Pulse Discharge in a Heated Plasma Flow Reactor M. Berry, S. Raskar, K. Orr, I. Adamovich, The Ohio State University, Columbus, OH	4:10 p.m. AIAA-2026-1229 Traceable Bayesian Uncertainty Quantification in Single-Shot Terahertz Spectroscopy of Plasmas A. Saha, M. Kang, C. R. Nallapareddy, T. C. Underwood, The University of Texas at Austin, Austin, TX	4:30 p.m. AIAA-2026-1230 Quantitative Measurement of NO Produced from Copper Surface Catalysis in Air Plasma R. Herrmann-Stanzel, J. Schlinder, University of Vermont, Burlington, VT; J. Meyers, University of Illinois Urbana-Champaign, Urbana, IL; D. Fletcher, University of Vermont, Burlington, VT	4:50 p.m. AIAA-2026-1231 Spatially Resolved Oxygen Dissociation and Thermometry of an Atmospheric Ar/O_2 Plasma Using Ultrafast CARS M. Konnik, T. Oldham, S. Kearney, University of Illinois Urbana-Champaign, Urbana, IL	

Tuesday, 13 January 2026

PGC-07	Detonation Initiation and Propagation				Florida Ballroom C
Chaired by: C. SLABAUGH, Purdue University and G. COBB, University of Alabama in Huntsville					
3:30 p.m. AIAA-2026-1232 Durability of Detonation Wave Through Suppressions in a 6-inch Rotating Detonation Engine D. Sanders, B. Sell, J. Liu, J. Hoke, Innovative Scientific Solution Inc., Dayton, OH; M.	3:50 p.m. AIAA-2026-1234 Prediction of Direct Initiation Requirements of Ethylene-Air Detonation J. Leff, S. Perna, J. Braun, NC State University, Raleigh, NC	4:10 p.m. AIAA-2026-1235 Propagation of Detonations Through Stratified Mixtures with Deflagrations J. Gardner, The University of Utah, Salt Lake City, UT; J. Squeo, Innovative Scientific Solutions, Inc, Dayton, OH; B.	4:30 p.m. AIAA-2026-1236 Spectral Analysis of Wave Mode Transition in a Hydrogen-Fueled Rotating Detonation Engine S. Thompson, University of Central Florida, Orlando, FL; R. Kumar, R. Ranjan, The	4:50 p.m. AIAA-2026-1827 Studies of Aluminum Dispersal and Reactions in Hydrogen-Oxygen Detonations Using a Gas-Driven Powder Injector N. Walsh, D. Dyson, R. Yuraszeck, H. Patel, A. Puerta-Alvarado, S. Vasu,	

Fotia, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH		Rankin, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; A. Novoselov, The University of Utah, Salt Lake City, UT	University of Tennessee at Chattanooga, Chattanooga, TN; V. Hasti, University of Central Florida, Orlando, FL	University of Central Florida College of Engineering and Computer Science, Orlando, FL; et al.	
Tuesday, 13 January 2026					
SCS-09	Lightweight and Inflatable Space Structures				Bayhill 24
Chaired by: S. PELLEGRINO, California Institute of Technology and A. RAKOW, MMA Space					
3:30 p.m. AIAA-2026-1237 Tether-Based Architecture for Solar-Powered Orbital Data Centers I. Bargatin, D. Jin, Z. Alansari, J. Raney, University of Pennsylvania, Philadelphia, PA	3:50 p.m. AIAA-2026-1238 Comparative Study of Kresling Origami Chains Under Impact Loading M. Hossain, O. Bateniparvar, University of Central Florida, Orlando, FL; D. Puglise, Milwaukee School of Engineering, Milwaukee, WI; M. Hanel, Western Kentucky University, Bowling Green, KY; R. Ghosh, University of Central Florida, Orlando, FL	4:10 p.m. AIAA-2026-1239 Deployable Multilayer Origami-inspired Telescope Shrouds C. Liou, M. Arya, Stanford University, Stanford, CA; S. Ferraro, Jet Propulsion Laboratory, Pasadena, CA	4:30 p.m. AIAA-2026-1240 A Novel Hybrid Auxetic Topology Under Axial Loading: Finite Element Numerical Simulation and Experimental Analysis under Quasi-Static and Fatigue Loading C. Lo, P. Sambaraju, California Polytechnic State University College of Engineering, San Luis Obispo, CA; J. Villegas Hernandez, Arizona State University, Tempe, AZ; M. Yekani Fard, California Polytechnic State University College of Engineering, San Luis Obispo, CA		
Tuesday, 13 January 2026					
SD-12/FD-44	Fluid-Structure Interaction III				Bayhill 18
Chaired by: N. SHARAN, Los Alamos National Laboratory and S. BOSE, Cadence Design Systems Inc					
3:30 p.m. AIAA-2026-1241 Aeroelasticity Studies of a 3D Half-Cylinder in Turbulent Flow; A Fully-Coupled Aeroelastic Model M. Ilie, J. Havenar, Georgia Southern University, Statesboro, GA	3:50 p.m. AIAA-2026-1242 Fsi + Sbli Over Thin Panels, Forced at Frequencies Studied. Forcing Done With Piezos. Psd, Spod, Bispectral Analysis Used to Study Coupling Between Vibrations and Flowfield. S. Adhikary, V. Narayanaswamy, NC State University, Raleigh, NC	4:10 p.m. AIAA-2026-1243 Experimental Study of Shock Impingement Over a Compliant Panel With a Turbulent Boundary Layer in Mach 4 Flow A. Acosta, J. Austin, California Institute of Technology, Pasadena, CA	4:30 p.m. AIAA-2026-1244 Turbulent Shock Wave Boundary Layer Interaction Over Viscoelastic Compliant Surfaces S. Chakravarty, V. Narayanaswamy, NC State University, Raleigh, NC	4:50 p.m. AIAA-2026-1245 Inertial Effects of a Shock Accelerated Particle on the Time-Dependent Drag Coefficient C. Hyett, Los Alamos National Laboratory, Los Alamos, NM; I. Borazjani, Texas A&M University, College Station, TX; D. Livescu, Los Alamos National Laboratory, Los Alamos, NM	

Tuesday, 13 January 2026		
SE-08/DGE-04/GTE-12/DE-08/HMT-02/EAT-04	Pattern-Based MBSE	Bayhill 27

Chaired by: M. FRENCH, Northrop Grumman Aeronautics Systems and R. RAHMAN

In the dynamic field of Defense Aerospace, Pattern-Based Model-Based Systems Engineering (MBSE) is revolutionizing the way complex systems are designed, developed, and managed. This panel will explore the innovative approach of using design patterns within MBSE to streamline system modeling and enhance reusability, consistency, and efficiency. Pattern-Based MBSE leverages predefined, proven templates and best practices to address common challenges, reducing the time and effort required to develop detailed system architectures. Experts will share insights on how this methodology improves communication among stakeholders, facilitates early validation and verification, and supports agility by enabling rapid iteration and adaptation. Real-world case studies will illustrate the successful application of Pattern-Based MBSE in optimizing system performance, reducing risks, and meeting stringent defense requirements. Attendees will learn about the tools and techniques essential for implementing this approach, as well as the cultural and organizational shifts needed for its successful adoption. Join us to discover how Pattern-Based MBSE is driving innovation and efficiency in Defense Aerospace, ensuring robust and adaptable systems that meet the mission-critical demands of the future. **Panelists:** William Schindel, ICTT System Sciences Marilee Wheaton, Fellow, Aerospace Corporation Olivia J. Pinon-Fischer, Principal Research Engineer, Georgia Institute of Technology

Tuesday, 13 January 2026					
SE-09	Systems Engineering Management and Lifecycle Approaches				Bayhill 25
Chaired by: J. GEBHARD, Rolls-Royce North American Technologies					
3:30 p.m. AIAA-2026-1248 Maximizing Effectiveness of the Systems Engineering Workforce H. Davidz, K. Nunn, ManTech International Corporation, Herndon, VA	3:50 p.m. AIAA-2026-1249 Towards Sustainable Lifecycle Maturity: Integrating Sustainable Development Goals Into the eTRL Framework R. Sugganahalli Natesh Babu, J. Caddell, R. Nilchiani, Stevens Institute of Technology, Hoboken, NJ	4:10 p.m. AIAA-2026-1250 Conceptualizing a Framework for Hybrid Space Architecture Sourcing and Integration in Civil Space Missions D. Bekdache, C. Guariniello, D. DeLaurentis, Purdue University, West Lafayette, IN	4:30 p.m. AIAA-2026-1251 AdvoCATE: The Assurance Case Automation Toolset at Age 14 E. Denney, G. Pai, KBR / NASA, Moffett Field, CA	4:50 p.m. AIAA-2026-1252 Improving Outcomes of Major Defense Acquisition Program by Integrating Program Management and System Engineering J. Metcalf, Colorado State University, Fort Collins, CO	

Tuesday, 13 January 2026					
SEN-05	UAS Sensors and Sensing Systems II				Celebration 12
Chaired by: I. CLARK, NASA Langley Research Center and E. CUNEYDI, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-1253 Gyroscope Scale Factor Estimation for a First-Order Gauss-Markov Drift Model A. Khilnani, S. Ye, Y. Bar-Shalom, University of Connecticut, Storrs, CT; A. Zaki, Naval Undersea Warfare Center Newport Division,	3:50 p.m. AIAA-2026-1254 *Development of Dandelion-Inspired Drones: Dandidrones* B. Mitra, A. Potnis, S. Bhattacharyya, W. Zhang, The University of Edinburgh School of Engineering, Edinburgh, United Kingdom;	4:10 p.m. AIAA-2026-1255 CFD-based Characterization of a WxUAS Sensor Housing for In-situ Atmospheric Sampling E. Michel, G. Britto Hupsel de Azevedo, C. Prasad, A. Alexander, J. Jacob,	4:30 p.m. AIAA-2026-1256 Lightweight UAV Borne 3D Perception via Pan-Tilt 2D LiDAR L. Garcia, T. Runner, H. Oropeza, C. Salinas, J. Xie, J. Chen, San Diego State University, San Diego, CA	4:50 p.m. AIAA-2026-1257 Delta-Pose Estimation of Very Sparse Time-Of-Flight Measurements Using Implicit Neural Representations H. Chhaya, H. Ramos, S. Senthil Kumar, M. Longmire, J. Paquet, University of Florida,	5:10 p.m. AIAA-2026-1258 Development of Autonomous Strategies for High Resolution Data Acquisition For sUAS-Based Atmospheric Research

Newport, RI; P. Willett, University of Connecticut, Storrs, CT	M. Desmulliez, Heriot-Watt University School of Engineering and Physical Sciences, Edinburgh, United Kingdom; I. Maria Viola, The University of Edinburgh School of Engineering, Edinburgh, United Kingdom	Oklahoma State University College of Engineering Architecture and Technology, Stillwater, OK		Shalimar, FL; K. Brink, Air Force Research Laboratory, Eglin Air Force Base, Eglin AFB, FL	K. Osei-Ntansah, A. Reliford, S. Smith, Howard University, Washington, D.C.

Tuesday, 13 January 2026

SFM-15	Trajectory/Mission/Maneuver Design and Optimization III				Plaza Ballroom I
Chaired by: R. SOOD, University of Alabama, Tuscaloosa					
3:30 p.m. AIAA-2026-1259 Optimal Transfers Between Periodic Orbit Families B. Fanger, R. Russell, J. Bourjeili, The University of Texas at Austin, Austin, TX	3:50 p.m. AIAA-2026-1261 Analysis of Global Optimization Algorithms for Costate Initialization of Minimum-Time Spiral Transfers D. LaSalle, G. Hecht, E. Botta, University at Buffalo, Buffalo, NY	4:10 p.m. AIAA-2026-1262 Preliminary Contingency Trajectory Planning for Europa Clipper's Galilean Moon Tour Y. Takubo, Stanford University, Stanford, CA; S. Campagnola, E. Pellegrini, B. Anderson, Jet Propulsion Laboratory, Pasadena, CA	4:30 p.m. AIAA-2026-1263 Feasibility of a Jupiter Minor Moon Flyby for the JUICE Mission A. Boutonnet, European Space Operations Centre, Darmstadt, Germany; A. Rocchi, OHB-Italia, Milano, Italy	4:50 p.m. AIAA-2026-2923 Genetic Algorithm Identification of Initial Orbits for Interplanetary and Earth-Moon Transfers S. Elango, Harvard University, Cambridge, MA; S. Cuffe, Embry-Riddle Aeronautical University, Daytona Beach, FL; A. Palma, University of Florida, Gainesville, FL; Q. Acchione, D. Wu, Embry-Riddle Aeronautical University, Daytona Beach, FL	

Tuesday, 13 January 2026

SFM-27	Dynamics, Perturbations, and Stability for Earth Orbital and Interplanetary Trajectories				Plaza Ballroom J
Chaired by: H. CHO, Yonsei University					
3:30 p.m. AIAA-2026-1264 Dynamical Structures Around Periodic Orbits With Controlled Solar Radiation Pressure in the Earth−Moon System T. Shimauchi, M. Bando, S. Hokamoto, Kyushu Daigaku Kogakubu Daigakuin Kogakufu, Fukuoka, Japan; Y. Takao, Yokohama Kokuritsu Daigaku, Yokohama, Japan	3:50 p.m. AIAA-2026-1265 A High-Fidelity Orbit-Attitude Coupled Propagator for VLEO Platforms H. Gunaltay, A. Lucca Fabris, C. Underwood, University of Surrey Space Centre, Guildford, United Kingdom; O. Marxen, University of Surrey Centre for Aerodynamics and Environmental Flow, Guildford, United Kingdom; N. Baresi, University of Surrey Space Centre, Guildford, United Kingdom	4:10 p.m. AIAA-2026-1266 High Order Continuation With Automatic Bifurcation Identification in the Circular Restricted Three Body Problem W. Kalinowski, University of Surrey Space Centre, Guildford, United Kingdom; T. Bridges, University of Surrey Department of Mathematics, Guildford, United Kingdom; N. Baresi, University of Surrey Space Centre, Guildford, United Kingdom	4:30 p.m. AIAA-2026-1267 NRLMSIS 2.1 Error in Drag Estimation During Geomagnetic Storms of the GRACE-FO Satellite A. Churi, A. Petersen, University of Florida, Gainesville, FL	4:50 p.m. AIAA-2026-1847 Modeling Trajectory and Attitude to Optimize Baffle Design for the Optical Navigation System of the Emirates Mission to the Asteroid Belt C. O'Neill, M. Bonnici, University of Colorado Boulder Laboratory for Atmospheric and Space Physics, Boulder, CO	5:10 p.m. AIAA-2026-1848 Navigation With Shape Estimation During Small Body Approach Q. Moon, B. Jones, R. Russell, The University of Texas at Austin, Austin, TX; C. Hollenberg, D. Lubey, S. Bhaskaran, Jet Propulsion Laboratory, Pasadena, CA

Tuesday, 13 January 2026					
SR-01	Solid Rocket Modeling and Simulations				Celebration 11
Chaired by: E. TRIGGS, Auburn University and M. FIORILLO, Avio S.p.A.					
3:30 p.m. AIAA-2026-1268 A Pseudo-3D Level Set Simulation Method for Propellant Surface Regression by APN / Erosive Burning in Solid Rocket Motors J. Trenter, W. Dahm, Arizona State University, Tempe, AZ	3:50 p.m. AIAA-2026-1269 Three-Dimensional Solid Rocket Motor Internal Ballistics With a Free-Vortex Method G. DiMaggio, R. Hartfield, Auburn University, Auburn, AL; V. Ahuja, Altair Engineering Inc, Troy, MI	4:10 p.m. AIAA-2026-1270 Lagrangian Analysis of Multiphase Flow Effects on Solid Rocket Nozzle Performance G. Passarani, M. Grossi, G. Cocirla, D. Bianchi, Universita degli Studi di Roma La Sapienza, Rome, Italy	4:30 p.m. AIAA-2026-1271 Phase Field Modeling of Aluminum Agglomeration in Solid Composite Propellants M. Mehrtens, B. Runnels, Iowa State University of Science and Technology, Ames, IA	4:50 p.m. AIAA-2026-1272 Solid Rocket Motors Numerical Simulations Using Advanced Eulerian Multiphase Models G. Cocirla, M. Grossi, G. Passarani, D. Bianchi, Universita degli Studi di Roma La Sapienza, Rome, Italy	

Tuesday, 13 January 2026					
STR-13	Composite Structural Analysis, Design, Testing, and Manufacturing III				Bayhill 21
Chaired by: J. CHAMBERS, Aurora Flight Sciences, A Boeing Company and S. LIN, University of Texas, Arlington					
3:30 p.m. AIAA-2026-1273 Failure of Adhesively Bonded Composite Stiffeners; a Blind Analysis Challenge S. Green, National Composites Centre, Bristol, United Kingdom; S. Hallett, G. Allegri, University of Bristol, Bristol, United Kingdom; H. Wright, National Composites Centre, Bristol, United Kingdom	3:50 p.m. AIAA-2026-1274 Application of Cohesive Elements to Predict Lead Failure Behaviors in Bonded Composite T-Joints under Two Load Cases G. Li, National Research Council Canada, Ottawa, Canada	4:10 p.m. AIAA-2026-1275 Progressive Damage and Failure Analysis of Composite Laminate Structure H. Liu, G. Qi, National Research Council Canada, Ottawa, Canada	4:30 p.m. AIAA-2026-1276 Lessons Learned in Modeling Honeycomb Sandwich Fillet Fracture With X-FEM Method in Abaqus Software A. MacGowan, S. Venkataraman, San Diego State University, San Diego, CA	4:50 p.m. AIAA-2026-1277 Failure Predictions in Adhesively Bonded Joints Using Machine Learning Techniques Y. Freed, Israel Aerospace Industries Ltd, Lod, Israel; N. Zobeiry, M. Salviato, University of Washington, Seattle, WA	

Tuesday, 13 January 2026					
STR-15/MAT-09	Other Topics in Structures and Materials				Bayhill 19
Chaired by: D. NORWOOD, Lockheed Martin Aeronautics and V. JOHNSON, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-1278 A Complex Potential Methodology for Reinforced Elliptical Cutouts and Bonded Repairs in Composites S. Russell, Russell Aerostructures Consulting LLC, Tyler, TX	3:50 p.m. AIAA-2026-1279 Thermal Performance Analysis of Lattice Structures Using Interface-Based CFD Metrics O. Hafeez, M. ElSayed, Carleton University, Ottawa, Canada; P. Rajakareyar, Calian Antenna Solutions,	4:10 p.m. AIAA-2026-1280 Physics-Informed Guided Wave Modes as Robust Identifiers of Progressive Structural Degradation in Thin-Walled Composite Structures			

	Vaudreuil-Dorion, Canada; M. Reid, General Dynamics Mission Systems, Ottawa, Canada	A. Gullapalli, C. Featherston, A. Kundu, Cardiff University, Cardiff, United Kingdom			

Tuesday, 13 January 2026					
SUR-02	Survivability of Aerospace Systems				Bayhill 26
Chaired by: S. CLAUCHERTY, Air Force Research Laboratory and B. LIN, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-1281 A Modeling and Simulation Framework for Evaluating Aircraft Survivability S. Mavridis, E. Harrison, D. Mavris, Georgia Institute of Technology, Atlanta, GA	3:50 p.m. AIAA-2026-1282 Experimental Characterization of a Quadrotor's Response to an Air Vortex Cannon K. VanHorn, UNC Charlotte, Charlotte, NC	4:10 p.m. AIAA-2026-1283 Perforation of Polymer Matrix Composite Materials Subjected to High-Energy Laser M. May, B. Schaufelberger, S. Reich, Fraunhofer EMI, Freiburg, Germany			

Tuesday, 13 January 2026					
TES-08	Sustainable Skies: Progress Towards The Role of Next-Gen Fuels in Aviation				Celebration 9
Chaired by: B. KHANDELWAL, University of Alabama, Tuscaloosa					
This panel session will discuss the progress which is being made towards Sustainable Aviation from a fuels point of view.					

Tuesday, 13 January 2026					
TP-07	Aircraft Icing				Bayhill 33
Chaired by: R. SAMPATH KUMAR, Advanced Cooling Technologies, Inc. and S. POOVATHINGAL, University of Kentucky					
3:30 p.m. AIAA-2026-1284 An Experimental Study to Evaluate the Effectiveness of Biphillic Surface Coatings for Aircraft Inflight Icing Protection K. Digavalli, C. Valentin, H. Sista, J. Wang, H. Hu, Iowa State University of Science and Technology, Ames, IA	3:50 p.m. AIAA-2026-1285 An Experimental Investigation on Splashing Characteristics of Supercooled Large Droplets Impinging onto Inclined Surfaces C. Valentin, J. Wang, H. Hu, Iowa State University of Science and Technology, Ames, IA	4:10 p.m. AIAA-2026-1286 Multi-Fidelity Analysis Approaches to Aircraft Icing P. Newman, T. Palmer, ATA Engineering Inc, San Diego, CA			

Tuesday, 13 January 2026					
TP-08	Non-Equilibrium Flows and Radiation I				Bayhill 32
Chaired by: J. RABINOVITCH, Stevens Institute of Technology and K. WEED, BAE Systems, Inc.					
3:30 p.m. AIAA-2026-1287	3:50 p.m. AIAA-2026-1471	4:10 p.m. AIAA-2026-1467	4:30 p.m. AIAA-2026-1468	4:50 p.m. AIAA-2026-1469	5:10 p.m. AIAA-2026-1470

Inferring Titan Atmosphere Methane Content From Dragonfly Backshell Radiation Measurements M. Sands, University of Colorado Boulder College of Arts and Sciences, Boulder, CO; A. Gaymann, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO; S. Jo, University of Central Florida, Orlando, FL; A. Doostan, I. Boyd, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	Comparison of Multicomponent Diffusion and Thermochemical Nonequilibrium Modeling Effects in CFD and DSMC S. Cranford, M. Kroells, T. Gross, T. Schwartzentruber, University of Minnesota Twin Cities, Minneapolis, MN	An Investigation of a Mach 15 Flow Over a Blunt Wedge Using First-Principles Potential Energy Surfaces: Influence of Wall Temperature P. Valentini, Z. Davis, Air Force Research Laboratory, Kitland Air Force Base, NM; M. Grover, NASA, Houston, TX; N. Bisek, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	Investigation of a High Enthalpy Cylinder Flow Using Ab Initio Air Chemistry Data Z. Davis, Utah State University Space Dynamics Laboratory, North Logan, UT; P. Valentini, Air Force Research Laboratory Space Vehicles Directorate, Kirtland AFB, NM	Hypersonic Non-equilibrium CFD and DSMC Model Comparisons with the Varda Reentry Capsule J. Crespo, P. Valentini, A. Rao, Air Force Research Laboratory Space Vehicles Directorate, Kirtland AFB, NM; Z. Davis, Utah State University Space Dynamics Laboratory, Albuquerque, NM; C. Johnston, NASA Langley Research Center, Hampton, VA	Validation of Thermal Nonequilibrium Modeling for Hypersonic Flows in RavenCFD T. Nielsen, M. Goodson, G. Salazar, Corvid Technologies, Mooresville, NC

Tuesday, 13 January 2026

UAS-07	Autonomous Task and System Integration	Orlando Ballroom M

Chaired by: J. PAUNICKA, Boeing Engineering Operations & Technology and M. ANDERSON, United States Air Force Academy

3:30 p.m. AIAA-2026-1288 Learning-based Control for Quadrotor Vertical and Slanted Landing Operations under Ground Effect Disturbances A. Sandoval, W. Zhang, Arizona State University Ira A Fulton Schools of Engineering, Mesa, AZ	3:50 p.m. AIAA-2026-1289 Hardware in the Loop Simulation of Fault Tolerance Solutions of a Morphing Vertical Take Off and Landing Aircraft M. Brady, S. Gururajan, Saint Louis University, St. Louis, MO	4:10 p.m. AIAA-2026-1290 Evaluating Single-Camera Range Estimation for Autonomous Air-to-Air Refueling During Rendezvous R. Lowe, University of Maryland, College Park, MD; V. Mwaffo, United States Naval Academy, Annapolis, MD; D. Costello, University of Maryland, College Park, MD	4:30 p.m. AIAA-2026-1291 UAS Based Mine and UXO Detection in a Model Minefield Environment A. Kanell, J. Jacob, Oklahoma State University, Stillwater, OK	4:50 p.m. AIAA-2026-1292 Docking Station for UAV for Autonomous Railway Track Inspection A. Kopyt, D. Florczak, R. Glebocki, Politechnika Warszawska, Warsaw, Poland	5:10 p.m. AIAA-2026-1293 OngoingWork: A Runtime Assurance Framework for Low-flying Autonomous UAS Medical Operations A. Kandula, Northeastern University, Boston, MA; K. Shu, Stanford University, Stanford, CA; G. Wright, Virginia Polytechnic Institute and State University, Blacksburg, VA; T. Slagel, S. Lehman, J. Fody, NASA Langley Research Center, Hampton, VA

Tuesday, 13 January 2026

NW-11 5:30 - 7:00 p.m.	Reception - Expo Hall	Regency Ballroom

Join exhibitors, colleagues and future friends in the Expo Hall to learn about amazing new technologies and make career changing connections. Open to all registrants.

Tuesday, 13 January 2026

TP-18	Aerothermodynamics I	Bayhill 32

Chaired by: A. MARTIN, University of Kentucky and K. WEED, BAE Systems, Inc.

1:00 p.m. AIAA-2026-2641 Utilizing the Master Equation Model for Non-Thermal Recombination Reactions on a Silica Surface D. Andrienko, University of Colorado Boulder, Boulder, CO	1:20 p.m. AIAA-2026-2643 Rovibrational-Specific Energy Transfer and Dissociation of $NO(X^2\Pi_r)+C(^3P)$ Collisions at High Temperatures C. Civrais, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL; B. Galvão, Centro Federal de Educacao Tecnologica de Minas Gerais, Belo Horizonte, Brazil; S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; M. Panesi, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL	1:40 p.m. AIAA-2026-2644 Rovibrational-Specific QCT Database and Master Equation Study on Hydrogen System in High-Energy Collisions H. Jeong, S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	2:00 p.m. AIAA-2026-2801 Maximum Entropy Principle-Based Three-Temperature Model Reduction of N2+N Collisions in Hypersonic Flows A. Notey, University of Illinois Urbana-Champaign, Urbana, IL; S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; M. Panesi, University of Illinois Urbana-Champaign, Urbana, IL	2:20 p.m. AIAA-2026-2802 Uncertainty Analysis of the Modified Marrone–Treanor Model N. Colavecchio, A. Ghosh, University of Minnesota Twin Cities, Minneapolis, MN; E. Torres, Universite Libre de Bruxelles Ecole polytechnique de Bruxelles, Brussels, Belgium; A. del Val, University of Minnesota Twin Cities, Minneapolis, MN	

Tuesday, 13 January 2026

TP-19	Thermal Protection Systems II				Bayhill 32
Chaired by: M. GROVER, NASA Lyndon B. Johnson Space Center and V. VISHWANATHAN, Johns Hopkins Applied Physics Laboratory					
9:30 a.m. AIAA-2026-2645 Cooling of a Hypersonic Leading Edge via Electron Emission and Absorption K. Monroe, I. Boyd, University of Colorado Boulder, Boulder, CO	9:50 a.m. AIAA-2026-2646 Effects of Surface Catalycity on Thermocouples Used for Hypersonic Heat Flux Measurement S. Swenson, University of Colorado Boulder Center for National Security Initiatives, Boulder, CO; C. Leszcz, I. Boyd, University of Colorado Boulder Ann and HJ Smead Department of Aerospace Engineering Sciences, Boulder, CO; R. Chaudhry, ANSYS Canada, Montreal, Canada; T. Aiken, University of Colorado Boulder Center for National Security Initiatives, Boulder, CO	10:10 a.m. AIAA-2026-2647 Effects of Microstructural Variability on Macroscopic Modeling of Gas-Surface Interaction Study in a Fluid-Material-Structural Coupled Framework B. Joseph, University of Kentucky, Lexington, KY; C. Thomas, A. Knutson, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN; S. McDaniel, R. Fu, University of Kentucky, Lexington, KY; et al.	10:30 a.m. AIAA-2026-2805 Emission Spectroscopy Measurements of Boron Volatiles for Ultra-High Temperature Ceramic Material Boundary Layer in Air Plasma W. Burke, M. Clyde, S. Weston, I. Ballou, D. Fletcher, University of Vermont, Burlington, VT	10:50 a.m. AIAA-2026-2806 Initial Aerothermal Characterization of a Tabletop Inductively Coupled Plasma Tunnel T. Remec, H. Ali, University of Colorado Boulder, Boulder, CO	

Wednesday

Wednesday, 14 January 2026

HUB-24 9:00 - 9:30 a.m.	ATI	the HUB in the Expo Hall

Wednesday, 14 January 2026

SP-03 7:30 - 8:00 a.m.	Technical Paper Session Prep	Session Rooms

Authors presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute prep on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s).

Wednesday, 14 January 2026

PLN-03 8:00 - 9:00 a.m.	Plenary	Windermere Ballroom

Next-Gen AI from Concept to the Mission: From research labs to real-world operations, next-generation AI is reshaping defense and national security — but only if it can be trusted, scaled, and deployed. Join Lockheed Martin CTO Dr. Craig Martell and President and CEO of the Special Competitive Studies Product Ylli Bajraktari, two leaders from the front lines of technology and policy, as they explore the barriers, breakthroughs, and bold decisions required to deliver AI with mission-level impact.

Wednesday, 14 January 2026

NW-05 9:00 - 9:30 a.m.	Networking Coffee Break	Regency Ballroom

Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.

Wednesday, 14 January 2026

AA-03	Jet Aeroacoustics I	Bayhill 30

Chaired by: M. SAMIMY, The Ohio State University and L. KOCH, NASA Glenn Research Center

9:30 a.m. AIAA-2026-1294 Coherent Noise Sources in Subsonic Lobed Jets J. Larisch, K. Ahuja, Georgia Institute of Technology Research Institute, Atlanta, GA	9:50 a.m. AIAA-2026-1295 Modeling Turbulence at High Strouhal Number Flows for Accurate Noise Predictions D. Nguiffo, Y. Chao, D. O'Connor, California State University Chico, Chico, CA	10:10 a.m. AIAA-2026-1297 Experimental Analysis of Surface-Pressure–Driven Far-Field Noise in Impinging Jet Flows R. Maryami, A. Alexander, B. Elbing, Oklahoma State University, Stillwater, OK	10:30 a.m. AIAA-2026-1298 Acoustics of Single Slot Style Fluidic Injections on Rectangular Nozzles at Overexpanded Flow Condition J. Cramer, K. Gautam, A. Mohammed, E. Gutmark, University of Cincinnati, Cincinnati, OH	10:50 a.m. AIAA-2026-1299 Fundamental Study of the Transmission Loss of Jet Noise Through Water Curtains T. Patel, K. Viswanath, US Naval Research Laboratory, Washington, D.C.	

Wednesday, 14 January 2026

ACD-07	Alternative Propulsion Aircraft Design	Rock Spring I & II

Chaired by: D. WELLS, NASA Langley Research Center and I. CHAKRABORTY, Auburn University

9:30 a.m. AIAA-2026-1300	9:50 a.m. AIAA-2026-1301	10:10 a.m. AIAA-2026-1302	10:30 a.m. AIAA-2026-1303	10:50 a.m. AIAA-2026-2807	

Probabilistic Optimization of a Hybrid-Electric Canard-Wing General Aviation Aircraft R. Bhandari, B. Kunwar , I. Chakraborty, Auburn University, Auburn, AL	Economic and Environmental Assessment of Hybrid-Electric Commuter Aircraft: A Business Case for the Spanish Seaplane Market V. Cusati, M. Tuccillo, F. Nicolosi, Universita degli Studi di Napoli Federico II, Naples, Italy; M. Ruocco, SmartUp Engineering s.r.l., Naples, Italy	Gradient-Based MDAO Framework for Advanced Aircraft Concepts S. Kaneko, M. Arnson, University of Michigan, Ann Arbor, MI; H. Hajdik, Electra.aero, Manassas, VA; G. Cinar, J. Martins, University of Michigan, Ann Arbor, MI; A. Uranga, Electra.aero, Manassas, VA	Conceptual Design Studies of Fuel Cell Powered Unmanned Aircraft for Long Loiter J. Mockelman, N. Crane, E. Kusulas, Lockheed Martin Aeronautics Co Palmdale, Palmdale, CA; J. Hamstra, R. Brewer, Lockheed Martin Aeronautics Company, Fort Worth, TX	Revisiting Wingtip Turbines for Performance Improvement and Emissions Reductions on Conventional and Hybrid Commercial Aircraft G. Whitehouse, J. Theron, A. Boschitsch, Continuum Dynamics Inc, Ewing Township, NJ; K. Collins, M. Gehrmann, Embry-Riddle Aeronautical University, Daytona Beach, FL	
Wednesday, 14 January 2026					
AMT-19	Coherent Laser Diagnostics I				Blue Spring I
Chaired by: C. DEDIC, University of Virginia and E. JANS, Sandia National Laboratories					
9:30 a.m. AIAA-2026-1304 Rotational Non-Equilibrium CARS Measurements in a Hypersonic Boundary Layer R. Rosser, A. Dogariu, Texas A&M University System, College Station, TX	9:50 a.m. AIAA-2026-1305 Coherent Anti-Stokes Raman Scattering in a Supersonic Inductively Coupled Plasma Torch S. Stark, N. Clemens, P. Varghese, The University of Texas at Austin, Austin, TX	10:10 a.m. AIAA-2026-1307 Temperature Profiles in a Blowdown Hypersonic Wind Tunnel via Femtosecond Coherent Anti-Stokes Raman Spectroscopy D. Richardson, S. Beresh, Sandia National Laboratories, Albuquerque, NM			
Wednesday, 14 January 2026					
AMT-20/FD-49	Firefly Blue Ghost Mission				Plaza Ballroom E
Chaired by: J. WEISBERGER, NASA Langley Research Center and P. DANEHY, NASA Langley Research Center					
9:30 a.m. AIAA-2026-1308 Firefly Blue Ghost Mission 1: SCALPSS 1.1 Payload and Mission Overview R. Maddock, M. Munk, P. Danehy, O. Tyrrell, J. Weisberger, T. Fahringer, NASA Langley Research Center, Hampton, VA; et al.	9:50 a.m. AIAA-2026-1309 Firefly Blue Ghost Mission 1: SCALPSS 1.1 Camera Calibration T. Fahringer, J. Weisberger, O. Tyrrell, P. Danehy, NASA Langley Research Center, Hampton, VA; M. Manginelli, W. Witherow, NASA Marshall Space Flight Center, Huntsville, AL; et al.	10:10 a.m. AIAA-2026-1310 Firefly Blue Ghost Mission 1: SCALPSS 1.1 Long Focal Length Camera Descent Imaging J. Weisberger, O. Tyrrell, T. Fahringer, P. Danehy, NASA Langley Research Center, Hampton, VA; W. Chambers, NASA Marshall Space Flight Center, Huntsville, AL	10:30 a.m. AIAA-2026-1311 Firefly Blue Ghost Mission 1: SCALPSS 1.1 Short Focal Length Camera Descent Imaging P. Danehy, O. Tyrrell, J. Weisberger, T. Fahringer, NASA Langley Research Center, Hampton, VA; W. Chambers, NASA Marshall Space Flight Center, Huntsville, AL	10:50 a.m. AIAA-2026-1312 Firefly Blue Ghost Mission 1: SCALPSS 1.1 Post-Landing Terrain Measurements O. Tyrrell, J. Weisberger, T. Fahringer, P. Danehy, NASA Langley Research Center, Hampton, VA	
Wednesday, 14 January 2026					

AMT-22	Velocimetry and Flow Characterization II				Blue Spring II
Chaired by: A. GERAKIS, Luxembourg Institute of Science & Technology and M. GAMBA, University of Michigan					
9:30 a.m. AIAA-2026-1313 Application of Tomographic Wavelet-Based Optical Flow Velocimetry (wOFV) to Hypersonic Flows W. Page, J. Sutton, The Ohio State University, Columbus, OH; T. McManus, S. Peltier, C. Clifford, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; L. Dingler, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN	9:50 a.m. AIAA-2026-1314 Acetone PLIF, Acetone MTV, and FLEET Measurements of Highly Underexpanded Rarefied Jet Flows K. Chandrasekar, C. Limbach, University of Michigan, Ann Arbor, MI	10:10 a.m. AIAA-2026-1315 Krypton Tagging Velocimetry Study of Unsteady Effects in an Inductively-Coupled Plasma Torch D. Ellender, N. Clemens, The University of Texas at Austin, Austin, TX	10:30 a.m. AIAA-2026-1316 Sensitivity Analysis of Event Based Algorithms for Velocimetry A. Khan, S. Gunasekaran, University of Dayton, Dayton, OH	10:50 a.m. AIAA-2026-1317 An Investigation Into Neural Radiance Fields for Spray Reconstruction M. Mitchell, P. Mouaikel, D. Scarborough, B. Thurow, Auburn University, Auburn, AL	

Wednesday, 14 January 2026					
APA-37	Applied Aeroelasticity and Aerodynamic-Structural Dynamic Interaction				Coral Spring I
Chaired by: C. NELSON, Siemens Digital Industries Software					
9:30 a.m. AIAA-2026-1318 Identification of Reduced-Order Models for Flutter Analysis Using CFD-Based Aerodynamic Data A. Carloni, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; J. Azevedo, Instituto de Aeronautica e Espaco, Sao Jose dos Campos, Brazil	9:50 a.m. AIAA-2026-1319 Learning-Based Output Feedback MPC and Q-Learning for Flutter Suppression J. Elze, Technische Universitat Berlin, Berlin, Germany; J. Magalhaes, Georgia Institute of Technology, Atlanta, GA; P. Ramirez, F. Silvestre, Technische Universitat Berlin, Berlin, Germany	10:10 a.m. AIAA-2026-1320 One-Degree-Of-Freedom Attitude Stability Analysis of a Mars Entry Inflatable Aeroshell Using Fluid-Structure Interaction T. Sawada, Tokyo Daigaku, Bunkyo, Japan; A. Oyama, Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus, Sagamihara, Japan; Y. Takahashi, R. Miyashita, T. Yoshio, Hokkaido Daigaku, Sapporo, Japan	10:30 a.m. AIAA-2026-1321 Investigation of Aerodynamic Interactions for a Distributed Flap System J. Xiong, KBR, Moffett Field, CA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; C. Forte, KBR, Moffett Field, CA		

Wednesday, 14 January 2026					
APA-40	Missile/Projectile/Munition Aerodynamics, Carriage and Store Separation				Coral Spring II
Chaired by: N. HALL, DARPA / SPA and W. HINMAN, University of Calgary					
9:30 a.m. AIAA-2026-1322 Unsteady Shear Layer Dynamics in an Asymmetric Wake	9:50 a.m. AIAA-2026-1323 Experimental Characterization of Asymmetric Flow in	10:10 a.m. AIAA-2026-1324 Experimental Investigation of a Complex Cavity	10:30 a.m. AIAA-2026-1325 Validation of Compressible-Flow Panel-Methods for the Analysis		

J. Wilkerson, Florida Agricultural and Mechanical University, Tallahassee, FL; S. Unnikrishnan, R. Kumar, Florida State University, Tallahassee, FL	Rectangular Cavities at Supersonic Speeds T. Siag, R. Kumar, Florida State University, Tallahassee, FL	Model with a Store at Supersonic Speeds E. Smith, Air Force Research Laboratory Munitions Directorate, Eglin Air Force Base, FL; G. Robertson, Arnold Engineering Development Complex, Arnold Air Force Base, TN; R. Kumar, FAMU-FSU College of Engineering, Tallahassee, FL; I. Maatz, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; K. Roughen, M4 Engineering, Long Beach, CA	of the Transonic and Supersonic Aerodynamics of Long-Range Air-Launched Missiles V. Ahuja, Altair Engineering Inc, Auburn, AL		

Wednesday, 14 January 2026

APA-41	Special Session: 2nd AIAA Stability and Control Prediction Workshop				Plaza Ballroom D
Chaired by: A. LOFTHOUSE, US Air Force and B. SIMMONS, NASA Langley Research Center					
9:30 a.m. AIAA-2026-1326 Kestrel KCFD Results for the 2nd AIAA Stability and Control Prediction Workshop A. Lofthouse, W. Vogel, US Air Force Life Cycle Management Center, Wright-Patterson AFB, OH	9:50 a.m. AIAA-2026-1327 Summary of the Second AIAA Stability and Control Prediction Workshop B. Simmons, NASA Langley Research Center, Hampton, VA; A. Lofthouse, Air Force Life Cycle Management Center, Wright-Patterson Air Force Base, OH; D. Vicroy, Adaptive Aerospace Group, Inc., Hampton, VA	10:10 a.m. AIAA-2026-1328 CFD-Based Prediction of Dynamic Stability Derivatives for the CRM at Low-Speed M. Ghoreyshi, P. Aref, J. Seidel, United States Air Force Academy, US Air Force Academy, Air Force Academy, CO, US, academic/mil, Air Force Academy, CO	10:30 a.m. AIAA-2026-1329 Estimation of Static and Dynamic Stability Derivatives Using FUN3D with Wind Tunnel Correlation S. Klausmeyer, Textron Aviation, Wichita, KS		

Wednesday, 14 January 2026

APA-43/FD-52	Special Session: High Speed Aerodynamics, in Honor of Antonio Ferri				Plaza Ballroom F
Chaired by: N. DIZINNO, NYU and R. HALLION, Fellow AIAA, Fellow RAeS, Fellow RHistS					
9:30 a.m. 4348525 Antonio Ferri's Early Research in Italy R. Paciorri, F. Nasuti, M. Marchetti, Universita degli Studi di Roma La Sapienza, Rome, Italy	9:50 a.m. 4342564 Antonio Ferri's Historical Activities at NACA, the Polytechnic Institute of Brooklyn, and NYU P. Sforza, University of Florida, Gainesville, FL	10:10 a.m. 4351608 Antonio Ferri's Early Years at General Applied Science Laboratories and Pioneering Work in Hypersonics J. Schetz, Virginia Polytechnic Institute and State University, Blacksburg, VA	10:30 a.m. 4353486 Computational Hypersonic Aerodynamics N. DiZinno, New York University, Brookyn, NY	10:50 a.m. 4351610 Antonio Ferri's Contributions and Legacy in the Design of Quiet Supersonic Aircraft P. Coen, NASA Langley Research Center, Hampton, VA	11:10 a.m. 4346283 Antonio Ferri's Legacy at GASL and Impact on the Transition of Hypersonics to Flight A. Castrogiovanni, North Wind, Ronkonkoma, NY

Wednesday, 14 January 2026					
APA-44/SPSN-01	Supersonic Aerodynamics				Barrel Spring I
Chaired by: V. MALDONADO, Texas Tech University and V. SHINDE, Mississippi State University					
9:30 a.m. AIAA-2026-1330 Aerodynamic Centers of Symmetric Diamond Airfoils in Inviscid Supersonic Flow S. Kesler, D. Hunsaker, Utah State University, Logan, UT	9:50 a.m. AIAA-2026-1331 The Effect of Shock Strength on Shock-Wave/Boundary-Layer Interactions on an Axisymmetric Cone N. Hux, FAMU-FSU College of Engineering, Tallahassee, FL; H. Chin, S. He, M. Adler, Lawrence Livermore National Laboratory, Livermore, CA; J. Gustavsson, R. Kumar, FAMU-FSU College of Engineering, Tallahassee, FL	10:10 a.m. AIAA-2026-1332 Tomo-PIV Study of Baseline Flow Structures Behind a Strut Injector J. McDermott, J. Gary, D. Viganò, Missouri University of Science and Technology, Rolla, MO	10:30 a.m. AIAA-2026-1333 Unsteady Vortex Characterisation for Supersonic Flow Experiments J. Langfield, Queen Mary University of London School of Engineering and Materials Science, London, United Kingdom; D. Morris, Dartmouth College Thayer School of Engineering, Hanover, NH; M. Forster, BAE Systems Plc, London, United Kingdom; K. Sabnis, Queen Mary University of London School of Engineering and Materials Science, London, United Kingdom		

Wednesday, 14 January 2026					
APA-45	Turbulence and Transition Modeling for Aerodynamic Applications I				Barrel Spring II
Chaired by: J. CODER, Pennsylvania State University and R. FUNK, Georgia Tech Research Institute					
9:30 a.m. AIAA-2026-1334 A Data-Driven k-Equation-Based Framework for Modeling Turbulence Using Sparse Regression H. Cairney, W. Harris, Massachusetts Institute of Technology, Cambridge, MA	9:50 a.m. AIAA-2026-1335 Exploration of Physics Informed Machine Learning Models for Turbulent Flows using DNS Data W. Cruz, RTX Corporation, Arlington, VA; L. Sankar, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-1336 Machine Learning-Assisted Turbulence Modeling for Flow Separation around Slender Bodies at Non-Zero Angles of Attack Y. Yun, S. Heo, J. Eom, S. Jee, Gwangju Institute of Science and Technology, Buk-gu, South Korea	10:30 a.m. AIAA-2026-1337 Cavity Induced Trip Model for RANS in Hypersonic Flows K. Nguyen, D. Wall, L. Joseph, Virginia Polytechnic Institute and State University, Blacksburg, VA		

Wednesday, 14 January 2026					
APA-46	Unsteady Aerodynamics I				Manatee Spring II
Chaired by: S. NARSIPUR, Mississippi State University and A. VOEGELE, The Aerospace Corporation					
9:30 a.m. AIAA-2026-1338	9:50 a.m. AIAA-2026-1339	10:10 a.m. AIAA-2026-1340	10:30 a.m. AIAA-2026-1341	10:50 a.m. AIAA-2026-1342	

Correction of Linearized CFD-Based Unsteady Aerodynamic Models K. Pausch, W. Weigold, B. Stickan, D. Cantiani, Airbus Operations GmbH, Hamburg, Germany	Unsteady Tailplane Loads From the Wake of a Stalled Wing Using Concurrent PIV and Force Measurements J. Deneke, D. Carter, NC State University, Raleigh, NC	Numerical Analysis of Pressure Wave Propagation at Rocket Launch Pads Using Open-Source CFD Solvers D. Gundem, T. Ghorbani Iriolya, E. Danisan, E. Cetin, Y. Atilkan, S. Eyi, Middle East Technical University, Orta Dogu Teknik Universitesi, Ankara, Ankara, TR, academic, Ankara, Turkey	Unsteady Dynamics in the Compressible Wake Behind a Cylinder N. Walters, A. Morales, S. Salauddin, D. Cruz, K. Ahmed, University of Central Florida, Orlando, FL	Novel Discrete-Vortex Method for Unsteady Thin Airfoils G. Torres, F. Marques, Universidade de Sao Paulo, São Carlos, Brazil	

Wednesday, 14 January 2026					
APS-04	Space Power Systems: Power Generation				Celebration 11
Chaired by: J. MCNATT, NASA Glenn Research Center and J. GEHRETT					
9:30 a.m. AIAA-2026-1343 Passive Solar Tracking for Space Applications Using Shape Memory Alloy-Based Thermal Actuation S. Patel, K. Kanna, A. Gupta, P. Gurugubelli Venkata, BITS Pilani, Hyderabad, India	9:50 a.m. AIAA-2026-1344 Power Generation Using Molten Salt Reactor and Supercritical CO_2 Cycle for Lunar Operation A. Delavald Marques, M. Boudreau, A. Dean, A. M. Prasad, Z. Londono, M. Otto, University of Central Florida, Orlando, FL; et al.	10:10 a.m. AIAA-2026-1345 Scalable Tritium Power Systems and Regulatory Flight Path for Nuclear-Powered CubeSats M. Stone, P. Cabauy, J. Grant, C. Flor-Reyes, J. Hernandez, City Labs, Miami, FL	10:30 a.m. AIAA-2026-1346 Simulation and Analysis of Stirling Alternators With Sage and COMSOL L. Rodriguez, S. Wilson, NASA Glenn Research Center, Cleveland, OH; D. Gedeon, Gedeon Associates, Athens, OH	10:50 a.m. AIAA-2026-1347 Topology Optimization of Light Trapping Structures for Extra-Terrestrial Photovoltaic Devices N. Almutairi, P. Acar, Virginia Polytechnic Institute and State University, Blacksburg, VA	

Wednesday, 14 January 2026					
ASE-03	Atmospheric and Space Environments III				Peacock Spring
Chaired by: E. WIE-ADDO, University of Missouri and J. ORTEGA, Missouri University of Science and Technology					
9:30 a.m. AIAA-2026-1348 Characterizing Suprathermal Electron Propagation Through Pitch Angle Distributions in the Inner Heliosphere D. Galarza, C. Silva, A. Petersen, University of Florida, Gainesville, FL	9:50 a.m. AIAA-2026-1349 Impact of Mountainous Terrain on Satellite RF Propagation K. Klim-Wiren, Aiglon SmallSat Development Team, Chesieres, Switzerland; K. Simmons, BLUECUBE Aerospace, Palm Beach Gardens, FL	10:10 a.m. AIAA-2026-1350 Atmospheric Effects on an Optical Laser Communication Between Space and Ground S. LaCava, J. Gremer, Z. Dragojlovic, C. Miller, ANSYS Inc, Canonsburg, PA			

Wednesday, 14 January 2026		
DE-09/AS-10	Advanced Composites and Architected Materials for Aerospace Applications	Bayhill 21
Chaired by: S. NASKAR, University of Southampton		

This discussion will focus on recent advances in multifunctional composites and architected materials (i.e. metamaterials) that are reshaping the design and performance of next-generation aircraft and spacecraft components. Emphasis will be placed on innovations in microstructural tailoring, multifunctionality, and lightweighting that contribute to enhanced structural efficiency, safety, and environmental sustainability in both aircraft and spacecraft systems, depending on their specific operational demands. Key topics of discussion will be as follows: • Design and optimization of high-performance advanced composites • Architected materials for load-bearing and adaptive structures • AI/ML-driven materials discovery • Multifunctional and reconfigurable systems • Emerging strategies for space-based manufacturing, including in-situ resource utilization and on-orbit fabrication of adaptive structures • Challenges in transitioning lab-scale innovation to real-world aerospace components Contributions that address emerging trends such as nano/micro-scale tailoring, active materials, and on-orbit manufacturing for space systems will be focused. This session aims to foster discussion among researchers, engineers, and industry experts on the future of aerospace structures and materials, and their transformative impact on flight performance, fuel efficiency, and long-term sustainability.

Wednesday, 14 January 2026

DGE-06	Digital Threads and Digital Twins				Silver Spring I
Chaired by: W. HAMMOND, University of Central Florida					
9:30 a.m. AIAA-2026-1351 Digital Twin of Defense Industrial Base Workforce K. Hasse, ARCTOS LLC, Beavercreek, OH	9:50 a.m. AIAA-2026-1352 Statistical Model Checking of Aircraft Digital Twins for Safety Verification A. Newcomb, O. Ochoa, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:10 a.m. AIAA-2026-1353 Real-Time Digital Twin Technology for Environmental Monitoring and Risk Prediction in Mines Z. Musayev, H. Khaniani, M. Razavi, N. Mojtabai, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	10:30 a.m. AIAA-2026-1354 Towards a Methodology for the Definition and Evaluation of Enterprises Through Modeling and Simulation: Application to Product Manufacturing N. Lepez Da Silva Duarte, O. Pinon-Fischer, B. Bagdatli, W. Benzerhouni, D. Mavris, Georgia Institute of Technology, Atlanta, GA; A. Faveto, Capgemini Engineering Research & Development, Aix-en-Provence, France; et al.		

Wednesday, 14 January 2026

DGE-19/SE-18/DE-19/GTE-32/EAT-18	Digital Thread for Supply Chain (DTh4SC)	Plaza Ballroom K
Chaired by: J. MATLIK, Northrop Grumman Aeronautics Systems		

In the Defense Aerospace sector, the Digital Thread is emerging as a crucial enabler for optimizing supply chain operations and ensuring seamless integration across the entire lifecycle of a system. This panel will delve into the concept of the Digital Thread, which connects data and processes from design and manufacturing to maintenance and end-of-life management. By harnessing advanced technologies such as IoT, AI, and blockchain, the Digital Thread facilitates real-time visibility, traceability, and predictive analytics across the supply chain. Experts will discuss how this interconnected data flow enhances decision-making, reduces lead times, and improves quality and compliance. Case studies will be presented to showcase successful implementations, detailing the tangible benefits such as increased efficiency, cost savings, and heightened agility in response to dynamic defense requirements. The panel will also address challenges in adopting the Digital Thread, including data standardization, cybersecurity, and the need for cross-functional collaboration. Join us to explore how the Digital Thread is transforming supply chain dynamics in Defense Aerospace, driving innovation and resilience in a complex and demanding environment. **Panelists:** Suzette Johnson (Northrop Grumman) Salena Zavorka-Bonacci (Lockheed Martin) Jay Ganguli (Pratt & Whitney)

Wednesday, 14 January 2026

EDU-09	Advancing Aerospace Education IV				Bayhill 33
Chaired by: R. LEBEAU, Saint Louis University					
9:30 a.m. AIAA-2026-1355 Rapid Design and Deployment of a Stability Augmentation System for a Modular UAS M. Brady, D. Solomon, J. Nguyen, S. Goebel, T. Greene, K. Kramer, Saint Louis University, St. Louis, MO; et al.	9:50 a.m. AIAA-2026-1356 Geometry-Based Multi-Keypoint Pose Estimation Using Monocular Vision for Autonomous Aerial Refueling in GPS-Denied Environments D. Costello, University of Maryland, College Park, MD; J. Anderson, S. Smith, V. Mwaffo, United States Naval Academy, Annapolis, MD	10:10 a.m. AIAA-2026-1357 Free-Stream Turbulence Measurement Using Hot-Wire Anemometer: An Undergraduate Laboratory Experience A. Suresh, S. James, V. Gopal, The University of Texas at Arlington Department of Mechanical & Aerospace Engineering, Arlington, TX	10:30 a.m. AIAA-2026-1358 Flow Over Cylinder: A Comprehensive Undergraduate Laboratory Experience S. James, H. Prasad, V. Gopal, The University of Texas at Arlington Department of Mechanical & Aerospace Engineering, Arlington, TX	10:50 a.m. AIAA-2026-1359 Experimental and Computational Study of Underexpanded Free Jets Produced by Canned Air Dusters J. Mares Zamora, C. Kang, The University of Alabama in Huntsville, Huntsville, AL; H. Aono, Shinshu Daigaku Senei Ryoiki Yugo Kenkyugun, Ueda, Japan	

Wednesday, 14 January 2026					
EP-06	Cathodes				Celebration 1
Chaired by: K. BOEHM, University of Alabama, Huntsville					
9:30 a.m. AIAA-2026-1360 Experimental Characterization of a Wire-Fed Metal-Propellant Hollow Cathode B. Oh, C. Krumins, T. Jarvis, T. Gill, B. Jorns, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-1361 Environmental Exposure Impact on High-Current Barium Oxide Cathode Operation R. Samuel, HX5, LLC, Cleveland, OH; T. Sarver-Verhey, R. Thomas, NASA Glenn Research Center, Cleveland, OH	10:10 a.m. AIAA-2026-1362 Design and Testing of a Heaterless Hollow Cathode H. Dorduncu, I. Mishra, B. Mertz, Rose-Hulman Institute of Technology, Terre-Haute, IN	10:30 a.m. AIAA-2026-1363 Variable Density Scaling in the Global Model for Different Conductor Geometries of an RF Cathode L. Su, M. Georgin, US Naval Research Laboratory, Washington, D.C.		

Wednesday, 14 January 2026					
EXPL-10	Dyreqt: A New Paradigm for Synthesis of Space Systems				Celebration 14
Chaired by: R. RAMACHANDRAN, Amentum Space Exploration Division and M. DIAZ, NASA Marshall Space Flight Center					
9:30 a.m. AIAA-2026-1364 Dyreqt: A Framework for Multidisciplinary Design, Analysis, and Optimization of Space System Architectures M. Diaz, R. Hetterich, D. Trent, S. Edwards, NASA Marshall Space Flight Center, Huntsville, AL	9:50 a.m. AIAA-2026-1365 Space Systems Synthesis at Multiple Architecture Levels Using Dyreqt M. Diaz, S. Edwards, D. Trent, P. Dees, R. Hetterich, S. Zhu, NASA Marshall Space Flight Center, Huntsville, AL	10:10 a.m. AIAA-2026-1366 Modern Digital Ecosystem for Space Mission Engineering M. Diaz, S. Edwards, NASA Marshall Space Flight Center, Huntsville, AL	10:30 a.m. AIAA-2026-1367 Development of a Multi-Disciplinary, Parametric Lunar Power Beaming Satellite Model Using Dyreqt J. McNabb, J. Zhong, F. Morales, B. Robertson, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA		

Wednesday, 14 January 2026					
EXPL-11	Lunar ISRU				Celebration 13
Chaired by: S. BANERJEE, Apple Inc and H. CHEN, Fairfield University, School of Engineering and Computing					
9:30 a.m. AIAA-2026-1368 Development of Lunar South Pole Transportation Pathing Model for Moving Isru Product From Point To Point V. Guerrero, G. Stevenson, K. Bruington, N. DeVault, A. Hidajat, E. Mendoza, Texas A&M University, College Station, TX; et al.	9:50 a.m. AIAA-2026-1369 Integrated Parametric Framework for Designing In-Situ Resource Utilization Capabilities in a Lunar Base Architectures P. Boyer, M. Balchanos, D. Mavris, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-1370 In-Situ Manufacturable Solid Fuels for Hybrid Rockets Using Lunar Resources J. Patten, W. Todd, N. Padilla, C. Clark, P. Pecic, K. Ahmed, University of Central Florida, Orlando, FL			

Wednesday, 14 January 2026		
FD-50	Fluid Dynamics Award Lecture	Orlando Ballroom N
Chaired by: M. VYAS, NASA Glenn Research Center		

The Fluid Dynamics Awards lecture will be given by Professor Ari Glezer, the recipient of 2025 American Institute of Aeronautics and Astronautics Fluid Dynamics Award for Groundbreaking contributions to the understanding, application, and invention of actuation strategies for Active Flow Control. **"*Adaptive Aerodynamic-Aeroelastic Control using Distributed Bleed Actuation*"** This award is presented for outstanding contributions to the understanding of the behavior of liquids and gases in motion as related to needs in aeronautics and astronautics. This prestigious award is proudly sponsored by the AIAA Fluid Dynamics Technical Committee.

Wednesday, 14 January 2026		
FT-06	Planning and Execution of a Multi-Range Missile Flight Test	Rainbow Spring II
Chaired by: T. HELBLING, Raytheon		

Planning an aircraft launched missile flight test on one range for the first time can be complex, planning one that encompasses 5 ranges of differing military branches is another level. This paper will address the tasks it takes to execute at a new range for the first time, the complexity of having to bring together and gain alignment with multiple ranges and lessons learned along the way. Topics include data handling and displaying, Range Safety Officer (RSO) requirements to execute, TM and FTS link margin analysis, planning and required products depending on the range and military branch, coordination with multiple support aircraft, data sharing issues, and ultimately coordination with varying levels of stakeholder organizations and military branches and how to bring them together for a common objective.

Wednesday, 14 January 2026					
GNC-23	Aircraft GNC Technology I: Improving Mission Effectiveness and Safety				Bayhill 29
Chaired by: J. CLEMENS, Lockheed Martin Aeronautics					
9:30 a.m. AIAA-2026-1371 Takeoff Safety Analysis of High Altitude Long Endurance Aircraft Using	9:50 a.m. AIAA-2026-1372 Improving Mission Completion Coping with Engine Failure Using	10:10 a.m. AIAA-2026-1373 Scalable Energy Harvesting via Lift Control in Taylor-Green Flows	10:30 a.m. AIAA-2026-1374 From Visual to Digital: Coordination Scheduling and Its Effect on Safety	10:50 a.m. AIAA-2026-1375 Carrier Phase Differential (CPD) HARAIM Evaluation	

Integral Quadratic Constraints C. Weiser, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Oberpfaffenhofen, Germany; F. Biertümpfel, University of Michigan, Ann Arbor, MI; D. Ossmann, Hochschule fur angewandte Wissenschaften Munchen, Munich, Germany	Energy-Based Control Approach R. Kökoğlu, R. Demirkiran, B. Yucel, Tusas-Turk Havacilik ve Uzay Sanayii AS, Ankara, Turkey	K. Laurent, Syracuse University, Syracuse, NY	and Efficiency in UAM Corridors A. Fujita, S. Pruekprasert, K. Nishinari, Tokyo Daigaku, Bunkyo, Japan; S. Nakadai, Intent Exchange, Inc., Bunkyo, Japan	for UAS Surface Navigation H. Kinatas, M. Joerger, Virginia Polytechnic Institute and State University, Blacksburg, VA	
Wednesday, 14 January 2026					
GNC-24/AFM-07	Entry, Descent and Landing Technology VI: Innovative Solutions to Entry, Descent, and Landing Flight Simulations				Orlando Ballroom L
Chaired by: H. SHEHATA, Analytical Mechanics Associates, Inc. and R. LUGO, NASA Langley Research Center					
9:30 a.m. AIAA-2026-1376 Desensitized Aerocapture Terminal Guidance P. Chadalavada, Analytical Mechanics Associates Inc, Hampton, VA; R. Deshmukh, S. Dutta, NASA Langley Research Center, Hampton, VA; E. Taheri, Auburn University, Auburn, AL	9:50 a.m. AIAA-2026-1377 Development of Aerothermal Database-In-The-Loop Capability with Flight Mechanics Simulations R. Deshmukh, NASA Langley Research Center, Hampton, VA; C. Naughton, J. Schulz, J. Hill, NASA Ames Research Center, Moffett Field, CA	10:10 a.m. AIAA-2026-1378 Generalized Energy Depletion Guidance for Aerobraking at Mars, Venus, Earth, and Titan N. Simha, E. Yu, G. Falcone , University of Michigan, Ann Arbor, MI			
Wednesday, 14 January 2026					
GTE-13	Combustors III				Celebration 2
Chaired by: A. KUMAR, GE Aerospace and A. HAZLETT, GE Aerospace					
9:30 a.m. AIAA-2026-1379 Visualization of Flashback in a Hydrogen Fueled Axial Stage Combustor P. Torres Serrano, M. Fortin, L. Longas, A. Ostrowski, A. Morales, K. Ahmed, University of Central Florida, Orlando, FL	9:50 a.m. AIAA-2026-1380 Design of a Counterflow Burner for Studying Flame Characteristics of Ammonia-Hydrogen Mixtures at High Pressure Gas Turbine Conditions S. Bobi, P. Garai, R. Rahman, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	10:10 a.m. AIAA-2026-1381 A Reduced Order Model Approach Based on Progress Variables for Simulation of Oxycombustion in the Allam-Fetvedt Cycle S. Yellapantula, B. Perry, M. Rahimi, National Laboratory of the Rockies, Golden, CO; D. Yi, K. Peterson, 8 Rivers, Durham, NC; M. Martin, National Laboratory of the Rockies, Golden, CO	10:30 a.m. AIAA-2026-1382 Influence of Pressure and Porosity on Early-Stage Jet-Fuel Fouling for Aviation Fuel Injector Screens A. Lira, R. Juarez, E. Petersen, Texas A&M University, College Station, TX		
Wednesday, 14 January 2026					

GTE-15	Workshop: Advancing High Speed Turbomachinery Design Using AI/ML Methods	Celebration 3
Chaired by: s. PATIL, ANSYS and S. HEGDE, Pratt & Whitney		
ANSYS will conduct a 2hr workshop on system design using data driven methods in collaboration with GE vernova		
Wednesday, 14 January 2026		
HSABP-06	State and Gaps in Hypersonic Air-Breathing Propulsion: Design Tools for Airflow Management	Celebration 4
Chaired by: B. OCHS, Air Force Research Laboratory and S. YANG, University of Minnesota		
This panel will discuss the state and gaps in HSABP airflow management (e.g., inlet/engine match: shock/boundary layer interaction (SBLI), flow separation, unstart, etc.) and associated practical design tools (including CFD modeling & simulation, uncertainty quantification (UQ), validation by experiments, and optimization). **Panelists:** Kevin G. Bowcutt (Boeing) Graham V. Candler (University of Minnesota) Ciprian Dumitrache (Colorado State University) Datta V. Gaitonde (Ohio State University) Tonghun Lee (Stanford University)		
Wednesday, 14 January 2026		
HUB-04 9:30 - 10:00 a.m.	From Aircraft to Arrays: Breaking Through the Scale Barrier in RF Simulation	the HUB in the Expo Hall
Traditional EM simulation tools struggle with electrically large structures—problems spanning dozens to hundreds of wavelengths encounter severe memory and computation time constraints. Nullspace was purpose-built to eliminate these barriers. This presentation demonstrates our capabilities through two critical applications: large phased arrays and large-scale RCS analysis – problems that historically required HPC clusters, now achievable on engineering workstations. Beyond solver performance, engineers typically spend 20-40% of simulation time on CAD cleanup. Discover how Nullspace's newest release features physics-aware CAD defeaturing that automatically removes electromagnetically irrelevant mechanical details while preserving critical RF elements, reducing prep time by up to 90%. Combined with Fast Adaptive Frequency Sweeps, this integrated workflow enables true rapid iteration on complex designs – exploration that's theoretically possible but practically prohibitive with legacy EM tools. Speaker: Masha V. Petrova, CEO of Nullspace, Inc.		
Wednesday, 14 January 2026		
INPSI-06/ACD-08/APA-38/AFM-06	Clean Aviation Special Session: Innovative Aircraft Concepts and Novel Configurations	Plaza Ballroom K
Chaired by: A. MILLI, GE Avio Aero and N. FEZANS, DLR - German Aerospace Center		

3:30 p.m. 4385171 Overview and Results From ONERA High Aspect Ratio Wing Research in European and National Projects P. Schmollgruber, ONERA – Office National d'Etudes et de Recherches Aerospatiales, Toulouse, France	3:50 p.m. 4385250 Future Advancements of High-Aspect-Ratio Wing Concepts: AWATAR Project Overview F. Mery, ONERA, Toulouse, France	4:10 p.m. AIAA-2026-1383 Lidar Maturation and Demonstration Activities in the Clean Aviation UP Wing Project N. Fezans, P. Linsmayer, P. Vrancken, J. Thurn, D. Kiehn, R. Lorbeer, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Braunsschweig, Germany; et al.	4:30 p.m. AIAA-2026-1384 Impact of Thermal Management System Design on Aircraft Performance in Hydrogen Fuel Cell Powertrains F. Nicolosi, G. Melone, M. Di Stasio, Universita degli Studi di Napoli Federico II, Naples, Italy	4:50 p.m. AIAA-2026-1385 Certification Readiness Level Scale: Maturing the Certifiability of Innovative Aircraft J. Jezegou, Fédération ENAC ISAE-SUPAERO ONERA, Université de Toulouse, Toulouse, France; C. Blondel de Joigny, V. Bureau, Dassault Aviation, Saint-Cloud, France; C. Seguin, ONERA, Toulouse, France; B. Jiménez Carrasco, R. André, Airbus S.A.S., Toulouse, France; et al.	5:10 p.m. "ODE4HERA: A Digital Engineering Environment for Future Hybrid-Electric Aircraft Design and Integration", Björn Nagel, German Aerospace Center (DLR)

Wednesday, 14 January 2026					
IS-11	Learning, Reasoning, and Data Driven Systems IV				Celebration 12
Chaired by: L. AKILAN, Mile2 and A. GOEL, University of Maryland Baltmore County					
1:00 p.m. AIAA-2026-1386 Time Series Classification for Satellite Fault Detection A. La Barca, J. Waltz, N. Ahmed, University of Colorado Boulder, Boulder, CO; A. Kim, I. Hussein, M. Dean, Trusted Space Inc, Leesburg, VA; et al.	1:20 p.m. AIAA-2026-1387 Autonomous Task Scheduling for Earth-Observing Satellites Tracking Moving Targets With Low Maneuverability Y. Nagano, H. Schaub, University of Colorado Boulder, Boulder, CO	1:40 p.m. AIAA-2026-1388 Adaptive Thrust Regulation in Solid Fuel Ramjet With Variable Goemetry Inlet P. Oveissi, University of Maryland Baltimore County, Baltimore, MD; R. DeBoskey, V. Narayanaswamy, NC State University, Raleigh, NC; A. Goel, University of Maryland Baltimore County, Baltimore, MD	2:00 p.m. AIAA-2026-1389 Thrust Regulation in a Solid Fuel Ramjet Using Dynamic Mode Adaptive Control P. Oveissi, University of Maryland Baltimore County, Baltimore, MD; G. Khokhar, K. Hanquist, University of Arizona, Tucson, AZ; A. Goel, University of Maryland Baltimore County, Baltimore, MD	2:20 p.m. AIAA-2026-1390 A Fast Forward Algorithm to Learn the Classification of Objects In Space K. Cavanaugh, A. Kuzmicki, Embry-Riddle Aeronautical University, Daytona Beach, FL; X. Li, Florida Institute of Technology, Melbourne, FL; S. Perera, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:40 p.m. AIAA-2026-1391 Path Planning and Tension Control Using Reinforcement Learning for Airborne Wind Energy Systems R. Selje, H. Wang, L. Sun, Baylor University, Waco, TX; Y. Zhu, T. Nam, Toyota Research Institute of North America, Ann Arbor, MI

Wednesday, 14 January 2026					
IS-12	Multi-Agent Control and Coordination II				Celebration 15
Chaired by: A. VON MOLL and I. WEINTRAUB					
9:30 a.m. AIAA-2026-1392 Multi-Agent Gatekeeper: Safe Flight Planning and Formation Control for Urban Air Mobility T. Vielmetti, D. Agrawal, D. Panagou, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-1393 Control of a Fully-Actuated Dual-axis Tilt Quadrotor R. Nanavati, Indian Institute of Technology Bombay, Mumbai, India; A. Sinha, University of Cincinnati, Cincinnati, OH; S. Kumar, Indian Institute of Technology Bombay, Mumbai, India	10:10 a.m. AIAA-2026-1394 Cooperative Encirclement of Malicious UAVs in an Interspersed UAV Swarm G. Kumar, A. Ratnoo, Indian Institute of Science, Bengaluru, India	10:30 a.m. AIAA-2026-1395 GPS-Denied Guidance Strategy for Safe Target Interception Under Multi-Defender Threats P. Ranjan, The University of Texas at San Antonio, San Antonio, TX; A. Sinha, University of Cincinnati, Cincinnati, OH; Y. Cao, The University of Texas at San Antonio, San Antonio, TX	10:50 a.m. AIAA-2026-1396 Deep Reinforcement Learning for Target Enclosing Under Limited Sensing and Autopilot Lag U. Siddique, P. Ranjan, Y. Cao, The University of Texas at San Antonio, San Antonio, TX; A. Sinha, University of Cincinnati, Cincinnati, OH	11:10 a.m. AIAA-2026-1397 Barrier Function-Based Robust Fixed-Time Leader-Follower Consensus With Variable Exponent T. Swaraj, National Institute of Technology Silchar, Silchar, India; K. Nath, Dr BR Ambedkar National Institute of Technology, Jalandhar, India; M. Bera, R. Mishra, National Institute of Technology Rourkela, Rourkela, India; S. Chakraborty, National Institute of Technology Silchar, Silchar, India

Wednesday, 14 January 2026					
LP-07	In-Space Liquid Propulsion System Design, Analysis, and Testing				Celebration 8
Chaired by: J. HORTON, L3Harris and S. WILLIAMS, Moog, Inc., Space, Advanced Programs					
9:30 a.m. AIAA-2026-1398	9:50 a.m. AIAA-2026-1399	10:10 a.m. AIAA-2026-1400	10:30 a.m. AIAA-2026-1401	10:50 a.m. AIAA-2026-1402	

Nitrous Oxide Gas Blowdown Modeling R. Kabour, S. Nath, J. Kudakwashe, M. Rotondi, L. Kamps, Letara Space, Sapporo, Japan	Machine Learning to Predict Ionic Liquid Propellant Properties A. Tahsin, P. Trusov, A. Bendimerad, E. Petro, Cornell University, Ithaca, NY	A Steam Engine for the Space Age: Thermodynamic Analysis of a Detonation Thruster With Water Electrolysis Propellant Generation J. Byers, G. Cobb, K. Durkee, J. Bennewitz, The University of Alabama in Huntsville College of Engineering, Huntsville, AL	Reaction Control Thruster Design and Qualification for the Blue Ghost Lunar Lander R. Cole, N. Gula, R. Whitney, B. Kniffen, Firefly Aerospace Inc, Cedar Park, TX	Application of the Liquid Rocket Engine Test and Evaluation Standard to Risk-Tolerant Missions J. Murphy, V. Goyal, L. Gevorkyan, D. Friedman, The Aerospace Corporation, El Segundo, CA	
Wednesday, 14 January 2026					
MAT-11	Materials for Extreme Environments: In-Space Manufacturing and Exploration				Bayhill 20
Chaired by: I. GUVEN, Virginia Commonwealth University and J. PINESS, Aegis Aerospace					
9:30 a.m. AIAA-2026-1404 Self-Sensing Structural Health Monitoring Capabilities of Lunar Regolith Simulant Polymer Concretes Incorporating Epoxy Nanocomposite Binders J. Cunningham, G. Seidel, Virginia Polytechnic Institute and State University College of Engineering, Blacksburg, VA	9:50 a.m. AIAA-2026-1405 Simulating Microgravity Additive Manufacturing Using Neutral Buoyancy for Space-Based Structural Fabrication L. Molina, S. Arroyo, The University of Texas at El Paso, El Paso, TX; A. Kwas, A. DeCicco, Northrop Grumman Corp, Falls Church, VA; B. Tseng, Y. Lin, The University of Texas at El Paso, El Paso, TX	10:10 a.m. AIAA-2026-1406 Multi-Material Lithography-Based Printing of 3YSZ-SiC for Regolith Wear Resistance A. Tirado-Pujols, E. Förster, Embry-Riddle Aeronautical University, Daytona Beach, FL; V. Wiesner, NASA Langley Research Center, Hampton, VA; S. Raghavan, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:30 a.m. AIAA-2026-1407 AQUASHIELD: Multifunctional Fluid-Filled Cellular Composites for Space Radiation Protection – Comprehensive Experimental, Computational, and Developmental Investigations A. Ghosh, G. Maestas, New Mexico Institute of Mining and Technology, Socorro, NM		
Wednesday, 14 January 2026					
MAT-12/STR-18	Structures and Materials in Extreme Environments				Bayhill 23
Chaired by: E. MCISAAC, Lockheed Martin Aeronautics and J. PINESS, Aegis Aerospace and Y. LI, University of Illinois at Urbana-Champaign					
9:30 a.m. AIAA-2026-1408 Building Block Validation Approach to a Ditching Simulation, Preliminary Studies S. Taylor, R. Holt, G. Bennett, G. Fernando, M. Wolff, Gulfstream Aerospace Corporation, Savannah, GA	9:50 a.m. AIAA-2026-1409 Mesoscale Homogenization of Composite Lattice Structures Using the Variational Asymptotic Method S. Bhalerao, Indian Institute of Technology Bombay, Mumbai, India; C. Srivastava, Indian Institute of Science,	10:10 a.m. AIAA-2026-1410 Deriving the Nonlinear Viscoelastic Formulations of Polymer Materials C. Cappon, C. Merrett, Mississippi State University, Mississippi State University, MS	10:30 a.m. AIAA-2026-1411 Thermodynamically Consistent Viscoelastic-Viscoplastic Models for Fatigue and Fracture C. Merrett, Mississippi State University James Worth Bagley College of Engineering, Mississippi State University, MS		

	Bengaluru, India; P. Pitchai, Institute of High Performance Computing, Singapore, Singapore; V. Sunthareswaran, S. Ponnusami, University of London, London, United Kingdom; G. P.J., Indian Institute of Technology Bombay, Mumbai, India				
Wednesday, 14 January 2026					
MDO-13	Special Session: Model-Based Systems Analysis and Engineering (MBSA&E) I				Bayhill 17
Chaired by: A. CARRERE, The Boeing Company and G. KENNEDY, Georgia Institute of Technology					
9:30 a.m. 4341601 Model-Based Systems Analysis & Engineering (MBSA&E) for the Sustainable Flight National Partnership (SFNP) I. Ordaz, B. Fazal, NASA Langley Research Center, Hampton, VA; E. Hendricks, NASA Glenn Research Center, Cleveland, OH	9:50 a.m. AIAA-2026-1412 Establishing Next Generation Collaboration in Model Based Systems Analysis & Engineering A. Carrere, S. Wakayama, R. Engelbeck, J. Gablonsky, M. Shi, Y. Arias, The Boeing Company, Chicago, IL	10:10 a.m. AIAA-2026-1413 The Aircraft Data Hierarchy: A Modern Aircraft Configuration Data Standard R. Engelbeck, E. Ocampo, M. Shi, A. Carrere, J. Gablonsky, S. Wakayama, The Boeing Company, Chicago, IL	10:30 a.m. AIAA-2026-1414 Model-Based Systems Analysis & Engineering: Standard Evaluator J. Gablonsky, A. Carrere, R. Engelbeck, M. Goldade, J. Musiak, E. Ocampo, The Boeing Company, Washington, D.C.; et al.	10:50 a.m. AIAA-2026-1415 Model Sharing and Collaboration Approaches for Next Generation of MDAO Collaboration: Results From the NASA MBSA&E Phase I Program Y. Arias, D. Wood, The Boeing Company, Chicago, IL	11:10 a.m. AIAA-2026-1416 Aircraft Model for Model-Based Systems Analysis & Engineering S. Wakayama, The Boeing Company, Huntington Beach, CA; R. Plybon, General Electric Company, Cincinnati, OH; A. Carrere, The Boeing Company, Huntington Beach, CA
Wednesday, 14 January 2026					
NDA-05/MDO-12	Design Under Uncertainty and Surrogate Modeling				Bayhill 26
Chaired by: Z. HU, University of Michigan, Dearborn and M. THAPA, University of Alabama, Tuscaloosa					
9:30 a.m. AIAA-2026-1417 Towards a Modular Framework for Aircraft Multidisciplinary Design Under Uncertainty P. Renkert, University of Dayton Research Institute, Dayton, OH; E. Forster, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	9:50 a.m. AIAA-2026-1418 Uncertainty Quantification and Sensitivity Analysis of Spalart Allmaras and Menter Shear Stress Model Coefficients for NACA 0012 Airfoil A. Sahni, S. Rezaeiravesh, The University of Manchester, Manchester, United Kingdom	10:10 a.m. AIAA-2026-1419 Higher Order Quantum Reservoir Computing for Non-Intrusive Reduced-Order Models V. Jain, Cornell University, Ithaca, NY; R. Maulik, The Pennsylvania State University, University Park, PA	10:30 a.m. AIAA-2026-1420 Federated Digital Twins for Space Systems S. Henao-Garcia, M. Kapteyn, K. Willcox, The University of Texas at Austin, Austin, TX		
Wednesday, 14 January 2026					
PC-18/PGC-09	Detonation Fundamentals II				Celebration 6
Chaired by: D. PINEDA, The University of Texas at San Antonio and S. YANG, University of Minnesota and R. SURYANARAYAN, University of Minnesota, Twin Cities					

9:30 a.m. AIAA-2026-1421 Experimental Study of a Cylindrical Rotating Detonation Torch for Scramjet Engines M. Kakuda, Nagoya Daigaku, Nagoya, Japan; K. Norimatsu, Tohoku Daigaku, Sendai, Japan; S. Suzuki, Nagoya Daigaku, Nagoya, Japan; N. Katsumura, S. Nishiura, Tohoku Daigaku, Sendai, Japan; N. Itouyama, Nagoya Daigaku Mirai Zairyo System Kenkyujo, Nagoya, Japan; et al.	9:50 a.m. AIAA-2026-1422 Mechanical Optimization of University-Printed 316L Stainless Steel for Rotating Detonation Engine Applications M. Nickell, K. Eisenbarger, J. Hernandez-McCloskey, K. Corral Martinez, S. Reutlinger, D. Pineda, The University of Texas at San Antonio, San Antonio, TX	10:10 a.m. AIAA-2026-1423 Morphology of Micro-Jets in Fully Three-Dimensional vs. Narrow-Channel Detonations R. Dushe, R. Suryanarayan, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN			
Wednesday, 14 January 2026					
PDL-07	Plasma and Laser Physics I				Rainbow Spring I
Chaired by: S. LEONOV, University of Notre Dame and A. TROPINA, Texas A&M University					
9:30 a.m. AIAA-2026-1424 Coupled Kinetic and Electrical Simulations of Methane Plasmalysis by Nanosecond Discharges P. Goutier, S. Delahaie, S. McGuire, N. Minesi, C. Laux, Universite Paris-Saclay, Gif-sur-Yvette, France; E. Pannier, Spark Cleantech, Gif-sur-Yvette, France	9:50 a.m. AIAA-2026-1425 Experimental Characterization of Nanosecond Discharges in Methane S. Delahaie, P. Goutier, N. Minesi, S. McGuire, C. Laux, Universite Paris-Saclay, Gif-sur-Yvette, France; E. Pannier, Spark Cleantech, Gif-sur-Yvette, France	10:10 a.m. AIAA-2026-1426 Influence of Pulse Width and Frequency on Discharge Energy and Temperatures in Nanosecond Plasmas C. Reuter, J. Sinrud, D. Kaganovich, US Naval Research Laboratory, Washington, D.C.	10:30 a.m. AIAA-2026-1427 Optical and Probe Diagnostics for Tabletop-Scale Inductively Coupled Plasma Tunnels E. Leong, H. Ali, University of Colorado Boulder, Boulder, CO		
Wednesday, 14 January 2026					
PGC-10/LP-08	Current RDRE Development Efforts at NASA and AFRL				Florida Ballroom C
Chaired by: L. SCHARBER, NASA Marshall Space Flight Center and B. WILLIAMS, NASA Marshall Space Flight Center					
This panel offers insights from three leading government R&D centers working to develop and field RDRE technology. Discussions include current hot fire test observations of regenerative and actively cooled RDREs tested at NASA as well as AFRL's efforts to rapidly mature RDRE technology through a joint experimental-computational cohort approach. Listeners can also expect an overview of NASA's various internal efforts and partnerships in this field. **Panelists:** Dr. Jason Burr, AFRL Dr. Daniel Paxson, GRC Tom Teasley, MSFC					
Wednesday, 14 January 2026					
SATS-03	Future Mission Concepts and Propulsion				Celebration 9
Chaired by: C. HARTSFIELD, Air Force Institute of Technology and P. DO VALE PEREIRA, University of Central Florida					
9:30 a.m.	9:50 a.m.	10:10 a.m.	10:30 a.m.		

