



Doolittle Institute | 1140 E John Sims Pkwy., #1 | Niceville, FL 32578

The review will take place in the Auditorium

Registration link: <https://community.apan.org/wg/afosr/w/researchareas/40331/2024-afosr-test-review/>

Dress Military: UOD | Dress Civilian: Business Casual | Unclassified Content/ Distro A

Call-in Number/Virtual link: Zoomgov (to be sent to registered attendees 09 DEC)

Agenda Day 1 | Tuesday, December 10, 2024

Time (CST)	Topic	Speaker
08:00-08:30	CHECK IN / LOGIN	
08:30-08:35	AFOSR Introductory Comments	Dr. B. Pokines, AFOSR/RTA
08:35-08:45	AFTC Introductory Comments	Mr. Nickolas Galyen, S& T Strategic Lead, AFTC/ENS
08:45-09:00	AFTC Perspectives	Dr. B. Jerome, Technical Advisor for Armament and Weapons Test and Evaluation, AFTC/CZ
09:00-09:25	S&T / T&E Partnerships at Arnold AFB	Dr. Scott Peltier – AFRL/RQHA (Arnold)
09:25-10:25	AFWERX S&T Opportunities	Ms. Kathy Reid, AFWERX
10:25-10:35	BREAK	
10:35-11:00	Benchmarking, Verification, and Authentication of Resource-restricted Quantum Hardware using Novel Quantum Control Protocols	Dr. Austin Minnich, Caltech
11:00-11:25	Nondestructive Evaluation of Integrated Circuits using Excitonic Probes	Dr. Parag Deotare, University of Michigan
11:25-11:50	Evaluating and Fingerprinting Spintronic Materials Performance using a Single Spin Sensor	Dr. Lucas Caretta, Brown University
11:50-12:50	LUNCH	
12:50-13:15	Quantum Testing and Thermal Management of Bioinspired Devices and Systems	Dr. Ivan Schuller, University of California, San Diego
13:15-13:40	Novel Measurement Techniques for the Rapid Characterization and Accurate Modeling of Dynamic Trap Activities in Ultra-Wide Band Gap Semiconductor Devices	Dr. Patrick Roblin, Ohio State
13:40-14:05	Ballistic Conduction in Nanometric Metals for Metrology	Dr. Katayun Barmak, and Dr. Bill Kadden, Columbia University
14:05-14:30	One- and Two-dimensional Material Probes of	Dr. John Schaibley, University of

	Ultraclean Surfaces	Arizona
14:30-14:55	Hardware Assurance Research for Verification Enabling Security Test and Evaluation for Cybersecurity (HARVESTEC)	Dr. Navid Asadi, AFRL/RW
14:55-15:10	BREAK	
15:10-15:35	Investigating Coupled Thermal, Mechanical, and Electrical Phenomena in High-Temperature Materials using Thermal Wave Sensors	Dr. Sean Lubner, Boston University
15:35-16:00	Innovative Test Science for Multi-domain Multi-sensor Fusion	Dr. Paul Sotirelis, AFRL/RV
16:00-16:25	Ground-based Test and Evaluation of Pinned Plasma Solitons Generated by Orbital Debris	Dr. Christine Hartzell, University of Maryland (Virtual)
GOVT & GOVT Contractor ONLY: Briefing and Discussion		
16:25-16:50	Munition Directorate's R&D for Hardware-in-the-Loop Weapons Testing	Capt. Ryan Trenter, AFRL/RWTS (Eglin)
1625	REVIEW ADJOURN FOR THE DAY	

Agenda Day 2 Wednesday, December 11, 2024		
Time (CST)	Topic	Speaker
08:00-08:15	CHECK IN / LOGIN	
08:15-08:20	AFOSR Introductory Comments	Dr. B. Pokines, AFOSR/RTA
08:20-08:35	Welcome & Introductory Comments	Dr. Kerianne Hobbs, AFRL/RYZA (Wright-Patterson)
08:35-09:00	Testing Autonomous Aircraft	Capt. Tyler "Kode" Brown (Eglin)
09:00-09:25	Safe and Robust Autonomy	Dr. Nathaniel Hamilton, AFRL/RYZA (Wright-Patterson).
09:25-09:50	BREAK	
09:50-10:15	Testing Autonomy	Dr. John Valasek, Texas A&M University
10:15-10:40	Layered T&E for Safety-Critical Autonomous Systems	Dr. Richard Murray and Dr. Aaron Ames, Caltech
10:40-11:05	Testbed for Human-Autonomy Teaming (Testbed4HAT)	Dr. Aurora Schmidt and Dr. Jared Markowitz, Johns Hopkins University Applied Physics

