Holiday Inn Arlington - Ballston
4610 Fairfax Dr., Arlington, VA 22203

Agenda Day 1 | Monday, June 23, 2025 | Eastern Time (ET)

Time	Thrust Area	Title	PI/Organization
08:30-08:40	**Welcome and Opening Remarks**		Amanda Chou, AFOSR Eric Marineau, ONR Kenneth Granlund, ARO
08:40-08:45	**Propulsion**	Introduction to High Speed Propulsion	Program Officers
08:45-09:02	**Propulsion**	ONR - Discontinuous Galerkin Methods for Modeling Chemically Reacting Hypersonic Phenomena	R. Johnson, NRL
09:02-09:19	**Propulsion**	ONR - Integration of Physics-Based and Data-Driven Turbulent Combustion Models in the JENRE® Multiphysics Framework and Computational Performance Analysis	S. Demir, ANL
09:19-09:36	**Propulsion**	ONR- Evaluation, Enhancement, and Application of JENRE on Large-Scale Computing Systems	T. Dunn, LLNL
09:36-09:53	**Propulsion**	ONR - Combustion Behavior Within a Solid-Fuel Ramjet at High Altitudes	D. Kessler, NRL
09:53-10:10	**Propulsion**	ONR - Improved Flamelet Progress Variable Approach for Compressible High-Speed Flows	B. Bojko, NRL
10:10-10:27	**Propulsion**	ONR - Learning-based Adaptive Thrust Control in a Direct-Connect SFRJ	B. Reitz, E. Washburn, NAWCWD
10:27-10:47	**BREAK**		
10:47-11:04	**Propulsion**	ONR - Data-driven, Learning-based, Adaptive Control of Solid Fuel Ramjet	A. Goel, UMBC
11:04-11:14	**Propulsion**	ONR - Experimental and Numerical Investigation on the Combustion Characteristics of Solid Fuels in Supersonic Combustors	L. Massa, G. Young, Virginia Tech
11:14-11:31	**Propulsion**	ONR - Combustion in Solid Fuel Ramjets	C. Slabaugh, Purdue U
11:31-11:48	**Propulsion**	ONR - Temperature and Compositional Measurements in Model Solid Fuel Ramjet Inlet and Exhaust Flows	R. Hanson, Stanford U.
11:48-11:58	**Propulsion**	ONR - High Fidelity Modeling of Hypersonic Air-Breathing Propulsion	T. Taylor, APL
11:58-13:13	**LUNCH**		
13:13-13:30	**Propulsion**	ONR - Optimized Simulations of High-Speed Turbulent Combustion	G. Candler, U of MN
13:30-13:40	**Propulsion**	ONR - Mach 4 Inlet Unstart Investigation and Mitigation with Self Energizing Vortex Generating Jets	G. Hobson, NPS

13:40-13:57	**Propulsion**	ONR - Data-Driven Input-Output Models for Reacting, High-Enthalpy Flows	B. McKeon, Stanford U
13:57-14:14	**Propulsion**	ONR - Intrinsic Instability of Compressible Reacting Flows and Its Role in Scramjet Unstart and Transition	A. Poludnenko, UConn
14:14-14:40	**Propulsion**	ONR - Active Mitigation of Unstart in Scramjets	R. Acharya, UTSI
14:40-14:55	**BREAK**		
14:55-15:00	**NEE**	Introduction in Non-Equilibrium Effects (NEE)	Program Officers
15:00-15:17	**NEE**	AFOSR - Spectroscopic Measurements and Nonequilibrium Modeling for High-Enthalpy Air	J. Austin, Caltech R. Hanson, Caltech
15:17-15:27	**NEE**	ONR - Plasma Assisted Cooling of Thermally Intense Aerospace Surfaces	K. Hanquist, U of Arizona
15:27-15:44	**NEE**	AFOSR - Modeling of Recombination in Hypersonic Flows: A Combined Theoretical and Experimental Approach	M. Panesi, UIUC
15:44-16:01	**NEE**	AFOSR - Improving Diagnostic Characterization of High Hypersonic (Mach 15+) Plasmas	M. A. Rao, AFRL, UIUC
16:01-16:16	**BREAK**		
16:16-16:33	**NEE**	ONR - Experimental Study of Non-Equilibrium Turbulence-Chemistry Interaction in External Hypersonic Flows	A. Veeraragavan, U of Queensland, Australia
16:33-16:43	**NEE**	AFOSR - Evaluation of Aerothermochemistry Models Through Sensitivity Analysis and Low-Uncertainty Experiments	I. Boyd, U of CO
