

# Virtual Workshop

Multi-Agent, Multidomain, Multidiscipline

Dr. Brett Pokines

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## Information and registration:

Please register to attend (registration is required to be sent zoom gov information for participation):

<https://community.apan.org/wg/afosr/w/researchareas/31445/2021-afosr-test-and-evaluation-portfolio-review/>

## Review Procedure for presenters:

1. Zoom gov't (our method of meeting virtually) is Public Release, Distribution A only. Zoom information will be sent to you after registering for the meeting. You will be able to share your slides from your computer.
2. Presentation slides should be sent to <brett.pokines.1@us.af.mil>, please send by 17 September 2020 (this is after the review); Please include your name within file name. If we need to make arrangements for large file transfer, email me.
3. Presentation of 20 minutes with 10 minutes for questions is the ideal.
4. Please, if you are presenting AFOSR funded science; within your briefing provide: a tweet for the T&E twitter site, list of awards received related to AFOSR support, AFOSR funded publications, AFOSR workforce development accomplishments (# of undergraduate/ graduate researchers supported, # of team members hired by the DoD, other measures), other items you believe highlight your success.
5. If you are presenting AFOSR funded science; highlight how you are contributing to basic or fundamental test science within your presentation. Highlight all connections & links to the Department of Defense Test Community.
6. Please if you are AFOSR funded plan to attend the full meeting --- it is important to contribute questions and to the discussion during all three days.

## Tuesday, 14 September 2021

Time	Time Zone		Name	Representing	Topic
13:00-13:30	Eastern		Dr. Brett Pokines	AFOSR	Test and Evaluation: Multi-Agent, Multidomain, Multidiscipline
13:30-14:00	Eastern		Major Matt Kading	USAF	Close Air Support
14:00-14:15	Eastern		<b>Break</b>		
14:15-14:35	Eastern		Dr Hang Ruan	NanoSonic, Inc.	NanoSonic
14:35-14:55	Eastern		Mr. Eric Lasker	Varda Space Industries	Varda Space Industries

## Wednesday, 15 September 2021

Time	Time Zone		Name	Representing	Topic
10:00-10:15	Eastern		Dr. Brett Pokines	AFOSR	Agile Science for Test and Evaluation
10:15-10:30	Eastern		Dr. Elisabetta L. Jerome, Technical Advisor for Armament and Weapons Test & Evaluation	AFTC	Air Force Test Center
10:30-11:00	Eastern		Dr. Kerianne Hobbs	Autonomy Capability Team (ACT3) AFRL	Safe Reinforcement Learning Benchmark Environments for Aerospace Control Systems
11:00-11:15	Eastern		<b>Break</b>		
11:15-11:45	Eastern		Drs. Richard Murray/Aaron Ames	CALIFORNIA INSTITUTE OF TECHNOLOGY	Formal Methods for V&V and T&E of Autonomous Systems
11:45-12:15	Eastern		Dr. Ricardo Sanfelice	UNIVERSITY OF CALIFORNIA SANTA CRUZ	Verification and Validation of Autonomous Systems with Hybrid Dynamics
12:15-12:45	Eastern		Dr. Laura Humphrey	Aerospace Systems Directorate	V&V of Autonomy Algorithms
12:45-13:30	Eastern		<b>Lunch</b>		
13:30-14:00	Eastern		Dr. Parasara Sridhar Duggirala	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	Enhanced Testing of Autonomous Systems using Formal Methods
14:00-14:30	Eastern		Dr. Stanley Bak	Stony Brook University	The Science of Fuzz Testing Autonomous Cyber-Physical Systems
14:30-15:00	Eastern		Dr. Leslie M. Blaha	AFRL/ RHAC embedded at Carnegie Mellon University	An Analytic Framework Enabling Comparison of Major Theoretical Frameworks in Sequential Decision-Making
15:00-15:30	Eastern		Dr Jeffrey Riffell	University of Washington	Miniature Autonomous Odor-Guided Flight Vehicles Test and Evaluation
15:30-15:45	Eastern		<b>Break</b>		
15:45-16:15	Eastern		Dr. Helen Durand	WAYNE STATE UNIVERSITY	Optimization-Based Materials Design and Manufacturing
16:15-16:45	Eastern		Dr. Adel Alaeddini	University of Texas at San Antonio	An Active Learning Methodology for Design and Optimization of Complex Expensive Tests

