

EAST HALL

WEST HALL

AM SESSIONS	RM 302/303 Innovative Propulsion Concepts <i>Anindya Ghoshal</i>	RM 304 Pressure Gain Combustion <i>Andrew Caswell Waldo Acosta</i>	RM 305 High Speed Turbine-Based Propulsion <i>Greg Bruening Heidi Wilkin</i>	RM 306 Target Life Engines for Low-Cost and Revolutionary Concepts <i>Capt Dan Lanzo</i>	RM 307 Turbine Engine Instrumentation Advances for More Effective R&D Testing <i>Ruth Sikorski</i>	RM 308 Battlespace Fuels <i>William Lewis</i>	RM 309 Mechanical System Technologies for Improved Performance and Durability <i>Kevin Thompson</i>	RM 310/311 Advances in Physics-Based Design Systems for Turbomachinery <i>John Clark</i>
8:30 AM	Development Status of the High Efficiency Rotary X Engine <i>Alexander Shkolnik</i>	Ultra Compact Combustor Advances at AFIT <i>Marc Polanka</i>	Introduction to High Speed Turbine-Based Propulsion <i>Greg Bruening</i>	Materials and Manufacturing for Affordable Small Engines <i>Kevin Chaput</i>	Airplane Engine Matching To Determine Engine Cycle Parameters <i>Syed Khalid</i>	Evaluation of Hydrocarbon Based Fuel Technologies for High Speed Flight <i>Donald Phelps</i>	Advancements in Modeling with the COBRAT™ Analytical Bearing Software <i>Nelson Forster</i>	Effects of Vane Bowing and Asymmetric Spacing on Blade Unsteadiness <i>John Clark</i>
9:00 AM	Modeling of Complex Multiphase Flows in Aviation Propulsion Systems <i>Luis Bravo</i>	Validation of Large Eddy Simulations of Bluff Body Stabilized Flames <i>Jeffrey Lovett</i>	Turbine-Based Propulsion's Role in AFRL's High Speed Systems Division Investment Strategy <i>William Gillard</i>	Targeted Life Design <i>Dan Lanzo</i>	Frequency Response Limitations in Gas Turbine Pressure Measurements (Part 1) <i>Steve Carter</i>	Fuel Injector Concept to Minimize Sensitivity to Liquid Physical Properties <i>Chris Brown</i>	Fatigue Life Performance of Hybrid Angular Contact Pyrowear 675 Bearings <i>Hitesh Trivedi</i>	Improved Fidelity Predictions for Resonant Stress in Turbine Components 1 <i>Michael Ni</i>
9:30 AM	Advanced High Temperature Propulsion Materials for FVL Propulsion <i>Anindya Ghoshal</i>	High Altitude Start for Small COTS Gas Turbine Engines <i>Andrew Knisely</i>	Overview of NASA's Hypersonic Technology Project <i>Steven Sinacore</i>	A Probabilistic Calibration Toolkit for Sub-Surface Anomaly Risk Assessment <i>Rajiv Sampath</i>	Frequency Response Limitations in Gas Turbine Pressure Measurements (Part 2) <i>Alan Szary</i>	Realtime Monitoring of Thermal Oxidation of Hydrocarbon Fuels <i>Paul Yelvington</i>	Bearing Heat Generation Model Development for Engine Preliminary Design <i>Brian Nicholson</i>	Improved Fidelity Predictions for Resonant Stress in Turbine Components 2 <i>Michael Ni</i>
10	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall	Break in Exhibit Hall
10:30 AM	Flow Incidence Tolerant Smart Adaptive Turbomachinery Blade Concept <i>Muthuvel Murugan</i>	Standing Detonations in High Mach Number Flows for High Speed Propulsion <i>Jonathan Reyes</i>	AEDC High Speed Turbine Engine Ground Test Capabilities <i>Stephen Maccarino</i>	Transitioning Targeted Life Designs to Cost Optimized Engine <i>Samuel Bailie</i>	Improving Data Quality through Enhanced Acoustic Attenuation Techniques <i>Steven Todd</i>	Probabilistic Design of Fuel Thermal Mgmt Systems <i>Kevin McCarthy</i>	Waveguide Sensors for Improved Turbine Engine Performance and Readiness <i>Richard Roth</i>	Comprehensive Multi-Disciplinary Simulation of Axial Turbomachinery <i>Roger Davis</i>