AIAA-2026-1428 Design and Analysis of a Self-Propelled Nanosatellite for a Mission Beyond Low Earth Orbit Z. Jaeger-Letts, Concordia University Gina Cody School of Engineering and Computer Science, Montreal, Canada; J. Glowacki, Victoria University of Wellington, Wellington, New Zealand	AIAA-2026-1429 Expulsion Dynamics of Saturated Cold-Gas Propellant in Microgravity H. Chen, S. Vitale, Á. Romero Calvo, Georgia Institute of Technology, Atlanta, GA	AIAA-2026-1430 DeSCENT: Suborbital Demonstration of ChipSats as Gram-Scale Atmospheric Probes J. Umansky-Castro, M. Lohatepanont, M. Hurford, R. Zheng, M. Peck, Cornell University, Ithaca, NY; A. Filo, 4Special Projects, Cupertino, CA; et al.	AIAA-2026-1431 Gravity Gradient Exploration Satellite L. Ritchie, I. Rosenthal, B. Mason, N. O'Hara, Embry-Riddle Aeronautical University, Daytona Beach, FL		
Wednesday, 14 January 2026					
SCS-10/AS-09	Adaptive Spacecraft Structures and Systems				Bayhill 24
Chaired by: A. LEE, North Carolina State University and X. NING, University of Illinois at Urbana-Champaign					
9:30 a.m. AIAA-2026-1432 Development and Characterisation of a Novel Piezoelectric Walking Motor for Small Satellite Applications I. Carney, R. Dorey, A. Viquerat, University of Surrey, Guildford, United Kingdom	9:50 a.m. AIAA-2026-1433 Post-Morphing Bending Behavior of Programmable Cellular Thin-Shell Structures Formed via Snap-Through Instabilities S. Lalisani, F. Royer, Cornell University, Ithaca, NY	10:10 a.m. AIAA-2026-1434 Evaluating Modular Reconfigurability for Auxiliary Attitude Control in Space Structures Y. Kim, D. Kwak, Seoul National University, Gwanak-gu, South Korea; H. Sharma, BITS Pilani, Pilani, India; Y. Shin, J. Yang, Seoul National University, Gwanak-gu, South Korea	10:30 a.m. AIAA-2026-1435 Bending-Stiff, Single Degree-of-Freedom Space Structures: Combining Origami and Deployable Shells J. Abayneh, J. Meyer, B. Ehemann, E. Pellecer, S. Teng, Q. Zheng, Cornell University, Ithaca, NY; et al.		
Wednesday, 14 January 2026					
SD-14	Finite Element and Computational Methods				Bayhill 18
Chaired by: A. DATTA, University of Maryland, College Park and A. GREWAL, National Research Council Canada					
9:30 a.m. AIAA-2026-1436 Aeroelastic Analysis of Rotor Blades Using Flexible Multibody Dynamics With Geometrically Nonlinear 3D Finite Elements S. Cheon, Jeonbuk National University, Jeonju-si, South Korea; S. Son, Gyeongsang National University, Jinju-si, South Korea; Y. Kee, J. Jeong, Korea Aerospace Research Institute, Daejeon,	9:50 a.m. AIAA-2026-1437 Exploration of a 3-D Fluid-Structure Interface for Mis-matched RANS-FEA Meshes of a Helicopter Rotor A. Datta, L. Swaisgood, University of Maryland, College Park, MD	10:10 a.m. AIAA-2026-1438 Wall-Resolved LES Evaluation of Mach Number and Angle of Attack Effects on the Flow Field around NACA Airfoils at Low Reynolds Numbers under Compressible Conditions T. Uchida , T. Nagata, T. Nonomura, Nagoya Daigaku, Nagoya, Japan	10:30 a.m. AIAA-2026-1439 Benchmark Supercritical Wing Computations Using CREATE-AV KESTREL and NASA AEROM W. Silva, NASA, Hampton, VA	10:50 a.m. AIAA-2026-1440 A Mixed-Time Explicit-Implicit Generalized Finite Element Method for Multi-Scale Field Problems T. Miller, J. McNamara, The Ohio State University, Columbus, OH	11:10 a.m. AIAA-2026-1441 Effect of Intralaminar Inhomogeneity on Buckling Behavior of Woven Fabric Composite Laminates with Interlaminar Delamination M. Okuno, R. Miyakawa, K. Yoshida, Kanazawa Kogyo Daigaku, Nonoichi, Japan

South Korea; I. Jeong, H. Cho, Jeonbuk National University, Jeonju-si, South Korea; et al.					

Wednesday, 14 January 2026

SD-15	Load Alleviation for Aerospace Vehicles	Bayhill 22

Chaired by: G. COPPOTELLI, Sapienza University of Rome and J. COOPER, University of Bristol

9:30 a.m. AIAA-2026-1442 In-Flight Hyperparameter Controller Adjustment for Load Alleviation of Very Flexible Aircraft J. Cavalcanti, I. Kolmanovsky, C. Cesnik, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-1443 Integrated Gust Load Alleviation and Active Flutter Suppression - Control Law Synthesis and Wind Tunnel Tests A. Sabatini, Universita degli Studi di Roma La Sapienza, Rome, Italy; E. Livne, University of Washington, Seattle, WA; G. Coppotelli, Universita degli Studi di Roma La Sapienza, Rome, Italy	10:10 a.m. AIAA-2026-1444 Feature-based Modeling for Aeroelastic Loads Alleviation Using Smart Vortex Generators A. Beno, J. Sodja, X. Wang, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	10:30 a.m. AIAA-2026-1445 Aeroelastic Behavior of Forward-Swept Wings with Flared Folding Wingtips F. Sacchi, J. Sneddon, F. Healy, D. Rezgui, J. Cooper, University of Bristol, Bristol, United Kingdom	10:50 a.m. AIAA-2026-1446 Utilization of Damper Systems for Nose Gear Drag Load Reduction D. Haudrich, Z. Lively, The Boeing Company, Chicago, IL	

Wednesday, 14 January 2026

SE-10/DGE-07/GTE-14/DE-10/HMT-03/EAT-05	AI and Machine Learning (ML) for Aerospace Applications	Bayhill 27

Chaired by: M. VAHAB, Mathworks

Machine Learning (ML) is unlocking unprecedented capabilities in the Defense Aerospace sector, driving innovation across a variety of critical applications. This panel will delve into the transformative role of ML in enhancing aerospace operations and capabilities. Key topics include predictive maintenance, where ML algorithms analyze time-series data to forecast equipment failures and optimize maintenance schedules, thereby reducing downtime and costs. The panel will also explore image and visual applications, such as using ML for object detection and anomaly identification in satellite imagery and surveillance. Another focus will be on embedded and Edge AI, highlighting how ML models deployed on edge devices enable real-time data processing and decision-making in resource-constrained environments. Additionally, the panel will address Verification and Validation (V&V) challenges specific to AI systems, ensuring their reliability, safety, and compliance with stringent defense standards. Experts will share case studies and insights on integrating ML into existing aerospace workflows, demonstrating its potential to enhance performance, safety, and operational efficiency. Join us to learn how ML is revolutionizing aerospace applications, driving forward the capabilities of defense systems in an increasingly complex and fast-evolving landscape. **Panelists:** Ella Atkins, Virginia Tech Joe Sanford, MathWorks Marilee J. Wheaton, Aerospace Corporation Mykel Kochenderfer, Stanford University

Wednesday, 14 January 2026

SE-11	The Future of Aviation Systems Safety	Bayhill 25

Chaired by: J. GEBHARD, Rolls-Royce North American Technologies

In an era where so many any mishap comes under such scrutiny and media attention, improving safety has never been more paramount. This panel session will discuss the future of aviation safety requirements, where have we come from, where are we now and what needs to change going forward to increase robustness

in the future with applications such as autonomous air vehicles, more automation in air traffic control and busier air spaces over our skys. **Panelists**: **John Gantt, Sr.**, Systems Safety Specialist, Rolls-Royce North America **Natasha Neogi**, Systems Engineer, NASA **Pat Canny**, Systems Architect, MathWorks					
Wednesday, 14 January 2026					
SEN-06	Sensor Systems for Space Applications				Celebration 16
Chaired by: L. FAIRFAX, US Army Research Laboratory and S. CAIN, Air Force Institute of Technology					
9:30 a.m. AIAA-2026-1447 Detecting Orbital Debris in LEO and MEO Using GNSS Signals for Passive Space Surveillance and Collision Risk Assessment A. Sanchez Calvo, A. Santander, Stanford University, Stanford, CA	9:50 a.m. AIAA-2026-1448 Boomless Search Coil Sensing With Magnetorquers in CubeSats: Addressing Magnetic Remanence and Interference S. Kalluri, University of Michigan, Ann Arbor, MI; A. Hoffmann, NASA Goddard Space Flight Center, Greenbelt, MD; M. Moldwin, J. Cutler, L. Ojeda, University of Michigan, Ann Arbor, MI	10:10 a.m. AIAA-2026-1449 Sensor Fusion Techniques for Uncertainty Reduction in Rendezvous and Proximity Operations C. Garrido, D. Barnhart, Space Engineering Reseach Center, Information Sceience Institute, Univeristy of Southern California, Marina del Rey, CA	10:30 a.m. AIAA-2026-1450 Dynamic Data Driven Applications Systems (DDDAS) for Space Sensor Fusion E. Blasch, MOVEJ Analytics, Fairborn, OH	10:50 a.m. AIAA-2026-1451 Efficient, Covariance-Constrained Sensor Fusion Through Observation Decimation A. Enriquez Fernandez, The University of Texas at El Paso College of Engineering, El Paso, TX; E. Blasch, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; A. Flores-Abad, J. Bird, The University of Texas at El Paso College of Engineering, El Paso, TX	
Wednesday, 14 January 2026					
SFM-16	Cislunar Astrodynamics I				Plaza Ballroom J
Chaired by: H. KOEHLER, NASA Marshall Space Flight Center					
9:30 a.m. AIAA-2026-1452 Safety Critical Control Using Fully Nonlinear Equations of Relative Motion for Formation Flying in Cislunar Space E. Zapien Ramos, K. Kim, M. Krstic, A. Rosengren, University of California San Diego, La Jolla, CA	9:50 a.m. AIAA-2026-1453 Robust NRHO Station-keeping Leveraging the Probabilistic Invariant Set N. Hiraiwa, N. Ozaki, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan	10:10 a.m. AIAA-2026-1454 Station-Keeping on a Synodic Resonant Orbit Using Solar Sails Y. Hayashi, N. Hiraiwa, M. Bando, S. Hokamoto, Kyushu Daigaku, Fukuoka, Japan	10:30 a.m. AIAA-2026-1455 Station-Keeping Techniques for Sidereal Resonant Tulip-Shaped Three-Body Orbits D. Koblick, Coorbital Inc., Rolling Hills Estates, CA; B. McCarthy, a.i. solutions, Inc., Houston, TX	10:50 a.m. AIAA-2026-1456 Cislunar Relative Dynamics in the Elliptic Restricted Three-Body Problem Using Fundamental Modal Solutions C. Vela, R. Opromolla, G. Fasano, Universita degli Studi di Napoli Federico II, Naples, Italy	
Wednesday, 14 January 2026					
SFM-17	Trajectory/Mission/Maneuver Design and Optimization IV				Plaza Ballroom I
Chaired by: F. CRESPO, Embry-Riddle Aeronautical University					
9:30 a.m. AIAA-2026-1457	9:50 a.m. AIAA-2026-1458	10:10 a.m. AIAA-2026-1459 Optimal Trajectory Design for On-orbit Optical	10:30 a.m. AIAA-2026-1460 Multi-Objective Graph Search for Automated	10:50 a.m. AIAA-2026-1461 DDP-Based Stochastic Trajectory Optimization	11:10 a.m. AIAA-2026-2786 Fast Approximate Method of Satellite Coverage

Stochastic Optimization for Target Point Approach on Quasi-Halo Orbits A. Martinelli, C. Giordano, F. Topputo, Politecnico di Milano, Milan, Italy	Customizable Augmented Reality Tool for Intuitive Trajectory Design D. Turner, J. McMahon, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	Inspection Using Spherical Gaussian T. Nobuhara, Y. Yoshimura, T. Hanada, Kyushu Daigaku, Fukuoka, Japan; T. Izumiyama, Kabushiki Kaisha IHI, Koto, Japan	Planetary Moon Tour Design F. Maccari, M. Lavagna, Politecnico di Milano, Milan, Italy	With Safe Mode Uncertainty Modeled by an Alternative Renewal Process M. Shibukawa, Sogo Kenkyu Daigakuin Daigaku, Miura District, Japan; N. Ozaki, JAXA, Sagamihara, Japan	Assessment With Temporal and Spatial Modifiers J. Mackintosh, S. Treblow, R. Clark, M. Nair, N. Crisp, C. McGrath, The University of Manchester, Manchester, United Kingdom

Wednesday, 14 January 2026

STR-17	Fatigue, Fracture, and Impact Damage of Structures	Bayhill 19

Chaired by: L. DEMASI, San Diego State University College of Engineering

9:30 a.m. AIAA-2026-1462 A Peridynamic Investigation of Deformation and Damage Due to Multiple High-Speed Hail Impacts B. Alicioglu, U. Can, I. Guven, Virginia Commonwealth University, Richmond, VA	9:50 a.m. AIAA-2026-1463 Fatigue Life Estimation of Notched Beam Under Random Vibrations Using Strain Gauge Data R. G, P. Joshi, Indian Institute of Technology Kharagpur, Kharagpur, India; V. V, R. C, S. Sankaran, R. A, Satish Dhawan Space Centre SHAR, Sriharikota, India; et al.	10:10 a.m. AIAA-2026-1464 Design and Instrumentation of an In-house Drop Tower for Low Velocity Impact Testing of Composites and Metals T. Sarker, R. Mogilisetti, S. Lin, The University of Texas at Arlington, Arlington, TX	10:30 a.m. AIAA-2026-1465 On the Stress Rupture Life Prediction of Composite Overwrapped Pressure Vessels L. Shimizu, V. Goyal, A. Paul, X. Qu, The Aerospace Corporation, El Segundo, CA	10:50 a.m. AIAA-2026-1466 Understanding the Influence of Boundary Condition and Crack Spacing on Impact Analysis of Composite Laminates O. Valdez Loya, P. Davidson, The University of Texas at Arlington, Arlington, TX	

Wednesday, 14 January 2026

TF-05/WE-03	Soaring to New Heights: Advancements in the Kite System for the Toyota Mothership	Florida Ballroom A

Chaired by: T. NAM, Toyota and Y. ZHU, Toyota

The Toyota Mothership is an advanced kite system envisioned for various missions that require exceptional endurance and station-keeping capabilities. As a cornerstone of this initiative, Toyota's Frontier Research Center in Japan has been developing an advanced kite system, expanding its flight envelope in terms of altitude and endurance. This includes innovative designs and cutting-edge technologies across multiple areas. The session will begin with an overview of the Toyota Mothership project presented by Eiji Itakura, the Captain of the Mothership. This will be followed by technical discussions on Toyota's latest prototype kite system, including advanced lightweight fabric, the winch system, the pressure regulating system, the pitch control mechanism, and the optical sensor for attitude estimation.

Wednesday, 14 January 2026

UAS-08	Novel Concepts and Applications for Uncrewed/Autonomous Systems I	Orlando Ballroom M

Chaired by: M. FRANCIS and M. ANDERSON, United States Air Force Academy

9:30 a.m. AIAA-2026-1472 Towards Autonomous Robotic Platforms for Servicing K. Dogan, K. Vernyi, T. Yucelen, M. Pakmehr,	9:50 a.m. AIAA-2026-1473 Operational Concept for the Use of Medium Size Unmanned Autonomous Helicopters in Wildfire-Fighting	10:10 a.m. AIAA-2026-1474 Tunnel Vision: High-Speed Mapping for Enclosed Terrain E. Kmetz, US Air Force Academy, Air Force	10:30 a.m. AIAA-2026-1475 Urban Air Mobility Flight Demand Modeling for Airports in New York City K. Acharya, University of Maryland Baltimore,	10:50 a.m. AIAA-2026-1476 Path Following Guidance Strategy for Autonomous Dynamic Soaring	11:10 a.m. AIAA-2026-1477 Electroreceptive Gradient-Following System for Autonomous Drone Landing

ControlX, Inc., Santa Clara, CA	T. Augustin, M. Kreuzer, A. Knoll, D. Ossmann, Hochschule fur angewandte Wissenschaften Munchen, Munich, Germany; M. Bachfischer, J. Bachler, Technische Universitat Munchen, Munich, Germany; et al.	Academy, CO; A. Kirkman, D. Wing, Brigham Young University, Provo, UT; A. Hargis, D. Ke, J. Halus, US Air Force Academy, Air Force Academy, CO; et al.	Baltimore, MD; K. Vasiloff, Z. Wang, The University of Tennessee System, Knoxville, TN; H. Song, University of Maryland Baltimore, Baltimore, MD; L. Sun, Baylor University, Waco, TX	Z. Zhuo, M. Nahon, I. Sharf, McGill University, Montreal, Canada	K. Mensah, H. Khaniani, M. Razavi, N. Mojtabai, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM

Wednesday, 14 January 2026

AIAA-07 10:00 a.m. - 12:00 p.m.	Rising Leaders in Aerospace: Speed Mentoring	Plaza Ballroom H

Leaders in the aerospace industry will take time to meet with students and young professionals and share their experiences. This is a great way to get insight and make new contacts.

Wednesday, 14 January 2026

F360-07 10:00 - 11:00 a.m.	AI Fight Club	Windermere Ballroom

Join this session to learn about a Lockheed-Martin-sponsored initiative, featuring a, “head-to-head style competitive environment designed to accelerate the development and operational deployment of artificial intelligence and bring warfighters faster decision-making and secure data analysis

Wednesday, 14 January 2026

HUB-05 10:00 - 10:30 a.m.	From Innovation to Award: Preparing Startups and Foreign Tech Firms for Rapid U.S. Government Acquisition and CMMC-Ready Go-to-Market	the HUB in the Expo Hall

For startups and foreign technology organizations, breaking into the U.S. defense and aerospace market is not just a technology challenge—it is a regulatory, ownership, and security challenge that directly determines speed to first contract award. Agencies across the U.S. Government, including defense and warfighting organizations, increasingly demand that innovative suppliers arrive “compliance ready”: CMMC-aligned, export-control aware, and structured to withstand FOCI and national security scrutiny without slowing acquisition timelines. This session presents a practical playbook for aligning go-to-market strategy with rapid acquisition readiness for new and non-traditional entrants. The discussion will focus on how startups and foreign-backed or foreign-based firms can: structure ownership and governance to address FOCI concerns early; map product and IP portfolios to U.S. export control regimes (ITAR/EAR) and adjust go-to-market channels accordingly; design cloud and engineering environments that meet CMMC, CUI, and supply chain security expectations from day one; and sequence these actions to support, rather than delay, first awards from DoD and other U.S. agencies. Drawing on case patterns from venture-backed, dual-use, and foreign-origin technology companies seeking to work with U.S. primes and government sponsors, the session will highlight concrete tools: pre-award readiness checklists, “compliance-by-design” architecture patterns, and ownership/partnership decision frameworks that reduce friction in source selection, security reviews, and contract negotiations. Attendees will leave with an integrated view of acquisition, compliance, and go-to-market—equipping them to position their organizations as low-risk, high-speed partners to U.S. government customers while preserving the agility that made them innovative in the first place. Speaker: Loverture Jones, Senior Director National Security, Trade and Technology, Alvarez and Marsal

Wednesday, 14 January 2026

HUB-06 10:30 - 11:00 a.m.	Meet the AIAA International Team—"AIAA Global Vision: Opportunities and Strategies for EMEA"	the HUB in the Expo Hall

Expanding AIAA activities internationally requires a clear vision and actionable steps. This session outlines practical strategies for growth in Europe, the Middle East, and Africa, emphasizing inclusivity, innovation, and global connectivity. Speaker: Martina Bruno, Senior Manager, Europe and Middle East, AIAA

Wednesday, 14 January 2026

HUB-07 11:00 - 11:30 a.m.	Strategies to Leverage Physics AI Surrogate Models for Spacecraft Design	the HUB in the Expo Hall
Northrop Grumman and Luminary Cloud have developed the first physics-based AI model for spacecraft thruster design. The model generates high-fidelity surface and volume solutions for thruster nozzles in seconds, reducing design iteration cycles from years to months. Unlike traditional CFD simulation, this Physics AI approach uses a substantial high-fidelity dataset and fundamental physics principles to predict flow fields and performance metrics such as vacuum thrust and mass flow rates from arbitrary geometric variations. Join Professor Juan Alonso, CTO of Luminary Cloud, and Fahad Khan, Director of Programs, AI Integration - Space Sytems at Northrop Grumman, as they present the tecnical architecture and validation results. Learn how this technology is accelerating engineering workflows in mission-critical aerospace applications. Speaker:		
Wednesday, 14 January 2026		
HUB-08 11:30 a.m. - 12:00 p.m.	Turbocharging Simulations: Next-Generation CFD/CSM for Faster, Smarter Flow Predictions	the HUB in the Expo Hall
This talk gives an overview of the capabilities of the software solutions provided by Metacomp Technologies, Inc., specifically highlighting recent advancements in its flagship software, CFD++, that dramatically accelerate both scale-resolving and statistically-steady turbulent flow simulations. Key innovations include subdomain-mode treatments and GPU acceleration for scale-resolving methods, enabling faster and more efficient high-fidelity predictions. For enhanced convergence of statistically-steady flow, reinforcement-learning AI methods are applied via selective-frequency damping and coherent-stress capture. Together, these developments open new possibilities for tackling complex turbulent flows at reduced computational cost. Speaker: Paul Batten, Principal Scientist, Metacomp		
Wednesday, 14 January 2026		
HUB-09 12:00 - 12:30 p.m.	RTX and U	the HUB in the Expo Hall
Discover exciting opportunities to collaborate with RTX, a global leader in aerospace and defense innovation. This panel discussion will explore the various ways universities can work with RTX to drive technological advancements, develop cutting-edge solutions, and foster mutually beneficial partnerships. Attendees will gain insights into RTX's collaboration priorities, successful partnership models, and actionable steps to engage with our business units—Collins Aerospace, Pratt & Whitney, and Raytheon. Join us to learn how we can work together to shape the future of aerospace and defense. Speakers: Christine Gemelli, Director, University Relations and Technical Learning, RTX Jonathan Hartman - Director, Open Innovation - Collins Aerospace Jeff Cohen, Director - Director of Research, RTRC Teresa Clement- Sr Manager, University and Small Business Partnerships - Raytheon Wally Orisamolu - Assoc Director, Pratt and Whitney		
Wednesday, 14 January 2026		
LUNCH-01 11:30 a.m. - 12:30 p.m.	Expo Hall Lunch	Regency Ballroom
Join our exhibitors in the Expo Hall for lunch. Included with all registrations.		
Wednesday, 14 January 2026		
HUB-10 12:30 - 1:00 p.m.	BAE Systems Success Stories of Bridging the Valley of Death	the HUB in the Expo Hall
We will share highlights of two BAE Systems success stories for bridging the gap between TRL 4 and 6 to enable mission capabilities that provide new ways to explore the planet and our universe. Our first example is about creating a product line that provides a range of standardized, high performing spacecraft buses. The second example tracks the development of actuators for three NASA Astrophysics Flagship missions. Speaker: Jeanette Domber, Senior Manager, Technical Solutions & Strategic Pursuits, BAE Systems		
Wednesday, 14 January 2026		
AA-04/EAT-07/TF-06	Advanced Air Mobility Noise	Bayhill 31

Chaired by: J. HUYNH, University of California, Irvine and D. CUPPOLETTI, University of Cincinnati

1:00 p.m. AIAA-2026-1478 Development of a Rapid Acoustic Prediction Methodology for Conceptual Electric Aircraft S. Brooks, P. Sorensen, D. Cuppoletti, University of Cincinnati, Cincinnati, OH	1:20 p.m. AIAA-2026-1479 Prediction of Performance and Noise of a Small Quadrotor using CHARM A. Rozman, E. Macrae-Sadek, J. Jiang, S. Becken, E. Dy, M. Cable, Boston University, Boston, MA; et al.	1:40 p.m. AIAA-2026-1480 Study of Propeller Noise Under Edgewise and Transition Flight Conditions for Urban Air Mobility J. Hua, M. Marques, V. Golubev, A. Lyrintzis, R. Mankbadi, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-1482 Impact of Design and Operation of Distributed Electric Propulsors to Aircraft Noise S. Yeung, J. Huynh, University of California Irvine, Irvine, CA		

Wednesday, 14 January 2026

AA-05	Jet Aeroacoustics II	Bayhill 30

Chaired by: K. DISOTELL, The Ohio State University and N. WEBB, The Ohio State University

3:30 p.m. AIAA-2026-1483 Active Control of Acoustics in a Supersonic Circular Jet K. Katterle, N. Hiler, M. Mitchell, N. Webb, M. Samimy, The Ohio State University, Columbus, OH	3:50 p.m. AIAA-2026-1484 Spectral Peaks Due to 'Guided Jet Waves' in Plug Nozzle Flows A. Fagan, K. Zaman, NASA Glenn Research Center, Cleveland, OH	4:10 p.m. AIAA-2026-1485 Experimental Investigation of Upstream Geometry Effects on Screech Feedback Mechanisms in Twin Supersonic Jets A. Mohammed, K. Gautam, A. Karnam, M. Saleem, E. Gutmark, University of Cincinnati, Cincinnati, OH	4:30 p.m. AIAA-2026-1486 Effect of Upstream Geometry on Broadband Shock Associated Noise and Screech Tones in Trapezoidal Nozzles A. Russell, A. Mohammed, J. Cramer, K. Gautam, E. Gutmark, University of Cincinnati College of Engineering and Applied Science, Cincinnati, OH	4:50 p.m. AIAA-2026-1487 Mapping Azimuthal Distribution of Supersonic Twin Rectangular Jet Noise K. Gautam, A. Mohammed, J. Cramer, E. Gutmark, University of Cincinnati, Cincinnati, OH	5:10 p.m. AIAA-2026-1488 Towards Noise Mitigation in Twin Supersonic Rectangular Jets: Baseline Large-Eddy Simulation and Validation J. Yamasaki, S. Dai, O. Martin, S. Lele, Stanford University, Stanford, CA; K. Gautam, A. Mohammed, University of Cincinnati, Cincinnati, OH; et al.

Wednesday, 14 January 2026

ACD-09	Design of Novel Aircraft Configurations	Rock Spring I & II

Chaired by: M. DRAKE, Boeing Commercial Airplanes and J. MONTORO, Lockheed Martin

1:00 p.m. AIAA-2026-1489 Multidisciplinary Design Optimization of Blended Wing-Body Aircraft with Lateral-Directional Stability Constraints C. Chen, University of Toronto, Toronto, Canada; A. Gray, Universite de Moncton, Moncton, Canada; D. Zingg, University of Toronto, Toronto, Canada	1:20 p.m. AIAA-2026-1490 Optimization of Twin-Aisle-Class Blended-Wing-Body Aircraft Incorporating Critical Requirements and High-Fidelity Aerodynamic Modelling R. Yazdi, University of Toronto Institute for Aerospace Studies, Toronto, Canada; A. Gray, Universite de Moncton, Moncton, Canada; D. Zingg, University of Toronto Institute	1:40 p.m. AIAA-2026-1491 Stability-Driven Preliminary Blended Wing Body Design With Foresight for Hydrogen Fuel Adoption S. Shekar, A. Molloy, M. Guidotti, M. Clarke, University of Illinois System, Urbana, IL			

	for Aerospace Studies, Toronto, Canada				
Wednesday, 14 January 2026					
AFM-09	Hypersonic and Spacecraft Flight Mechanics I				Bayhill 33
Chaired by: S. D'SOUZA, NASA-ARC					
1:00 p.m. AIAA-2026-1492 A Simulated Aerodynamic Database Analysis for the Genesis Sample Return Capsule B. Willier, H. Dean, B. Robertson, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-1493 Reduced-Order Model-in-the-loop Flight Simulation of the Genesis Sample Return Capsule H. Dean, B. Willier, B. Robertson, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-1494 Simulated Ballistic Range Campaign of the Genesis Sample Return Capsule B. Willier, M. Walter, H. Dean, B. Robertson, D. Mavris, Georgia Institute of Technology, Atlanta, GA	2:00 p.m. AIAA-2026-1495 Generalized Formulation of State and Parameter Estimation for Atmospheric Re-entry O. Padun, Y. Lu, Worcester Polytechnic Institute, Worcester, MA	2:20 p.m. AIAA-2026-1496 Dynamic Instability Analysis with Different Reentry Capsule Shapes at Subsonic and Transonic Speeds R. Hosaka, D. Yamashita, M. Okawa, Tohoku Daigaku, Sendai, Japan; Y. Egami, Aichi Kogyo Daigaku, Toyota, Japan; K. Yamada, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan; T. Ikami, Tohoku Daigaku Ryutai Kagaku Kenkyujo, Sendai, Japan; et al.	
Wednesday, 14 January 2026					
AMT-23	Flow Visualization				Blue Spring II
Chaired by: B. SCHMIDT, Case Western Reserve University and S. SINGH, Embry-Riddle Aeronautical University					
1:00 p.m. AIAA-2026-1498 Application of Adaptive Optics for Improvement of Spatial Resolution of Telescopic Flow Visualization T. Mizukaki, Tokai Daigaku Kogakubu Daigakuin Kogaku Kenkyuka, Hiratsuka, Japan; T. Minezaki, University of Tokyo, Tokyo, Japan; S. Oya, Kokuritsu Tenmondai, Mitaka, Japan	1:20 p.m. AIAA-2026-1499 Convection Over Coffee: Revisiting a Steamy Background-Oriented Schlieren Dataset J. Molnar, The Pennsylvania State University, University Park, PA; F. Fuest, LaVision GmbH, Göttingen, Germany; S. Grauer, The Pennsylvania State University, University Park, PA	1:40 p.m. AIAA-2026-1500 Quantitative Visualization Around a High-Speed Projectile Under Low-Pressure Condition by Using Parallel-Phase-Shift Interferometry T. Mizukaki, Y. Iwamoto, Tokai Daigaku Kogakubu Daigakuin Kogaku Kenkyuka, Hiratsuka, Japan; K. Otani, Tohoku Daigaku Ryutai Kagaku Kenkyujo, Sendai, Japan	2:00 p.m. AIAA-2026-1501 Improving Effective Temporal Resolution of Schlieren Imaging: A Decomposition-Based Frame Interpolation Method J. Langfield, Queen Mary University of London School of Engineering and Materials Science, London, United Kingdom; J. Webb, Department of Mathematics, University of Manchester, Manchester, United Kingdom; M. Quinn, School of Engineering, University of Manchester, Manchester, United Kingdom; K. Sabnis,	2:20 p.m. AIAA-2026-1502 Uncertainty Estimation and Experimental Design For Unsteady Flow-Field Measurements via Bootstrapping R. Cook, J. Naughton, K. Gerow, University of Wyoming, Laramie, WY; P. Nikoueeyan, Resono Pressure Systems Inc, Laramie, WY	

			Queen Mary University of London School of Engineering and Materials Science, London, United Kingdom		
Wednesday, 14 January 2026					
APA-48/FD-54	Flow Control: Methods and Applications VII				Manatee Spring I
Chaired by: B. TUNA, Florida State University and H. STROUD, Sandia National Lab					
1:00 p.m. AIAA-2026-1503 Airfoil Decambering for Gust Load Alleviation Using a Bi-stable Hinge M. Bathgate, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL; S. Ferracin, D. Jin, S. Patel, J. Raney, University of Pennsylvania, Philadelphia, PA	1:20 p.m. AIAA-2026-1504 Replacing the Aileron of the High-Lift Common Research Model With Trailing-Edge Coanda Actuators E. McFadden, J. Bons, The Ohio State University, Columbus, OH	1:40 p.m. AIAA-2026-1505 Adaptive Control of 2D In-Ground-Effect Flight with Distributed Pressure Sensing J. Vander Schaaf, K. Fidkowski, D. Bernstein, University of Michigan, Ann Arbor, MI	2:00 p.m. AIAA-2026-1506 Regulation of the Aerodynamic Loads on a Circular Cylinder Using 2- and 3-D Coanda Wall Jet Arrays N. Rackers, M. DeSalvo, B. Vukasinovic, A. Glezer, Georgia Institute of Technology, Atlanta, GA	2:20 p.m. AIAA-2026-1507 On the Use of Coanda Effect on Truncated Airfoils, or the Jet-Flap Issues Revisited M. Vibhu, L. Taubert, I. Wygnanski, The University of Arizona, Tucson, AZ	2:40 p.m. AIAA-2026-1508 Lift Augmentation Using Pulsed Combustion for Externally Blown Flaps J. Mayonado, N. Pillai, E. Vural, A. Flatau, D. Maqbool, University of Maryland, College Park, MD
Wednesday, 14 January 2026					
APA-50	Special Session: Rotor-in-Hover Simulations				Coral Spring II
Chaired by: N. HARIHARAN, HPCMP CREATE and R. NARDUCCI, Boeing Defense, Space & Security and J. ABRAS, HPCMP CREATE					
1:00 p.m. "Status and Future Path" presented by Robert Narducci	1:20 p.m. AIAA-2026-1509 An Investigation of CFD Predictions for Rotor Hover Performance Near Stall Conditions B. Min, B. Wake, Lockheed Martin Corporation, Bethesda, MD; R. Jain, U.S. Army Combat Capabilities Development Command Aviation & Missile Center, Moffett Field, CA	1:40 p.m. AIAA-2026-1510 Enhanced Engineering Workflows in the HPCMP CREATE Ecosystem Demonstrated on the SUI Endurance UAV J. Abras, V. Lakshminarayan, HPCMP CREATE, Alexandria, VA; E. Mestreau, S. Dey, US Naval Research Laboratory, Washington, D.C.; N. Hariharan, HPCMP CREATE, Alexandria, VA	2:00 p.m. AIAA-2026-1511 Numerical Simulations of an Installed Rotor in Prescribed and Free Flight Maneuvers C. Sheng, The University of Toledo, Toledo, OH	2:20 p.m. AIAA-2026-1512 Analysis of HVAB Rotor Hover Performance with Uncertainty in CFD Meshing Strategies J. Schaefer, Boeing Research and Technology, Saint Louis, MO; J. Abras, HPCMP CREATE-AV Helios Team, Alexandria, VA; R. Narducci, Boeing Defense, Space & Security, Philadelphia, PA; A. Wissink, R. Jain, U.S. Army Combat Capabilities Development Command, Aviation & Missile Center, Moffett Field, CA	2:40 p.m. AIAA-2026-1513 Preliminary Application of Inverse Design to the HVAB Rotor Tip C. Nelson, Siemens Digital Industries Software Inc, Bellevue, WA; M. Ku, Georgia Institute of Technology College of Engineering, Atlanta, GA; Y. Yanagita, Siemens Digital Industries Software Inc, Salt Lake City, UT; L. Sankar, Georgia Institute of Technology College of Engineering, Atlanta, GA
Wednesday, 14 January 2026					
APA-51	Turbulence and Transition Modeling for Aerodynamic Applications II				Barrel Spring II
Chaired by: J. CODER, Pennsylvania State University and C. PECK, Sandia National Laboratories					

1:00 p.m. AIAA-2026-1514 A Numerically Tolerant Formulation of the Amplification Factor Transport Transition Model A. Simpson, M. Galbraith, S. Allmaras, Massachusetts Institute of Technology, Cambridge, MA	1:20 p.m. AIAA-2026-1515 A Two-Equation Turbulence Model Combining Eddy Viscosity and Turbulent Kinetic Energy M. Haigler, J. Coder, The Pennsylvania State University, University Park, PA; M. Galbraith, S. Allmaras, Massachusetts Institute of Technology, Cambridge, MA	1:40 p.m. AIAA-2026-1516 Local Algebraic Transition Model With Crossflow Correlations and Compressibility Corrections N. Saadeh, University of Toronto, Toronto, Canada; M. Piotrowski, Bombardier Inc, Toronto, Canada; D. Zingg, University of Toronto, Toronto, Canada	2:00 p.m. AIAA-2026-1517 Comparing Different Algebraic Correlations for Spalart-Allmaras BCM Transitional Model Using Metric-Based Mesh Adaptation E. Parente, Safran Tech, Châteaufort, France; C. Tarsia Morisco, F. Alauzet, Institut National de Recherche en Sciences et Technologies du Numerique, Palaiseau, France		
Wednesday, 14 January 2026					
APA-52	Unsteady Aerodynamics II				Manatee Spring II
Chaired by: A. VOEGELE, The Aerospace Corporation and S. NARSIPUR, Mississippi State University					
1:00 p.m. AIAA-2026-1518 Impact of Gusts on Performance of NACA-0012 Airfoil at Low-Re V. Durgesh, University of Idaho, Moscow, ID; A. Medina, M. Mongin, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; S. Gunasekaran, University of Dayton, Dayton, OH	1:20 p.m. AIAA-2026-1519 Unsteady Aerodynamic Analysis on Sonic Anemometer-Mounting System Using OpenFOAM A. Valdés R. , O. Garibaldi, Universidad Tecnológica de Panamá, Panama, Panama	1:40 p.m. AIAA-2026-1520 Correlating States of the Horseshoe Vortex and Corner Separations in Wing-Body Junction Flows P. Winner, E. Gnanamanickam, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-1521 Pressure Fluctuations and Reattachment Streaks on a Cone-Slice-Ramp Geometry at Mach 5 A. Pandey, University of South Florida, Tampa, FL		
Wednesday, 14 January 2026					
AS-11	Bioinspired and Adaptable Systems				Bayhill 27
Chaired by: D. MCGOWAN, NASA Langley Research Center and E. ARNOLD, University of Kansas					
1:00 p.m. AIAA-2026-1522 Design of Thermally Activated Foldable Bio-inspired Wing for Micro Air Vehicles T. Fasola, V. Khare, Mississippi State University, Mississippi State University, MS	1:20 p.m. AIAA-2026-1523 Wing-Body Junction Flow Control Using a PAM-Actuated Morphing Leading-Edge Fairing A. Zhagiparova, S. Singh, D. Kim, V. Golubev, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-1910 Thick Origami–Based Design of a Compactly Stowable Deployable Wing B. Kim, Y. Miyazawa, J. Yang, Seoul National University, Seoul, South Korea; H. Lee, Inha University, Incheon, South Korea	2:00 p.m. AIAA-2026-1911 Design and In-Flight Performance of a Modified Structural Antenna Concept for Small UAS J. Guzman, E. Arnold, The University of Kansas Institute for Information Sciences, Lawrence, KS	2:20 p.m. AIAA-2026-1912 Exploration of Morphing Wing-Integrated Offset Reflector Antenna Concept for Aerodynamic and Far-Field Electromagnetic Performance R. Ward, D. Hartl, Texas A&M University, College Station, TX	

Wednesday, 14 January 2026					
DE-12/DGE-09	Emerging Design Methods and Digital Ecosystems				Bayhill 23
Chaired by: J. WIDRICK, Northrop Grumman Space Systems and N. JOHNSON, Click Bond					
1:00 p.m. AIAA-2026-1524 A Decision Support Tool for Blended Wing Body Aircraft Design T. Humphrey, T. Burnett, B. Sannar, H. Wooley, Brigham Young University, Provo, UT; E. Winga, J. Wiser, US Air Force Academy, Air Force Academy, CO; et al.	1:20 p.m. AIAA-2026-1525 Characterizing Aerospace Cost Estimate Dynamics: Distributional Metrics for Contextualizing Outcome Variability K. Roush, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-1526 Uncertainty Propagation and Visualization of Aircraft Design, Economic, and Industrial Systems Using Design Space Exploration Methodology N. Srinivasan, E. Kallou, B. Bagdatli, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA	2:00 p.m. AIAA-2026-1527 Leveraging Taxonomies and Enterprise Architecture for Enhanced MBSE and Digital Engineering Practice J. Hugues, N. Shevchenko, C. Dempsey, Carnegie Mellon University, Pittsburgh, PA	2:20 p.m. AIAA-2026-1528 The Cornerstone of Digital Engineering: Harnessing Model-based Systems Engineering for Future Systems F. Sahebsara, S. Khatouri, D. Aziz, O. Zeki, M. Hieb, A. Raz, George Mason University Center of Excellence in Command Control Communications Computing Intelligence and Cyber, Fairfax, VA	2:40 p.m. REIMAGINE: A Modular AI-Assisted Early Mission Formulation Process. Speaker: Alexander Demagall, Texas A&M University

Wednesday, 14 January 2026		
DGE-08/SE-12/DE-11/GTE-16/EAT-08	Certification By Analysis (CbA)	Bayhill 25
Chaired by: A. KARL, Rolls-Royce		

In the realm of Defense Aerospace, Certification by Analysis (CbA) is a pivotal methodology that enhances the reliability and performance of critical systems through rigorous computational analysis. This panel will delve into the latest advancements and best practices in CbA, focusing on how detailed modeling, simulation, and data-driven validation are used to certify aerospace components and systems. Experts will discuss the integration of Verification, Validation, and Uncertainty Quantification (VVUQ) to ensure models accurately represent real-world conditions and capture uncertainties. Emphasis will be placed on case studies demonstrating successful CbA applications, highlighting the efficiency and safety benefits over traditional physical testing. Attendees will gain insights into the technical challenges and solutions for implementing CbA, ensuring compliance with stringent regulatory standards while reducing costs and time. The panel will also explore future trends and technological innovations poised to elevate the role of CbA in Defense Aerospace.

Wednesday, 14 January 2026					
DGE-10	Knowledge-Based and Computational Engineering				Silver Spring I
Chaired by: R. YEMAN, Leidos					
1:00 p.m. AIAA-2026-1529 Enabling Scalable Provenance-Based Data Management for Digital Engineering Workflows: A Semantically Grounded Approach for HPC Scale CFD	1:20 p.m. AIAA-2026-1530 A Report on How to Best Support Implementing Digital Engineering for Computational Design and Analysis – A Survey and Results	1:40 p.m. AIAA-2026-1531 Adaptive Digital Twins: Continuous Subspace Learning for Dynamic Domains P. Wang, O. Pinon-Fischer, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA			

S. Legensky, Intelligent Light, Secaucus, NJ; D. Amels, SmartCFD, Wood-Ridge, NJ; S. Makinen, Independent Consultant, New York, NY	A. Ram, The Charles Stark Draper Laboratory Inc, Cambridge, MA				

Wednesday, 14 January 2026

EAT-24/INPSI-12/ACD-23	Clean Aviation Executive Panel: Disruptive Technologies and Roadmap to Next-Generation Aircraft	Orlando Ballroom N

Chaired by: S. DUBOIS, Clean Aviation Joint Undertaking

This panel explores disruptive innovations and emerging technologies shaping the roadmap for the future of aviation, featuring perspectives from key players in the European, U.S., and Canadian aerospace industry and leading research agencies. The session will share insights, the latest research and development in technologies, demonstration efforts, technology challenges, transitions to products, and priorities and opportunities for next-generation aircraft. Panelists will also present their vision for the design and demonstration of the next generation high-performing aircraft in a rapidly changing world that demands agility and innovation. The discussion will also highlight how the Clean Aviation partnership, under Horizon Europe, is advancing disruptive technologies and accelerating progress toward a competitive and sustainable future. **Speakers: Jean Thomassin**, Executive Director, New Products and Services Introduction, Pratt & Whitney Canada **Thierry Rouge-Carrassat**, Vice President, Research & Technology Programs and Technology Strategy, Safran **Todd Spierling**, Principal Technical Fellow – Electrification, Collins Aerospace **Gary Way**, Head of EU and International R&T Programmes, Rolls-Royce **Björn Nagel**, Founding Director, Institute for System Architectures in Aeronautics, German Aerospace Center (DLR) **Laurent Thomasson**, CTO Representative, Airbus

Wednesday, 14 January 2026

EP-07	Hall Thrusters	Celebration 1

Chaired by: J. DANKANICH, NASA

1:00 p.m. AIAA-2026-1532 Total and Differential Sputtering Properties of Disordered Carbons S. Clark, R. Thompson, J. Rovey, University of Illinois Urbana-Champaign, Urbana, IL	1:20 p.m. AIAA-2026-1533 Design and Simulation of a Student 1.35kW Magnetically Shielded Hall-Effect Thruster C. Rodewald, J. Thaggard, M. Fox, G. Kunkel, The University of Alabama in Huntsville, Huntsville, AL	1:40 p.m. AIAA-2026-1534 Historical Development, Technology, and Applications of Hall Effect Thrusters R. Blakeman, M. Fernandez-Tous, University of North Dakota, Grand Forks, ND	2:00 p.m. AIAA-2026-1535 Extended Lifetime BHT-350 Hall Effect Thruster J. Szabo, M. Schroeder, J. Rogers, N. Wegmann, S. Paintal, V. Hruby, Busek, Natick, MA		

Wednesday, 14 January 2026

EP-08	Making Very Low Earth Orbit (VLEO) Satellites a Reality	Celebration 11

Chaired by: S. SHEPARD, Lockheed Martin Space Systems

Dr Shepard and Dr Walker will lead a panel of four individuals across industry, academia and government to discuss advancements in satellite and air-breathing electric propulsion to make VLEO operations a reality. Satellite and thruster designs to survive the atomic oxygen environment, along with mission CONOPs to enable enough power for thruster operations, as well as inlet designs to capture air and weather pattern dynamics are some of the various topics that will be covered. The focus will be on how these advancements are leading towards missions that will become a reality in the near future.

Wednesday, 14 January 2026

EXPL-12	Lunar and Martian ISRU	Celebration 13

Chaired by: J. BRODNICK, NASA Marshall Space Flight Center and H. CHEN, Fairfield University, School of Engineering and Computing					
1:00 p.m. AIAA-2026-1536 Taguchi-Based DEM Calibration of Angle of Repose and Particle Scaling for LHS-1 and MGS-1 Simulants D. Stephens, T. Letcher, South Dakota State University, Brookings, SD	1:20 p.m. AIAA-2026-1537 Capillary Absorption Spectroscopy of Hydrogen for Martian and Lunar ISRU Applications L. Munera, K. Fetter, P. Singaram, The University of Texas at San Antonio, San Antonio, TX; A. Fahrland, E. Ozen, J. Kriesel, Opto-Knowledge Systems, Inc, Torrance, CA; et al.	1:40 p.m. AIAA-2026-1538 Simulated Lunar Gravity Testing of a Magnetic and Electrostatic System for Beneficiating Lunar Regolith B. Coffman, G. Porter, L. Manteufel, M. Cottrell, D. Bayless, J. Smith, Missouri University of Science and Technology, Rolla, MO; et al.	2:00 p.m. AIAA-2026-1539 Development of In Situ Novel Explosives from Martian Regolith Perchlorates for Excavation and Construction A. Hamoy, Purdue University, West Lafayette, IN	2:20 p.m. AIAA-2026-1540 Hybrid Additive Manufacturing of a Topologically Optimized, Modular Lattice Wheel for Terrain-Adaptive Mobility on Martian Surfaces J. Kurian, M. Bubna, M. Levy, Z. Caicedo, Virginia Polytechnic Institute and State University, Blacksburg, VA	

Wednesday, 14 January 2026					
FD-53/APA-47	CFD Methods for Hypersonics				Barrel Spring I
Chaired by: R. SPETH, Air Force Research Laboratory and U. SASIDHARAN, Florida State University					
1:00 p.m. AIAA-2026-1541 Mesh Adaptation for Accurate Prediction of Surface Heat Flux in Hypersonic Problems M. Gica, Z. Gordon, Rensselaer Polytechnic Institute, Troy, NY; C. Brown, P. Keistler, Corvid Technologies, Mooresville, NC; S. Tendulkar, R. Nastasia, Simmetrix Inc., Clifton Park, NY; et al.	1:20 p.m. AIAA-2026-1542 A Positivity Preserving Discontinuous Galerkin Method for Hypersonic Flow of Thermally Perfect Gases M. Peck, F. Airaudo, A. Pandare, J. Waters, J. Schulte, C. Long, Los Alamos National Laboratory, Los Alamos, NM	1:40 p.m. AIAA-2026-1543 An r-Adaptive Hybridizable Discontinuous Galerkin Method for Nonequilibrium Hypersonic Flows R. Van Heyningen, N. Nguyen, J. Peraire, Massachusetts Institute of Technology, Cambridge, MA	2:00 p.m. AIAA-2026-1544 A *r*-Adaptive Discontinuous Galerkin Method Based on Interface Conservation for Reacting Hypersonic Viscous Flows H. Luo, G. Absillis, NC State University, Raleigh, NC; M. Goodson, T. Nielsen, G. Salazar, Corvid Technologies, Mooresville, NC	2:20 p.m. AIAA-2026-1722 Development and Verification of a Parallel, Unstructured Hypersonic Flow Solver A. Knutson, C. Switala, T. Drayna, P. Subbareddy, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	2:40 p.m. AIAA-2026-1721 Stochastic Input-Output Analysis of High Speed Flows A. Dwivedi, P. Subbareddy, G. Berridge, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN

Wednesday, 14 January 2026					
FD-55	Instability and Transition VII				Coral Spring I
Chaired by: O. SCHMIDT, University of California, San Diego and S. SURYANARAYANAN, University of Akron					
1:00 p.m. AIAA-2026-1545 Direct Numerical Simulations of the Effect of Wind-Driven Runback Droplets and Rivulets on Boundary Layer Transition A. Settlemier, S. Suryanarayanan, University of Akron, Akron, OH; Y. Zhao, J.	1:20 p.m. AIAA-2026-1546 Can Flow Separation from Curved Surfaces Be Predicted Without Boundary-Layer Calculations? M. Shorbagy, H. Taha, University of California Irvine, Irvine, CA	1:40 p.m. AIAA-2026-1547 Centrifugal-Rossiter Interactions in an Open Cavity Flow E. Shokrgozar, B. Yeung, University of California San Diego, La Jolla, CA; F. Aguirre, M. Mathias, M. de Medeiros, Universidade de Sao Paulo, São Paulo, Brazil;	2:00 p.m. AIAA-2026-1548 Spatiotemporal Instability of Cavity Edge for High-Speed Water Entry of Spherical Projectiles P. Thasu, M. Sendrey, B. Schmidt, Case Western Reserve University, Cleveland, OH		

Wang, H. Hu, Iowa State University, Ames, IA		O. Schmidt, University of California San Diego, La Jolla, CA			
Wednesday, 14 January 2026					
FD-56	Shock-Droplet Interactions I				Plaza Ballroom E
Chaired by: J. PALMORE, University of Washington and C. BREHM, University of Maryland, College Park					
1:00 p.m. AIAA-2026-1549 Preliminary Analysis of the Wake Region in Hypersonic Aerobreakup J. Langhorn, A. Dworzanczyk, Stevens Institute of Technology, Hoboken, NJ; M. Viqueira-Moreira, F. Ayoub, University of Maryland, College Park, MD; A. Marino, Stevens Institute of Technology, Hoboken, NJ; M. Libeau, Naval Surface Warfare Center Dahlgren Division, Dahlgren, VA; et al.	1:20 p.m. AIAA-2026-1550 High-Speed Shock/Droplet Aerobreakup Using a Sharp Interface Method A. Sayad, J. Rabinovitch, Stevens Institute of Technology Charles V Schaefer Jr School of Engineering and Science, Hoboken, NJ; C. Lee, O. Desjardins, Cornell University, Ithaca, NY	1:40 p.m. AIAA-2026-1551 Unsteady Acceleration Droplet Breakup J. Keltz, V. Kakadia, Texas A&M University, College Station, TX; V. Duke, Universidad Tecnologica de Panama, Panama City, Panama; P. Ramaprabhu, UNC Charlotte, Charlotte, NC; J. McFarland, Texas A&M University, College Station, TX	2:00 p.m. AIAA-2026-1552 Three-Dimensional Numerical Analysis of Droplet-Shock Interaction with Phase Change A. Sukumaran, Texas A&M University, College Station, TX; B. Boyd, University of Canterbury, Christchurch, New Zealand; D. Jarrahbashi, Texas A&M University, College Station, TX	2:20 p.m. AIAA-2026-1553 Direct Numerical Simulation (DNS)-Informed Drag Modeling for Droplet-Shock Interaction P. Ramesh, A. Sarker, J. Keltz, J. McFarland, D. Jarrahbashi, Texas A&M University System, College Station, TX	2:40 p.m. AIAA-2026-1554 Characterization of Droplet Shapes from Atomizing Spray Liquid Jet in Crossflow via Machine Learning S. Kancharla, Y. Lin, J. Palmore, University of Washington, Seattle, WA
Wednesday, 14 January 2026					
GNC-26	Aircraft GNC Technology II: Structural Mode Control and Filtering				Bayhill 29
Chaired by: J. KIRKMAN, Lockheed Martin Aeronautics and J. CLEMENS, Lockheed Martin Aeronautics					
1:00 p.m. AIAA-2026-1555 Open-Source Benchmark Model for Active Flutter Suppression J. Eichelsdörfer, German Aerospace Center (DLR), Weßling, Germany	1:20 p.m. AIAA-2026-1556 Modal Blending for Active Flutter Suppression J. Eichelsdörfer, German Aerospace Center (DLR), Weßling, Germany	1:40 p.m. AIAA-2026-1557 Integrating Aeroelastic and Primary Flight Control: Robust Design and Wind Tunnel Demonstration F. Stalla, G. Looye, German Aerospace Center (DLR), Wessling, Germany; M. Pusch, Munich University of Applied Sciences (HM), Munich, Germany; S. Theodoulis, Delft University of Technology (TU Delft), Delft, The Netherlands	2:00 p.m. AIAA-2026-1558 Flight-Validated Digital Filtering for Vibration Mitigation on a 250 kg eVTOL: An FFT-Guided Design Approach J. Spraggett, N. Pourmostaghimi, Y. Sadat-Nejad, Mostavio, Toronto, Canada		
Wednesday, 14 January 2026					
GNC-27/AFM-08	Entry, Descent and Landing Technology VII: HyperSat				Orlando Ballroom L
Chaired by: M. WHORTON, NASA and A. NOEL, Georgia Tech Research Institute					
1:00 p.m.	1:20 p.m.	1:40 p.m.	2:00 p.m.	2:20 p.m.	

AIAA-2026-1559 HyperSat: An Innovative, High-cadence, Hypersonic Flying Testbed K. Ahuja, Georgia Institute of Technology, Atlanta, GA; A. Noel, B. Mindiak, N. Breen, Georgia Institute of Technology Research Institute, Atlanta, GA; B. Robertson, J. Dec, Georgia Institute of Technology, Atlanta, GA; et al.	AIAA-2026-1560 Aerothermal Analysis and Design of HyperSat: An Aerobraking CubeSat With a Mechanically Deployable Heatshield J. Dastoor, M. Walter, B. Robertson, Georgia Institute of Technology College of Engineering, Atlanta, GA; A. Noel, Georgia Institute of Technology Research Institute, Atlanta, GA; D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA; K. Ahuja, Georgia Institute of Technology Research Institute, Atlanta, GA	AIAA-2026-1561 Preliminary Design and Analysis of the HyperSat using CubeSat Technologies D. Ramsey, R. Parnerkar, E. Wang, R. Paladugu, A. Noel, G. Lightsey, Georgia Institute of Technology, Atlanta, GA; et al.	AIAA-2026-1562 Mechanical Analysis of a Deployable Flexible Thermal Protection System for HyperSat, a CubeSat Platform A. Noel, M. Gamarnik, J. Arias, Georgia Institute of Technology Research Institute, Atlanta, GA; J. Dec, K. Ahuja, Georgia Institute of Technology, Atlanta, GA	AIAA-2026-1563 Continued Characterization and Improvements to an Inductively Coupled Plasma Jet for Thermal Protection System Pre-Screening M. Milone, Georgia Institute of Technology Research Institute, Atlanta, GA; N. Horak, D. Ramsey, K. Ahuja, Georgia Institute of Technology Daniel Guggenheim School of Aerospace Engineering, Atlanta, GA	

Wednesday, 14 January 2026

GT-07/APA-39/AMT-21/FD-51/CFD2030-08	Meet the Turbulence Measurers II	Plaza Ballroom D

Chaired by: R. DECKER, USAF Academy

This session is a companion to "Meet the Turbulence Modelers II" session proposed for SciTech 2026. As such, it will consist of a series of informal presentations made by Subject Matter Experts (SME) to outline the state-of-the-art of contemporary techniques for measuring off-the-surface flowfield data in a manner that may be understood by Turbulence Measurers (and others in the CFD stakeholder community, too). To help bound the material addressed, particular attention will be drawn toward the use of techniques associated with high-speed turbulence and hypersonic flows. The presentations will be followed by facilitated interactive discussion. So, not quite a panel session - more of a mini-workshop. This will build on the special session held at AVIATION 2025.

Wednesday, 14 January 2026

GT-08	CRM-HL Ecosystem Special Session	Rainbow Spring II

Chaired by: M. RIVERS, NASA Langley Research Center

1:00 p.m. CRM-HL Ecosystem Updates and Plans (Presentation Only – Speaker TBD)	1:20 p.m. NASA 2.7% Full-Span Model Air Mode Test Preliminary Results (Presentation Only – Melissa Rivers)	1:40 p.m. ICED CRM Project Plan (Presentation Only – Speaker TBD)	2:00 p.m. AIAA-2026-1564 Numerical Sensitivity of the Slat Brackets Wake on Fixed Grid RANS Simulations of the High-Lift Configuration Aircraft Y. Kojima, M. Murayama, Y. Ito, T. Ishida, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan; K. Tanaka, T. Hirai, Ryoyu Systems Co., Ltd., Nagoya, Japan	2:20 p.m. AIAA-2026-1565 Noise Reduction of Main Landing Gear of High-Lift Common Research Model Y. Ito, T. Takaishi, Y. Ozawa, Japan Aerospace Exploration Agency, Mitaka, Japan; T. Hirai, Ryoyu Systems Co., Ltd., Nagoya, Japan; K. Shimoda, IHI Aerospace Engineering Co. Ltd., Tomioka, Japan; H. Kamliya	

				Jawahar, Safran Landing Systems, Gloucester, United Kingdom	

Wednesday, 14 January 2026

GT-10	Introduction to Ground Test Facilities	Plaza Ballroom K

Chaired by: J. VOGEL, Pratt & Whitney

This session consists of 3-4 presenters introducing the audience to their test facilities, sharing history, capabilities, and recent events. A Q&A session takes place with the moderator and audience participation after the panelists present their facilities. This session is primarily geared towards students and early-career professionals looking to learn more about test facilities and ground testing in general.

Wednesday, 14 January 2026

GTE-17	Combustors IV				Celebration 2
Chaired by: A. KUMAR, GE Aerospace and A. NIX, West Virginia University					
1:00 p.m. AIAA-2026-1566 An Overview of a Micro-Scale Gas Turbine Combustor Test Campaign A. Jones, Southwest Research Institute, San Antonio, TX; M. Harris, Acutronic Turbine Inc, Austin, TX	1:20 p.m. AIAA-2026-1567 Effects of Inlet Temperature on Lean Blowoff of Ammonia Hydrogen Flames Inside a Toroidal Jet-Stirred Reactor O. Marquez Valenzuela, G. Barrios Cadenas, M. Ahmed, C. Loving, A. Maia, A. Thornton, University of Central Florida, Orlando, FL; et al.	1:40 p.m. AIAA-2026-1568 Structural and Thermal Optimization of Dual-Lined Cryogenic Fuel Tanks for Mid-Sized Commercial Aircraft E. Taylor, B. Turner, A. Menendez, A. De La Paz, T. Dagher, M. Otto, University of Central Florida, Orlando, FL; et al.	2:00 p.m. AIAA-2026-1569 Investigation of Triply Periodic Minimal Surfaces as an Ammonia Cracking Structure B. Turner, T. Seaquist, A. Menendez, A. Manjula Prasad, E. Fernandez, M. Otto, University of Central Florida, Orlando, FL; et al.		

Wednesday, 14 January 2026

GTE-18	Structures and Dynamics				Celebration 3
Chaired by: S. GHOSH, University of Central Florida and S. HEGDE, Pratt & Whitney					
1:00 p.m. AIAA-2026-1570 Numerical Analysis of Sealing Performance of Supercritical CO2 in Turbine Shafts Using Hybrid Labyrinth– Honeycomb Seals With Seal Structures G. Mandal, A. Al-Ani, Z. Londono, A. Manjula Prasad, M. Otto, E. Fernandez, University of Central Florida, Orlando, FL; et al.	1:20 p.m. AIAA-2026-1571 Leak Testing and Simulation Validation of E-Ring Seals With Computational Fatigue Predictions for Aerospace Duct Systems A. Cecil, Clemson University College of Engineering Computing and Applied Sciences, Clemson, SC; S. Roeseler, R. Plessinger, E. Motyka, E. Volpe, B. Jones,	1:40 p.m. AIAA-2026-1572 Computational Studies of Turbine Stage Blade Flutter Using a Fully-Coupled Aeroelastic Approach M. Ilie, Georgia Southern University, Statesboro, GA			

	Technetics Group LLC, Columbia, SC; et al.				
Wednesday, 14 January 2026					
HR-02	Combustion Stability, Combustion Dynamics, Mixing, Motor Performance, and Related Issues				Celebration 9
Chaired by: J. MAJDALANI, Auburn University and M. HITT, NASA Marshall Space Flight Center					
1:00 p.m. AIAA-2026-1574 Chemical Reactor Network for Hybrid Rocket Engines Optimization L. Folcarelli, F. Masseni, D. Pastrone, Politecnico di Torino, Turin, Italy	1:20 p.m. AIAA-2026-1575 Influence of Chamber Pressure, Oxidizer Port Velocity, and Port Diameter on Combustion-Mode Transition in a Liquid Oxygen - Solid Fuel Duct M. Yamaguchi, S. Suzuki, T. Son, S. Takahashi, M. Kumagai, H. Nagata, Hokkaido Daigaku, Sapporo, Japan	1:40 p.m. AIAA-2026-1576 Theoretical Analysis for Residual Thrust of Hybrid Thruster H. Kariya, Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Sendai, Japan; K. Utsugi, Tohoku Daigaku Gakusai Kagaku Frontier Kenkyujo, Sendai, Japan; K. Nagayama, T. Kuwahara, Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Sendai, Japan; Y. Saito, Tohoku Daigaku Gakusai Kagaku Frontier Kenkyujo, Sendai, Japan	2:00 p.m. AIAA-2026-1577 Effect of Characteristic Chamber Length on c* Efficiency in CAMUI Hybrid Rockets Using Hydrogen Peroxide R. Kinjo, S. Watanabe, A. Dhaifan, M. Wakita, H. Nagata, Hokkaido Daigaku, Sapporo, Japan	2:20 p.m. AIAA-2026-1578 Stabilized Combustion with Single-Port Fuel and Hydrogen Peroxide as Oxidizer T. Son, K. Kuchizawa, S. Suzuki, M. Yamaguchi, M. Kumagai, H. Nagata, Hokkaido Daigaku, Sapporo, Japan	
Wednesday, 14 January 2026					
HSABP-07	Solid Fuel Ramjets and Scramjets I				Celebration 4
Chaired by: N. PADILLA, University of Central Florida					
1:00 p.m. AIAA-2026-1579 Feasibility Assessments of a Unique Additive Manufacturing Method for Functionally-Graded Solid Fuel Ramjet Propellants R. Thibaudeau, S. Whitmore, Utah State University College of Engineering, Logan, UT	1:20 p.m. AIAA-2026-1580 Experiments and Simulations of the Cascaded Multi-Stage Impinging Jet Fuel Combustion in Solid Fuel Ramjets G. Gallo, L. Bancalso, University of Hawai'i at Manoa, Honolulu, HI; H. Sakurai, H. Nagata, Hokkaido Daigaku, Sapporo, Japan	1:40 p.m. AIAA-2026-1581 PMMA Flammability Limits in a Small-Scale Slab Burner P. Pecic, W. Todd, J. Patten, N. Padilla, C. Clark, K. Ahmed, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-1582 Diverging Combustor for Solid Fuel Scramjets N. Padilla, P. Pecic, J. Patten, W. Todd, H. Basset, K. Ahmed, University of Central Florida, Orlando, FL	2:20 p.m. AIAA-2026-1583 RANS-Fidelity Modeling and Control of Solid Fuel Ramjets A. Boueri, K. Hanquist, Purdue University, West Lafayette, IN; P. Oveissi, A. Goel, University of Maryland Baltimore County, Baltimore, MD	
Wednesday, 14 January 2026					
HUB-11 1:00 - 1:30 p.m.	From Earth to Orbit: Dual-Use Tech Driving the Next Space Race				the HUB in the Expo Hall
Wednesday, 14 January 2026					

IS-13	Adaptive and Intelligent Control Systems I				Celebration 15
Chaired by: A. GOEL, University of Maryland Baltmore County and E. VAN KAMPEN, TU Delft					
1:00 p.m. AIAA-2026-1584 LMI-Driven Tracking Control of Fuzzy Nonlinear Cyber-Physical Systems: Application to Quadrotor UAVs in Urban-Like Environment S. Hwang, M. Cho, I. Hwang, Purdue University, West Lafayette, IN	1:20 p.m. AIAA-2026-1585 A Multi-step and Eligibility Trace Approach to Incremental Dual Heuristic Programming for Flight Control W. Chan, E. Van Kampen, Technische Universiteit Delft, Delft, The Netherlands	1:40 p.m. AIAA-2026-1586 Adaptive Relative Orbit Control for Spacecraft Using On/Off Thrusters Under Uncertain Disturbances Y. Tsurusaki, Y. Yoshimura, T. Hanada, Kyushu Daigaku, Fukuoka, Japan; Y. Itaya, T. Fukushima, Orbital Lasers Co., Ltd, Akasaka, Minato-ku, Japan	2:00 p.m. AIAA-2026-1587 Feedback Linearization-Based Guidance Law for Guaranteed Interception A. Dorsey, A. Goel, University of Maryland Baltimore County, Baltimore, MD	2:20 p.m. AIAA-2026-1588 Safe Rocket Landing Using Lyapunov-Based Reinforcement Learning X. Truong, S. Hong, Florida Institute of Technology, Melbourne, FL	

Wednesday, 14 January 2026					
IS-14	Learning, Reasoning, and Data Driven Systems III				Celebration 12
Chaired by: A. STIMPSON, VTG Defense and J. XIE, San Diego State University					
9:30 a.m. AIAA-2026-1589 Deep Reinforcement Learning for Energy-Aware Path Planning of Multicopters in 3D Dynamic Environments S. Aranda Rocha, N. Negash, L. Sun, Baylor University, Waco, TX	9:50 a.m. AIAA-2026-1590 Behavioral Cloning of Rover Control Policy with Pretrained Vision Encoders A. Chen, Stanford University, Stanford, CA; R. Lipkis, M. Aoki, A. Agogino, NASA Ames Research Center, Moffett Field, CA	10:10 a.m. AIAA-2026-1591 Multi-Agent Path Planning Using Proximal Policy Optimization With Experience Sharing Y. Yan, L. Sun, P. Ro, Baylor University, Waco, TX	10:30 a.m. AIAA-2026-1592 Multi-Agent Reinforcement Learning Environment for Beyond Visual Range Air Combat (BVR-MARL) S. Schosser, C. Retzlaff, A. Schulte, Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik, Neubiberg, Germany	10:50 a.m. AIAA-2026-1593 A Comparison of Data-Driven Learning Algorithms to Predict Trajectories in the DRO Family H. Aluvihare, S. Murarisetty, O. Jayawardene, A. Anderson, D. Canales, S. Perera, Embry-Riddle Aeronautical University, Daytona Beach, FL	11:10 a.m. AIAA-2026-1594 UAV State Estimation Using Physics-Informed Neural Networks N. Nayeem, I. Faruque, Oklahoma State University, Stillwater, OK

Wednesday, 14 January 2026					
IS-15	Safety-Critical Control and Learning for Advanced Air Mobility I				Celebration 16
Chaired by: H. MONCAYO, Embry-Riddle Aeronautical University					
1:00 p.m. AIAA-2026-1595 Assured Learning for Intelligent Dynamic Systems: A Metacognitive Framework R. Jado Puente, H. Moncayo, M. Budihartono, M. Mirmirani, S. Dey, Embry-Riddle	1:20 p.m. AIAA-2026-1596 Experimental Results of Safe Model Reference Adaptive Control With Performance Guarantees N. Sarioglu, K. Dogan, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-1597 Health Monitoring System-Informed Control Barrier Function Filter for Safety-Critical Systems M. Budihartono, H. Moncayo, M. Mirmirani, S. Dey, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-2752 Learning-Based Hybrid Approach to Online Human-Pilot Behavior Characterization G. Gavilanez, R. Jado Puente, E. Martinez, H. Moncayo, J. Clardy, Embry-		

Aeronautical University, Daytona Beach, FL			Riddle Aeronautical University, Daytona Beach, FL		
Wednesday, 14 January 2026					
LP-09	Novel Liquid Propulsion Component Design and Test				Celebration 8
Chaired by: B. BOUST and T. POURPOINT, Purdue University					
1:00 p.m. AIAA-2026-1600 Proportional Controller Throttle Testing of a Liquid Rocket Engine M. Mieritz, K. Schumacher, P. Staley, D. DeTurris, California Polytechnic State University, San Luis Obispo, CA	1:20 p.m. AIAA-2026-1601 Development of an Optically Accessible Green Hypergolic Rocket Engine with Bi Swirl Injector A. Moser, C. Ji, K. Potthast, Y. Amin, R. Dalton, A. Damjanov, Purdue University System, West Lafayette, IN; et al.	1:40 p.m. AIAA-2026-1602 Experimental and Numerical Study of an Optically Accessible Cavitating Venturi K. Potthast, J. Romanowski, T. Pourpoint, Purdue University, West Lafayette, IN; M. Spencer, J. Braun, NC State University, Raleigh, NC	2:00 p.m. AIAA-2026-1603 Design and Performance Analysis of an Optically Accessible Pneumatic Poppet Valve J. Romanowski, K. Potthast, T. Pourpoint, Purdue University, West Lafayette, IN		
Wednesday, 14 January 2026					
MAT-13	Materials for Additive Manufacturing, Self-Healing Polymers and Thermoplastics				Bayhill 20
Chaired by: G. ODEGARD, Michigan Technological University and Y. LI, University of Illinois at Urbana-Champaign					
1:00 p.m. AIAA-2026-1604 From Anisotropy to Efficiency: A Lamination Parameter Approach to Composite Lattices J. Selvaraj, S. Adhikari, University of Glasgow, Glasgow, United Kingdom; S. Mukherjee, Indian Institute of Technology Jodhpur, Indra Colony, India	1:20 p.m. AIAA-2026-1605 Dual-Cure Frontal Polymerization for Rapid Manufacturing of Fiber Reinforced Composites S. Chowdhury, S. Islam, M. Mangwiro, A. Haque, E. Papon, The University of Alabama, Tuscaloosa, AL	1:40 p.m. AIAA-2026-1606 Energetic Characterization of Thermoplastic Fuels for Hybrid Rocket Propulsion Applications A. Wilkey, S. Whitmore, Utah State University College of Engineering, Logan, UT			
Wednesday, 14 January 2026					
MDO-15	Special Session: Model-Based Systems Analysis and Engineering (MBSA&E) II				Bayhill 17
Chaired by: A. CARRERE, The Boeing Company and C. LUPP, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-1607 Weakly Coupling MBSE and MDAO via a Tool Neutral Authoritative Source of Truth P. Mokotoff, University of Michigan, Ann Arbor, MI; M.	1:20 p.m. 4346855 Aviary – Annual Update 2025 E. Aretskin-Hariton, NASA Glenn Research Center, Cleveland, OH; J. Kirk, B. Phillips, NASA Langley	1:40 p.m. 4335324 Integration of Multi-domain, Multidisciplinary Methods for Conceptual Aircraft Design B. Fazal, J. Schmidt, B. Phillips, I. Ordaz, NASA Langley	2:00 p.m. AIAA-2026-1608 A Theoretical Foundation and Practical Demonstration of Integrating MDO, MBSE and the Digital Thread	2:20 p.m. AIAA-2026-1609 Multidisciplinary Co-Design Optimization and Reinforcement Learning for CubeSat Architecting M. Wijaya, S. Lazreg, M. Cordy, A. Hein,	

Shi, The Boeing Company, Everett, WA; A. Carrere, The Boeing Company, Huntsville, AL; G. Cinar, University of Michigan, Ann Arbor, MI	Research Center, Hampton, VA; R. Falck, K. Moore, NASA Glenn Research Center, Cleveland, OH; C. Bennett, NASA Langley Research Center, Hampton, VA	Research Center, Hampton, VA; K. Moore, Banner Quality Management, Inc., Cleveland, OH	C. Lupp, J. Kao, N. Novotny, T. Wontor, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; A. Xu, J. Singleton, University of Dayton Research Institute, Dayton, OH; et al.	Interdisciplinary Centre for Security, Reliability and Trust (SnT), Luxembourg City, Luxembourg; J. Bussemaker, German Aerospace Center (DLR), Hamburg, Germany	

Wednesday, 14 January 2026

MST-03	Air Traffic Management Simulation and Digital Twins I				Blue Spring I
Chaired by: D. SAROJINI, Virginia Polytechnic Institute and State University and N. PRABHAKAR, Argonne National Labs					
1:00 p.m. AIAA-2026-1610 Congestion and Operational Efficiency Simulation for Modern Airspace in Florida Using Agent-Based Modeling S. Kuba, M. Akbas, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:20 p.m. AIAA-2026-1611 Fast Surrogate Models for Adaptive Aircraft Trajectory Prediction in en Route Airspace N. Pepper, The Alan Turing Institute, London, United Kingdom; M. Thomas, National Air Traffic Services, Fareham, United Kingdom; Z. Xuereb Conti, The Alan Turing Institute, London, United Kingdom	1:40 p.m. AIAA-2026-1612 Utilizing Discrete Event Simulation to Optimize Flight Dispatch Routes J. McGurn, B. Watson, Embry-Riddle Aeronautical University, Daytona Beach, FL			

Wednesday, 14 January 2026

NDA-06/MDO-14	Probabilistic Surrogate Modeling and Physics-informed Machine Learning				Bayhill 26
Chaired by: M. RUMPFKEIL and N. BARTOLI, ONERA					
1:00 p.m. AIAA-2026-1613 Comparison of Gradient-based and Global Autoencoded Lift-constrained Drag Minimizations K. Fuchi, University of Dayton Research Institute, Dayton, OH; M. Rumpfkeil, University of Dayton, Dayton, OH; P. Beran, D. Bryson, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-1614 Advancements in Reduced Order Model-Based Multifidelity Uncertainty Quantification for High-Speed Flows A. Gruber, G. Geraci, Sandia National Laboratories, Albuquerque, NM; P. Blonigan, E. Parish, Sandia National Laboratories California, Livermore, CA; M. Eldred, Sandia National Laboratories, Albuquerque, NM	1:40 p.m. AIAA-2026-1615 Non-Intrusive Reduced Order Modeling of Aerothermal Field Data Including Ablation Shape Change J. Needels, P. Blonigan, Sandia National Laboratories California, Livermore, CA; J. Murray, J. Tencer, M. Barone, Sandia National Laboratories, Albuquerque, NM	2:00 p.m. AIAA-2026-1616 A Physics Informed Neural Network Framework for Optimization of Functionally Graded Materials for Aerostructural Systems Z. Eger, P. Acar, Virginia Polytechnic Institute and State University, Blacksburg, VA	2:20 p.m. AIAA-2026-1617 Physics-Informed Machine Learning for Characterizing System Stability T. Koike, E. Qian, Georgia Institute of Technology, Atlanta, GA	2:40 p.m. AIAA-2026-1618 Data-Driven Non-Central Wishart Framework for Hybrid Uncertainty Quantification of Aerostructures A. Mannoosseril, S. Adhikari, University of Glasgow, Glasgow, United Kingdom

Wednesday, 14 January 2026

PC-20	Advancing Space Nuclear Power and Propulsion System Technologies	Celebration 5

Chaired by: S. MENON, Louisiana State University

This session follows up on panel discussions on Nuclear Thermal Propulsion from the 2024 SciTech meeting. The panel comprises people with background and expertise in leveraging nuclear energy for spacecraft propulsion. The discussion will focus around progress and challenges in utilizing nuclear energy for spacecraft propulsion through pathways such as Nuclear Thermal Propulsion and Nuclear Electric Propulsion. Ongoing activities and programs at various federal agencies, private industry, and universities will be discussed.