16:43-17:00	**NEE**	AFOSR - Fundamental Studies of Vibrationally Resolved Air Kinetics in the Vicinity of a Partially Catalytic Surface	D. Andrienko, U of CO
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Agenda Day 2 | Tuesday, June 24, 2025 | Eastern Time (ET)			
Time	**Thrust Area**	**Title**	**PI/Organization**
8:30-8:47	**NEE**	AFOSR - Quantification and Mitigation of Thermochemical Non-Equilibrium in High-Enthalpy Hypersonic Wind Tunnels	D. Baccarella, U of TN
8:47-9:04	**NEE**	ONR - Deep Learning Closure of Non-Equilibrium Fluid Mechanics	J. MacArt, Notre Dame
9:04-9:21	**NEE**	AFOSR - Direct Molecular Simulation of Multi-Species Reacting Flows	A. Blanco, N. Bisek, AFRL
9:21-9:38	**NEE**	AFOSR - High-fidelity modeling of non-equilibrium gas-phase recombination for hypersonic air flows (YIP)	R. MacDonald, U of CO
9:38-9:58	**BREAK**		

9:58-10:03	**GSI**	Introduction to Gas-Surface Interaction (GSI)	Program Officers
10:03-10:13	**GSI**	AFOSR - Surface catalytic recombination on carbon-based TPS materials	K. Stephani, UIUC
10:13-10:30	**GSI**	AFOSR - Experimental/Computational Study of Gas-phase and Gas-surface Interactions for High Speed Rarefied Flow	T. Schwartzentruber, UMinn
10:30-10:56	**GSI**	ONR - Computational and Experimental Study of the Temporal Response of UHTC Materials for Thermal Protection of Hypersonic Vehicles	I. Boyd, U of Colorado
10:56-11:13	**GSI**	ONR - Thermodynamic Comparative Analysis of Hypersonic Materials Response Using Oxy-torch and Plasmatron, Screening and Arc Jet Testing	E. Corral, U of Arizona
11:13-11:30	**GSI**	ONR - Characterization of High Enthalpy Flows and Ablation Products Surrounding Hypersonic Platforms	R. Miles, TAMU
11:30-11:47	**GSI**	AFOSR - Disruptive research approach for GSI-model consolidation through on-ground and in-flight analyses	J. El Rassi, T. Magin, VKI
11:47-11:52	**FSI**	Introduction to Fluid Structure Interactions (FSI)	Program Officers
11:52-12:09	**FSI**	ONR - Resolving Shock-Driven Droplet Breakup and Evaporation at Hypersonic Conditions	
12:09-13:24	**LUNCH**		
13:24-13:34	**FSI**	ONR - Fluid-thermal-structure Interaction of a Finned Model at Mach 6	D. Bodony, UIUC
13:34-13:51	**FSI**	ONR - Electromagnetic Launch For Hypersonic Research and Development	M. Libeau, NSWC_DD
13:51-14:08	**FSI**	ONR - Prediction of High-Velocity Droplet Damage Using Peridynamic Approaches	I. Guven, VA Commonwealth U
14:08-14:34	**FSI**	ONR - A Numerical Investigation of Particle and Droplet Impingement for Hypersonic Flow Conditions Including Material Response Modeling	C. Brehm, U of MD
14:34-14:44	**FSI**	ONR - Low- and High-Fidelity Simulations of High-Speed Droplet Aerobreakup and Impingement with Material Response Modeling	C. Brehm, U of MD
14:44-14:59	**BREAK**		
14:59-15:16	**FSI**	AFOSR - The Role of Cavitation in Droplet Breakup: Understanding and Predicting Hypersonic Structural Loading through Multiscale Simulations and Shock-tube Experimentation	S. Grace, Boston U
15:16-15:33	**FSI**	ONR - Investigating the Formation of Ice Crystal Aggregates and their Impacts on Hypersonic Vehicles	H. Chelmo, U of North Dakota
15:33-15:59	**FSI**	ONR - Fragmentation and Melting of Ice Particles Subjected to Hypersonic Aerothermodynamic Environments	S. Poovathingal, U of Kentucky
15:59-16:14	**BREAK**		
16:14-16:31	**FSI**	ONR - Water Entry of Hypervelocity Projectiles (YIP)	B. Schmidt, Case Western U