11:00 AM	Carbureted Fuel Injection Scheme for Augmentor Stability <i>Daniel Micka</i>	Radial RDE Bleed Air Turbine <i>Fred Schauer</i>	Developing a Water Injection System for Extended Turbine Operation <i>William Nolan</i>	Small Engine Development Initiative <i>Daniel Laubach</i>	Measurements of Turbine Engine Thrust using a Novel Acoustic Technique <i>Wing Ng</i>	What's Hot in Jet Fuel? <i>Paul Wrzesinski</i>	High Temperature Foil Bearings, The Journey to 870°C - Now What? <i>James Walton</i>	Advanced Wall Resolved Eddy Simulation CFD for Turbine Film Cooling Design <i>Michael Boehler</i>
11:30 AM			Precooler Development for High Mach Turbine-Based Combined Cycle <i>Andrew Slippay</i>		Vibrational Modes of a UAV Engine Turbocharger at High Altitude <i>Michael Szedlmayer</i>	Evaluation and Approval of Alternative Fuels <i>Tedd Biddle</i>	Scalable NiCoCrAlY Coatings for Durable Turbine Engines <i>Timothy Hall</i>	Advanced Methods for Temperature Field Measurements in Complex Geometries <i>Michael Benson</i>
12:00 PM	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall	Lunch in Exhibit Hall

EAST HALL

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PM SESSIONS	RM 302/303 Hybrid Electric Propulsion Power and Thermal <i>Michael Rottmayer</i>	RM 304 Propulsion Digital Enterprise Digital Thread/Digital Twin in Design, Mfg and Sustainment <i>Grizelda LoyKraft</i>	RM 305 High Speed Turbine-Based Propulsion <i>Greg Bruening Heidi Wilkin</i>	RM 306 Next Generation Intelligent (Electrical) Power Systems <i>Chad Miller</i>	RM 307 Turbine Engine Instrumentation Advances for More Effective R&D Testing <i>Ruth Sikorski</i>	RM 308 Electrical Power Generating Systems, and Integrated, Dynamic Engine Power Extraction <i>Kevin Yost</i>	RM 309 Mechanical System Technologies for Improved Performance and Durability <i>Kevin Thompson</i>	RM 310/311 Advanced in Physics-Based Design Systems for Turbomachinery <i>John Clark Michael Ooten</i>
1:30 PM	Electrified Aircraft Propulsion System Modeling and Hardware Demonstration <i>Joseph Connolly</i>	Uncertainty Quantification for Digital Engineering <i>Kevin O'Flaherty</i>	Combined-Cycle Engine Large Scale Inlet Mode Transition Experiment (CCE-LIMX) Phase 4 Program Overview <i>Heidi Wilkin</i>	Series Dc Arc Prevention and Detection Challenges in Aircraft <i>Eric Bauer</i>	AFRL Efforts to Increase Rotating Turbine Data while Decreasing Slip-Ring Dependency <i>Rich Anthony</i>	Generator Sizing and Design Considerations for High Power Requirements <i>Kevin Yost</i>	Componentlevel HighT3 Dusts Salt VCE Turbine Testing Progress <i>Lewis Schmidt</i>	Manufacturing Process Simulation Based on a Multiscale Modeling Applied to <i>Joe Sharp</i>
2:00 PM	Electrified Aircraft Propulsion Concepts for Commercial Aviation <i>Cheryl Bowman</i>	How Emerging Technology Brings Innovation to Sustainment for the 21st Century <i>Brent Baker</i>	Inlet Sequence Development for Closed-Loop Controlled CCE-LIMX Mode Transition Experiments <i>Lancert Foster</i>	DC Voltage Balancers for Bipolar DC Aircraft Power Systems Comp and Control <i>Luis Herrera</i>	Advancing Instrumentation Through Continuous-duration Testing at PSU-START <i>Reid Berdanier</i>	AFRL and AEDC Collaborative Project Exploring Electrical and Mechanical Analysis of an EPGS under Dynamic Large Step Conditions <i>Kevin Yost</i>	Validated Dynamic Performance Simulation Model for Rolling Bearings <i>Pradeep Gupta</i>	Realize Faster Time-to-Market through a Reliability Physics-Based Approach <i>Edward Dodd</i>