Wednesday, 14 January 2026

PC-21	Ammonia Combustion I				Celebration 6
Chaired by: B. EMERSON and D. DASGUPTA, Argonne National Laboratory					
1:00 p.m. AIAA-2026-1620 Laser Absorption Measurement of Key Species During Ammonia Oxidation in a Shock Tube M. Abulail, C. Gregoire, O. Mathieu, E. Petersen, Texas A&M University, College Station, TX	1:20 p.m. AIAA-2026-1621 Methodology for Unsteady Exhaust Emissions Characterization in High-Pressure Hydrogen–Ammonia–Methane Flames T. Kayser, T. Shahin, B. Murdock, A. Hodge, R. Gejji, R. Lucht, Purdue University, West Lafayette, IN; et al.	1:40 p.m. AIAA-2026-1622 CFD Analysis of the Impact of Ammonia Cracking on NOx Emissions in Turbulent Combustion A. Tharpe, T. Cannon, G. Layhew, R. Roberts, Tennessee Tech University, Cookeville, TN			

Wednesday, 14 January 2026

PC-22	Computations and Methods				Celebration 7
Chaired by: F. BISETTI, University of Texas at Austin and C. CADOU, University of Maryland					
1:00 p.m. AIAA-2026-1623 *Ab Initio*-Trained Machine Learning Molecular Dynamics Model for Radical Reactions in Hydrogen Combustion Z. Shi, Princeton University, Princeton, NJ; A. Lele, Rowan University, Glassboro, NJ; A. Jasper, S. Klippenstein, Argonne National Laboratory, Lemont, IL; Y. Ju, Princeton University, Princeton, NJ	1:20 p.m. AIAA-2026-1624 Predicting Spray Penetration in High-Pressure Combustion Using Machine Learning Models Tuned on ECN Data M. Pruitt, M. Brown, R. Ranjan, The University of Tennessee at Chattanooga, Chattanooga, TN	1:40 p.m. AIAA-2026-1625 Machine Learning-Augmented Flame Front Detection in High-Speed Imaging: A Physics-Guided Framework T. Ahmed, Augusta University, Augusta, GA; S. Rajaganapathy, Independent Researcher, Englewood, CO; P. Sristi, Augusta University, Augusta, GA; D. Sen, A. Dhotre, University of Minnesota Twin Cities, Minneapolis, MN; A. Srna, Sandia National Laboratories Combustion Research Facility, Livermore, CA; et al.	2:00 p.m. AIAA-2026-1626 A Framework for Understanding the Impact of Fuel Composition on Flame Heat Transfer to Materials C. Clark, P. Richins, M. Cassens, S. Lynch, J. O'Connor, Pennsylvania State University, University Park, PA	2:20 p.m. AIAA-2026-1627 GPU-Native Implementation of the Thickened Flame Model (TFM) and Its Combination With Cell Agglomeration: Application to the Lean Premixed PRECCINSTA Burner A. Newale, R. Borker, H. Kutkan, J. Dsouza, R. Yadav, A. Main, Ansys Inc, San Diego, CA	

Wednesday, 14 January 2026					
PDL-08	Plasma and Laser Physics II				Rainbow Spring I
Chaired by: S. GORDEYEV, University of Notre Dame and A. YALIN, Colorado State University					
1:00 p.m. AIAA-2026-1628 Control and In-Situ Diagnostics of N_2 Vibrational Excitation With Hybrid AC-RF Plasma and Ferroelectric Electrode Y. Xu, Princeton University, Princeton, NJ; M. Berry, The Ohio State University, Columbus, OH; Z. Chang, E. Desmet, T. Srivastava, W. Wang, Princeton University, Princeton, NJ; et al.	1:20 p.m. AIAA-2026-1629 Investigation of the Quenching of $N_2(B^3\Pi_g, v)$ States by N_2 and O_2 J. du Garreau de la Méchenie, J. Perrin-Terrin, C. Laux, Laboratoire Energetique Moleculaire et Macroscopique Combustion, Gif-sur-Yvette, France	1:40 p.m. AIAA-2026-1630 Hybrid fs/ps CARS Characterization of Rotational and Vibrational Excitation of N_2 in RF Non-Equilibrium Plasma W. Wang, Z. Chang, E. Desmet, Y. Xu, Z. Sun, M. Zhang, Princeton University, Princeton, NJ; et al.	2:00 p.m. AIAA-2026-1631 Modeling RF Molecular Hydrogen Plasmas With Coupled EEDF and Plasma Kinetics S. Pokharel, J. Stanley, L. Raja, The University of Texas at Austin Cockrell School of Engineering, Austin, TX	2:20 p.m. AIAA-2026-1632 Simulation and Analysis of Flow in 2D in the Constrictor Plasma of the Technion Arc-Heated Wind Tunnel J. Shevah, D. Yanuka, Technion Israel Institute of Technology, Haifa, Israel	

Wednesday, 14 January 2026					
PGC-11	Novel PGC Architectures				Florida Ballroom C
Chaired by: A. AGRAWAL, The University of Alabama and M. HEMMING, University of Alabama, Huntsville					
1:00 p.m. AIAA-2026-1633 Wall Effects on Pressure Gain of Radial Type RDE A. Hayashi, Aoyama Gakuin Daigaku, Shibuya, Japan; T. Ito, N. Tsuboi, K. Ozawa, Kyushu Kogyo Daigaku, Kitakyushu, Japan; K. Ishii, Yokohama Kokuritsu Daigaku Riko Gakubu, Yokohama, Japan	1:20 p.m. AIAA-2026-1634 Experimental and Computational Investigation of a Reed-Valved Propane-Fueled Resonant Pulse Combustor D. Paxson, H. Perkins, NASA Glenn Research Center, Cleveland, OH; S. Yungster, HX5, Cleveland, OH	1:40 p.m. AIAA-2026-1635 Design of a Disk-RDRE and High-Speed Imaging of the RDRE Chamber K. Lee, B. Sung, G. Mo, S. Choi, M. Jo, J. Choi, Pusan National University, Geumjeong-gu, South Korea	2:00 p.m. AIAA-2026-1636 Characteristics and Performance of a Novel Radial Rotating Detonation Engine With an Axial Exhaust Throat D. Langner, A. Agrawal, The University of Alabama, Tuscaloosa, AL	2:20 p.m. AIAA-2026-1637 3D Numerical Simulation on Disk Type RDE Used Hydrogen-Air Non-Premixed Gas: Investigation of Pressure Loss Factors T. Ito, N. Tsuboi, K. Ozawa, Kyushu Kogyo Daigaku, Kitakyushu, Japan; A. Hayashi, Aoyama Gakuin Daigaku, Shibuya, Japan	

Wednesday, 14 January 2026					
PGC-12	PGC Thermal Management I				Florida Ballroom B
Chaired by: V. ATHMANATHAN, Purdue University and J. KASAHARA, Nagoya University					
1:00 p.m. AIAA-2026-1638 Thermal Considerations of Oblique Detonation Wave Anchoring Features S. Smith, J. Sprunger, A. La Sorsa, K. Ahmed, University of	1:20 p.m. AIAA-2026-1640 Analytical Modeling of Unsteady Heat Transfer in Rotating Detonation Engines	1:40 p.m. AIAA-2026-1641 Film Cooling Applied to a Rotating Detonation Engine A. Thordson, M. Polanka, Air Force Institute of Technology,	2:00 p.m. AIAA-2026-1642 Concept of Dynamic Heat Insulation for Rotating Detonation Engines	2:20 p.m. AIAA-2026-1643 Integration of Film Cooling in a Micro Rotating Detonation Combustor M. Tagliaferri, A. Picchi, Universita degli Studi di	

Central Florida College of Engineering and Computer Science, Orlando, FL	G. Cobb, K. Durkee, The University of Alabama in Huntsville, Huntsville, AL; J. Burr, Air Force Research Laboratory, Edwards Air Force Base, CA; D. Hollingsworth, J. Bennewitz, The University of Alabama in Huntsville, Huntsville, AL	Wright-Patterson Air Force Base, OH; M. Tagliaferri, Universita degli Studi di Firenze, Florence, Italy; M. Longer, Innovative Scientific Solutions, Inc, Dayton, OH	D. Vrocharis, G. Koutsakis, The University of New Mexico Department of Mechanical Engineering, Albuquerque, NM	Firenze, Florence, Italy; M. Polanka, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH; A. Andreini, Universita degli Studi di Firenze, Florence, Italy	

Wednesday, 14 January 2026

SCS-11/STR-20/SFM-19 — In-Space Servicing, Assembly and Manufacturing (ISAM) IV — Bayhill 24

Chaired by: J. BLACK, Northrop Grumman Space Systems and M. SANTER, Imperial College London

1:00 p.m. AIAA-2026-1644 Influence of Photopolymer Degassing on Mechanical Properties of Structures Manufactured Under High Vacuum J. Pimpi, M. Kringer, Hochschule fur angewandte Wissenschaften Munchen, Munich, Germany; P. Reiß, Technische Universitat Munchen, Munich, Germany; T. Sinn, Dcubed GmbH, Germering, Germany; M. Pietras, Hochschule fur angewandte Wissenschaften Munchen, Munich, Germany	1:20 p.m. AIAA-2026-1645 Synchrokinetic Assemblers for Modular Construction in Microgravity N. Guilbert, Ange Optimization, Copenhagen, Denmark; S. Guilbert, Danmarks Tekniske Universitet, Lyngby, Denmark; F. Royer, Cornell University, Ithaca, NY	1:40 p.m. AIAA-2026-1646 Rapid Manufacturing of a Custom Small Satellite: The MAD-SPRINT Approach C. Hartney, J. Rome, K. Tolu, D. Hinkley, L. Toda, The Aerospace Corporation, El Segundo, CA; A. Pustinger, The University of Texas at El Paso, El Paso, TX; et al.	2:00 p.m. AIAA-2026-1647 Scaling Space Structures: A Mass-Efficient Design and Optimization Approach M. Folkers, T. Murphey, J. Sorensen, Opterus Research and Development, Inc., Loveland, CO		

Wednesday, 14 January 2026

SD-16 — Aeroelastic Problems of Vertical Lift Vehicles and Small UAVs — Bayhill 18

Chaired by: W. WELSH, Lockheed Martin Rotary and Mission Systems and A. GREWAL, National Research Council Canada

1:00 p.m. AIAA-2026-1247 Aeroelastic Stability Analysis of a Wing-Propeller System Including Aerodynamic Interference Effects J. Santos, F. Marques, Universidade de Sao Paulo, São Carlos, Brazil; C. Riso, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-1648 Aeroelastic Stability Assessment of the AMSL Aero Vertiia eVTOL Aircraft V. Muscarello, P. Marzocca, RMIT University, Melbourne, Australia; R. Lehmann, A. Swallow, D. Linton, AMSL Aero Pty Ltd, Sydney, Australia	1:40 p.m. AIAA-2026-1649 Aeroelastic Analysis of a Distributed Propulsor With Rotary Inertia on an Uniform Cantilever Wing M. Prajapati, R. Kapania, Virginia Polytechnic Institute and State University, Blacksburg, VA	2:00 p.m. AIAA-2026-1650 Trajectory Optimization of Morphing Aerial Vehicles Based on Mid-Fidelity Aeroservoelastic Models P. Smith, S. Pudasaini, D. Huang, The Pennsylvania State University, University Park, PA	2:20 p.m. AIAA-2026-1651 Modelling the Impact of a Gust on a Small Unmanned Cruise Vehicle A. Pontillo, P. Banneheka Navaratna, M. Lowenberg, J. Cooper, University of Bristol, Bristol, United Kingdom; D. Hayes, MBDA Holding SAS, Stevenage, United Kingdom	

Wednesday, 14 January 2026					
SD-17	Special Session: Results of the IAWTM High-Aspect-Ratio Aeroservoelastic Wind Tunnel Tests I				Bayhill 22
Chaired by: P. HEANEY, NASA Langley Research Center and J. QUINDLEN, Boeing Research and Technology					
1:00 p.m. AIAA-2026-1652 Summary of the Integrated Adaptive Wing Technology Maturation Wind Tunnel Tests of a High Aspect Ratio Commercial Transport Aircraft J. Quindlen, The Boeing Company, Huntington Beach, CA; P. Heaney, NASA Langley Research Center, Hampton, VA; D. Ortega, The Boeing Company, Huntington Beach, CA; G. Clark, The Boeing Company, Seattle, WA; H. Hussain, The Boeing Company, Charlotte, NC; P. Bentley, NASA Langley Research Center, Hampton, VA; et al.	1:20 p.m. AIAA-2026-1653 Comparison of Methods for Efficient Static Wind Tunnel Testing Using Multiple Control Surfaces J. Grauer, B. Simmons, NASA Langley Research Center, Hampton, VA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; C. Forte, KBR Wyle, Inc., Moffett Field, CA; J. Quindlen, Boeing Research and Technology, Huntington Beach, CA	1:40 p.m. AIAA-2026-1654 Experimental Verification of High-Fidelity Static Aeroelastic Load Predictions J. Xiong, KBR, Moffett Field, CA; P. Bentley, G. McHugh, W. Stevens, NASA Langley Research Center Structural Acoustics Branch, Hampton, VA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; C. Forte, KBR, Moffett Field, CA	2:00 p.m. AIAA-2026-1655 High-Fidelity Flutter Prediction of Aspect Ratio 13.5 Flexible Wing Wind Tunnel Model N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Xiong, KBR, Moffett Field, CA; J. Ouellette, NASA Langley Research Center Structural Acoustics Branch, Hampton, VA; D. Ortega, Boeing Technology Innovation, Huntington Beach, CA	2:20 p.m. "System Identification of IAWTM Aeroelastic Models from Dynamic Wind Tunnel Test Data" presented by Jared Grauer (oral presentation)	

Wednesday, 14 January 2026					
SFM-18	Cislunar Astrodynamics II				Plaza Ballroom J
Chaired by: A. GENOVA, NASA Ames Research Center					
1:00 p.m. AIAA-2026-1657 Coupled Orbit-Attitude Periodic Motion in the Earth-Moon System With Solar Radiation Pressure Torque Z. Fizell, D. Guzzetti, Auburn University, Auburn, AL	1:20 p.m. AIAA-2026-1658 Orbit Bundles in Cislunar Space for Maintenance and Servicing M. Nakani, Indian Space Research Organisation, Bengaluru, India; I. Bhat, D. Ghose, Indian Institute of Science, Bengaluru, India	1:40 p.m. AIAA-2026-1659 Generation of Optimal Forced Periodic Trajectories: Lunar Pole-Sitting Orbits C. Merrill, L. Arzoumanian, G. Jorge, M. Zweig, Cornell University, Ithaca, NY; J. Kulik, Utah State University, Logan, UT; D. Savransky, Cornell University, Ithaca, NY	2:00 p.m. AIAA-2026-1660 Designing Ballistic Connections between Cislunar Orbits Leveraging Hamiltonian Normal Forms C. Hunsberger, R. Eapen, P. Singla, The Pennsylvania State University, University Park, PA	2:20 p.m. AIAA-2026-1661 Stationkeeping Strategies for Non-Natural Cislunar Constellations Represented by Approximate Series F. Senra, C. Gaikwad, G. Holt, Embry-Riddle Aeronautical University, Daytona Beach, FL; H. Chen, University of Texas at Arlington Research Institute, Fort Worth, TX; H. Peng, Embry-Riddle Aeronautical University, Daytona Beach, FL	

SFM-20	Trajectory/Mission/Maneuver Design and Optimization V				Plaza Ballroom I
Chaired by: P. O'CONNELL, Western Michigan University					
1:00 p.m. AIAA-2026-1662 Classification of Effective Cislunar Periodic Orbits for Lunar Navigation Constellation with Launch-Count Considerations R. Komatsu, Sogo Kenkyu Daigakuin Daigaku, Miura District, Japan; Y. Kawakatsu, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan	1:20 p.m. AIAA-2026-1663 Review of Pure State-Path Inequality Constraint Enforcement Methods Within the Indirect Method E. Taheri, N. Nurre, Auburn University, Auburn, AL	1:40 p.m. AIAA-2026-1664 Optimal Low-Thrust Stationkeeping Maneuvers to Maintain Desired Osculating Keplerian Orbital Elements D. LaSalle, E. Botta, University at Buffalo, Buffalo, NY	2:00 p.m. AIAA-2026-1665 Fast Cooperative Close-Range Satellite Formation Trajectory Optimization Using Finite Fourier Series Method E. Taheri, Auburn University, Auburn, AL; E. Ahmadi, University of Vaasa, Vaasa, Finland	2:20 p.m. AIAA-2026-1666 Numerical Solution of Bang-Bang and Singular Optimal Control Problems Using Integral Legendre-Gauss-Lobatto Collocation A. Crow, A. Rao, University of Florida, Gainesville, FL	2:40 p.m. AIAA-2026-1667 Trajectory Design for Escape from the Secondary body in a Non-autonomous Model T. Shihara, Tokyo Daigaku Daigakuin Shinryoiki Sosei Kagaku Kenkyuka, Kashiwa, Japan; Y. Kawakatsu, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan; K. Howell, Purdue University, West Lafayette, IN

Wednesday, 14 January 2026					
STR-19	Additive Structures				Bayhill 19
Chaired by: R. TAYLOR, University of Texas, Arlington and Z. HU, The Boeing Company					
1:00 p.m. AIAA-2026-1668 Exploration of ULTEM 9085 as a Candidate Material for Aerospace Applications E. Garrison, L. Salisbury, G. Bowers, C. Thompson, S. Narsipur, M. Priddy, Mississippi State University James Worth Bagley College of Engineering, Mississippi State University, MS	1:20 p.m. AIAA-2026-1669 Additively Manufactured Conformal Triply Periodic Minimal Surface Heat Exchanger Design and Evaluation T. Barber, J. Brewer, R. Gorla, S. Richter, Air Force Institute of Technology Graduate School of Engineering and Management, Wright-Patterson Air Force Base, OH; A. Roman, Z. Carner, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; et al.	1:40 p.m. AIAA-2026-1670 Multi-Scale Microstructure-Informed Modeling of Residual Stresses and Distortions in Additive Friction Stir Deposition M. Agarwal, M. Elleithy, R. Kapania, P. Acar, Virginia Polytechnic Institute and State University, Blacksburg, VA; W. Zhao, Oklahoma State University, Stillwater, OK	2:00 p.m. AIAA-2026-1671 Additive Manufacturing of Antennas for Expendable and Low-Cost UAS Applications A. Waggoner, E. Arnold, The University of Kansas Institute for Information Sciences, Lawrence, KS	2:20 p.m. AIAA-2026-1672 Structural Testing of Additive Manufactured Biomimetic Porous Structures Derived From Fire Ant Nest Architectures C. Johnson, T. Felgenhauer, A. Rivera, S. Venkataraman, San Diego State University, San Diego, CA	

Wednesday, 14 January 2026					
STR-21	Stitched Composite Structures				Bayhill 21
Chaired by: O. FASEHUN, The Boeing Company and M. SENSMEIER, Embry-Riddle Aeronautical University					
1:00 p.m. AIAA-2026-1673 Experimental Investigation of the Effectiveness of	1:20 p.m. AIAA-2026-1674 Manufacturing Demonstration of an All-	1:40 p.m. AIAA-2026-1675			

Various Stitching Methods on Arresting Mode-II Interlaminar Damage Propagation in Stitched Resin-Infused Composites A. White, Mississippi State University Department of Aerospace Engineering, Mississippi State University, MS; W. Huberty, C. Bounds, Mississippi State University Advanced Composites Institute, Mississippi State, MS; H. Kim, Mississippi State University Department of Aerospace Engineering, Mississippi State University, MS	Composite Selectively 3D Stitched Fuselage Section using HMZ-RTM S. Saha, B. Scheneman, M. Tajiboy, M4 Engineering, Inc., Long Beach, CA	Cryogenic Mode I Fracture Behavior of Stitched Composites S. Saha, M4 Engineering, Inc, Long Beach, CA; A. Wheat, R. Sullivan, Mississippi State University James Worth Bagley College of Engineering, Mississippi State University, MS			

Wednesday, 14 January 2026

TF-07/WE-04	Pioneering Technologies for the Toyota Mothership: Enhancing Safety and Autonomy	Florida Ballroom A

Chaired by: T. NAM, Toyota and X. DENG, Toyota Research Institute of North America

The Toyota Mothership is an advanced kite system envisioned for various missions that require exceptional endurance and station-keeping capabilities. Recent advancements in essential components of the prototype system will be presented in a companion session, Toyota's High Altitude Aerial Platform Research I. This session will highlight the development of advanced technologies, including path planning and tracking algorithms, airborne wind system parameter optimization with machine learning, aerodynamic morphing of inflatable wings, a bio-inspired flight control system, vision-based attitude sensing using contrastive learning, and lightweight sensors for large deformations.

Wednesday, 14 January 2026

TP-10	Non-Equilibrium Flows and Radiation II	Bayhill 32

Chaired by: R. MACDONALD, University of Colorado Boulder and R. SAMPATH KUMAR, Advanced Cooling Technologies, Inc.

1:00 p.m. AIAA-2026-1676 Modeling Laser Absorption Measurements in a Shock Tube using the Photon Monte Carlo Method S. Thirani, D. Levin, University of Illinois Urbana-Champaign, Urbana, IL	1:20 p.m. AIAA-2026-1677 Assessment of CN Non-Boltzmann Kinetics Against Low Density Shock Tube Data A. Fagnani, NASA Postdoctoral Fellow at NASA Ames Research Center, Moffett Field, CA; D. Drescher, J. Streicher, R. Hanson, Stanford University, Stanford, CA; A. Brandis, NASA Ames Research Center, Moffett Field, CA; B. Cruden, AMA Inc. at NASA Ames Research Center, Moffett Field, CA	1:40 p.m. AIAA-2026-1678 Laser Absorption Measurements of CN(X) Population and Temperature Evolution in the Low Density Electric Arc Shock Tube D. Drescher, J. Streicher, R. Hanson, Stanford University, Stanford, CA	2:00 p.m. AIAA-2026-1679 Vibrational-State-Resolved Measurements of Nitric Oxide for the Ground to Fourteenth Excited Vibrational State J. Streicher, D. Merrell, D. Drescher, C. Strand, R. Hanson, Stanford University, Stanford, CA	2:20 p.m. AIAA-2026-1680 Spatially Resolved Absorption Spectroscopy of NO in Shock Tube Experiments Using an Ultraviolet Tunable Modeless Laser M. Buquet, B. Williams, P. Ewart, T. Hermann, University of Oxford, Oxford, United Kingdom	

Wednesday, 14 January 2026					
UAS-09	Novel Concepts and Applications for Uncrewed/Autonomous Systems II				Orlando Ballroom M
Chaired by: J. PAUNICKA, Boeing Engineering Operations & Technology					
1:00 p.m. AIAA-2026-1681 A Preliminary Risk Assessment Model Considering UAV Operations Over Land and Sea G. Jiang, H. Chen, X. Wang, K. Low, Civil Aviation University of China, Tianjin, China	1:20 p.m. AIAA-2026-1682 Information Theory Based Quantitative Complexity Analysis for Uncrewed Aerial Vehicle Safety Testing Scenarios Q. Goss, J. Ortiz Gomez, M. Akbas, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-1683 Integrated Modeling and Flight Validation of a Long-Endurance UAV Control Algorithm J. Lee, J. Ahn, Sejong University, Gwangjin-gu, South Korea			

Wednesday, 14 January 2026		
F360-08 1:30 - 2:00 p.m.	A Level Digital Playing Field – Vision & Urgency	Windermere Ballroom
Today's fragmented tools, trapped data, and manual compliance slow defense acquisition with major programs still taking decades to field. Incremental gains are no longer enough; tenfold improvement is needed to equip the warfighter. Istari Digital has introduced digital infrastructure as code-based-foundations that enable cross-network, vendor-neutral collaboration without aggregating data, and has demonstrated success with AFRL's Flyer One program, reducing design-review timelines by 50–60%. This session will examine how a level digital playing field can make digital engineering the backbone of faster, safer, and more effective national defense.		

Wednesday, 14 January 2026		
HUB-12 1:30 - 2:00 p.m.	8th Annual Materials Startup Panel	the HUB in the Expo Hall
Are you interested in starting your own company or working with startups or small disruptive companies to deliver your materials technology to the market fast? Panelists from startups and small disruptive companies can answer your questions! Moderator: Jessica Piness, Panelist: Christy Zo, Principal Researcher at LabAM24		

Wednesday, 14 January 2026		
AIAA-08 2:00 - 4:00 p.m.	Rising Leaders in Aerospace: Panel & Social Hour Breaking the Sound Barrier: The Next 80 Years of Supersonic and Hypersonic Travel	Plaza Ballroom H
The successful X-59 flight earlier this year marks almost eight decades of progress in supersonic / hypersonic flight since the sound barrier was first broken. As we enter this new age of hypersonics, high-speed flight has the potential to revolutionize air travel in both the commercial and the military domains. This panel brings together leading voices from government, industry, and academia to talk about the promise, the possibilities, and the challenges involved in this next phase of supersonic / hypersonic flight. The panel will explore the R&D efforts, development of advanced technologies, and integrating new paradigms such as AI that will be necessary for ensuring sustainable, scalable, and commercially viable high-speed flight in the future. Most importantly, we will examine the role young professionals and engineers will play in developing and deploying these critical technologies at scale, shaping the future of sustainable supersonic and hypersonic travel. The discussion will address workforce development needs and the role professional societies like AIAA play in preparing the next generation of aerospace innovators. Following the one-hour panel, there will be a social hour and networking opportunity with a dessert bar.		

Wednesday, 14 January 2026		
EP-03	Building Supportive Networks for a Successful Career	Celebration 11

Chaired by: L. SU, University of Michigan					
In this session, our panelists will discuss how to develop your network and community in the field of aerospace engineering with a focus on electric propulsion, particularly for students and early-career scientists and engineers. Topics covered will include navigating the field as a member of a smaller institution, avenues for reaching out to potential mentors and collaborators, and ways to maintain existing relationships. The AIAA EPTC will host a happy hour afterwards that all are invited to attend.					
Wednesday, 14 January 2026					
F360-09 2:00 - 3:00 p.m.	Level Digital Playing Field: Lessons Learned				Windermere Ballroom
Panelists will share practical insights from establishing a level digital playing field, addressing challenges, legacy tool integration, and establishing a decentralized, zero-trust "engineering commons" for collaboration. The session will underscore how coordinated efforts across AIAA, National Defense Industrial Association, and Object Management Group are shaping a level digital playing field and outlines a national path for integrating these methods into defense acquisition. A Q&A will allow the audience to dig into accelerating system deployment through this emerging digital foundation.					
Wednesday, 14 January 2026					
HUB-13 2:00 - 3:00 p.m.	Breaking Barriers in STEM to Discover Their Aerospace Potential				the HUB in the Expo Hall
Pursuing STEM can feel intimidating, but these Higher Orbits students are proving what's possible with determination and passion. This panel will highlight their unique journeys, the obstacles they've overcome, and the accomplishments that continue to fuel their dreams. They will share their hopes for careers in the industry and how industry can help students like them find their way in aerospace. Speaker: Michelle Lucas, Founder and CEO, Higher Orbits					
Wednesday, 14 January 2026					
HUB-14 3:00 - 3:30 p.m.	Advanced Aircraft Concepts Modeled in Days: How Specter Aerospace Accelerates Hypersonic Design with nTop				the HUB in the Expo Hall
Hypersonic systems are notoriously complex to design, and even harder to iterate on. Every design change has cascading effects on performance, manufacturability, and mission integration. This talk showcases how Specter Aerospace, in partnership with nTop, compressed weeks of design effort into just days. Attendees will learn the blueprint for reconfigurable, affordable hypersonics at the speed of the DoD now demands through models that enable rapid interation, simulation-ready designs, manufacturing-aware workflows, and seamless integration across the entire development pipeline.					
Wednesday, 14 January 2026					
NW-06 3:00 - 3:30 p.m.	Networking Coffee Break				Regency Ballroom
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.					
Wednesday, 14 January 2026					
ACD-11	Aircraft Systems/Subsystems Architecture Considerations				Rock Spring I & II
Chaired by: I. CHAKRABORTY, Auburn University and S. LISCOUËT-HANKE					
3:30 p.m. AIAA-2026-1686 Automation of Wire Routing for Aircraft Conceptual Design	3:50 p.m. AIAA-2026-1687 AMADEVS: A Generalized Aircraft Modeling &	4:10 p.m. AIAA-2026-1688 A Study to Evaluate the System Viability of Integrated HLFC (Hybrid	4:30 p.m. AIAA-2026-2798 Creation of Manufacturing Cost Estimation Surrogate		

B. Setty, S. Liscouët-Hanke, Concordia University, Montreal, Canada	Analysis Environment for Multidisciplinary Design J. Kim, S. Park, B. Chatelain, S. Jeong, J. Ryu, S. Joo, Seoul National University, Gwanak-gu, South Korea; et al.	Laminar Flow Control) With Anti-Icing Functionality H. Karin, K. Chiaki, S. Yoshinaga, H. Oyori, IHI Corporation, Akishima-shi, Japan; T. Akinaga, Y. Shibuya, Akita Daigaku, Akita, Japan	Models for Application in a Cross-Organizational Design Workflow T. van der Laan, GKN Fokker Aerostructures B.V., Papendrecht, The Netherlands; N. Bartoli, T. Lefebvre, Office National d'Etudes et de Recherches Aerospatiales Departement Physique Instrumentation Environnement Espace, Toulouse, France		
Wednesday, 14 January 2026					
AFM-10	Hypersonic and Spacecraft Flight Mechanics II				Bayhill 33
Chaired by: B. JOHNSON, NASA Lyndon B. Johnson Space Center					
3:30 p.m. AIAA-2026-1689 Closed-Form Solution of Skip Re-Entry Trajectories With Velocity-Dependent Aerodynamic Coefficients Using Matched Asymptotic Expansions J. Ramirez, I. Sarras, F. Dietrich, B. Hérissé, ONERA Traitement de l'information et systemes, Palaiseau, France	3:50 p.m. AIAA-2026-1690 Trajectory Optimization With No-Fly Zones Using the Uniform Trigonometrization Indirect Method S. Duwadi, J. Hurley, K. Mall, University of South Alabama, Mobile, AL	4:10 p.m. AIAA-2026-1691 Hypersonic Glide Vehicle Trajectory Forecasting via Transformer and Physics-Informed GBDT Models E. Barr, P. Figueroa, S. Olcmen, The University of Alabama, Tuscaloosa, AL	4:30 p.m. AIAA-2026-1692 A Comparative Analysis of Aerobraking Dynamics Across Celestial Bodies Using SpaceAGORA E. Yu, N. Simha, G. Falcone , University of Michigan, Ann Arbor, MI	4:50 p.m. AIAA-2026-1693 Time-Optimal Spacecraft Reorientation Using the Uniform Trigonometrization Indirect Method A. Sharma, University of Colorado Boulder, Boulder, CO; K. Mall, P. Chanana, J. Hurley, University of South Alabama, Mobile, AL	
Wednesday, 14 January 2026					
AMT-24	AMT in Industry				Blue Spring II
Chaired by: W. MCCORD, Lockheed Martin Aeronautics and R. CORDER, Raytheon					
This panel session will comprise of technical and management leaders in industry who will give presentations outlining their career path and available work opportunities (for full time and internships). The following Q&A session will allow students to ask pertinent questions regarding careers outside of the traditional academic / government lab environments. **Panelists:** Rijka Corder - Chief Engineer, RTX Tom Jenkins - CEO, MetroLaser James Chism - Research Engineer, CFD Research Walker McCord - Project Engineer, Lockheed Martin					
Wednesday, 14 January 2026					
APA-53/ACD-10/MDO-16	Aerodynamic Design: Analysis, Methodologies, and Optimization Techniques I				Manatee Spring II
Chaired by: A. EICHENLAUB, Lockheed Martin Space and J. DEATON, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-1694	3:50 p.m. AIAA-2026-1695	4:10 p.m. AIAA-2026-1696			

Robust Mesh Deformation for Aerodynamic Shape Optimization with Large Geometric Changes T. Lahteenmaa-Swerdlyk, D. Zingg, University of Toronto Institute for Aerospace Studies, Toronto, Canada	Aerodynamic Shape Optimization of Transonic Swept Wings for Natural Laminar Flow F. Husain, University of Toronto Institute for Aerospace Studies, Toronto, Canada; M. Piotrowski, Bombardier Inc, Montreal, Canada; D. Zingg, University of Toronto Institute for Aerospace Studies, Toronto, Canada	Non-Uniform Rational B-Spline Parameterization for Aerodynamic Shape Optimization C. Ongole, P. Ranjan, P. Ansell, University of Illinois Urbana-Champaign, Urbana, IL			
Wednesday, 14 January 2026					
APA-55/FD-58	Flow Control: Methods and Applications VIII				Manatee Spring I
Chaired by: H. STROUD, Sandia National Lab					
3:30 p.m. AIAA-2026-1697 Lift and L/D Enhancement in Vortex-Shedding Flows Using Predictive Cost Adaptive Control E. Stout, H. Kumar, J. Vander Schaaf, S. Islam, K. Fidkowski, D. Bernstein, University of Michigan, Ann Arbor, MI	3:50 p.m. AIAA-2026-1699 Trade Study of Regular and Flapped CoFlow Jet Airfoils, Part I: Injection Slot Size Effect F. Ding, J. Jeon, G. Zha, University of Miami, Coral Gables, FL	4:10 p.m. AIAA-2026-1700 Overview of the D90 Active Flow Control Demonstrator Project D. Williams, S. Simon, A. Lask, Illinois Institute of Technology, Chicago, IL			
Wednesday, 14 January 2026					
AS-12	Smart Sensors and Actuators Design				Bayhill 27
Chaired by: M. MARTINEZ, Clarkson University and J. KAUFFMAN, University of Central Florida					
3:30 p.m. AIAA-2026-1701 Experimental Analysis of a Novel Piezoelectric Flow Injection Valve for Flutter Boundary Mapping in Turbomachinery S. Giannuzzi, T. Myers, E. McLeod, University of Central Florida, Orlando, FL; D. McCormick, U. Jonsson, M. Ilak, RTX Corporation, Arlington, VA; et al.	3:50 p.m. AIAA-2026-1702 Temperature Effects on Resonance Behaviors of a Piezoelectric Transducer S. Naz, B. Zhao, T. Xu, Old Dominion University, Norfolk, VA	4:10 p.m. AIAA-2026-1703 Characterization, Modeling, and Experimental Testing of 3D Printed Polymer Composite Laminate Morphing Structures A. Stone, W. Jeong, S. Panchal, J. Weibel, D. Ziviani, Purdue University System, West Lafayette, IN	4:30 p.m. AIAA-2026-1705 Higher-Order Derivatives of Origami Architectures for Reconfigurable Space Antenna Design A. Sharma, S. Naskar, T. Mukhopadhyay, University of Southampton Faculty of Engineering and Physical Sciences, Southampton, United Kingdom		
Wednesday, 14 January 2026					

DE-13/ACD-13/SE-13/HMT-04	Emerging Processes and Systems in Mission Engineering and Design				Bayhill 21
Chaired by: P. FRAZIER, Northrop Grumman Mission Systems and J. CLAUSS and S. DAM, SPEC Innovations and A. MCGOWAN, NASA Langley Research Center and G. ROTH, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-1706 Hohmann Transfer Trajectory to Mars: Fuel Optimization and Aerocapture Strategy S. McClure, J. Colangelo, Embry-Riddle Aeronautical University, Daytona Beach, FL	3:50 p.m. AIAA-2026-1707 Design Space Exploration of a Reusable Launch Vehicle Through Integrated Stage-Mission Optimization W. Kim, J. Ko, J. Ahn, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	4:10 p.m. AIAA-2026-1708 LSTM-Based Trajectory Prediction for Human-Drone Interaction in Structured Environments H. Hellmann, S. Byeon, I. Hwang, Purdue University, West Lafayette, IN	4:30 p.m. AIAA-2026-1709 Developing a Reusable Propulsive Self-Landing Rocket for Collegiate Rocketry B. Li, S. Paik, A. Wicklund, University of California San Diego, La Jolla, CA		

Wednesday, 14 January 2026

DGE-11	Intellectual Property and Data Rights Issues	Silver Spring I

Chaired by: C. AIELLI, AFRL

The concept of an authoritative source of truth (ASoT) is important for digital engineering implementation, as it refers to a single, trusted repository of data and models within a digital engineering system of interest. This trusted repository serves as the primary reference point for all ecosystem stakeholders throughout the system's lifecycle, ensuring consistency and accuracy by providing a verified and controlled source of information. The rapid product development enabled by configuration control of digital threads and system models derived from the ASoT can be hindered by the presence of intellectual property and associated information products, e.g. "secret sauce". Suitable protections for intellectual property data and models, and their representation within a digital system's ASoT, is vital for protecting the unique designs, data, and models within the ASoT, safeguarding the proprietary knowledge develop during the engineering process. Suitable protection and methods of handling intellectual property are critical for companies of all sizes but are especially important for smaller companies that may be engaging with an ecosystem's ASoT for the first time. Data rights refer to the Government's nonexclusive license rights for two categories of valuable intellectual property, "technical data" and "computer software" delivered by contractors under civilian agency and Department of Defense contracts. Technical data is defined as any recorded information of a scientific or technical nature, from product design and maintenance data, to include computer databases and software documentation. For each digital system procured by the Government, creation and sustainment of a system's ASoT must be carefully phrased in the contracting language to allow for the safeguarding of an organization's proprietary data, and its sharing across the ecosystem stakeholders. This panel session and the associated technical paper session will provide venues for discussing and presenting use cases that address best practices for representing intellectual property within a shared digital ecosystem. These sessions will address challenges such as ensuring secure compilation of proprietary data in a digital ecosystem, training large language models using datasets with varying levels of data rights, design optimization challenges when working with proprietary data, and digital system verification with mixed data rights. Overcoming these challenges without compromising the intellectual property of data owners is a critical requirement. In addition, use cases are of interest from Government organizations that describe data rights issues, paths explored to resolved identified risks, and other digital outcomes that can be shared across the digital engineering community.

Wednesday, 14 January 2026

DGE-12/SE-14/DE-15/GTE-22/EAT-12	Verification and Validation Uncertainty Quantification (VVUQ) of Models	Bayhill 25

Chaired by: A. KARL, Rolls-Royce

In the rapidly evolving and high-stakes field of Aerospace Defense, the reliability and accuracy of computational models are paramount. Verification, Validation, and Uncertainty Quantification (VVUQ) play a crucial role in ensuring that these models meet the stringent requirements of the industry. Verification focuses on

ensuring that the models are correctly implemented and free of errors. This step involves rigorous testing to confirm that the mathematical and computational aspects of the models accurately follow the intended design specifications. Validation is the process of confirming that the models accurately represent real-world phenomena. By comparing model outputs with experimental or real-world data, validation ensures that the models provide a true representation of the systems they simulate, enhancing their predictive capability and relevance to real-world scenarios. Uncertainty Quantification (UQ) addresses the inherent uncertainties in modeling and simulation. In Aerospace Defense, this includes uncertainties in input data, model parameters, and the assumptions underlying the models. UQ aims to identify, quantify, and reduce these uncertainties, providing a more comprehensive understanding of the model's reliability and the confidence intervals associated with its predictions. Together, VVUQ forms a robust framework that ensures computational models in Aerospace Defense are credible, reliable, and effective tools for designing, testing, and decision-making. By systematically addressing errors, validation against real-world data, and uncertainty management, VVUQ enhances the safety, performance, and resilience of aerospace defense systems, ultimately supporting the mission-critical objectives of the industry.

Wednesday, 14 January 2026

EAT-11	Hybrid Electric Propulsion and Other Topics				Bayhill 31
Chaired by: F. SALUCCI, Argonne National Laboratory					
3:30 p.m. AIAA-2026-1710 Reliability and Performance Trade Studies for NASA's Subsonic Single Aft Engine Aircraft P. Mokotoff, G. Cinar, University of Michigan, Ann Arbor, MI	3:50 p.m. AIAA-2026-1711 Minimizing Cost Risk Through Hybrid-Electric Operations: Analyzing the Relationship between Airline Profits and Oil Prices J. Wishart, Volpe Center, Cambridge, MA; R. Jansen, NASA Glenn Research Center, Cleveland, OH; R. Wilkinson, Volpe Center, Cambridge, MA	4:10 p.m. AIAA-2026-1713 Autonomous Battery Units as an Enabling Technology for Urban Air Mobility K. Nguyen, D. Hogge, J. Riris, D. Sarojini, B. Denby, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:30 p.m. AIAA-2026-1714 Multi-Fidelity Modelling of Low Temperature Proton Exchange Membrane Fuel Cell Power Systems for Clean Aviation J. Schaefer, F. Di Fiore, B. Wu, L. Mainini, Imperial College London, London, United Kingdom	4:50 p.m. AIAA-2026-1715 Development of a Passive Variable Conductance Thermosyphon for Polymer Electrolyte Membrane Fuel Cells R. Abdelmaksoud, C. Tarau, J. Diebold, Advanced Cooling Technologies Inc., Lancaster, PA	

Wednesday, 14 January 2026

EDU-10	Modeling and Simulation in Undergraduate Aerospace Engineering Curricula	Bayhill 32
Chaired by: D. GEBRE EGZIABHER		

Modeling and simulation are an integral part of modern aerospace engineering design and analysis. This reality has, in part, motivated AIAA to recommend updating the accreditation criteria for aerospace engineering programs to explicitly include modeling and simulation in the undergraduate curriculum. In this panel, educators will discuss innovative approaches for incorporating modeling and simulation into undergraduate aerospace engineering instruction. Curricula from a range of aerospace engineering programs will be highlighted to showcase how modeling and simulation are being integrated into a typical undergraduate aerospace education.

Wednesday, 14 January 2026

EXPL-13	Mission Architecture I				Celebration 14
Chaired by: M. BENTON, Embry Riddle Aeronautical University and T. CICHAN, Lockheed Martin Space Systems					
3:30 p.m. AIAA-2026-1716 Comparison of Nuclear and Chemical Propulsion	3:50 p.m. AIAA-2026-1717 Establishing a Mars Base Camp on Phobos to	4:10 p.m. AIAA-2026-1718	4:30 p.m. AIAA-2026-1719 IRMA: New Era for Interstellar Travel		

Architectures for Human Mars Missions C. Reynolds, C. Joyner, T. Kokan, D. Levack, B. Muzek, L3Harris Technologies Inc, Melbourne, FL	Enable Future Crewed Mars Surface Missions B. Donahue, The Boeing Company Defense Space and Security, Huntsville, AL	Design and Concept of Mars Microprobe Mission Architecture L. Piper, Self, Norwich, CT	C. Decker, R. Biju, J. Bayandor, University at Buffalo, Buffalo, NY		

Wednesday, 14 January 2026

EXPL-14	Operational Space Medicine and Human Systems Integration Topics from Human Performance Maintenance to Spacesuit Design	Celebration 13

Chaired by: D. HOLLAND, Human Systems Integration and B. DUNBAR, Texas A&M University

This moderated session with presentations highlights the strengths that human beings bring to long duration spaceflight operations, and notes some of the challenges as well regarding spacesuit design, medical issues, human systems integration challenges, spatial disorientation and neurological issues, and the cutting-edge questions about interfacing with AI partners. **Speakers/Panelists:** Dwight Holland, MD, PhD/Bonnie Dunbar, PhD -- Panel Intro and an Overview of the Human Factor in Space Since the Dawn of Manned Spaceflight Bonnie Dunbar, PhD-- SpaceSuit Design Issues and Innovations Emmanuel Urquieta, MS, MD-- Overview of Space Medicine Concerns Dwight Holland, MD, PhD-- Human Systems Integration in Long Duration Exploration Missions in Space: People, Workload, and Interfaces with AI Considered-- Are we Ready? Angus Rupert, MD, PhD-- Spatial Disorientation and Neurological Spaceflight Concerns Peter Hancock, PhD, ScD-- Human-AI teaming in Future Space Exploration-- with an emphasis on "remote presence"

Wednesday, 14 January 2026

F360-10 3:30 - 4:30 p.m.	Unlocking T&E Collaboration	Windermere Ballroom

This session will examine how aerospace professionals can strengthen collaboration in test and evaluation to accelerate the pace, rigor, and effectiveness of programs supporting both military and civilian aviation. The discussion will highlight emerging trends in manned crewed and unmanned uncrewed systems, challenges in aligning standards and practices, and strategies, —including new testing methodologies and expanded approaches, —to ensure test programs consistently deliver on the promise of aerospace innovation.

Wednesday, 14 January 2026

FD-59	Flow Control Open Forum	Plaza Ballroom F

Chaired by: N. WEBB, The Ohio State University

Short presentations and open discussion on topics of interest to the aerodynamic flow control community.

Wednesday, 14 January 2026

FD-60	Fundamental Flow Physics and Novel Numerical Approaches	Peacock Spring

Chaired by: M. PECK and X. ZHONG

3:30 p.m. AIAA-2026-1723 A Computational Study of a Pulse Laser Energy Deposition on an 8.4 Degree Wedge, 10 Degree Ramp	3:50 p.m. AIAA-2026-1724 Evaluating the Variational Theory of Lift as Applied to Conformal Mappings of Airfoils S. Adams, N. Hoch, Z. Montgomery, D. Hunsaker,	4:10 p.m. AIAA-2026-1725 Variational Projection of Navier Stokes (VPNS) : A Novel Optimization Based Solver for Incompressible Fluid Flows			

J. Mendes, Lockheed Martin Aeronautics Company, Fort Worth, TX; N. Tichenor, Texas A&M University System, College Station, TX; B. Sommers, G. Font, W. Nolan, Lockheed Martin Aeronautics Company, Fort Worth, TX	Utah State University College of Engineering, Logan, UT	K. Anand, H. Taha, University of California Irvine, Irvine, CA			
Wednesday, 14 January 2026					
FD-61	Instability and Transition VIII				Coral Spring I
Chaired by: L. PAQUIN, North Carolina State University and E. BENITEZ, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-1726 Delay of Crossflow Transition on a Yawed Cone at Mach 6 P. Paredes, M. Choudhari, F. Li, NASA Langley Research Center, Hampton, VA	3:50 p.m. AIAA-2026-1727 Aero-Optical and Fluidic Studies of Crossflow Transitional Waves in Hypersonic Flow Z. Noel, B. Bemis, T. Juliano, M. Peck, University of Notre Dame College of Engineering, Notre Dame, IN; K. Hanquist, The University of Arizona College of Engineering, Tucson, AZ; S. Gordeyev, University of Notre Dame College of Engineering, Notre Dame, IN	4:10 p.m. AIAA-2026-1728 Design of a Hypersonic Swept-Wing Experiment for the Study of Crossflow-Vortex/Step-Excrescense Interaction K. Groot, H. Detmer, A. Mazur, A. Garcia, University of Wyoming College Of Engineering & Physical Sciences, Laramie, WY; S. Craig, The University of Arizona College of Engineering, Tucson, AZ			
Wednesday, 14 January 2026					
FD-62	Machine-Learning-Enabled Reduced-Order and Closure Modeling				Coral Spring II
Chaired by: H. GAO, Iowa State University and M. KINZEL, Embry-Riddle Aeronautical University					
3:30 p.m. AIAA-2026-1729 Modeling High-Reynolds Number Flows Using Transformers and Multi-Scale Latent Spaces C. Morton, J. McNamara, The Ohio State University, Columbus, OH	3:50 p.m. AIAA-2026-1730 Machine Learning Prediction of Dynamic Stall Loads using a Modal Approach J. Miller, J. Naughton, University of Wyoming, Laramie, WY; P. Nikoueeyan, Resono Pressure Systems Inc, Laramie, WY	4:10 p.m. AIAA-2026-1731 A Machine Learning Model for the Prediction of Sub-Grid Interfacial Area in Two-Phase Turbulent Flows A. Bhattacharjee, L. Hatashita, S. Jain, Georgia Institute of Technology College of Engineering, Atlanta, GA	4:30 p.m. AIAA-2026-1732 Experimental Investigation of Fuel Spray Atomization at Engine-Relevant Conditions and Analysis using Unsupervised Learning Methods H. Ek, K. Lee, S. Bhushan, Mississippi State University, Mississippi State University, MS; J. Hwang, Korea Advanced Institute of Science and Technology, Daejeon, South Korea		

Wednesday, 14 January 2026					
FD-63	Shock-Droplet Interactions II				Plaza Ballroom E
Chaired by: S. POOVATHINGAL, University of Kentucky and O. DESJARDINS					
3:30 p.m. AIAA-2026-1733 Novel Methods for Evaluating Shock-Droplet Interactions B. Cavainolo, Embry-Riddle Aeronautical University, Daytona Beach, FL; K. Nguyen, Virginia Polytechnic Institute and State University, Blacksburg, VA; R. Forehand, University of Central Florida College of Engineering and Computer Science, Orlando, FL; R. Shannon, Boston University, Boston, MA; M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL; S. Grace, Boston University, Boston, MA	3:50 p.m. AIAA-2026-1734 Shock-Induced Atomization and Vaporization of Liquid Fuel Droplet Clouds M. Tripathi, P. Khare, University of Cincinnati, Cincinnati, OH	4:10 p.m. AIAA-2026-1735 Quantifying Droplet Demise from High-speed Projectile Impacts J. Pearson, J. Harbers, T. Meyer, Purdue University, West Lafayette, IN; M. Libeau, Naval Surface Warfare Center Dahlgren Division, Dahlgren, VA; B. W, S. Roy, Spectral Energies, Beavercreek, OH; et al.	4:30 p.m. AIAA-2026-1736 Water Droplet Breakup in a Hypersonic Shock Environment M. Lindsay, S. Briggs, A. Aguilera, S. Vasu, University of Central Florida College of Engineering and Computer Science, Orlando, FL; M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL; S. Grace, Boston University, Boston, MA; et al.	4:50 p.m. AIAA-2026-1737 Predicting Fracture of Atmospheric Ice in Hypersonic Shock Layers E. Huff, H. Chen, S. Poovathingal, University of Kentucky, Lexington, KY	5:10 p.m. AIAA-2026-1738 Coupled Experimental–Computational Analysis of Liquid Jet Breakup in Subsonic Cross Flows L. Wilkie, K. Gatsonis, F. Rice, N. Michnoff, J. Braun, NC State University, Raleigh, NC

Wednesday, 14 January 2026					
GNC-29	GNC Graduate Student Paper Competition				Bayhill 28
Chaired by: S. THEODOULIS, TU Delft and D. SAHA, Northeastern University					
This session is the guidance, navigation, and control graduate paper competition session. During this session the six finalists will present their research as part of the final selection criteria of the overall winner.					

Wednesday, 14 January 2026					
GNC-30	Robust and Adaptive Aircraft Control				Bayhill 29
Chaired by: J. CLEMENS, Lockheed Martin Aeronautics and J. KIRKMAN, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-1741 Nested-Architecture Adaptive Control of the FliteTest Explorer J. Ong, A. Babu, R. Richards, University of Michigan, Ann Arbor, MI; D. Hunsaker, Utah State University, Logan, UT; D. Bernstein, University of Michigan, Ann Arbor, MI	3:50 p.m. AIAA-2026-1742 Robust Linear Design for Flight Control Systems with Operational Constraints M. Menner, Aurora Flight Sciences Corporation, Cambridge, MA; E. Lavretsky, The Boeing Company, Huntington Beach, CA	4:10 p.m. AIAA-2026-1743 Active Incremental Nonlinear Dynamic Inversion for Sensor and Actuator Fault-Tolerant Control D. Atmaca, C. de Visser, E. Van Kampen, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	4:30 p.m. AIAA-2026-1744 Adaptive Incremental Dynamic Inversion for Fault-tolerant Flight Control of a Flying Wing R. Ul Haq, D. Atmaca, E. Van Kampen, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands	4:50 p.m. AIAA-2026-1745 Control Lyapunov and Barrier Function Based Analytic Controller for Air-Breathing Hypersonic Vehicles O. Vaknin, M. Idan, Technion Israel Institute of Technology, Haifa, Israel	5:10 p.m. AIAA-2026-1746 Active Flutter Suppression Control Design for Wind-Tunnel Testing Using μ-Synthesis L. Anderson, R. Caverly, University of Minnesota Twin Cities, Minneapolis, MN; J. Grauer, NASA Langley Research Center, Hampton, VA

Wednesday, 14 January 2026					
GT-11	Development and Advancement of Wind Tunnel Subsystems				Rainbow Spring II
Chaired by: C. JAUCH, North Wind and S. MULLER, Amentum					
3:30 p.m. AIAA-2026-1747 Hybrid MPC-PID Control of Blowdown Supersonic Wind Tunnel H. Prasad, G. Somaroutu, V. Gopal, The University of Texas at Arlington Department of Mechanical & Aerospace Engineering, Arlington, TX	3:50 p.m. AIAA-2026-1748 Commissioning of a Supersonic Nozzle Control Regulator in the TUSQ Facility P. Swann, J. Moran, D. Buttsworth, I. Jahn, University of Southern Queensland, Toowoomba, Australia	4:10 p.m. AIAA-2026-1749 Thermomechanical Modeling of Actively Cooled Nozzles for Ground Test J. Koller, S. Smith, A. Kotler, K. Ahmed, M. Rosolen, University of Central Florida, Orlando, FL			

Wednesday, 14 January 2026		
GTE-19	Computational Tools and Modelling (CFD) Using Data Driven Methods for Turbomachinery Design	Celebration 3
Chaired by: A. KUMAR, GE Aerospace and S. HEGDE, Pratt & Whitney		

Artificial Intelligence (AI) and data-driven methods are fundamentally reshaping the design, analysis, and operation of gas turbine engines. This lecture will explore key dimensions of this transformation. First, it will examine how AI and Machine Learning (ML) are revolutionizing gas turbines today—beyond theory—through real-world applications like predictive maintenance, performance monitoring, lifecycle and process optimization/control, and rapid design iteration. Second, the lecture will delve into active areas where AI/ML is adding significant value to engineering simulation, like Computational Fluid Dynamics (CFD). This includes the use of AI-based surrogates, integration into numerical and solver frameworks, and possibilities when combining physical measurement with simulation, among other things. The lecture will synthesize recent academic findings, applied research, and industry activities to address three guiding questions: How is AI transforming gas turbine engines? What data-driven modeling methods are actively being applied today? And what future trends are poised to define the next generation of intelligent propulsion systems. **Speaker:** Justin Hodges, Head of Physical AI at CoreWeave

Wednesday, 14 January 2026					
GTE-20	High Fidelity Simulations I				Celebration 2
Chaired by: V. HASTI, University of Central Florida and S. HEGDE, Pratt & Whitney and S. DALAKOS, GE Aerospace Research					
3:30 p.m. AIAA-2026-1750 Using Unsupervised Machine Learning to Experimentally Categorize Separation on Low-Pressure Turbine Blades A. Suter, C. Marks, J. Kerestes, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; M. Wolff, Wright State University, Dayton, OH	3:50 p.m. AIAA-2026-1751 High-Fidelity Numerical Simulation of an Anchored Hydrogen-Air Flame in a Dual-Swirl Co-Axial Injector V. Hasti, University of Central Florida, Orlando, FL; R. Ranjan, The University of Tennessee Chattanooga, Chattanooga, TN	4:10 p.m. AIAA-2026-1752 Large Eddy Simulation of Thermoacoustic Oscillations in an Annular Combustor Under EGR Conditions: Mode Decomposition Analysis I. Kabil, C. Xu, Argonne National Laboratory, Lemont, IL; Y. Sung, J. Blust, C. Steele, D. Johnson, Solar Turbines Incorporated, San Diego, CA; et al.			

Wednesday, 14 January 2026

HSABP-08/PC-24	High Fidelity Combustion Modeling for High-Speed Propulsion I				Celebration 4
Chaired by: J. EDWARDS, North Carolina State University and S. DEMIR, Argonne National Laboratory					
3:30 p.m. AIAA-2026-1753 Evaluation of Turbulent-Combustion Models for a Hydrogen Fueled Scramjet Engine Using RANS Simulation S. Kang, B. Sung, J. Kim, J. Choi, Pusan National University, Geumjeong-gu, South Korea	3:50 p.m. AIAA-2026-1754 High-Order Flux Reconstruction for the Implicit Large Eddy Simulation of an Axisymmetric Scramjet Combustor T. Koeplinger, C. Hash, J. Edwards, NC State University, Raleigh, NC	4:10 p.m. AIAA-2026-1755 Unsteady Flamelet Progress Variable Modeling in a Discontinuous Galerkin Framework: Implementation, Optimization and Demonstration S. Demir, Argonne National Laboratory, Lemont, IL; P. Guthrey, Lawrence Livermore National Laboratory, Livermore, CA; B. Bojko, R. Johnson, US Naval Research Laboratory, Washington, D.C.	4:30 p.m. AIAA-2026-1756 Application of the Dynamic Zone Flamelet Model to High-Speed Turbulent Combustion G. Holum, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	4:50 p.m. AIAA-2026-1757 Numerical Simulation of Scramjet Combustion in Thermo-Chemical Non-Equilibrium Within an Arc-Heated Direct Connect Facility S. Richardson, J. Edwards, NC State University, Raleigh, NC	

Wednesday, 14 January 2026		
HUB-15 3:30 - 4:00 p.m.	From Reporting to Sensing: How Coherent Architecture Enables Early Truth in Complex Systems	the HUB in the Expo Hall
Modern aerospace systems now operate at a scale and pace where traditional reporting, intuition, and hierarchical oversight no longer provide early warning. As interaction density increases across hardware, software, data, operations, and people. Small structural errors are often masked by workarounds and human effort, normalized by metrics, and discovered only after meaningful options have narrowed. Sensing is noticing structural change before metrics break. Speaker: Myriam Newman		

Wednesday, 14 January 2026					
IS-16	Adaptive and Intelligent Control Systems II				Celebration 15
Chaired by: A. GOEL, University of Maryland Baltmore County and M. HASSANALIAN, New Mexico Tech					
3:30 p.m. AIAA-2026-1758 Adaptive Trajectory Planning for Safe Low-Level Helicopter Flight in MUM-T Environments V. Wuwer, M. Gerdts, A. Schulte, Universitat der Bundeswehr Munchen Fakultat fur Luft- und Raumfahrttechnik, Neubiberg, Germany	3:50 p.m. AIAA-2026-1759 Extremum Seeking Framework With Vanishing Dither Signal J. Portella Delgado, J. Paredes Salazar, A. Goel, University of Maryland Baltimore County, Baltimore, MD	4:10 p.m. AIAA-2026-1760 Physics-infused Learning for Aerial Manipulator in Winds and Near-Wall Environments Y. Zhang, J. Geng, The Pennsylvania State University, University Park, PA	4:30 p.m. AIAA-2026-1761 Space-Based Environmentally-Adaptive Robotic Grasping L. Askianakis, Technische Universitat Munchen, Munich, Germany; A. Artemov, Project-S, Munich, Germany	4:50 p.m. AIAA-2026-1762 Minimal Sensor Quadruped Locomotion Without Contact Models via Reinforcement Learning D. Nguyen, R. Liang, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	

Wednesday, 14 January 2026		
IS-17	Learning, Reasoning, and Data Driven Systems V	Celebration 12

Chaired by: S. BANDYOPADHYAY, Jet Propulsion Laboratory, Caltech

3:30 p.m. AIAA-2026-1763 Centralized Copy-Paste: Enhanced Data Augmentation Strategy for Wildland Fire Semantic Segmentation J. Kim, The Ohio State University, Columbus, OH; T. Chen, Boston University, Boston, MA; Z. Dong, N. Kunchala, A. Guller, The Ohio State University, Columbus, OH; D. Ospina Acero, Universidad de Antioquia, Medellín, Colombia; et al.	3:50 p.m. AIAA-2026-1764 Probabilistic Multi-Agent Aircraft Landing Time Prediction K. Kim, S. Yoon, K. Lee, Korea Aerospace University, Goyang-si, South Korea	4:10 p.m. AIAA-2026-1765 Efficient Domain Adaptation of Whisper for Air Traffic Control Transcription and Contextual Error Rate Evaluation M. Maaz, G. Carannante, N. Bouaynaya, Rowan University, Glassboro, NJ; S. Shah, C. Nichols, A. Omezzine, FAA William J. Hughes Technical Center, Atlantic City, NJ, Atlantic City, NJ	4:30 p.m. AIAA-2026-1766 VHF-Sim2Real: Generative Noise Injection for Improved Automatic Speech Recognition in Air Traffic Control O. Garib, M. Ghanem, O. Pinon-Fischer, D. Mavris, Georgia Institute of Technology, Atlanta, GA	4:50 p.m. AIAA-2026-1767 Spiking Neural Network Gesture Recognition with Rotationally Invariant Fourier Encoding L. Larsh, S. Sharif, Y. Banad, The University of Oklahoma, Norman, OK	5:10 p.m. AIAA-2026-1768 Ensemble Control for Massive-Scale Heterogeneous Robotic Systems under Signal Temporal Logic Specifications A. Arias Londono, C. Sun, Villanova University College of Engineering, Villanova, PA

Wednesday, 14 January 2026

IS-18	Safety-Critical Control and Learning for Advanced Air Mobility II	Celebration 16

Chaired by: H. MONCAYO, Embry-Riddle Aeronautical University and N. PRABHAKAR, Argonne National Labs

3:30 p.m. AIAA-2026-1769 A Comprehensive Review of Trajectory Planning in Swarm Drones: Methods, Challenges, and Future Directions J. Magalhaes, N. Tukenmez, K. Vamvoudakis, Georgia Institute of Technology, Atlanta, GA; F. Fotiadis, Dell Seton Medical Center at The University of Texas, Austin, TX; A. Homaifar, North Carolina Agricultural and Technical State University, Greensboro, NC; S. Bogosyan, Istanbul Teknik Universitesi, Istanbul, Turkey	3:50 p.m. AIAA-2026-1770 Effect of Navigation and Trajectories on eVTOL Flight Energy and Performance N. Prabhakar, F. Salucci, D. Karbowski, Argonne National Laboratory, Lemont, IL	4:10 p.m. AIAA-2026-1771 Flight Trajectory Protection for an Urban Air Mobility Vehicle Under Reduced Pitch Maneuverability E. Martinez, J. Clardy, H. Moncayo, R. Jado Puente, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:30 p.m. AIAA-2026-1772 Simulation Framework for Assessing Autonomous Intelligent Trajectory Planning for Advanced Air Mobility Operations in the National Airspace System J. Clardy, E. Martinez, V. Fraticelli, H. Moncayo, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:50 p.m. AIAA-2026-1773 Mixing Real and Synthetic Data in Neural Network Training: A Case Study Regarding Runway Detection G. Daniel, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; J. Cruz, Embraer SA, Sao Jose dos Campos, Brazil; M. Maximo, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil	5:10 p.m. AIAA-2026-1774 AssistTaxi-v2: A Scalable Dataset for Taxiway/Runway Scene Understanding Under Diverse Conditions P. Ganeriwala, M. Khan, A. Alvarez, S. Bhattacharyya, Florida Institute of Technology, Melbourne, FL; N. Neogi, S. Lehman, NASA Langley Research Center, Hampton, VA

Wednesday, 14 January 2026

LP-10	NPSS: Introduction Tutorial	Celebration 8

Chaired by: N. ANDREWS, Southwest Research Institute

A description, demonstration, and introduction to using Numerical Propulsion Simulation Software. This a consortium based tool used widely in the industry. The tutorial will show users what it is, how to use it, its benefits, and examples of simulation cases. This tutorial has been held for several years and gets okay attendance. Especially valuable for students or young professionals

Wednesday, 14 January 2026					
MAT-14	Materials for Extreme Environments: Hypersonics, Launch/Reentry, and Orbital Effects				Bayhill 20
Chaired by: J. PINESS, Aegis Aerospace and B. BEDNARCYK, NASA Glenn Research Center					
3:30 p.m. AIAA-2026-1775 Coupled Effect of Angle of Incidence and Temperature on the High-speed Particle Impact Cratering and Erosion of Graphite J. Ochilov, S. Ravindran, University of Minnesota Twin Cities, Minneapolis, MN	3:50 p.m. AIAA-2026-1776 Comparative Study of High-Temperature Polymer Composites Under Varying Simulated Re-Entry Conditions B. Treiber, M. Sticher, H. Ruckdaeschel, Universitat Bayreuth, Bayreuth, Germany; R. Feru, J. Koo, The University of Texas at Austin, Austin, TX	4:10 p.m. AIAA-2026-1777 Atomistic Simulation of the Impact of Water Droplet on Carbon-Carbon Composite at Hypersonic Velocit S. Roy, M. Al Amin, The University of Alabama, Tuscaloosa, AL	4:30 p.m. AIAA-2026-1778 Evaluation of Ablation and Mechanical Behavior in Needle-Punched High Silica-Phenolic Composites With Comparison to Laminated Structures Z. Akyazici, B. Selamet, Istanbul Teknik Universitesi, Istanbul, Turkey; M. Kilinc, M. Baysal, DeltaV Space Technologies, Istanbul, Turkey; S. Eken, Istanbul Teknik Universitesi, Istanbul, Turkey; C. Tola, ASELSAN AS, Ankara, Turkey; et al.	4:50 p.m. AIAA-2026-1779 Hypersonic Weather Encounter Damage Predictions in Carbon-Carbon Composites U. Can, I. Guven, Virginia Commonwealth University, Richmond, VA	5:10 p.m. AIAA-2026-1780 Mechanical Property Testing of Thermoset and Thermoplastic Composites for Cryotank Applications S. Miller, J. Pinakidis, V. Lvovich, NASA Glenn Research Center, Cleveland, OH; P. Heimann, University Space Research Association, Cleveland, OH; W. Mulhearn, NASA Goddard Space Flight Center, Greenbelt, MD; K. Segal, Intuitive Machines, Greenbelt, MD

Wednesday, 14 January 2026					
MAT-15	Testing and Characterization of Materials I				Bayhill 23
Chaired by: R. KOPP, ATA Engineering, Inc. and S. THORSSON, Exponent					
3:30 p.m. AIAA-2026-1781 Experimental Investigation of Electrical Discharge Machining Process in Aluminum Alloy 2024 Reinforced with SiC and B_4C Metal Matrix Composite P. Sutradhar, C. Rai, S. Sharma, D. Karunakaran, Anna University, Chennai, India; T. Krishna Kumar, Indian Institute of Technology Kanpur, Kanpur, India	3:50 p.m. AIAA-2026-1782 Shear Lag in High-Throughput Testing of Thin-Ply Composites V. Khare, S. Coltharp, Mississippi State University James Worth Bagley College of Engineering, Mississippi State University, MS; K. Kwok, Purdue University, West Lafayette, IN	4:10 p.m. AIAA-2026-1783 Comparison of Interfacial Mechanical Behavior of Continuous Carbon Fiber Composites Manufactured using Autoclave and 3D Printing Approach R. Arram, Y. Jiang, S. Namilae, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:30 p.m. AIAA-2026-1784 In-situ Characterization of High Temperature Ceramic Coating Degradation within a Replicated Aeroengine Environment using Synchrotron X-ray Diffraction Z. Stein, Embry-Riddle Aeronautical University, Daytona Beach, FL; P. Kenesei, J. Park, J. Almer, Argonne National Laboratory Advanced Photon Source, Lemont, IL; J. Wischek, M. Bartsch, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; et al.	4:50 p.m. AIAA-2026-1785 Validating a Two-Point Displacement Method for Strain Measurement in Accelerated Fatigue Testing O. Scott-Emuakpor, P. Johnson, H. Vadrevu, Hyphen Innovations, Moraine, OH	5:10 p.m. AIAA-2026-1786 Black-Tipped Wing Alignment in V-Formation: Aerodynamic Implications for Avian Flight Efficiency G. Quayson, M. Orlando, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM

Wednesday, 14 January 2026

MDO-17/ACD-14/DE-14/NDA-08	Robustness, Design for Reliability, and Multi-Disciplinary Design Optimization				Bayhill 17
Chaired by: I. MARKS, Northrop Grumman and J. WIDRICK, Northrop Grumman Space Systems and M. HENSON, Lockheed Martin Aeronautics and J. MONTORO, Lockheed Martin					
3:30 p.m. AIAA-2026-1787 Robust Thermoelastic Topology Optimization of Hypersonic Structures Under Manufacturing and Aerothermal Uncertainties J. Leonetti, R. Murphy, M. Santer, Imperial College London, London, United Kingdom	3:50 p.m. AIAA-2026-1788 Certification-Informed Reliability and Performance Assessment of Electrified Aircraft J. Gould, N. Shune, D. Sarojini, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:10 p.m. AIAA-2026-1789 Reliability-based Hybrid Genetic Algorithm to address Mixed-Discrete Nonlinear Programming Problems under Uncertainty N. Kolencherry, W. Crossley, Purdue University, West Lafayette, IN	4:30 p.m. AIAA-2026-1790 Efficient Reliability-Based Design Optimization of Spacecraft and Trajectory Systems Using Gaussian Process Surrogates S. Naidu, L. Leifsson, Purdue University, West Lafayette, IN	4:50 p.m. AIAA-2026-1791 Enhancing Airline Operational Efficiency Through an Optimized Mixed Fleet Deployment Methodology N. Srinivasan, M. Kirby, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA	

Wednesday, 14 January 2026					
MST-04	Air Traffic Management Simulation and Digital Twins II				Blue Spring I
Chaired by: J. SCHWITHAL, DLR - German Aerospace Center and I. FIALHO, The Boeing Company					
3:30 p.m. AIAA-2026-1792 Conditioning Aircraft Trajectory Prediction on Meteorological Data With a Hybrid Physics-Data Approach: Extended Abstract A. Hodgkin, N. Pepper, The Alan Turing Institute, London, United Kingdom; M. Thomas, National Air Traffic Services, Fareham, United Kingdom	3:50 p.m. AIAA-2026-1793 A Framework for Assuring the Accuracy and Fidelity of an AI-Enabled Digital Twin of en Route UK Airspace A. Keane, N. Pepper, C. Burr, A. Hodgkin, The Alan Turing Institute, London, United Kingdom; J. Korna, M. Thomas, National Air Traffic Services, Fareham, United Kingdom	4:10 p.m. AIAA-2026-1794 A Probabilistic Digital Twin of UK en Route Airspace N. Pepper, A. Keane, A. Hodgkin, D. Gould, E. Henderson, L. Lauritsen, The Alan Turing Institute, London, United Kingdom; et al.	4:30 p.m. AIAA-2026-1795 Decentralized Conflict Resolution for Urban Air Mobility: A Scalable Agent-based Modeling Approach Using Swarm Intelligence R. Sugumar, M. Akbas, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:50 p.m. AIAA-2026-1796 Rapid Identification and Detailed Evaluation of UAS Encounter Scenarios through Integrated Simulation J. Gonzalez Nunez, J. Pamplona, J. Lee, J. Ortiz Gomez, M. Evans-Lichtigfeld, M. Akbas, Embry-Riddle Aeronautical University, Daytona Beach, FL	5:10 p.m. AIAA-2026-1797 Networked Simulation for Cybersecurity Evaluation of Small Unmanned Aircraft Systems in Dense Urban Environments A. Diaz-Gonzalez, A. Coursey, B. Bjorkman, D. Shatokhin, C. Lemieux-Mack, N. Dahle, Vanderbilt University, Nashville, TN; et al.

Wednesday, 14 January 2026					
NDA-07	Bayesian Methods for Uncertainty Quantification				Bayhill 26
Chaired by: G. GERACI, Sandia National Laboratories and S. MULANI, The University of Alabama					
3:30 p.m. AIAA-2026-1798 Optimal Experimental Design to Improve System-Level Predictions with Mission-Level Data under Uncertainty D. Villanueva, C. Hoyt, C. Morehead, A. Markina-	3:50 p.m. AIAA-2026-1799 Multi-Resolution Digital Twins Under Uncertainty With Applications to Multiscale Systems S. Pyrialakos, A. Chaudhuri, K. Willcox, The University of Texas at Austin Oden Institute	4:10 p.m. AIAA-2026-1800 Probabilistic Surrogate Modeling and Uncertainty Quantification for Aviation Fleet Emissions N. Maruthuvakudi Venkatram, B. Bagdatli, D.	4:30 p.m. AIAA-2026-1801 Nodal Framework Modeling for System-Level Reliability Analysis T. Schostek, D. Ziviani, Purdue University System, West Lafayette, IN	4:50 p.m. AIAA-2026-1802 Some Conservative and Efficient Sparse-Sample Tail Probability Estimation Methods and Practical Motivation for Them V. Romero, Sandia National Laboratories, Albuquerque,	

Khusid, The MITRE Corporation Bedford, Bedford, MA; A. Chaudhuri, The University of Texas at Austin Oden Institute for Computational Engineering and Sciences, Austin, TX	for Computational Engineering and Sciences, Austin, TX	Mavris, Georgia Institute of Technology, Atlanta, GA		NM; C. Jekel, Lawrence Livermore National Laboratory, Livermore, CA	
Wednesday, 14 January 2026					
NFF-02	Missions Enabled by Nuclear or Future Propulsion				Celebration 9
Chaired by: G. MEHOLIC, The Aerospace Corporation and A. ALVES ALMEIDA, University of Michigan					
3:30 p.m. AIAA-2026-1803 High-Speed Fusion Based Combined Cycle Transport Vehicle Design Project J. Gay, R. Quintero, K. McMahon, N. Kwan, Y. Hao, Y. De Silva, University of Maryland, College Park, MD; et al.	3:50 p.m. AIAA-2026-1804 Bimodal and Hybrid Nuclear Thermal / Nuclear Electric Propulsion Concepts for Human Mars Missions T. Kokan, Aerojet Rocketdyne / L3Harris, Huntsville, AL; C. Joyner, Aerojet Rocketdyne / L3Harris, West Palm Beach, FL; D. Levack, Aerojet Rocketdyne / L3Harris, Canoga Park, CA; B. Muzek, Aerojet Rocketdyne / L3Harris, Huntsville, AL; R. Noble, Aerojet Rocketdyne / L3Harris, Canoga Park, CA; C. Reynolds, Aerojet Rocketdyne / L3Harris, Huntsville, AL	4:10 p.m. AIAA-2026-1805 Nuclear Electric Propulsion for Planetary Defense S. Oleson, E. Turnbull, S. McCarty, NASA Glenn Research Center, Cleveland, OH; T. Packard, HX5, Brookpark, OH; L. Mason, M. Lykins, NASA Glenn Research Center, Cleveland, OH; et al.	4:30 p.m. AIAA-2026-1806 Low-Thrust Trajectory Design for Rendezvous Missions to Jupiter and Saturn Using Nuclear Electric Propulsion M. Salunkhe, L. Thomas, The University of Alabama in Huntsville, Huntsville, AL	4:50 p.m. AIAA-2026-1807 Instrumentation and Control Approaches for NTP, NEP, and FSP Identification and Placement C. Joyner, T. Kokan, J. Larkin, D. Levack, L3Harris Technologies Inc, Jupiter, FL	
Wednesday, 14 January 2026					
PC-23	Combustion Chemistry and Diagnostics				Celebration 6
Chaired by: P. LYNCH and M. MCCLAIN, Purdue University					
3:30 p.m. AIAA-2026-1808 Flame Temperature Mapping Using Two Synthetic OH Planar Laser-Induced Fluorescence Images H. Chand, R. Joarder, Indian Institute of Technology Kharagpur, Kharagpur, India	3:50 p.m. AIAA-2026-1809 Novel Imaging Diagnostics for Quantification of Metal Particle Burn Times From a Simple Experimental Configuration J. Rodriguez, D. Guildenbecher, S. Son, M. Ornek, Purdue University, West Lafayette, IN	4:10 p.m. AIAA-2026-1810 Detailed Kinetic Modeling of Rp-1 Surrogate Oxidation From Composition Analysis Q. Nguyen, P. Duong, K. Lin, National Tsing Hua University, Hsinchu, Taiwan	4:30 p.m. AIAA-2026-1811 Shock-Tube Spectroscopic CO Measurements and Kinetics Modeling of Rocket Propellants C. Gregoire, University of Florida, Gainesville, FL; E. Petersen, Texas A&M University System, College Station, TX	4:50 p.m. AIAA-2026-1812 A Symbolic Computational Abstraction of Chemistry Libraries E. Cisneros-Garibay, The University of Tennessee Space Institute, Tullahoma, TN; D. Adam, S. Bryngelson, Georgia Institute of Technology, Atlanta, GA	

Wednesday, 14 January 2026					
PC-25	Liquid Fuels				Celebration 7
Chaired by: J. OEFELEIN, Georgia Institute of Technology					
3:30 p.m. AIAA-2026-1813 Investigation of Fuel Droplet Evaporation at Supercritical Conditions M. Khamis, G. Reed, S. Menon, Louisiana State University, Baton Rouge, LA	3:50 p.m. AIAA-2026-1814 Flame Stability and Geometric Analysis of Ultrasonically Excited LJIC Combustion C. Clark, D. Cruz, S. Salauddin, K. Ahmed, University of Central Florida, Orlando, FL	4:10 p.m. AIAA-2026-1815 Investigation of Lubricant Oil-Induced Pre-Ignition in a Premixed Hydrogen Environment T. Lee, V. Duke Walker, A. Srna, Sandia National Laboratories California, Livermore, CA	4:30 p.m. AIAA-2026-1816 Large Eddy Simulation of High-Viscosity Spray Injection Using Volume-of-Fluid Method P. Chen, A. Ceschin, A. Marzooq, J. Guo, H. Im, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	4:50 p.m. AIAA-2026-1817 Evaporation Dynamics of a Cloud of Droplets Under Elevated Temperature and Pressure Conditions K. Chougag, M. Fortin, A. Morales, S. Salauddin, K. Ahmed, University of Central Florida, Orlando, FL	

Wednesday, 14 January 2026		
PC-26/GTE-21	Sustainable Aviation Fuel: Production, Testing, and Its Current and Future Perspectives.	Celebration 5
Chaired by: F. DI SABATINO, Southwest Research Institute		

This session will be a combination of a tutorial and a panel discussion, focusing on the topic of Sustainable Aviation Fuels. The session will delve into the entire lifecycle of these fuels, from production, to certification to usage. Structure: Tutorial (First 30 Minutes): The session will begin with a 30-minute tutorial where the panel moderator and panelists will introduce the main topic and the challenges associated with it. Panel Discussion: Following the tutorial, the session will transition into a panel discussion where these challenges will be thoroughly examined. The discussion will also include a Q&A segment where questions from the audience will be addressed.