11:05-11:30	A Bayesian Approach to Breaking Things: Efficiently Predicting Diverse Failure Modes via Sampling	Dr. Yingke Li and Dr. Chuchu Fan, MIT
11:30-13:00	LUNCH	
13:00-13:25	Compositionally Verifiable Reinforcement Learning Systems and Distributed Testing	Dr. Ufuk Topcu, The University of Texas at Austin (Virtual)
13:25-13:50	Novel Test Coverage for Max Operational Capability in Autonomous Systems	Dr. Matt Anderson, AFRL/RITA
13:50-14:15	Experimental Design for Parameter Estimation in Complex Autonomous Systems	Dr. Ricardo Sanfelice, University of California, Santa Cruz
14:15-14:25	BREAK	
14:25-14:50	Formally Verifying Deep Reinforcement Learning Controllers with Lyapunov Barrier Certificates	Mr. Michael Durling, GE Aerospace Research and Dr. Clark Barrett, Stanford
14:50-15:15	SALUS: Safe Autonomy for Leading Uncrewed Systems	Dr. Sebastian Zanlongo and Dr. Mike Castle, Johns Hopkins University Applied Physics Laboratory
15:15-15:40	Safe Autonomy with Adversarial Control Actions	Dr. Helen Durand, Wayne State University
15:40-16:05	Differential Agility: Formal Verification and Testing of Learning-Enabled Multi-Agent Aerospace Systems	Dr. Carlos A. Varela, Rensselaer Polytechnic Institute
16:05-16:30	Neurosymbolic Techniques for Testing and Evaluation of Autonomous Systems Design and Implementation	Dr. Parasara Sridhar Duggirala, University of North Carolina at Chapel Hill
16:30-16:55	ACE: T&E of Tensor Training Datasets for AI Autonomy	Dr. Dimitris A. Pados, Florida Atlantic University (Virtual)
16:55	REVIEW ADJOURN FOR THE DAY	

Agenda Day 3 Thursday, December 12, 2024		
Time (CST)	Topic	Speaker
07:50-8:00	CHECK IN / LOGIN	
08:00-08:25	Modeling and testing of plasma effects on orbiting space debris for improved Space Situational Awareness	Dr. Abhijit Sen, Institute for Plasma Research (Virtual)
08:25-08:50	Exploiting Plasma Properties to Detect Small (Sub 10 cm) Orbital Debris	Dr. William Amatucci, Naval Research Laboratory
08:50-09:15	Testing and Evaluation Enabled Discovery of Multifunctional 2D Materials for Space Technology	Dr. Fei Yao, SUNY Buffalo

09:15-09:40	Biomedical Engineering Center for Acute Stress and Credibility Assessment	Dr. Mark Uline, University of South Carolina
09:40-09:50	BREAK	
09:50-10:15	Digital Engineering the Test and Modeling Process: Autonomous Methods for Reconciling Test and Model Results	Dr. Keegan Moore, Georgia Tech (Virtual)
10:15-10:40	A Novel Semi-Supervised Kernel Formulation for Extrapolation from Small Datasets: Rapid Predictive Modeling of the Effect of a Leeway Object Geometry on its Drift and Divergence in Deep Waters	Dr. Adel Alaeddini, Southern Methodist University
10:40-11:05	A High-Speed Stereo Camera System to Enable Non-Contact Strain Measurements at Extreme Magnifications and Temperatures	Dr. Ryan Berke, Utah State University
11:05-11:30	High-Temperature Fluctuating-Stress Ultrasonic Fatigue Tester for Studying Environment-Dependent Ultra-Long-Life Fatigue of Defense-Critical Advanced Materials and Processes	Dr. Meysam Haghshenas, University of Toledo
11:30-11:55	Novel Space Science Test via Adaptive Control and Integral Concurrent Learning Leveraging On-orbit CubeSat structural identification	Dr. Riccardo Bevilacqua, Embry-Riddle Aeronautical University
11:55-13:00	LUNCH	
13:00-13:25	A Machine Learning Based Transfer Function to Predict Warhead In-Flight Behavior from Static Arena Test Data	Dr. Riccardo Bevilacqua, Embry-Riddle Aeronautical University
13:25-13:50	In-Flight Measurements of Species Emission Spectra behind a Hypersonic Bow Shock using the HyCUBE Sensor Probe	Dr. Demoz Gebre-Egziabher, University of Minnesota
13:50-14:15	Probing the Ablation of Hypersonic Vehicle Heat Shield Materials using Pulsed Lasers and Advanced Spectroscopic Diagnostics	Dr. Marien Simeni, University of Minnesota
14:15-14:40	Fundamental Spectroscopy of Oxygen at High Temperatures and Pressures in Support of Quantitative Sensing for Hypersonic Air Flows	Dr. Ronald Hanson, Stanford University (Virtual)
14:40-15:05	Analysis of Boundary-Layer Transition Measurements on a Blunt Ogive at the Holloman Sled Track	Dr. Bradon Chynoweth, Purdue (Virtual)
15:05-15:15	BREAK	
15:15-15:40	Boundary Layer Transition 1B (BOLT-1B) Flight Experiment	Dr. Brad Wheaton, APL (Virtual)
15:40-16:05	Flight Experiment Design and Preparation for Standing Oblique Detonation Fundamentals for Hypersonic Propulsion	Dr. Kareem Ahmed, University of Central Florida (Virtual)
16:05-16:30	Novel Testing Methods for Measuring Critical Gas Phase Interactions in Hypersonic Ground Test	Dr. Greg Scofield, Purdue (Virtual)
16:30-16:45	AFOSR Closing Comments	Dr. B. Pokines, AFOSR/RTA

16:45

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