2:30 PM	SUAS Energy Optimized Mission Planning <i>Adam Parry</i>	Propulsion Digital Enterprise for Sustainment <i>Kurt Heinemann</i>	Wind Tunnel Testing Considerations While Testing the CCE-LIMX <i>Thomas Stueber</i>	Machine Learning in Fault Detection and Protection of Aircraft Power System <i>Xiu Yao</i>	Stall/ Surge Detection using Blade Tip Timing Measurements <i>Stephen Poland</i>	Investigation of the Effects of Increased Electrical Power on an Aircraft Ecclair <i>BangHung Tsao</i>		Integrated Design and Analysis Platform for Fans of Turbofan Engines <i>Leonid Moroz</i>
3	Break in Foyer	Break in Foyer	Break in Foyer	Break in Foyer	Break in Foyer	Break in Foyer	Break in Foyer	Break in Foyer
3:30 PM	Safe High Power Density Li-Ion Battery for Directed Energy Weapon Systems <i>Avijit Bhunia</i>	Application of the Hybrid Prognostic Model for Turbine Fans <i>Rob Keefer</i>	Boeing Perspective on TBCC Propulsion for Future Hypersonic Vehicles <i>Richard Dyer</i>	Ensuring Large-disturbance Stability of Aircraft Electrical Generation Systems <i>Oleg Wasynczuk</i>	Entitlement Characteristics of Axial Staged Combustor <i>Michelle Otero</i>	Power and Thermal Transient Interaction within an Adaptive Turbine Engine <i>Mitch Wolff</i>		Endwall Loss Reduction Techniques in High Lift Turbine Passages <i>Chris Marks</i>
4:00 PM	Disc Turbine Engine <i>Mustafa Rez</i>	MQ-9 Improved Performance Technology Engine (IPTE) Digital Twin <i>Eric Blumer</i>	Lockheed Martin Perspective on TBCC Propulsion <i>Rob Vermeland</i>	Fault Mitigation of Aircraft Electrical Power Systems with Real Time Hardware <i>Bang-Hung Tsao</i>	UltraFast 4D for Flame Stability and Dynamics in an Augmentor Combustor <i>Jonathan Reyes</i>	Ultra Compact Aircraft Turbine Based Electrical Power Generation <i>Eric Lewis</i>		Flexible Fast and High Fidelity System for GTU Simulation <i>Leonid Moroz</i>
4:30 PM	Exergy Dynamics-Based Modeling and Control for Stable and Feasible Aircrafts <i>Marja Ilic</i>		Precooler Development for High-speed Propulsion and New High-temperature Test Capability <i>Adam Dissel</i>	Autonomous Power Controller for the NASA Lunar Orbital Platform Gateway <i>Jeffrey Csank</i>	Internal Aero Diagnosis using Steady-State and High Response Instrumentation <i>Syed Khalid</i>	AFRL/RQ Automated Aerospace Generator Testing and Parameter Characterization <i>William Perdikakis</i>		The Best Multidisciplinary Turbomachinery Design and Optimization System <i>Mark Turner</i>
5:00 PM				Solid State Crowbar and Rapid Exciter De-energization of Aerospace Generator <i>William Perdikakis</i>	Unsteady Aerodynamic Effects due to Fan Blade Blending <i>Clint Knapke</i>	Statistical Calibration Case Study Using a 2-D CFD Turbulence Model <i>Kevin O'Flaherty/Zachary Graves</i>		Development of Advanced Diagnostics for Full Stage Turbine Heat Transfer Measurement <i>Randall Mathison</i>

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AM SESSIONS	RM 302/303 Additive Mfg Challenges and Opportunities for Turbine Engines <i>Edmund Moore</i>	RM 304 Robust, High Performance Aircraft Thermal System Components <i>Travis Michalak</i>	RM 305 Airframe Propulsion Integration <i>Angie Scribber</i>	RM 306 Integrated Propulsion, Power, and Thermal Control to Optimize Air Vehicle Energy Management <i>Jon Zumberge</i>	RM 307 Advances in Intelligent Active Controls Integrated with PHM and Propulsion Systems <i>Al Behbahani</i>	RM 308 Benefits/Challenges of Alternative Actuation Technologies for Emerging/Future Aircraft <i>Earl Gregoryk</i>	RM 309 Mesh Morphing and Modeling of Manufactured Components <i>Onome Scott-Emuakpor</i>	RM 310/311 Modeling and Simulation-Based Trade Space Analysis for Aircraft Subsystems <i>Soumya Patnaik</i>