Wednesday, 14 January 2026					
PDL-09	Hypersonics and Entry Flow Plasmas				Rainbow Spring I
Chaired by: B. PARENT and A. SHASHURIN, Purdue University, School of Aeronautics and Astronautics					
3:30 p.m. AIAA-2026-1818 Spatially and Thermally Resolved Detection of Carbon Ablation Products From High-Power Laser Ablation of Graphite J. Letkemann, E. Chacon, T. Haag, A. Tropina, R. Miles, Texas A&M University, College Station, TX	3:50 p.m. AIAA-2026-1819 Thermodynamically Consistent Vibrational-Electron Energy Exchange and Application to Hypersonic Plasmas F. Rodríguez Fuentes, B. Parent, The University of Arizona, Tucson, AZ	4:10 p.m. AIAA-2026-1820 On Board Optical Emission Spectra Collection in Plasmatron X Facility for Hycube Missions G. LaCombe, J. Neumann, J. Yoo, M. Simeni, E. Longmire, D. Gebre Egziabher, University of Minnesota Twin Cities, Minneapolis, MN; et al.	4:30 p.m. AIAA-2026-1821 Semiclassical Model of Nonadiabatic Energy Transfer in Atom-Molecule Collisions I. Adamovich, The Ohio State University, Columbus, OH; B. Galvão, Centro Federal de Educação Tecnológica de Minas Gerais, Belo Horizonte, Brazil; T. Aiken, Center for National Security Initiatives, Boulder, CO	4:50 p.m. AIAA-2026-1822 Influence of Radiative Heat Transfer on Magnetohydrodynamic Flow Control in Mars Entry K. Tabuchi, T. Fujino, University of Tsukuba, Tsukuba, Japan	

Wednesday, 14 January 2026		
PGC-13	PGC Thermal Management II	Florida Ballroom C

Chaired by: T. TEASLEY, NASA Marshall Space Flight Center and C. STEVENS, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-1823 Tabletop Material Testbed for Rotating Detonation Engine Components P. Hsu, C. Crabtree, Z. Rohde, S. Roy, Spectral Energies, Beavercreek, OH; O. Bibik, W. Sun, Georgia Institute of Technology, Atlanta, GA	3:50 p.m. AIAA-2026-1824 Spatio-Temporally Resolved Experimental Characterization of Rotating Detonation Rocket Engine Heat Transfer D. Johnson, V. Athmanathan, P. Salek, T. Meyer, Purdue University, West Lafayette, IN; C. Fugger, Spectral Energies, Dayton, OH	4:10 p.m. AIAA-2026-1825 Numerical Boundary Layer and Heat Flux Characterization in the THOR and NPS RDEs J. Grunenwald, J. Braun, NC State University, Raleigh, NC; C. Brophy, Naval Postgraduate School, Monterey, CA; V. Athmanathan, T. Meyer, Purdue University System, West Lafayette, IN; A. Webb, Spectral Energies, Beavercreek, OH; et al.	4:30 p.m. AIAA-2026-1826 Advances in Steady-State Operation of an Air-Cooled Rotating Detonation Engine A. Ruan, S. Grasa, E. Bach, R. Gejji, C. Slabaugh, G. Paniagua, Purdue University, West Lafayette, IN	4:50 p.m. AIAA-2026-1829 Symmetric, Square, Lattice Pattern Injector Design and Experimental Flow Characterization Within a Detonation Engine V. Joseph, J. Kasahara, K. Matsuoka, N. Itouyama, M. Yasui, Y. Ide, Nagoya Daigaku, Nagoya, Japan; et al.	
Wednesday, 14 January 2026					
SCS-12	Solar Sails, Solar Shields, and Other Membrane Structures				Bayhill 24
Chaired by: T. MURPHEY, Opterus Research and Development, Inc. and E. GDOUTOS, Proteus Space					
3:30 p.m. AIAA-2026-1830 Thermally Stable Method of Attaching Precision Thin Films to Deployable Structures Using High Strain Kirigami Borders G. Popov, S. Pellegrino, California Institute of Technology, Pasadena, CA	3:50 p.m. AIAA-2026-1831 Lightweight Deployable Millimeter-Wave MetaLens: Structural Analysis and Precision Fabrication S. Huang, N. Jones, K. Pound, M. Zhou, K. Murillo, Stanford University, Stanford, CA; D. Hoppe, Jet Propulsion Laboratory, Pasadena, CA; et al.	4:10 p.m. AIAA-2026-1832 Fabrication and Evaluation of Two-Layer Woven Textile Deployable Reflect-Array Antenna Structure H. Sakamoto, T. Tomura, T. Komaba, Tokyo Kagaku Daigaku Kogakuin, Meguro, Japan	4:30 p.m. AIAA-2026-1833 A Photonic Sail of Utmost Simplicitiy: The Ribbon G. Greschik, TentGuild Eng Co, Boulder, CO	4:50 p.m. AIAA-2026-1834 Low-Power Solar Sail Control Using In-Plane Forces From Tunable Buckling of Kirigami Films G. Aldan, I. Bargatin, University of Pennsylvania, Philadelphia, PA	
Wednesday, 14 January 2026					
SD-18	Special Session: Results of the IAWTM High-Aspect-Ratio Aeroservoelastic Wind Tunnel Tests II				Bayhill 22
Chaired by: J. QUINDLEN, Boeing Research and Technology and P. HEANEY, NASA Langley Research Center					
3:30 p.m. AIAA-2026-1835 A Model of Turbulence in the Langley Transonic Dynamics Tunnel for Aeroservoelastic Analysis J. Ouellette, NASA Langley Research Center, Hampton, VA	3:50 p.m. AIAA-2026-1836 Design and Testing of Drag Minimization and Maneuver Load Alleviation Control Laws for the IAWTM Wind Tunnel Test	4:10 p.m. AIAA-2026-1837 Design and Testing of Gust Load Alleviation Control Laws for the IAWTM Wind Tunnel Test J. Quindlen, The Boeing Company, Huntington Beach, CA; C. Forte, N.	4:30 p.m. AIAA-2026-1838 Design and Evaluation of Active Flutter Suppression Control Laws for the IAWTM Wind Tunnel Test J. Grauer, J. Waite, B. Stanford, T. Ivanco, NASA Langley Research Center,	4:50 p.m. AIAA-2026-1839 Design and Experimental Validation of Multi-Objective Gust Load Alleviation Optimal Control for a High Aspect Ratio Flexible Transport Wing	5:10 p.m. AIAA-2026-1840 Design and Experimental Validation of Hamiltonian Control for Gust Load Alleviation and Flutter Suppression of a High Aspect Ratio Flexible Transport Wing

	C. Forte, KBR Wyle Services LLC, Huntsville, AL; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Quindlen, The Boeing Company, Huntington Beach, CA; H. Hussain, The Boeing Company, Charlotte, NC	Nguyen, NASA Ames Research Center, Moffett Field, CA; T. Ivanco, NASA Langley Research Center, Hampton, VA; H. Hussain, The Boeing Company, Charlotte, NC	Hampton, VA; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; C. Forte, KBR Wyle, Inc., Moffett Field, CA; et al.	C. Forte, KBR Wyle Services LLC, Huntsville, AL; N. Nguyen, NASA Ames Research Center, Moffett Field, CA	C. Forte, KBR Wyle Services LLC, Huntsville, AL; N. Nguyen, NASA Ames Research Center, Moffett Field, CA
Wednesday, 14 January 2026					
SD-19	Vibration Energy Losses, Damping, and Vibration Control				Bayhill 18
Chaired by: J. SILLS, NASA and S. LIGUORE, Boeing Research & Technology					
3:30 p.m. AIAA-2026-1842 Impacts of Bolt Preload Variation on the Vibrational Properties of Bolted-Joint Beams T. Elkabani, A. Tiede, A. Abdelkefi, New Mexico State University College of Engineering, Las Cruces, NM	3:50 p.m. AIAA-2026-1843 Transient Coupling and Damping Loss Factors for Nonlinear Mass-Spring System J. Lopez, R. Kaiser, Z. Sotoudeh, California State Polytechnic University Pomona, Pomona, CA	4:10 p.m. AIAA-2026-1844 Comparative Dynamical Study and Repeatability of Metallic Plates Using Additive and Subtractive Manufacturing Techniques N. Hall, D. Binns, M. Fountain, A. Abdelkefi, New Mexico State University College of Engineering, Las Cruces, NM	4:30 p.m. AIAA-2026-1845 Model-Free Adaptive Output Feedback Vibration Suppression in a Cantilever Beam J. Paredes Salazar, A. Goel, University of Maryland Baltimore County, Baltimore, MD	4:50 p.m. AIAA-2026-1846 Low-Order H2/H-infinity Controller Design for Aeroelastic Vibration Suppression M. Mirtaba, J. Paredes Salazar, University of Maryland Baltimore County, Baltimore, MD; D. Huang, The Pennsylvania State University, University Park, PA; A. Goel, University of Maryland Baltimore County, Baltimore, MD	
Wednesday, 14 January 2026					
SFM-22	Cislunar Astrodynamics III				Plaza Ballroom I
Chaired by: D. CANALES GARCIA, Embry-Riddle Aeronautical University					
3:30 p.m. AIAA-2026-1849 Stability Analysis of Error Dynamics in Virtual Target-Based Transfer Trajectories Wthin the Cislunar Environment P. Shukla, D. Ghose, Indian Institute of Science, Bengaluru, India	3:50 p.m. AIAA-2026-1850 Docking of a Spacecraft on a Tumbling Satellite Moving on Halo Orbits Using Lyapunov Vector Field Based Guidance Law I. Bhat, D. Ghose, Indian Institute of Science, Bengaluru, India	4:10 p.m. AIAA-2026-1851 Analysis of Non-Gaussian Uncertainty Evolution in the Cislunar Domain J. Zastrow, University at Buffalo School of Engineering and Applied Sciences, Buffalo, NY; A. Glenn, P. Singla, The Pennsylvania State University, University Park, PA; C. Nebelecky, University at Buffalo School of Engineering and Applied Sciences, Buffalo, NY	4:30 p.m. AIAA-2026-1852 Ballistic Lunar Transfers to Earth-Moon L4 Quasi-Periodic Tori for Cislunar Space Weather Studies F. Criscola, S. Jo, Embry-Riddle Aeronautical University, Daytona Beach, FL; A. Farres, University of Maryland Baltimore County, Baltimore, MD; D. Canales, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:50 p.m. AIAA-2026-1853 Design Strategies for Short-Term Ballistic Loitering Near Multi-Body Orbits L. Nugent, K. Howell, Purdue University, West Lafayette, IN; S. Scheuerle, D. Davis, NASA Johnson Space Center, Houston, TX	
Wednesday, 14 January 2026					

SR-02	Solid Rocket Manufacturing and Inspections Methods				Celebration 11
Chaired by: B. LAKOTA, Johns Hopkins University Applied Physics Laboratory and S. CARLOTTI, Politecnico di Milano					
3:30 p.m. AIAA-2026-1854 Reducing Material Discontinuities in Additively Manufactured Potassium Nitrate and Sucrose Propellant Grains E. Stockman, D. Gavin, T. Elliott, University of Tennessee at Chattanooga, Chattanooga, TN	3:50 p.m. AIAA-2026-1855 UV-Cured Composite Solid Propellants: Characterization of Binder and of 3D-Printer Samples A. Lucarno, S. Carlotti, F. Maggi, Politecnico di Milano, Milan, Italy	4:10 p.m. "Designing Elastic Liquids From Their Molecular Architecture" presented by Prof. Alan Jeffrey Giacomin			

Wednesday, 14 January 2026					
STR-22	Composite Structural Analysis, Design, Testing, and Manufacturing IV				Bayhill 19
Chaired by: W. ZHAO, Oklahoma State University and A. SELVARATHINAM, Lockheed Martin Aeronautics					
3:30 p.m. AIAA-2026-1856 Behaviour of Adhesively Bonded Composite Stiffeners: A Blind Prediction Exercise M. Miranda, R. Li, S. Pinho, Imperial College London, London, United Kingdom	3:50 p.m. AIAA-2026-1857 Layerwise Decohesion Model: A Computationally Efficient Delamination Model for T-Shaped Composite Structures Under Pull and Side-Bend Loading S. Hari, P. Kumar, A. Srinivasa, J. Reddy, Texas A&M University, College Station, TX	4:10 p.m. AIAA-2026-1858 Experimental Testing of a 30-Meter Triangular, Rollable, and Collapsible Composite Deployable Boom C. Kosztowny, M. Mennu, G. Dean, NASA Langley Research Center, Hampton, VA; R. Larson, Analytical Mechanics Associates Inc, Hampton, VA	4:30 p.m. AIAA-2026-1859 Numerical Structural Stiffness Prediction of Thermoviscoelastic CFRP Bistable Boom Y. Sunaga, T. Yokozeki, Tokyo Daigaku Daigakuin Kogakukei Kenkyuka Kogakubu, Bunkyo, Japan; S. Kajihara, Meiji Daigaku Rikogakubu Daigakuin Rikogaku Kenkyuka, Kawasaki, Japan; A. Watanabe, Sakase Adtech Co., Ltd., Sakai, Japan		

Wednesday, 14 January 2026		
TP-11	Thermophysics Award Lecture	Orlando Ballroom N
Chaired by: K. WEED, BAE Systems, Inc.		
The 2025 Thermophysics award winner, Deborah A Levin, will present a lecture.		

Wednesday, 14 January 2026		
UAS-10	The Anatomy of Autonomy	Florida Ballroom A
Chaired by: A. LACHER, NASA Langley Research Center		
Based on book of same title scheduled for publication by AIAA in September 2025, the Anatomy of Autonomy panel session will focus on the author's perspectives on autonomous capabilities and technologies in aerospace systems, with emphasis on their evolution, current practice, and potential future prospects.		

Introduction (moderator) – Scope and focus of the panel discussion Summary of the book, followed by panel comments Tools & Methods – … from physics to AI, followed by panel discussion Emerging Capabilities & their Value Proposition – A summary, followed by panel discussion Aviation – including AAM, UAS, and Air Traffic Management Space Enterprise – drivers and constraints Challenges & Potential Solutions – (all followed by panel discussion) Regulatory issues/culture & timelines Financial/investment constraints Risk issues – development & fielding Safety expectations

Wednesday, 14 January 2026

UAS-11	Uncrewed and Autonomous Systems Student Paper Session				Orlando Ballroom M
Chaired by: I. CLARK, NASA Langley Research Center					
3:30 p.m. AIAA-2026-1860 Lunar Tunnel Boring Machine (LTBM) - Lunar Habitation Excavation T. Rockey, C. Virnoche, V. Prendergast, J. Curran, C. Chillemi, J. Bae, Rochester Institute of Technology, Rochester, NY	3:50 p.m. AIAA-2026-1861 A Clustering-Based Approach for Cooperative Tasks Scheduling of Heterogenous Multi-Agent J. Lee, J. Ahn, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	4:10 p.m. AIAA-2026-1862 Development of an Autonomous Uncrewed Aerial System - Dragonfly - with Payload delivery, Image detection and Mapping capabilites, for the 2025 SUAS Competition A. Ibrahim, J. Crespo Cuellar, A. Singh Chana, C. Schaefer, A. Bah, M. Brady, Saint Louis University, St. Louis, MO; et al.	4:30 p.m. AIAA-2026-1863 Sundancer: A Solar UAV Platform for Emergency Communications S. Griggs, Atlanta City School District, Atlanta, GA	4:50 p.m. AIAA-2026-1864 Fourier Series Quadratic Bézier Approximation for Gradient Vector Field Trajectory Following T. Moleski, J. Wilhelm, Ohio University, Athens, OH	

Wednesday, 14 January 2026

VSTOL-01/ACD-12/EAT-10/SL-01	Design, Analysis, and CONOPS of Advanced Air Mobility Vehicles				Orlando Ballroom L
Chaired by: J. CAI, Worcester Polytechnic Institute and R. MANGE, Lockheed Martin Corporation					
3:30 p.m. AIAA-2026-1865 Preliminary Design and Testing of a Reconnaissance Emergency Aircraft for Critical Hurricane Relief T. Hullette, D. Carter, F. Ewere, NC State University, Raleigh, NC	3:50 p.m. AIAA-2026-1866 Development, Flight Testing and Parameter Estimation of a Morphing, Hybrid/VTOL UAS M. Ghanchi, S. Gururajan, Saint Louis University, St. Louis, MO	4:10 p.m. AIAA-2026-1867 An Integrated Conceptual-Design Framework for Multicopter Urban Air Mobility Vehicles D. Faraz, B. Mufti, Z. Toor, A. Javed, National University of Sciences and Technology, Islamabad, Pakistan	4:30 p.m. AIAA-2026-1869 Faireness-Informed Design of Urban Air Mobility Network: A Case Study of Dallas-Fort Worth Metropolitan Area J. Yu, University of Texas at Arlington Research Institute, Arlington, TX		

Wednesday, 14 January 2026

AIAA-10 5:00 - 6:30 p.m.	Corporate Member Reception (Invite Only)	Regency Ballroom
Invite Only event for AIAA Corporate Members and invited guests.		

Wednesday, 14 January 2026

AIAA-11 6:00 - 10:00 p.m.	2026 AIAA Associate Fellows Induction Ceremony and Dinner	Regency Ballroom O-P

Join us as we celebrate our newly elected Class of 2026 Associate Fellows. (additional ticket required) The grade of Associate Fellow recognizes individuals "who have accomplished or been in charge of important engineering or scientific work, or who have done original work of outstanding merit, or who have otherwise made outstanding contributions to the arts, sciences, or technology of aeronautics or astronautics." To be selected as an Associate Fellow an individual must be an AIAA Senior Member in good standing, with at least 12 years of professional experience, and be recommended by three AIAA members.

Wednesday, 14 January 2026

AS-14/INPSI-14/ACD-26	Clean Aviation Program Highlights and Achievements	Florida Ballroom B

Chaired by: H. MONNER, DLR - German Aerospace Center and D. MAVRIS

Keynote Speaker: **Axel Krein**, Executive Director, Clean Aviation Joint Undertaking The Clean Aviation Programme is the European Union's largest and most advanced research and innovation initiative, transforming the future of aviation. This session will provide a key update on the program, its evolving portfolio of disruptive technologies for future aircraft, and outline upcoming research funding opportunities.

Wednesday, 14 January 2026

TP-20	Aerothermodynamics II	Bayhill 32

Chaired by: A. MARTIN, University of Kentucky and A. NAGLE, BAE Systems, Inc.

9:30 a.m. AIAA-2026-2803 Assessment of QCT–Master Equation Informed Chemical Kinetic Parameters for the O_2 +N interaction in a Two-Temperature Mode L. Rodriguez, R. Macdonald, T. Aiken, I. Boyd, University of Colorado Boulder, Boulder, CO	9:50 a.m. AIAA-2026-2936 Finite-Rate Surface Chemistry Modeling for High-Temperature Gas-Surface Interactions in CFD++ B. Lopez, Metacomp Technologies Inc, Westlake Village, CA	10:10 a.m. AIAA-2026-2938 Analysis of Error and Cost in Coupling Approaches for Hypersonic Trajectory Simulations R. Takagi, C. Thomas, A. Knutson, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	10:30 a.m. AIAA-2026-2940 Improving Heat Flux Predictions in Multi-Wall Hypersonic Flows Using a Low Dissipation Sensor K. Rhoads, A. Barrios-Lobelle, A. Martin, University of Kentucky, Lexington, KY	10:50 a.m. AIAA-2026-2937 High-Order Adaptive Flow-Material Coupled Simulation of Uranus Orbiter and Probe Entry B. Dias, Oak Ridge Associated Universities at NASA Ames Research Center, Moffett Field, CA; L. François, DMPE, ONERA, Université Paris-Saclay, Palaiseau, France; M. Massot, A. Simon, CMAP, École Polytechnique, Palaiseau, France	11:10 a.m. AIAA-2026-2939 K-ADEPT: Modeling the Hypersonic Reentry of an Innovative Thermal Protection System E. Susic, R. Davuluri, R. Fu, E. Adams, B. Joseph, A. Long, University of Kentucky, Lexington, KY; et al.

Thursday

Thursday, 15 January 2026

HUB-25 10:00 - 10:30 a.m.	How AI and accelerated computing are reshaping aerospace engineering workflows	the HUB in the Expo Hall

The aerospace industry faces increasing pressure to reduce time-to-market while managing growing design complexity. This roundtable brings together technology leaders from NVIDIA, Neural Concept, and Leonardo Helicopters to discuss how the convergence of Geometric Deep Learning and accelerated computing is fundamentally reshaping engineering workflows. We will explore the shift from traditional design-simulation-iteration cycles to near-real-time optimization workflows, examining how AI-driven surrogate models are empowering engineers to explore vast design spaces with rapid feedback. The discussion will offer a strategic, forward-looking perspective on the future of aerodynamic design and the practical implementation of AI in industrial aerospace environments. Speakers: Dr.

Thanos Margaritis – Commercial Director, Neural Concept Dr. Neil Ashton – Distinguished Engineer and Product Architect, NVIDIA Nicolò Vallana – Rotorcraft Technologies Specialist, Leonardo Helicopters

Thursday, 15 January 2026

HUB-26 12:30 - 1:00 p.m.	Speed Without Compromise: Winning with Rapid OTA Acquisition	the HUB in the Expo Hall

This session cuts through the red tape and gets straight to results. We'll break down how Other Transaction Authority (OTA) enables government and industry to move from requirement to award in weeks—not years—while still managing risk, protecting IP, and delivering mission-ready capability. Attendees will learn when OTA is the right tool, how to structure a rapid acquisition pathway, common pitfalls that slow teams down, and practical strategies to transition successful prototypes into production. Bottom line: faster awards, smarter partnerships, and real outcomes—because the mission can't wait. Speaker: Harry Aderton, Chief Growth Officer, Black Rock Engineering & Technology

Thursday, 15 January 2026

HUB-27 1:00 - 1:30 p.m.	True Mobility's Paul Brinkman interview with Electra Aero	the HUB in the Expo Hall

Virginia company Electra has been proving how distributed electric propulsion and blown lift enable flight of "ultra short" takeoff and landing aircraft. Two of their leading engineers, JP Stewart and Chris Courtin, will talk about the Part 23 certification path the company is pursuing and what it's like to be a key part of developing a novel aircraft Interviewer: Paul Brinkman, AIAA JP Stewart and Chris Courtin, Electra Aero

Thursday, 15 January 2026

EAT-20/INPSI-15/ACD-24	Clean Aviation Special Session: Next-Generation Propulsion Technologies and Advanced Architectures	Orlando Ballroom M

Chaired by: K. ACHESON, The Boeing Company and T. MUELLER, Liebherr-Aerospace

This industry session will explore breakthrough technologies in propulsion, power, and thermal management that will enable next-generation aircraft. Technical presentations will provide updates and results across three key areas: ultra-efficient propulsion, hydrogen propulsion, and hybrid-electric propulsion systems. **Highlighted propulsion systems include**: Safran Open Fan and CFM RISE, Rolls-Royce UltraFan, hybrid-electric geared turbofan technologies from MTU, Collins Aerospace, and Pratt & Whitney, hybrid-electric propulsion systems for regional aircraft from Avio Aero/GE Aerospace and Rolls-Royce, hydrogen combustion technologies from Rolls-Royce, hydrogen propulsion systems from GE Avio Aero and Safran, and fuel cell propulsion systems from Honeywell and MTU Aero Engines. **Highlighted power/thermal systems integration technologies include**: High-power, high-voltage electrical systems and distribution for hybrid-electric aircraft, thermal management, and systems integration. Presentations: **1. Presentation – Rolls-Royce Gary Way**, Head of EU and International R&T Programmes, Rolls-Royce **2. Presentation – Safran Thierry Rouge-Carrassat**, Vice President, Research & Technology Programs and Technology Strategy, Safran **3. Presentation – GE Avio Aero Andrea Milli**, Avio Aero and GE Aerospace Senior Technical Programme Manager for Clean Aviation, GE Aerospace **4. Presentation – MTU Aero Engines Fabian Donus**, Director Technology Management, MTU Aero Engines **5. Presentation – Collins Aerospace Ignacio Castro Alvarez**, Senior Principal Engineer, Collins Aerospace **6. Presentation – Honeywell Jan Ludvik**, Director Engineering for Advanced Technology Europe, Honeywell

Thursday, 15 January 2026

AIAA-99 6:30 - 7:15 a.m.	Aerospace Fun Run	Hotel Lobby

6:15 AM - Meet in Hotel Lobby Need to get your fitness in while you're in town for SciTech? Craving an opportunity to get to know some of your fellow attendees outside of the walls of the conference? Join us for an Aerospace Fun Run! This run will be hosted by an AIAA Staff Member and is open to all ability levels. This run will be less than 3 miles long and should take no more than one hour. Meet in the lobby at 6:15 AM by the hotel check in desk to sign a waiver and join in the fun!

Thursday, 15 January 2026

SP-04 7:30 - 8:00 a.m.	Technical Paper Session Prep	Session Rooms
Authors presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute prep on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s).		
Thursday, 15 January 2026		
PLN-04 8:00 - 9:00 a.m.	Plenary	Windermere Ballroom
Collaborative Combat Aircraft: Jason Levin - Anduril		
Thursday, 15 January 2026		
HUB-16 9:00 - 9:30 a.m.	Making Big Bets on Hypersonic Defense	the HUB in the Expo Hall
Come to the AIAA Hub to learn directly from Lockheed Martin's hypersonic experts on how we're investing in the integrated hypersonic ecosystem. Lockheed Martin's lead for future hypersonic investments will discuss recent technology developments, novel approaches, and transitioned capabilities in hypersonic defense. Speakers: Chris Reynolds , Technical Assistant to VP & Chief Technology Officer, Lockheed Martin Guy Chriqui, Hypersonic Solutions Tech Domain Program Manager, Lockheed Martin		
Thursday, 15 January 2026		
NW-07 9:00 - 9:30 a.m.	Networking Coffee Break	Regency Ballroom
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.		
Thursday, 15 January 2026		
AA-07	Computational Aeroacoustics	Bayhill 30
Chaired by: S. UNNIKRISHNAN		

9:30 a.m. AIAA-2026-1870 Comparison of Tip Vortex Noise for Squared and Rounded Tips A. Freed, J. Won, S. Lee, University of California Davis, Davis, CA	9:50 a.m. AIAA-2026-1871 JAIC: Cavity Acoustic-Intelligent Analysis B. Jolly, W. Aziz, E. Pavuk, US Department of the Air Force, Eglin AFB, FL	10:10 a.m. AIAA-2026-1872 Evaluation of Quadrupole Correction Techniques in Spectral FW-H Analogy for Complex Flow Configurations D. Casalino, Dassault Systemes Deutschland GmbH, Stuttgart, Germany; N. Pisharoti, Dassault Systemes Americas Corp, Waltham, MA	10:30 a.m. AIAA-2026-1873 Toward Resolvent-Based Estimation and Control of Wavepackets in Supersonic Turbulent Jets Y. Zhou, A. Towne, University of Michigan, Ann Arbor, MI; J. Jung, Argonne National Laboratory, Lemont, IL; R. Bhagwat, Florida State University, Tallahassee, FL; E. Martini, P. Jordan, Universite de Poitiers, Poitiers, France; et al.		

Thursday, 15 January 2026		
AA-08	General Acoustics / Duct Acoustics / Advanced Testing Techniques	Celebration 14

Chaired by: J. MENDOZA, RTX and D. NANCE, Harris Miller Miller & Hanson Inc.					
9:30 a.m. AIAA-2026-1874 Wind Noise Mitigation of Infrasound Sensor Payloads on High Altitude Balloons K. Spillman, J. Jacob, B. Elbing, Oklahoma State University, Stillwater, OK	9:50 a.m. AIAA-2026-1875 Experimental Study of Wall-Induced Cavitation and Acoustic Softening Leading to Choking in Aerospace Fluids S. Khan, Y. Vohra, S. Rana, Amity Institute of Aerospace Engineering, Noida, India; V. Sanal Kumar, Amity University Noida, Noida, India	10:10 a.m. AIAA-2026-1876 Verification Framework for Acoustic Mode Predictions in Ducted Swirling Flows J. Severino, NASA Glenn Research Center, Cleveland, OH			
Thursday, 15 January 2026					
ACD-16/UAS-12	Design of Uninhabited Aerial Vehicles I				Rock Spring I & II
Chaired by: J. MERRET, University of Illinois at Urbana-Champaign					
9:30 a.m. AIAA-2026-1877 Rapid Fabrication and Testing of a Conceptually-Designed Bespoke VTOL sUAS L. Taylor-Storm, T. Jones, A. Haefner, J. Cole, The Pennsylvania State University Applied Research Laboratory, State College, PA	9:50 a.m. AIAA-2026-1878 Design, Analysis, and Testing of a Modular Tiltrotor eVTOL Vehicle With Distributed Electric Propulsion G. Saunders, G. Sumagaysay, S. Patel, A. Iribe, D. Francis, G. Salib, California State Polytechnic University Pomona, Pomona, CA; et al.	10:10 a.m. AIAA-2026-1879 Design, Manufacturing, and Flight Test of a Capstan Driven Variable Span Morphing Wing sUAS A. Haefner, T. Jones, L. Taylor-Storm, The Pennsylvania State University Applied Research Laboratory, State College, PA; H. Pangborn, The Pennsylvania State University College of Engineering, University Park, PA; J. Cole, The Pennsylvania State University Applied Research Laboratory, State College, PA	10:30 a.m. AIAA-2026-1880 Flight Testing of a Lifting-Wing Quadcopter UAV: First Results A. Daud Filho, Universidade de São Paulo Escola Politécnica, Universidade de Sao Paulo Escola Politecnica, São Paulo, SP, BR, academic/eng, São Paulo, Brazil; G. Caurin, Universidade de Sao Paulo Escola de Engenharia de Sao Carlos, São Carlos, Brazil; E. Silva, J. Silva, Universidade de São Paulo Escola Politécnica, Universidade de Sao Paulo Escola Politecnica, São Paulo, SP, BR, academic/eng, São Paulo, Brazil	10:50 a.m. AIAA-2026-1881 Design and Construction of a Modular 3D-Printed Tandem Tilt-Wing Testbed L. Ott, M. May, D. Milz, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Weßling, Germany	
Thursday, 15 January 2026					
AFM-12	Handling Qualities and Flying Qualities				Bayhill 33
Chaired by: J. GRAUER, NASA Langley Research Center and C. SCHULZE, Systems Technology, Inc.					
9:30 a.m. AIAA-2026-1882 Some Common Discrepancies, Misnomers,	9:50 a.m. AIAA-2026-1883 Flying Qualities Considerations for	10:10 a.m. AIAA-2026-1884	10:30 a.m. AIAA-2026-1885 Validation of Scaled Automation Qualities	10:50 a.m. AIAA-2026-1886 An Evaluation of Fault-Tolerant Control	11:10 a.m. AIAA-2026-2808

and Misunderstandings in Aircraft Stability and Control J. Grauer, E. Morelli, NASA Langley Research Center, Hampton, VA	Relaxed Static Stability Next-Generation Civilian Aircraft S. Potvin, P. Grant, University of Toronto Faculty of Applied Science & Engineering, Toronto, Canada	How Airframe Scale Affects Flight Dynamic Modes C. Kelly, I. Faruque, Oklahoma State University, Stillwater, OK	Framework for Group 1 to Group 3 Vertical Lift UAS C. Ivler, University of Portland, Portland, OR; E. Vo, C. Schulze, M. Jones, Systems Technology Inc, Hawthorne, CA	Allocation Strategies for eVTOL Aircraft G. Asper, P. Corrigan, B. Simmons, C. Woolsey, Virginia Polytechnic Institute and State University, Blacksburg, VA	Electric Aircraft Handling Qualities: Why Battery Positioning Matters A. Molloy, S. Shekar, M. Guidotti, M. Clarke, University of Illinois Urbana-Champaign, Urbana, IL

Thursday, 15 January 2026

AMT-25	Particle and Solid Fuel Diagnostics				Blue Spring II
Chaired by: J. MICHAEL, Auburn University and K. ZHU, Princetel					
9:30 a.m. AIAA-2026-1887 Simultaneous Emission and Laser Absorption Spectroscopy Measurements in Post-Detonation Fireballs of Aluminized PETN Hemispheres R. Travis, C. Schwartz, C. Nunes, R. Ramirez, J. Vera, D. Guildenbecher, Purdue University, West Lafayette, IN; et al.	9:50 a.m. AIAA-2026-1888 Testing of a Solid Particle Seeder for CMAS Infiltration Experiments E. Yoerg, Embry-Riddle Aeronautical University, Daytona Beach, FL; C. Guijosa-Garcia, R. Naraparaju, Institute for Frontier Materials on Earth and in Space, German Aerospace Center (DLR), Cologne, Germany; S. Singh, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:10 a.m. AIAA-2026-1889 Soot Characterization in a Solid Fuel Opposed Flow Burner Using Laser-Induced Incandescence R. Onifade, S. Bidwai, M. Welch, J. Michael, Auburn University, Auburn, AL	10:30 a.m. AIAA-2026-1890 Absorption Thermometry and Surface Dynamics of POM and PMMA in a Crossflow Burner M. Welch, S. Bidwai, J. Michael, Auburn University Samuel Ginn College of Engineering, Auburn, AL		

Thursday, 15 January 2026

AMT-27	Velocimetry and Flow Characterization III				Barrel Spring II
Chaired by: C. COMBS, The University of Texas at San Antonio and M. MAYO, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-1891 High-Speed Imaging of Atomic Oxygen Emission in the HyMETS Arcjet Tunnel K. Samuels, The University of Tennessee Knoxville Tickle College of Engineering, Knoxville, TN; T. Schwartz, Stanford University School of Engineering, Stanford, CA; S. Splinter, P. Danehy, N. Rodrigues, NASA Langley Research Center, Hampton, VA	9:50 a.m. AIAA-2026-1892 Prandtl-D Flying-Wing Wind Tunnel Aerodynamic Characterization and Surface Flow Survey Y. Tobita, San Diego State University, San Diego, CA; P. Hammer, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; C. Hiemcke, General Atomics Aeronautical Systems Inc, Poway, CA; X. Liu, San Diego State University, San Diego, CA	10:10 a.m. AIAA-2026-1893 Flow Field Characterization of Impinged Shock Waves via Laser Absorption Spectroscopy and High-Speed Schlieren Imaging L. Vest, L. Pitts, T. Ruiz, I. Kaltenbaugh, M. Lindsay, S. Vasu, University of Central Florida, Orlando, FL	10:30 a.m. AIAA-2026-1894 Using Infrared Imaging to Quantify Flow Dynamics of a Cold, Non-reactive CO2 Jet in Crossflow L. Senkar, D. Cuppoletti, University of Cincinnati, Cincinnati, OH	10:50 a.m. AIAA-2026-1895 Hydroxyl Radical Distributions in Shear Coaxial Methane-Oxygen Combustion via Rotational Laser Absorption Tomography A. Quiroz, P. Barnouin, E. Fee, A. Olaee, R. Spearrin, University of California Los Angeles, Los Angeles, CA	11:10 a.m. AIAA-2026-1896 Velocity, Temperature, and Speciation Measurements of CO Behind Hypersonic Shock Waves Up to Mach 8 J. McGaunn, T. Ruiz, J. Sanchez, L. Vest, G. Duany Izaguirre, F. Arafin, University of Central Florida, Orlando, FL; et al.

Thursday, 15 January 2026					
APA-57/ACD-15/MDO-18	Aerodynamic Design: Analysis, Methodologies, and Optimization Techniques II				Manatee Spring II
Chaired by: K. LAFLIN, Textron Aviation and D. BRYSON, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-1897 Surface-Inclination Methods for Aerodynamic Analysis of Launch and Re-entry Vehicles in Hypersonic Flow S. Shahjahan, D. Enriquez, Altair Engineering Inc, Troy, MI	9:50 a.m. AIAA-2026-1898 3D Iterative Parametric Optimization Study of a FSAE Aerodynamic Package Using Computational Fluid Dynamics E. Hogea, R. Hogea, R. Agarwal, Washington University in St Louis, St. Louis, MO	10:10 a.m. AIAA-2026-1899 Development of an Aero-Structural Aircraft Fuselage Optimization Methodology Considering Internal Layout S. Jeong, J. Kim, K. Yee, Seoul National University, Gwanak-gu, South Korea	10:30 a.m. AIAA-2026-1900 Multi-Objective Aerodynamic Optimization of Proprotors in the Moderate Reynolds Number Regime C. Joseph, C. Natividad, C. Badrya, University of California Davis, Davis, CA	10:50 a.m. AIAA-2026-1901 CFD-Based Shape Optimization of a Bladeless Drone Thruster Using Gaussian Process Surrogate Modeling With Experimental Validation A. Turgut, J. Bloom, V. Dhiman, A. Aboelezz, University of Maine System, Bangor, ME	

Thursday, 15 January 2026					
APA-58/FD-65	Flow Control: Methods and Applications IX				Manatee Spring I
Chaired by: J. VASILE, U. S. Army Research Laboratory (APG)					
9:30 a.m. AIAA-2026-1902 High Efficiency Co-Flow Jet Wingsail Airfoil for Sustainable Maritime Transportation P. Engström, Chalmers tekniska hogskola AB, Gothenburg, Sweden; L. Friess, K. Xu, University of Maine System, Bangor, ME; R. Bensow, Chalmers tekniska hogskola AB, Gothenburg, Sweden	9:50 a.m. AIAA-2026-1903 Leading-Edge Pressure Response to Partial-Span Coandă Actuation X. Yan, M. McCrink, J. Bons, The Ohio State University, Columbus, OH	10:10 a.m. AIAA-2026-1904 Numerical investigation of a Coandă Based Fluidic Vectoring System for Compressor Air Tip Injection M. Berton, J. Marty, ONERA Mecanique des fluides et energetique, Meudon, France; J. Delva, ONERA Mecanique des fluides et energetique, Lille, France; P. Joseph, A. Dazin, Ecole Nationale Superieure d'Arts et Metiers, Lille, France	10:30 a.m. AIAA-2026-1905 Mass-Flow Reduction Strategies of Co-Flow Jets on Finite Wings P. Morgan, Ohio Aerospace Institute, Dayton, OH; D. Garmann, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH		

Thursday, 15 January 2026					
APS-05	Space Power Systems: Power Management, Distribution and Transmission				Celebration 11
Chaired by: L. RODRIGUEZ, NASA Glenn Research Center and G. THOMAS and E. BRANDON, NASA Jet Propulsion Laboratory					
9:30 a.m. AIAA-2026-1907 Design and Analysis of a Lunar Surface SMR With	9:50 a.m. AIAA-2026-1908 An Experimental Study of Losses in High Voltage AC Lunar Power Cables	10:10 a.m. AIAA-2026-1909 Molten Salt Corrosion in Heat Exchangers for Space Power Generation	10:30 a.m. AIAA-2026-0693 Simulation of the Multiphase Reaction Zone in a Li-SF_6 Combustion	10:50 a.m. AIAA-2026-0694 Development of a Solid-State High-Temperature Superconducting Rectifier	

Integrated ISRU for a 100 Person Lunar Habitat B. Efe, D. Basar, A. Kozluca, M. Toygar, Koc Universitesi, Istanbul, Turkey	J. Klopp, G. Thomas, J. Csank, NASA Glenn Research Center, Cleveland, OH	Z. Londono, A. Al-Ani, A. M. Prasad, A. Delavald Marques, G. Sarobar Mandal, M. Otto, University of Central Florida, Orlando, FL; et al.	System for Spacecraft Power and Heating V. Viswanathan, The Pennsylvania State University, University Park, PA; J. Cor, J. VanderVeer, The Pennsylvania State University Applied Research Laboratory, State College, PA; A. Rattner, The Pennsylvania State University, University Park, PA	with an Air-Core Mutual Inductor J. Mander, D. Thrimawithana, The University of Auckland, Auckland, New Zealand; K. Hamilton, B. Leuw, R. Badcock, OpenStar Technologies Limited, Wellington, New Zealand; L. Li, The University of Auckland, Auckland, New Zealand; et al.	

Thursday, 15 January 2026

DGE-13	Digital Airworthiness	Silver Spring I

Chaired by: J. CLAUSS

9:30 a.m. 4356881 Applying Assurance Case Technology for Automated Rapid Certification of Software M. Castillo-Effen, S. Traub, Lockheed Martin Corporation, Bethesda, MD	9:50 a.m. AIAA-2026-1914 Acceleration of Fielding Through Digitial Airworthiness Certification G. Simpson, G. Gebert, L. Seda, K. Lehnert, B. Jones, A. Ortiz, Lockheed Martin Corporation, Orlando, FL; et al.				

Thursday, 15 January 2026

DGE-15/SE-16/DE-17/GTE-27/EAT-15	Modernizing the Systems Engineer Review Process	Bayhill 25

Chaired by: S. JOHNSON, Northrop Grumman Mission Systems

The Defense Aerospace sector faces the challenge of modernizing its systems review processes to keep pace with rapid technological advancements and evolving mission requirements. This panel will explore the transformative power of integrating Continuous Integration, Continuous Development, and Continuous Review (CI/CD/CR) to achieve this modernization. By replacing traditional gated reviews such as Preliminary Design Review (PDR) and Critical Design Review (CDR) with a continuous and iterative evaluation framework, CI/CD/CR promotes agility, early issue detection, and real-time feedback. Attendees will gain insights into how automated testing, seamless integration of updates, and ongoing validation enhance collaboration and responsiveness. Experts will share case studies demonstrating successful implementations of CI/CD/CR, highlighting the improvements in efficiency, quality, and adaptability. The panel will also discuss the challenges of adopting these practices, including cultural shifts and the need for robust tooling and infrastructure. Join us to learn how CI/CD/CR is revolutionizing systems review processes in Defense Aerospace, paving the way for more resilient, agile, and mission-ready systems. **Panelists:** Dr. Robin Yeman, Leidos Dr. Steve Dam, SPEC Innovations Dr. Preston Frazier, Northrop Grumman

Thursday, 15 January 2026

EAT-13/PC-28/GA-01	Challenges and Opportunities in Battery Safety for the Aerospace Sector	Plaza Ballroom F

Chaired by: J. THOMAS, Southwest Research Institute

Electrified systems that rely on electrochemical energy storage, most notably lithium-ion batteries, are now pervasive across the aviation and aerospace sectors. They support traditional aircraft power systems, emerging electrified and hybrid aircraft, and are routinely present as cargo and passenger-carried items. While these technologies enable new capabilities, they also introduce a critical safety concern: the potential for catastrophic failure through battery thermal runaway, including energetic release, fire, and propagation. This technical panel will examine the unique challenges that battery thermal runaway presents for aerospace applications and explore opportunities for advancing safety across the full system lifecycle. Topics will include thermal runaway initiation and propagation, detection and mitigation strategies, and the evolving certification and regulatory trade space. Drawing on perspectives from academia, industry, consulting, and government, the panel aims to identify key knowledge gaps, practical engineering solutions, and pathways toward safer integration of battery systems in current and future aviation platforms.

Thursday, 15 January 2026

EP-10	Flight Missions and Concept Studies				Celebration 1
Chaired by: A. HOSKINS, Hoskins Space Consulting					
9:30 a.m. AIAA-2026-1915 *Performance of the Psyche Electric Propulsion System During the First Cruise Phase* J. Snyder, C. Garner, Jet Propulsion Laboratory, Pasadena, CA	9:50 a.m. AIAA-2026-1916 The Safety and Hazard Process Followed During the Design of a 50kW-Class Electric Propulsion Subsystem: PPE Z. Karajeh, I. Johnson, Maxar Space Systems, Palo Alto, CA; J. Brinkman, D. Herman, NASA Glenn Research Center, Cleveland, OH	10:10 a.m. AIAA-2026-1917 Mars Mission Applications Enabled by a High-Power Solar Electric Propulsion (SEP) Power and Propulsion Element (PPE) M. McGuire, S. Oleson, NASA Glenn Research Center, Cleveland, OH; D. Smith, HX5, Fort Walton Beach, FL; E. Turnbull, M. Havens, NASA Glenn Research Center, Cleveland, OH	10:30 a.m. AIAA-2026-1918 Mission Analysis for LifeSprings: Mars Sample Return from Columbia Hills R. Ito, University of Colorado Boulder, Boulder, CO; N. Ozaki, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan		

Thursday, 15 January 2026

EXPL-15	Mission Architecture II				Celebration 13
Chaired by: M. BENTON, Embry Riddle Aeronautical University and Z. HASNAIN, Texas A&M					
9:30 a.m. AIAA-2026-1919 Trajectory Optimization and Mission Design for Interplanetary Transfers to Mars and Ceres R. Bheemavarapu, K. Dhanunjaya Reddy, Chandigarh University, Sahibzada Ajit Singh Nagar, India; M. Biswal, R. Kumar, Acceleron Aerospace, Bangladore, India; L. George, J. Pappas, University of Colorado Colorado Springs, Colorado Springs, CO	9:50 a.m. AIAA-2026-1920 Interplanetary Colonization and Multi-Agent Systems: A Systematized Literature Review A. Neubert, B. Watson, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:10 a.m. AIAA-2026-1921 HARMONIA: A Hybrid Docking and Grappling System for Next-Generation In-Orbit Servicing and Active Debris Removal W. Kanjumba, N. Fitz-Coy, University of Florida, Gainesville, FL	10:30 a.m. AIAA-2026-1922 Surface Power Demand Modeling for Human Martian and Lunar Missions Y. Charoenboonvivat, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA		

Thursday, 15 January 2026

F360-11 9:30 - 10:30 a.m.	Ryan Tseng - Shield AI	Windermere Ballroom

Ryan Tseng, President, Co-Founder and Chief Strategy Officer of Shield AI, will discuss how his cutting-edge technologies are developed, and how they will enhance human capabilities in the field through human-machine teaming. “Without resilient autonomy, your mission is just a plan. In contested and degraded environments, platforms lose comms, manual control falters, and overwhelmed operators can't keep up. That's when autonomy is mission critical."

Thursday, 15 January 2026

FD-66/APA-59	Hypersonic Boundary Layer Transition I	Barrel Spring I

Chaired by: M. HAIGLER, AFRL and D. GARMANN, Air Force Research Laboratory

9:30 a.m. AIAA-2026-1923 A Simple Analytical Velocity Profile for a Turbulent High-Speed Boundary Layer Over a Flat Plate D. Shekhtman, Fairfield University School of Engineering & Computing, Fairfield, CT	9:50 a.m. AIAA-2026-1924 Boundary-Layer Transition Over a Smooth Circular Cone at Non-Zero Angle of Attack in a Mach 8 Digital Wind Tunnel M. Schuabb, L. Duan, The Ohio State University, Columbus, OH; A. Scholten, National Institute of Aerospace, Hampton, VA; P. Paredes, M. Choudhari, NASA Langley Research Center, Hampton, VA; D. Carter, Illinois Institute of Technology, Chicago, IL; et al.	10:10 a.m. AIAA-2026-1925 Time-stepping Global Stability Analysis Using Dynamic Mode Decomposition for Hypersonic Boundary Layer Y. Kuroda, Y. Nakamura, S. Sato, N. Ohnishi, Tohoku University, Sendai, Japan	10:30 a.m. AIAA-2026-1926 Real-Gas Direct Numerical Simulation of a Single-Species and Binary-Species Hypersonic Boundary Layer with Wall Heat Transfer A. Chamarthi, J. Bellan, California Institute of Technology, Pasadena, CA		

Thursday, 15 January 2026

FD-67	Instability and Transition IX	Coral Spring I

Chaired by: R. BHAGWAT, Florida State University

9:30 a.m. AIAA-2026-1927 Statistical Characterization of Transient Energy Growth in Rayleigh-Taylor Instability under Multimodal Perturbations M. Kola, University of Michigan, Ann Arbor, MI; D. Israel, Los Alamos National Laboratory, Los Alamos, NM; A. Towne, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-1928 Statistical Modeling of Energy Amplification of Inflow Perturbations in Boundary Layer Flows S. Gupta, J. Paulson, P. Frame, A. Towne, University of Michigan, Ann Arbor, MI	10:10 a.m. AIAA-2026-1929 Characterization of the Compressible Kelvin-Helmholtz Instability M. Gutierrez, O. Tumuklu, Rensselaer Polytechnic Institute, Troy, NY	10:30 a.m. AIAA-2026-1930 DNS Investigation of the Breakdown Mechanics of G\"{o}rtler Vortices in Hypersonic Flows O. Es-Sahli, M. Brockhaus, A. Sescu, Mississippi State University James Worth Bagley College of Engineering, Mississippi State University, MS; Y. Hattori, Institute of Fluid Science, Tohoku University., Sendai, Japan	10:50 a.m. AIAA-2026-1931 How Streamwise Thermal Gradients Influence Mack's Second Mode S. Kafle, K. Graziose, S. Harzenski, J. Kuehl, University of Delaware, Newark, DE; T. Juliano, University of Notre Dame, Notre Dame, IN	

Thursday, 15 January 2026					
FD-68	ML and Quantum Algorithms				Coral Spring II
Chaired by: S. PAN, Rensselaer Polytechnic Institute					
9:30 a.m. AIAA-2026-1932 A Tensor Network-Based Quantum Algorithm for the Nonlinear 1D Burgers' Equation M. Gopalakrishnan Meena, Oak Ridge National Laboratory, Oak Ridge, TN; V. Jones, University of Virginia, Charlottesville, VA; Y. Zhang, Los Alamos National Laboratory, Los Alamos, NM; X. Gao, University of Virginia, Charlottesville, VA	9:50 a.m. AIAA-2026-1933 Physics-Informed Neural Networks for Real-Time, Micro-scale Atmospheric Flow Prediction S. Sarker, B. Cavainolo, M. Kinzel, Embry-Riddle Aeronautical University, Daytona Beach, FL	10:10 a.m. AIAA-2026-1934 Quantum Solver Using Singular Value Decomposition for Computational Fluid Dynamics K. Gottiparthi, C. Lu, M. Gopalakrishnan Meena, Oak Ridge National Laboratory, Oak Ridge, TN; M. Chaudhary, Illinois State University, Normal, IL; E. El-Araby, University of Kansas, Lawrence, KS	10:30 a.m. AIAA-2026-1935 The Local Deep Galerkin Method Applied to the (2+1)-Dimensional Navier-Stokes and Cahn-Hilliard Equations C. Fischer, Y. Bai, K. Fu, N. McClanahan, J. Kimn, J. Doom, South Dakota State University, Brookings, SD	10:50 a.m. AIAA-2026-1936 Simulating Non-Trivial Incompressible Flows With a Quantum Lattice Boltzmann Algorithm D. Jennings, K. Korzekwa, M. Lostaglio, P. Mannix, PsiQuantum Corp, Palo Alto, CA; R. Ashworth, E. Marsili, Airbus UK, Filton, United Kingdom; et al.	

Thursday, 15 January 2026					
FD-69	Modal Decomposition and Flow Instabilities				Peacock Spring
Chaired by: F. ZIGUNOV, -					
9:30 a.m. AIAA-2026-1937 Modal Analysis of Oscillating Laminar Flow Behind Tandem and Parallel Cylinders Using Dynamic Mode Decomposition P. Tamilselvam, Illinois Institute of Technology, Chicago, IL	9:50 a.m. AIAA-2026-1938 Modal Analysis of Oblique Shock-Induced Flow Dynamics in a Supersonic Reacting Shear Layer R. Boukharfane, University Mohamed VI Polytechnic, Ben Guerir, Morocco	10:10 a.m. AIAA-2026-1939 Investigating Planar Shear Layer Mixing Dynamics via Mori-Zwanzig Formalism A. Gautam, Michigan State University, East Lansing, MI; M. Woodward, D. Livescu, Los Alamos National Laboratory, Los Alamos, NM	10:30 a.m. AIAA-2026-1940 Bi-global Optimal Perturbation of a Laminar Separation Bubble using Harmonic Resolvent Analysis M. Islam, Y. Sun, Syracuse University, Syracuse, NY	10:50 a.m. AIAA-2026-2150 Airfoil Performance in a Backward-Facing Step Flow A. Zuniga, B. Barraza, Q. Liu, J. Pulliam, New Mexico State University, Las Cruces, NM	11:10 a.m. AIAA-2026-2149 Modal Analysis for Transient Flow With Time-Stepping Approach Y. Nakamura, Y. Kuroda, S. Sato, N. Ohnishi, Tohoku Daigaku, Sendai, Japan

Thursday, 15 January 2026					
FD-71	Shock-Boundary Layer Interactions I				Orlando Ballroom L
Chaired by: N. WEBB, The Ohio State University and J. POGGIE, Purdue University					
9:30 a.m. AIAA-2026-1942 Experimental Study of Hypersonic Turbulent Flow Separation Generated by a Compression Ramp S. Mercado Barrero, F. Siddiqui, Texas A&M University, College Station, TX;	9:50 a.m. AIAA-2026-1943 3D Shock/Boundary Layer Interaction on a Delta Wing With a Compression Ramp M. Megazzini, J. Little, The Ohio State University, Columbus, OH	10:10 a.m. AIAA-2026-1944 Numerical Investigation of Fin-Induced Mach 5 Laminar Shockwave Boundary Layer Interaction J. Aguilar Pan, S. Haramura Bastos, B. Barraza, A. Hoang,	10:30 a.m. AIAA-2026-1945 Investigation of Supersonic Jet in Mach 4 Crossflow on a Generic Finned Ogive-Cylinder R. Anthis, M. Pierce, A. Singh, K. Hanquist, J. Threadgill, The University of Arizona, Tucson,	10:50 a.m. AIAA-2026-1946 Reynolds Number Effects on Shock Boundary Layer Interaction Over an Axisymmetric Surface N. Chokshi, U. Sasidharan, Florida State University, Tallahassee, FL	

K. Bowcutt, The Boeing Company, Huntington Beach, CA; R. Bowersox, Texas A&M University, College Station, TX		C. Ross, F. Shu, New Mexico State University, Las Cruces, NM; et al.	AZ; P. Gray, Raytheon Missiles & Defense, Tucson, AZ		
Thursday, 15 January 2026					
GNC-31	Aircraft Guidance Algorithms and Applications				Bayhill 29
Chaired by: A. MCKINNIS, Lockheed Martin Aeronautics					
9:30 a.m. AIAA-2026-1947 Nonlinear Path Following Guidance With Bounded Control S. Kumar, S. Kumar, Indian Institute of Technology Bombay, Mumbai, India; A. Sinha, University of Cincinnati, Cincinnati, OH	9:50 a.m. AIAA-2026-1948 Sliding Mode Guidance for UAV Rendezvous with a Maneuvering Target in Three-Dimensional Space S. Basak, S. Ghosh, Indian Institute of Technology Madras, Chennai, India	10:10 a.m. AIAA-2026-1949 QP-MPC Based Guidance for Complex Path Following of Fixed-Wing Aerial Vehicles A. Dodge, J. Clough, J. Xu, S. Keshmiri, The University of Kansas, Lawrence, KS	10:30 a.m. AIAA-2026-1950 Flight Test of Multi-Agent Aircraft Swarm for Polar Research M. Carlson, J. Clough, A. Dodge, S. Keshmiri, The University of Kansas, Lawrence, KS; A. Blevins, Naval Surface Warfare Center Panama City Division, Panama City, FL	10:50 a.m. AIAA-2026-1951 Multi Agent Guidance Algorithm for Air Mobility by Reverse Spacetime Harmonic Potential Field K. Itakura, Kabushiki Kaisha Hitachi Seisakusho, Hitachi, Japan	11:10 a.m. AIAA-2026-1952 Robust Control Design for the Flying-V within the Signal-Based H-infinity Framework B. Pedroso, T. Pollack, S. Theodoulis, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands
Thursday, 15 January 2026					
GNC-32/AFM-11	Entry, Descent and Landing Technology VIII: Dragonfly I				Plaza Ballroom K
Chaired by: M. WRIGHT, NASA Ames Research Center and K. EDQUIST, NASA Langley Research Center					
9:30 a.m. AIAA-2026-1953 EDL Concept of Operations for the Dragonfly Rotorcraft Mission to Titan M. Wright, NASA Ames Research Center, Moffett Field, CA; K. Edquist, NASA Langley Research Center, Hampton, VA; R. Vaughan, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	9:50 a.m. AIAA-2026-1954 Dynamic Stability Characterization of the Dragonfly Entry Vehicle Configurations During the EDL Prepared-For-Powered Flight Phase D. Owens, NASA, Hampton, VA	10:10 a.m. AIAA-2026-1955 Subsonic and Transonic Aerodynamic Stability Characterization of the Dragonfly Aeroshell D. Owens, NASA, Hampton, VA	10:30 a.m. AIAA-2026-1956 Huygens Probe Entry, Descent, and Landing Dynamics Assessment Using a Multi-Body Parachute Model C. Robb, A. Pensado, R. Winski, J. Williams, M. Manwell, Analytical Mechanics Associates Inc, Hampton, VA	10:50 a.m. AIAA-2026-1957 Simulation of the Dragonfly Subscale Drop Tests J. Williams, A. Pensado, R. Winski, C. Robb, M. Manwell, Analytical Mechanics Associates Inc, Hampton, VA; N. Guecha-Ahumada, NASA Langley Research Center, Hampton, VA; et al.	
Thursday, 15 January 2026					
GNC-33	Towards Safe Autonomous Flight and Its Benefits I				Bayhill 28
Chaired by: D. SUN, Purdue University and J. CARSON, NASA					
9:30 a.m. AIAA-2026-1958	9:50 a.m. AIAA-2026-1959	10:10 a.m. AIAA-2026-1960			

Distributed Optimal Defensive Trajectory Planning against Adversarial Swarms with Receding Horizon H. Kang, C. Aoun, University of Illinois Urbana-Champaign, Urbana, IL; I. Kaminer, Naval Postgraduate School Graduate School of Engineering and Applied Sciences, Monterey, CA; N. Hovakimyan, University of Illinois Urbana-Champaign, Urbana, IL	Moving Horizon Estimation for Quadrotors: An L_1 Adaptive Optimizer Approach T. Nguyen, M. Kim, S. Banik, J. Kim, N. Hovakimyan, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL	Monocular Vision-Based Navigation for UAVs in Dynamic Environments A. Perumalla, E. Johnson, The Pennsylvania State University - University Park Campus, University Park, PA			

Thursday, 15 January 2026

GT-13/HSABP-10	Accelerate Your Future: A Hypersonic Air-Breathing Propulsion Career Trajectory	Celebration 4

Chaired by: S. YANG, University of Minnesota and J. MALO DE MOLINA, Specter Aerospace

This panel is about HSABP career development and review of technical history. Specifically, the career development part will include education, how to prepare skillsets, how to get involved/engaged with the HSABP community, etc. In addition, this panel will also include a history review of HSABP-relevant technical topics presented by the panelists: e.g., liquid/solid ramjets, combined cycles, high-speed gas turbines, etc. **Panelists:** Jack R. Edwards (North Carolina State University) Felipe Gomez del Campo (Specter Aerospace) Stephen D. Heister (Purdue University) Venke Sankaran (Air Force Research Laboratory) Jeffrey B. Stout (Aerojet Rocketdyne, L3Harris Technologies) Krishna Venkatesan (GE Aerospace)

Thursday, 15 January 2026

GT-14	Development of Advanced Measurement Techniques for Hypersonic Testing	Rainbow Spring II

Chaired by: F. TURBEVILLE, NASA Langley Research Center and J. HERDY, CFD Research Corporation

9:30 a.m. AIAA-2026-1961 Dynamic Aeroheating Measurements on a Cone-Flare Geometry F. Turbeville, C. Broslawski, J. Cheatwood, NASA Langley Research Center, Hampton, VA	9:50 a.m. AIAA-2026-1962 IR Thermography and Experimental-CFD Surface Heat Flux Comparisons on a Modular Hypersonic Expansion-Compression Geometry G. Lee, J. Pehrson, C. Jordan, Sandia National Laboratories, Albuquerque, NM; A. Pandey, University of South Florida, Tampa, FL; R. Bhakta, K. Casper, Sandia National Laboratories, Albuquerque, NM	10:10 a.m. AIAA-2026-1963 Ratiometric Infrared Thermography for an Emissivity-Free Analysis in High-Enthalpy Test Facilities D. Dove, J. Dixon, M. Trotsky, C. Isaacs, D. Baccarella, K. Kihm, The University of Tennessee Knoxville, Knoxville, TN			

Thursday, 15 January 2026

GT-15/APA-60/AMT-26/FD-72/CFD2030-09	Turbulence Modelling and Turbulence Measuring: Shared Implication for Numerics and Uncertainty Quantification	Plaza Ballroom D

Chaired by: R. DECKER, USAF Academy

A more conventional panel session, to complement the "Meet the Turbulence Modelers II" and "Meet the Turbulence Measurers II" sessions held earlier in the Forum, this will bring together Subject Matter Experts (SME) from the Turbulence Modeling and Turbulence Measuring communities specifically to address the challenges posed by CFD validation. Attention will be drawn to the topics raised by both groups of SMEs, with a view towards developing balanced perspectives on topics including spatial and temporal resolution requirements (and limitations). The overarching intent will be to help establish a shared understanding of the challenges and opportunities, and in so doing, identify potential ways in which the computational and physical testing communities can work together to advance the state-of-the art of CFD validation.

Thursday, 15 January 2026

GTE-26	High Fidelity Simulations II				Celebration 2
Chaired by: P. SHARMA, Cadence Design Systems, Inc. and J. HAYNES, GE Aerospace					
9:30 a.m. AIAA-2026-1964 Engine Performance Prediction for the Bombardier CRJ700 Regional Jet Aircraft E. Zohreh Nejad, G. Ghazi, R. Botez, Ecole de technologie superieure, Montreal, Canada	9:50 a.m. AIAA-2026-1965 Reduced Order Model AI Inference of Critical Bird Ingestion Parameters N. Grathwohl, N. McPartlin, Altair Engineering Inc, Troy, MI	10:10 a.m. AIAA-2026-1966 Accelerating Design Space Exploration of Film Cooling with Parametric Machine Learning Based on High-Fidelity CFD D. Sondak, N. Fougere, J. Higgins, A. Jammalamadaka, G. Laskowski, Dassault Systemes Americas Corp, Waltham, MA; J. Bi, Dassault Systemes Simulia Corp, Providence, RI; et al.	10:30 a.m. AIAA-2026-1967 Integrated Energy–Exergy–Environmental Analysis and Optimization of a Heavy-Duty Gas Turbine in Hot-Dry Climates Using High-Pressure Inlet Fogging with Overspray A. Nourmohammadi Abadchi, KN Toosi University of Technology, Tehran, Iran; N. Ozve Aminian, University of Colorado Colorado Springs, Colorado Springs, CO; R. Soufisheikh, Hakim Sabzevari University, Sabzevar, Iran; A. Mehmandoost, Iran University of Science and Technology, Tehran, Iran	10:50 a.m. AIAA-2026-1968 Numerical Investigations on Unsteady Detonation Flame Dynamics in a Rotating Detonation Engine S. Kim, X. Huang, J. Ryu, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates	

Thursday, 15 January 2026

HR-03	Design and Development of Novel Hybrid Rocket Motor Concepts				Celebration 9
Chaired by: B. MAICKE, Pennsylvania State University and G. STORY, NASA Marshall Space Flight Center					
9:30 a.m. AIAA-2026-1969 Enhancing Performance and Efficiency of Hybrid Rocket Thrusters for Satellite Deorbiting	9:50 a.m. AIAA-2026-1970 Design, Development, and Testing of a Modular Bench-Top Hybrid Rocket Engine Testbed	10:10 a.m. AIAA-2026-1971 Lunar ISRU Metal-Fueled Hybrid Rocket Propulsion: Ignition, Combustion Dynamics, Performance Analysis, and	10:30 a.m. AIAA-2026-1972 Visualization of Electroconductive Polymer Ignition in Nitrous Oxide for Hybrid Rocket Propulsion	10:50 a.m. AIAA-2026-1973 Formation Analysis and Powderization of Combustion Products in a Magnesium-Wire and	

L. Mecham, S. Whitmore, Utah State University College of Engineering, Logan, UT	G. Guenther, D. Compton, M. Carolan, H. Anderson, Z. Green, L. Groven, South Dakota School of Mines and Technology, Rapid City, SD; et al.	Experimental Demonstration U. Yelken, M. Karpat, Koc Universitesi Muhendislik Fakultesi, Istanbul, Turkey; A. Yalcintas, Bogazici Universitesi Muhendislik Fakultesi, Istanbul, Turkey; A. Karabeyoglu, Koc Universitesi Muhendislik Fakultesi, Istanbul, Turkey	Y. Leung, T. Nakajo, S. Hirano, H. Nagata, Hokkaido Daigaku, Sapporo, Japan; L. Kamps, S. Hirai, Letara, Ltd., Sapporo, Japan	Water Micro-Hybrid Propulsion System M. Han, M. Fujii, S. Jeong, H. Koizumi, K. Komurasaki, Tokyo Daigaku, Bunkyo, Japan	

Thursday, 15 January 2026

HUB-17 9:30 - 10:00 a.m.	Airplane-Engine Matching: Process for Selecting The Engine Conceptual Design	the HUB in the Expo Hall

The propulsion system has to be designed to provide installed performance to achieve airplane performance metrics which include range, maximum speed, acceleration, climb rate, maneuverability, take-off distance, and landing velocity. This conceptual design process, called airplane/engine matching, can achieve the desired results with interactive and iterative computations between the airplane performance model, engine performance parametric model, requirements routine, and mission analysis routine. The process can be applied to determine the engine cycle requirements for either an existing aircraft (eg. F-16 re-engined by 2 OEM's) or for a new aircraft Analysis is presented on forces acting on the airplane leading to the powerful concept of specific excess power, Ps, thrust loading and wing loading. Constraint analysis is then performed to determine the thrust loading and wing loading for each maneuver. The information is used in the interactive and iterative computation stated above to determine the cycle parameters required for each mission. The generated data is then used to establish the control schedules. Highlights of the conceptual design process of a commercial turbofan is presented using state-of-the -art-software. Factors which are factored in arriving at the best solution include engine weight, airplane drag, installation drag, the allowable engine dimensions for the airplane configuration, engine size, payload, and range. The presentation also includes the advantages of an open fan engine over a ducted turbofan. Speaker: Syed J. Khalid

Thursday, 15 January 2026

INPSI-07	High-Speed Inlets, Isolators and Nozzles I				Florida Ballroom B
9:30 a.m. AIAA-2026-1974 Experimental Investigation of Hypersonic Performance Inlet at Sub-Design Mach Number with Varying Angle of Attack M. Schram, V. Narayanaswamy, NC State University, Raleigh, NC	9:50 a.m. AIAA-2026-1975 Ramp-Jet Scaling Effects on Aerospike Nozzle Flow Dynamics Using a High-Fidelity Navier-Stokes Solver Z. Pyle, G. Jacobs, San Diego State University, San Diego, CA	10:10 a.m. AIAA-2026-1976 Performance Analysis of an Unsteady Ejector Driven by Exhaust Conditions of a Rotating Detonation Engine (RDE) S. Balakrishnan, G. Blaisdell, Purdue University, West Lafayette, IN	10:30 a.m. AIAA-2026-1977 CFD Analysis of High-Speed Air-Breathing Inlets M. Dhanasar, F. Ferguson, C. Ramaswamy, North Carolina Agricultural and Technical State University, Greensboro, NC	10:50 a.m. AIAA-2026-1978 De-Risking of a High-Speed Intake Distortion Facility Using a Small-Scale Pilot Rig M. Migliorini, S. Hersbach, P. Zachos, D. MacManus, Cranfield University, Cranfield, United Kingdom; P. Martin, Defence Science and Technology Laboratory, Salisbury, United Kingdom	11:10 a.m. AIAA-2026-1979 Unsteady Characterization of Vortical Structures in Highly Distorted Intake Duct Flows A. Grois, J. Remiger, L. Oberthür, M. Stößel, D. Kozulovic, Insitute of Jet Propulsion, Department of Aerospace Engineering, University of the Bundeswehr Munich, Neubiberg, Germany; M. Krummenauer, Bundeswehr Technical Center for Aircraft and Aeronautical Equipment (WTD61), Neubiberg, Germany

Thursday, 15 January 2026					
IS-19	Autonomy I				Celebration 15
Chaired by: J. WILHELM, Ohio University and A. CHAKRAVARTHY, University of Texas, Arlington					
9:30 a.m. AIAA-2026-1980 Reactive Avoidance of Obstacles by a Quadrotor using 3D Collision Cones in Multiple Settings A. Kashyap, O. Samir, R. Rijal, R. Gyawali, A. Chakravarthy, The University of Texas at Arlington, Arlington, TX	9:50 a.m. AIAA-2026-1981 Perpendicular Scenario Collision Avoidance With Quadratic Bézier Curve Trajectory Planning M. Variny, J. Wilhelm, Ohio University, Athens, OH	10:10 a.m. AIAA-2026-1982 Loiter UAV Reinsertion Guidance for Fixed-wing UAV Corridors P. J, S. Kedarisetty, Indian Institute of Technology Bhilai, Bhilai, India; A. Ratnoo, Indian Institute of Science, Bengaluru, India	10:30 a.m. AIAA-2026-1983 Deep Q-Network With Lagrangian Relaxation for Autonomous Aircraft Landing M. Momit, University of North Dakota, Grand Forks, ND; W. Jiang, Tensor Auto Inc., San Jose, CA; B. Hussain, Texas A&M University, College Station, TX; M. Ammar, Northeastern University, Boston, MA; S. Bhujel, University of North Dakota, Grand Forks, ND; Y. Pang, The University of Texas at Austin, Austin, TX; et al.	10:50 a.m. AIAA-2026-1984 Learning-based Hierarchical Framework for Strategic and Tactical Planning A. Samyal, L. Garcia Insa, S. Bharadwaj, SkyGrid, Austin, TX	11:10 a.m. AIAA-2026-1985 Trajectory Optimization of a UAV Following Moving Targets in Wireless Communication Network A. Tolcu, A. Chakravarthy, The University of Texas at Arlington, Arlington, TX

Thursday, 15 January 2026					
IS-20	Guidance, Navigation, and Control Architectures for Autonomous Systems I				Celebration 16
Chaired by: E. BUTCHER, University of Arizona and L. FAIRFAX, US Army Research Laboratory					
9:30 a.m. AIAA-2026-1986 Navigation Path Planning and Flight Rules in Simulated Air Corridors for Urban Air Mobility A. Menon, J. Steck, J. Watkins, Wichita State University, Wichita, KS; K. Namuduri, University of North Texas, Denton, TX; K. Kraus, Z. Farrington, Wichita State University, Wichita, KS	9:50 a.m. AIAA-2026-1987 Predictive Cost Adaptive Flight Control of an Aircraft with a Bio-Inspired Rotating Empennage R. Richards, University of Michigan, Ann Arbor, MI; D. Hunsaker, Utah State University, Logan, UT; D. Bernstein, University of Michigan, Ann Arbor, MI	10:10 a.m. AIAA-2026-1988 Predictive Cost Adaptive Control of Six-Degree-of-Freedom CFD-Simulated Flight D. Serbin, S. Islam, K. Fidkowski, D. Bernstein, University of Michigan, Ann Arbor, MI	10:30 a.m. AIAA-2026-1989 Event-Triggered Broadcasting for Formation Control with Collision Avoidance L. Fairfax, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD	10:50 a.m. AIAA-2026-1990 Experimental Results With the Symbiotic Control Framework on an Aerospace Platform C. Naranjo, T. Yucelen, University of South Florida, Tampa, FL; J. Hrynuk, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD	11:10 a.m. AIAA-2026-1991 Stability Bounds for Fractional PID Cooperative Control of a Multi-Agent Rigid Body System with Undirected and Directed Communication Networks E. Butcher, M. Maadani, University of Arizona, Tucson, AZ

Thursday, 15 January 2026					
IS-21	Probabilistic and Rule-Based Systems				Celebration 12
Chaired by: J. XIE, San Diego State University					
9:30 a.m. AIAA-2026-1992	9:50 a.m. AIAA-2026-1993	10:10 a.m. AIAA-2026-1994	10:30 a.m. AIAA-2026-1995	10:50 a.m. AIAA-2026-1996	11:10 a.m. AIAA-2026-1997

A Decision-Making Framework for Autonomous Aerial Vehicles in Responding to GPS Loss L. Sun, R. Prell, R. Rubio, J. Soughtout, N. Negash, Baylor University, Waco, TX	Decentralized Belief Propagation for Satellite Constellation Resource Management R. Draves, N. Stevenson, E. Jones, N. Ahmed, University of Colorado Boulder, Boulder, CO; E. Borcherding, Z. Sears, Lockheed Martin Space Systems Co, Denver, CO; et al.	Parameter Estimation for Flight Energy Consumption Models using Kalman Filtering S. Calderon Ochoa, N. Negash, L. Sun, Baylor University, Waco, TX	Applying Optimization Methods to Wildfire: A Simulation Study J. Evans, B. Bagdatli, D. Mavris, Georgia Institute of Technology, Atlanta, GA	Cooperative Optimized Leader Selection in Large UAV Swarms by Maximizing the Average Controllability in a Hierarchical Control Structure K. Warnakulasooriya, University of South Alabama, Mobile, AL; H. Sevil, University of West Florida, Pensacola, FL; A. Segev, University of South Alabama, Mobile, AL	Accelerating Classical Path Planning via Learned Search Space Reduction N. Poddar, B. Mishra, University of West Florida, Pensacola, FL; G. Clark, Florida Institute for Human and Machine Cognition, Pensacola, FL; H. Sevil, University of West Florida, Pensacola, FL; R. Griffin, Florida Institute for Human and Machine Cognition, Pensacola, FL

Thursday, 15 January 2026

LP-11	Propellant Management, Storage, and Feed System Design, Analysis, and Testing I				Celebration 8
Chaired by: J. MOLINSKY, Northrop Grumman Space Systems and K. MAEDA, Purdue University					
9:30 a.m. AIAA-2026-1998 Lightweight, High-Flow 'Floating Seal' Valve for Cryogenic Propellant Management on Spacecraft L. O'Neill, E. Goodman, M. Bagley, Creare LLC, Hanover, NH	9:50 a.m. AIAA-2026-1999 Visualization of Flow Boiling Regimes During Transfer Line Chilldown Process J. Kannamkulathu Narayanan, A. Muniraj, F. O'Leary, A. Meylikhov, C. Kharangate, Case Western Reserve University, Cleveland, OH; J. Hartwig, NASA Glenn Research Center, Cleveland, OH; et al.	10:10 a.m. AIAA-2026-2000 CFD Predictions of Vertical Upflow Liquid Nitrogen Chilldown Experiments Uing Subgrid Nucleate Boiling Model A. Muniraj, J. Kannamkulathu Narayanan, D. Makadia, C. Kharangate, S. Hylton, M. Kassemi, Case Western Reserve University, Cleveland, OH; et al.	10:30 a.m. AIAA-2026-2001 A Predictive Model of Adsorption of Cryogenic Liquids in Aerogel-Based Materials J. Foroosh, University of Central Florida College of Engineering and Computer Science, Orlando, FL; A. Swanger, NASA John F Kennedy Space Center, Merritt Island, FL; R. Vaidyanathan, University of Central Florida College of Engineering and Computer Science, Orlando, FL	10:50 a.m. AIAA-2026-2002 Fluid Testing of the Gateway MMH Refueling System P. Desai, B. Lusby, NASA Johnson Space Center, Houston, TX; B. Nufer, A. Felt, NASA John F Kennedy Space Center, Merritt Island, FL; T. Yoder, F. Monarrez, NASA White Sands Test Facility, Las Cruces, NM	

Thursday, 15 January 2026

MAT-17	Testing and Characterization of Materials II				Bayhill 21
Chaired by: R. LI, Aurora Flight Sciences, A Boeing Company and T. XU, Old Dominion University					
9:30 a.m. AIAA-2026-2003 Fatigue and Static Damage Behavior of Hybrid Re-Entrant Active Link-Based Auxetic J. Villegas Hernandez, Arizona State University Ira A Fulton Schools of Engineering,	9:50 a.m. AIAA-2026-2004 Modelling of Damage and Failure in Multi-Phase Microstructures through Phase Field Fracture C. Erdogan, T. Yalçinkaya, Orta Dogu Teknik Universitesi, Ankara, Turkey	10:10 a.m. AIAA-2026-2005 Can Anisotropy Play a Role in Tuning Thermal Expansion of Titanium Alloy Structures? M. Billah, P. Acar, Virginia Polytechnic Institute and	10:30 a.m. AIAA-2026-2006 CMC Material Analysis Under Deflagration Conditions of Hydrogen Combustion L. Longas, K. Chougag, F. Faysal, J. Gou, K. Ahmed, University of Central Florida	10:50 a.m. AIAA-2026-2007 Application of a Constitutive Model for Simulating Thermo-Mechanical Fatigue for Austenitic Stainless Steel. N. Al-Shaer, N. Wijeyeratne, Florida Polytechnic University,	

Tempe, AZ; E. Lee, A. Nguyen, C. Lo, M. Yekani Fard, California Polytechnic State University, San Luis Obispo, CA		State University, Blacksburg, VA	College of Engineering and Computer Science, Orlando, FL	Lakeland, FL; A. Gordon, University of Central Florida, Orlando, FL	
Thursday, 15 January 2026					
MAT-18/STR-25	Thermoplastic Composites				Bayhill 23
Chaired by: S. ROY, The University of Alabama and G. ODEGARD, Michigan Technological University and M. MAIARU, Columbia University					
9:30 a.m. AIAA-2026-2008 Design Optimization and Structural Evaluation of a Fully Composite Type V Hydrogen Tank for Use in Aviation Y. Sen, M. Demirbas, S. Sert, C. Meral, M. Sümer, M. Bakir, Ankara Yildirim Beyazit Universitesi, Ankara, Turkey; et al.	9:50 a.m. AIAA-2026-2009 An Experimental Investigation of Graphene Nanoplatelet Size Effect on the Mechanical Performance of Graphene/PEKK Composites S. Pariafsai, S. Amirahmadi, S. Roy, The University of Alabama, Tuscaloosa, AL	10:10 a.m. AIAA-2026-2010 Relative Performance of Thermoset and Thermoplastic Shear Panels After Hydrodynamic Ram Testing P. Harter, R. Ziegler, R. Hostert, Wichita State University, Wichita, KS; R. Haynes, US Army Combat Capabilities Development Command Army Research Laboratory, Adelphi, MD	10:30 a.m. AIAA-2026-2011 Multiphysics Modeling and Process Tailoring of Ultrasonic Welding for Thermoplastic Composites Q. Wei, R. Li, J. Lua, Global Engineering & Materials Inc, Princeton, NJ; M. Walthers, Wichita State University National Institute for Aviation Research, Wichita, KS	10:50 a.m. AIAA-2026-2012 Static and Fatigue Analysis of a Novel Bending and Stretch-Dominated Star Arrowhead Auxetic Structure E. Lee, California Polytechnic State University, San Luis Obispo, CA; J. Villegas Hernandez, Arizona State University, Tempe, AZ; M. Yekani Fard, California Polytechnic State University, San Luis Obispo, CA	
Thursday, 15 January 2026					
MDO-19	Machine Learning and Optimization				Bayhill 17
Chaired by: A. FELDSTEIN, Aurora Flight Sciences, A Boeing Company and A. CARRERE, The Boeing Company					
9:30 a.m. AIAA-2026-2013 Enhancing Multi-Fidelity Bayesian Optimization for Mixed-Variable, Multi-Objective Multi-Disciplinary Drone Design Optimization R. Charayron, N. Bartoli, T. Lefebvre, ONERA Traitement de l'information et systemes, Toulouse, France; J. Morlier, ISAE-SUPAERO, Toulouse, France	9:50 a.m. AIAA-2026-2014 Uncovering Direct Influence Networks of Takeoff Weight: Network Science and Information Theoretic Approach E. Bossi, A. AlMomani, Embry-Riddle Aeronautical University, Prescott, AZ, Prescott, AZ	10:10 a.m. AIAA-2026-2015 Combining and Comparing Aerodynamic Shape Optimization Approaches on GPUs: Adjoint Methods and Physics AI P. Gomes, M. Mara, J. Ho, K. Leppkes, G. Saez, R. Chiodi, Luminary Cloud, Inc., San Mateo, CA; et al.	10:30 a.m. 4355349 Machine Learning-Based Prediction of Laminate Knockdown Factor Due to Wrinkles D. Bardenstein, Y. Ofir, E. Ejgenberg, Y. Freed, S. Shoam, Israel Aerospace Industries Ltd, Lod, Israel	10:50 a.m. AIAA-2026-2016 Physics-Constrained Generative Adversarial Networks for Dimensionality Reduction in Optimization S. Sisk, X. Du, Missouri University of Science and Technology, Rolla, MO	11:10 a.m. AIAA-2026-2017 Self-Supervised Airfoil Shape Optimization S. Berguin, P. Van Hentenryck, Georgia Institute of Technology, Atlanta, GA
Thursday, 15 January 2026					
MST-05	Modeling and Simulation for Certification and Qualification				Blue Spring I
Chaired by: I. FIALHO, The Boeing Company and N. PRABHAKAR, Argonne National Labs					

9:30 a.m. AIAA-2026-2018 Toward Statistical Risk Analysis for Aerospace Systems With AI/ML Components Y. He, NASA Ames Research Center, Moffett Field, CA; K. Dmitriev, Technische Universitat Munchen, Munich, Germany	9:50 a.m. AIAA-2026-2019 Extending an Automated Methodology for Simulation Model Calibration to Manufacturer and Flight Test Validation Data M. Harper, B. Kunwar , I. Chakraborty, Auburn University, Auburn, AL	10:10 a.m. AIAA-2026-2020 Implementing "Good Enough" for Modeling and Simulation Verification and Validation P. Turner, Northrop Grumman Mission Systems, Linthicum Heights, MD; B. Pratt Ferguson, Northrop Grumman Defense Systems, Roy, UT; A. Vanderwyst, Northrop Grumman Aeronautics Systems, Melbourne, FL	10:30 a.m. AIAA-2026-2021 Design and Implementation of Generic HIL Framework for Autonomous Aerial Vehicles: An Efficient Approach W. Hassan, I. Mir, M. Abbas, J. Masud, Air University, Islamabad, Pakistan; M. Safdar, University of Maryland, College Park, MD		

Thursday, 15 January 2026

NDA-09	Probabilistic and Physics-Informed Machine Learning, Multi-Fidelity Methods	Bayhill 26

Chaired by: P. BLONIGAN, Sandia National Laboratories and A. CHAUDHURI, University of Texas, Austin

9:30 a.m. AIAA-2026-2022 Certification of Dynamical System Models Using End-to-End Distributionally-Robust Uncertainty Quantification A. Subramanian, JuliaHub Inc., Cambridge, MA; A. Gerlach, A. Von Moll, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; F. Holtorf, Massachusetts Institute of Technology, Cambridge, MA; B. Chung, A. Sabharwal, JuliaHub Inc., Cambridge, MA; et al.	9:50 a.m. AIAA-2026-2023 Uncertainty Quantification of Machine Learning Models With Adaptive Sampling Applications A. Shah, J. Alonso, Stanford University, Stanford, CA	10:10 a.m. AIAA-2026-2024 A Multi-Fidelity Approach to Distribution Estimation Applied to Aerospace Applications T. Dixon, University of Michigan, Ann Arbor, MI; G. Bomarito, NASA Langley Research Center, Hampton, VA; G. Geraci, Sandia National Laboratories, Albuquerque, NM; J. Warner, J. Pribe, NASA Langley Research Center, Hampton, VA; M. Eldred, Sandia National Laboratories, Albuquerque, NM; et al.	10:30 a.m. AIAA-2026-2025 Improving the Efficiency of Multi-Fidelity Approaches for Transfer Learning With Application to Hall Thrusters W. Jacqueline, Sandia National Laboratories, Albuquerque, NM; T. Marks, University of Michigan, Ann Arbor, MI; G. Geraci, O. Davis, M. Eldred, Sandia National Laboratories, Albuquerque, NM; A. Gorodetsky, University of Michigan, Ann Arbor, MI		

Thursday, 15 January 2026

PC-27/GTE-24	Carbon-Free Fuels Combustion and its Applications for Aviation and Power Generation	Celebration 5

Chaired by: F. DI SABATINO, Southwest Research Institute

This session will be a combination of a tutorial and a panel discussion, focusing on the topic of Carbon-Free Fuels Combustion. The session will delve into power generation and aviation applications of carbon-free fuels. Structure: Tutorial (First 30 Minutes): The session will begin with a 30-minute tutorial where the panel moderator and panelists will introduce the main topic and the challenges associated with it. Panel Discussion: Following the tutorial, the session will transition into a panel discussion where these challenges will be thoroughly examined. The discussion will also include a Q&A segment where questions from the audience will be addressed.