16:31-16:41	**FSI**	ONR - Advancing understanding of and predictive modeling capabilities for high-speed shock-induced droplet Aerobreakup and surface damage	J. Rabinovitch, Stevens; O. Desjardins, Cornell
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Agenda Day 3 | Wednesday, June 25, 2025 | Eastern Time (ET)			
Time	**Thrust Area**	**Title**	**PI/Organization**
8:30-8:47	**FSI**	ONR - Enhanced hypersonic aerodynamics and stability models through hardware in the loop ground tests in TUSQ	I. Jahn, U of SQ, Austrailia
8:47-9:04	**FSI**	AFOSR - Computationally tractable robust codesign of hypersonic vehicles	C. Manzie, U of Melbourne, Australia
9:04-9:21	**FSI**	ONR - High Energy Laser and Ultra-high-speed camera for multiscale investigation of materials subject to hypersonic impacts	S. Ravindran, U Minn
9:21-9:31	**FSI**	ONR - Mechanics of hypersonic materials under hypersonic flight conditions	S. Ravindran, U Minn
9:31-9:48	**FSI**	AFOSR - Topology-Aware Learning and Modeling of High-Rate Dynamic Systems	C. Hu, Iowa State U
9:48-10:08	**BREAK**		
10:08-10:25	**FSI**	AFOSR - Decoding fluid-structural coupling during shock-boundary layer interactions acting on compliant surfaces	J. McNamara, OSU
10:25-10:42	**FSI**	AFOSR - Hypersonic FTSI Unit Case for a Thermally-Buckled Structural Panel	A. Neely, UNSW, Australia
10:42-10:59	**FSI**	AFOSR - Measurement and Modeling of an Oblique Shock Grazing a Compliant Panel	D. Bodony, UIUC
10:59-11:16	**FSI**	AFOSR - Experiments on Hypersonic Fluid-Structure Interaction in the Wind Tunnel H2K	D. Daub, S. Willems, DLR
11:16-11:33	**FSI**	AFOSR - Aerothermoelastic Experiments and Simulation of High-Speed Vehicle Structures	M. Spottswood, K. Brouwer, D. Ehrhardt, AFRL
11:33-11:38	**TF**	Introduction to Turbulent Flows (TF)	Program Officers
11:38-11:55	**TF**	AFOSR - Theoretical developments in hypersonic turbulent boundary layers with application to friction and heat transfer estimation	J. Larsson, U of MD
11:55-12:05	**TF**	AFOSR - Theoretical developments in hypersonic turbulent boundary layers with application to friction and heat transfer estimation	S. Pirozzoli, Sapienza, Rome
12:05-13:20	**LUNCH**		
13:20-13:37	**TF**	ONR - Turbulence Quantities in Supersonic and Hypersonic Flows	N. Parziale, Stevens

13:37-13:54	**TF**	ONR - Simulation and Modeling of Hypersonic Turbulent Boundary Layers with Varied Reynolds Numbers and Pressure Gradients	L. Duan, OSU
13:54-14:11	**TF**	ONR - Subfilter-scale (SFS) analysis of hypersonic turbulence: a path towards a consistent wall-modeled LES strategy	C. Scalo, Purdue U
14:11-14:28	**TF**	ONR - Development of Improved WMLES Capabilities for Hypersonic Flows for Body-Fitted and IBM-based CFD Solvers	C. Brehm, U of MD
14:28-14:48	**BREAK**		
14:48-15:05	**TF**	ONR - Development of Hybrid Simulation Models for Heat Transport in Hypersonic Turbulent Flow	P. Durbin, Iowa State U
15:05-15:31	**TF**	ONR - Aero-Optical Studies of Mixing Flows at Supersonic and Hypersonic Speeds	S. Gordeyev, Notre Dame
15:31-15:48	**TF**	ARO - Aero-Optical Effects of Vortical Instabilities in Hypersonic Boundary Layers	S. Gordeyev, Notre Dame
15:48-16:08	**BREAK**		
16:08-16:25	**TF**	ARO - Role of Compressibility on Crossflow Separation and Vortex Asymmetry on Slender Axisymmetric Bodies at High Angles of Incidence	Rajan Kumar, Unnikrishnan Nair, Florida A&M University
16:25-16:42	**TF**	AFOSR - Entropy-conserving Large Eddy Simulation Models for Hypersonic Flows	J. Bellan, Cal Tech