8:30 AM		A Rapid Response High Heat Flux Temperature Control Thermal Management System <i>Rory Roberts</i>	Aeromechanical Evaluation of an FDM Printed Thermoplastic StreamVane <i>Tim Janczewski</i>	Open Architectures for Control of Integrated Vehicle Systems <i>Daniel Pollock</i>	Integrated Propulsion Power and Thermal Modeling for the Characterization <i>Ashok Chandoke</i>	Designing EMAs for Flight Critical Systems <i>Keith Bloxham</i>	Structured Blue Light Scanning and Mesh Morphing for As-manufactured Models <i>Jeff Brown</i>	Towards Automated Tradespace Exploration in Aircraft Power and Thermal Design <i>Alex Heitzel</i>
9:00 AM	Challenges and Opportunities in Implementing AM Parts in Turbine Engines <i>Gregory Colvin</i>	Status of AFRL/RQOM In-House Advanced Thermal Lift for Aircraft Thermal Management <i>Travis Michalak</i>	Experimental Evaluation of the Performance and Operability of a Robust Boun <i>David Arend</i>	Impacts on IP and Cyber Security - An Open Mission Systems Approach <i>Nicholas Kovach</i>	Empirical Modeling of Flow and Operability from Fan & Compressor Rig Data <i>Michael Lyall</i>	Assessing Flight Control Power Consumption and Waste Heat <i>William Schley</i>	Mistuned Frequency and Mode Shape Emulation for Reduced Order Models <i>Emily Carper</i>	Sensitivity Analysis to Study Design Parameter Influence on System Performance <i>Philip Abolmoadi</i>
9:30 AM	Design and Performance of Additively Manufactured Aircraft Heat Exchangers <i>Stephen Lynch</i>	Status of Tri Service Effort "Thermally Enabling Architectures for Pulse P <i>Fernando Rodriguez</i>	Center Body Influences on the AIP and Secondary Flows <i>Jesse Coffman</i>	Security for Integrated Avionics Systems <i>Josh McCamey</i>	Dynamic Systems Analysis of N3 Hybrid Electric Aeropropulsion Systems <i>George Thomas</i>	Motor Control Electronics for NextGen EMAs in Uncontrolled Environments <i>Parag Kshirsagar</i>	Emulation of Modal Shape Veering In As-measured Airfoils of a Transonic Compressor Rotor <i>Jeff Brown</i>	Electrical Modeling and Sizing Tools with Focus on Aircraft Generators <i>Michelle Boyd</i>
10	Break in Exhibit Hall							
10:30 AM	Controlling Cooling Performance of Additively Manufactured Turbine Components <i>Karen Thole</i>	Recuperator Development for Small Gas Turbine Engines <i>Darin Knaus</i>	Management and Optimization of Diesel Cycle Combustion Stability for Low Power/High Altitude Operations <i>Michael Kraft</i>	Controller Integration of Aircraft Power Propulsion and Thermal Subsystems <i>Andrew Alleyne</i>	High Temperature Smart Node for Distributed Propulsion Control Systems <i>Bhal Tulpule</i>		Mistuning Evaluation and Comparisons using As-Manufactured Models and Experimental Methods <i>Daniel Gillaugh</i>	A Multi-Disciplinary Modeling Toolset for Transient Analysis Control and <i>Nicholas Niedbalski</i>
11:00 AM	Surface Finishing of AM Shrouded Impellers <i>Tim Hall</i>	Ice Repellant Surfaces for Air Cycle Machine (ACM) Components <i>Vinod Veedu</i>	High Speed Airframe Propulsion Integration Advancements <i>Heidi Wilkin</i>	Panel on Revolution for Aircraft Propulsion Power and Thermal Control I <i>Brandon Hency</i>	Enabling Advanced Distributed Controls through Advanced Additive Packaging <i>Anthony Francis</i>		Emulation of Aerodynamic Performance and Unsteady Load of a Transonic Turbine <i>Jeff Brown</i>	Thermal Systems Analysis Toolbox Overview <i>Jonathan Kratz</i>