Thursday, 15 January 2026					
PC-29/PGC-15	Detonation Fundamentals III				Celebration 6
Chaired by: R. BIELAWSKI, University of Central Florida and R. HYTOVICK, University of Central Florida					
9:30 a.m. AIAA-2026-2026 Effects of Initial Conditions and Chemical Kinetics on Cellular Multiplicity of Regular Channel Hydrogen Detonations R. Suryanarayan, University of Minnesota Twin Cities, Minneapolis, MN; R. Johnson, US Naval Research Laboratory, Washington, D.C.; S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	9:50 a.m. AIAA-2026-2027 Measuring Detonation Cell Size in Gaseous Hydrocarbon-Air Mixtures at Elevated Temperatures and Oxygen-Deficient Conditions D. Sanders, K. Cho, J. Hoke, Innovative Scientific Solutions Inc., Dayton, OH; A. Skiba, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	10:10 a.m. AIAA-2026-2028 Pre-vaporized Fuel Effects on Liquid Fuel Cloud Detonation T. Brown, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	10:30 a.m. AIAA-2026-2029 Statistical Analysis of Transverse Wave Speed in Near-Limit Hydrocarbon Detonations L. Berson, R. Cideme, K. Ahmed, University of Central Florida, Orlando, FL		

Thursday, 15 January 2026						
PC-30	Internal Combustion Engines					Celebration 7
Chaired by: D. KNAUS, Creare LLC and S. SALAUDDIN, University of Central Florida						
9:30 a.m. AIAA-2026-2030 Ignition Assistance Device for Diesel Aviation Engines D. Knaus, L. O'Neill, M. Swanson, K. Winters, Creare LLC, Hanover, NH; S. Salauddin, M. Voigt, University of Central Florida, Orlando, FL; et al.	9:50 a.m. AIAA-2026-2031 Investigation of a Novel Hot Surface Ignition Assistance Device for Diesel Aviation Engines S. Salauddin, M. Voigt, D. Knaus, L. O'Neill, M. Swanson, K. Ahmed, University of Central Florida, Orlando, FL	10:10 a.m. AIAA-2026-2032 Design and Test of an Augmented Spark Igniter With Interchangeable Flow Control Orifices J. Davies, C. Harris, N. Patel, A. Goldman, D. Scarborough, Auburn University, Auburn, AL; T. Teasley, NASA Marshall Space Flight Center, Huntsville, AL	10:30 a.m. AIAA-2026-2033 Numerical Investigation of Early Spark Kernel Evolution in a Cavity-Type Aircraft Igniter S. Demir, R. Scarcelli, Argonne National Laboratory, Lemont, IL; D. Petruska, B. Dam, N. Spotts, Woodward, Inc., Zeeland, MI	10:50 a.m. AIAA-2026-2034 Numerical Modeling of Spark Ignition in Aerial Internal Combustion Engines Using Low Cetane Number Synthetic Aviation Fuels S. Narayanan, P. Pavalavanni, S. Yang, Z. Sun, University of Minnesota Twin Cities, Minneapolis, MN; K. Kim, C. Kweon, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD	11:10 a.m. AIAA-2026-2035 A Feature-Focused Neural Network based Bi-Fidelity Surrogate Model for Combustion Prediction in Aerial Internal Combustion Engines P. Pavalavanni, S. Narayanan, Z. Sun, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN; K. Kim, C. Kweon, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD

Thursday, 15 January 2026		
PDL-10	Short Pulsed Lasers Discussion Group	Rainbow Spring I
Chaired by: J. CREEL, Bush Combat Development Complex - Texas A&M		

The Short-Pulsed Laser Discussion Group provides a platform for passionate researchers to share their perspectives and discuss the rapid advancements of pulsed laser technologies and nonlinear optical phenomena in aerospace applications. Join us to share your unique insights and engage in thought-provoking discussions about the latest developments in directed energy, laser ignition, aero-optics, laser diagnostics, and remote sensing. Whether you are an expert in the field or just starting a new project involving pulsed lasers, this group offers a supportive environment to drive your interests forward. As part of this discussion group, you'll have an opportunity to connect with like-minded individuals, exchange knowledge, and explore the innovative projects shaping the future of aerospace applications using short-pulsed lasers.

Thursday, 15 January 2026

PGC-16	Small-Scale Rotating Detonation Engines				Florida Ballroom C
Chaired by: Z. AYERS, RTRC and J. HERNANDEZ-MCCLOSKEY, UTSA					
9:30 a.m. AIAA-2026-2036 On the Determination of Rotating Detonation Engine Wave Modes Using Limited Point Measurements K. Durkee, A. Panettieri, G. Cobb, J. Bennewitz, The University of Alabama in Huntsville, Huntsville, AL	9:50 a.m. AIAA-2026-2037 Combined Computational and Experimental Assessment of a Small Scale Methane Oxygen RDRE F. Rice, N. Michnoff, J. Lance, J. Fernandez, K. Shook, E. Hurley, NC State University, Raleigh, NC; et al.	10:10 a.m. AIAA-2026-2038 Coreless Combustor Operation in 10-mm and 25-mm Rotating Detonation Rocket Engines C. Knowlen, T. Mundt, Q. Roberts, H. Shipman, M. Kurosaka, University of Washington College of Engineering, Seattle, WA	10:30 a.m. AIAA-2026-2039 Dynamics of Small Scale Rotating Detonation Rocket Engines P. Meagher, University of Central Florida, Orlando, FL; D. Ramesh, University of Connecticut, Storrs, CT; P. Zhang, Applied Materials Inc, Santa Clara, CA; X. Zhao, University of Connecticut, Storrs, CT		

Thursday, 15 January 2026

SAR-07	ML and AI for Space Robotics and Automation II				Florida Ballroom A
Chaired by: C. GUARINIELLO, Purdue University and O. MA, University of Cincinnati					
9:30 a.m. AIAA-2026-2040 In-Space Servicing Mission Simulations Using Mathematical Surrogate Models M. Woc, D. Inoyama, T. Stoumbos, Northrop Grumman Corp, Falls Church, VA	9:50 a.m. AIAA-2026-2041 A Physically Accurate Simulation Framework for Training and Validation of AI-Based Algorithms for Space Exploration L. Cavalieri, F. Buonomo, S. Andolfo, M. El Awag, R. Teodori, A. Genova, Universita degli Studi di Roma La Sapienza, Rome, Italy	10:10 a.m. AIAA-2026-2042 Simulation Based Reward Function Validation for Multi-Agent On Orbit Inspection P. Quinn, B. Gopu, G. Nehma, M. Tiwari, Florida Institute of Technology, Melbourne, FL	10:30 a.m. AIAA-2026-2043 Designing Planetary Missions for Uncertain Environments: Lessons Learned and Path Forward C. Gentgen, Massachusetts Institute of Technology, Cambridge, MA; D. Landau, M. Ono, Jet Propulsion Laboratory, Pasadena, CA; B. Weiss, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA		

Thursday, 15 January 2026

SD-20	Aeroelastic Problems of Hypersonic Vehicles	Bayhill 22
Chaired by: K. MCHUGH, AFRL and A. ABDELKEFI, New Mexico State University		

9:30 a.m. AIAA-2026-2044 Aeroelastic Stability Characterization of a Slender Model Under Planar Shock Impingement in Mach 5 Flow B. Diaz Villa, J. Sirohi, N. Clemens, The University of Texas at Austin, Austin, TX	9:50 a.m. AIAA-2026-2045 Mach 6 Aerothermoelastic Experiment for an Inclined, Compliant CFCF Panel With Buckling D. Kirkpatrick, D. Dooner, A. Neely, University of New South Wales, Canberra, Australia; C. Hoke, University of Colorado Boulder, Boulder, CO; T. Beberniss, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; D. Buttsworth, University of Southern Queensland, Toowoomba, Australia	10:10 a.m. AIAA-2026-2046 Numerical Investigation of Coupled Aerothermoelastic Effects on Hypersonic Intake Performance N. Poudel, S. Bhattrai, Tribhuvan University Institute of Engineering, Patan, Nepal			

Thursday, 15 January 2026

SE-15/DGE-14/GTE-25/DE-16/HMT-05/EAT-14	Establishing a Digital Culture in Your Organization	Bayhill 24

Chaired by: A. RAM, The Charles Stark Draper Laboratory, Inc.

In the rapidly evolving Aerospace Defense sector, fostering a digital culture is essential for maintaining competitive advantage and achieving operational excellence. This panel will explore strategies for successfully embedding a digital-first mindset within organizations, emphasizing the importance of embracing digital technologies, data-driven decision-making, and continuous innovation. Topics will include leadership's role in driving digital transformation, cultivating a workforce adept in digital skills, and encouraging a culture of collaboration and agility. Experts will share insights on overcoming common challenges such as resistance to change, integrating legacy systems with new technologies, and ensuring cybersecurity in all digital initiatives. Real-world examples will highlight how leading aerospace defense organizations have successfully navigated their digital transformation journeys, showcasing improvements in efficiency, agility, and mission readiness. Attendees will gain practical knowledge on implementing digital tools and platforms, fostering cross-functional collaboration, and designing training programs to upskill employees. Join us to learn how to establish a robust digital culture that supports innovation, enhances decision-making, and drives sustained success in the highly competitive Aerospace Defense industry. **Panelists:** Steven Dam (SPEC Innovations) Sirisha Rangavajhala (Draper Labs) Enanga D. Fale (Northrop Grumman) Chad Hall (Lockheed Martin)

Thursday, 15 January 2026

SFM-24	Rendezvous, Relative Motion, Proximity Operations, and Docking I	Plaza Ballroom I

Chaired by: M. SAGLIANO, Università di Bologna

9:30 a.m. AIAA-2026-2047 Adaptive UKF-Based Navigation for ISS Rendezvous and Proximity Operations	9:50 a.m. AIAA-2026-2049 Reachability-Driven Reference Governor for Hybrid-Actuated Spacecraft Attitude Control	10:10 a.m. AIAA-2026-2050 Differential Drag Estimation and Autonomous Control for Non-Cooperative Rendezvous	10:30 a.m. AIAA-2026-2623 Deputy-Centric Fault Detection and Isolation for Fault-Tolerant SmallSat Swarms H. Vernekar, E. Asphaug, J. Thangavelautham, The	10:50 a.m. AIAA-2026-2624 Safe and Minimal-Thrust Trajectories for In-Space Inspection and Proximity Operations	11:10 a.m. AIAA-2026-2625 Real-Time Estimation of Drag-Based Parameters in LEO via Adaptive Control and Sparse Identification

P. Llanos, Embry-Riddle Aeronautical University, Daytona Beach, FL	H. Lee, J. Lee, H. Lee, D. Jung, Korea Aerospace University, Goyang-si, South Korea	K. Yokota, T. Sasaki, R. Nakamura, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan	University of Arizona College of Engineering, Tucson, AZ	C. Lorenzen, A. Zufall, S. Robinson, University of California Davis, Davis, CA	M. Sakal, C. Riano-Rios, M. Tiwari, Florida Institute of Technology, Melbourne, FL
Thursday, 15 January 2026					
SFM-26	Space Autonomy and Space Robotics				Plaza Ballroom J
Chaired by: M. INTELISANO, Space Exploration Engineering					
9:30 a.m. AIAA-2026-2051 Flexible Trajectory Planning With the Dyna Reinforcement Learning Architecture Under Computation Constraints R. Majumdar, University of Michigan, Ann Arbor, MI; D. Sternberg, Jet Propulsion Laboratory, Pasadena, CA; O. Jia-Richards, University of Michigan, Ann Arbor, MI	9:50 a.m. AIAA-2026-2052 End-Effector Trajectory Optimization and Obstacle Avoidance for Free-Flying Space Robots A. Kiefte, S. Ulrich, Carleton University, Ottawa, Canada	10:10 a.m. AIAA-2026-2053 Automatic Intent Assignment through Estimation of Proximity Maneuvers R. Balo, M. Tender, M. Kumar, The Ohio State University, Columbus, OH; A. Soderland, Air Force Research Laboratory, Albuquerque, NM	10:30 a.m. AIAA-2026-2054 Manipulator-Constrained Trajectory Optimization With Elbow-Switching for Space-Based Robots A. Kiefte, S. Ulrich, Carleton University, Ottawa, Canada	10:50 a.m. AIAA-2026-2055 Machine Learning Benchmarking for Spacecraft Processors During Spacecraft Rendezvous and Proximity Operations M. Lingamsetty, F. Abed Azad, R. Shaikh, C. Petersen, University of Florida, Gainesville, FL	11:10 a.m. AIAA-2026-2056 Experimental Demonstration of LiDAR-Based Docking and Refueling of a Spinning Spacecraft J. Peters, D. Folta, T. King, D. Sayed Ahmed, S. Charlton, B. Aharony, Carleton University, Ottawa, Canada; et al.
Thursday, 15 January 2026					
TP-13	Nonequilibrium Flow Physics				Bayhill 31
Chaired by: F. PANERAI, University of Illinois at Urbana Champaign and J. RABINOVITCH, Stevens Institute of Technology					
9:30 a.m. AIAA-2026-2057 Application of Machine-Learned Turbulence Models for Improved Predictions in Hypersonic Flows D. Rossana, J. Gonzales, W. Jordan, C. Roy, Virginia Polytechnic Institute and State University, Blacksburg, VA; D. Stelter, Spectral Sciences Inc, Burlington, MA	9:50 a.m. AIAA-2026-2059 Effects of Modeling Measured Surface Roughness on Orbital Drag in Low Earth Orbits A. Burtsev, The University of Texas at Austin Cockrell School of Engineering, Austin, TX; M. Fiaz, The University of Texas at Austin, Austin, TX; A. Tiwari, T. Underwood, The University of Texas at Austin Cockrell School of Engineering, Austin, TX; B. Mullins, The University of Texas at Austin, Austin, TX; D. Goldstein, The University of Texas at Austin Cockrell School of Engineering, Austin, TX	10:10 a.m. AIAA-2026-2060 BLAST: Boundary Layer Analysis & Simulation Toolbox for Chemically Reacting Flows D. Lanza, M. Franco, F. Panerai, University of Illinois Urbana-Champaign, Urbana, IL	10:30 a.m. AIAA-2026-2061 Compressible Laminar Locally Self-Similar Boundary Layers in Thermochemical Nonequilibrium S. Ravichandran, R. Macdonald, University of Colorado Boulder, Boulder, CO	10:50 a.m. AIAA-2026-2266 Development of New X2 Expansion Tube Test Conditions to Facilitate Low Density Non-Equilibrium Testing at 4 to 6 km/s C. James, J. Hodson, T. van den Herik, Y. Liu, S. Lock, N. Wechgelaer, The University of Queensland, Brisbane, Australia; et al.	11:10 a.m. AIAA-2026-2265 Pathlength-Amplified Tunable Diode Laser Absorption Spectroscopy of the Excitation and Ionization of Air in a Shock Tube D. Merrell, D. Drescher, Z. Granowitz, J. Streicher, C. Strand, R. Hanson, Stanford University, Stanford, CA; et al.
Thursday, 15 January 2026					

UAS-13/FT-07	UAS Flight Testing				Orlando Ballroom M
Chaired by: A. TUCKER, US Air Force and J. SERGEANT, Virgin Galactic					
9:30 a.m. AIAA-2026-2062 Indoor Testbed for Verification and Validation of Autonomous Fixed-Wing Uncrewed Aerial Vehicles W. Sribunma, J. Kim, L. Lin, J. Goppert, S. Brunswicker, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-2063 Development of a Simulation to Flight Workflow for Subscale Flight Testing of Experimental Control Laws A. Comer, Z. Atkinson, P. Bhandari, Z. Miller, E. Harp, Oklahoma State University, Stillwater, OK	10:10 a.m. AIAA-2026-2064 Introduction to Flight System Design for Unmanned Aerial Systems R. Gilbert, D. Hunsaker, Utah State University, Logan, UT	10:30 a.m. AIAA-2026-2065 Autonomous Drone Performance During Maritime Integration for Gust Response: Lab Experiment K. Torshizi, C. Lam, T. Williams, D. Costello, P. Tokekar, University of Maryland, College Park, MD	10:50 a.m. AIAA-2026-2066 Enabling the T&E of Autonomous Functions Through Standardization of Drone Integration J. Safeer, C. Titus, R. Neuner, J. Gaus, D. Costello, University of Maryland, College Park, MD	11:10 a.m. AIAA-2026-2067 Development of a Fixed-Wing UAV Testbed for In-Flight Data Collection from an Event-Based Camera P. Coen, B. Cox, O. Dantsker, Indiana University, Bloomington, IN

Thursday, 15 January 2026					
VSTOL-03	Advances in V/STOL Flight Control Laws, Handling Qualities, and Pilot/User-Vehicle Interfaces				Bayhill 18
Chaired by: M. BISHEBAN, University of Calgary and M. PANIKER, Wisk Aero					
9:30 a.m. AIAA-2026-2068 Transition Corridor Estimation for a Tilt-Wing Aircraft \\ with Optimal Control-based Reachability Analysis M. May, D. Milz, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Oberpfaffenhofen, Germany; S. Armanini, Imperial College London, London, United Kingdom	9:50 a.m. AIAA-2026-2069 Landing Trajectory Planning for Ultra-STOL Aircraft Subjected to Disturbances T. Long, M. Drela, D. Ulker, Massachusetts Institute of Technology, Cambridge, MA	10:10 a.m. AIAA-2026-2070 Stability and Robustness of a Tandem Tilt-Wing VTOL With Dynamic Inversion Control Laws D. Milz, M. May, German Aerospace Center (DLR), Wessling, Germany; S. Armanini, Imperial College London, London, United Kingdom; G. Looye, German Aerospace Center (DLR), Wessling, Germany			

Thursday, 15 January 2026		
F360-12 10:30 - 11:30 a.m.	Balancing Safety and Innovation	Windermere Ballroom
This session will explore strategies for balancing the accelerating pace of aerospace innovation with the enduring need for safety, ensuring progress is achieved responsibly and efficiently. The dDiscussion will connect current trends, such as advanced air mobility, autonomy, and spaceflight developments with safety frameworks and mitigation approaches designed to sustain innovation while protecting mission success and public trust.		

Thursday, 15 January 2026		
HUB-18 10:30 - 11:00 a.m.	From Mission to Workforce: Turning Human Spaceflight into a Scalable Talent Pipeline	the HUB in the Expo Hall
This session explores how Aymette Medina Jorge's New Shepard NS-32 mission, in partnership with Blue Origin's Club for the Future, demonstrates a practical and industry-aligned model for workforce development. Guided by Club for the Future's mission to inspire the next generation to pursue STEM careers through access to		

space, hands-on learning, and authentic mission connections, the flight paired a historic human spaceflight with a structured engagement platform. This approach converted inspiration into measurable educational impact through student-designed digital artifacts, flown payloads, and global participation. The talk highlights how the space industry can strategically leverage mission assets to strengthen early talent pipelines, expand workforce diversity, and build scalable, repeatable pathways from education to industry that support long-term commercial space and aerospace workforce needs. Speaker: Amy Medina

Thursday, 15 January 2026

HUB-19 11:00 - 11:30 a.m.	The International Space Station: 25 Years of Innovation and Inspiration	the HUB in the Expo Hall

In November, the International Space Station (ISS) reached a historic milestone—25 years of continuous human presence in orbit. Over that time, more than 290 astronauts have lived and worked aboard the space station, driving research and development that benefits life on Earth and expands NASA's reach into space. This session will highlight some of the most innovative advancements enabled by the ISS and explore what's next for low Earth orbit as we look toward the future of space exploration. Moderator: Patrick O'Neill, INTERNATIONAL SPACE STATION NATIONAL LABORATORY Michael Roberts, Chief Science Officer, ISS National Lab Robyn Gatens, Director, International Space Station and Commercial Spaceflight Divisions, NASA (Invited)

Thursday, 15 January 2026

HUB-20 11:30 a.m. - 12:00 p.m.	How to Recognize & Celebrate Young Professionals in Aerospace	the HUB in the Expo Hall

A discussion with leaders in the industry on the role of young professionals on how we can collaborate to celebrate and empower their advancement for the benefit of all. Speaker: Jake Williams, Sr. Manager, K-12 and Young Professional Programs , AIAA

Thursday, 15 January 2026

HUB-21 12:00 - 12:30 p.m.	RTX Technology Research Center: Partnering with Academia and Small Businesses to Shape What's Next	the HUB in the Expo Hall

At RTX Technology Research Center (RTRC), our innovation model is built on working hand in hand with government, academia and small businesses to bridge ideas and implementation. RTRC partnerships harness academic expertise and entrepreneurial agility to accelerate technology development and real-world impact. Together, we create a dynamic ecosystem where discovery meets application, driving sustained success in innovation to meet mission needs. Speaker: Ebad Jahangir, Associate Director - Strategic Technologies and Partnerships, RTX

Thursday, 15 January 2026

AA-09	Acoustic/Fluid Dynamics Interactions / Turbomachinery and Core Noise	Bayhill 27

Chaired by: J. WINKLER, RTX and F. MERY, ONERA

1:00 p.m. AIAA-2026-2071 Boundary Layer Turbulence and Wall Pressure Fluctuations in the Wake of a Wall-Mounted Fence S. Damani, Virginia Polytechnic Institute and State University, Blacksburg, VA; Q. Zhuo, D. Zhou, M. Wang, University of Notre Dame, Notre Dame, IN; K. Lowe, W. Devenport, Virginia	1:20 p.m. AIAA-2026-2072 Experimental and Theoretical Investigation of Airfoil Noise Mitigation Using Biologically-Inspired Porosity M. Syed, B. Schiffer, A. Lopez, University of Massachusetts Lowell, Lowell, MA; J. Kershner, Lehigh University, Bethlehem, PA; R. Hajian, University of Massachusetts Lowell, Lowell, MA	1:40 p.m. AIAA-2026-2073 The Effect of Spanwise Controlled Morphing on the Aeroacoustics of a Flat-Plate Wing A. Herrera, S. Bhattacharya, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-2074 Acoustic and Flowfield Measurements of Rotor-Surface Interaction E. Webster Rachid, D. Cuppoletti, University of Cincinnati, Cincinnati, OH	2:20 p.m. AIAA-2026-2075 Entropy Transport and Noise Generation Mechanism in Modern Aero-Engine Combustors S. Koushik, D. McCormick, J. Mendoza, Raytheon Technologies Research Center, East Hartford, CT	

Polytechnic Institute and State University, Blacksburg, VA					
Thursday, 15 January 2026					
AA-10	Propeller, Rotorcraft and Wind Turbine Noise I				Bayhill 30
Chaired by: S. LEE, University of California, Davis and S. LI, Oklahoma State University					
1:00 p.m. AIAA-2026-2076 Rotor Noise Reduction Using Beveled Trailing Edges and Hybrid RANS/LES Simulations J. Won, S. Lee, University of California Davis, Davis, CA	1:20 p.m. AIAA-2026-2077 Experimental Analysis of Rotor Noise and Interference Effects in a Dual-Rotor Configuration D. Garcia, R. Hörnschemeyer, E. Stumpf, Rheinisch-Westfalische Technische Hochschule Aachen Fakultat fur Maschinenwesen, Aachen, Germany	1:40 p.m. AIAA-2026-2078 Comparative Analysis of High and Mid-Fidelity Methods for Predicting Performance and Acoustics for UAM Applications S. Ossyra, V. Voropayev, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-2079 Aeroacoustic Validation of Flow360 for Joby's Five-Bladed eVTOL Propeller Using Scale-Resolving Simulations and NFAC Experiments P. Dehpanah, Q. Wang, Flexcompute Inc, Watertown, MA; A. Thai, J. Bain, G. Mikic, Joby Aviation Inc, Santa Cruz, CA		
Thursday, 15 January 2026					
ACD-18/UAS-14	Design of Uninhabited Aerial Vehicles II				Rock Spring I & II
Chaired by: R. BARRETT-GONZALEZ, The University of Kansas and D. DOUGHERTY, Northrop Grumman Aeronautics Systems					
1:00 p.m. AIAA-2026-2080 Aerodynamic Framework for Surveillance and Reconnaissance UAVs: Application to the Angel Owl with JPAD–STAR-CCM+ Coupling V. Cusati, Universita degli Studi di Napoli Federico II, Naples, Italy; E. Ongut, E. Allegaert, Siemens Digital Industries Software Inc, Leuven, Belgium	1:20 p.m. AIAA-2026-2081 A Multidisciplinary Design, Analysis, and Optimization (MDAO) Framework for Conceptual UAV Design P. Joisar, A. Abhishek, Indian Institute of Technology Kanpur, Kanpur, India	1:40 p.m. AIAA-2026-2082 Advancements in Flapping Wing Drone Technology and Wildlife Observation Via Taxidermy D. Vosbein, J. Upshaw, S. Maimako, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	2:00 p.m. AIAA-2026-2083 Design and Experimental Validation of a Next-Generation Coaxial Monocopter S. Maimako, J. Opoku, D. Nguyen, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM		
Thursday, 15 January 2026					
AFM-14	System Identification and Flight Test I				Bayhill 33
Chaired by: B. SIMMONS, NASA Langley Research Center and M. ABDULRAHIM, University of Missouri Kansas City					
1:00 p.m. AIAA-2026-2084 Flight-Testing of the VT-03-s Shadow Multi-Tilt-Rotor	1:20 p.m. AIAA-2026-2085 MACE: Development of an Autonomous Solar	1:40 p.m. AIAA-2026-2086 Expedient Flight Test With Inexperienced Test Pilots	2:00 p.m. AIAA-2026-2087 Longitudinal Trim Analysis for Aircraft Icing From the	2:20 p.m. AIAA-2026-2088 System Identification for a Subscale Tiltrotor eVTOL	

Configuration in VTOL and CTOL Operations I. Chakraborty, B. Kunwar , S. Putra, R. Bhandari, H. McCormick, Auburn University, Auburn, AL	Assisted Aircraft for Monitoring Volcanoes up to 30,000ft AMSL T. Richardson, M. Watson, D. Hine, T. David, M. Simpson, S. Bullock, University of Bristol, Bristol, United Kingdom; et al.	M. Abdulrahim, University of Missouri-Kansas City, Kansas City, MO	SENS4ICE European Flight Test Campaign C. Deiler, F. Sachs, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany	Aircraft from Hover Flight-Test Data B. Simmons, K. Ackerman, NASA Langley Research Center, Hampton, VA	

Thursday, 15 January 2026

AIAA-12 1:00 - 2:30 p.m.	Rising Leaders in Aerospace: Career Development Workshop	Regency Ballroom O-P

Whether you're a student entering the workforce or a young professional exploring a new role, this workshop offers tools for navigating the aerospace hiring process. Learn how to tell your story effectively, communicate technical depth, and prepare for interviews through interactive exercises and guidance from industry professionals.

Thursday, 15 January 2026

AIAA-13 1:00 - 3:00 p.m.	The Divide between Acceptance and Rejection of a Journal Article	Plaza Ballroom G

Thursday, 15 January 2026

AMT-28	Coherent Laser Diagnostics II	Blue Spring II

Chaired by: S. KEARNEY, Sandia National Laboratories and D. RICHARDSON, Sandia National Laboratories

1:00 p.m. AIAA-2026-2089 Comparison of Ultrafast Coherent Anti-Stokes Raman Scattering Techniques for One-Dimensional Imaging B. Murdock, K. Stava, R. Lucht, Purdue University, West Lafayette, IN	1:20 p.m. AIAA-2026-2090 Ultrafast Coherent Stokes Raman Scattering of CH4 and CO2 for Simultaneous Measurement of Fuel and Flame Temperature A. Warner, R. Gejji, R. Lucht, C. Slabaugh, Purdue University, West Lafayette, IN	1:40 p.m. AIAA-2026-2091 Simultaneous Multi-Component Velocity Measurement in a Closed-Circuit Wind Tunnel via Coherent Rayleigh-Brillouin Scattering A. Kumar, S. Karatodorov, Y. Zhao, G. Alfaro, Luxembourg Institute of Science and Technology, Esch-sur-Alzette, Luxembourg; F. Chim, Texas A&M University, College Station, TX; A. Gerakis, Luxembourg Institute of Science and Technology, Esch-sur-Alzette, Luxembourg	2:00 p.m. AIAA-2026-2092 Investigation of NH_3-H_2 Counterflow Diffusion Flames Using Dual-Pump Coherent Anti-Stokes Raman Scattering (DPCARS) V. De La Trinidad, B. Murdock, R. Lucht, Purdue University, West Lafayette, IN	2:20 p.m. AIAA-2026-2093 Hydrogen Chirped-Probe-Pulse Femtosecond Coherent anti-Stokes Raman Scattering Thermometry in a High-Pressure GH_2/GO_2 Model Rocket Combustor Z. Chang, R. Gejji, B. Murdock, Purdue University, West Lafayette, IN; M. Masquelet, Blue Origin LLC, Kent, WA; R. Lucht, Purdue University, West Lafayette, IN	2:40 p.m. AIAA-2026-2094 Characterizing Single-Shot Picosecond-Pump Coherent Rayleigh Brillouin Scattering for Nitrogen Thermometry W. Senior, S. Beresh, D. Richardson, Sandia National Laboratories, Albuquerque, NM

Thursday, 15 January 2026

AMT-30	Tomography Techniques	Barrel Spring II

Chaired by: T. MEYER and X. LIU, San Diego State University

1:00 p.m.	1:20 p.m.	1:40 p.m.	2:00 p.m.	2:20 p.m.	2:40 p.m.

AIAA-2026-2095 Comparison of Identification and Tracking Methods for Multi-Camera Field Observations of Flocking Birds A. Gupta, K. Laurent, Syracuse University, Syracuse, NY	AIAA-2026-2096 Determination of Mean Total Pressure from Volumetric Thermographic and Velocimetry Data M. Krull, S. Lynch, The Pennsylvania State University, University Park, PA	AIAA-2026-2097 A Robust Optical Framework for High-Density Structural Marker Tracking in Fluid-Structure Interaction Experiments L. de Santana, I. Hysa, M. Meulen, K. Knepper, M. Tuinstra, Royal NLR – Netherlands Aerospace Centre, Marknesse, The Netherlands	AIAA-2026-2098 Development of Rotating Three-Dimensional Velocimetry for Higher Reynolds Number Flows P. Mouaikel, V. Raghav, B. Thurow, Auburn University, Auburn, AL	AIAA-2026-2099 High-Resolution, Quantitative Density Tomography Using a Rotating Nozzle F. Zigunov, S. Wagner, M. Namatsaliuk, Syracuse University, Syracuse, NY	AIAA-2026-2100 Development of Tomographic Reconstruction Method for MTV using Neural Radiance Fields S. Halder, Auburn University, Auburn, AL; M. Yamakaitis, The George Washington University, Washington, D.C.; B. Sapkota, Auburn University, Auburn, AL; C. Fort, P. Bardet, The George Washington University, Washington, D.C.; B. Thurow, Auburn University, Auburn, AL
Thursday, 15 January 2026					
APA-61/ACD-17/MDO-20	Aerodynamic Design: Analysis, Methodologies, and Optimization Techniques III				Manatee Spring II
Chaired by: A. EICHENLAUB, Lockheed Martin Space and K. LAFLIN, Textron Aviation and J. DEATON, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2101 Climb Performance of Electric UAVs R. Chong, C. Tay, Temasek Laboratories at National University of Singapore, Singapore, Singapore; B. Khoo, National University of Singapore College of Design and Engineering, Singapore, Singapore	1:20 p.m. AIAA-2026-2102 Numerical Performance Studies on a Multi-Delta Wing Fighter Configuration A. Schuette, A. Schwoeppe, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Braunschweig, Germany; M. Ghoreyshi, US Air Force Academy, U.S. Air Force Academy, CO	1:40 p.m. AIAA-2026-2103 A Universal Method for Comparing Open Rotors and Ducted Fans in Hover D. Cousins, J. Taylor, University of Cambridge, Cambridge, United Kingdom; M. Sheath, Greenjets Ltd, Milton Keynes, United Kingdom; S. Grimshaw, University of Cambridge, Cambridge, United Kingdom	2:00 p.m. AIAA-2026-2104 The Effects of Store Stabilizing Fins Wake on Horizontal Tail of Aircraft H. Khan, J. Masud, Z. Zainab, Z. Tariq, A. Shahzad, F. Akram, Air University, Islamabad, Pakistan; et al.	2:20 p.m. AIAA-2026-2105 Optimal Vortex Designs of Rotor-Only Axial Fans for Improved Static Pressure Recovery H. Witte, C. Bode, Technische Universitat Braunschweig, Brunswick, Germany	2:40 p.m. AIAA-2026-2106 Development of a Surrogate Model for Drag Prediction of Cars Based on Wind Tunnel Data in the Context of Aerodynamic Optimization of Tires A. Lazaro Prat, Technische Universitat Darmstadt, Darmstadt, Germany; N. Cortes Cendales, H. Gau, BMW, Munich, Germany; T. Schuetz, Technische Universitat Darmstadt, Darmstadt, Germany
Thursday, 15 January 2026					
APA-62/GT-17/FT-08	Aerodynamic Testing: Ground, Wind-Tunnel, and Flight Testing I				Plaza Ballroom F
Chaired by: K. XU, University of Maine					
1:00 p.m. AIAA-2026-2107 Effects of Plasma Actuators on Flow	1:20 p.m. AIAA-2026-2108 Experimental Characterization of Quadrotor Flow Topology	1:40 p.m. AIAA-2026-2109 Design and Experimental Validation of Real-Time Drag Optimization and	2:00 p.m. AIAA-2026-2110 Wind Tunnel Testing Using a Robotic Sting for Lateral-Directional		

Separation Control of a NACA 0012 Airfoil T. Yamada, H. Norimoto, National Institute of Technology, Tsuyama College, Tsuyama, Japan	Near the Ground Using Event-Based Stereo-PIV B. Samuel, D. Bao, F. Schweitzer, C. Vienney, Laboratoire de Physique de l'ENS de Lyon, Lyon, France; N. Lanchon, B. Dubrulle, Universite Paris-Saclay, Gif-sur-Yvette, France; et al.	Maneuver Load Alleviation Controls for a High Aspect Ratio Flexible Transport Wing C. Forte, KBR Wyle Services LLC, Huntsville, AL; N. Nguyen, NASA Ames Research Center, Moffett Field, CA	Stability Evaluation of a Tailless SST Aircraft Configuration C. Nae, Institutul National de Cercetari Aerospatiale Elie Carafoli, Bucharest, Romania		
Thursday, 15 January 2026					
APA-63	Aero-Structural Interactions				Coral Spring II
Chaired by: S. AUER, The Boeing Company and A. AHMED, Auburn University					
1:00 p.m. AIAA-2026-2111 Fluid-Structure Coupled Post-Flight Analysis of the Ascent Phase of SHEFEX II M. Franze, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Brunswick, Germany	1:20 p.m. AIAA-2026-2112 Characterizing Control Effectiveness with a Flexible Control Surface S. Clark, The Boeing Company, St. Louis, MO	1:40 p.m. AIAA-2026-2113 Enhanced DLM Flutter Analysis via Viscous Panel-Method-Based Aerodynamic Corrections J. Chaussee, D. Enriquez, Altair Engineering Inc, Troy, MI	2:00 p.m. AIAA-2026-2114 High-Order Harmonic Balance Vortex Lattice Method for Nonlinear Aeroelastic Limit Cycle Oscillations S. Ayala, Polytechnique Montreal, Montreal, Canada; M. Parenteau, Bombardier Inc, Montreal, Canada; E. Laurendeau, Polytechnique Montreal, Montreal, Canada	2:20 p.m. AIAA-2026-2115 Effect of Pre-Strain in Membrane Wing on the Aerodynamic Forces and Flow Field Around the Wing H. Kurahashi, T. Ikami, H. Nagai, Tohoku Daigaku, Sendai, Japan	2:40 p.m. AIAA-2026-2116 Aeroelastic Flutter Wing Sizing for a General Aviation Blended-Wing-Body Aircraft N. Buddhamatya, University of California, Davis, Davis, CA
Thursday, 15 January 2026					
APA-64/FD-73	Flow Control: Methods and Applications X				Manatee Spring I
Chaired by: J. VASILE, U. S. Army Research Laboratory (APG)					
1:00 p.m. AIAA-2026-2117 The Effect of Micro-Cavity Actuator Geometry on Dynamic Stall Control Authority E. Butler, J. Bons, N. Webb, The Ohio State University, Columbus, OH	1:20 p.m. AIAA-2026-2118 Boundary Layer Response on Flat Plates with Triangular Porous Texturing Elements and Solid Triangular Prisms M. Olvera, L. Alvarez, E. Rodriguez, I. Choutapalli, The University of Texas Rio Grande Valley, Edinburg, TX	1:40 p.m. AIAA-2026-2119 Trade Study of Tandem Wing at Hover With Deflected Slipstreme Enabled by CoFlow Jet at Low Reynolds Number J. Jeon, A. Diaz, University of Miami, Coral Gables, FL; Y. Ren, CoFlow Jet, Miami, FL; G. Zha, University of Miami, Coral Gables, FL	2:00 p.m. AIAA-2026-2120 On the Interaction Between a Jet and a Vortex on a Lambda Wing H. Kalyankar, A. Higuera Pierre Noel, U. Urreiztieta, L. Taubert, I. Wygnanski, The University of Arizona, Tucson, AZ		
Thursday, 15 January 2026					
DGE-16	Verification and Validation (V&V)				Silver Spring I

Chaired by: M. PATEL-PARSONS, AFMC Digital Transformation Office and P. ZIMMERMAN, UK Research and Innovation and W. HAMMOND, University of Central Florida

1:00 p.m. AIAA-2026-2121 A Digital Engineering Quality Assurance Framework for Engineering Models and Simulation Data R. Eshcol, R. Willmot, D. Torres, W. Woo, D. Coleman, R. Chiu, Lockheed Martin Corporation, Bethesda, MD; et al.	1:20 p.m. AIAA-2026-2122 From Physical Realm to Digital Twin: An Additive Manufacturing Approach to Digital Twin Testbed Development S. Khatouri, F. Sahebsara, M. Hieb, A. Raz, George Mason University Center of Excellence in Command Control Communications Computing Intelligence and Cyber, Fairfax, VA	1:40 p.m. AIAA-2026-2123 Physics-Based Uncertainty Quantification for Subsonic Wind Tunnel Testing Using a Validated CFD Model Part II: Holistic UQ Analysis Z. Dragojlovic, K. Sharma, V. Viti, ANSYS Inc, Canonsburg, PA	2:00 p.m. AIAA-2026-2124 Will the Adoption of Digital Engineering Improve Our Ability to Address Cyber Threats? C. Woody, Carnegie Mellon University, Pittsburgh, PA	2:20 p.m. 4355768 Code-First Digital Engineering J. Morell, M. Johnson-Ptt, Istari Digital, Arlington, VA	

Thursday, 15 January 2026

DGE-22	Code-First Digital Engineering	Bayhill 19

Chaired by: C. BENSON, Istari Digital

From model-based systems engineering and digital twins to AI-generated airframe designs, a new "code-first" paradigm is redefining how we design and build aerospace systems by bringing software-like speed and agility to hardware development. This forward-looking panel convenes experts from cutting-edge organizations – including Istari Digital, SysGit, Divergent, Nominal, Zoo, P-1, and nTop – to discuss the key technologies enabling this shift, share real-world success stories (from the first digitally-certified aircraft to AI-driven, fully automated manufacturing workflows), and explore what it all means for the future of aerospace. Attendees will hear how code-centric approaches such as advanced MBSE, generative design, digital twins, and software-defined manufacturing are accelerating innovation and transforming everything from development and certification to production in the aerospace industry.

Thursday, 15 January 2026

EAT-16	Propulsion, Power and Thermal Systems	Orlando Ballroom M

Chaired by: J. GLADIN, Georgia Tech (ASDL)

1:00 p.m. AIAA-2026-2125 Aerodynamics of a Single-Engine Aircraft Retrofit for Hydrogen-Electric Propulsion A. Mesny, S. Bull, University of Bath, Bath, United Kingdom; M. Legg, ZeroAvia Ltd, Cirencester, United Kingdom; C. Sangan, University of Bath, Bath, United Kingdom	1:20 p.m. AIAA-2026-2126 Mission-level Assessment of Ice Protection System Electrification on Hybrid-Electric Turboprop Regional Aircraft S. Tan, Y. Cai, J. Xie, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA	1:40 p.m. AIAA-2026-2127 Optimization of Subsystem Architectures for Hybrid Electric Propulsion on a Single-Aisle Commercial Aircraft J. Kenny, A. Kamath, J. Gladin, A. Iyer, D. Mavris, Georgia Institute of Technology College of Engineering, Atlanta, GA; S. Taylor, RTX Corporation, East Hartford, CT; et al.	2:00 p.m. AIAA-2026-2128 Power Quality Assessment in a DC Grid for an All-Electric Aerial Vehicle L. Ferreira, G. Ferreira, Embraer SA, Sao Jose dos Campos, Brazil; R. D'Amore, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; M. Ávila, Embraer SA, Sao Jose dos Campos, Brazil	2:20 p.m. AIAA-2026-2129 Development of a 2 MW+ High Power Density Induction Motor for Electric Aircraft Propulsion Using Cryogenic Aluminum Windings M. Sumption, The Ohio State University, Columbus, OH	2:40 p.m. AIAA-2026-2130 Modeling and Vehicle-Level Assessment of Thermal Management System for Hybrid Electric Regional Turboprop Aircraft C. Pastra, Y. Cai, J. Kenny, E. Balkas, D. Mavris, Georgia Institute of Technology, Atlanta, GA

Thursday, 15 January 2026

EP-11	Addressing the Challenges with Molecular Propellants	Celebration 11
Chaired by: Y. RAITSES, Princeton Plasma Physics Laboratory		

Significant electric propulsion investments have been targeting the use of molecular propellants for a range of applications. However, molecular propellants are relatively inefficient and present a range of challenges for implementation. Research has been funded for modeling, testing and even basic molecular propellant characterization to address key barriers to performance optimization. Given the recent increase in investment, a panel is appropriate to engage all the stakeholders, share lessons learned, and validate priority technology gaps unique to the use of molecular propellants.

Thursday, 15 January 2026

EP-12	Facility Effects				Celebration 1
Chaired by: M. WALKER, Georgia Institute of Technology and J. CABRERA, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-2131 Hybrid DSMC and PIC-MCC Method with Spatially Varying Pressure for Electric Propulsion Ground Testing G. Lim, D. Levin, University of Illinois Urbana-Champaign, Urbana, IL	1:20 p.m. AIAA-2026-2132 Collisional Carbon Transport Measurements Taken in Close Proximity of a 600 W Hall Thruster R. Thompson, S. Clark, J. Rovey, University of Illinois Urbana-Champaign, Urbana, IL	1:40 p.m. AIAA-2026-2133 A Method Comparison for Charge Exchange Corrections for Hall Thrusters M. Allen, B. Jorns, University of Michigan, Ann Arbor, MI	2:00 p.m. AIAA-2026-2134 Background Pressure Effects on the Ion Source/Thruster Plume S. Musikhin, I. Romadanov, Y. Raitses, Princeton Plasma Physics Laboratory, Princeton, NJ		

Thursday, 15 January 2026

EXPL-16	Mission Architectures III				Celebration 13
Chaired by: M. BENTON, Embry Riddle Aeronautical University and M. KASSEMI, NASA Glenn Research Center					
1:00 p.m. AIAA-2026-2135 Six Future Deep Space Exploration Missions for the NASA Space Launch System B. Donahue, The Boeing Company Defense Space and Security, Huntsville, AL	1:20 p.m. AIAA-2026-2136 Foundations for Interplanetary Logistics: Spaceport Infrastructure for Lunar and Martian Surface Access W. Kanjumba, Vicillion, Newark, DE	1:40 p.m. AIAA-2026-2137 Optimizing Science Return From 2024 YR4 Through Conditional Mission Architectures O. Bury, M. Boudreau, P. do Vale Pereira, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-2138 Riding the Wind Currents of Mars: An SLS Launched Mars Balloon Mission B. Donahue, The Boeing Company Defense Space and Security, Hutnsville, AL		

Thursday, 15 January 2026

F360-13 1:00 - 2:00 p.m.	Human Readiness Levels	Windermere Ballroom

This session will introduce Human Readiness Levels (HRLs) as a new standard in aerospace engineering, emphasizing their role in strengthening processes and improving outcomes across programs. The discussion will focus on how HRLs can be applied meaningfully to address key questions of human-system integration, readiness, and performance, ensuring more effective and reliable aerospace solutions.

Thursday, 15 January 2026

FD-75/APA-65	Hypersonic Boundary Layer Transition II	Barrel Spring I

Chaired by: E. BENITEZ, Air Force Research Laboratory and R. SPETH, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2139 Direct Numerical Simulation of a Hypersonic Turbulent Boundary Layer over a Blunt Ogive D. Roy, M. Schuabb, L. Duan, The Ohio State University, Columbus, OH; R. Bowersox, Texas A&M University, College Station, TX	1:20 p.m. AIAA-2026-2140 Constrained Resolvent Forcing for Recreating Turbulent Boundary Layers Using Scale-Resolving Methods L. Villalobos, NC State University, Raleigh, NC; A. Scholten, National Institute of Aerospace, Hampton, VA; J. Edwards, NC State University, Raleigh, NC	1:40 p.m. AIAA-2026-2141 Impact of Structurally-Informed Surface Deformations on Boundary-Layer Transition at Mach 6 E. Benitez, Z. Riley, M. Borg, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	2:00 p.m. AIAA-2026-2142 Predictive Compressibility Transformation for Hypersonic Turbulent Boundary Layers with Cold Walls E. Danis, University of Missouri System, Columbia, MO		

Thursday, 15 January 2026					
FD-76	Instability and Transition X				Coral Spring I
Chaired by: A. TOWNE and D. LEVIN					
1:00 p.m. AIAA-2026-2143 Kinetic Linear Stability Theory Analysis of Canonical High Speed Flows I. Karpuzcu, D. Levin, University of Illinois Urbana-Champaign, Urbana, IL; V. Theofilis, Technion Israel Institute of Technology, Haifa, Israel	1:20 p.m. AIAA-2026-2144 Scaling of Entropy Layer Instabilities in High-Speed Flows I. Milman, M. Karp, Technion Israel Institute of Technology, Haifa, Israel	1:40 p.m. AIAA-2026-2145 Linear Stability Analysis of Mach 5 Boundary Layer Flows S. Haramura Bastos, B. Barraza, A. Gross, New Mexico State University, Las Cruces, NM	2:00 p.m. AIAA-2026-2146 Linear Stability Analysis of Flow Disturbances in a One-Dimensional Scramjet S. Haiman, M. Karp, Technion Israel Institute of Technology, Haifa, Israel	2:20 p.m. AIAA-2026-2147 DSMC Study on Unsteadiness of Supersonic Flow Over a Cylinder M. Senkardesler, I. Karpuzcu, D. Levin, University of Illinois Urbana-Champaign, Urbana, IL	2:40 p.m. AIAA-2026-2148 Numerical Analyses Are Conducted To Investigate the Transient Responses of Base Flows To Small Disturbances in a Two-Dimensional Sharp Expanding and Contracting Channel P. Kumar, DRDO Defence Research and Development Laboratory, Hyderabad, India; M. Das, Indian Institute of Technology Kanpur, Kanpur, India

Thursday, 15 January 2026					
FD-78	Plume-Surface Interaction I				Plaza Ballroom E
Chaired by: A. KORZUN, NASA Langley Research Center and M. MEHTA					
1:00 p.m. INVITED TALK: NASA Investments in Plume-Surface Interaction (PSI) to Enable Moon and Mars Exploration (A. Korzun)	1:20 p.m. AIAA-2026-1941 Initial Measurements of Plume Impingement in the NASA Langley 60-foot Vacuum Sphere N. Rodrigues, A. Korzun, C. Broslawski, NASA Langley Research Center, Hampton,	1:40 p.m. AIAA-2026-2152 A Data-Derived Scaling Approach for Plume-Surface Interaction Crater Formation D. Stubbs, M. Mehta, NASA Marshall Space Flight Center, Huntsville, AL	2:00 p.m. AIAA-2026-2153 Data-driven Framework to Characterize Crater Dynamics During Plume-Surface Interactions M. Patel, University of Michigan, Ann Arbor, MI; L. Bruni, University of Illinois	2:20 p.m. AIAA-2026-2154 Neural Network-Based Predictions of Crater Evolution During Plume Surface Interaction S. Satyal, V. Nataraj Bhargav, B. Thurow, D. Scarborough, V.	2:40 p.m. AIAA-2026-2151 Validation of Plume-Surface Interaction Flow Field Modeling with the Loci-CHEM Code C. Morris, D. Stubbs, NASA Marshall Space Flight Center, Huntsville, AL; N. Rodrigues,

	VA; T. Schwartz, E. Nemie, AMA Inc. at the NASA Langley Research Center, Hampton, VA; W. Chambers, NASA Marshall Space Flight Center, Huntsville, AL; et al.		Urbana-Champaign, Urbana, IL; N. Nanjappa, University of Michigan, Ann Arbor, MI; F. Evrard, University of Illinois Urbana-Champaign, Urbana, IL; J. Capecelatro, University of Michigan, Ann Arbor, MI; L. Villafañe Roca, University of Illinois Urbana-Champaign, Urbana, IL	Raghav, N. Sharan, Auburn University, Auburn, AL	NASA Langley Research Center, Hampton, VA
Thursday, 15 January 2026					
FD-79	Shock-Boundary Layer Interactions II				Orlando Ballroom L
Chaired by: N. NUTTER, Oak Ridge National Laboratory and R. GLASBY, Oak Ridge National Laboratory					
1:00 p.m. AIAA-2026-2155 Investigation of Unsteady Dynamics of a Hypersonic Hollow-Cylinder/Flare Using Optical Diagnostics K. Posladek, A. Andrade, R. Lopez, C. Combs, The University of Texas at San Antonio College of Sciences, San Antonio, TX; R. Glasby, Oak Ridge National Laboratory, Oak Ridge, TN	1:20 p.m. AIAA-2026-2156 *The Reynolds Stress Transport Budgets in a Hypersonic Shock-Separated Cylinder-Flare* V. Bhagwandin, US DEVCOM Army Research Laboratory, Aberdeen Proving Ground, MD; P. Martin, University of Maryland, College Park, MD	1:40 p.m. AIAA-2026-2157 Angle-of-Attack Effects on Hypersonic Transitional Shock-Wave/Boundary-Layer Interactions over ROTEX-T J. Davami, T. Bukowski, T. Juliano, The University of Notre Dame, South Bend, IN	2:00 p.m. AIAA-2026-2340 Effects of Ablative Laser Energy Deposition on Supersonic Flow Structure D. Diaz, J. Barger, M. Vitols, J. Lee, E. Schorr, A. Craig, University of Arizona, Tucson, AZ; et al.	2:20 p.m. AIAA-2026-2341 Oblique Shock Wave/Turbulent Boundary Layer Interaction: Information-Theoretic Approach A. Muruganandam, S. Hemchandra, R. Das, Indian Institute of Science, Bengaluru, India	
Thursday, 15 January 2026					
FD-80	Turbulent Flows III				Plaza Ballroom D
Chaired by: P. JOHNSON, University of California Irvine					
1:00 p.m. AIAA-2026-0525 Effect of Compressibility on Supersonic Cylinder Wakes: Insights from Time Accurate Numerical Simulations N. Shah, J. Turner, Colorado State University, Fort Collins, CO	1:20 p.m. AIAA-2026-0526 Characterization of a Particle Image Velocimetry (PIV) Setup Using Vortex Shedding from Circular Cylinder at Low Reynolds Number P. Mishra, S. Adhikari, S. Banjade, K. Devkota, K. Darlami, IOE Pulchowk Campus, Lalitpur, Nepal	1:40 p.m. AIAA-2026-2158 Passive Control Strategies for Transonic and Supersonic Flows Over Cavities M. Pegoda, A. Sescu, E. Luke, Mississippi State University, Mississippi State University, MS; R. Schmit, R. Speth, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	2:00 p.m. AIAA-2026-2159 Hot Wire Anemometry in Cold Mach 4 Flow A. Padhi, M. Plum, G. Hobson, W. Smith, A. Gannon, Naval Postgraduate School, Monterey, CA; B. Nikaido, NASA Ames Research Center, Moffett Field, CA	2:20 p.m. AIAA-2026-2160 Compressibility Effects on the Reynolds Averaged Turbulent Cylinder Wake N. Walters, A. Morales, S. Salauddin, D. Cruz, K. Ahmed, University of Central Florida, Orlando, FL	2:40 p.m. AIAA-2026-2161 Heat Transfer Effects in Turbulent, Dense Gas Flow Over a Cylinder A. Chandra, H. Song, S. Lele, Stanford University, Stanford, CA
Thursday, 15 January 2026					
GNC-34/AFM-13	Entry, Descent and Landing Technology IX: Dragonfly II				Plaza Ballroom K

Chaired by: M. WRIGHT, NASA Ames Research Center and K. EDQUIST, NASA Langley Research Center					
1:00 p.m. 4353700 Low-Speed Wind Tunnel Testing and Computational Analysis of a Sub-Scale Dragonfly Lander and Backshell K. Edquist, NASA Langley Research Center, Hampton, VA	1:20 p.m. 4345739 Static Aerodynamics of the Dragonfly Entry Vehicle E. Shellabarger, K. Edquist, D. Owens, D. Liechty, J. Shafner, NASA Langley Research Center, Hampton, VA; Y. Moon, Analytical Mechanics Associates Inc, Hampton, VA; et al.	1:40 p.m. 4355261 Dragonfly Thermal Protection System: Design and Analysis E. Stern, M. Mahzari, O. Schroeder, NASA Ames Research Center, Moffett Field, CA	2:00 p.m. 4349191 Dragonfly Preparation for Powered Flight Modeling and Analysis in the POST2 Simulation R. Winski, A. Pensado, J. Williams, C. Robb, M. Manwell, Analytical Mechanics Associates Inc, Hampton, VA	2:20 p.m. 4353936 Aerothermal Analysis for the Dragonfly Mission A. Brandis, C. Naughton, NASA Ames Research Center, Moffett Field, CA; C. Johnston, NASA Langley Research Center, Hampton, VA; D. Saunders, AMA Inc at NASA Ames, Moffett Field, CA	2:40 p.m. 4353948 DrEAM Instrumentation for the Dragonfly Mission A. Brandis, H. Hwang, J. Santos, E. Stern, NASA Ames Research Center, Moffett Field, CA; T. Thiele, DLR, Cologne, Germany; C. Naughton, NASA Ames Research Center, Moffett Field, CA; et al.

Thursday, 15 January 2026					
GNC-35	Missile, Projectile and Rocket GNC I				Bayhill 29
Chaired by: S. THEODOULIS, TU Delft and M. MCFARLAND, Raytheon					
1:00 p.m. AIAA-2026-2162 Robust Two-Degree-of-Freedom Missile Autopilot Design via Scheduled μ-Synthesis and LPV Methods F. Prochazka, Diehl Defence GmbH & Co KG, Röthenbach a. d. Pegnitz, Germany	1:20 p.m. AIAA-2026-2163 Nonlinear Longitudinal Autopilot Design for Robust Finite-Time Missile Control K. Lee, Catholic Kwandong University, Gangneung-si, South Korea; S. Singh, University of Nevada Las Vegas, Las Vegas, NV	1:40 p.m. AIAA-2026-2164 Swarm-Optimized Adaptive Augmentation of Missile Autopilot A. Dorsey, P. Oveissi, University of Maryland Baltimore County, Baltimore, MD; J. Barton, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; A. Goel, University of Maryland Baltimore County, Baltimore, MD	2:00 p.m. AIAA-2026-2165 Drone Evasive Maneuver Against Bird Attack Y. Hayashi, T. Yamasaki, H. Takano, Natinal defense academy ofJapan, Yokosuka, Japan	2:20 p.m. AIAA-2026-2166 Reachability Prediction of Guided Missiles Using Active Learning of Artificial Neural Networks M. Ehrenfeld, M. Schneider, W. Fichter, Universitat Stuttgart Fakultat 6 Luft- und Raumfahrttechnik und Geodasie, Stuttgart, Germany	2:40 p.m. AIAA-2026-2167 Optimal 3D Soft Landing Guidance With Approach Angle Path Constraints R. Frenkel, V. Shaferman, Technion Israel Institute of Technology, Haifa, Israel

Thursday, 15 January 2026					
GNC-36	Towards Safe Autonomous Flight and Its Benefits II				Bayhill 28
Chaired by: D. SUN, Purdue University and J. CARSON, NASA					
1:00 p.m. AIAA-2026-2168 PACT: Potential Differential Game-Based Multi-Agent Coordination for Time-Critical Missions M. Aramyan, R. Madhavan, S. Banik, University of Illinois Urbana-Champaign, Urbana, IL; T. Bakaryan, Institute of Mathematics of National Academy of Sciences of Republic of Armenia,	1:20 p.m. AIAA-2026-2169 Distributionally Robust Imitation Learning: Layered Control Architecture for Certifiable Autonomy A. Gahlawat, A. Aboudonia, S. Banik, N. Hovakimyan, University of Illinois Urbana-Champaign Grainger College of Engineering,	1:40 p.m. AIAA-2026-2170 Disturbance-Robust Blending Control for Gradient-Free Backup Control Barrier Functions: Safety Guarantees for Underpowered Systems in the Presence of Uncertainty N. Miguel, A. Patterson, I. Gregory, NASA Langley	2:00 p.m. AIAA-2026-2171 Expert Switching for Robust AAV Landing: A Dual-Detector Framework in Simulation H. Tasnim, A. Rasul, B. Jo, H. Yoon, Tennessee Tech University, Cookeville, TN	2:20 p.m. AIAA-2026-2172 Development and Testing for Perception-Based Autonomous Landing of a Long-Range QuadPlane A. Rasul, H. Tasnim, J. Kim, Y. Lim, S. Schmitz, B. Jo, Tennessee Tech University, Cookeville, TN; et al.	2:40 p.m. AIAA-2026-2173 Kinematically Constrained Joint Pose Estimation of a UAS and Non-Cooperative Moving Platform V. Iyer, E. Johnson, The Pennsylvania State University, University Park, PA

Yerevan, Armenia; N. Hovakimyan, University of Illinois Urbana-Champaign, Urbana, IL	Urbana, IL; N. Matni, University of Pennsylvania Department of Electrical and Systems Engineering, Philadelphia, PA; A. Ames, California Institute of Technology, Pasadena, CA; et al.	Research Center, Hampton, VA; S. Mou, Purdue University, West Lafayette, IN			
Thursday, 15 January 2026					
GT-16	Advancements in Wind Tunnel Diagnostics for Aerodynamic Testing				Rainbow Spring II
Chaired by: R. MERITT, Ahmic Aerospace and R. CALLAHAN, Lockheed Martin Aeronautics					
1:00 p.m. AIAA-2026-2174 Force Measurement Technique Using Laser Interference Patterns (aka "Optical Balance") in Clean Air Hypersonic Tunnel J. Herdy, CFD Research Corporation, Huntsville, AL	1:20 p.m. AIAA-2026-2175 Methodology for Performance Validation of Load Cells in Wind Tunnel - A Case Study of a Low-subsonic Wind Tunnel C. Savage, A. Rahman, A. Saha, B. Jo, Tennessee Tech University, Cookeville, TN	1:40 p.m. AIAA-2026-2176 Preliminary Experimental Validation of Regularization and Calibration Methods for the Stress Wave Force Balance J. Heston, T. Corke, University of Notre Dame College of Engineering, Notre Dame, IN	2:00 p.m. AIAA-2026-2177 Graphite Shear Stress Measurements in the Fairfield Ludwieg Tube M. Devine, J. Cummings, D. Costello, E. Alfonso-Olmos, D. Ocampo, C. Savigny, Fairfield University School of Engineering & Computing, Fairfield, CT; et al.	2:20 p.m. AIAA-2026-2178 Exploration of Acoustic Trap Stability Limit at Sub-Atmospheric Pressures and Reduced Temperature I. Osmani, D. Delene, H. Chelmo, University of North Dakota, Grand Forks, ND	
Thursday, 15 January 2026					
GTE-28	High Fidelity Simulations III				Celebration 2
Chaired by: V. HASTI, University of Central Florida and A. NIX, West Virginia University					
1:00 p.m. AIAA-2026-2179 Acceleration of LES and Finite Rate Chemistry Modeling of the Preccinsta Burner by Adaptive Mesh Refinement and a Thickened Flame Model A. Raman, S. Wijeyakulasuriya, S. Liu, X. Ren, Convergent Science Inc, Middleton, WI	1:20 p.m. AIAA-2026-2180 Numerical Study of Premixed NH3 Flames in a Microscale Swirl Burner With an H2 Pilot Flame at Increased Pressures A. Phengsomphone, A. Sahoo, M. Chaudhury, S. Ekkad, V. Narayanaswamy, NC State University, Raleigh, NC	1:40 p.m. AIAA-2026-2181 Flamelet Model with Epsilon Tracking in a Turbine Stator S. Walsh, Y. Zhu, F. Liu, W. Sirignano, University of California Irvine, Irvine, CA	2:00 p.m. AIAA-2026-2182 Combined CFD Analysis of Combustor-Turbine Interaction in Turboshaft Engines S. Kim, J. Kim, S. Kwak, Hanwha Aerospace Co Ltd, Seongnam, South Korea; S. Kim, H. Chung, Y. Kang, Korea Aerospace Research Institute, Daejeon, South Korea	2:20 p.m. AIAA-2026-2183 Swirl and Jet Flow Interaction Over Film-Cooling Plates E. Arslan, Ö. Baskan Percin, M. Percin, O. Uzol, Orta Dogu Teknik Universitesi, Ankara, Turkey; H. Turkeri, Tusas Engine Industries Inc, Eskisehir, Turkey	
Thursday, 15 January 2026					
HIS-04	AIAA Historic Aerospace Sites				Bayhill 20
Chaired by: W. GORDON, AIAA Niagara Frontier Section					

This panel will present the 2025 class of AIAA Historic Aerospace Sites, honoring locations of profound aerospace achievement around the world. Representatives from each new site will discuss their unique history and technical contributions. This year's sites are:
- Filton, UK, the longest running continuous site of aircraft manufacture in the world
- Brooklands, UK, location of A.V. Roe's first flights in 1908, subsequently home of Vickers Aviation and British Aircraft Corporation
- Mia Mia, Australia, site of the first Australian-built aircraft flight by the Duignan brothers in 1910
- National Research Council of Canada Aerospace Research Centre, Ottawa
- Avro Canada plant, Malton, Ontario, site of manufacture of the Jeltiner, CF-100, CF-105 Arrow and the Orenda and Iroquois engines

Thursday, 15 January 2026

HSABP-11/PC-34	High Fidelity Combustion Modeling for High-Speed Propulsion II				Bayhill 17
Chaired by: C. FUREBY, Lund University and J. OEFELEIN, Georgia Institute of Technology					
1:00 p.m. AIAA-2026-2184 Large Eddy Simulation of Ethylene-Air Combustion in High Speed Flow Environments D. Purushotham, J. Oefelein, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-2185 Droplet Identification in an Interface Capturing Volume of Fluids Approach for Liquid Jet in Supersonic Crossflow O. Gibson, M. Ullman, S. Sharma, V. Raman, University of Michigan, Ann Arbor, MI	1:40 p.m. AIAA-2026-2186 Numerical Simulation of Ethylene-Fueled Scramjet Combustion Within the X3R Shock Tunnel C. Hash, J. Edwards, NC State University, Raleigh, NC; T. Lee, University of Illinois Urbana-Champaign, Urbana, IL; A. Veeraragavan, M. Trudgian, The University of Queensland, Brisbane, Australia	2:00 p.m. AIAA-2026-2187 LES of Stable Combustion and Lean Blow-out in a Mach 2 Cavity Flameholder C. Fureby, Lunds Universitet, Lund, Sweden	2:20 p.m. AIAA-2026-2188 Interaction Between a Coaxial Rotating Jet and a Reactive Core Flow R. Jain, R. Fernandez, S. Sharma, Y. Keskinoz, V. Raman, University of Michigan, Ann Arbor, MI	

Thursday, 15 January 2026

HSABP-12/INPSI-08	High-Speed Inlets, Isolators and Nozzles II				Celebration 4
Chaired by: R. ACHARYA and V. NARAYANASWAMY					
1:00 p.m. AIAA-2026-2189 Analysis of a Continuously Variable Inlet and Isolator Design with Experimental, Computational, and Theoretical Comparison E. Cavanaugh, NC State University, Raleigh, NC; J. Redding, University of Cincinnati, Cincinnati, OH; V. Narayanaswamy, NC State University, Raleigh, NC; L. Bravo, M. Murugan, US Army Combat Capabilities Development Command, Aberdeen Proving Ground, MD	1:20 p.m. AIAA-2026-2190 Optimization Strategy for Aggressive S-Shaped Inlet Compressor Ducts S. Platini, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium; P. Gaetani, Politecnico di Milano, Milan, Italy; F. Fontaneto, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium	1:40 p.m. AIAA-2026-2191 Evaluating Truncation Strategies for Busemann Inlets in Hypersonic Airbreathing Applications Z. Ningard, R. Borenius, M. Kot, D. Stead, Z. White, R. Bielawski, University of Central Florida, Orlando, FL; et al.	2:00 p.m. AIAA-2026-2192 Transient Effect of Passive Bleed Slots on a Propagating Shock Train L. Hahn, P. Lax, J. Szczudlak, S. Leonov, S. Morris, University of Notre Dame, Notre Dame, IN	2:20 p.m. AIAA-2026-2193 Simulation of a Hypersonic Busemann Inlet at Off Design Mach Number and Angle of Attack C. Rising, The University of Texas at El Paso, El Paso, TX; E. Ching, R. Johnson, US Naval Research Laboratory, Washington, D.C.	

Thursday, 15 January 2026

IS-22	Autonomy II				Celebration 15
Chaired by: I. WEINTRAUB and R. SHARMA, Air Force Institute of Technology					
1:00 p.m. AIAA-2026-2194 Deep Neural Network as 5-D Image for Threat Avoidance A. Denton, M. Riddick, I. Weintraub, D. Kunz, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-2195 Probabilistic Weapon Engagement Zones for a Turn Constrained Pursuer G. Stagg, C. Peterson, Brigham Young University, Provo, UT; I. Weintraub, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	1:40 p.m. AIAA-2026-2196 Cooperative Defense via Region-Based Interception in Turret-Evader-Pursuer Engagement S. Bajpai, A. Sinha, University of Cincinnati, Cincinnati, OH; R. Sharma, Integrated Solutions for Systems Inc, Dayton, OH	2:00 p.m. AIAA-2026-2197 Multi-Objective Cost Function for Mid-Course Target Assignment in Air-Defense Cooperative Guidance O. Ostermann, J. Autenrieb, C. Schwarz, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	2:20 p.m. AIAA-2026-2199 Research on Military Aerial Image Generation Technology Using Generative Artificial Intelligence S. Kim, Y. Han, M. Kim, Cheongju University, Cheongju, South Korea	

Thursday, 15 January 2026					
IS-23	Guidance, Navigation, and Control Architectures for Autonomous Systems II				Celebration 16
Chaired by: M. NAZARI and D. CANALES					
1:00 p.m. AIAA-2026-2200 Optimal Computer Vision-Based Spacecraft Rendezvous and Proximity Operations in the Cislunar Region S. Jo, Embry-Riddle Aeronautical University, Daytona Beach, FL; C. Waldecker, Stellerian, Kinnelon, NJ; L. Mendoza Zambrano, Embry-Riddle Aeronautical University, Daytona Beach, FL; R. Schmitt, Stellerian, Kinnelon, NJ; J. Schmitt, Embry-Riddle Aeronautical University, Daytona Beach, FL; D. Cordoba Paez, Stellerian, Kinnelon, NJ; et al.	1:20 p.m. AIAA-2026-2201 Output Formation Tracking via Distributed Observer and Distributed Internal Model Approaches with Application to Networked Quadrotors and Mobile Robots K. Gul, A. Teklu, S. Sarsilmaz, Utah State University, Logan, UT	1:40 p.m. AIAA-2026-2202 Exponential Convergent Projection-Based Estimator onto a Closed Convex Set M. Soltani, M. Balas, Texas A&M University System, College Station, TX	2:00 p.m. AIAA-2026-2203 Nonlinear Estimation of a Faulty Agent in a Multiagent System Using Relative Pose Observations M. Fagetti, M. Nazari, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:20 p.m. AIAA-2026-2204 A Robust Multi-Constraint Funnel MRAC System With Applications to Autonomous Multi-Rotor UAVs Transporting Payloads Connected by Ropes M. Gramuglia, A. L'Afflitto, Virginia Polytechnic Institute and State University, Blacksburg, VA	2:40 p.m. AIAA-2026-2205 Curriculum Learning With Heat Map-Based State Representations in Autonomous Drone Cargo Search K. Kömürcü, K. Kafadar, E. Özaltun, F. Orak, M. Sanli, E. Gazi, Istanbul Teknik Universitesi, Istanbul, Turkey; et al.

Thursday, 15 January 2026					
LP-12	Propellant Management, Storage, and Feed System Design, Analysis, and Testing II				Celebration 8
Chaired by: N. ANDREWS, Southwest Research Institute and J. MAJDALANI, Auburn University					
1:00 p.m. AIAA-2026-2207 Microgravity Demonstration of a Hybrid	1:20 p.m. AIAA-2026-2209 Experimental and Numerical Study on	1:40 p.m. AIAA-2026-2208 An Analytical Model for Flow in Banded-Screen			

Screen Channel Liquid Acquisition Device for Transfer of Cryogenic Fluids T. Conboy, L. O'Neill, Creare, LLC, Hanover, NH; J. Hartwig, NASA Glenn Research Center, Cleveland, OH	Coupled Dynamics of Liquid Propellant and Spacecraft Motion Induced by Impact Y. Yahata, K. Kumagai, T. Himeno, Tokyo Daigaku, Bunkyo, Japan; M. Otsuki, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan; M. Baba, Japan Aerospace eXploration Agency, Research and Development Directorate, Sagamihara-shi, Japan; M. Takahashi, Keio Gijuku Daigaku Rikogakubu Daigakuin Rikogaku Kenkyuka, Yokohama, Japan; et al.	Liquid Acquisition Devices With Variable Permeability C. Millett, V. Maron Sauer, California State University Northridge, Northridge, CA; S. Darr, M. Taliaferro, The Aerospace Corporation, El Segundo, CA			
Thursday, 15 January 2026					
MST-06	Modeling and Simulation of Air Vehicle Dynamics, Systems, and Environments I				Blue Spring I
Chaired by: N. PRABHAKAR, Argonne National Labs and D. SAROJINI, Virginia Polytechnic Institute and State University					
1:00 p.m. AIAA-2026-2210 A Simulation Environment for Performance Evaluation of Flight Path Reconstruction Methods In Extended Flight Envelope Applications G. Moszczynski, P. Grant, University of Toronto Institute for Aerospace Studies, Toronto, Canada; V. Myrand-Lapierre, CAE Inc, Montreal, Canada	1:20 p.m. AIAA-2026-2211 A High-Fidelity 3D Simulation Environment for Multi-Aircraft Operations T. Bautista, F. Wang, New Mexico State University, Las Cruces, NM; A. Govindarajan, L. Sun, Baylor University, Waco, TX; J. Chen, Rice University, Houston, TX; B. Hu, University of Houston, Houston, TX; et al.	1:40 p.m. AIAA-2026-2212 Modeling and Control of Aerial Slung Load System Using Partial Feedback Linearization and Koopman Operator Theory S. Nimmala, K. Das, Tata Consultancy Services Limited, Mumbai, India; D. Ghose, Indian Institute of Science, Bengaluru, India	2:00 p.m. AIAA-2026-2213 Development of a Simulation Environment for Separating Air Vehicles R. McLaughlin, J. Yancosek, M. Perhinschi, West Virginia University, Morgantown, WV		
Thursday, 15 January 2026					
NFF-03	Fusion and Future Flight Propulsion				Celebration 9
Chaired by: J. CASSIBRY, The University of Alabama in Huntsville and G. MEHOLIC, The Aerospace Corporation					
1:00 p.m. AIAA-2026-2214 Hypersonic Nuclear Fusion Combined Cycle Propulsion Enabled by Direct Charged Particle-to-Air Beam Window Array	1:20 p.m. AIAA-2026-2215 Modelling Novel Linear Parabolic Magnetic Nozzle Configurations for a Z-Pinch Fusion Propulsion System	1:40 p.m. AIAA-2026-2216 Development of a 3U Plasma Magnet Technology Demonstrator O. Guy, X. Duchesne, Y. Purdon, S. Kaip, M.	2:00 p.m. AIAA-2026-2217 On the Cone-Shaped Geometrical Design and Scale-Up of A Solenoid Thruster		

R. Weed, C. Peddeti, C. Dietz, Aerofuse, Inc., San Francisco, CA; K. Bowcutt, C. Brehm, R. Quintero, University of Maryland, College Park, MD; et al.	S. Manasterski, K. Judd, J. Cassibry, K. Xu, The University of Alabama in Huntsville, Huntsville, AL	Larrouturou, A. Higgins, McGill University, Montreal, Canada; et al.	C. Wu, K. Pan, National Taiwan University, Taipei City, Taiwan		
Thursday, 15 January 2026					
PC-31	Ammonia Combustion II				Celebration 6
Chaired by: B. EMERSON and S. MENON, Louisiana State University					
1:00 p.m. AIAA-2026-2218 Oxidation of Ammonia Blends with Methyl Formate in a Supercritical Pressure Jet-Stirred Reactor up to 100 atm Y. Cao, B. Mei, W. Xu, Princeton University, Princeton, NJ; A. Jasper, S. Klippenstein, Argonne National Laboratory, Lemont, IL; Y. Ju, Princeton University, Princeton, NJ	1:20 p.m. AIAA-2026-2219 Numerical Investigation of Extinction Strain Rates in Ammonia-Hydrogen Fuel Blends for Aviation Applications P. Garai, S. Bobi, R. Rahman, R. Ghorpade, S. Vasu, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-2220 Effects of Hydrogen Addition on the Stability Limits of Ammonia-Hydrogen Flames in a Toroidal Jet-Stirred Reactor G. Barrios Cadenas, O. Marquez Valenzuela, A. Maia, M. Ahmed, A. Santiago, A. Thornton, University of Central Florida, Orlando, FL; et al.	2:00 p.m. AIAA-2026-2221 Comprehensive Investigation of Spectral Emission Characteristics of Hydrogen and Ammonia Flames M. Suarez, M. Hay, W. Kulatilaka, Texas A&M University System, College Station, TX		
Thursday, 15 January 2026					
PC-32	Combustion III				Celebration 7
Chaired by: C. CLARK, University of Central Florida and P. MEAGHER, University of Central Florida					
1:00 p.m. AIAA-2026-2222 Assessment of RANS-based CFD Approaches for Numerical Modeling of Bluff-body Diffusion Flame Burners N. Mahto, P. Pal, C. Xu, Argonne National Laboratory, Lemont, IL; C. Bedick, National Energy Technology Laboratory, Pittsburgh, PA	1:20 p.m. AIAA-2026-2223 Heat Release Rate Analysis of Ultrasonically Driven Pintile Injectors D. Cruz, C. Clark, S. Salauddin, K. Ahmed, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-2224 Analysis of Thermodynamically Induced Compressibility in Supercritical Mixing Layers C. Casotto, D. Purushotham, J. Oefelein, Georgia Institute of Technology, Atlanta, GA	2:00 p.m. AIAA-2026-2226 Computational Fluid Dynamics Modeling of Plasma Assisted Combustion in High Speed Flows G. Svensson, W. Harris, Massachusetts Institute of Technology, Cambridge, MA	2:20 p.m. AIAA-2026-2227 Accelerated Reacting Flow Simulations Through Local CSP-Based Stiffness Reduction A. Carinci, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; R. Galassi, Universita degli Studi di Roma La Sapienza, Rome, Italy; M. Malik, F. Hernández-Pérez, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; M. Valorani, Universita degli Studi di Roma La Sapienza, Rome, Italy; H. Im, King Abdullah University of	

				Science and Technology, Thuwal, Saudi Arabia	

Thursday, 15 January 2026

PC-38/PDL-14	Plasma Assisted Combustion: Augmenting Operability and Performance	Celebration 5

Chaired by: T. OMBRELLO, Air Force Research Laboratory

Following a very successful joint session hosted by the Propellants and Combustion and Plasmadynamics and Lasers Technical Committees at SciTech 2025, we seek to have another invited session/workshop. Last year we had several presentations that provided general overviews of the topic area, and then a session providing a deeper dive on plasma-assisted ignition. At SciTech 2026, we envision having several invited speakers on the specific topic area of how plasma is being used to expand the operability and performance of combustors and reduction of pollutants/emission.