16:42-16:59	**TF**	ONR - High-Speed High-Reynolds-Number Boundary Layer Measurements and Modeling	R. Bowersox, TAMU
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Agenda Day 4 | Thursday, June 26, 2025 | Eastern Time (ET)			
Time	**Thrust Area**	**Title**	**PI/Organization**
8:30-8:35	**Transition**	Introduction to Hypersonic Boundary Layer Transition	Program Officers
8:35-8:52	**Transition**	AFOSR - Linear modal and non-modal instability analyses of high-speed laminar separated flow over complex geometries. Part II: The HIFiRE-1, ROTEX-T and Oberkampf vehicles	V. Theofilis, Technion, Israel A. Burtsev, UT Austin
8:52-9:09	**Transition**	ONR - A probabilistic transition model for hypersonic boundary layers	A. Towne, U of Michigan
9:09-9:35	**Transition**	ONR - Receptivity to Breakdown Mechanisms During Transition on Hypersonic Forebodies	D. Gaitonde, OSU, S. Unnikrishnan, FSU
9:35-9:52	**Transition**	ONR - Receptivity and Transition over Blunt Configurations under Noisy and Quiet Hypersonic Conditions	A. Scholten, NIA
9:52-10:09	**Transition**	ONR - Instability and Receptivity of Complex Hypersonic Flows using Input/Output Analysis	J. Nichols, U of MN

10:09-10:26	**BREAK**		
10:26-10:46	**Transition**	AFOSR - Stagnation Point Injection in Hypersonic Flow	B. Schmidt, Case Western U
10:46-11:03	**Transition**	AFOSR - Effect of Particulates and Free Stream Disturbances on Hypervelocity Boundary Layer Transition (YIP)	B. Schmidt, Case Western U
11:03-11:29	**Transition**	ONR - Detailed Investigation of Hypersonic Instability, Breakdown, and Natural Transition under Quiet Flow with Simulated Ablation-Gas Injection	J. Jewell, Purdue U
11:29-11:46	**Transition**	AFOSR - A Numerical Investigation of Transpiration Cooling for Transitional and Turbulent Flows over Slender Bodies	C. Brehm, U of MD
11:46-12:03	**Transition**	AFOSR - Boundary Layer Transition 1B (BOLT-1B) Flight Experiment	B. Wheaton, JHU/APL
12:03-13:18	**LUNCH**		
13:18-13:35	**Transition**	ONR - Practical Modeling of Hypersonic Boundary Layer Transition and its Impact to Flight Vehicle Performance	N. Bitter, APL
13:35-13:52	**Transition**	ONR - Optimal receptivity and roughness analyses for transition in high-speed boundary layers	T. Colonius, CalTech
13:52-14:02	**Transition**	ONR - Numerical Investigations of the Nonlinear Transition Stages in Boundary Layers for High Mach Numbers	H. Fasel, U of AZ
14:02-14:17			
14:17-14:27	**Transition**	AFOSR - Relaminarization of Hypersonic Boundary Layers by Flow Expansion	M. Borg, AFRL
14:27-14:44	**Transition**	AFOSR - Nozzle Heating and Cooling Patterns for Improved Hypersonic Quiet Wind-Tunnel Design	J. Kuehl, U of Delaware
14:44-15:01	**Transition**	AFOSR - Investigating the Influence of Tailored Wall Temperature Profiling on Hypersonic Boundary Layer Transition	A. Veeraragavan, U of Queensland, Australia
15:01-15:18	**Transition**	AFOSR - Boundary Layer Transition induced surface heating on hypersonic vehicles	S. Smith, Howard U
15:18-15:33	**BREAK**		
15:33-15:43	**Transition**	ONR - Characterization and optimal design of measurements in transitional high-speed flow (New Start)	T. Zaki, APL
15:43-16:00	**Transition**	AFOSR - Efficient prediction of hypersonic transition on cones	T. Zaki, APL
16:00-16:17	**Transition**	AFOSR -Transition to turbulence in high-speed flight: Incoming disturbances and particulates	T. Zaki, APL