11:30 AM	In Situ Process Monitoring for Metal AM with Nickel Base Aerospace Alloys <i>Mark Cola</i>		Insights into HIID (HIBRID (Higher Bypass Ratio Inlet Development) Inlet Integration Demonstration) Data <i>William Steenken</i>	Panel on Revolution for Aircraft Propulsion Power and Thermal Control II <i>Brandon Hency</i>	High Temperature Materials for Electronic Control Assemblies <i>Craig Hillman</i>		Open Discussion	Intelligent Heat Exchanger Performance Analysis and Optimization Tool <i>Foluso Ladeinde</i>
12:00 PM	Lunch in Exhibit Hall							

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PM SESSIONS	RM 302/303	RM 304	RM 305 Air Vehicle Technology Integration <i>David Brown</i>	RM 306 Integrated Propulsion, Power, and Thermal Control to Optimize Air Vehicle Energy Management <i>Jon Zumberge</i>	RM 307 Advances in Intelligent Active Controls Integrated with PHM and Propulsion Systems <i>Al Behbahani</i>	RM 308	RM 309 Structural Assessment Methods <i>Onome Scott-Emuakpor</i>	RM 310/311 Modeling and Simulation-Based Trade Space Analysis for Aircraft Subsystems <i>Soumya Patnaik</i>
1:30 PM			Air Vehicle Technology Integration Overview <i>David A Brown</i>	Energy Optimized Coordination and Control of an Aircraft Thermal Management <i>Tim Deppen</i>	Controls PHM Status and Progress <i>Alireza Behbahani</i>		Turbine Engine Fatigue Facility Overview <i>Andrew Goldin</i>	Inclusion of Coupled Subsystem Performance Models in Operational Analysis Trade Studies <i>Darcy Allison</i>
2:00 PM			Propulsion Integration Performance Impacts on Low Cost Attritable Aircraft Technology (LCAAT) Design <i>Trenton White</i>	Synthesis of Controllers for Dynamically Reconfigurable Power and Thermal <i>Ufuk Topcu</i>	Advances in Highly Integrated Propulsion Power and Thermal Systems Control <i>Mitchell Smith</i>		The Influence of Additive Manufacturing Processing Parameters and the Effect of Defects on Fatigue Performance of Alloy 718 <i>Luke Sheridan</i>	Development and Thermal Management of a High Energy Pulse System <i>Nathan Butt</i>
2:30 PM			LCAAT Propulsion Integration Cost Impacts and Options <i>Greg Mosler</i>	Model Predictive Control for Aircraft Fuel Thermal Management <i>Adam Parry</i>	Enabling Intelligent Active Propulsion, Power and Thermal Management Controls with PHM <i>Jeffrey Sloat</i>		Additive Repair of Integrally Bladed Rotors <i>Onome Scott-Emuakpor</i>	Effective Power Generation in Hypersonic Vehicles <i>Rory Roberts</i>
3	Break in Foyer							
3:30 PM			Gremlins Inlet Engine Integration <i>John Roy</i>	Turbine Electrified Energy Management <i>Dennis Culley</i>			Integrally Bladed Rotor Blend Limit Assessment <i>Bryan Langley</i>	
4:00 PM			Advanced Diffuser/Aperture Control (ADAC) Propulsion Integration Test Rig <i>Brock Pleiman</i>	Coordinating Distributed Model Predictive Controllers Operating at Differing Time Scales for More Electric Aircraft <i>William Dunham</i>			Enhancing Fatigue Study of Gas Turbine Engine Components Using Digital Image Correlation <i>Casey Holycross</i>	
4:30 PM				Predictive Reference Governor for Synchronous Generator Regulation with a Pulsed Constant Power Load <i>Raul Ordonez</i>			Effects of Cooling Hole Arrays in SiC-SiC Composites <i>Gary Ostdiek</i>	
5:00 PM				Electromechanical Thermal Modeling and Stability of Pulse Loads <i>Wayne Weaver</i>			Investigating Damping Performance of Laser Powder Bed Fused Components with Unique Internal Structures <i>Onome Scott-Emuakpor</i>	