Thursday, 15 January 2026

PDL-11	Computational Methods for Plasmas and Lasers I	Rainbow Spring I

Chaired by: S. BANE, Purdue University, School of Aeronautics and Astronautics

1:00 p.m. AIAA-2026-2228 Simulations of Thermal Blooming Effect M. Maikov, A. Tropina, R. Miles, Texas A&M University System, College Station, TX	1:20 p.m. AIAA-2026-2229 Reduced Order Residual Neural Networks for Plasma Streamer Propagation N. Srinivasan, C. Lief, T. Taneja, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	1:40 p.m. AIAA-2026-2230 Simulation of Voltage and Current Waveforms During Nanosecond Pulsed Capacitive Discharges via Electrically Coupled Plasma Fluid Model and Lossless Transmission Line F. Bisetti, A. Duarte, The University of Texas at Austin, Austin, TX			

Thursday, 15 January 2026

PGC-17/PC-33	Detonation Fundamentals IV	Florida Ballroom B

Chaired by: J. BURR, Air Force Research Laboratory and Y. MAZUMDAR

1:00 p.m. AIAA-2026-2231 Hydrodynamic Phenomena in Detonation Driven Droplet Breakup C. Young, C. Blaies, Texas A&M University System, College Station, TX; A. Cook, Lawrence Livermore National Laboratory, Livermore, CA; J. McFarland, Texas A&M University System, College Station, TX	1:20 p.m. AIAA-2026-2232 Time-Resolved Spectral Emissions of Nitromethane Droplets in Post-Detonation Flows A. Puerta-Alvarado, D. Dyson, H. Patel, S. Vasu, University of Central Florida, Orlando, FL; R. Houim, University of Florida, Gainesville, FL	1:40 p.m. AIAA-2026-2233 Droplet Deformation Dynamics in Variable Pressure Post-Shock Flows S. Schroeder, L. Patel, S. Salauddin, A. Morales, M. Becraft, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL	2:00 p.m. AIAA-2026-2234 Investigation of Hypersonic Shock-Induced Vaporization in Monodisperse n-Dodecane Droplet Clouds M. Becraft, S. Schroeder, L. Patel, S. Salauddin, A. Morales, J. Sproull, University of Central Florida, Orlando, FL; et al.	2:20 p.m. AIAA-2026-2235 Spectroscopic Measurements of Aluminum Doped Nitromethane Droplet Sprays H. Patel, D. Dyson, R. Yuraszeck, A. Puerta-Alvarado, N. Walsh, S. Vasu, University of Central Florida, Orlando, FL; et al.	

Thursday, 15 January 2026					
PGC-18/AMT-29	Measurement and Diagnostics II				Florida Ballroom C
Chaired by: D. PINEDA, The University of Texas at San Antonio and C. CARTER, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2236 Radiative Heat Transfer in Rocket Detonation Environments via Laser Absorption Spectroscopy E. Foss, P. Barnouin, N. Kuenning, R. Spearrin, University of California Los Angeles, Los Angeles, CA	1:20 p.m. AIAA-2026-2237 Analysis of Oblique Shock at RDE Exit Using Tomographically Reconstructed Density Fields A. Gupta, A. Agrawal, The University of Alabama, Tuscaloosa, AL	1:40 p.m. AIAA-2026-2238 Fabrication of an Additively-Manufactured Chamber for Combustion Health Monitoring in Air-Breathing Rotating Detonation Flows J. Hernandez-McCloskey, K. Eisenbarger, M. Nickell, K. Corral Martinez, D. Pineda, The University of Texas at San Antonio, San Antonio, TX	2:00 p.m. AIAA-2026-2239 Quantifying Deflagration Losses in Rotating Detonation Combustors J. Guerrero, M. Gamba, University of Michigan, Ann Arbor, MI	2:20 p.m. AIAA-2026-2240 Interaction Between Normal Shock and Heterogeneous Transverse Jet K. Ozawa, Kyushu Kogyo Daigaku, Kitakyushu, Japan; J. Guerrero, M. Gamba, University of Michigan, Ann Arbor, MI; N. Tsuboi, Kyushu Kogyo Daigaku, Kitakyushu, Japan; K. Ishii, Yokohama Kokuritsu Daigaku, Yokohama, Japan; A. Hayashi, Aoyama Gakuin Daigaku, Shibuya, Japan	

Thursday, 15 January 2026					
SAR-08	Novel Technologies for Space Robotics I				Florida Ballroom A
Chaired by: C. GUARINIELLO, Purdue University and S. HASSANAIN, Home					
1:00 p.m. AIAA-2026-2241 Solar-Driven Additive Sintering of Lunar Regolith Simulant: A Proof-of-Concept for Off-Earth Manufacturing S. Sreekumar, A. Valdivia, M. Iversen, University of Central Florida, Orlando, FL; N. Afanador, Blue Origin LLC, Cape Canaveral, FL; J. Jolly, University of Central Florida, Orlando, FL; C. Sipe, Blue Origin LLC, Cape Canaveral, FL; et al.	1:20 p.m. AIAA-2026-2242 Demonstration of Metrics for Self-Healing and Self-Reconfiguration in a Monolithic and Segmented Robotic System J. Hill, G. MacRae, P. Lintala, N. Taniguchi, J. Pastizzo, E. Bootehsaz, University of Southern California, Los Angeles, CA; et al.	1:40 p.m. AIAA-2026-2243 KRITTER - A Novel Wheel-on-Limb Robot for Training Planetary Rover Suspension Control J. Martin, D. Gribok, N. Bolatto, J. Shankman, N. Limparis, D. Akin, University of Maryland, College Park, MD	2:00 p.m. AIAA-2026-2244 Stitching Illumination-Matched Maps: A LIMA-Based Pipeline for Robust Reference Map Generation N. Rothenberger, Y. Cheng, A. Ansar, Y. Iwashita, Jet Propulsion Laboratory, Pasadena, CA	2:20 p.m. AIAA-2026-2245 Non-Prehensile Robotic Pushing Strategies for Sloped Terrain and Planetary Surface Conditions T. Girgin, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL	

Thursday, 15 January 2026					
SD-22/FD-74	Fluid-Metamaterial Interactions I				Bayhill 24
Chaired by: M. HUSSEIN, University of Colorado Boulder and A. JUHL, AFRL					
1:00 p.m. 4356625	1:20 p.m. 4348868	1:40 p.m. AIAA-2026-2246	2:00 p.m. 4355181	2:20 p.m. 4345965	

Laminar-To-Turbulent Transition Delay by a Lattice of Phononic Subsurfaces: Bloch Analysis of Flow Perturbations and Direct Numerical Simulations M. Hussein, University of Colorado Boulder, Boulder, CO; D. Roca, Centre Internacional de Metodes Numerics a l'Enginyeria, Barcelona, Spain; A. Harris, A. Kianfar, University of Colorado Boulder, Boulder, CO	Delaying the Transition of Tollmien-Schlichting Waves via Phononic Subsurfaces A. Juhl, C. Willey, V. Chen, A. Medina, C. Barnes, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; B. Tuna, Florida State University Florida Center for Advanced Aero-Propulsion, Tallahassee, FL; et al.	Manipulation of Laminar-to-Turbulent Transition Using Phononic Subsurfaces B. Tuna, R. Kumar, FAMU-FSU College of Engineering, Tallahassee, FL; C. Willey, V. Chen, BlueHalo, Beavercreek, OH; A. Medina, C. Barnes, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; et al.	On the Physical Mechanisms of First and Second Mode Control via Phononic Subsurfaces C. Brehm, C. Klauss, V. Russo, University of Maryland, College Park, MD; M. Hussein, University of Colorado Boulder, Boulder, CO	Design of a Nonlinear Subsurface Acoustic Diode for Boundary Layer Transition Delay H. Yousef, R. Schmidt, University at Buffalo, Buffalo, NY; I. Roy, A. Boueri, C. Scalo, Purdue University, West Lafayette, IN; M. Nouh, University at Buffalo, Buffalo, NY	
Thursday, 15 January 2026					
SEN-07	Novel Sensors, Algorithms, and Sensing Applications				Bayhill 23
Chaired by: P. FRAZIER, Northrop Grumman Mission Systems and P. VOYER, Philippe Voyer					
1:00 p.m. AIAA-2026-2248 Comparison of Methods for Wavelength Determination from Laser Speckle Patterns J. Tompkins, A. Bonner, S. Cain, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-2249 Tracking the Spread of Rapid Ohia Death Using Synthetic Aperture Radar C. O'Neill, S. Peters, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	1:40 p.m. AIAA-2026-2250 Applying the Complex-Step-Based Numerical Integration Within an Extended Kalman Filter J. Ramos, University of Florida, Shalimar, FL; K. Brink, Air Force Research Laboratory, Munitions Directorate, Eglin AFB, FL	2:00 p.m. AIAA-2026-0195 Center of Gravity Estimation for Rotary-Wing Aircraft Using Neural Networks A. Davis, LeTourneau University, Longview, TX		
Thursday, 15 January 2026					
SFM-14/SCS-08/STR-14/EDU-08	In-Space Servicing, Assembly, and Manufacturing (ISAM): In-Space Assembly (iSA) Interface (I/F) Hardware Design I				Plaza Ballroom J
Chaired by: J. ROME, The Aerospace Corporation and T. MITCHELL, COSMIAC					
1:00 p.m. AIAA-2026-2251 Common In-Space Assembly Interface Standardization Framework for the United States Space Force (USSF) T. Mitchell, Air Force Research Laboratory, Kirtland AFB, NM; R. Ewart, United States Space Force, El	1:20 p.m. AIAA-2026-2252 Mechanical Linkage, Data and Power Connection, and Fuel Transfer for In-Space Assembly and Manufacturing (ISAM) D. Selvaraj, H. Hess, Enduralock, Lenexa, KS	1:40 p.m. AIAA-2026-2253 In-Space Interface: Universal Device Adapter T. Jaeger, NovaWurks, Long Beach, CA	2:00 p.m. AIAA-2026-2254 Oceaneering Latching Devices for In-Space Assembly (ISA) – Enabling Space Construction and Logistics From LEO to GEO and Beyond! C. Walz, T. Tierney, Oceaneering International Inc, Houston, TX	2:20 p.m. AIAA-2026-2255 HotSwap Component Exchange System for Space Applications T. Howe, ThermaSat Inc, Scottsdale, AZ	2:40 p.m. AIAA-2026-2256 Modular and Responsive by Design: The Strategic Value of Androgynous Interfaces for ISAM T. Schervan, T. Pauels, J. Kreisel, iBOSS GmbH, Aachen, Germany

Segundo, CA; E. Plotke, P. Lai, KBR, Inc., El Segundo, CA					
Thursday, 15 January 2026					
SFM-25	Rendezvous, Relative Motion, Proximity Operations, and Docking II				Plaza Ballroom I
Chaired by: S. ULRICH, Carleton University					
1:00 p.m. AIAA-2026-2257 Mixed-Integer Linear Programming for Autonomous Spacecraft Applications L. Fina, C. Petersen, University of Florida, Gainesville, FL	1:20 p.m. AIAA-2026-2258 Optimal Guidance and Collision Risk Evaluation for Circular Relative Orbit Injections D. Ruggiero, E. Capello, Politecnico di Torino, Turin, Italy	1:40 p.m. AIAA-2026-2259 Predefined-Time Singularity-Free Control With Hybrid Actuator Optimal Allocation for Autonomous Spacecraft Docking T. Krishna Kumar, S. Sahu, D. Giri, Indian Institute of Technology Kanpur, Kanpur, India	2:00 p.m. AIAA-2026-2260 LIDAR-Based Relative Navigation and 3D Target Reconstruction for Close Proximity Operations With Unknown Target A. Nocerino, G. Fasano, M. Grassi, R. Opromolla, Universita degli Studi di Napoli Federico II, Naples, Italy	2:20 p.m. AIAA-2026-2261 Finite Control Set MPC for Rendezvous on Elliptic Orbits Using On/Off Thrusters A. Bezerra, G. Falcone , I. Kolmanovsky, University of Michigan, Ann Arbor, MI	
Thursday, 15 January 2026					
SOF-05	AI and Machine Learning Applications in Aerospace				Celebration 12
Chaired by: B. LUKIC, German Aerospace Center (DLR)					
1:00 p.m. AIAA-2026-2262 Atmospheric Visibility Estimation From Photographs via Large Language Models, or Can ChatGPT Tell the Weather? C. Mourning, G. Naravara, Ohio University, Athens, OH	1:20 p.m. AIAA-2026-2263 Prediction of Performance Degradation in Safety-Critical Flight Software Using NASA SimuPy-Flight and Random Forest V. Devarajulu, University of Houston-Clear Lake, Houston, TX; A. Lindquist, Wolf Advanced Technology, Aurora, Canada; S. Ravva, Purdue University, West Lafayette, IN	1:40 p.m. AIAA-2026-2264 Serverless Avionics: A new Architectural Approach B. Lukic, T. Schubert, S. Friedrich, C. Önem, J. Beck, N. Breitmoser-Widdecke, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; et al.			
Thursday, 15 January 2026					
STR-26/SD-23/MAT-19	Structures, Structural Dynamics, and Materials Lecture				Orlando Ballroom N
Chaired by: Z. SOTOUDEH, Cal Poly Pomona					

Speaker: Dr. Michael S. Eldred From stewardship to conceptual design: new opportunities for information fusion in aerospace vehicles Throughout several decades of Department of Energy stewardship programs, characterized by refurbishments and lifecycle extensions, a primary focus has been on parsimonious use of high-fidelity multi-physics simulations executing on parallel computing architectures. Given extensive historical experience in terms of both experiments and simulations and adequate runway for comprehensive analyses, popular approaches such as stratified random sampling using resolved simulations of the target system were viewed as adequate for most UQ/V&V analysis purposes. Faced with an emerging set of mission challenges, new conceptual design activities are now

characterized by quick turnaround for decision support, without the luxury of an abundance of directly relevant simulation and test data. In this environment, we need to deliver predictions for system behavior in days rather than months, achieving higher levels of agility than before, while effectively managing significant uncertainties. A critical strategy in this environment is the ability to rigorously fuse information from an expanded range of available sources, exploiting performance data from related in-family legacy systems, from related system configurations and mission definitions, and from fast analyses at reduced fidelity. This talk will focus on technology developments motivated by this new environment, starting from the latest multifidelity methods; leading to transfer learning approaches across related systems, configurations and missions; and expanding into a future for digital engineering based on networked information models.

Thursday, 15 January 2026

TP-15	Thermal Control and Heat Transfer I				Bayhill 32
Chaired by: K. WEED, BAE Systems, Inc. and P. VALENTINI, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2267 Investigation of Atomic Oxygen Interactions with Amorphous Silica Surfaces under VLEO Conditions A. Appar, S. Poovathingal, University of Kentucky, Lexington, KY	1:20 p.m. AIAA-2026-2268 Design Optimization and Experimental Analysis of Heat Flow in a CubeSat PCM Thermal Control Unit P. Narayan, E. Mirny, D. Agarwal, S. Bellidiga, K. Kyle, E. Silk, University of Maryland, College Park, MD	1:40 p.m. AIAA-2026-2269 SATMO: A Multi-Planet Thermal Analysis Tool for CubeSat Missions A. Chipps, Massachusetts Institute of Technology, Cambridge, MA; D. Forgette, Jet Propulsion Laboratory, Pasadena, CA; K. Cahoy, Massachusetts Institute of Technology, Cambridge, MA	2:00 p.m. AIAA-2026-2270 Thermal Performance of Spacecraft Wall Structures Using PCM-Embedded TPMS Designs F. Ghafoorian, H. Wan, University of Colorado Colorado Springs College of Engineering and Applied Science, Colorado Springs, CO; S. Patnaik, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	2:20 p.m. AIAA-2026-2271 Adiabatic Entrance Length Selection for Supercritical CO2 Flows in Tubes With Various Hydraulic Diameters K. Walsh, N. Lopes, C. Bochenek, M. Ricklick, S. Boetcher, Embry-Riddle Aeronautical University, Daytona Beach, FL	

Thursday, 15 January 2026

VSTOL-02	Vertiport Architecture Considerations, Designs, Lessons, Viability				Bayhill 18
Chaired by: M. PANIKER, Wisk Aero and C. REIMANN, RTX					
1:00 p.m. AIAA-2026-2272 Advanced Air Mobility Infrastructure With Expeditionary Landing Surfaces for eVTOL Aircraft H. Wilhelms, L. Sun, J. Jordan, P. Allison, Baylor University, Waco, TX; T. Rushing, A. Cisko, US Army Engineer Research and Development Center, Vicksburg, MS	1:20 p.m. AIAA-2026-2273 Effects of Delays and Technical Disruptions on Satisfaction of Airtaxi Passenger N. Nair, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany; S. Nagrare, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cochstedt, Germany	1:40 p.m. AIAA-2026-2274 Simultaneous Charging and Discharging of Drone Battery via Contact-Based Charging System F. Mannan, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	2:00 p.m. AIAA-2026-2275 Autonomous Deployment of Solar-Powered Drone Vertiports on Mars: Parachute-Assisted Landing, Terrain Hazard Detection, and Self-Leveling Infrastructure F. Mannan, L. Moore, A. Mostafanejad, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	2:20 p.m. AIAA-2026-2276 Systematic Multi-Criteria Approach to Determine Suitable Vertiport Locations for Advanced Air Mobility M. Lepe, J. Huynh, University of California Irvine, Irvine, CA	

Thursday, 15 January 2026

NW-08 3:00 - 3:30 p.m.	Networking Coffee Break				Regency Rotunda
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.					
Thursday, 15 January 2026					
AA-11/FD-86	Propeller, Rotorcraft and Wind Turbine Noise II / Airframe/High-Lift Noise / Turbulence and Vortex Induced Noise Sources				Bayhill 30
Chaired by: P. IFJU, University of Florida and T. SUZUKI, The Boeing Company					
3:30 p.m. AIAA-2026-2277 Numerical Analysis of Broadband Noise in Propeller–Wing Configurations Using High-Fidelity Computational Fluid Dynamics E. Brown, S. Lee, University of California Davis, Davis, CA	3:50 p.m. AIAA-2026-2278 Aeroacoustics Simulations of Airframe Noise Using Cartesian-Grid-Based Compressible Flow Solver FFVHC-ACE H. Asada, S. Kawai, Tohoku University, Sendai, Japan	4:10 p.m. AIAA-2026-2279 High-Fidelity Simulation and Analytical Modeling of Tip Vortex Turbulence for Interactional Aeroacoustic Predictions S. Ghimire, S. Li, Oklahoma State University, Stillwater, OK			
Thursday, 15 January 2026					
ACD-20/TF-08	Design of Vertical Takeoff and Landing (VTOL) Aircraft				Rock Spring I & II
Chaired by: C. BIL, RMIT University and K. OU, Honda Aircraft Company					
3:30 p.m. AIAA-2026-2280 Flight Mission Modeling of eVTOL and eCTOL Commuter Aircraft J. Kwak, T. Venkatesh, M. Bradley, M. Luhar, S. Byahut, University of Southern California, Los Angeles, CA	3:50 p.m. AIAA-2026-2281 Demand and Economic Potential for Battery-Electric Regional Air Mobility in Germany F. Reuel, Technische Universitat Munchen, Munich, Germany; J. van Wensveen, Vaeridion GmbH, Munich, Germany; E. Schaerer, Technische Universitat Munchen, Munich, Germany; S. Armanini, Imperial College London, London, United Kingdom	4:10 p.m. AIAA-2026-2282 A Participatory Design Framework for Accessible Design Features in Urban Air Mobility Aircraft M. Michaud, K. Chahal, N. Tepylo, Clarkson University, Potsdam, NY	4:30 p.m. AIAA-2026-2283 Investigation on Aeroelastic Instability of a Distributed Propulsion Tiltrotor S. Kim, C. Ahn, H. Choi, S. Shin, Seoul National University, Gwanak-gu, South Korea	4:50 p.m. AIAA-2026-2284 Development of a PIDO-Based Integrated Optimization Framework for High-Performance Tiltrotor Blade Design Considering Forward Flight and Hover Flow Conditions Y. Kim, S. Lee, D. Im, Cheongju University, Cheongju-si, South Korea	5:10 p.m. AIAA-2026-2800 Evaluating eVTOL and Seaplane Integration in Intermodal Transport: An Inter-Modal, Multi-Stakeholder Simulation Study N. Naeem, N. Cigal, P. Prakasha, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Hamburg, Hamburg, Germany
Thursday, 15 January 2026					
AFM-15	System Identification and Flight Test II				Bayhill 33
Chaired by: C. SCHULZE, Systems Technology, Inc. and C. WOOLSEY, Virginia Tech					
3:30 p.m. AIAA-2026-2285	3:50 p.m. AIAA-2026-2286	4:10 p.m. AIAA-2026-2287	4:30 p.m. AIAA-2026-2288	4:50 p.m. AIAA-2026-2289	5:10 p.m. AIAA-2026-2290

Direct Computation of Stability and Control Derivatives with Respect to Static, Dynamic, and Unsteady Variables A. Ricciardi, J. Trout, E. Blades, ATA Engineering Inc, San Diego, CA; D. Luke, Air Force Research Laboratory Directed Energy Directorate, Kirtland AFB, NM	Sensing and Estimation of Fire-Induced Wind Field Using Small UAS M. Shawon, The University of Kansas, Lawrence, KS; H. Wu, Florida Agricultural and Mechanical University, Tallahassee, FL; M. Rhudy, Penn State Berks, Reading, PA; J. Matt, H. Chao, The University of Kansas, Lawrence, KS	Aircraft System Identification Approach for Control Surface Fault Diagnosis P. Corrigan, G. Asper, B. Simmons, C. Woolsey, Virginia Polytechnic Institute and State University, Blacksburg, VA	Control Law Development, Flight Testing, and System Identification of a Distributed Electric Propulsion Subscale Aircraft B. Kunwar , S. Putra, H. McCormick, R. Bhandari, I. Chakraborty, Auburn University, Auburn, AL	Supervised Machine Learning for Identifying Motor-Propeller System Failures Onboard Multicopters C. Godby, C. Ivler, University of Portland, Portland, OR; U. Borek, University of Michigan, Ann Arbor, MI; C. Possedi, University of Portland, Portland, OR; A. Pua, University of Michigan, Ann Arbor, MI	Identification of Non-Dimensional Aerodynamic Derivatives using Markov Parameter Based Least Squares Identification Algorithm C. Leshikar, C. Zaramella, E. Madewell, J. Valasek, Texas A&M University System, College Station, TX

Thursday, 15 January 2026

AMT-31	Innovations in Aerodynamic Measurement Technologies	Orlando Ballroom N

Chaired by: J. COLBORN, The University of Texas at San Antonio

Speaker Nick Parziale, "Non-Intrusive Optical Diagnostics for High-Speed Boundary-Layer Physics and Multiphase Flow"

Thursday, 15 January 2026

AMT-32	Sensor, Facility, and Algorithm Development	Blue Spring II

Chaired by: E. BRAUN, Air Force Research Laboratory and J. MOLNAR, The Pennsylvania State University

3:30 p.m. AIAA-2026-2292 Development of an Optically Accessible Narrow-Channel Detonation Facility for Laser-Based Measurements of Wave Propagation S. Sawaya, A. Gargiulo, L. Elkowitz, S. Poole, M. Novak, C. Dedic, University of Virginia, Charlottesville, VA	3:50 p.m. AIAA-2026-2293 Time Resolved BOS Velocimetry of Synthetic Raytraced Images of a Low Speed Mixing Flow C. Moy, S. Lakshminarayanan Balakrishnan, G. Blaisdell, S. Bane, Purdue University, West Lafayette, IN	4:10 p.m. AIAA-2026-2294 Analysis of the RAFT Neural Network for Particle Image Velocimetry: Noise, Laser Sheet Effects, and Object Occlusion R. Whitley, University of Colorado Colorado Springs, Colorado Springs, CO; N. Shumway, C. Fagley, US Air Force Academy, Air Force Academy, CO; X. Yee, University of Colorado Colorado Springs, Colorado Springs, CO	4:30 p.m. AIAA-2026-2295 Quantitative Rainbow Schlieren Deflectometry for Supersonic Binary Ideal Gas Mixing A. Hendricks, T. Wanstall, The University of Alabama, Tuscaloosa, AL	4:50 p.m. AIAA-2026-2291 Efforts Towards Shear Stress and Heat Flux Measurement on a Hollow Cylinder at Mach 6 B. Segall, T. Keenoy, N. Parziale, Stevens Institute of Technology, Hoboken, NJ	

Thursday, 15 January 2026

APA-66/ACD-19/MDO-21	Aerodynamic Design: Analysis, Methodologies, and Optimization Techniques IV	Manatee Spring II

Chaired by: R. FUNK, Georgia Tech Research Institute and D. BRYSON, Air Force Research Laboratory

3:30 p.m. AIAA-2026-2296	3:50 p.m. AIAA-2026-2297	4:10 p.m. AIAA-2026-2298	4:30 p.m. AIAA-2026-2299	4:50 p.m. AIAA-2026-2300	5:10 p.m. AIAA-2026-2301

The Influence of a Tip Propeller's Vertical Offset on a Trailing Wing with Fixed Lift G. Padovany da Silva, Pontificia Universidade Catolica do Parana, Curitiba, Brazil; S. Chauhan, University of Michigan, Ann Arbor, MI; G. Olichevis Halila, Pontificia Universidade Catolica do Parana, Curitiba, Brazil; J. Martins, University of Michigan, Ann Arbor, MI; J. Azevedo, Instituto de Aeronautica e Espaco, Sao Jose dos Campos, Brazil	Mitigation of Ignition Overpressure in Launch Pads via Unsteady Adjoint-Based Optimization E. Danisan, S. Eyi, Orta Dogu Teknik Universitesi, Ankara, Turkey	Exploring Multivariable Design Trade-offs in Hypersonic Expansion Tunnels Using Multi-Objective Optimization A. Hanumpatla, D. Knight, Rutgers University New Brunswick, New Brunswick, NJ	Evaluation of Inner–Outer Problem Coupling in Low-Order Aerodynamic Models R. Ward, E. Limacher, W. Hinman, University of Calgary Schulich School of Engineering, Calgary, Canada	PVU: A Medium-Order Finite Element Panel Method M. Drela, Massachusetts Institute of Technology, Cambridge, MA; D. Ulker, H. Youngren, Self, Cambridge, MA	Multi-Fidelity Surrogate-Based Trajectory-Aware Shape Optimization of Hypersonic Vehicles K. Haque, A. Meo, University of Illinois Urbana-Champaign, Urbana, IL; A. Meini, University of California Irvine, Irvine, CA; M. Panesi, University of Illinois Urbana-Champaign, Urbana, IL

Thursday, 15 January 2026

APA-67/GT-18/FT-09	Aerodynamic Testing: Ground, Wind-Tunnel, and Flight Testing II	Plaza Ballroom F

Chaired by: I. BAHR, NSWC Carderock and J. COLE, The Pennsylvania State University

3:30 p.m. AIAA-2026-2302 Multifunctional Vehicle-Mounted Test Platform for Aerodynamic Testing of Propellers and Aircraft Models J. Hua, Shenzhen Feima Robotics Tech Co. Lt., Beijing Branch, Beijing, China; H. Wang, A. Ji, B. Li, Tianjin Feima Robotics Tech Co. Ltd, Tianjin, China	3:50 p.m. AIAA-2026-2303 PIV and Load Measurements of a Rotor in a Building Wake J. Gillespie, D. Carter, NC State University, Raleigh, NC	4:10 p.m. AIAA-2026-2304 Evaluation of an Experimental Method for Predicting Dynamic Loads of Propellers Under Oblique Inflow Conditions M. Mbaya, D. Frey, FH Aachen, Aachen, Germany; O. Bergmann, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cochstedt, Germany; C. Braun, F. Janser, FH Aachen, Aachen, Germany	4:30 p.m. AIAA-2026-2305 Design and Characterization of a Modular Wind Wall for VTOL and Fixed Wing UAV Testing D. Freeman, A. Aboelezz , University of Maine System, Bangor, ME	4:50 p.m. AIAA-2026-2306 Performance Testing of Small Multi-Rotor UAV Propellers B. Cox, O. Dantsker, Indiana University, Bloomington, IN	5:10 p.m. AIAA-2026-2307 Assessment and Comparison of Fan Array Wind Tunnel Facilities M. Rahmati, M. Rahman, R. Nouri, The University of Memphis, Memphis, TN; C. Dougherty, Cornell University, Ithaca, NY; D. Robinson, S. Narsipur, Mississippi State University, Mississippi State University, MS; et al.

Thursday, 15 January 2026

APA-68/SD-24	DPW-8/AePW-4 Mini Workshop 2 and All-Hands Tagup	Peacock Spring

Chaired by: B. POMEROY, NASA Langley Research Center

This panel session, serving as DPW-8/AePW-4 Mini Workshop 2, will provide key insight into the upcoming DPW-8/AePW-4 workshop. Updates will be provided from all seven working groups including the two joint groups (Static Deformation and Buffet), AePW (High-Speed, Large Deformation, High Alpha), and DPW (Source of Scatter and Test Environment). The panel session will be a mix of presentations, Q&A, and discussion.

Thursday, 15 January 2026

APA-69/FD-82	Flow Control: Methods and Applications XI	Manatee Spring I

Chaired by: N. HARRISON, The Boeing Company and J. XIONG, KBR Wyle, Inc.

3:30 p.m. AIAA-2026-2308 Turbulence Suppression in the Wake of a Cylinder via Microfiber Coating Under Subcritical Flow M. Hasegawa, Kanagawa University, Yokohama, Japan; G. Blois, University of Idaho, Moscow, ID; H. Sakaue, University of Notre Dame, Notre Dame, IN	3:50 p.m. AIAA-2026-2309 Control of Inlet Flow Separation A. Shmilovich, Y. Yadlin, The Boeing Company, Chicago, IL	4:10 p.m. AIAA-2026-2310 Smart Engine Nacelle Strake G. Nino, H. Carbrey, C. Homfeldt, A. Maldonado, M. Saludares, P. Snyder, University of Washington, Seattle, WA; et al.	4:30 p.m. AIAA-2026-2311 Aerodynamic Performance Enhancement Through Triangular Porous Texturing on Infinite Flat Plates: A Computational Fluid Dynamics Approach L. Alvarez, M. Olvera, I. Choutapalli, The University of Texas Rio Grande Valley, Edinburg, TX		
Thursday, 15 January 2026					
APA-71	Transonic Aerodynamics				Coral Spring II
Chaired by: W. HINMAN, University of Calgary and V. MALDONADO, Texas Tech University					
3:30 p.m. AIAA-2026-2312 Computational Study of the Effect of Wall Geometry on the Transonic Buffet Envelope for a NACA0012 T. Xu, E. Dowell, Duke University Pratt School of Engineering, Durham, NC	3:50 p.m. AIAA-2026-2313 Sensitivity of a Sinusoidally Pitching Airfoil to Surface Jets for Active Control of Transonic Flutter V. Godavarthi, J. Seo, R. Mittal, Johns Hopkins University, Baltimore, MD	4:10 p.m. AIAA-2026-2314 Modal Assessment of the Turbulent Near-Wake Flow Field Induced by Transonic Shock Buffet Mode C. Schauerte, Y. Kwong, Rheinisch-Westfalische Technische Hochschule Aachen Aerodynamisches Institut und Lehrstuhl fur Stromungsmechanik, Aachen, Germany; A. Schreyer, Hochschule fur angewandte Wissenschaften Munchen, Munich, Germany	4:30 p.m. AIAA-2026-2315 Nonlinear Time-Domain System Identification of Aircraft Stability and Control Derivatives N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Xiong, KBR Wyle Services LLC, Moffett Field, CA		
Thursday, 15 January 2026					
APA-72	Tutorial on Lift, Control, Stability, Instruments, and Loads as an Integrated Approach for Broad-Based Learning				Plaza Ballroom K
Chaired by: J. WISSLER, Practical Aeronautics, Inc.					

Aircraft are complex systems requiring skilled professionals working in a team to combine their specific expertise to develop a fully integrated vehicle. The professionals who engineer, test, manufacture, and in any way support these aircraft are accomplished specialists who sometimes lack an overall understanding of the airplane system as a whole. Fundamental understanding of the airplane-engine system gives team members the ability to communicate more effectively and think beyond their specific area of expertise. This tutorial session provides participants with an improved practical understanding of and, equally importantly, greater appreciation for these amazing machines called airplanes – how they fly and why they look the way they do. It is also an example of how an integrated approach based on fundamentals provides insights for a wide spectrum of professionals. In this tutorial, we use a practical, fundamentals-based approach to look at various topics related to aircraft and their operation and how they work together to enable airplanes to function. We establish a common starting point for discussion by

first defining the four forces acting on an airplane before focusing on lift and how it is generated. To aid learning, we include videos where appropriate and use a very simple balsa wood glider to illustrate fundamental concepts. With that foundation, we then apply it to a conventional airplane, its features, and its geometry, using a full spectrum of examples from general aviation aircraft (e.g., a Cessna) to fighters (e.g., an F-15) to advanced transport aircraft (e.g., a Boeing 787). We talk about stall and how it happens and the effect of leading/trailing edge devices on the wing. We then move from lift generation to control of the aircraft. Although there are multiple axes to consider, we focus on pitch in this tutorial. Closely related to control is stability; in this tutorial, we focus on pitch static stability and how aircraft geometry affects it, especially things one can do to increase pitch stability and what could happen if one doesn't (e.g., cg being too far aft or center of lift too far forward). Our little balsa wood glider figures prominently in establishing a practically-based, physical understanding. We also touch on how one might mechanically augment the flight controls to build stability into the airplane, for example in cases where roll and yaw are coupled. Building on the control discussion, we briefly present how a pilot assesses the aircraft's state using his or her instruments and uses the controls to operate the aircraft in an intentional as opposed to an unintended manner. An example of intentional flying is to put a load on the aircraft, a.k.a., pull some g's. We discuss what happens to the aircraft and the pilot under these conditions and how that impacts the aircraft's flight envelope. During this tutorial, we use contemporary airplanes today to look at topics such as lift, stability, control, loads, and performance as defined by the flight envelope. These amazing machines are subject to the laws of physics and how that physics integrates in design determines how the airplane flies and why it looks the way it does. By following this kind of approach, one can establish a common reference for an integrated team, thus improving communication, understanding, and engagement.

Thursday, 15 January 2026

DGE-17	Digital Ecosystem - Digital Engineering in Context with Ecosystem, Architecture and Infrastructure	Silver Spring I

Chaired by: R. GRAVES, Air Force Research Laboratory

Report out on the Digital Engineering Integration Committee's work on defining what a Digital Ecosystem is and why it's important.

Thursday, 15 January 2026

EAT-19	Electric Energy Conversion, Power Electronics and Electric Machines				Bayhill 21

Chaired by: S. LIU, The Boeing Company

3:30 p.m. AIAA-2026-2316 Quantitative Evaluation of Observability for Batteries in Electric Aircraft Using Gramian-Based Methods R. Akintade, G. Rizzoni, The Ohio State University, Columbus, OH	3:50 p.m. AIAA-2026-2317 Cycle Analysis of Gas Turbine / Solid Oxide Fuel Cell Hybrids for Aircraft L. Pratt, C. Cadou, University of Maryland, College Park, MD	4:10 p.m. AIAA-2026-2318 Development of a Pressurized Solid Oxide Fuel Cell Testing Facility L. Pratt, R. Northcutt, B. Dainkeh, C. Cadou, University of Maryland, College Park, MD	4:30 p.m. AIAA-2026-2319 Impact of Advanced ULTRA-COMPACT Integrated Power Train on Hybrid Electric Turboprop S. Taylor, J. Tangudu, RTX Corporation, Arlington, VA	4:50 p.m. AIAA-2026-2320 Propeller Design for Hydrogen-Electric Aircraft J. Dawe, A. Frey, J. Bird, O. Pountney, C. Sangan, University of Bath, Bath, United Kingdom	

Thursday, 15 January 2026

EP-13	Electrospray and FEEPs	Celebration 1

Chaired by: E. PETRO, Cornell University and A. GREIG, BAE Systems Inc.

3:30 p.m. AIAA-2026-2321 Kinetic Plume Modeling of Electrospray Ion Sources With Emitter and Extractor Defects A. Smith, A. Park, E. Petro, Cornell University, Ithaca, NY	3:50 p.m. AIAA-2026-2322 Low-Cost Optical and Image-Based Analysis of Electrospray System Deposition Pattern for Early-Stage Design	4:10 p.m. AIAA-2026-2672 Development and Characterization of a Two-Stage Coaxial Plasma Gun			

	E. Lopedote, P. Hendrick, C. Iorio, Universite Libre de Bruxelles, Brussels, Belgium	R. Reuben, K. Boehm, K. Xu, The University of Alabama in Huntsville, Huntsville, AL			

Thursday, 15 January 2026

EXPL-17	The Life Sciences Perspective in Spaceflight -- Challenges and Research for Long-Duration Space Missions at Multiple Levels of Analysis from the Cell to Vehicle Design	Celebration 14

Chaired by: M. SCHMIDT, Advanced Pattern Analysis & Countermeasures Group and D. HOLLAND, Human Systems Integration

Building on the session the previous day regarding human beings attributes, strengths and weaknesses for long duration spaceflight, this session delves into the additional concerns of radiation effects, the loss of gravity on human homeostasis (and whether artificial gravity is one answer as a countermeasure). Discussions will also include the challenge of understanding elevated intracranial pressure and bone demineralization, and individual differences with regard to susceptibility to these effects. **Speakers/Panelists:** Jeff Jones, MPH, MD-- An Overview of Radiation Challenges for SpaceFlight Michael Schmidt, PhD, MPhil-- Molecular Factors in Astronauts Affecting Radiation Susceptibility, and Countermeasures Selection Mark Benton, PhD-- Artificial Gravity Concerns and as a Countermeasure for Long Duration Space Missions James Muccio, MS, MD/Dwight Holland, MD, PhD-- Theoretical Bone Demineralization and Fracture Concerns for a Mission to Mars Edson Oliveira, MD-- Intracranial Pressure Monitoring in Space: Neurosurgical Challenges and Innovations

Thursday, 15 January 2026

EXPL-18	Space Policy and Technologies for Space Exploration	Celebration 13

Chaired by: K. PATEL, Jet Propulsion Laboratory (JPL) and M. GROSS, Jet Propulsion Laboratory (JPL)

3:30 p.m. AIAA-2026-2323 Developing a Multi-Agent AI Governance System for Behavioral Health (MAGSBH) in Space Exploration S. Jewell, MMAARS, Los Angeles, CA	3:50 p.m. AIAA-2026-2325 Development and Testing of 3D Medium Density Carbon Phenolic (3MDCP) for NASA's Mars Sample Return Thermal Protection System S. Violette, Fiber Materials Inc., Biddeford, ME	4:10 p.m. AIAA-2026-2326 Dynamics of Planetary Lander Landing Gear with Electromagnetic Damping System S. Iwabuchi, K. Minesugi, Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus, Sagamihara, Japan			

Thursday, 15 January 2026

F360-14 3:30 - 4:30 p.m.	Capture the Satellite Challenge	Windermere Ballroom

Thursday, 15 January 2026

FD-81	Fixed Wings	Plaza Ballroom E

Chaired by: P. VIJGEN

3:30 p.m. AIAA-2026-2327 Wake Characteristics of a Bell-Shaped Lift Distribution	3:50 p.m. AIAA-2026-2328 Cross-Stream PIV Characterization of the Prandtl-D3C Wake	4:10 p.m. AIAA-2026-2329 High-Fidelity Computations of the Prandtl-D Flying Wing P. Hammer, D. Garmann, Air Force Research Laboratory,	4:30 p.m. AIAA-2026-2330 The Turbulence Kinetic Energy Budget of a Slender Delta Wing With Trailing Edge Jets Using Volumetric PIV	4:50 p.m. AIAA-2026-2331 Wall Modeling Effects in Transitional Airfoil Flows Using the Lattice-Boltzmann Method	

C. Cain, S. Gunasekaran, University of Dayton, Dayton, OH	C. Cain, J. DeMoor, S. Gunasekaran, University of Dayton, Dayton, OH	Wright-Patterson Air Force Base, OH	H. Balogun, M. Khan, Tuskegee University College of Engineering, Tuskegee, AL; C. Aji, Tuskegee University, Tuskegee, AL	B. Rocha Ribeiro, Universidade Estadual de Campinas, Campinas, Brazil; F. Avallone, Politecnico di Torino, Turin, Italy; W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil	
Thursday, 15 January 2026					
FD-83	High-Order Numerical Methods				Barrel Spring II
Chaired by: Z. WANG, University of Kansas					
3:30 p.m. AIAA-2026-2332 A Discontinuous Galerkin Spectral Element Method for Chemically Reacting Flows J. Lueth, P. Subbareddy, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	3:50 p.m. AIAA-2026-2333 A GPU-native high-order DG solver for Large-Eddy-Simulation D. Flad, A. Hueppe, A. Main, V. Pasquariello, ANSYS, Otterfing, Germany	4:10 p.m. AIAA-2026-2334 A Space-Time Approach to Nonlinearly Stable Flux Reconstruction C. Pethrick, S. Nadarajah, McGill University, Montreal, Canada	4:30 p.m. AIAA-2026-2335 Nonlinearly Stable Flux Reconstruction for Aerodynamic Transitional Flow Simulations D. Roy, S. Nadarajah, McGill University, Montreal, Canada		
Thursday, 15 January 2026					
FD-84/APA-70	Hypersonic Shear Layers				Barrel Spring I
Chaired by: E. BENITEZ, Air Force Research Laboratory and G. ROTH, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-2336 Large-Scale Aerodynamic Oscillations From a Partially-Closed Cavity at Mach 6 E. Benitez, N. Bisek, M. Borg, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; J. Clingenpeel, N. Molinaro, R. Meritt, Ahmic Aerospace, Dayton, OH	3:50 p.m. AIAA-2026-2337 Heat Flux, Surface Temperature, and Wall Shear Characterization via Embedded Sensors in a Partially-Closed Cavity in Hypersonic Conditions J. Clingenpeel, N. Molinaro, R. Meritt, Ahmic, A CUBRC Company, Dayton, OH; E. Benitez, M. Borg, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	4:10 p.m. AIAA-2026-2338 Separation Shear Layer Instabilities in Hypervelocity Flows W. Yu, A. Knisely, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; M. Stramenga, Y. Luo, J. Austin, California Institute of Technology, Pasadena, CA	4:30 p.m. AIAA-2026-2339 Application of High-Speed Acetone-PLIF to a Supersonic Jet in Hypersonic Crossflow N. Stegmeier, The University of Texas at San Antonio, San Antonio, TX; N. Rodrigues, NASA Langley Research Center, Hampton, VA; C. Combs, The University of Texas at San Antonio, San Antonio, TX		
Thursday, 15 January 2026					
FD-88	Turbulent Flows IV				Plaza Ballroom D
Chaired by: K. AHMED, University of Central Florida and J. MAJDALANI, Auburn University					
3:30 p.m. AIAA-2026-2342	3:50 p.m. AIAA-2026-2343	4:10 p.m. AIAA-2026-2344	4:30 p.m. AIAA-2026-2345		

An Angular Momentum Integral Equation for Turbulent Flows Over a Permeable Surfaces M. Warnecke, S. Stout, P. Fradera-Soler, P. Johnson, University of California Irvine, Irvine, CA	Scalar Source Localization Using Multi-Sensor Domains of Dependence in Turbulent Channel Flow Z. You, Q. Wang, San Diego State University, San Diego, CA; X. Zhu, Portland State University, Portland, OR	On the An-isotropic Turbulent Wake Flows Near Unsteady Free Surfaces C. Wang, D. Butler, C. Eluchie, S. Dar, M. Nguyen, S. Gerlock, The University of Iowa IIHR Hydroscience and Engineering, Iowa City, IA; et al.	The Effect of Branch Angle on the Wake of a Wall-Mounted Cruciform C. Anzalotta, S. Bhattacharya, University of Central Florida, Orlando, FL		
Thursday, 15 January 2026					
GNC-37	Missile, Projectile and Rocket GNC II				Bayhill 29
Chaired by: N. NIGAM, Johns Hopkins University Applied Physics Laboratory and M. MCFARLAND, Raytheon					
3:30 p.m. AIAA-2026-2346 Terminal Time and Angle-constrained Interception of a Non-Maneuvering Target Under Autopilot Lag S. Bajpai, P. Sood, A. Sinha, University of Cincinnati, Cincinnati, OH; R. Sharma, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH	3:50 p.m. AIAA-2026-2347 New Modified Proportional Navigation Guidance with Several Constraints H. Takano, Y. Shiraishi, T. Yamasaki, National Defense Academy of Japan, Yokosuka-city, Japan	4:10 p.m. AIAA-2026-2348 Impact Angle Constrained Guidance Laws for Stationary Target Interception in 3D Space N. Singh, Amrita Vishwa Vidyapeetham, Coimbatore, Coimbatore, India; S. Pal, A. Menon, S. Hota, Indian Institute of Technology Kharagpur, Kharagpur, India	4:30 p.m. AIAA-2026-2349 Deviated Pursuit-Based Impact Time Guidance With Bounded Input S. Singh, S. Kumar, D. Mukherjee, Indian Institute of Technology Bombay, Mumbai, India	4:50 p.m. AIAA-2026-2350 Great Circle Guidance for Long-Range Bank to Turn Vehicles J. Matthews, ASEI, Tucson, AZ; A. Abdelmawgoud, RTX Corporation, Arlington, VA	5:10 p.m. AIAA-2026-2351 Low-Thrust Orbital Linear-Quadratic Differential Games With Terminal Speed Constraints Y. Drucker, V. Shaferman, Technion Israel Institute of Technology, Haifa, Israel
Thursday, 15 January 2026					
GNC-38	Towards Safe Autonomous Flight and Its Benefits III				Bayhill 28
Chaired by: D. SUN, Purdue University and J. CARSON, NASA					
3:30 p.m. AIAA-2026-2352 Baseball Avoidance Multirotor Simulation M. Acheson, K. Ackerman, T. Britton, N. Campbell, I. Gregory, D. Hill, NASA Langley Research Center, Hampton, VA; et al.	3:50 p.m. AIAA-2026-2353 Robust Direction-Preserving Control Allocation T. Nakamura-Zimmerer, L. Miller, NASA Langley Research Center, Hampton, VA	4:10 p.m. AIAA-2026-2354 Robust Trajectory Tracking Flight Control of a Tailsitter UAS R. Axten, E. Johnson, The Pennsylvania State University, University Park, PA	4:30 p.m. AIAA-2026-2355 Optimal Guidance for Ship Landing Using Monocular Vision P. Jenny, Universitat Stuttgart, Stuttgart, Germany; E. Johnson, A. Perumalla, The Pennsylvania State University, University Park, PA		
Thursday, 15 January 2026					
GT-19	Novel Applications in Ground Testing				Rainbow Spring II
Chaired by: E. BERRY, Collins Aerospace and E. SCHUCH, Calspan					
3:30 p.m.	3:50 p.m.	4:10 p.m.	4:30 p.m.	4:50 p.m.	

AIAA-2026-2356 Metal Laser Marking for Wind Tunnel Model Displacement Measurements Using Digital Image Correlation A. Lovejoy, Lovejoy Engineering, Hampton, VA	AIAA-2026-2357 Development of an Altitude Conditioning System for Dual Cylinder Two-Stroke Engines T. Balaj, M. Polanka, J. Ausserer, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH; J. Baranski, A. Brown, Innovative Scientific Solutions, Inc, Dayton, OH	AIAA-2026-2358 Modeling, Design, and Commissioning of a Heated Water Loop for Wind Tunnel Heat Exchanger Testing W. Andress, G. Paniagua, Purdue University, West Lafayette, IN	AIAA-2026-2359 A Parametric Design of a Nanonewton-Scale DMD-Driven Torsion Pendulum J. Messer, University of Southern California, Los Angeles, CA	AIAA-2026-2360 Commissioning of an Inductively Coupled Plasma Wind Tunnel Facility for Hypersonics and Magnetoaerodynamics H. Ali, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	

Thursday, 15 January 2026

GTE-30	Data Driven Methods Across the Gas Turbine Industry - Digital Twins, MRO, System Design	Celebration 3

Chaired by: A. HAZLETT, GE Aerospace and S. HEGDE, Pratt & Whitney

Explore the latest advancements in manufacturing methods and emerging technologies, and their applications and transformative impacts in aerospace production - from design to prototyping, assembly, and quality control. **Panelists:** Dinakar D (GE Aerospace) Sunil Patil (Ansys) Shubham Kulkarni (Altair) Kishore Reddy (RTRC, RTX)

Thursday, 15 January 2026

GTE-33	Multidisciplinary Analysis and Optimization	Celebration 2

Chaired by: A. YATSKO, AIAA and B. KHANDELWAL, University of Alabama, Tuscaloosa

3:30 p.m. AIAA-2026-2361 TurboMAP: A Modular, Multi-Point Engine Modeling Framework for Mid-Fidelity Cycle and Emissions Analysis in Python D. Rhode, J. Mukhopadhaya, International Council on Clean Transportation, Washington, D.C.	3:50 p.m. AIAA-2026-2363 Validation and Benchmarking of TurboMAP Engine Modeling Framework D. Rhode, International Council on Clean Transportation, Washington, D.C.; C. Kocer, Georgia Institute of Technology, Atlanta, GA; J. Mukhopadhaya, International Council on Clean Transportation, Washington, D.C.; J. Gladin, D. Mavris, Georgia Institute of Technology, Atlanta, GA				

Thursday, 15 January 2026

HSABP-13	Topics in High-Speed Air-Breathing Propulsion III	Celebration 4

Chaired by: G. SIDHARTH, Iowa State University and C. RISING, The University of Texas at El Paso

3:30 p.m.	3:50 p.m.	4:10 p.m.	4:30 p.m.		

AIAA-2026-2364 Aerated-Liquid Fuel Jets in Hypersonic Crossflows: A Review N. Dreyer, J. Sprunger, K. Ahmed, University of Central Florida, Orlando, FL	AIAA-2026-2365 Wave Interactions in Oblique Detonations P. Laad, G. Sidharth, Iowa State University of Science and Technology, Ames, IA	AIAA-2026-2560 Three-Dimensional Unsteadiness of a Shock Train in a Low Aspect Ratio Rectangular Duct J. Sullivan, D. Gaitonde, The Ohio State University, Columbus, OH	AIAA-2026-2561 Shock Train Control in High Speed Inlets and Isolators L. Sharma, V. Narayanaswamy, NC State University, Raleigh, NC		
Thursday, 15 January 2026					
IS-24	Autonomy III				Celebration 15
Chaired by: E. ATKINS, Virginia Tech and L. SUN, Baylor University					
3:30 p.m. AIAA-2026-2366 Synergistic Skies: Evolutionary Multi-Objective Optimization for eVTOL Dispatching and Charging in Advanced Air Mobility N. Negash, L. Sun, Baylor University, Waco, TX	3:50 p.m. AIAA-2026-2367 Multi-Aircraft Energy-Optimal Route Planning for Advanced Air Mobility N. Collins, E. Atkins, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:10 p.m. AIAA-2026-2368 Slot-hopping Enabled Loiter Guidance and Automation for Fixed-wing UAV Corridors P. J, S. Kedarisetty, Indian Institute of Technology Bhilai, Bhilai, India; A. Ratnoo, Indian Institute of Science, Bengaluru, India	4:30 p.m. AIAA-2026-2369 Safe Autonomous Landing of a UAV in Offset Approaches using Neural Networks M. Ramasamy, Indian Institute of Science, Bengaluru, India; J. Raj, DRDO Aeronautical Development Establishment, Bengaluru, India; D. Ghose, Indian Institute of Science, Bengaluru, India	4:50 p.m. AIAA-2026-2370 Feasibility Assurance for Search-Based Emergency Landings H. Tekaslan, E. Atkins, Virginia Polytechnic Institute and State University, Blacksburg, VA	
Thursday, 15 January 2026					
IS-25	Guidance, Navigation, and Control Architectures for Autonomous Systems III				Celebration 16
Chaired by: A. CHAKRAVARTHY, University of Texas, Arlington and K. WILCHER					
3:30 p.m. AIAA-2026-2371 Passive Inertial Navigation of Maritime Vessels Using a Gravimeter Y. Cheng, XAnalytix Systems, Clarence Center, NY; S. Szklany, Anduril Industries, Costa Mesa, CA; J. Crassidis, University at Buffalo, Buffalo, NY; T. Meyer, Lockheed Martin RMS - Gravity Systems, Niagara Falls, NY	3:50 p.m. AIAA-2026-2372 Mitigating the Effects of Sensor and Actuator Attacks in Uncertain Networked Multiagent Systems D. Venkat, W. Haddad, Georgia Institute of Technology College of Engineering, Atlanta, GA; J. Kerce, Georgia Institute of Technology Research Institute, Atlanta, GA	4:10 p.m. AIAA-2026-2373 A Multi-Robot Experimental Platform for Emulating Autonomous On-Orbit Servicing B. Russell, N. Wolfe, University of New Mexico, Albuquerque, NM; G. Gutow, Michigan Technological University, Houghton, MI; L. Garcia Carrillo, Air Force Research Laboratory Space Vehicles Directorate, Kirtland AFB, NM; C. Danielson, R. Fierro, University of New Mexico, Albuquerque, NM	4:30 p.m. AIAA-2026-2374 Thrust and Tilt Constrained Fault-Tolerant Control of Quadcopters With Propeller Failure R. Rijal, A. Chakravarthy, The University of Texas at Arlington, Arlington, TX	4:50 p.m. AIAA-2026-2375 Uncertainty-Driven Online Path Planning for Autonomous Bathymetry Mapping Using a Tethered System A. Pulido, J. Shin, University of Florida, Gainesville, FL	

Thursday, 15 January 2026					
IS-26	Large Language Models to Support Space Operations				Celebration 12
Chaired by: V. RODRIGUEZ-FERNANDEZ, Universidad Politécnica de Madrid and R. LINARES					
3:30 p.m. AIAA-2026-2376 VibeOps: Intelligent Spacecraft Operations Co-Pilot R. Blanco Maceiras, A. Hickman, AVS US, Inc, Lansing, NY; A. Carrasco, D. Gonzalez, R. Diaz de Cerio, P. Via Ortega, AVS Added Value Solutions, Vitoria, Spain	3:50 p.m. AIAA-2026-2377 Guiding Generative AI Solution for Fundamental Astrodynamics Problems D. Wu, R. Shah, Embry-Riddle Aeronautical University, Daytona Beach, FL; V. Rodriguez-Fernandez, Universidad Politecnica de Madrid, Madrid, Spain	4:10 p.m. AIAA-2026-2378 LLMs in the Loop: AI Agents for Precision Telescope Command E. Noriega-Atala, The University of Arizona, Tucson, AZ; V. Rodriguez-Fernandez, Universidad Politecnica de Madrid, Madrid, Spain; A. Scorsoglio, K. Gupta, L. Ramponi, R. Furfaro, The University of Arizona, Tucson, AZ	4:30 p.m. AIAA-2026-2379 Can LLMs Do Rocket Science? Exploring the Limits of Complex Reasoning with GTOC 12 I. Del Campo Sánchez-Hermosilla, P. Cuervo, V. Rodriguez-Fernandez, Universidad Politecnica de Madrid, Madrid, Spain	4:50 p.m. AIAA-2026-2380 Tiny Recursive Control: Iterative Reasoning for Efficient Optimal Control A. Jain, R. Linares, Massachusetts Institute of Technology School of Engineering, Cambridge, MA	

Thursday, 15 January 2026					
LP-13	Propellant Management, Storage, and Feed System Design, Analysis, and Testing III				Celebration 8
Chaired by: F. NASUTI, University of Rome "La Sapienza" and J. HARTWIG, NASA Glenn Research Center					
3:30 p.m. AIAA-2026-2381 Additional Evaluations of Gas Phase Effects on Slosh Dynamics with Commercial Codes E. Gordon, L. Walters, N. Andrews, A. Prasad Varghese, Southwest Research Institute, San Antonio, TX	3:50 p.m. AIAA-2026-2382 In-Space No-Vent Fill Operations for Cryogenic Propellants M. Sansone, H. Yang, J. Brodnick, NASA Marshall Space Flight Center, Huntsville, AL	4:10 p.m. AIAA-2026-2383 Conceptual Study on a Passive Thermodynamic Vent System for Long-Term Storage of Cryogenic Propellants in Space S. Jun, M. Seo, Korea Aerospace Research Institute, Daejeon, South Korea	4:30 p.m. AIAA-2026-2384 Achieving Zero Boiloff for LH2 Supply Tanks on an NTP Rocket to Mars T. Perrin, Aerodyne Industries, LLC, Cape Canaveral, FL	4:50 p.m. AIAA-2026-2385 Vortex Generator System for Enhancing Heat Transfer in Cryogenic Pipelines G. Nino, A. Ala, H. Wang, F. Spencer, R. Breidenthal, University of Washington, Seattle, WA	

Thursday, 15 January 2026					
MAT-20	Materials for Extreme Environments				Bayhill 23
Chaired by: R. LI, Aurora Flight Sciences, A Boeing Company					
3:30 p.m. AIAA-2026-2386 Ignition and Combustion of Steels in Hypersonic Flows: A Coupled Formulation H. Dei, Massachusetts Institute of Technology School of Engineering,	3:50 p.m. AIAA-2026-2387 Study of C-C Composite Recession under Hypersonic Airflow Conditions A. Stoica, R. Bencivengo, S. Leonov, University of Notre Dame, Notre Dame, IN; R.	4:10 p.m. AIAA-2026-2388 Design Evaluation and Oxidation Behavior of Tungsten Alloy Heat Pipes for Lunar Applications A. M. Prasad, E. Torres, A. Delavald Marques, A. Dean, M. Boudreau, M. Otto,	4:30 p.m. AIAA-2026-2389 Aerothermal Finite Difference Analysis of Hypersonic Leading Edges A. La Sorsa, T. Jaycard, J. Bernard, K. Ahmed, University		

Cambridge, MA; M. Bautista Aguilar, Arkansas State University, Jonesboro, AR; W. Harris, Massachusetts Institute of Technology School of Engineering, Cambridge, MA	Gulotty, Honeywell International Inc., Des Plaines, IL	University of Central Florida College of Engineering and Computer Science, Orlando, FL; et al.	of Central Florida, Orlando, FL		

Thursday, 15 January 2026

MAT-21	Microstructure Characterization and Modeling				Bayhill 20
Chaired by: R. KOPP, ATA Engineering, Inc. and A. GHOSH, New Mexico Tech					
3:30 p.m. AIAA-2026-2390 Deep Learning Multiclass Segmentation of Intra- and Interlaminar Microdamage in Synchrotron CT of Advanced Composites R. Kopp, ATA Engineering Inc, San Diego, CA; B. Wardle, Massachusetts Institute of Technology, Cambridge, MA	3:50 p.m. AIAA-2026-2391 Microstructural Analysis of Novel Low-Density Flexible Ablators Based on Polysiloxane Resin S. Bernstein, S. Kim, W. Li, J. Koo, The University of Texas at Austin, Austin, TX; F. Alvarez-Borges, M. Mavrogordato, University of Southampton, Southampton, United Kingdom	4:10 p.m. AIAA-2026-2392 Discrete Element Modeling of Nanoscratch Interface Testing for Functionalized Carbon Fibers A. Skoppe, Embry-Riddle Aeronautical University, Daytona Beach, FL; F. Madiyar, Bethune-Cookman University, Daytona Beach, FL; S. Namilae, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:30 p.m. AIAA-2026-2394 Finite Element Modeling of Frequency-Dependent Scattering in 3D Polycrystalline Media With a Microvoid A. Yadav, M. Mitra, Indian Institute of Technology Kharagpur, Kharagpur, India		

Thursday, 15 January 2026

MAT-22	Pulsed Electrochemical Machining, Non-Contact and Non-Thermal Material Removal for Critical Aerospace Features	Bayhill 24
Chaired by: K. ABOLAFIA, Voxel Innovations		

Speaker: Daniel Herrington, Voxel Innovations CEO This session will elaborate on the continued development of pulsed electrochemical machining (PECM), a non-contact and non-thermal material removal method, to enable new designs, advanced material usage such as refractory metals, and improve high-volume manufacturing for critical aerospace parts such as turbine blades and microchannel heat exchangers.

Thursday, 15 January 2026

MDO-22	Emerging Methods, Algorithms, and Software Development in MDO				Bayhill 17
Chaired by: N. BARTOLI, ONERA and R. LIEM, Imperial College London - Access Management					
3:30 p.m. AIAA-2026-2395 Agentic AI for Conversational Aerodynamic Analysis and Optimization of Airfoils and Wings	3:50 p.m. AIAA-2026-2396 Data-Driven Process-Product Optimization Under Uncertainty for Large Scale Additive Manufacturing	4:10 p.m. AIAA-2026-2397 Implicit Multidisciplinary Optimization Problems: Algorithms for GPU Acceleration and Applications	4:30 p.m. AIAA-2026-2398 Surrogate-Based Uncertainty Propagation in Aerostructural Analysis of a Wing in Subsonic Flow A. Dikshit, P. Koratikere, L. Leifsson, Purdue University, West Lafayette, IN; P. He,	4:50 p.m. AIAA-2026-2399 Comparison of Co-Kriging, Composite Neural Networks, and Kolmogorov Arnold Networks for Multi-Fidelity Surrogate Modeling	

L. Fang, P. He, Iowa State University of Science and Technology, Ames, IA	C. Bock, M. Rais-Rohani, B. Ellis, University of Maine System, Bangor, ME	G. Kennedy, M. Soltane, Georgia Institute of Technology, Atlanta, GA	Iowa State University of Science and Technology, Ames, IA	T. Zangle, B. Ellis, M. Rais-Rohani, University of Maine System, Bangor, ME	

Thursday, 15 January 2026

MST-07	Modeling and Simulation of Air Vehicle Dynamics, Systems, and Environments II	Blue Spring I

Chaired by: N. PRABHAKAR, Argonne National Labs and D. SAROJINI, Virginia Polytechnic Institute and State University

3:30 p.m. AIAA-2026-2400 Numerical and Experimental Analysis of a Gliding Turn-Back Maneuver Following an Engine Failure N. Lototsky, University of Southern California, Los Angeles, CA	3:50 p.m. AIAA-2026-2401 Reinforcement-Learning Control of a Hybrid Airship Using a High-Fidelity Digital Twin N. Lyan, I. Bayezit, Istanbul Teknik Universitesi Ucak ve Uzay Bilimleri Fakultesi, Istanbul, Turkey	4:10 p.m. AIAA-2026-2402 Effects of Actuator and Sensor Abnormal Conditions on Missile Performance R. McLaughlin, J. Yancosek, M. Perhinschi, West Virginia University, Morgantown, WV			

Thursday, 15 January 2026

NDA-10/GNC-39	Uncertainty Quantification in Multi-Disciplinary Design	Bayhill 26

Chaired by: A. RENGANATHAN, Pennsylvania State University and E. DECARLO, Southwest Research Institute

3:30 p.m. AIAA-2026-2403 A Systems Approach to Modeling Uncertain ODE Systems B. Margolis, K. Lyons, C. Natividad, NASA Ames Research Center, Moffett Field, CA; C. York, D. Woffinden, NASA Johnson Space Center, Houston, TX; M. Tarpley, Amentum Space Exploration Division, Huntsville, AL; et al.	3:50 p.m. AIAA-2026-2404 An Efficient Parametric Reduced Basis Method to Emulate Fluid Flow with Shocks M. Bilal, K. Sethunarayanan, A. Renganathan, The Pennsylvania State University - University Park Campus, University Park, PA	4:10 p.m. AIAA-2026-2405 Probabilistic Fatigue Crack Growth Analysis With Mixed Uncertainty on Equivalent Initial Damage Size L. Hunt, E. DeCarlo, M. Stanfield, Southwest Research Institute, San Antonio, TX			

Thursday, 15 January 2026

PC-35/PDL-12	Plasma Assisted Combustion: Towards Adoption in the Commercial and Defense Community	Celebration 5

Chaired by: T. OMBRELLO, Air Force Research Laboratory

Following a very successful joint workshop and panel hosted by Propellants and Combustion and Plasmadynamics and Lasers at SciTech 2025, we seek to have another workshop/panel. Last year the workshop and panel included members from academia, government, and industry, and received significant acclaim for connecting and having a free discussion with a large attendance. This year, we envision a similar workshop and panel that continues to help connect excellent foundational work to the needs of industry through a series of short introduction talks and free discussion. The goal is to discuss more applications of plasma assisted combustion in increasingly relevant and practical combustion systems, moving towards adoption/implementation in commercial or defense products.

Thursday, 15 January 2026

PC-37	Combustion IV and Flames				Celebration 6
Chaired by: A. STEINBERG, Georgia Institute of Technology and K. VENKATESAN, GE Aerospace					
3:30 p.m. AIAA-2026-2406 Burning Times of Select Aluminum Alloy Particles G. Peter, M. Ornek, S. Son, Purdue University, West Lafayette, IN	3:50 p.m. AIAA-2026-2407 Accelerating Accurate Prediction of Real-Fluid Thermodynamics in Ansys for GPU-Based CFD N. Srinivasan, University of Minnesota Twin Cities, Minneapolis, MN; D. Williams, S. Ranjan, Ansys, Waterloo, Canada; S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	4:10 p.m. AIAA-2026-2408 Large Eddy Simulation of Thermo-Acoustic Instabilities of Bluff-Body Stabilized Flames; A Comparison Between Jet-A and C1 B. Jarfors, C. Fureby, Lunds Universitet, Lund, Sweden	4:30 p.m. AIAA-2026-2409 One-Dimensional Hybrid fs/ps Coherent Anti-Stokes Raman Scattering System for Simultaneous Rotational and Rovibrational Spectroscopy in Reactive Flows A. Gargiulo, L. Elkowitz, C. Dedic, University of Virginia, Charlottesville, VA	4:50 p.m. AIAA-2026-2410 Dynamics of Compressible Turbulent Standing Flames K. Chougag, A. Morales, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	

Thursday, 15 January 2026					
PDL-13	Computational Methods for Plasmas and Lasers II				Rainbow Spring I
Chaired by: E. MATLIS and C. DUMITRACHE, Colorado State University					
3:30 p.m. AIAA-2026-2411 Numerical Investigation of Femtosecond Laser Electronic Excitation Tagging in Pure Nitrogen M. Hooshyar, C. Dumitrache, Colorado State University, Fort Collins, CO	3:50 p.m. AIAA-2026-2412 Numerical Modeling of Energy Deposition Pathways in Sparking Events at Different Rates S. Austin, C. Guerra-Garcia, C. Nguyen, J. Peraire, Massachusetts Institute of Technology, Cambridge, MA	4:10 p.m. AIAA-2026-2413 Simulation of Gas-Surface Interactions in a Very-Low Earth Orbit Wind Tunnel Using PICLas N. Wijesinghe, D. Soni, S. Berg, Rutgers University New Brunswick, New Brunswick, NJ	4:30 p.m. AIAA-2026-2414 Coarse-Grained Modeling of Radiation Processes in Non-Equilibrium Laser-Induced Plasma M. Hazarika, K. Duraisamy, University of Michigan, Ann Arbor, MI; H. Cambier, A. Munafò, M. Panesi, University of California Irvine, Irvine, CA; S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea		

Thursday, 15 January 2026					
PGC-20	Validation of PGC Concepts and Methods				Florida Ballroom B
Chaired by: M. ROSS, Air Force Research Laboratory and D. SCHWER, Naval Research Lab					
3:30 p.m. AIAA-2026-2417 Reduced Order Thermodynamic and 3D Unsteady CFD Models for Performance Estimates of a Rotating Detonation Engine	3:50 p.m. AIAA-2026-2418 Experimental Validation of a Simple Model for Air-Breathing Rotating Detonation Engines H. Quinlan, P. DeHart, A. Sarmiento, T. Rezzag-Lebza,	4:10 p.m. AIAA-2026-2419 Spatiotemporal Sensitivity in Rotating Detonation Rocket Engine Large Eddy Simulations A. Batista, Amentum - AFRL, Edwards AFB, CA; J. Burr, M.	4:30 p.m. AIAA-2026-2420 Assessment of the Wray-Agarwal Turbulence Model for Detonation Combustion	4:50 p.m. AIAA-2026-2416 Using Rotating Reference Frames to Manipulate Rotating Detonation Rocket Engine Frequency Spectra, Including Transformation of	

V. Tangirala, C. Nordeen, A. Dean, CPEC Technologies, Niskayuna, NY; C. Brophy, Naval Postgraduate School, Monterey, CA	K. Ahmed, University of Central Florida, Orlando, FL	Ross, M. Harvazinski, E. Paulson, Air Force Research Laboratory Aerospace Systems Directorate, Edwards Air Force Base, CA	K. Sagar, R. Agarwal, Washington University in St Louis, St. Louis, MO	Temporal Quasi-Periodicity to Strict Periodicity B. Caraway, A. Pearlstein, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL	
Thursday, 15 January 2026					
SAR-09	Novel Technologies for Space Robotics II				Florida Ballroom A
Chaired by: C. SULLIVAN, Redwire Space and O. MA, University of Cincinnati					
3:30 p.m. AIAA-2026-2421 Compensating Disturbance to the Base Spacecraft from One Arm using the Second Arm of a Dual-Arm Space Robotic System J. Talavage, A. Barth, O. Ma, University of Cincinnati, Cincinnati, OH	3:50 p.m. AIAA-2026-2422 Lunar Payload Logistics: Advancing Autonomous Control for Lunar Surface Transporter Vehicles L. Murray, T. Letcher, South Dakota State University, Brookings, SD	4:10 p.m. AIAA-2026-2423 Hybrid Hierarchical Swarm Robots for Planetary Exploration E. Abid, J. Castelblanco, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:30 p.m. AIAA-2026-2424 Advanced Manufacturing and Materials of a Bio-mimetic Hoof for Space Robotics Applications B. Heckel, S. Nitta, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL		
Thursday, 15 January 2026					
SATS-04	Design of SmallSat Systems and Education				Celebration 9
Chaired by: J. SAUDER, Jet Propulsion Laboratory (JPL) and P. HUANG, The University of Arkansas					
3:30 p.m. AIAA-2026-2425 A^{3}SatPQ: Pioneering Pathways to the SmallSat Community for Precollege Students J. Moore, Institute for Earth Observations, Palmyra, NJ	3:50 p.m. 4344539 CubeSats' Role in Storm Tracking and Weather Prediction W. Xu, P. Xu, Wolfpack CubeSat Development Team, Dublin, Ireland; K. Simmons, Wolfpack CubeSat Development Team, Palm Beach Gardens, FL	4:10 p.m. AIAA-2026-2426 Vibration Modal Anaylsis for Simplified Separatable 12U Cubesat Chassis J. Spann, Air Force Institute of Technology Graduate School of Engineering and Management, Wright-Patterson Air Force Base, OH	4:30 p.m. AIAA-2026-2427 Enabling Technologies for a Low-Cost, Deployable Inspection Satellite A. Zufall, C. Lorenzen, S. Robinson, University of California Davis, Davis, CA	4:50 p.m. AIAA-2026-2428 A Comprehensive Review of CubeSat Communication Subsystems: Antennas, Modulation Schemes, and Oscillators for Educational and Amateur Missions M. Biswal M, Acceleron Aerospace, Bangalore, India; R. Kumar V, A. BSM, P. Murugan, Grahaa Space, Bangalore, India	
Thursday, 15 January 2026					
SD-25	Dynamic Loads, Response, and Stability of Aerospace Vehicles				Bayhill 22
Chaired by: A. SCOTTI, Pilatus Aircraft Ltd and J. COOPER, University of Bristol					
3:30 p.m.	3:50 p.m.	4:10 p.m.	4:30 p.m.		