16:17-16:34	**Transition**	ONR - A New Biorthogonal Decomposition Method and DNS Receptivity Studies for Amplitude Method in Hypersonic Boundary-Layer Transition Prediction with Atmospheric Turbulence	X. Zhong, UCLA
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Agenda Day 5 | June 27, 2025 | Eastern Time (ET)			
Time	**Thrust Area**	**Title**	**PI/Organization**
8:30-8:35	**SBLI**	Introduction to Shock-Boundary Layer Interactions (SBLI)	Program Officers
8:35-8:52	**SBLI**	AFOSR - Nonlinear Flow Receptivity in Shock-Wave Boundary-Layer Interaction	G. Rigas(Flavio Savarino), Imperial College, England
8:52-9:09	**SBLI**	AFOSR - Mach number effects on shock-boundary layer interactions over curved surfaces of supersonic turbine cascades	W. Wolf, Universidade Estadual de Campinas, Brazil
9:09-9:26	**SBLI**	ONR - Investigation of Transitional SBLI at Mach 5 using Controlled Forcing: Experiments, Simulations and Theory	J. Little, Ohio State University
9:26-9:43	**SBLI**	ONR - Kinetic Treatment of Sources and Mechanisms that Drive Unsteady, Shock-dominated Flow Instability	D. Levin, UIUC
9:43-10:00	**SBLI**	AFOSR - Turbulent Separation and Unsteadiness in Compound Shock/Boundary Layer Interactions	F. Alvi, FSU
10:00-10:20	**BREAK**		
10:20-10:37	**SBLI**	ONR - Improved Simulation of Internal and External Hypersonic Flows using High-Order Implicit Shock Tracking (YIP)	M. Zahr, Notre Dame
10:37-10:54	**SBLI**	ARO - Investigation of High-Reynolds-Number, Hypersonic Shock-Wave /Boundary-Layer Interactions through Ballistic-Range and Ground Testing	S. Laurence, U of M
10:54-11:11	**FSI**	ONR - Droplet Breakup and Evaporation from Unsteady Accelerations in Hypersonic Weather Impacts	J. McFarland, TAMU
11:11-11:16	**DFI**	Introduction to Diagnostics, Facilities and Instrumentation (DFI)	Program Officers
11:16-11:33	**DFI**	ONR - Development of spontaneous Raman spectroscopy for optical diagnostics in detonation engines	P. Varghese, UT Austin
11:33-11:59	**DFI**	ONR - Arc-Jet Freestream Turbulence Characterization and its Influence on Laminar Heating Augmentation in the Stagnation Region	L. Maddalena, UTA
11:59-13:14	**LUNCH**		
13:14-13:24	**DFI**	ONR - Scaling of Arc-Jet Shock/Freestream Turbulence Interaction and its Effect on Stagnation Heating	L. Maddalena, UTA
13:24-13:41	**DFI**	ONR - Spectrally-Resolved Laser Diagnostics for High-Enthalpy Flow Measurements	R. Hanson, Stanford U.
13:41-13:51	**DFI**	ONR - Development and Assessment of Detonation-Drivers for Hypervelocity Expansion Tube Ground Testing	J. Shepherd, Caltech (Joanna Austin)
13:51-14:01	**DFI**	ONR - Masters and STEM Programs in Hypersonic Systems	T. Corke, Notre Dame

14:01-14:31	**BREAK**		
14:31-14:48	**DFI**	AFOSR - Canonical Validation Experiments for Fundamental Hypersonic Aerodynamics (Wrap-up)	M. Sheplak, UF
14:48-15:05	**DFI**	AFOSR - Development of Advanced Off-Surface Flow and Thermodynamic Measurements in Hypersonic Environments	J. Sutton, OSU
15:05-15:31	**DFI**	AFOSR - New Mexico Basic Research Center of Excellence for Hypersonic Sensor Development and Testing	J. Frankel, NMSU
15:31-15:50	**DFI**	AFOSR - "Async-ELF": 10k USD, 1kg, 100kHz-Equivalent 3D Optical Diagnostics for Hypersonic Testing (Wrap-up) / AFOSR - AsyncELF 2.0: Hypersonic Ground-Test and Transonic Flight-Test with the Asynchronous Embedded Light-Field Paradigm (New Start)	Z.P. Tan, National Yang Ming Chiao Tung U, Taiwan
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