## Thursday, 16 September 2021

Time	Time Zone		Name	Representing	Topic
10:00-10:30	Eastern		Mr. Jae Kwak	Virginia Tech Applied Research Corporation	Air Force Office of Scientific Research DURIP Reflections
10:30-11:00	Eastern		Dr. Kenneth Yu	University of Maryland	Hypersonic Center of Testing Excellence for Fostering Future Test & Evaluation Workforce
11:00-11:30	Eastern		Dr. Ronald Hanson	LELAND STANFORD JUNIOR UNIVERSITY	Fundamental Aspects of NO IR Spectroscopy in High T and P Air
11:30-12:00	Eastern		Dr. Thomas Ward	IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY	Development of Novel Molecule-Based Measurement Techniques to Characterize Aero-Thermo-Elastic Interactions of Super-/Hyper-sonic Flows and Solid Surfaces
12:00-12:45	Eastern		<b>Lunch</b>		
12:45-13:15	Eastern		Dr. Vinod Kumar	UNIVERSITY OF TEXAS AT EL PASO	Need for CFD Modeling of Water Braking Phenomena at the Holloman High Speed Test Track
13:15-13:45	Eastern		Dr. Saba Mudaliar	AFRL/Rymf	cope and Feasibility Study of Laser Telemetry on Hypersonic Air Vehicles
13:45-14:15	Eastern		Dr. Demoz Gebre-Egziabher	UNIVERSITY OF MINNESOTA	HyCUBE: A Reconfigurable CubeSat-Like Platform for Hypersonic Flight Testing
14:15-14:45	Eastern		Dr. Ryan Caverly	UNIVERSITY OF MINNESOTA	On-the-Fly Flight Test Maneuver Optimization and Nonlinear Modeling of Hypersonic Systems
14:45-15:00	Eastern		<b>Break</b>		
15:00-15:30	Eastern		Dr. Christine Hartzell	University of Maryland	Ground-based Test and Evaluation of Pinned Plasma Solitons Generated by Orbital Debris
15:30-16:00	Eastern		Dr. Jeffery Allen	MUNITIONS DIRECTORATE	Hardware Assurance Research for Verification Enabling Security Test and Evaluation for Cybersecurity
16:00-16:30	Eastern		Dr. Taylor Barton	UNIVERSITY OF COLORADO	Reconfigurable Transmitters for Test & Evaluation with Integrated Thermal Monitoring and Control
16:30-17:00	Easter		Dr. Stavros Georgakopoulos	FLORIDA INTERNATIONAL UNIVERSITY	Highly Efficient Wireless Power Transfer and Data Transmission Methods

## Friday, 17 September 2021

Time	Time Zone		Name	Representing	Topic
09:30-10:00	Eastern		Dr. Jeroen van Kan	NATIONAL UNIVERSITY OF SINGAPORE	Evaluating high resolution in vivo proton imaging at nanoscale aiming to set up liquid cell proton microscopy
10:00-10:30	Eastern		Dr. John Schaibley	University of Arizona	Towards single photon transistors with 1D and 2D materials
10:30-11:00	Eastern		Dr. Patrick Roblin	OHIO STATE UNIVERSITY	Modeling of Traps and Additive Phase Noise in Ultra-Wide Band-Gap Semiconductor Technology
11:00-11:30	Eastern		Dr. Austin Minnich	CALIFORNIA INSTITUTE OF TECHNOLOGY	Towards the quantum noise limit in microwave amplifiers: a first-principles study of hot electron noise
11:30-12:00	Eastern		Dr. Katayun Barmak	COLUMBIA UNIVERSITY	Thermoelectric Phenomena in Quasi-One-Dimensional Metals
12:00-12:45	Eastern		<b>Lunch</b>		
12:45-13:15	Eastern		Dr. Paras Prasad	RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK	Design, Fabrication, and Testing of Revolutionary New Generation Hybrid 2-D Magneto-Optic Materials
13:15-13:45	Eastern		Dr. Ryan Berke	UTAH STATE UNIVERSITY	High-Throughput Characterization of High Cycle Fatigue for Extreme Temperature
13:45-14:15	Eastern		Dr. Riccardo Bevilacqua	Embry-Riddle Aeronautical University	Machine learning based transfer to predict warhead in-flight behavior from static arena test data
14:15-14:45	Eastern		Dr. Paul Sotirelis	SENSORS DIRECTORATE	Exploring Fusion and Autonomous Applications of Radar Polarimetry
14:45-15:00	Eastern		<b>Break</b>		
15:00-15:30	Eastern		Dr. Donald Kunz	US DEPT OF AIR FORCE	Basic Research with Integrated Flight Test
15:30-16:00	Eastern		Dr. Choon Tan	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Physics and Management of Aerothermal-Mechanical Interactions for Enabling
16:00-16:30	Eastern		Dr. Sukwon Choi	Pennsylvania State University	Thermal Mechanical Investigation of Ultra Wide Bandgap Materials and Devices
16:30-17:00	Eastern		Dr. Steven Schneider	PURDUE UNIVERSITY	Towards Experimental Measurements of Boundary-Layer Transition at the Holloman Test Track