AIAA-2026-2429 Transport-Induced Load Prediction for Aircraft Structures Using a Neural Network Surrogate T. Mkhoyan, Aurora Flight Sciences Corporation, Manassas, VA	AIAA-2026-2430 Efficient Approach for Early Failure Prediction in High-Aspect-Ratio Wings During Gust Encounters M. Miranda, A. Cea, R. Li, R. Palacios, S. Pinho, Imperial College London, London, United Kingdom	AIAA-2026-2431 Design Optimisation of a Lightweight Aerodynamic Fairing for Vibration Fatigue S. Anderson, J. Cooper, F. Scarpa, B. Titurus, University of Bristol, Bristol, United Kingdom	AIAA-2026-2432 Unsteady Nonlinear 2D Lift Model Based on Steady Coefficients N. Aliskevicius, O. Stanlov, M. Karpel, Technion Israel Institute of Technology, Haifa, Israel		
Thursday, 15 January 2026					
SD-26	Special Session: Mars Aerial Exploration				Bayhill 18
Chaired by: A. DATTA, University of Maryland, College Park and S. RAGHAVAN, Embry Riddle Aeronautical University					
3:30 p.m. AIAA-2026-2433 Guidelines and Designs for Helicopter Airfoils and Blades for Mars Applications With Experimental Validation B. Perez Perez, H. Cummings, W. Koning, F. Haddad, A. Sheikman, C. Cornelison, NASA Ames Research Center, Moffett Field, CA; et al.	3:50 p.m. AIAA-2026-2434 On the Fabrication of Ultra-Thin Composite Rotors for Martian Flight M. Donovan, A. Datta, University of Maryland, College Park, MD	4:10 p.m. AIAA-2026-2435 Failure Analysis of Mars Hexacopter With RPM-Controlled Rotors W. Fong, F. Gandhi, NC State University, Raleigh, NC	4:30 p.m. AIAA-2026-2436 The Effects of Rotor Shaft Spacing and Rotor Rotation Direction on Aerodynamic Interference of Mars Multicopter Rotors R. Onishi, Tokyo Daigaku, Bunkyo, Japan; A. Oyama, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo Toshokan, Sagamihara, Japan	4:50 p.m. AIAA-2026-2437 Aerodynamic Optimization of Angular Airfoil for Micro-Scale Mars Airplane Y. Iida, Kogakuin University, Shinjuku, Japan; A. Oyama, Institute of Space and Astronautical Science, JAXA, Sagamihara, Japan; S. Sekimoto, Tokai University, Hiratsuka, Japan; M. Sato, Kogakuin University, Shinjuku, Japan	
Thursday, 15 January 2026					
SE-17/DGE-18/GTE-31/DE-18/HMT-06/EAT-17	Digital Engineering and Decision Making				Bayhill 27
Chaired by: A. RAM, The Charles Stark Draper Laboratory, Inc.					
In the Aerospace Defense industry, Digital Engineering is revolutionizing how decisions are made by providing a comprehensive, integrated, and data-driven approach to system design, development, and management. This panel will delve into the critical role of Digital Engineering in enhancing decision-making processes across the lifecycle of aerospace systems. Key discussions will focus on the integration of digital technologies such as Model-Based Systems Engineering (MBSE), digital twins, and advanced analytics to create a cohesive digital thread. Experts will highlight how these tools enable real-time data access, improved collaboration, predictive insights, and faster iteration, ultimately leading to more informed and agile decision-making. The panel will share case studies showcasing the successful application of Digital Engineering in complex defense projects, emphasizing improvements in efficiency, risk management, and system performance. Attendees will gain insights into best practices for implementing Digital Engineering, including overcoming common challenges such as data interoperability and upskilling the workforce. Join us to explore how Digital Engineering is transforming decision-making in the Aerospace Defense sector, driving innovation, and ensuring systems are mission-ready and adaptable to future demands. **Panelists:** Nigel Taylor (MBDA UK) Rick Arthur (GE Aerospace) Marlon Rodgers (Lockheed Martin) Laura Mainini (Imperial College, UK) Gregory Roth (AFRL)					
Thursday, 15 January 2026					

SFM-23/SCS-13/STR-24/EDU-11	In-Space Servicing, Assembly, and Manufacturing (ISAM): In-Space Assembly (iSA) Interface (I/F) Hardware Design II				Plaza Ballroom J
Chaired by: T. MITCHELL, COSMIAC and J. ROME, The Aerospace Corporation					
3:30 p.m. AIAA-2026-2438 Lockheed Martin's Augmentation System Port Interface (ASPIN) for In-Space Servicing, Assembly, and Manufacturing (ISAM) J. Schutt, M. Lavis, A. Black, Lockheed Martin Corporation, Bethesda, MD	3:50 p.m. AIAA-2026-2439 Development of an Androgynous Docking Connector for In-Space Assembly and Satellite Servicing K. Okseniuk, A. Ribner, M. Fraunberger, R. Mayo, T. Pierce, SpaceWorks Enterprises, Inc., Atlanta, GA	4:10 p.m. AIAA-2026-2440 Qualification of RAFTI, a Commercial In-Space Valve K. Smith, A. Humphreys, D. Richardson, Orbit Fab Inc, Lafayette, CO	4:30 p.m. AIAA-2026-2441 Dispelling the Myth of the Universal Interface: Results and Inferences From an Evaluation of In-space Connectable Interfaces D. Barnhart, R. Rughani, N. Gladden, Arkisys, Los Alamitos, CA		
Thursday, 15 January 2026					
SFM-28	Rendezvous, Relative Motion, Proximity Operations, and Docking III				Plaza Ballroom I
Chaired by: A. BOONRATH, University at Buffalo					
3:30 p.m. AIAA-2026-2442 New Observability Criteria Based on Covariance Matrix for Angles-Only Navigation against Non-Cooperative Targets A. Kushima, K. Nakagawa, Tokyo Daigaku, Bunkyo, Japan; Y. Tsuda, Uchu Koku Kenkyu Kaihatsu Kiko, Sagamihara, Japan	3:50 p.m. AIAA-2026-2443 Experimental Comparison of Stereovision Based Stochastic Filtering Approaches for Proximity Operations R. Goodridge, S. Ulrich, Carleton University, Ottawa, Canada	4:10 p.m. AIAA-2026-2444 Robust Trajectory Design for Spacecraft Rendezvous Considering Navigation Performance and Passive Safety M. Fujiwara, T. Sasaki, T. Yamamoto, Japan Aerospace Exploration Agency, Sagamihara, Japan	4:30 p.m. AIAA-2026-2445 Convex Guidance Generation for Target Inspection Trajectories E. Belloni, M. Lavagna, Politecnico di Milano, Milan, Italy	4:50 p.m. AIAA-2026-2446 Continuous-Time Successive Convexification for Passively-Safe Spacecraft Rendezvous on a Near Rectilinear Halo Orbit P. Elango, A. Vinod, Mitsubishi Electric Research Laboratories, Cambridge, MA; K. Kitamura, Mitsubishi Denki Kabushiki Kaisha, Chiyoda, Japan; B. Acikmese, University of Washington, Seattle, WA; S. Di Cairano, A. Weiss, Mitsubishi Electric Research Laboratories, Cambridge, MA	5:10 p.m. AIAA-2026-2447 Event-Based Spacecraft Representation Using Inter-Event-Interval Adaptive Time Surfaces A. Crain, S. Ulrich, Carleton University, Ottawa, Canada
Thursday, 15 January 2026					
SR-03	Solid Rocket Motor Design and Testing				Celebration 11
Chaired by: A. NERI and J. SCROGGINS, Anduril Industries					
3:30 p.m. AIAA-2026-2448 A Machine Learning Framework Using Neural	3:50 p.m. AIAA-2026-2449 Design, Development, and Testing of an	4:10 p.m. AIAA-2026-2450 Development and Qualification of the Solid	4:30 p.m. AIAA-2026-2451 GEM46 Motor Destruct Test		

Networks for Conceptual Design of First Stage Engine L. Mancini, G. Della Posta, ESA Centre for Earth Observation, Frascati, Italy; M. Bernardini, Universita degli Studi di Roma La Sapienza, Rome, Italy; A. Neri, ESA Centre for Earth Observation, Frascati, Italy	Indigenous Sounding Rocket in Nepal N. Shrestha, M. Neupane, P. Giri, S. Kharel, P. Bhattarai, S. Bhattrai, Tribhuvan University Institute of Engineering, Lalitpur, Nepal; et al.	Propellant Red Kite Sounding Rocket Motor A. Weigand, M. Berndl, M. Kuhn, L. Stadler, J. Werneth, Bayern-Chemie GmbH, Aschau am Inn, Germany; R. Kirchhartz, Deutsches Zentrum für Luft- und Raumfahrt, DLR, Oberpfaffenhofen, Germany; et al.	R. Kundu, Bangham Engineering Inc., Huntsville, AL		
Thursday, 15 January 2026					
STR-27/AS-15	Structural Health Monitoring and Non-Destructive Evaluation				Bayhill 19
Chaired by: J. TIDWELL, Boeing Commercial Airplanes and J. WERTZ, Air Force Research Laboratory					
3:30 p.m. AIAA-2026-2452 Additively Manufactured Cryogenic Tank with Embedded Fiber Optic Sensors S. Bender, D. Nguyen, D. Kim, Embry-Riddle Aeronautical University, Daytona Beach, FL	3:50 p.m. AIAA-2026-2453 High-Fidelity Load Identification Using Deformation Measurements for Static and Dynamic Problems T. Ansari, S. Warnakulasuriya, Technische Universitat Munchen, Munich, Germany; I. Antonau, Technische Universitat Braunschweig, Brunswick, Germany; F. Airaudo, H. Antil, R. Lohner, George Mason University, Fairfax, VA; et al.	4:10 p.m. AIAA-2026-2454 Using Machine Learning Models to Predict Damage in Aerospace Composites, Subjected to Real Flight Loads and Profiles V. Sunthareswaran, M. Bravo Haro, S. Anusuya Ponnusami, City St George's University of London, London, United Kingdom	4:30 p.m. AIAA-2026-2456 System Identification in Structures Subject to Dynamic Loading T. Ansari, Technische Universitat Munchen, Munich, Germany; F. Airaudo, George Mason University, Fairfax, VA; S. Warnakulasuriya, Technische Universitat Munchen, Munich, Germany; I. Antonau, Technische Universitat Braunschweig, Brunswick, Germany; R. Lohner, H. Antil, George Mason University, Fairfax, VA; et al.		
Thursday, 15 January 2026					
TP-16	Thermal Control and Heat Transfer II				Bayhill 32
Chaired by: S. SOBHANI, Cornell University					
3:30 p.m. AIAA-2026-2457 Surface Treatment Strategies to Produce Hydrophilic Porous Titanium Wicks for Heat Pipes T. El Dannaoui, T. Guenka, S. Bilén, S. Lynch, C. Greer, The Pennsylvania State University,	3:50 p.m. AIAA-2026-2458 An Experimental Study of Thermal Flow Characteristics inside a DBD Plasma Reactor for Plastic Upcycling S. Haque, S. Iffat Uday, H. Sista, J. Wang, X. Bai, H. Hu, Iowa State University of	4:10 p.m. AIAA-2026-2459 Implementing Roughness Profiles to Control the Temperature Profile Within a Gas-Cooler D. Hardy, T. Bagar, Q. Acchione, M. Ricklick, S. Boetcher, Embry-Riddle Aeronautical University, Daytona Beach, FL	4:30 p.m. AIAA-2026-2460 Graph-Based Dynamic Modeling of a PAO Loop for Aircraft Thermal Management Systems V. Vyas, N. Jain, Purdue University, West Lafayette, IN; K. McCarthy, A. Bolander, PC Krause and Associates, West Lafayette, IN	4:50 p.m. AIAA-2026-2461 Machine Learning-Guided Design of Binary Ionic Liquid Mixtures for Spacecraft Thermal Control E. Acar, P. Biswas, S. Sobhani, Cornell University, Ithaca, NY	

University Park, PA; W. Sixel, NASA, Cleveland, OH; et al.	Science and Technology, Ames, IA				

Thursday, 15 January 2026

TP-17	Thermal Protection Systems I				Bayhill 31
Chaired by: B. DIAS, NASA Ames Research Center and J. RABINOVITCH, Stevens Institute of Technology					
1:00 p.m. AIAA-2026-2462 Simultaneous O Atom nsTALIF and NO nsLIF Imaging Strategy to Expedite Characterization and Numerical Validation of High Enthalpy Plasma Flows J. Meyers, S. Kumar, A. Munafò, M. Panesi, University of Illinois Urbana-Champaign, Urbana, IL	1:20 p.m. AIAA-2026-2463 Gas Surface Interaction Reactant and Product Characterization in High Enthalpy Air Plasma Flows via nsTALIF/LIF Imaging in the UIUC 350 kW Plasmatron X Facility J. Meyers, A. Singh, A. Munafò, M. Panesi, University of Illinois Urbana-Champaign, Urbana, IL	1:40 p.m. AIAA-2026-2464 Development of a Surface Heating Correlation for Reproducing Planetary Entry Applications in ICP Facilities A. Scaboro, M. Franco, A. Meini, T. Mansfield, F. Panerai, G. Elliott, University of Illinois Urbana-Champaign, Champaign, IL; et al.	2:00 p.m. AIAA-2026-2465 Numerical Investigation of High-Power Inductively Coupled Plasma Discharges S. Kumar, University of Illinois System, Urbana, IL; A. Munafò, University of California Irvine, Irvine, CA; S. Jo, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; J. Meyers, University of Illinois System, Urbana, IL; M. Panesi, University of California Irvine, Irvine, CA		

Thursday, 15 January 2026

AIAA-14 5:30 - 7:30 p.m.	LeadHership@SciTech	Windermere Ballroom

Friday

Friday, 16 January 2026

SP-05 7:30 - 8:00 a.m.	Technical Paper Session Prep	Session Rooms
Authors presenting papers will meet with session chairs and co-chairs in their session rooms for a short 30-minute prep on the day of their sessions to exchange bios and review final details prior to the session. Please attend on the day of your session(s).		

Friday, 16 January 2026

PLN-05 8:00 - 9:00 a.m.	Plenary	Windermere Ballroom
NASA's James Webb Space Telescope: Origins, Development, Operation and Lessons Learned: Jonathan Arenberg - NGC		

Friday, 16 January 2026

NW-09 9:00 - 9:30 a.m.	Networking Coffee Break	Regency Rotunda
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.		

Friday, 16 January 2026					
ACD-21	Advanced Design Methods				Rock Spring I & II
Chaired by: T. GUIMARÃES, Purdue University					
9:30 a.m. AIAA-2026-2466 Introducing Discrete Airfoil Selection for Improved Multi-Objective Rotor Blade Design with High-Fidelity CFD Validation M. Safdar, J. Baeder, University of Maryland, College Park, MD	9:50 a.m. AIAA-2026-2467 Rapid Fuselage and Cabin Sizing Method for Commercial Transport Aircraft Design Y. Cheng, N. Cocoves, T. Ergan, J. Xie, Y. Cai, M. Kirby, Georgia Institute of Technology, Atlanta, GA; et al.	10:10 a.m. AIAA-2026-2468 Combined Aerodynamic and Structural Study on Hypersonic Aircraft With Lightweight Morphing Wing From Takeoff to Cruise Y. Onozeki, S. Shimizu, Tokyo Daigaku Daigakuin Shinryoiki Sosei Kagaku Kenkyuka, Kashiwa, Japan; M. Berthet, Tokyo Daigaku, Bunkyo, Japan; Y. Aoki, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan			

Friday, 16 January 2026					
AFM-16	Aircraft Dynamics, Performance, Stability, and Control I				Bayhill 33
Chaired by: C. WOOLSEY, Virginia Tech					
9:30 a.m. AIAA-2026-2469 Lifting-Line Analysis of an Aircraft With a Bio-Inspired Rotating Empennage During Aerial Refueling A. Olsen, Z. Montgomery, D. Hunsaker, Utah State University, Logan, UT	9:50 a.m. AIAA-2026-2470 The Effects of Flight and Ejection parameters on Store Separation K. Fatima, S. Ahmed, M. Irfan, H. Khan, J. Masud, A. Shahzad, Air University, Islamabad, Pakistan; et al.	10:10 a.m. AIAA-2026-2471 PID Feedback and Heading Control in Pairwise Insect Flight Dynamics M. Islam, Harvard University, Cambridge, MA; I. Faruque, Oklahoma State University, Stillwater, OK	10:30 a.m. AIAA-2026-2472 Passive Solution for Improved Stability and Drag of Cuboid Underslung Payloads A. Skeen, L. Bradley, A. Tornese, T. Siefers, C. Fagley, US Air Force Academy, Air Force Academy, CO	10:50 a.m. AIAA-2026-2473 Side Forces in Gliding Flight of Draco Lizards M. Zakaria, C. Woolsey, P. Khandelwal, J. Socha, S. Ross, Virginia Polytechnic Institute and State University, Blacksburg, VA	11:10 a.m. AIAA-2026-2474 Real-Time Extremum Seeking for Natural Hovering and Source Seeking in Bio-Inspired Flapping Flight: Further Simulations A. Elgohary, S. Eisa, University of Cincinnati College of Engineering and Applied Science, Cincinnati, OH

Friday, 16 January 2026					
APA-73/GT-20/FT-10	Aerodynamic Testing: Ground, Wind-Tunnel, and Flight Testing III				Plaza Ballroom F
Chaired by: I. BAHR, NSWC Carderock and K. LUKACOVIC, National Full-Scale Aerodynamics Complex and C. SMITH, Lockheed Martin					
9:30 a.m. AIAA-2026-2475 Building a Metadata-Centric Archive for Experimental Aerodynamics	9:50 a.m. AIAA-2026-2476 Investigation of Grid Fin Aerodynamics A. Anuskiewicz, R. Cave, C. Flores, S. Brucker, R.	10:10 a.m. AIAA-2026-2477 Aerodynamic Parameter Estimation for a Scaled F-16: A Simulation-Based Sensitivity Analysis	10:30 a.m. AIAA-2026-2478 Aerodynamic Characterization of a Non-axisymmetric Body at Supersonic Speeds	10:50 a.m. AIAA-2026-2479 Heat Flux Characterization of High-Speed Flow Facility	

D. Veerasamy, G. Page, D. Butcher, L. Skelly, Loughborough University, Loughborough, United Kingdom	Goldshmid, San Diego State University, San Diego, CA	K. Tischner, D. Hunsaker, Utah State University College of Engineering, Logan, UT	D. Dickerson-Evans, A. Kunstmann, E. Yeseren, H. Litt, FAMU-FSU College of Engineering, Tallahassee, FL; E. Smith, B. Dickinson, Air Force Research Laboratory Munitions Directorate, Eglin Air Force Base, FL; et al.	A. Shack, S. Smith, A. La Sorsa, A. Kotler, K. Ahmed, University of Central Florida, Orlando, FL	

Friday, 16 January 2026

APA-74	Aero-Propulsive Interactions and Aerodynamics of Integrated Propeller Systems				Coral Spring II
Chaired by: F. FERGUSON, North Carolina A&T State University					
9:30 a.m. AIAA-2026-2480 Design and Development of a Custom-Built Static Test Stand to Evaluate the Aerodynamic Performance of Coaxial Propellers S. Ahmed, R. Sarker, A. Halder, K. Rouser, Oklahoma State University, Stillwater, OK	9:50 a.m. AIAA-2026-2481 Wing-Induced Integration Effects on Propeller Performance in a Distributed Propulsion Configuration J. Oldeweme, T. Lindner, P. Scholz, J. Friedrichs, Technische Universitat Braunschweig, Brunswick, Germany	10:10 a.m. AIAA-2026-2482 Mid-Fidelity Numerical Simulation of a Propeller-Blown Wing S. Shahjahan, D. Enriquez, V. Ahuja, Altair Engineering Inc, Troy, MI	10:30 a.m. AIAA-2026-2483 Parametric Flow Analysis of a Curvature-Continuous Aeropropulsive Wing M. Lauer, A. Sanguinetti, P. Ansell, University of Illinois Urbana-Champaign Grainger College of Engineering, Urbana, IL	10:50 a.m. AIAA-2026-2484 GPU-Accelerated Wall-Modeled Large-Eddy Simulations of Shaped Film Cooling Holes R. Djeddi, P. Sharma, L. Shunn, K. Wang, S. Bose, Cadence Design Systems Inc, San Jose, CA; M. Joly, RTX Corporation, Arlington, VA	

Friday, 16 January 2026

APA-76	Low Speed, Low Reynolds Number and Bio-Inspired Aerodynamics				Plaza Ballroom K
Chaired by: B. BORNHOFT, Air Force Research Laboratory and N. HALL, DARPA / SPA					
9:30 a.m. AIAA-2026-2485 Unraveling Non-linear Wing Aerodynamics at Low Reynolds Numbers - An Experimental and Computational Approach S. Jacob, R. Stewart, M. Benedict, Texas A&M University, College Station, TX; M. Ramasamy, U. S. Army Combat Capabilities Development Command Aviation and Missile Center, Moffett Field, CA	9:50 a.m. AIAA-2026-2486 Steady Aerodynamic Theory for Porous Membrane Wings R. Sah, S. Tiomkin, University of South Florida, Tampa, FL	10:10 a.m. AIAA-2026-2487 Influence of Pitching Axis Location on Aerodynamics of Asynchronous Pitching and Decelerating Wings R. Addo-Akoto, J. Han, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	10:30 a.m. AIAA-2026-2488 Aerodynamic Performance of Micro flyers Inspired by Dandelion Seed Morphology G. Quayson, M. Orlando, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	10:50 a.m. AIAA-2026-2489 Thermally Induced Buoyancy as a Passive Lift Mechanism in Dandelion Seed Dispersal M. Orlando, G. Quayson, M. Hassanalian, New Mexico Institute of Mining and Technology, Socorro, NM	11:10 a.m. AIAA-2026-2490 Empirical Method to Extract Steady-Level Flight Conditions of a Stroke- and Pitch-Controlled Flapping Wing J. Drake, E. Limacher, W. Hinman, University of Calgary, Calgary, Canada; K. Afantchao, AERIUM Analytics, Calgary, Canada

Friday, 16 January 2026

APS-06	High-Speed and Hypersonic Vehicle Power Systems I	Celebration 11
Chaired by: L. ELSTON, AFRL and J. DELMAR, Air Force Research Laboratory		

9:30 a.m. AIAA-2026-2491 Transient Solid State Power Generation in the Thermal Protection System of High-Speed Vehicles S. Schaiper, University of Dayton Research Institute, Dayton, OH; R. Mulford, S. Mohler, University of Dayton, Dayton, OH; B. Tolson, M. Hanchak, University of Dayton Research Institute, Dayton, OH; S. Geelhood, ARCTOS LLC, Beavercreek, OH; et al.	9:50 a.m. AIAA-2026-2492 Heat Transfer Performance of Supercritical CO2 Under Variable Gravity J. Reed, University of Dayton, Dayton, OH; J. DelMar, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; A. Schrader, University of Dayton, Dayton, OH; J. McCoppin, University of Dayton Research Institute, Dayton, OH	10:10 a.m. AIAA-2026-2493 Comparison of Quality Prediction Methods for Transient Two-Phase Systems in High-Speed Applications Z. Carner, A. Roman, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH; M. Wolff, Wright State University College of Engineering and Computer Science, Dayton, OH; T. Wanstall, University of Alabama, Tuscaloosa, AL	10:30 a.m. AIAA-2026-2494 Size-Weight-and-Power Analysis of Magnetic Systems for Aerospace Magnetohydrodynamic Power Generation C. Kovacs, Scintillating Solutions LLC, Columbus, OH; L. Elston, J. Bulmer, T. Haugan, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH		
Friday, 16 January 2026					
CSS-01	Cybersecurity I				Bayhill 21
Chaired by: R. THUMMALA, Cornell University					
9:30 a.m. AIAA-2026-2495 Adversarial Pursuits in Cislunar Space F. Fotiadis, Q. Rommel, The University of Texas at Austin, Austin, TX; G. Falco, Cornell University, Ithaca, NY; U. Topcu, The University of Texas at Austin, Austin, TX	9:50 a.m. AIAA-2026-2496 Cybersecurity Threat Analysis of a Free-Space Optical Communication System Through Model-Based Systems Engineering B. Prigg, A. Raz, A. Barreto, George Mason University College of Engineering and Computing, Fairfax, VA	10:10 a.m. AIAA-2026-2497 CubeSat Cloud Communications & Cybersecurity Architectures L. George, P. Fong, University of Colorado Colorado Springs, Colorado Springs, CO	10:30 a.m. AIAA-2026-2498 Secure BLE Interface for Connected Aircraft Systems K. Janakiraman, N. Rao, Honeywell Aerospace, Phoenix, AZ; N. Baggaley, Honeywell International Inc, Atlanta, GA		
Friday, 16 January 2026					
DE-21	Accelerating Conceptual Aircraft Design with Implicit Modeling				Bayhill 27
Chaired by: M. MUELLER, nTop and I. MARKS, Northrop Grumman					

Legacy CAD-based workflows are struggling to keep up with the accelerating demand for rapid iteration in the conceptual and preliminary design of advanced aircraft. Building and controlling complex surface models with fragile, parametric feature trees leads to extended geometry preparation cycles and poor integration between aerodynamic, structural, propulsion, and other key early-stage disciplines. Implicit modeling technology addresses these issues by significantly reducing model build times and improving the speed and reliability of iteration for large scale design exploration. The equation driven geometry offers precise shape control while allowing engineers to encode their logic in a way that is readable and editable. Through flexible parametrization techniques, configurators can watch their model update in real time as they intuitively control aerodynamic aspects of wings like sweep, camber, and twist. These implicit modeling workflows can be reused modularly, helping with localized control of parameters impacting an aircraft performance across disciplines. Combining these modeling techniques with advanced analysis workflows further accelerates design iteration cycles, enabling deeper exploration and more insights to be uncovered faster in the early stages of the design process to support informed decision making. In this session, we will demonstrate how implicit modeling approaches for conceptual design of

aircraft are improving on existing workflows and discuss broader implications for how the aerospace industry can benefit from computational design with implicit modeling.

Friday, 16 January 2026

DGE-20	Digital Aerospace Worthiness	Silver Spring I

Chaired by: R. GRAVES, Air Force Research Laboratory

Digital aerospace worthiness process implementation for complex systems is a key enabler for fielding the latest technologies in a timely manner. Both air and space systems are required to safely execute their design objectives and navigate through their respective environments to accomplish a mission. In recent years, the Department of the Air Force has endorsed grass-roots efforts to explore the value proposition associated with these processes. There is no single organization that has the resources or authority to improve aerospace worthiness processes, and there are no overarching ecosystems to coordinate, communicate, or prioritize disparate efforts. For aircraft and spacecraft, an initial risk assessment and continued compliance of the aerospace system against aerospace worthiness standards depends on the design of the aerospace system, covering activities such as engineering evaluation, simulation, experimental ground tests. The process also depends on production to ensure that the assembled aerospace system conforms with design specifications, and maintenance of the aerospace system to ensure it sustains its aerospace worthiness posture. Aerospace worthiness is continually demonstrated by execution of a maintenance program for a system of interest over the system's life cycle. This panel session and the associated technical paper session will provide venues for presenting status and progress on digital aerospace worthiness activities. A long-term vision is the creation of a digital aerospace worthiness ecosystem to serve as a mechanism for coordinating and communicating ongoing activities, providing strategic vision on the implementation of digital methods, process, and tools, and provide prioritized guidance and recommendations on current and future efforts.

Friday, 16 January 2026

EAT-22/INPSI-16/ACD-25	Clean Aviation Special Session: Future Aircraft Architecture, Technology Integration and Novel Certification	Orlando Ballroom M

Chaired by: G. WAY, Rolls-Royce and J. COOPER, University of Bristol

Technical presentations sharing the latest results and updates from Clean Aviation Program research projects in the areas of aircraft design, innovative concepts and architecture, novel wing design and technologies, aircraft technologies and system-level integration, systems architecture, and certification of novel aircraft. Presentations: 'SMR ACAP – Short-Medium Range Aircraft Architecture and Technology Integration Project' **Xavier Hue**, Airbus **HERA – Hybrid-Electric Regional Architecture**: Project Updates on Concepts, Architecture, and Technology Demonstration 'HERA Project Overview & Update' **Giuseppe Piscopo**, Vittorio Ascione et al. Leonardo Aircraft 'HERA Project Update – Airbus Defence & Space' **Lucia Martinez**, Airbus Defence & Space 'HERWINGT – Hybrid Electric Regional Wing Integration Novel Green Technologies' **Maria Rodriguez**, Airbus Defence & Space 'High Power (up to several MW), High-Voltage Electrical Distribution for Hybrid-Electric Aircraft: Overview and Results from the HECATE Project' **Ignacio Castro Alvarez**, Senior Principal Engineer, Collins Aerospace 'CONCERTO: Novel Certification Methods and Compliance Means for Disruptive Technologies' **EASA** – European Union Aviation Safety Agency

Friday, 16 January 2026

EP-14	Alternative Propellants	Celebration 1

Chaired by: J. DANKANICH, NASA

9:30 a.m. AIAA-2026-2499 Development of an Igniter System and Two-Dimensional Beam Mapping of an ASCENT-Propelled Pulsed	9:50 a.m. AIAA-2026-2500 Comparison of Analytical Power Deposition Models and Thermal Predictions for Hall Effect Thrusters Using Alternative Propellants	10:10 a.m. AIAA-2026-2501 First Discharge of a Bismuth-Fueled Vacuum Arc Thruster for Spacecraft Momentum Management			

Magnetoplasmadynamic Thruster N. Babusis, L. Organski, A. Shashurin, Purdue University, West Lafayette, IN	K. Borders, E. Petro, Cornell University, Ithaca, NY	D. White, Embry-Riddle Aeronautical University, Prescott, AZ			
Friday, 16 January 2026					
EXPL-19	Lunar Exploration				Celebration 13
Chaired by: B. WILLIAMS, NASA Marshall Space Flight Center and H. YANG					
9:30 a.m. AIAA-2026-2502 Multi-Functional Lunar Surface Service Hub J. Thangavelautham, University of Arizona, Tucson, AZ	9:50 a.m. AIAA-2026-2503 The Eagle II – Conceptual Design of an Alternative Lunar Lander Vehicle and Lunar Landing Architecture to Return Americans to the Moon M. Benton, Embry-Riddle Aeronautical University, Prescott, AZ	10:10 a.m. AIAA-2026-2504 Understanding Evolutionary Constraints of a Lunar Base From an Operational Perspective B. Thakar, J. Hawkins, T. Jonchay, J. McNabb, D. Mavris, Georgia Institute of Technology, Atlanta, GA	10:30 a.m. AIAA-2026-2505 Cryogenic Lunar Sample Return J. Coleman, K. Dang, M. Walter, B. Robertson, D. Mavris, Georgia Institute of Technology, Atlanta, GA; A. Noel, Georgia Institute of Technology Research Institute, Atlanta, GA	10:50 a.m. AIAA-2026-2506 The Moon as an Astronomical Platform: Building the 1st Large Scale Lunar Farside Radio Telescope J. Green, Space Science Endeavors, Silver Spring, MD; B. Donahue, The Boeing Company Defense Space and Security, Arlington, VA; D. Cooke, Cooke Concepts and Solutions, Gettysburg, PA; A. Beckman, The Boeing Company Defense Space and Security, Arlington, VA	
Friday, 16 January 2026					
FD-90/APA-75	Hypersonic Flight Vehicles				Barrel Spring I
Chaired by: M. HAIGLER, AFRL and C. SCHROCK					
9:30 a.m. AIAA-2026-2507 Direct Simulation Monte Carlo Sensitivity Analysis at Super-Orbital Velocities M. Wall, C. Leszcz, T. Aiken, I. Boyd, University of Colorado Boulder College of Engineering and Applied Science, Boulder, CO	9:50 a.m. AIAA-2026-2508 Linear Modal Instability Analyses of High-Speed Laminar Separated Flow Over the ROTEX-T Vehicle A. Burtsev, The University of Texas at Austin, Austin, TX; V. Pezlar, G. Raz, V. Theofilis, Technion Israel Institute of Technology, Haifa, Israel	10:10 a.m. AIAA-2026-2509 Characterisation of Wake-Region Optical Emissions From an Ablative Hypersonic Glide Vehicle J. Knight, J. Kildare, University of South Australia, Adelaide, Australia; F. Zander, University of Southern Queensland, Toowoomba, Australia; Y. Law, M. Evans, University of South Australia, Adelaide, Australia	10:30 a.m. AIAA-2026-2510 An Integrated CFD, Guidance, and Control Approach with Heating Considerations D. Williams, D. Bhattacharjee, M. Hemati, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN		
Friday, 16 January 2026					

FD-91	Mesh Adaptation and Non-Conformal Grids				Coral Spring I
Chaired by: S. JAIN, Georgia Institute of Technology					
9:30 a.m. AIAA-2026-2511 Feature Based Mesh Adaptation Applied on the AIAA PAW-6 Nozzle Jet Prediction A. Remigi, E. Parente, Safran SA, Paris, France; H. Raniolo, Safran Aircraft Engines, Moissy-Cramayel, France	9:50 a.m. AIAA-2026-2512 Localized Flux Limiting for Mixed Element Volume Scheme on Anisotropic Adapted Meshes A. Gobbi, F. Alauzet, J. Vanharen, Inria Centre de Recherche Saclay-Ile-de-France, Palaiseau, France	10:10 a.m. AIAA-2026-2513 Recent Advancements in Third-Order Edge-Based Scheme for Anisotropic Adaptive Meshes C. Tarsia Morisco, F. Alauzet, Institut National de Recherche en Sciences et Technologies du Numerique, Palaiseau, France; H. Nishikawa, National Institute of Aerospace, Hampton, VA	10:30 a.m. AIAA-2026-2514 Quantifying Numerical Impact of Hanging-Node Interfaces on Flow Accuracy D. Pekurovsky, P. Subbareddy, T. Drayna, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN		
Friday, 16 January 2026					
FD-92	Modern Solver Design: Adjoint Methods, Optimization, and Scalability				Barrel Spring II
Chaired by: K. BHAGANAGAR and N. SHARAN					
9:30 a.m. AIAA-2026-2515 A Quadratic Optimization Framwork for Solving Incompressible Navier-Stokes Equations in Arbitrary Domain Using Finite Difference and Meshfree Methods P. Mokhasi, The University of Mississippi National Center for Physical Acoustics, University, MS	9:50 a.m. AIAA-2026-2516 A Scaling Study for Incompressible Multispecies Solver in Vertex-CFD F. Oz, K. Pieper, M. Delchini, W. Gurecky, Oak Ridge National Laboratory, Oak Ridge, TN	10:10 a.m. AIAA-2026-2517 Algorithmic Differentiation Framework of the CFD Software by ONERA, DLR, Airbus (CODA): Design and Evaluation for Adjoint Sensitivity Analysis of Aircraft A. Büchner, F. Kasielke, A. Schmid, B. Sert, A. Stueck, DLR Institute for Software Methods for Product Virtualization, Dresden, Germany	10:30 a.m. AIAA-2026-2518 Hardware-Agnostic Compact Difference Schemes in C++/Kokkos for High-Order CFD S. Nazir, J. Poggie, Purdue University, West Lafayette, IN		
Friday, 16 January 2026					
FD-93	Shock-Boundary Layer Interactions IV				Orlando Ballroom L
Chaired by: V. NARAYANASWAMY and S. HEMCHANDRA, Indian Institute of Science					
9:30 a.m. AIAA-2026-2519 Large-Eddy Simulation of an Axisymmetric Shock-Wave/Boundary-Layer Interaction at Mach 2.5	9:50 a.m. AIAA-2026-2520 Physics of Flow Control in Compression Ramp-Induced SBLI Using Filler Wedges R. Kannan, L. Waddell, H. Babinsky, University of	10:10 a.m. AIAA-2026-2521 Large-Scale, Low-Frequency Phenomena Ahead of a Supersonic Wing-Body Junction A. Dasgupta, A. Ephraim, S. Singh, Embry-Riddle	10:30 a.m. AIAA-2026-2522 Filleting Effect on Blunt Fin-Induced Turbulent Shockwave Boundary Layer Interaction M. Gomez Fierro, A. Hoang, C. Ross, A. Delgado, F. Shu,	10:50 a.m. AIAA-2026-2523 On Upstream Influence of Conical Shock Wave - Turbulent Boundary Layer Interactions B. Bomjan Gurung, S. Gai, M. Talluru, A. Khraibut, University	

L. Howerton, G. Blaisdell, J. Poggie, Purdue University, West Lafayette, IN	Cambridge, Cambridge, United Kingdom	Aeronautical University, Daytona Beach, FL; N. Compton, L. Ukeiley, University of Florida, Gainesville, FL	A. Gross, New Mexico State University, Las Cruces, NM	of New South Wales Canberra at ADFA, Canberra, Australia	
Friday, 16 January 2026					
FD-94	Turbulence and Wall-Bounded Flow Modeling: RANS and Immersed Methods				Plaza Ballroom D
Chaired by: P. HAMMER, Air Force Research Laboratory and G. LASKOWSKI					
9:30 a.m. AIAA-2026-2524 A VOF-IBM Method for High-Fidelity Simulation of Fluid-Structure Interaction in Two-Phase Flows: Application to Rain Interaction With a NACA-0012 Wing S. Schwartz, S. Garcia, Y. Ling, University of South Carolina, Columbia, SC	9:50 a.m. AIAA-2026-2525 Interpolation-Free Immersed Boundary Method Implementation Using the Space-Time Conservation Framework in UNICONES H. Lu, K. Chen, C. Chang, G. Cheng, National Applied Research Laboratories National Center for High-Performance Computing, Hsinchu, Taiwan	10:10 a.m. AIAA-2026-2526 Tracking Surface Contact and Penetration in Immersed and Embedded Boundary Simulations E. Rivas, J. Ryerse, Virginia Polytechnic Institute and State University, Blacksburg, VA; E. Lopez-Ramos, E. Guzas, Naval Undersea Warfare Center Newport Division, Newport, RI; K. Wang, Virginia Polytechnic Institute and State University, Blacksburg, VA			
Friday, 16 January 2026					
FD-95	Wing-Gust Interactions I				Plaza Ballroom E
Chaired by: X. HE, University of Utah and K. MCHUGH, AFRL					
9:30 a.m. AIAA-2026-2527 Transverse Gust Mitigation with Trailing Edge Flap: Flow Topology and Effects of Initial Flow Condition S. Li, P. Vadher, H. Babinsky, University of Cambridge, Cambridge, United Kingdom	9:50 a.m. AIAA-2026-2528 Effect of Integration Length in Transverse Gust Mitigation B. Latrobe, B. Aguilar, D. Raj Adhikari, University of Central Florida College of Engineering and Computer Science, Orlando, FL; J. Hrynuk, US Army Combat Capabilities Development Command Army Research Laboratory Aberdeen Proving Ground, Aberdeen Proving Ground, MD; S. Bhattacharya, University of Central Florida College of	10:10 a.m. AIAA-2026-2690 Flexible Wings for Vortical Gust Mitigation C. Bianco, E. Handy-Cardenas, I. Balaguera, K. Breuer, Brown University, Providence, RI			

	Engineering and Computer Science, Orlando, FL				
Friday, 16 January 2026					
GNC-40	Flying NASA's Dragonfly Lander at Titan				Bayhill 28
Chaired by: R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory					
9:30 a.m. AIAA-2026-2529 Rotorcraft Flight on Saturn's Largest Moon Titan: An Integrated Approach for Extraterrestrial Vertical Flight M. Robbins, R. Vaughan, Z. Putnam, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; T. McGee, Point Mass Technologies LLC, Pittsburgh, PA	9:50 a.m. AIAA-2026-2530 Surrogate Modeling of Aerodynamic Loads on the Dragonfly Lander in Flight G. Perrotta, M. Misiorowski, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	10:10 a.m. AIAA-2026-2531 Dragonfly Model Validation Using System Identification of a Surrogate Vehicle E. Sutton, E. Superfin, J. Stipes, Johns Hopkins Applied Physics Laboratory, Laurel, MD; S. Yang, D. Lee, Advanced Rotorcraft Technology Inc, Sunnyvale, CA	10:30 a.m. AIAA-2026-2532 Flight Control System Design and Analysis for the Dragonfly Lander. L. Rodovskiy, C. Boss, K. Popek, E. Sutton, B. Shapiro, E. Superfin, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	10:50 a.m. AIAA-2026-2533 Dragonfly Lander In-Flight Contingency Path Planning and Preliminary Analyses K. Popek, A. Dippold, M. Marshall, R. Foust, Johns Hopkins University Applied Physics Laboratory, Laurel, MD	11:10 a.m. AIAA-2026-2534 Modeling and Flight Performance of NASA's Dragonfly Rotorcraft Lander M. Marshall, B. McCann, M. Mari, E. Tang, L. Rodovskiy, E. Superfin, Johns Hopkins University Applied Physics Laboratory, Laurel, MD; et al.
Friday, 16 January 2026					
GNC-41	Spacecraft Launch Guidance, Navigation and Control I				Bayhill 29
Chaired by: J. DONGMO, NASA Goddard Space Flight Center and R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory and C. PECK, Sandia National Laboratories					
9:30 a.m. AIAA-2026-2535 Robust Lunar Landing Trajectory Control Laws Using Neural ODEs with Reservoir Computing for Efficient Learning S. Ueda, Uchu Koku Kenkyu Kaihatsu Kiko - Sagamihara Campus, Sagamihara, Japan; H. Ogawa, Uchu Koku Kenkyu Kaihatsu Kiko Tsukuba Uchu Center, Tsukuba, Japan	9:50 a.m. AIAA-2026-2536 Time-Optimal Spin-to-Spin Slew Maneuver With Angular Velocity Constraints via Sequential Convex Programming J. Lee, Y. Lee, Y. Jeong, D. Lee, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	10:10 a.m. AIAA-2026-2537 Powered Descent Trajectory Design and Guidance Algorithms for Chandrayaan-3 Lunar Landing Mission S. Kumar, A. Rallapalli, D. Chakrabarti, R. M P, B. G V P, U R Rao Satellite Center, Bangalore, India	10:30 a.m. AIAA-2026-2538 Convexification of Aerodynamic-Constraints for Reusable-Rockets Reentry-Burn Guidance H. Arai, S. Matsumoto, Uchu Koku Kenkyu Kaihatsu Kiko Kenkyu Kaihatsu Bumon, Chofu, Japan	10:50 a.m. AIAA-2026-2539 Optimal Satellite Maneuvers for Spaceborne Jamming Attacks F. Fotiadis, Q. Rommel, B. Sadler, U. Topcu, The University of Texas at Austin, Austin, TX	11:10 a.m. AIAA-2026-2540 Flight-Ready Precise and Robust Carrier-Phase GNSS Navigation Software for Distributed Space Systems S. Low, T. Bell, S. D'Amico, Stanford University, Stanford, CA
Friday, 16 January 2026					
GT-21	Design and Modernization of Ground Test Facilities				Rainbow Spring II
Chaired by: P. GOULDING, NASA Ames Research Center and R. ROUGHT, Arnold Engineering Development Complex					
9:30 a.m. AIAA-2026-2541	9:50 a.m. AIAA-2026-2542	10:10 a.m. AIAA-2026-2543	10:30 a.m. AIAA-2026-2544		

The New Perforated Walls, Compressor and Control Upgrades of the DNW-HST R. Gebbink, F. Wubben, Koninklijk Nederlands Lucht- en Ruimtevaartcentrum, Amsterdam, The Netherlands	Design and Simulation of a Low-cost Mach 2 Supersonic Wind Tunnel V. Morgan Acevedo, O. Garibaldi, Universidad Tecnologica de Panama, Panama City, Panama	Modernization of the Missouri University of Science and Technology SupersonicWind Tunnel J. Gary, D. Viganò, Missouri University of Science and Technology, Rolla, MO	Development of High Unit-Reynolds Number Supersonic Wind Tunnel Facility at the University of Texas at Arlington V. Gopal, G. Somaroutu, A. Suresh, H. Prasad, The University of Texas at Arlington Department of Mechanical & Aerospace Engineering, Arlington, TX		
Friday, 16 January 2026					
GTE-34	Advanced Cycle Design Concepts and Measurement Technologies I				Celebration 2
Chaired by: J. HAYNES, GE Aerospace and A. YATSKO, AIAA					
9:30 a.m. AIAA-2026-2545 Design of a Micro-Turbojet M. Zheng, T. Vu, I. Yezhov, N. Shrestha, A. Saini, T. Lien, Purdue University, West Lafayette, IN; et al.	9:50 a.m. AIAA-2026-2546 Simulation Study of a Waste Heat Recovery Cycle With Integrated Ammonia Cracking for Zero Carbon Emissions Aircraft M. Ahmed, G. Sarobar Mandal, S. Shahzad, E. Taylor, M. Otto, J. Kapat, University of Central Florida, Orlando, FL	10:10 a.m. AIAA-2026-2547 Flight-Like Recuperator for Model 250 Engine D. Knaus, J. Cox, M. Izenson, Creare LLC, Hanover, NH; J. Sanders, Edare LLC, Lebanon, NH; C. Heathco, New Centerline Design, Avon, IN	10:30 a.m. AIAA-2026-2548 A Modeling Framework for Supercritical CO2 Power Systems in Aviation K. Patel, G. Mandal, N. Brijlal, E. Fernandez, M. Otto, J. Kapat, University of Central Florida College of Engineering and Computer Science, Orlando, FL	10:50 a.m. AIAA-2026-2549 The Turbo Rocket Jet Cycle – A 68:1 Thrust-To-Weight Combined Cycle Air-Breathing Propulsion System Using Storable Propellants J. Bucknell, Independent Researcher, Troy, MI	11:10 a.m. AIAA-2026-2550 Useful Derivatives for Numerical Propulsion System Simulation Models B. Margolis, K. Lyons, J. Garcia, NASA Ames Research Center, Moffett Field, CA; J. Felder, S. Jones, T. Lavelle, NASA Glenn Research Center, Cleveland, OH; et al.
Friday, 16 January 2026					
HIS-01	Aircraft / Spacecraft Lessons Learned and Case Studies				Bayhill 20
Chaired by: K. BURNS, Retired and W. GORDON, AIAA Niagara Frontier Section					
9:30 a.m. AIAA-2026-2551 Jenny in Uniform: The Military Service of the Curtiss Jenny and Canadian Aeroplanes Limited Canuck in the U.S. and Canada from 1915 to 1927 W. Gordon, AIAA Niagara Frontier Section, Snyder, NY	9:50 a.m. AIAA-2026-2552 The 1914 Papin-Rouilly Gyroptère: A Retrospective Analysis S. Ossyra, Embry-Riddle Aeronautical University, Daytona Beach, FL; M. Villanueva, California State Polytechnic University Pomona, Pomona, CA	10:10 a.m. AIAA-2026-2553 The History of Tire Testing at Cornell Aeronautical Laboratory K. Burns, California American Legion, Sanger, CA	10:30 a.m. AIAA-2026-2554 The History of Space Toilets and the Development of Toilet Technology P. Andreychuk, PAO Raketno-kosmiceskaa korporacia Energia imeni S P Koroleva, Korolyov, Russia	10:50 a.m. AIAA-2026-2865 Space Anthropology D. Wilson, DePaul University, Chicago, IL	11:10 a.m. AIAA-2026-2866 A Comprehensive Review on Student Nanosatellite Programs in India M. Biswal M, Acceleron Aerospace, Bangalore, India
Friday, 16 January 2026					
HMT-07	Machine Learning and AI/xAI				Bayhill 18

Chaired by: A. BABU, Cornell University and M. SABET, Cornell University					
9:30 a.m. AIAA-2026-2555 AI-Agents for Mitigating Errors in Aircraft Maintenance S. Ha, L. Damon, G. Nanda, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-2556 Real-Time Validation of an AI-Based Solution for Tactical Air Traffic Complexity Prediction and Resolution J. Gauci, C. Koopman, L. Grech, L-Universita ta' Malta, Msida, Malta; M. Bezzina, N. Borovich, M. Jurvansuu, INGENAV, Madrid, Spain; et al.	10:10 a.m. AIAA-2026-2557 Scaling Keyword Tagging in Space Science: LLM-Driven Automation for Domain-Specific Literature S. Hanson, NASA, Washington, D.C.	10:30 a.m. AIAA-2026-2558 Human-In-The-Loop Testing of AI Agents for Air Traffic Control With a Regulated Assessment Framework B. Carvell, M. Thomas, A. Pace, C. Dorney, National Air Traffic Services, Fareham, United Kingdom; G. De Ath, R. Everson, University of Exeter, Exeter, United Kingdom; et al.	10:50 a.m. AIAA-2026-2559 Towards Naturalistic Human-Machine Teaming with LLM Agents: A Case Study in Air Traffic Management N. Xue, Purdue University, West Lafayette, IN; D. Verma, Cornell University, Ithaca, NY; V. Srihari, Georgia Institute of Technology, Atlanta, GA; W. Piotrowski, K. Chour, K. Kalyanam, NASA Ames Research Center, Moffett Field, CA	
Friday, 16 January 2026					
HSABP-14	Solid Fuel Ramjets and Scramjets II				Celebration 4
Chaired by: A. GILMANOV, Combustion Science & Engineering and L. BRAVO, US Army Research Laboratory					
9:30 a.m. AIAA-2026-2562 Mie Scattering Imaging of Metal Particle Dispersion in a Solid Fuel Ramjet Combustor L. Macarie, K. Stava, G. Young, R. Gejji, C. Slabaugh, Purdue University, West Lafayette, IN	9:50 a.m. AIAA-2026-2563 Performance Enhancement of Solid Fuel Ramjets via Aft-Chamber Oxidizer Injection A. Gilmanov, P. Gokulakrishnan, M. Klassen, Combustion Science and Engineering Inc, Columbia, MD	10:10 a.m. AIAA-2026-2564 Numerical Investigation of Solid Fuel Ramjet Combustion With Increasing Modeling Fidelity R. DeBoskey, NC State University, Raleigh, NC; B. Bojko, D. Kessler, US Naval Research Laboratory, Washington, D.C.; V. Narayanaswamy, NC State University, Raleigh, NC			
Friday, 16 January 2026					
INPSI-10	Inlets, Nozzles, and Propulsion, Systems Integration				Florida Ballroom B
9:30 a.m. AIAA-2026-2565 Bluff Body Dynamic Distortion Generators: Design and RANS CFD Analysis of Dynamic StreamVanes E. Padula, K. Lowe, A. Untaroiu, J. Gonzales, Virginia Polytechnic Institute and	9:50 a.m. AIAA-2026-2566 Assessment of a Thrust Measurement System for Supersonic Nozzles G. Di Cicca, M. Ferlauto, J. Hassan, R. Marsilio, Politecnico di Torino, Turin, Italy	10:10 a.m. AIAA-2026-2567 Numerical Analysis of Separation Events for Two-Dimensional Supersonic Wavy Geometries H. Sabbah, NC State University, Raleigh, NC; A. Montanari, M. Grossi, M. Migliorino, F. Nasuti, Sapienza	10:30 a.m. AIAA-2026-2568 Optimization and Experimental Validation of a Robust S-Duct Geometry With Boundary-Layer Ingestion I. Chikhaoui, University of Toronto Institute for Aerospace Studies, Toronto,	10:50 a.m. AIAA-2026-2569 Unsteady Swirl Distortion Characterization in a Coupled Fan-Intake System in Crosswind Conditions Using Stereoscopic Particle Image Velocimetry	

State University, Blacksburg, VA		University of Rome, Rome, Italy; J. Braun, NC State University, Raleigh, NC	Canada; C. Clark, F. Rasimarzabadi, National Research Council Canada, Ottawa, Canada; H. abo el Ella, Carleton University Faculty of Engineering and Design, Ottawa, Canada; H. Breton, National Research Council Canada, Ottawa, Canada; D. Zingg, University of Toronto Institute for Aerospace Studies, Toronto, Canada	T. Piovesan, P. Zachos, D. MacManus, Cranfield University, Cranfield, United Kingdom	
Friday, 16 January 2026					
IS-27	Autonomy IV				Celebration 15
Chaired by: A. CHAKRAVARTHY, University of Texas, Arlington and J. LANGELAAN, Pennsylvania State University					
9:30 a.m. AIAA-2026-2570 Real-Time Controller Architecture for sUAS Flight Test N. Luna, J. Valasek, Z. Curtis, Texas A&M University, College Station, TX	9:50 a.m. AIAA-2026-2571 Localization and Predictive Control for Dynamic Object Interception on Lighter-Than-Air UAVs M. Dempsey, C. Taylor, O. Dantsker, Indiana University, Bloomington, IN	10:10 a.m. AIAA-2026-2572 Modeling and Control of a Flexible-Wing UAV Performing Soaring S. Eskandarian, A. Chakravarthy, The University of Texas at Arlington, Arlington, TX	10:30 a.m. AIAA-2026-2573 Generalized Landing for Small and Micro UAS A. Brown, B. Cheng, J. Langelaan, The Pennsylvania State University, University Park, PA	10:50 a.m. AIAA-2026-2574 Reactive Mission and Contingency Management for UAS: Implementation and Flight Testing K. Thomessen, P. Nagarajan, Deutsches Zentrum fur Luft- und Raumfahrt DLR Standort Braunschweig, Brunswick, Germany	11:10 a.m. AIAA-2026-2575 Distributed State Estimation for Vision-Based Cooperative Slung Load Transportation in GPS-Denied Environments J. Pence, J. Fezell, J. Langelaan, J. Geng, The Pennsylvania State University, University Park, PA
Friday, 16 January 2026					
IS-28	Distributed Data Acquisition and Processing for Advanced Air Mobility				Celebration 12
Chaired by: V. STEPANYAN, KBR Wyle Services LLC					
9:30 a.m. AIAA-2026-2576 Cross Validation of Sensor Inputs as Part of Position Estimation for Urban Air Mobility T. Lombaerts, E. Kawamura, K. Kannan, C. Ippolito, V. Stepanyan, G. Gorospe, NASA Ames Research Center, Moffett Field, CA; et al.	9:50 a.m. AIAA-2026-2578 *Distributed Sensing for Advanced Air Mobility in Varying Environments* C. Dolph, D. Katragadda, B. Petty, NASA Langley Research Center, Hampton, VA; C. Ippolito, G. Gorospe, T. Lombaerts, NASA Ames Research Center, Moffett Field, CA; et al.	10:10 a.m. AIAA-2026-2579 Vision-based Approach and Landing with Distributed Sensing and Hierarchical Mixture of Experts E. Kawamura, K. Kannan, T. Lombaerts, V. Stepanyan, NASA Ames Research Center, Moffett Field, CA; C. Dolph, NASA Langley Research Center, Hampton, VA; N. Brown, NASA Armstrong Flight Research	10:30 a.m. AIAA-2026-2749 Wind and Turbulence Distributed Sensing for Advanced Air Mobility E. Kawamura, D. Soloway, N. Nguyen, T. Lombaerts, J. Baculi, K. Sheth, NASA Ames Research Center, Moffett Field, CA; et al.	10:50 a.m. AIAA-2026-2750 Multi-Layer Perceptron Based Small Uncrewed Aerial System Trajectory Classification D. Katragadda, E. Deckert, C. Dolph, NASA Langley Research Center, Hampton, VA	

		Center, Edwards Air Force Base, CA; et al.			
Friday, 16 January 2026					
IS-29	Guidance, Navigation, and Control Architectures for Autonomous Systems IV				Celebration 16
Chaired by: N. NGUYEN, NASA-Ames Research Center and K. DOGAN, Embry-Riddle Aeronautical University					
9:30 a.m. AIAA-2026-2580 Game-Theoretic Decision Making and Payoff Design for Multiagent UAV Collision Avoidance A. Ozgun, C. Hindistan, S. Demirkol Ozgun, Z. Gul, Ege Universitesi, Izmir, Turkey; M. Deniz, Izmir Katip Celebi Universitesi, Çiğli, Turkey; E. Tatlicioglu, Ege Universitesi, Izmir, Turkey	9:50 a.m. AIAA-2026-2581 Reinforcement Learning Based--Driven Parameter Adaptation for UAV Systems Z. Gul, A. Ozgun, C. Hindistan, S. Demirkol Ozgun, Ege Universitesi, Izmir, Turkey; M. Deniz, Izmir Katip Celebi Universitesi, Çiğli, Turkey; E. Tatlicioglu, Ege Universitesi, Izmir, Turkey	10:10 a.m. AIAA-2026-2582 Koopman Based Pole Placement for Quadrotor Control S. Martini, M. Stefanovic, K. Valavanis, University of Denver, Denver, CO	10:30 a.m. AIAA-2026-2583 Output Feedback Learning Control of Atomic Force Microscopes S. Taskingollu, Ege Universitesi, Izmir, Turkey; K. Dogan, Embry-Riddle Aeronautical University, Daytona Beach, FL; B. Bidikli, Izmir Katip Celebi Universitesi, Çiğli, Turkey; E. Tatlicioglu, Ege Universitesi, Izmir, Turkey; E. Zergeroglu, Gebze Teknik Universitesi, Gebze, Turkey	10:50 a.m. AIAA-2026-2584 Interactions of Time-Scale Separated Hybrid Adaptive Systems N. Nguyen, NASA Ames Research Center, Moffett Field, CA; B. Lian, Auburn University, Auburn, AL	
Friday, 16 January 2026					
LP-14	Liquid Propulsion System and Component Design, Analysis, Testing and Operation I				Celebration 8
Chaired by: J. MOLINSKY, Northrop Grumman Space Systems and F. BENDANA, The Aerospace Corporation					
9:30 a.m. AIAA-2026-2586 Development of an Iterative-Based Prechill Characterization for a Collegiate Liquid Methane and Liquid Oxygen Rocket S. Chidambara Ganesh, D. Ho, University of California San Diego, La Jolla, CA	9:50 a.m. AIAA-2026-2587 Highly Magnified High-speed Imaging of Cryogenic Liquid Jet Breakup Processes Under Subcritical Conditions N. Yoshida, T. Kataoka, J. Hayashi, Kyoto Daigaku, Kyoto, Japan; Y. Daimon, Tsukuba Daigaku, Tsukuba, Japan; N. Sako, T. Haga, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan; et al.	10:10 a.m. AIAA-2026-2588 Experimental and Numerical Studies on Acoustic Softening and Flow Choking in Liquid Propulsion System D. Roy, A. Varma, M. Srivastasva, T. Singh, Amity Institute of Aerospace Engineering, Noida, India; V. Sanal Kumar, Amity University Noida, Noida, India	10:30 a.m. AIAA-2026-2589 Evaluation of Local Mixture and Flow Rate Ratio for Liquid-Liquid Type Pintle Injector N. Sako, K. Goto, J. Nakatsuka, K. Tominaga, T. Nagata, Japan Aerospace Exploration Agency, Sagamihara, Japan	10:50 a.m. AIAA-2026-2590 Investigation of Mechanical Based Suppression Device on Liquid Propellant Line Water Hammer Effects E. Yalcinkaya, M. Tomac, C. Yilmaz, Roketsan Roket Sanayii ve Ticaret AS, Ankara, Turkey	
Friday, 16 January 2026					
MDO-23/NDA-11	Non-Deterministic Analysis in MDO				Bayhill 17
Chaired by: C. LUPP, Air Force Research Laboratory and G. CATALDO, NASA Goddard Space Flight Center					
9:30 a.m. AIAA-2026-2591	9:50 a.m. AIAA-2026-2592	10:10 a.m. AIAA-2026-2593	10:30 a.m. AIAA-2026-2594	10:50 a.m. AIAA-2026-2595	

Physics-Informed Neural Surrogates for Mesh-Invariant Modeling of High-Speed Flows A. Pal, Massachusetts Institute of Technology, Cambridge, MA; S. Spreizer, Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA; A. Edelman, C. Rackauckas, Massachusetts Institute of Technology, Cambridge, MA; M. Jones, Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA; T. Korenyi-Both, US Department of the Air Force, Washington, D.C.	Computationally Efficient Modelling of Full Trajectory Heat loads for Hypersonic Systems S. Koirala, I. Jahn, J. Williamson, D. Buttsworth, F. Zander, A. Lock, University of Southern Queensland, Toowoomba, Australia	Prediction of Flutter Boundary of a Full Aircraft using a CFD-Based Reduced Order Method H. Yang, CFD Research Corporation, Huntsville, AL	Gaussian Process Surrogate Models for Uncertainty Quantification in Spacecraft and Trajectory Systems S. Naidu, L. Leifsson, Purdue University, West Lafayette, IN	Stochastic Optimization Techniques for the Design of Just-In-Time Collision Avoidance Constellations T. DeWalch, R. Fitzgerald, Virginia Polytechnic Institute and State University, Blacksburg, VA	
Friday, 16 January 2026					
MST-08	Modeling and Simulation of Space Vehicle Dynamics, Systems, and Environments				Blue Spring I
Chaired by: I. FIALHO, The Boeing Company and J. SCHWITHAL, DLR - German Aerospace Center					
9:30 a.m. AIAA-2026-2596 System Identification Algorithm Considering Multiple Frequency Modes and its Application to Attitude Dynamics of a Large Flexible Structure Satellite T. Yamasaki, H. Takano, National Defense Academy of Japan, Dept. of Aerospace Engineering, Yokosuka, Japan	9:50 a.m. AIAA-2026-2597 SISIFOS: Specialized Illumination SImulator for Orbiting Spacecraft I. Velentzas, J. Florez Castillo, N. Bruckner, M. Dor, P. Tsiotras, Georgia Institute of Technology, Atlanta, GA	10:10 a.m. AIAA-2026-2598 REALMs: An Open-Source Simulation Framework for the Development of Self-Landing Rocket Controls K. Ugalde, University of California San Diego, La Jolla, CA			
Friday, 16 January 2026					
PC-39	Combustion V				Celebration 7
Chaired by: M. ARIENTI, Sandia National Laboratories					
9:30 a.m. AIAA-2026-2599 Experimental Study on Laminar Flame Speeds of H_2/Air Mixtures Doped With Fire Suppressants	9:50 a.m. AIAA-2026-2600 Computational Fluid Dynamics Analysis of Flow Field of Different Hybrid Rocket Engine Oxidizer Injector Designs	10:10 a.m. AIAA-2026-2601 Study of the Spatio-Temporal Dynamics in the Volvo Validation Rig Using Modal Decomposition Techniques	10:30 a.m. AIAA-2026-2602 Symbolic Recurrence Analysis of Distributed Combustion T. Karnam Reddy, Y. Nanda, S. Muralidharan, E. Gutmark,		

M. Nielsen, O. Mathieu, E. Petersen, Texas A&M University, College Station, TX	A. Mugot, S. Guirnaldo, MSU-Iligan Institute of Technology, Iligan City, Philippines; J. Maglasang, Cebu Technological University College of Engineering, Cebu City, Philippines; R. Cunanan, University of Central Florida, Orlando, FL; H. Soriano, MSU-Iligan Institute of Technology, Iligan City, Philippines	I. Tidwell, G. Usher, R. Smith, R. Ranjan, The University of Tennessee at Chattanooga, Chattanooga, TN	University of Cincinnati, Cincinnati, OH		

Friday, 16 January 2026

PC-40	Shock Tube	Celebration 6

Chaired by: S. MARTIN, Embry-Riddle Aeronautical University and S. SCHROEDER, University of Central Florida

9:30 a.m. AIAA-2026-2603 Two-Line Absorption Thermometry Characterization of a Miniature Shock Tube A. Moro, J. Fenderson, P. Lynch, University of Illinois Chicago, Chicago, IL	9:50 a.m. AIAA-2026-2604 Shock Tube-Based Soot Formation Mechanism Refinement for Supersonic Aviation K. Rouviere , J. Sanchez, T. Vo, F. Arafin, R. Rahman, S. Vasu, University of Central Florida, Orlando, FL	10:10 a.m. AIAA-2026-2605 *n*-Hexane Flame Propagation at Elevated Temperatures and Pressures in a Shock Tube L. Simitz, L. Zheng, M. Figueroa-Labastida, R. Hanson, Stanford University, Stanford, CA	10:30 a.m. AIAA-2026-2606 A CFD Study of the Combustion Process in a Miniature Shock Tube at Different Oxyhydrogen Fill Pressures J. Subburaj, T. Kashif, M. Vogl, S. Maddi, Z. Alyousef, A. Farooq, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	10:50 a.m. AIAA-2026-2607 Ignition Delay Times of Hydrogen-air Mixtures at Ultra-high Pressures Inside a Shock Tube T. Kreuscher, S. Klopp, R. Rahman, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	

Friday, 16 January 2026

PC-41	The Physics of Jets in Cross Flow: Experimental and Computational Progress	Celebration 5

Chaired by: C. RISING, The University of Texas at El Paso

Extensive scientific research is ongoing to investigate the physics of fuel jets in cross flow. Most studies primarily focus on the injection of various fuels in different thermodynamic states, that is: liquid, gas, or supercritical fluids, into an oxidizer cross flow, encompassing both supersonic and subsonic regimes. This session will provide an overview of recent and ongoing experimental work, as well as highlight computational advancements that address critical needs in computational fluid dynamics (CFD) development for these challenging cases. The session aims to bring together the community working on this multifaceted problem and encourage collaboration among groups exploring different physics and approaches. It is ideal for those interested in multiphase flows, breakup, particle physics, combustion, diagnostics, and more, with the overarching goal of closely linking experimentalists and computational practitioners.

Friday, 16 January 2026

PDL-15	Aero-Optics and Atmospheric Optical Turbulence	Rainbow Spring I

Chaired by: K. XU, University of Alabama in Huntsville and J. CREEL, Bush Combat Development Complex - Texas A&M

9:30 a.m. AIAA-2026-2609	9:50 a.m. AIAA-2026-2610				

Verification of Numerical Simulations of Optically Coupled Laser and Particle Beam Propagation and Application to Mode-Matching A. Jewell, Y. Bao, C. Limbach, University of Michigan, Ann Arbor, MI	Numerical Analysis of Collimated and Focused Laser Beam Propagation Across Planar Shockwaves N. Tokmantsev, C. Limbach, University of Michigan, Ann Arbor, MI				
Friday, 16 January 2026					
PGC-21	PGC Operability and Performance II				Florida Ballroom C
Chaired by: D. FERGUSON, retired government and M. FOTIA, Air Force Research Laboratory					
9:30 a.m. AIAA-2026-2611 High Area Ratio Convergent Nozzle to Improve Performance of Rotating Detonation Engine A. James, S. Talukdar, A. Agrawal, The University of Alabama, Tuscaloosa, AL	9:50 a.m. AIAA-2026-2612 Comptutational Examination of Converging Geometries in RDRE Nozzles M. Ross, J. Burr, M. Harvazinski, Air Force Research Laboratory, Edwards AFB, CA; A. Batista, Amentum - Air Force Research Laboratory, Edwards AFB, CA	10:10 a.m. AIAA-2026-2613 Impact of Varying Combustion Chamber Area in Rotating Detonation Engines M. Powers, S. Sharma, V. Raman, University of Michigan, Ann Arbor, MI	10:30 a.m. AIAA-2026-2614 Assessment of the Inner Body Configuration Influence on Rotating Detonation Engine Performance G. Bruno, B. Saracoglu, Von Karman Institute For Fluid Dynamics, Sint-Genesius-Rode, Belgium		
Friday, 16 January 2026					
SATS-05	Small Satellite Novel Technologies				Celebration 9
Chaired by: P. HUANG, The University of Arkansas and P. DO VALE PEREIRA, University of Central Florida					
9:30 a.m. AIAA-2026-2615 Efficient Multi-User Detection and Turbulent Compensation in Optical Links for Small Satellite Communications C. Xu, Embry-Riddle Aeronautical University, Daytona Beach, FL; C. Chen, Jet Propulsion Laboratory, Pasadena, CA; T. Yang, E. Rojas, Embry-Riddle Aeronautical University, Daytona Beach, FL	9:50 a.m. AIAA-2026-2616 Structured Radio Waves for Radar Imaging Y. Tanabe, H. Kimura, M. Ito, K. Nakamura, T. Funane, S. Saito, Hitachi, Ltd., Research & Deveopment Group, Kokubunji, Jamaica; et al.	10:10 a.m. AIAA-2026-2617 Feasibility Study of Parabolic Reflector for Structured Radio Waves SAR in Small Satellites M. Ito, Y. Tanabe, H. Kimura, K. Nakamura, M. Yonehara, T. Funane, Hitachi, Ltd., Kokubunji, Japan; et al.	10:30 a.m. AIAA-2026-2618 Space Printer for Autonomous Manufacture of Mega-Structures (SPAMM) S. Timperley, G. Simoncioni, N. Realuyo, A. Spear, B. Yan, G. Ehrich, US Air Force Academy, Air Force Academy, CO; et al.	10:50 a.m. AIAA-2026-2619 Electrodynamic Dust Shield for Lunar Regolith Mitigation on Optical Systems A. Pujols, H. Faust, D. Lopez, T. Henderson, Embry-Riddle Aeronautical University, Daytona Beach, FL	
Friday, 16 January 2026					

SD-27/FD-89	Fluid-Metamaterial Interactions II				Bayhill 24
Chaired by: D. RESTREPO, The University of Texas at San Antonio					
9:30 a.m. 4343670 Phononic Metamaterials for Stabilization for Hypersonic Flows J. Navarro, D. Balderas, C. Combs, D. Restrepo, The University of Texas at San Antonio, San Antonio, TX	9:50 a.m. AIAA-2026-2620 Optimization of Phononic Subsurfaces for Hypersonic Boundary Layer Disturbance Reduction C. Klauss, J. Batstone, University of Maryland, College Park, MD; M. Hussein, University of Colorado Boulder, Boulder, CO; C. Brehm, University of Maryland, College Park, MD	10:10 a.m. AIAA-2026-2621 Dynamic Passive Control of Turbulent Drag via Subsurface Resonant Phononic Material C. Lin, California Institute of Technology, Pasadena, CA; V. Ramakrishnan, A. Goza, K. Matlack, University of Illinois Urbana-Champaign, Urbana, IL; H. Bae, California Institute of Technology, Pasadena, CA	10:30 a.m. AIAA-2026-2622 A High-Fidelity Simulation Framework for Turbulent Flows with Complex (Metamaterial) Structures D. Beckers, California Institute of Technology, Pasadena, CA; S. Balasubramanian, University of Illinois Urbana-Champaign, Urbana, IL; C. Lin, California Institute of Technology, Pasadena, CA; A. Goza, University of Illinois Urbana-Champaign, Urbana, IL; H. Bae, California Institute of Technology, Pasadena, CA		
Friday, 16 January 2026						
SFM-32	Satellite Constellations and Formations I					Plaza Ballroom J
Chaired by: L. POLICASTRI, Space Exploration Engineering						
9:30 a.m. AIAA-2026-2626 Screw Theory Application: Computationally-Efficient Obstructed Constellation Access Calculation C. Ludden, C. Petersen, University of Florida, Gainesville, FL	9:50 a.m. AIAA-2026-2627 Graph-Theoretic Performance Analysis for Constellation Link Geometry via Random Geometric Networks Q. Zhou, M. Mesbahi, University of Washington, Seattle, WA	10:10 a.m. AIAA-2026-2628 Formation Control of Underactuated Spacecraft J. Tran, M. Emami, University of Toronto, Toronto, Canada	10:30 a.m. AIAA-2026-2629 Integrated Trajectory and Beamforming Optimization for Fuel-Efficient Reconfiguration of Distributed Space Antennas S. Shim, Sogo Kenkyu Daigakuin Daigaku, Miura District, Japan; Y. Takahashi, Tokyo Kagaku Daigaku, Meguro, Japan; N. Usami, S. Sakai, Uchu Koku Kenkyu Kaihatsu Kiko, Sagamihara, Japan	10:50 a.m. AIAA-2026-2630 Heliocentric Constellation Design for Space Weather Monitoring using Resonant Orbits S. West, M. Moretto, NC State University, Raleigh, NC; J. Bookbinder, NASA Ames Research Center, Moffett Field, CA	11:10 a.m. AIAA-2026-2785 Design and Deployment of a Martian Position, Navigation, and Timing Constellation Using Aerocapture D. Gochenaur, M. Jones, C. Tommila, L. Etzenbach, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA
Friday, 16 January 2026						
SL-02	Space Mobility and Logistics: In-Space Servicing, Manufacturing, and Ecosystem					Bayhill 23
Chaired by: H. CHEN, Fairfield University, School of Engineering and Computing and Y. SHIMANE, Georgia Institute of Technology						
9:30 a.m. AIAA-2026-2631	9:50 a.m. AIAA-2026-2632	10:10 a.m. AIAA-2026-2633	10:30 a.m. AIAA-2026-2634	10:50 a.m. AIAA-2026-2635		

Integration of On-Orbit Servicing into Constellation Maintenance with Spare Inventory Management J. Kim, T. Sung, W. Hwang, J. Ahn, Korea Advanced Institute of Science and Technology, Daejeon, South Korea	What is Preventing Space Mobility and Logistics from Taking Off? J. Greer, G. Richardson, J. Rome, The Aerospace Corporation, Colorado Springs, CA	Aggregation Station Placement and Target Assignment Optimization for a Multi-Object Space Collection System K. Takahashi, T. Chujo, H. Nakanishi, Tokyo Kagaku Daigaku, Meguro, Japan	Optimal Planning and Scheduling for Satellite Servicing Under Partial Observability S. Patnala, V. Mousseau, A. Abdin, Universite Paris-Saclay CentraleSupelec, Gif-sur-Yvette, France	Designing a Resilient Space Ecosystem: Advanced Technologies, Sustainability Metrics, and Human-Centric Operations W. Kanjumba, Vicillion, Newark, DE	

Friday, 16 January 2026

SPSN-02	Supersonic Ground and Flight Testing				Orlando Ballroom N
Chaired by: S. PATEL, Boom Supersonic					
9:30 a.m. AIAA-2026-2636 XB-1 Supersonic Demonstrator: Development and Flight Testing From a Flight Analysis Perspective M. Veletas, Boom Technology Inc, Centennial, CO	9:50 a.m. AIAA-2026-2637 Development and Flight Testing of the Stability Augmentation System for the XB-1 Supersonic Demonstrator D. Duran, Boom Technology Inc, Centennial, CO	10:10 a.m. AIAA-2026-2638 Roll Rate and Reduced Frequency Effects on Blunt Body Dynamics in a Supersonic Wind Tunnel P. Innocenzi, P. Bruce, S. Navarro-Martinez, Imperial College London, London, United Kingdom	10:30 a.m. AIAA-2026-2639 Supersonic Configurations at Low Speeds (SCALOS): Results and Insights from the 2024 Wind Tunnel Test Campaign K. Ting , K. Wiersema, R. Soltani, C. Nelson, E. Livne, University of Washington, Seattle, WA	10:50 a.m. AIAA-2026-2640 Wind Tunnel Low-Speed Tare and Interference Corrections: CFD vs Test Results - The Supersonic Configurations (SCALOS) Cases K. Wiersema, K. Ting , E. Livne, C. Nelson, R. Soltani, University of Washington, Seattle, WA	

Friday, 16 January 2026

F360-15 10:00 - 11:00 a.m.	Introduction to Wargaming with AFRL	Regency Ballroom O-P

Friday, 16 January 2026

ACD-22	Development of Aircraft Design Frameworks				Rock Spring I & II
Chaired by: R. AJAJ					
1:00 p.m. AIAA-2026-2648 Development of an Automated Tool for Aircraft Performance using Operational Data and Propulsion Characteristics A. Saha, B. Jo, Tennessee Tech University, Cookeville, TN	1:20 p.m. AIAA-2026-2649 An Object-Oriented Framework for Flexible Design of Fixed-Wing Aircraft B. Chatelain, J. Kim, K. Yee, Seoul National University, Seoul, South Korea	1:40 p.m. AIAA-2026-2650 A Component-Assembly Architecture for Conceptual Aircraft Design B. Margolis, K. Lyons, C. Natividad, D. Pham, N. Listgarten, NASA Ames Research Center, Moffett Field, CA	2:00 p.m. AIAA-2026-2651 A Unified Multi-Fidelity Aero-Structural Design Framework for Novel Aircraft Configurations S. Shubham, A. Sharma, A. Riaz, Cranfield University, Cranfield, United Kingdom	2:20 p.m. AIAA-2026-2652 A Comparison of Methodologies for Generating Design-Requirement-Driven Conceptual Aircraft Designs A. Ghiglino, J. Alonso, Stanford University, Stanford, CA; A. Cobb, SRI International, Arlington, VA	2:40 p.m. AIAA-2026-2653 Model-Based Multi-Fidelity Convergent Design Process for Commercial Aircraft T. Yokoyama, Y. Utsumi, H. Nagakura, Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda, Japan; M. Kanamori, Y. Ohmichi, K. Kubota, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan

Friday, 16 January 2026					
AFM-17	Aircraft Dynamics, Performance, Stability, and Control II				Bayhill 33
Chaired by: M. ABDULRAHIM, University of Missouri Kansas City					
1:00 p.m. AIAA-2026-2654 Incremental Nonlinear Dynamics Inversion Control for Flexible Aircraft S. Salahudden, Punjab Engineering College (Deemed to be University), Chandigarh, India; Y. Chhetri, Ministry of Defence, Delhi, India; T. Siag, Florida State University, Tallahassee, FL	1:20 p.m. AIAA-2026-2655 Aeroservoelastic Flight Dynamic Modeling of Multi-Rotor eVTOL Aircraft N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Xiong, KBR Wyle Services LLC, Moffett Field, CA	1:40 p.m. AIAA-2026-2656 Trajectory Design and Control Strategies for GPS Skywriting M. Abdulrahim, University of Missouri-Kansas City, Kansas City, MO	2:00 p.m. AIAA-2026-2657 Optimal Trajectory Design for Vehicles Navigating around Obstacles Using Pontryagin Neural Networks B. Burchett, U.S. Army Research Laboratory, Aberdeen Proving Ground, MD	2:20 p.m. AIAA-2026-2658 Numerical Simulation of a Hydrogen-Fueled Scramjet Added With a Porous Burner at Different Mach Numbers J. Chen, K. Pan, S. Huang, National Taiwan University College of Engineering, Taipei City, Taiwan	2:40 p.m. AIAA-2026-2659 On Flight Path Reconstruction In the Absence of Angle of Attack and Sideslip Measurements G. Moszczynski, A. Goudar, A. Schoellig, P. Grant, University of Toronto Institute for Aerospace Studies, Toronto, Canada; V. Myrand-Lapierre, CAE Inc, Montreal, Canada

Friday, 16 January 2026					
APS-07	High-Speed and Hypersonic Vehicle Power Systems II				Celebration 11
Chaired by: J. DELMAR, Air Force Research Laboratory and L. ELSTON, AFRL					
1:00 p.m. AIAA-2026-2660 Development of an Electrically Matching Boil-Off Calorimeter for Thermophysical Property Measurement of CO2-Based Zeotropic Mixtures E. Fender, J. McCoppin, University of Dayton Research Institute, Dayton, OH; J. DelMar, Air Force Research Laboratory Aerospace Systems Directorate, Wright-Patterson Air Force Base, OH	1:20 p.m. AIAA-2026-2661 A Comprehensive Analysis of Triply Periodic Minimal Surface Structures Applied to Additively Manufactured Conformal Heat Exchangers for High-Speed Applications N. Lewan, M. Wolff, Wright State University, Dayton, OH; A. Roman, Z. Carner, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; J. Brewer, T. Barber, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH	1:40 p.m. AIAA-2026-2662 Experimental Investigation of Heat Transfer to Tightly Packed Cylinder Arrays at Various Reynolds Numbers C. Sexsmith, M. Kovachev, M. Ricklick, Embry-Riddle Aeronautical University, Daytona Beach, FL			

Friday, 16 January 2026					
CSS-02	Cybersecurity II				Bayhill 21
Chaired by: R. THUMMALA, Cornell University					
1:00 p.m. AIAA-2026-2663	1:20 p.m. AIAA-2026-2664	1:40 p.m. AIAA-2026-2665	2:00 p.m. AIAA-2026-2666	2:20 p.m. AIAA-2026-2667	

When to Compute in Space R. Thummala, G. Falco, Cornell University, Ithaca, NY	Adaptive Aerospace Intrusion Detection Using HyperNEAT-Driven Neural Network Evolution M. Akbas, R. Bossie, T. Donay, R. Pepe, M. de Jonge, Embry-Riddle Aeronautical University, Daytona Beach, FL	Remote ID Spoofing Attacks and Defenses B. Bjorkman, S. Zheng, A. Coursey, C. Lemieux-Mack, S. Gonzalez, A. Diaz-Gonzalez, Vanderbilt University, Nashville, TN; et al.	A Provenance Chain for Decentralized Data Ecosystems in Space Missions A. Reif, F. Hanke, O. Ramírez-Agudelo, M. Karl, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany	Detection of Compromised UAVs using Graph Machine Learning N. Dahle, R. Canady, A. Coursey, A. Diaz-Gonzalez, C. Lemieux-Mack, B. Bjorkman, Vanderbilt University, Nashville, TN; et al.	
Friday, 16 January 2026					
DGE-21	Digital Ecosystem				Silver Spring I
Chaired by: R. GRAVES, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2668 Approach and Application of Evaluations for Digital Transformation in Aerospace C. Reinhart, J. Huffman, Spirit AeroSystems Inc, Wichita, KS	1:20 p.m. AIAA-2026-2669 Foundations of a Governance Framework for Digital Engineering Services Ecosystems R. Noguchi, The Aerospace Corporation, El Segundo, CA	1:40 p.m. AIAA-2026-2670 Toward a Real-Time Digital Twin Framework for Infection Mitigation During Air Travel A. Srinivasan, University of West Florida, Pensacola, FL; S. Namilae, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-2671 Engineering Software Development for Digital Thread in Structural Analysis Y. Park, G. Fernando, M. Wolff, Gulfstream Aerospace Corporation, Savannah, GA		
Friday, 16 January 2026					
FD-100	Shock-Boundary Layer Interactions V				Orlando Ballroom L
Chaired by: J. OEFELEIN, Georgia Institute of Technology and K. SHOELE					
1:00 p.m. AIAA-2026-2673 Direct Numerical Simulation of Shock Impingement on a Compliant Panel at Mach 1.92 R. Wilder, J. Oefelein, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-2674 Effect of Surface Motion on Background Unsteadiness in Turbulent Shock/Boundary-Layer Interactions M. Kronheimer, J. McNamara, D. Gaitonde, The Ohio State University, Columbus, OH	1:40 p.m. AIAA-2026-2675 Data-Driven Modal Analysis of Shock-Wave Boundary Layer Interactions Over a Rigid and a Compliant Surface A. Shahriar, R. Bhagwat, A. Mittal, K. Shoele, FAMU-FSU College of Engineering, Tallahassee, FL	2:00 p.m. AIAA-2026-2676 Aero-Thermo-Elastic Analysis of Swept Shock Wave-Boundary Layer Interaction A. Mittal, A. Shahriar, K. Shoele, Florida State University, Tallahassee, FL	2:20 p.m. AIAA-2026-2677 Effect of Surface Panel Motion on Turbulent Compound Shock/Boundary-Layer Interactions A. Suri, D. Gaitonde, J. McNamara, The Ohio State University, Columbus, OH	
Friday, 16 January 2026					
FD-101	Shock Capturing and Shock Fitting Methods				Coral Spring I
Chaired by: A. KERCHER, Naval Research Laboratory					
1:00 p.m. AIAA-2026-2678	1:20 p.m. AIAA-2026-2679	1:40 p.m. AIAA-2026-2680	2:00 p.m. AIAA-2026-2681	2:20 p.m. AIAA-2026-2682	

A Discontinuous High-Order Shock-Fitting Method for Complex Flow Problems T. Fujimoto, Z. Wang, The University of Kansas, Lawrence, KS; F. Bolsoni Oliveira, Instituto Tecnologico de Aeronautica, Sao Jose dos Campos, Brazil; J. Azevedo, Instituto de Aeronautica e Espaco, Sao Jose dos Campos, Brazil	An Adaptive Flux Reconstruction Scheme for Robust Shock Capturing S. Srinivasan, S. Nadarajah, McGill University, Montreal, Canada	Towards Automatic Construction of 3D Shock-fitted Meshes based on Robust Shock Detection and Processing A. Woodruff, O. Sahni, Rensselaer Polytechnic Institute, Troy, NY	Accelerating Convergence of Space-Time Implicit Shock Tracking Solvers With Shock Trajectory Prediction and Mesh Optimization E. Saez, M. Zahr, C. Naudet, University of Notre Dame, Notre Dame, IN	Towards a Third-Derivative-Free Fourth-Order Accurate Shock-Capturing Scheme for Arbitrary Tetrahedral Grids H. Nishikawa, National Institute of Aerospace, Hampton, VA	

Friday, 16 January 2026

FD-102	Verification Techniques in Computational Physics I				Bayhill 30
Chaired by: B. FRENO, Sandia National Laboratories and J. FERGUSON, Los Alamos National Laboratory					
1:00 p.m. 4330073 Progress on Code Verification for Collisional Plasma Dynamics B. Freno, Sandia National Laboratories, Albuquerque, NM	1:20 p.m. 4356628 Self-similar Mesh Convergence, Asymptotic Convergence, and Energy Transport Analysis J. Ferguson, Los Alamos National Laboratory, Los Alamos, NM	1:40 p.m. 4350501 Development and Verification of Novel Solvers for Wave Kinetic Equations J. Banks, Rensselaer Polytechnic Institute, Troy, NY; J. Shatah, New York University Courant Institute of Mathematical Sciences, New York, NY	2:00 p.m. 4354336 Solution Verification Methods on Deforming Domains K. Fidkowski, University of Michigan, Ann Arbor, MI	2:20 p.m. 4336681 Uncertainty Estimation in Turbulent Flows Using the Adjoint of a Tailored RANS A. Parajuli, A. Deshpande, J. Larsson, University of Maryland, College Park, MD	2:40 p.m. 4345714 Error Transport Equations: Recent Progress and Challenges W. Jordan, A. Vikrama, C. Roy, Virginia Polytechnic Institute and State University, Blacksburg, VA

Friday, 16 January 2026

FD-103	Wall-Bounded and Free Shear Flows I				Plaza Ballroom K
Chaired by: V. GOPAL					
1:00 p.m. AIAA-2026-2683 Quadrant-Splitting Analysis of Coherent Motions in the Turbulent Boundary Layer of a NACA0012 at High Angle of Attack L. Silva, W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil	1:20 p.m. AIAA-2026-2684 Evolution of Wall-Bound Streamwise Vortices Formed by a Spanwise Array of Surface Jets in a Turbulent Boundary Layer B. Toth, B. Vukasinovic, A. Glezer, Georgia Institute of Technology, Atlanta, GA; M. DeFore, C. Harris, Northrop Grumman Aeronautics Systems, Palmdale, CA	1:40 p.m. AIAA-2026-2685 Reynolds Stress Budget in the Near-Field of an Axisymmetric Wake in the High Reynolds Number Regime M. Ojaghloo, J. Naughton, University of Wyoming, Laramie, WY			

Friday, 16 January 2026

FD-104	Wing-Gust Interactions II				Plaza Ballroom E
Chaired by: D. ADHIKARI and J. FRANCK, University of Wisconsin Madison					
1:00 p.m. AIAA-2026-2686 Generating Shearing and Transverse Gusts Through One-Dimensional Wind Tunnel Control B. Lim, J. Lovell-Medina, J. Karr, X. He, The University of Utah, Salt Lake City, UT	1:20 p.m. AIAA-2026-2687 Free-Flight Kinematics of Soldier Flies During Headwind Gust Perturbations D. Gupta, Cornell University, Ithaca, NY; S. Sane, National Center for Biological science, GKVK Campus, TIFR, Bangalore, India; J. Arakeri, Indian Institute of Science, Bengaluru, India	1:40 p.m. AIAA-2026-2688 Blade-Vortex Interaction on a Twisting Flat Plate C. Soto, S. Bhattacharya, University of Central Florida, Orlando, FL	2:00 p.m. AIAA-2026-2689 Vortex Gust Interaction With a Freely-Flying Rigid Airfoil B. Yan, J. Franck, University of Wisconsin-Madison Department of Mechanical Engineering, Madison, WI		

Friday, 16 January 2026

FD-96/APA-78	Hypersonic Flows				Barrel Spring I
Chaired by: R. SPETH, Air Force Research Laboratory and R. BEBLO, Air Force Research Laboratory					
1:00 p.m. AIAA-2026-2691 Scaling for Hypersonic Entropy Layers on Blunt-Nosed Wedges J. Lee, O. Schmidt, A. Sanchez, University of California San Diego, La Jolla, CA	1:20 p.m. AIAA-2026-2692 Examination of Nonequilibirum Effects at High Mach Number and Stagnation Enthalpy for Double Cone Model - Part III C. Eden, D. Knight, Rutgers The State University of New Jersey, New Brunswick, NJ	1:40 p.m. AIAA-2026-2693 Improvements to a One-Dimensional Stagnation Line Model of Bow Shock Freestream Disturbance Interactions M. Chan, W. Hinman, University of Calgary Schulich School of Engineering, Calgary, Canada	2:00 p.m. AIAA-2026-2694 Characterization of Convective Heating Uncertainties for Slender Vehicles at Super-Orbital Hypersonic Speeds T. Aiken, C. Leszcz, D. Jimenez, I. Boyd, University of Colorado Boulder, Boulder, CO	2:20 p.m. AIAA-2026-2695 Aerodynamic Heating of Hypersonic Flows: Computational, Theoretical, and Experimental Studies C. Williams, R. Davuluri, K. Hanquist, Purdue University, West Lafayette, IN; B. Kinsey, S. Schmidt, A. Craig, The University of Arizona, Tucson, AZ	

Friday, 16 January 2026

FD-97	Particle-Laden Flows				Barrel Spring II
Chaired by: K. DANIEL, Sandia National Labs					
1:00 p.m. AIAA-2026-2696 The Influence of Turbulence and Adhesion on Spatially Heterogeneous Particle Deposition and Wear M. Herzog, J. Capecelatro, University of Michigan, Ann Arbor, MI	1:20 p.m. AIAA-2026-2697 Dispersal of Bi-modal Particle Curtains by Shock Waves K. Daniel, J. Wagner, Sandia National Labs, Albuquerque, NM	1:40 p.m. AIAA-2026-2698 Numerical Investigation of Particle-Laden Flow Sampling Bias Around an Engine K. Martin, S. Mao, P. Brockway, W. Ng, K. Lowe, Virginia Polytechnic Institute	2:00 p.m. AIAA-2026-2699 The Effect of Particle Shape on their Trajectories in Particle Laden Flows J. Hartmann, S. Staudacher, Universitat Stuttgart Institut fur Luftfahrtantriebe, Stuttgart, Germany	2:20 p.m. AIAA-2026-2700 Characterization of Rotary Atomizer Spray Geometry Under the Influence of a Propeller B. Grenwood, A. Khan, M. Bender, S. Gunasekaran, University of Dayton School of Engineering, Dayton, OH	

		and State University, Blacksburg, VA			
Friday, 16 January 2026					
FD-98	Plume-Surface Interaction II				Plaza Ballroom D
Chaired by: A. KORZUN, NASA Langley Research Center and J. RABINOVITCH, Stevens Institute of Technology					
1:00 p.m. INVITED TALK: A Description of Plume-Surface Interactions and Non-Dimensional Analysis for Crater Formation (G.Shallcross)	1:20 p.m. AIAA-2026-2701 Gas-Granular Computational Fluid Dynamics Simulation of Rocket Plume Impingement On Close-Range Surfaces in Near Vacuum M. Knickerbocker, J. West, J. Howison, T. Rivord, P. Liever, NASA Marshall Space Flight Center, Huntsville, AL	1:40 p.m. AIAA-2026-2830 Effect of Plume Conditions and Granular Bed Properties on the Temporal Transitions in Mechanisms Driving Plume-Surface Interactions V. Nataraj Bhargav, S. Satyal, B. Thurow, D. Scarborough, N. Sharan, V. Raghav, Auburn University, Auburn, AL	2:00 p.m. AIAA-2026-2831 Ejecta Tracking During Plume-Surface Interactions at Sub-Atmospheric Conditions L. Heuser, R. Zhao, N. Rasmont, J. Rovey, L. Villafañe Roca, University of Illinois Urbana-Champaign, Urbana, IL	2:20 p.m. AIAA-2026-2832 Mitigation of Plume-Surface Interaction Effects via Landing Mats. C. Jimenez Cuesta, University of Glasgow, Glasgow, United Kingdom; L. Heuser, J. Rovey, University of Illinois Urbana-Champaign, Urbana, IL; A. Lüking, FibreCoat, Aachen, Germany; L. Villafañe Roca, University of Illinois Urbana-Champaign, Urbana, IL	
Friday, 16 January 2026					
FD-99/AA-12	Reduced-Order Modeling for Fluid Dynamics and Aeroacoustics I				Coral Spring II
Chaired by: X. AN, Kent State University and E. DANIS, University of Missouri, Columbia					
1:00 p.m. AIAA-2026-2702 SPOD Mode Interpolation with Frequency Alignment on the Grassmannian Manifold Y. Zhu, University of California San Diego, La Jolla, CA; S. Sato, Tohoku Daigaku, Sendai, Japan; O. Schmidt, University of California San Diego, La Jolla, CA	1:20 p.m. AIAA-2026-2703 Topology-Inspired Clustering Hierarchy for Graph Autoencoders via Spectral Graph Theory L. Magargal, S. Moreno-Rivera, P. Khodabakhshi, Lehigh University P C Rossin College of Engineering and Applied Science, Bethlehem, PA	1:40 p.m. AIAA-2026-2704 Identification of Low-Order Unsteady Aerodynamic Models for Store Release in Transonic Flow E. Hale, M. Candon, RMIT University, Melbourne, Australia; A. Da Ronch, University of Southampton, Southampton, United Kingdom; V. Muscarello, P. Marzocca, RMIT University, Melbourne, Australia	2:00 p.m. AIAA-2026-2705 Cluster-Based Reduced-Order Modeling of Flow Around a High-Aspect-Ratio Wing M. Khazaee Kuhpar, B. Seyed-Aghazadeh, University of Massachusetts Dartmouth, Dartmouth, MA		
Friday, 16 January 2026					
GNC-42	Motion Planning, Sensing and Control for Spacecraft Robotic Systems I				Bayhill 28
Chaired by: A. CHAKRAVARTHY, University of Texas, Arlington and S. ULRICH, Carleton University					
1:00 p.m. AIAA-2026-2706	1:20 p.m. AIAA-2026-2707	1:40 p.m. AIAA-2026-2708	2:00 p.m. AIAA-2026-2709	2:20 p.m. AIAA-2026-2710	2:40 p.m. AIAA-2026-2711

Navigation Around Unknown Space Objects Using Visible-Thermal Image Fusion E. Elias, Massachusetts Institute of Technology, Cambridge, MA; M. Esswein, The Charles Stark Draper Laboratory Inc, Cambridge, MA; J. How, D. Miller, Massachusetts Institute of Technology, Cambridge, MA	Priority-Driven Task Allocation Framework for Robotic On-Orbit Servicing P. Kötting, Deutsches Zentrum fur Luft- und Raumfahrt DLR Institut fur Robotik und Mechatronik, Oberpfaffenhofen, Germany	Unscented Trajectory Optimization With Updates K. Han, M. Karpenko, Naval Postgraduate School, Monterey, CA	Optimal Trajectory Planning for Rotorcraft With Underslung Payload T. Kuo, M. Karpenko, Naval Postgraduate School, Monterey, CA	An Optimal Search Framework for the Maximum-Probability Target-Detection Problem in Discrete Time and Space Y. Lee, V. Dobrokhodov, M. Karpenko, Naval Postgraduate School, Monterey, CA	Path Following Guidance for Manned-Unmanned Team of Aircraft M. Malhotra, A. Ratnoo, Indian Institute of Science, Bengaluru, India; V. Patel, Aeronautical Development Agency, Bengaluru, India
Friday, 16 January 2026					
GNC-43	Spacecraft Launch Guidance, Navigation and Control II				Bayhill 29
Chaired by: R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory and J. DONGMO, NASA Goddard Space Flight Center and C. PECK, Sandia National Laboratories					
1:00 p.m. AIAA-2026-2712 Finite-Time Convergent Integrated Relative Position and Attitude Control for Spacecraft Rendezvous N. Anand, Vikram Sarabhai Space Centre, Thiruvananthapuram, India; S. Kumar, Indian Institute of Technology Bombay, Mumbai, India; R. U.P, Vikram Sarabhai Space Centre, Thiruvananthapuram, India	1:20 p.m. AIAA-2026-2713 Optimal Bounded Thrust Directional Orbital Rendezvous O. Nahum, V. Shaferman, Technion Israel Institute of Technology, Haifa, Israel	1:40 p.m. AIAA-2026-2714 Optimal Low-Thrust Spacecraft Rendezvous with Terminal Velocity Constraints Y. Drucker, V. Shaferman, Technion Israel Institute of Technology, Haifa, Israel	2:00 p.m. AIAA-2026-2715 Quasi-Optimal Learning based Analytical Powered Descent Guidance with State and Action Constraints S. Kumar, V. Agrawal, A. Rallapalli, N. Priyadarshini , B. G V P, U R Rao Satellite Center, Bangalore, India	2:20 p.m. AIAA-2026-2716 Thrust Vector Control for Flexible Launch Vehicles: An H-Infinity Open Loop Shaping Approach J. Diz, S. Theodoulis, Technische Universiteit Delft Faculteit Luchtvaart- en Ruimtevaarttechniek, Delft, The Netherlands; P. Simplício, European Space Research and Technology Centre, Noordwijk, The Netherlands	
Friday, 16 January 2026					
GT-23	Characterization of New and Existing Wind Tunnels				Rainbow Spring II
Chaired by: B. CHYNOWETH, Purdue University and F. TURBEVILLE, NASA Langley Research Center					
1:00 p.m. AIAA-2026-2717 Flow Characterization of the AFOSR--Notre Dame Large Mach-6 Quiet Tunnel S. Choi, T. Juliano, University of Notre Dame, Notre Dame, IN	1:20 p.m. AIAA-2026-2718 Design and Characterization of an Actively-Controlled Hypersonic Wind Tunnel Nozzle J. Vaughn, Texas A&M University, College Station, TX; E. White, The University of Texas at Dallas, Richardson, TX; I. Leyva, R. Bowersox,	1:40 p.m. AIAA-2026-2719 Commission and Characterization of Syracuse University Skytop Blowdown Wind Tunnel M. Namatsaliuk, M. Donato, F. Zigunov, Syracuse University College of Engineering & Computer Science, Syracuse, NY			

	Texas A&M University, College Station, TX				
Friday, 16 January 2026					
GTE-35	Advanced Cycle Design Concepts and Measurement Technologies II				Celebration 2
Chaired by: A. HAZLETT, GE Aerospace					
1:00 p.m. AIAA-2026-2721 Ceramic Material Selection for Toroidal Jet-Stirred Reactors in Ammonia Combustion for Aviation Fuel Research A. Elmer-Santiago, G. Barrios Cadenas, O. Marquez Valenzuela, M. Ahmed, A. Maia, A. Thornton, University of Central Florida, Orlando, FL; et al.	1:20 p.m. AIAA-2026-2722 Effect of Air-to-Liquid Mass Ratio on Global Combustion Characteristics of Jet-A Using Swirl Burst Injectors M. Ahmed, T. Moumita, S. Islam, L. Jiang, Baylor University, Waco, TX	1:40 p.m. AIAA-2026-2723 An Image Processing Technique for Erosion Analysis on Compressor Blade Geometry L. Olivera, G. Byun, G. Orfaly, W. Ng, K. Lowe, Virginia Polytechnic Institute and State University College of Engineering, Blacksburg, VA			
Friday, 16 January 2026					
HIS-02	History of Peoples and Institutions				Bayhill 20
Chaired by: R. HALLION, Fellow AIAA, Fellow RAeS, Fellow RHistS and J. BLANTON, Classic Engineering, LLC					
1:00 p.m. AIAA-2026-2724 The Guggenheim Contribution to Aerospace: A Centenary Appreciation R. Hallion, Air Force Armament Museum Foundation, Shalimar, FL	1:20 p.m. AIAA-2026-2725 The Life of Wilhelm Kutta and His Contributions to Theoretical Aerodynamics N. Hoch, Utah State University College of Engineering, Logan, UT	1:40 p.m. AIAA-2026-2726 Paul Redfern – South Carolina Aviation Pioneer J. Blanton, Classic Engineering, LLC, Simpsonville, SC	2:00 p.m. AIAA-2026-2727 AIAA SDSU Student Branch History P. Khodadi, A. Cook, Y. Tobita, X. Liu, San Diego State University, San Diego, CA	2:20 p.m. AIAA-2026-2728 The History of Micro Craft K. Burns, California American Legion, Sanger, CA	2:40 p.m. AIAA-2026-2729 A Historical Journey from MSC Software to Hexagon D&E and an Enduring Legacy of Innovative Contributions to Digital Engineering F. Harvey, Hexagon Manufacturing Intelligence Ltd, North Kingstown, RI
Friday, 16 January 2026					
HMT-08	Human Factors and Human Performance				Bayhill 18
Chaired by: M. SABET, Cornell University and A. BABU, Cornell University					
1:00 p.m. AIAA-2026-2730 Next-Generation Human Systems Integration Testing: Model-Based HSI in Space Wargaming Software Development	1:20 p.m. AIAA-2026-2731 Situation Awareness-Based Agent Transparency and Team Fluency in a Multi-Agent	1:40 p.m. AIAA-2026-2732 Relations Between Event-Based Record and Training Period in Airline Captain Upgrade Training M. Ueno, K. Yamada, Uchu Koku Kenkyu Kaihatsu Kiko,	2:00 p.m. AIAA-2026-2733 Topic Modeling of Instructor Comments During Captain Upgrade Training Using Latent Dirichlet Allocation	2:20 p.m. AIAA-2026-2734 A Multimodal Framework for Assessing Fitness to Fly in Flight Training M. Rahman, N. Fala, Auburn University, Auburn, AL	2:40 p.m. AIAA-2026-2735 Optimizing Student Pilot Learning Through Skill Development Prediction and Tracking L. Alarcon-Aneiva, N. Fala, Auburn University, Auburn, AL

K. Exposito, United States Space Force, Washington, D.C.; M. Taranto, United States Test Pilot School, Edwards AFB, CA	Intelligence, Surveillance, Reconnaissance Scenario R. Agbeyibor, R. Bowers, J. Kolb, K. Feigh, Georgia Institute of Technology, Atlanta, GA	Chofu, Japan; T. Matsuda, H. Ikeshita, Y. Kyoya, Nihon Koku Kabushiki Kaisha, Shinagawa, Japan	K. Yamada, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan; C. Hamada, Sincere Co. Ltd., Funabashi, Japan; H. Ikeshita, T. Matsuda, Y. Kyoya, Nihon Koku Kabushiki Kaisha, Shinagawa, Japan; M. Ueno, Uchu Koku Kenkyu Kaihatsu Kiko, Chofu, Japan		
Friday, 16 January 2026					
HSABP-16/PC-43	High Fidelity Combustion Modeling for High-Speed Propulsion III				Celebration 3
Chaired by: R. BIELAWSKI, University of Central Florida and A. SIENKIEWICZ, Home					
1:00 p.m. AIAA-2026-2736 Structure of Oblique Shock to Oblique Detonation Transition with an Inert Near Wall Layer R. Bielawski, University of Central Florida, Orlando, FL	1:20 p.m. AIAA-2026-2737 Assessment of Different Hydrogen-Air Reaction Models Effects on Numerical Predictions of a 2D Air-Breathing Rotating Detonation Engine A. Sienkiewicz, Uniwersytet Warszawski, Warsaw, Poland	1:40 p.m. AIAA-2026-2738 Numerical Investigation of Combustion Characteristics in a Dual-Combustion Scramjet Engine M. Jo, B. Sung, J. Choi, Pusan National University, Geumjeong-gu, South Korea			
Friday, 16 January 2026					
INPSI-11/HSABP-17	Integrated Propulsion for High Speed Systems				Florida Ballroom B
Chaired by: K. BOWCUTT and T. O'BRIEN, Raytheon					
1:00 p.m. AIAA-2026-2739 The Aero Derivative Reactivity-Controlled Compounded Internal Combustion Engine Cycle: Achieving Near-Carnot Efficiencies for Medium and Heavy-Duty Applications J. Bucknell, Independent Researcher, Troy, MI	1:20 p.m. AIAA-2026-2740 Geometric Considerations of Hypersonic Inlet Integrability for Internal Flow-Path Combustion S. Wade, E. Pereira, S. Smith, K. Ahmed, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-2741 Performance Evaluation of a Conceptual Turbo-Ramjet Engine for a Two Stage To Orbit Launch System M. Hussein, S. Hauptman, Massachusetts Institute of Technology, Cambridge, MA	2:00 p.m. AIAA-2026-2742 Numerical Investigation on the Use of Plasma Actuators for Separation Control in Over-Expanded Nozzles D. Tozzi, Politecnico di Torino, Turin, Italy; C. Bach, Technische Universitat Dresden, Dresden, Germany; A. Ferrero, F. Masseni, D. Pastrone, Politecnico di Torino, Turin, Italy	2:20 p.m. AIAA-2026-2743 Numerical Design of a Mach-Adaptable Intake for a Dual-Mode Ramjet in VLEO Launch Applications M. Rigamonti, B. shoesmith, A. Ingenito, Sapienza University of Rome - School of Aerospace Engineering, Rome, Italy; G. Rocco, ACS Aeronautical Consulting & Solutions S.r.L., Rome, Italy	
Friday, 16 January 2026					
IS-30	Autonomy V				Celebration 15
Chaired by: J. WILHELM, Ohio University					
1:00 p.m.	1:20 p.m.	1:40 p.m.	2:00 p.m.	2:20 p.m.	

AIAA-2026-2744 Online Decision Making for UAVs via Receding Horizon MDP and POMDPs T. Wiens, J. Bradley, NC State University College of Engineering, Raleigh, NC	AIAA-2026-2745 Approach Pattern Automation With Quadratic Bézier Curve Trajectory Planning M. Variny, J. Wilhelm, Ohio University, Athens, OH	AIAA-2026-2746 Online Action-Stacking Improves Reinforcement Learning Performance for Air Traffic Control B. Carvell, National Air Traffic Services, Fareham, United Kingdom; G. De Ath, University of Exeter, Exeter, United Kingdom; E. Benjamin, The Alan Turing Institute, London, United Kingdom; R. Everson, University of Exeter, Exeter, United Kingdom	AIAA-2026-2747 Coupled Task Assignment for Hierarchical Multi-Agent Systems in Disaster Response Missions: A Nested Hungarian Approach A. Khalil, Y. Lee, E. Bakolas, The University of Texas at Austin, Austin, TX; G. Gremillion, US Army Combat Capabilities Development Command Army Research Laboratory, Adelphi, MD	AIAA-2026-2748 Geofence Compliance Maneuvers for Fixed-Wing UAVs P. T S, A. Ratnoo, Indian Institute of Science, Bengaluru, India	
Friday, 16 January 2026					
IS-32	Guidance, Navigation, and Control Architectures for Autonomous Systems V				Celebration 16
Chaired by: H. MONCAYO, Embry-Riddle Aeronautical University and K. DOGAN, Embry-Riddle Aeronautical University					
1:00 p.m. AIAA-2026-2751 Torque-Level NMPC for Robust End-Effector Control Under Quadruped Base-Induced Disturbances J. Nakladov, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:20 p.m. AIAA-2026-2753 Model Reference Adaptive Control for Uncertain Systems Subject to Unknown Control Input Matrix and Coupled Dynamics T. Vongkunghae, K. Dogan, Embry-Riddle Aeronautical University, Daytona Beach, FL	1:40 p.m. AIAA-2026-2754 Distributed Adaptive Control With Adaptive Control Allocation for Multiagent Systems A. Bray, K. Dogan, Embry-Riddle Aeronautical University, Daytona Beach, FL	2:00 p.m. AIAA-2026-2585 Autonomous Robotic Assembly for Planetary Missions: A Dual Arm LEGO Based Simulation Study D. Chhabria, C. Kilic, Embry-Riddle Aeronautical University, Daytona Beach, FL		
Friday, 16 January 2026					
LP-16	Liquid Propulsion System and Component Design, Analysis, Testing and Operation II				Celebration 8
Chaired by: T. POURPOINT, Purdue University and F. BENDANA, The Aerospace Corporation					
1:00 p.m. AIAA-2026-2755 Measurements of Nitrogen Tetroxide Solubility and Diffusion Rate in Teflon J. Desain, C. Kern, L. Chen-Mertens, B. Valdez, H. Dragnea, The Aerospace Corporation, El Segundo, CA	1:20 p.m. AIAA-2026-2756 Progress in the Areas of Additive Manufacturing and Turbopump Development of the Liquid Rocket Lab F. Chandler, C. Herrera, C. Johnson, California State Polytechnic University Pomona, Pomona, CA	1:40 p.m. AIAA-2026-2757 Advanced Optical Patternator for Performance Prediction of Bipropellant Thrusters K. Tominaga, Uchu Koku Kenkyu Kaihatsu Kiko, Tsukuba, Japan; C. Inoue, Kyushu Daigaku, Fukuoka, Japan			
Friday, 16 January 2026					
LP-17	Other Topics in Liquid Propulsion				Celebration 5

Chaired by: F. NASUTI, University of Rome "La Sapienza" and M. HARVAZINSKI, AFRL/RQRC					
1:00 p.m. AIAA-2026-2758 CFD Parametric Analysis of Supersonic Retropropulsion for Reusable Launchers M. Grossi, A. Montanari, D. Bianchi, F. Nasuti, Sapienza University of Rome, Rome, Italy	1:20 p.m. AIAA-2026-2759 Multi-fidelity Data Ensembles of Liquid Phase Rocket Ignition: Ignition Limit States and Reliability A. Voci, H. Collis, T. Zahtila, D. Brouzet, D. Rossinelli, A. Mani, Stanford University, Stanford, CA; et al.	1:40 p.m. AIAA-2026-2760 Complexity Management of Rocket Engines: Discrete Event Simulation of Clustered Engine Reuse L. Etzenbach, M. Hussein, C. Gentgen, O. de Weck, Massachusetts Institute of Technology, Cambridge, MA	2:00 p.m. AIAA-2026-2761 Large Scale Rocket Plume Effects on Concrete Surfaces R. Jensen, Sierra Lobo, Inc., Edwards Air Force Base, CA		

Friday, 16 January 2026					
MST-09	Human Factors, Perception, and Cueing				Blue Spring I
Chaired by: J. SCHWITHAL, DLR - German Aerospace Center and I. FIALHO, The Boeing Company					
1:00 p.m. AIAA-2026-2762 Effects of Motion Fidelity on Pilot Performance Using Mixed-Reality Visuals P. Zaal, Metis Technology Solutions, Inc., Albuquerque, NM; M. Blanken, NASA Ames Research Center, Moffett Field, CA; S. Orth, Symvionics, Inc., Arcadia, CA; S. Penmetcha, NASA Ames Research Center, Moffett Field, CA; P. Slade, Quantum3D, Milpitas, CA	1:20 p.m. AIAA-2026-2763 Cyclograms as a Novel Analysis Method for Aircraft Handling Qualities Evaluations D. Musso, E. Vo, M. Jones, Systems Technology Inc, Hawthorne, CA	1:40 p.m. AIAA-2026-2764 Simulator Study on Ride Comfort of Flexible Aircraft J. Schwithal, O. Ostermann, J. Buch, D. Niedermeier, Deutsches Zentrum fur Luft- und Raumfahrt DLR, Cologne, Germany; D. Drewiacki, G. Castro, Empresa Brasileira de Pesquisa Agropecuaria, Brasília, Brazil	2:00 p.m. AIAA-2026-2765 Mitigating the Black Hole Illusion in Night Approaches Using Synthetic, Enhanced, and Augmented Reality Vision Systems D. Panchal, Silver Oak University, Ahmedabad, India; K. Yangdon, Amity Institute of Aerospace Engineering, Noida, India; V. Sanal Kumar, Amity University Noida, Noida, India	2:20 p.m. AIAA-2026-2766 Integrating Real-Time Wind Hazard Prediction and Visual Augmentation in Full-Flight Simulators to Assess the Pilot's Workload M. Kurz, M. Dauner, HM Hochschule München University of Applied Sciences, Munich, Germany; B. Fischer, Reiser Simulation and Training GmbH, Berg, Germany; G. Socher, A. Knoll, HM Hochschule München University of Applied Sciences, Munich, Germany	2:40 p.m. AIAA-2026-2767 Julia Programming for Real-Time Flight Control on Embedded Platforms B. Chung, R. Voleti, Juliahub, Boston, MA; J. Zhou, University of Washington, Seattle, WA

Friday, 16 January 2026					
PC-42	Combustion VI				Celebration 7
Chaired by: E. BARBOUR, The Aerospace Corporation					
1:00 p.m. AIAA-2026-2768 Fuel Delivery and Concentration Measurements During Ammonia Flame Speed Experiments A. Safdari, J. Kim, R. Rahman, S. Vasu, University of Central Florida, Orlando, FL	1:20 p.m. AIAA-2026-2769 Evaluation of the Accuracy of Fuel Property Predictions by Functional Group-Based Surrogates A. Abraham, K. Brezinsky, P. Lynch, University of Illinois Chicago, Chicago, IL	1:40 p.m. AIAA-2026-2770 Neural Network Aided Adaptive Tabulation with Dynamic Load Balancing for Vapor-Liquid Equilibrium Modeling of Transcritical Multiphase Flows	2:00 p.m. AIAA-2026-2771 Predicting Critical Parameters of Hydrocarbon Species using Bidirectional Encoder Representations from Transformers N. Srinivasan, R. Suryanarayan, S. Yang,	2:20 p.m. AIAA-2026-2772 Effect of Temperature and Pressure on Laminar Flame Speed Measurements for Aviation Fuels U. Costa, E. Petersen, Texas A&M University System, College Station, TX	

		N. Srinivasan, S. Yang, University of Minnesota Twin Cities, Minneapolis, MN	University of Minnesota Twin Cities, Minneapolis, MN		
Friday, 16 January 2026					
PDL-16	Laser-Based Propulsion and Other Topics in Plasmas				Rainbow Spring I
Chaired by: L. MASSA, Virginia Tech and A. TROPINA, Texas A&M University					
1:00 p.m. AIAA-2026-2773 Electron Beam Guided by Millimeter-Wave Ponderomotive force in the Ionospheric Plasma K. Sakakibara, Osaka Koritsu Daigaku, Osaka, Japan	1:20 p.m. AIAA-2026-2774 Experimental Characterization of an NO_2-Seeded Argon Laser-Thermal Thruster Powered by a Fiber Laser A. Côté, S. Riel, G. Dubé, McGill University, Montréal, Canada; E. Duplay, Technische Universiteit Delft, Delft, The Netherlands; J. Loiseau, Royal Military College of Canada, Kingston, Canada; A. Higgins, McGill University, Montréal, Canada	1:40 p.m. AIAA-2026-2775 Dynamics of Pulsed Laser Clearing of Soot Particles and its Effects on a Co-Propagating CW Laser D. Motley, A. Tropina, R. Miles, Texas A&M University, College Station, TX; B. Howder, J. Creel, Bush Combat Development Complex - Texas A&M University, Bryan, TX	2:00 p.m. AIAA-2026-2776 Design of a Plasma Flow Reactor Facility for Analysis of Vapor-Phase Chemistry in High-Temperature Oxidizing Environments A. Ambarish, C. Dennis, T. Loye, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	2:20 p.m. AIAA-2026-2777 Development of a Magnetohydrodynamic Modeling Capability in Loci/CHEM M. Nucci, ATA Engineering Inc, San Diego, CA	
Friday, 16 January 2026					
PGC-22/LP-15	Liquid Fueled Rotating Detonation Engines II				Florida Ballroom C
Chaired by: A. HARROUN, Juno Propulsion Inc. and R. HYTOVICK, University of Central Florida					
1:00 p.m. AIAA-2026-2778 Numerical Simulations of Liquid-Fueled Rotating Detonation Engines Using the KHRT Droplet Breakup Model M. Nagori, P. Tarey, UNC Charlotte, Charlotte, NC; J. Boles, T. Nielsen, M. Goodson, Corvid Technologies, Mooresville, NC; J. McFarland, Texas A&M University, College Station, TX; et al.	1:20 p.m. AIAA-2026-2779 Effect of Hydrocarbon Boiling Point on Air Breathing Rotating Detonation Engine Operation G. Rodriguez, G. Miller, T. Osterhoudt, K. Ahmed, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-2780 Diffuse Interface Model with Surface Tension for Modeling Wave–Droplet Interactions in Compressible Two-Phase Flows S. Patel, T. Tryon, X. Yee, University of Colorado Colorado Springs, Colorado Springs, CO; B. Runnels, Iowa State University of Science and Technology, Ames, IA; M. Quinlan, University of Colorado Colorado Springs, Colorado Springs, CO	2:00 p.m. AIAA-2026-2781 Experimental Analysis of Detonation Wave Modes in a Disk-Shaped Rotating Detonation Rocket Engine Using Liquid Propane and Nitrous Oxide G. Mo, K. Lee, S. Kang, W. Han, M. Jo, J. Choi, Pusan National University, Geumjeong-gu, South Korea		
Friday, 16 January 2026					
SFM-31	Machine Learning and Artificial Intelligence Applied to Space Flight Problems I				Plaza Ballroom I

Chaired by: C. NEBELECKY, University at Buffalo

1:00 p.m. AIAA-2026-2782 Low Thrust Minimum Time Transfer: Reinforcement Learning of Optimal Co-State Time Dependance J. Steck, A. Dutta, A. Arustei, Wichita State University, Wichita, KS	1:20 p.m. AIAA-2026-2783 Combining Supervised Pretraining and Reinforcement Learning for Scalable Low-Thrust Spacecraft Trajectory Design M. Schmidt, J. Martin, University of Maryland, College Park, MD	1:40 p.m. AIAA-2026-2784 Deep Reinforcement Learning for Safe Satellite Operational Mode Switching F. Abed Azad, N. Furioso, A. Petersen, C. Petersen, University of Florida Herbert Wertheim College of Engineering, Gainesville, FL	2:00 p.m. AIAA-2026-2924 Time-Series Forecasting of 10.7 cm Solar Radio Flux using ResNeXt-iTransformer Hybrid Model C. Matthews, D. Sanchez, The University of Oklahoma, Norman, OK	2:20 p.m. AIAA-2026-2925 RT-DETR Enhanced with NAS: A Hybrid Spacecraft Detection Approach N. Kamra, S. Ulrich, Carleton University, Ottawa, Canada	2:40 p.m. AIAA-2026-2926 Physics-Informed Deep Reinforcement Learning for Free-Floating Space Manipulator Motion Planning F. Basmadji, Centrum Badan Kosmicznych Polskiej Akademii Nauk, Warsaw, Poland; S. Ulrich, J. Sasiadek, Carleton University, Ottawa, Canada

Friday, 16 January 2026

SL-03 — Advanced Space Logistics Infrastructures: Spaceport, ISRU, and Asteroid Mining — Bayhill 23

Chaired by: H. CHEN, Fairfield University, School of Engineering and Computing and Y. SHIMANE, Georgia Institute of Technology

1:00 p.m. AIAA-2026-2787 Optimal Routing and Trajectory Planning for Asteroid Mining With Partial In-Situ Resource Utilization E. Choi, K. Ho, Georgia Institute of Technology, Atlanta, GA	1:20 p.m. AIAA-2026-2788 Analyzing the Economic and Environmental Trade-offs of In-Situ Resource Utilization (ISRU) L. Paulson, M. Balchanos, D. Mavris, Georgia Institute of Technology, Atlanta, GA	1:40 p.m. AIAA-2026-2789 From Terrestrial to Space Logistics: A Transfer Framework for Facility Location Artifacts Y. Hou, P. Grogan, Arizona State University Ira A Fulton Schools of Engineering, Tempe, AZ	2:00 p.m. AIAA-2026-2790 Modeling Framework for Leveraging A Priori Knowledge for Multi Gravity Assist Trajectory Design and Optimization R. Yasufuku, Tokyo Daigaku, Bunkyo, Japan; N. Ozaki, Y. Kawakatsu, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo Toshokan, Sagamihara, Japan	2:20 p.m. AIAA-2026-2791 Spaceport Cargo Logistics Depot and Space Cargo Unit Load Devices (ULDs) Optimization C. Major, M. Elkamel, L. Rabelo, University of Central Florida College of Engineering and Computer Science, Orlando, FL	

Friday, 16 January 2026

SPSN-03 — Supersonic Modeling and Simulation — Orlando Ballroom N

Chaired by: T. MAGEE, Boeing Research & Technology

1:00 p.m. AIAA-2026-2792 Shockwave Interaction Enhanced by Computational Modeling A. Prouty, L. Sivagar, K. Young, N. Gandur, D. Grumbine, Embry-Riddle Aeronautical University, Prescott, AZ	1:20 p.m. AIAA-2026-2793 A Demand-driven Flight Routing Method for Commercial Supersonic Aircraft Designs Z. Wang, N. Hinze, A. Trani, Virginia Polytechnic Institute and State University, Blacksburg, VA	1:40 p.m. AIAA-2026-2794 Physics-Guided Machine Learning via Feature-Level Augmentation in an LSTM Model for Temperature Prediction in High-Speed Missile Radomes G. Atay, K. Yapici, ASELSAN AS, Ankara, Turkey			

Friday, 16 January 2026

TES-09	Fuels and Combustion II				Celebration 9
Chaired by: S. VASU, University of Central Florida and V. ATHMANATHAN, Purdue University					
1:00 p.m. AIAA-2026-2795 Design of Reactor Network Experiments to Optimize Combustor Staging in Gas Turbines K. Lubin, L. Yovino, R. Ghorpade, R. Rahman, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	1:20 p.m. AIAA-2026-2796 Hydrogen Monitoring During Helium Purging of Rocket Engine Testing Facilities N. Hulliger, J. Urso, S. Vasu, University of Central Florida, Orlando, FL	1:40 p.m. AIAA-2026-2797 Design and Characterization of Jet Injection Using Particle Image Velocimetry V. Rodriguez, B. Rick, F. Arafin, R. Rahman, R. Ghorpade, J. Urso, University of Central Florida, Orlando, FL; et al.	2:00 p.m. AIAA-2026-2934 DataLab Simulation of Experimental Validated NACA Profile of VAWT Blades With the EnerghxPlus Platform E. Ogedengbe, T. Odunsi, University of Lagos Faculty of Engineering, Yaba, Nigeria	2:20 p.m. AIAA-2026-2935 Renewable Energy System Sizing and Building Envelope Auditing with the EnerghxPlus Platform H. Ismail-Badmus, E. Ogedengbe, M. Oyewole, F. Olaleru, D. Nkwaze, University of Lagos, Yaba, Nigeria	2:40 p.m. Sensitivity Analysis in Hydrodynamic Simulations of a Shocked Gas Mixture, presented by Jacob Rosenbaum

Friday, 16 January 2026		
NW-10 3:00 - 3:30 p.m.	Networking Coffee Break	Regency Rotunda
Breaking barriers is easier when we do it together. Join fellow attendees for coffee and dialogue that transforms professional relationships.		

Friday, 16 January 2026					
AFM-18	Aircraft Dynamics, Performance, Stability, and Control III				Bayhill 33
Chaired by: K. SHWEYK, Boeing Commercial Airplanes and R. PAUL, Oklahoma State University					
3:30 p.m. AIAA-2026-2809 Rudder to Bank Angle: Control and Effects for the Elimination of Ailerons on Fixed Wing Airframes C. Kelly, I. Faruque, Oklahoma State University, Stillwater, OK	3:50 p.m. AIAA-2026-2810 Multi-Fidelity Validation of Control Surface Deflection Predictions Using FlightStream Z. Atkinson, A. Comer, Oklahoma State University, Stillwater, OK; A. Marion, G. Sharma, Kennesaw State University, Kennesaw, GA; S. Shahjahan, Altair Engineering Inc, Troy, MI; T. Wilson, WindShape Inc., Tulsa, OK	4:10 p.m. AIAA-2026-2811 Performance and Robustness Assessment for a Port-Hamiltonian Input-to-State Stabilizing Flight Controller S. Widman, I. Willebeek-LeMair, C. Woolsey, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:30 p.m. AIAA-2026-2812 Wake Interaction of Tandem Tilt-Wing UAV with No Vertical Stager Wings S. Watanabe, K. Muraoka, Japan Aerospace Exploration Agency, Mitaka, Japan	4:50 p.m. AIAA-2026-2813 Analysis of Aircraft With Hinged Wingtips Based on Multi-Body Dynamics and Unsteady Aerodynamic Models A. Modarres Aval, D. Clifford, A. Da Ronch, University of Southampton, Southampton, United Kingdom	

Friday, 16 January 2026					
EP-16	Electromagnetic and RF Thrusters				Celebration 1
Chaired by: K. XU, University of Alabama in Huntsville					
3:30 p.m. AIAA-2026-2814 Insights Into Acceleration Mechanisms of Low-Power AF-MPDTs From	3:50 p.m. AIAA-2026-2815 Characterization of Inductively Coupled RF Plasma Source Operating	4:10 p.m. AIAA-2026-2816 Feasibility and Potential Applications of the Microwave	4:30 p.m. AIAA-2026-2817 Analysis of Wall Loss Currents in an ECR Magnetic Nozzle Thruster		

Magnetohydrodynamic Modeling J. Glowacki, Victoria University of Wellington, Wellington, New Zealand	With Molecular Gases for Electric Propulsion Y. Raitses, Y. Ussenov, Princeton Plasma Physics Laboratory, Princeton, NJ	Electrothermal Thruster for Orbital Transfer Vehicles M. Nava, Politecnico di Milano, Milan, Italy; D. Zuin, D-Orbit SpA, Fino Mornasco, Italy; F. Maggi, Politecnico di Milano, Milan, Italy	A. Eckhaus, B. Jorns, University of Michigan, Ann Arbor, MI		
Friday, 16 January 2026					
EXPL-23	Artificial Intelligence, Robotics and Other Technologies for Space Exploration				Celebration 13
Chaired by: B. WILLIAMS, NASA Marshall Space Flight Center and H. YANG					
3:30 p.m. AIAA-2026-2818 Reinforcement Learning-Based Framework to Support Multi-Agent Teaming in Space Missions X. Liu, University of South Florida, Tampa, FL; S. Dyke, Purdue University, West Lafayette, IN	3:50 p.m. AIAA-2026-2819 AI-Driven and Additively Manufactured Spacesuit Gloves: A New Paradigm in Extravehicular Mobility Design D. Mateus Jiménez, P. De Leon, University of North Dakota John D Odegard School of Aerospace Sciences, Grand Forks, ND	4:10 p.m. AIAA-2026-2820 Nearfield Magnetopause by Simple Algebra S. Carpenter, E. Yu, S. Hu, R. Zhang, C. Chen, MarsB.space, Fremont, CA; B. Quo, Carnegie Mellon University, Pittsburgh, PA; et al.			
Friday, 16 January 2026					
FD-105	Bio-Inspired and Low-Reynolds Number Flows				Coral Spring I
Chaired by: S. BHATTACHARYA, University of Central Florida and M. AMITAY, Rensselaer Polytechnic Institute					
3:30 p.m. AIAA-2026-2821 The Wing and Tail Interactions and Dipole-Jet Formation in Perching Maneuver D. Adhikari, A. Herrera, S. Bhattacharya, University of Central Florida, Orlando, FL	3:50 p.m. AIAA-2026-2822 Testing the Aerodynamic Efficiency of Albatross-Inspired Blades for Vertical-Axis Wind Turbines S. Shashidhar, K. Bhaganagar, The University of Texas at San Antonio College of Engineering, San Antonio, TX	4:10 p.m. AIAA-2026-2823 Bio-Inspired Flow Separation Control on Finite Wings Across Varying Time Scales E. Venne, A. Bose, K. Schuler, M. Amitay, Rensselaer Polytechnic Institute, Troy, NY			
Friday, 16 January 2026					
FD-106	Droplet-Surface Interactions/Multi-Material Flows				Plaza Ballroom E
Chaired by: J. MIDDLEBROOKS and P. YIP, University of Minnesota					
3:30 p.m. AIAA-2026-2824	3:50 p.m. AIAA-2026-2825 Investigation of the Impact-Freezing Process	4:10 p.m. AIAA-2026-2826 Characterization of Droplet-Plasma	4:30 p.m. AIAA-2026-2827 Eulerian Finite Volume Method for High	4:50 p.m. AIAA-2026-2828 High-Order ALE Multi-Material Hydrodynamics	

Numerical Analysis of High-Speed Droplet Impingement A. Sarker, A. Sukumaran, D. Jarrahbashi, Texas A&M University, College Station, TX	of Supercooled Droplets on Porous Surfaces H. Zhang, X. Zhang, Y. Liu, The City College of New York, New York, NY	Interactions During Droplet Impingement on Surface Dielectric Barrier Discharge Plasma M. Sarwar, J. Ahumada, Y. Liu, The City College of New York, New York, NY	Deformation Multi-Material Hydrodynamics F. Airaudo, A. Pandare, Los Alamos National Laboratory, Los Alamos, NM; N. Favrie, Aix-Marseille Universite, Marseille, France	A. Pandare, F. Airaudo, Los Alamos National Laboratory, Los Alamos, NM	

Friday, 16 January 2026					
FD-109/AA-13	Reduced-Order Modeling for Fluid Dynamics and Aeroacoustics II				Coral Spring II
Chaired by: L. MAGARGAL, Lehigh University					
3:30 p.m. AIAA-2026-2833 Tensor-Train Operator Inference E. Danis, University of Missouri System, Columbia, MO; D. Truong, K. Rasmussen, B. Alexandrov, Los Alamos National Laboratory, Los Alamos, NM	3:50 p.m. AIAA-2026-2834 Bayesian Inversion and Uncertainty Quantification for Hypersonic Flows A. Dwivedi, G. Candler, University of Minnesota Twin Cities, Minneapolis, MN	4:10 p.m. AIAA-2026-2835 A Physics-Constrained Data-Informed Eigenspace Uncertainty Quantification Framework for Turbulence Modeling N. Gupta, K. Duraisamy, University of Michigan, Ann Arbor, MI			

Friday, 16 January 2026					
FD-110	Shock-Boundary Layer Interactions VI				Orlando Ballroom L
Chaired by: W. WOLF, University of Campinas					
3:30 p.m. AIAA-2026-2836 Spatial Evolution of Mean Flow Properties in Supersonic Boundary Layers of Adiabatic and Isothermal Curved Surfaces Including Shock Interactions G. Hamada, W. Wolf, H. Lui, Universidade Estadual de Campinas, Campinas, Brazil; C. Junqueira-Junior, Ecole Nationale Superieure d'Arts et Metiers, Paris, France	3:50 p.m. AIAA-2026-2837 Conditional Analysis of Shock-Induced Flow Separation Events in a Supersonic Turbine H. Lui, W. Wolf, Universidade Estadual de Campinas, Campinas, Brazil	4:10 p.m. AIAA-2026-2838 Stability Analysis of Shockwave Laminar Boundary Layer Interaction Over a Cylinder A. Lakshmi Narasimha Prasad, U. Sasidharan, Florida State University, Tallahassee, FL			

Friday, 16 January 2026					
FD-111	Unsteady Wings				Barrel Spring I
Chaired by: V. DURGESH, University of Idaho and S. LYNCH					
3:30 p.m. AIAA-2026-2839	3:50 p.m. AIAA-2026-2840	4:10 p.m. AIAA-2026-2841			

Experiments and Computations on a Pitching NLF-0414 Airfoil at Low Reynolds Number P. Hammer, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; N. Shumway, US Air Force Academy, U.S. Air Force Academy, CO	Connection Between Vortex Structures and the Center of Pressure in Unsteady Separated Flow Over Pitching Swept Wings D. Deb, Brown University, Providence, RI; Y. Zhu, University of California Riverside, Riverside, CA; P. Gaudio, K. Breuer, Brown University, Providence, RI	Experimental and Computational Aerodynamic Analysis of Low-Re Wings in Translation and Rotation M. White, S. Palakurthy, T. Vechalapu, A. Zope, S. Narsipur, S. Bhushan, Mississippi State University, Mississippi State University, MS			
Friday, 16 January 2026					
FD-112	Verification Techniques in Computational Physics II				Bayhill 30
Chaired by: B. FRENO, Sandia National Laboratories and J. FERGUSON, Los Alamos National Laboratory					
3:30 p.m. 4334664 Verification in the Post Moore's Law, Exascale Age W. Rider, Sandia National Laboratories, Albuquerque, NM	3:50 p.m. 4351724 On the Fly Solution Verification for Discrete Ordinates Calculations at No Cost W. Bennett, Los Alamos National Laboratory, Los Alamos, NM; R. McClarren, University of Notre Dame, Notre Dame, IN; J. Ferguson, Los Alamos National Laboratory, Los Alamos, NM	4:10 p.m. 4351328 Solution Verification of Inert and Reactive Anomalous Waves in a Non-ideal Gas J. Powers, K. Pielemeier, University of Notre Dame, Notre Dame, IN	4:30 p.m. 4354300 Verification With a Black-Box Equation of State S. Gerberding, Los Alamos National Laboratory, Los Alamos, NM	4:50 p.m. 4351859 Method of Manufactured Solutions to Verify a Finite Element Model for Non-Isothermal Flow of a Generalized Newtonian Fluid N. Kim, Western Carolina University, Cullowhee, NC	5:10 p.m. AIAA-2026-2842 Analyzing the Physics Within Complex Unsteady Flow Fields F. Ferguson, X. Niu, Y. Gao, D. Feng, North Carolina Agricultural and Technical State University, Greensboro, NC
Friday, 16 January 2026					
FD-113	Wall-Bounded and Free Shear Flows II				Plaza Ballroom K
Chaired by: J. NAUGHTON, University of Wyoming					
3:30 p.m. AIAA-2026-2843 Characterization of Near Wake Flow Behind a Circular Cylinder in High Supersonic Flow Using High-Fidelity Simulations A. Nandhan, M. Talluru, S. Gai, University of New South Wales Canberra at ADFA, Canberra, Australia	3:50 p.m. AIAA-2026-2844 Average Skin Friction Coefficient Measurements in Constant Area Rectangular Ducts With Supersonic Flow G. Somaroutu, V. Gopal, The University of Texas at Arlington Department of Mechanical & Aerospace Engineering, Arlington, TX	4:10 p.m. AIAA-2026-2845 Investigation of Thermal Convection Over Realistic Ice Roughness Under Flow Acceleration using ELES R. Gaudioso, D. Sotomayor-Zakharov, M. Gallia, Technische Universitat Braunschweig, Brunswick, Germany	4:30 p.m. AIAA-2026-2846 Three-Dimensional Effects of the Flow Over the BeVERLI Hill M. Shanmugam, D. Binu, K. Lowe, C. Roy, W. Devenport, A. Borgoltz, Virginia Polytechnic Institute and State University, Blacksburg, VA		
Friday, 16 January 2026					

GNC-44	Motion Planning, Sensing and Control for Spacecraft Robotic Systems II				Bayhill 28
Chaired by: A. CHAKRAVARTHY, University of Texas, Arlington and S. ULRICH, Carleton University					
3:30 p.m. AIAA-2026-2847 Quadrotor Guidance for Three-Dimensional Inspection of Structures R. Khandelwal, A. Ratnoo, Indian Institute of Science, Bengaluru, India	3:50 p.m. AIAA-2026-2848 Optimal Path-Planning via Waypoints for a Soaring UAV D. Williams, A. Chakrabarti, D. Goswami, M. McCrink, The Ohio State University, Columbus, OH; X. Yu, Arizona State University, Mesa, AZ	4:10 p.m. AIAA-2026-2849 Crosswind Flight Control of an Airborne Wind Energy Kite Y. Zhu, X. Deng, C. Zhao, T. Nam, Toyota Research Institute North America, Ann Arbor, MI	4:30 p.m. AIAA-2026-2850 Switched Filter-Based Stationary Source Seeking by Multiple Agents S. Banerjee, S. Ghosh, Indian Institute of Technology Madras, Chennai, India	4:50 p.m. AIAA-2026-2851 Remote Sensing and Acoustic Noise Based Motion Planning for Very Maneuverable Micro Air Vehicles R. Hurley, R. Lind, University of Florida, Gainesville, FL; J. Kehoe, Aerovironment Inc, Manassas, VA	5:10 p.m. AIAA-2026-2852 Simulation-Based Evaluation of GNSS–IMU and LiDAR Sensor Fusion for UAV Tracking Using Extended Kalman Filters Q. Zeng, Z. Gao, A. Mohanty, Harvey Mudd College, Claremont, CA
Friday, 16 January 2026					
GNC-45	Spacecraft Launch Guidance, Navigation and Control III				Bayhill 29
Chaired by: C. PECK, Sandia National Laboratories and R. VAUGHAN, Johns Hopkins University Applied Physics Laboratory and J. DONGMO, NASA Goddard Space Flight Center					
3:30 p.m. AIAA-2026-2853 Robust Glideslope Guidance With Inner Loop Augmentation and Non-Uniform Maneuver Pulses for Propellant Optimization A. Rallapalli, S. Kumar, B. G V P, R. Lagisetty, U R Rao Satellite Center, Bangalore, India	3:50 p.m. AIAA-2026-2854 Attitude Control of Flexible Satellites Using Bayesian-Optimized Active Disturbance Rejection Control H. Tawaraya, T. Yamasaki, H. Takano, National Defense Academy of Japan, Yokosuka, Japan	4:10 p.m. AIAA-2026-2855 A Hybrid Model Predictive Control Framework for Docking \& Stabilization of Composite Rigid Spacecraft Dynamics H. Basu, P. Jirwankar, R. Sanfelice, University of California Santa Cruz, Santa Cruz, CA; M. Castroviejo-Fernandez, I. Kolmanovsky, University of Michigan, Ann Arbor, MI	4:30 p.m. AIAA-2026-2856 Linear Quadratic Powered Descent With Bounded Thrust and Ground-Collision Avoidance O. Nataf, V. Shaferman, Technion Israel Institute of Technology, Haifa, Israel	4:50 p.m. AIAA-2026-2857 Adaptive Q-Law Control for Closed-Loop Electric Propulsion Orbit Transfer S. Kumar, S. Deevi, A. Rallapalli, B. G V P, U R Rao Satellite Center, Bangalore, India	
Friday, 16 January 2026					
GT-25	Testing and Characterization of High Enthalpy Wind Tunnels				Rainbow Spring II
Chaired by: F. TURBEVILLE, NASA Langley Research Center and B. CHYNOWETH, Purdue University					
3:30 p.m. AIAA-2026-2858 Design and Characterization of the Energy Matter Interaction Tunnel M. Smotzer, S. Steinmetz, S. Jeppson, K. Orr, G. Ellsworth, R. Shuttlesworth, Lawrence Livermore National	3:50 p.m. AIAA-2026-2859 Simulation of Hypersonic Conditions Over a Blunt Body Using a Hybrid Rocket with Nitrogen Plume Cooling J. Sorenson, S. Whitmore, J. Coen, J. Dowdy, R. Thibaudeau, Utah State	4:10 p.m. AIAA-2026-2860 Surface Quality Analysis of Reinforced Carbon-Carbon Leading Edges in Hypersonic Environments T. Jaycard, A. La Sorsa, S. Smith, R. Hytovick, K. Ahmed, University of Central Florida, Orlando, FL	4:30 p.m. AIAA-2026-2861 Design and Characterization of a High-Enthalpy Hypersonic Wind Tunnel: The HyperReact Facility N. Dreyer, E. Fernandez, A. La Sorsa, J. Sprunger, K. Ahmed,		

Laboratory, Livermore, CA; et al.	University College of Engineering, Logan, UT		University of Central Florida, Orlando, FL		
Friday, 16 January 2026					
GTE-36	Thermal Management, Heat Transfer and Cooling				Celebration 2
Chaired by: P. SHARMA, Cadence Design Systems, Inc. and M. OTTO, University of CEntral Florida					
3:30 p.m. AIAA-2026-2862 Development of a Transcritical Flow Prediction Model Using Gas-Liquid Two-Phase Flow Analysis Techniques S. Sakai, T. Himeno, T. Watanabe, A. Hattori, Tokyo Daigaku, Bunkyo, Japan	3:50 p.m. AIAA-2026-2863 Thermal Analysis of a Combustor Liner With Integrated Ammonia Cracker A. Menendez, B. Turner, S. Shahzad, M. Otto, E. Fernandez, J. Kapat, University of Central Florida, Orlando, FL	4:10 p.m. AIAA-2026-2864 Supersonic Film Cooling on a Flat Plate N. Medeiros, M. Polanka, J. Rutledge, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH			
Friday, 16 January 2026					
HMT-09	Human Machine Interaction (HMI)				Bayhill 18
Chaired by: T. MORRIS, NASA LaRC and M. SABET, Cornell University					
3:30 p.m. AIAA-2026-2867 Multidimensional Skill Training for Human Users via Shared Control H. Lin, S. Byeon, I. Hwang, Purdue University, West Lafayette, IN	3:50 p.m. AIAA-2026-2868 Crew Workload Estimation From Analysis of Voice Data I. Ahmed, R. Paddack, R. Paul, I. Faruque, Oklahoma State University, Stillwater, OK	4:10 p.m. AIAA-2026-2869 Towards Transparent AI Agents for Air Traffic Control E. Mohamed, The Alan Turing Institute, London, United Kingdom; B. Carvell, National Air Traffic Services, Fareham, United Kingdom; R. Procter, E. Benjamin, The Alan Turing Institute, London, United Kingdom; G. De Ath, University of Exeter, Exeter, United Kingdom; R. Everson, The Alan Turing Institute, London, United Kingdom			
Friday, 16 January 2026					
HR-04	Green Propellants, Combustion Stability, Mixing, Motor Performance, and injector Design				Celebration 9
Chaired by: M. HITT, NASA Marshall Space Flight Center and T. ELLIOTT, University of Tennessee at Chattanooga					
3:30 p.m. AIAA-2026-2870 Combustion of Hypergolic Hybrid Rocket Fuel in	3:50 p.m. AIAA-2026-2871 Development of a GOX/ABS Hybrid-Gas	4:10 p.m. AIAA-2026-2872 Classification of Angled-Hole Oxidizer Injector	4:30 p.m. AIAA-2026-2873 Combustion of Liquefying Fuels with 3D-printed		

Hydrogen Peroxide Spray Environment S. Levi, D. Peles, S. Nath, K. Mizrahi, J. Lefkowitz, Technion Israel Institute of Technology, Haifa, Israel	Generator System for the NASA Plume Surface Interaction (PSI) Experimental Campaign. S. Whitmore, R. Thibaudeau, Utah State University, Logan, UT	Designs for Hybrid Rockets, and Experimental Study of Hole Angle on Discharge Coefficients M. Li, McGill University, Montreal, Canada	Reinforcement: Metallized Cellular Structures and Loaded Formulations F. Giambelli, L. Calò, F. Calabrò, V. Santolini, C. Rontini, D. Tamiozzo, Politecnico di Milano, Milan, Italy; et al.		
Friday, 16 January 2026					
HSABP-18	Topics in High-Speed Air-Breathing Propulsion II				Celebration 3
Chaired by: C. BROPHY, Naval Postgraduate School and C. KNOWLEN, University of Washington					
3:30 p.m. AIAA-2026-2874 Modeling, Design and Testing of Refresh Dynamics on Centerline Fuel Injection for an Axial Flow Rotating Detonation Engine D. Kuratko, C. Brophy, U. Meintjes, Naval Postgraduate School, Monterey, CA; T. Neafus, Purdue University System, West Lafayette, IN; A. Thoeny, Naval Postgraduate School, Monterey, CA	3:50 p.m. AIAA-2026-2875 Baffled-Tube Ram Accelerator Thrust Characteristics With Aluminum Projectiles J. Correy, J. Clevenger, C. Knowlen, University of Washington, Seattle, WA; A. Higgins, McGill University, Montreal, Canada	4:10 p.m. AIAA-2026-2876 Modeling Thermomechanical Behavior of Sintered Porous Transpiration Cooled Plates S. Gallant, S. Smith, K. Ahmed, University of Central Florida College of Engineering and Computer Science, Orlando, FL	4:30 p.m. AIAA-2026-2877 Analytical Transient Heat Transfer Model for Active Cooling Channels A. Zhuchkan, S. Smith, K. Ahmed, University of Central Florida, Orlando, FL	4:50 p.m. AIAA-2026-2878 A Rapid Computational Framework for Predicting Ablative Nosetip Recession Using Bow Shock Modeling and FIAT-Based Thermal Response T. Morris, A. La Sorsa, S. Smith, A. Kotler, K. Ahmed, University of Central Florida, Orlando, FL	
Friday, 16 January 2026					
INPSI-13	Innovations in Engine Design: Advances in Composites, Detonations, and Aerodynamics				Celebration 4
3:30 p.m. AIAA-2026-2879 Design and Testing of a Water-Cooled Center Body in a Small Scale Rotating Detonation Engine E. Blaney, F. Schauer, S. Theuerkauf, Air Force Institute of Technology, Wright-Patterson Air Force Base, OH; B. Sell, Innovative Scientific Solutions Inc., Dayton, OH; C. Stevens, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH	3:50 p.m. AIAA-2026-2880 Analytical Mechanics of Ceramics and Fiber-Reinforced CMCs for Material Processing Foundations of Rocket Nozzles: Stage I N. Cano, V. Ceja, O. Lopez, J. Jimenez, D. Odwyer, A. Galicia, University of California Berkeley, Berkeley, CA; et al.	4:10 p.m. AIAA-2026-2881 Numerical Study of a Perpendicularly Injected Jet for Fluidic Thrust Vectoring Applications N. Schwagerus, M. Stößel, D. Kozulovic, Institute of Jet Propulsion, Fakultät für Luft- und Raumfahrttechnik, University of the Bundeswehr Munich, Neubiberg, Germany	4:30 p.m. AIAA-2026-2882 Numerical Study on Distortion at the Nacelle Inlet Under Crosswind R. Kokubo, Y. Oba, IHI Corporation, Akishima-shi, Japan; M. Yamamoto, Tokyo University of Science, Katsushika-ku, Japan	4:50 p.m. AIAA-2026-2883 Design and Test of a Resonance Igniter With Aerospike Nozzle S. Steiner, C. Bauer, DeltaOrbit GmbH, Garching (Munich), Germany	
Friday, 16 January 2026					

IS-33	Autonomy VI				Celebration 15
Chaired by: B. NGUELIFACK					
3:30 p.m. AIAA-2026-2884 Adaptive Robust Markov Decision Process for Wide-Area Surveillance With Collaborative Combat Aircraft J. Choi, University of Michigan, Ann Arbor, MI; M. Li, Ecole polytechnique federale de Lausanne, Lausanne, Switzerland; M. Li, University of Michigan, Ann Arbor, MI	3:50 p.m. AIAA-2026-2885 Dynamic Risk-Free Approach Vector Generation During Aerial Engagements Using the Relative Velocity Framework M. G, D. Ghose, Indian Institute of Science, Bengaluru, India	4:10 p.m. AIAA-2026-2886 Zero-Shot Benchmarking of Monocular Depth Estimation Networks for Autonomous Aerial Refueling J. Anderson, S. Smith, United States Naval Academy, Annapolis, MD; D. Costello, University of Maryland, College Park, MD; B. Nguelifack, V. Mwaffo, United States Naval Academy, Annapolis, MD	4:30 p.m. AIAA-2026-2887 Blob-Geometry Monocular Depth Estimation for Drogue Tracking in Autonomous Aerial Refueling K. Lee, D. Costello, B. Nguelifack, V. Mwaffo, United States Naval Academy, Annapolis, MD		

Friday, 16 January 2026					
IS-34	Distributed Data Acquisition and Processing for Advanced Air Mobility III				Celebration 12
Chaired by: V. STEPANYAN, KBR Wyle Services LLC					
3:30 p.m. AIAA-2026-2888 Real-Time Wildfire Localization on the NASA Autonomous Modular Sensor Using Deep Learning Y. Ravan, A. Malek, C. Dolph, NASA, Washington, D.C.; N. Behari, Harvard University, Cambridge, MA	3:50 p.m. AIAA-2026-2890 Simultaneous Track-Monitoring of Multiple Mobile Airspace Objects Using Non-Collocated Video Sensors C. Zhu, O. Ajeigbe, S. Roy, Texas A&M University System, College Station, TX	4:10 p.m. AIAA-2026-2891 A Survey of Security Challenges and Solutions for Advanced Air Mobility and eVTOL Aircraft M. Ghazanfari , I. Sharifi, P. Wei, A. Taye, The George Washington University, Washington, D.C.; B. Ward, X. Koutsoukos, Vanderbilt University, Nashville, TN; et al.	4:30 p.m. AIAA-2026-2892 A Survey of Security Challenges and Solutions for UAS Traffic Management (UTM) and Small Unmanned Aerial Systems (sUAS) I. Sharifi, M. Ghazanfari, A. Taye, P. Wei, The George Washington University, Washington, D.C.; M. Ahmed, H. Tae Kim, Purdue University, West Lafayette, IN; et al.		

Friday, 16 January 2026					
IS-35	Guidance, Navigation, and Control Architectures for Autonomous Systems VI				Celebration 16
Chaired by: K. DOGAN, Embry-Riddle Aeronautical University and N. NGUYEN, NASA-Ames Research Center					
3:30 p.m. AIAA-2026-2893 Adaptive Control of a 5-Degree-of-Freedom Spacecraft Testbed Considering Actuator Degradation	3:50 p.m. AIAA-2026-2894 Adaptive Control and Moment of Inertia Estimation for a Sliding-Mass Actuated 5 Degree	4:10 p.m. AIAA-2026-2895 Hamiltonian Gust Load Alleviation Control with Adaptive Gust Estimation: Analysis and Wind Tunnel Test Correlation	4:30 p.m. AIAA-2026-2896 Prescribed Time Velocity Tracking Control of Direct Current Motor Systems H. Ozturk, E. Selim, Ege Universitesi, Izmir, Turkey; H.	4:50 p.m. AIAA-2026-2897 Robust Dynamic Object Detection Algorithms for Continuous-Capture mWidar Imaging	

N. Sisson, P. Fontdegloria, K. Vernyi, K. Dogan, R. Bevilacqua, Embry-Riddle Aeronautical University, Daytona Beach, FL	of Freedom Testbed with Concurrent Learning P. Fontdegloria, K. Vernyi, K. Dogan, R. Bevilacqua, Embry-Riddle Aeronautical University, Daytona Beach, FL	C. Forte, KBR Wyle Services LLC, Huntsville, AL; N. Nguyen, NASA Ames Research Center, Moffett Field, CA; J. Berg, K. Ting, E. Livne, University of Washington, Seattle, WA	Inci, Adiyaman Universitesi, Adiyaman, Turkey; E. Tatlicioglu, Ege Universitesi, Izmir, Turkey; E. Zergeroglu, Gebze Teknik Universitesi, Kocaeli, Turkey; S. Demirkol Ozgun, Ege Universitesi, Izmir, Turkey	A. La Barca, B. Jourabchi, N. Ahmed, University of Colorado Boulder, Boulder, CO; F. Da Silva, Wavsens, Westminster, CO	
Friday, 16 January 2026					
LP-18	Combustor, Diagnostic, and Test Facility Design, Analysis, and Operation				Celebration 8
Chaired by: M. HARVAZINSKI, AFRL/RQRC and J. HARTWIG, NASA Glenn Research Center					
3:30 p.m. AIAA-2026-2898 Investigation of Boiling Heat Transfer Characteristics of MON-3 and MMH for Spacecraft Propulsion T. Nagata, Uchu Koku Kenkyu Kaihatsu Kiko Kenkyu Kaihatsu Bumon, Tsukuba, Japan; Y. Matsuura, Kabushiki Kaisha IHI Aerospace, Tomioka, Japan	3:50 p.m. AIAA-2026-2899 Modular Reduced-Order Modeling of Combustion Dynamics in a Three-Dimensional Transverse Rocket Combustor B. Gatza, C. Huang, University of Kansas, Lawrence, KS	4:10 p.m. AIAA-2026-2900 Development of the UTSA FLame and Advanced Rocket Experimentation (FLARE) Test Facility J. Hernandez-McCloskey, K. Eisenbarger, K. Corral Martinez, S. Reutlinger, J. Torbey, E. Saikumar, The University of Texas at San Antonio, San Antonio, TX; et al.	4:30 p.m. AIAA-2026-2901 Hydraulic System Design and Integration for a Small-Scale Liquid Rocket Engine Test Stand M. Cichon, A. Banko, M. Samek, Akademia Gorniczo-Hutnicza im Stanislawa Staszica w Krakowie, Kraków, Poland		
Friday, 16 January 2026					
MST-10	Modeling and Simulation Integration				Blue Spring I
Chaired by: I. FIALHO, The Boeing Company and J. SCHWITHAL, DLR - German Aerospace Center					
3:30 p.m. AIAA-2026-2902 Hypersonic Wake Signature Modeling for Electro-Optical Infrared Sensor Simulation Using Multi-Domain Physics R. Kynor, Ansys Government Initiatives (AGI), Exton, PA; F. Mercado, ANSYS Inc, Canonsburg, PA; V. Viti, P. Douglass, Ansys Government Initiatives (AGI), Exton, PA; M. Cailler, ANSYS Inc, Canonsburg, PA; D. Tantry, Ansys Government Initiatives (AGI), Exton, PA; et al.	3:50 p.m. AIAA-2026-2903 Development of a General Radar Cross Section Model for Complex Flying Vehicle In Motion J. Yancosek, R. McLaughlin, M. Perhinschi, West Virginia University, Morgantown, WV; W. Boord, Boord Engineering Sciences and Technologies, Severna Park, MD; P. Pace, West Virginia University, Morgantown, WV	4:10 p.m. AIAA-2026-2904 AI-Powered Dent Analysis of Aircraft Engine Nacelles Using Altair PhysicsAI: A Lightweight Digital Twin Demonstrator H. Gowda, W. Abbott, Altair Engineering Inc, Troy, MI	4:30 p.m. AIAA-2026-2905 Reducing Uncertainty for Modeling and Simulation Experimentation & Analysis J. Kloiber, P. Turner, R. Nicholls, E. Masters, A. Bruner, Northrop Grumman Mission Systems, Linthicum Heights, MD		
Friday, 16 January 2026					

PC-45	Combustion VII				Celebration 7
Chaired by: F. DI SABATINO, Southwest Research Institute and M. FORTIN, UCF					
3:30 p.m. AIAA-2026-2906 Hybrid Laser Fusion Thermonuclear Propulsion System M. Soliman Mossallam, National Authority for Remote Sensing & Space Sciences, El-Nozha El-Gedida, Egypt	3:50 p.m. AIAA-2026-2907 Numerical Analysis of a Flame Deflector Using Reactive and Non-Reactive Flow Models S. Eyi, T. Ghorbani Iriolya, Orta Dogu Teknik Universitesi Muhendislik Fakultesi, Ankara, Turkey; S. Tsutsumi, Uchu Koku Kenkyu Kaihatsu Kiko Uchu Kagaku Kenkyujo, Sagamihara, Japan	4:10 p.m. AIAA-2026-2908 Performance of Flamelet Models with Epsilon Tracking for Diffusion Flame Simulations S. Walsh, Y. Zhu, F. Liu, W. Sirignano, University of California Irvine, Irvine, CA	4:30 p.m. AIAA-2026-2909 Impact of Varying Fidelity Conjugate Heat Transfer Models on Propulsion-Relevant Cooling Channel Performance S. Reutlinger, J. Hernandez-McCloskey, D. Pineda, The University of Texas at San Antonio, San Antonio, TX		
Friday, 16 January 2026					
PC-46/HSABP-15	Supersonic Combustion				Celebration 6
Chaired by: V. HASTI, University of Central Florida					
3:30 p.m. AIAA-2026-2910 Effect of Injector Configuration on Flame Stabilization in Confined Supersonic Flowpaths S. Sharma, J. Singh, V. Raman, University of Michigan, Ann Arbor, MI	3:50 p.m. AIAA-2026-2911 Structure of the Shock-Flame Complex in Free-Standing Supersonic Hydrogen-Air Combustion A. Bhagat, J. Miller, S. Wehe, A. Steinberg, Georgia Institute of Technology, Atlanta, GA	4:10 p.m. AIAA-2026-2912 LES of Supersonic Reacting Mixing Layers Using Flamelet Progress Variable Approach S. Deshpande, S. Ghosh, Indian Institute of Technology Kharagpur, Kharagpur, India			
Friday, 16 January 2026					
PGC-23	PGC Operability and Performance III				Florida Ballroom C
Chaired by: V. RAMAN, University of Michigan					
3:30 p.m. AIAA-2026-2913 Investigating Detonation-Shock Interference Using a Dual-Branch Model with Applications to RDEs J. Bishop, M. Quinlan, University of Colorado Colorado Springs College of Engineering and Applied Science, Colorado Springs, CO	3:50 p.m. AIAA-2026-2914 Rotating Detonation Engine Combustion Chamber Linear Acoustic Analysis A. Goldman, D. Scarborough, Auburn University System, Auburn, AL; J. Hernandez-McCloskey, The University of Texas at San Antonio, San Antonio, TX; T. Teasley, C. Eberhart, NASA	4:10 p.m. AIAA-2026-2915 Operability of Restricted Flow-Through Rotating Detonation Engine With Heated Flows B. Lane, E. Gutmark, University of Cincinnati, Cincinnati, OH	4:30 p.m. AIAA-2026-2916 Analysis of Reflected Detonation Waves C. Ashworth, N. Berube, B. Suarez, S. Vasu, University of Central Florida, Orlando, FL	4:50 p.m. AIAA-2026-2917 Experimental Study of Asymmetric Propagation Behavior in Reflective Shuttling Detonation Cycle: Structural Variations Induced by Propagation Direction T. Nagaoka, K. Matsuoka, Nagoya Daigaku, Nagoya, Japan; H. Watanabe, Centre National de la Recherche	

	Marshall Space Flight Center, Huntsville, AL			Scientifique, Chasseneuil, France; N. Itouyama, J. Kasahara, Nagoya Daigaku Mirai Zairyo System Kenkyujo, Nagoya, Japan	

Friday, 16 January 2026

PGC-24	PGC System Integration	Florida Ballroom B

Chaired by: J. STOUT, Aerojet Rocketdyne and S. REDHAL, GE Aerospace

3:30 p.m. AIAA-2026-2918 Parametric Study on Pre-Detonator Performance Under Various Operating Conditions G. Miller, G. Rodriguez, T. Rezzag-Lebza, C. Gustafson, K. Ahmed, University of Central Florida, Orlando, FL	3:50 p.m. AIAA-2026-2919 Optimization of an Air-Cooled Diffuser Downstream of a Rotating Detonation Combustor J. Fernandez, J. Grunenwald, J. Braun, NC State University, Raleigh, NC; A. Booth, Virginia Polytechnic Institute and State University, Blacksburg, VA	4:10 p.m. AIAA-2026-2920 Effect of Architecture of a Combustor on the Rotating Detonation Combustor Perfromance V. Tangirala, C. Nordeen, A. Dean, CPEC Technologies, Niskayuna, NY	4:30 p.m. AIAA-2026-2921 Design and Characterization of Bladed Power Extraction From a Rotating Detonation Rocket Combustor L. Nicol, C. Thunes, D. Ngum, E. Murray, J. Barbeito, R. Dacosta, NC State University, Raleigh, NC; et al.	4:50 p.m. AIAA-2026-2922 Turbine Integration in a RDE for Hydrogen-Based Power Generation J. Grune, K. Sempert, J. Beil, D. Banuti, Karlsruhe Institute of Technology KIT, Karlsruhe, Germany	

Friday, 16 January 2026

SL-04	Systems Engineering Challenges for Space Logistics	Bayhill 23

Chaired by: P. GROGAN, Arizona State University

The objective of this session is to align space logistics challenges in the practitioner community with emerging systems engineering capabilities from the research community. Space logistics encompasses the theory and practice of 1) driving space system design for operability and supportability and 2) managing the flow of materiel, services, and information needed throughout a space system lifecycle. Emerging systems engineering technology such as digital twins, model-based systems engineering, and optimization algorithms describe, anticipate, and respond to uncertain, dispersed, and decentralized space operations to inform logistics requirements and solutions. This session invites commercial and government practitioner community representatives to describe observed and anticipated space logistics challenges and research community representatives to discuss alignment with emerging tools and techniques.

Friday, 16 January 2026

SPSN-04	Supersonic Operations and Modeling/Analysis	Orlando Ballroom N

Chaired by: T. MAGEE, Boeing Research & Technology

3:30 p.m. AIAA-2026-2927 Persistent Contrail Avoidance Trajectories for a Supersonic Business Jet M. Colling, P. Thomas, P. Sarhadi, University of Hertfordshire School of Physics Engineering and	3:50 p.m. AIAA-2026-2928 Modeling the Impact of Supersonic Civil Aviation Emissions on the Ozone Column Using Gaussian Process Regression L. Wattebled, C. Leron, E. Kallou, D. Mavris, Georgia	4:10 p.m. AIAA-2026-2929 Modal Analysis of Supersonic Jet Flow Structures via Proper Orthogonal Decomposition Under Temperature and Pressure Variations			

Computer Science, Hatfield, United Kingdom	Institute of Technology, Atlanta, GA	H. Samsamkhayani, West Virginia University, Morgantown, WV			
Friday, 16 January 2026					
SR-04	Solid Rocket Propellants				Celebration 11
Chaired by: M. FIORILLO, Avio S.p.A. and B. LAKOTA, Johns Hopkins University Applied Physics Laboratory					
3:30 p.m. AIAA-2026-2930 The Effects of Density on Burning Rates of Lab-Scale AP/HTPB Composite Solid Propellants K. Herder, A. Hong, T. Sammet, E. Petersen, Texas A&M University, College Station, TX	3:50 p.m. AIAA-2026-2931 Thermally Switchable Microwave Absorptivity of Composite Propellant and Engineered Additives S. Pathan, T. Sanders, University of Missouri, Columbia, MO	4:10 p.m. AIAA-2026-2932 Thermal Characterization of Ammonium Perchlorate with Acrylonitrile Butadiene Styrene or Polylactic Acid Supports for Additively Manufactured Solid Rocket Propellant C. Mackey, E. Stockman, D. Gavin, T. Elliott, University of Tennessee at Chattanooga, Chattanooga, TN	4:30 p.m. AIAA-2026-2933 Parametric Study of Bi-Modal Ammonium Perchlorate Composite Propellant Variations on Solid Rocket Motor Performance N. Baber, G. Sian, W. Fehring, K. Rouser, Oklahoma State University, Stillwater, OK		