**Monday (Jan 31 - Day 1)**

**\*\*\*All times are listed in MST\*\*\***

**Tutorial Workshops**

0700 Registration

**TBD:**

0800 Tutorial Workshop I- **T&E of HEL Systems (Lim Dis C)** (TBD)

1200 Lunch on Own

1300 Tutorial Workshop II- **Intro to DoD T&E Process (Lim Dis D) (JTO)**

# TBD:

0800 Tutorial Workshop III – **T&E of HPM Systems (Lim Dis C) (Schleher)**

1200 Lunch on Own

1300 Tutorial Workshop IV – **DE Design of Test (Lim Dis D) (Isbell/Newton)**

# TBD:

0800 Tutorial Workshop V – **Introduction to Cybersecurity T&E (Open) (Virtual)** (TBD)

1200 Lunch on Own

1300 Tutorial Workshop VI - **TENA & JMETC for Distributed Systems Engineering (Open) (Hudgins)**

**Tuesday (Feb 1 - Day 2)**

0700 **Registration Desk Opens**

**Continental Breakfast in the Exhibit Area**

0800 **Welcome**

Mr. Edward Trzcienski, 2022 Conference Program Co-Chair

Posting of the Colors and National Anthem

0815 Opening Remarks: ITEA President, Peter Crump – (PENDING)

DEPS Executive Director, Mr. Mark Neice

0830 U.S. Senator Martin Heinrich (D-N.M.) (Video) (Introduction by Trzcienski) – (PENDING)

0835 George Rumford, Deputy Director of Test Resource Management Center (PENDING) (Introduction by Winchester) (PENDING)

0915 OPEN (PENDING)

1000 **Break**

1030 ***TBD*** (PENDING) (Introduction by Winchester) (PENDING)

1115 Maj. Gen. James Sears, AFOTEC Commander (Confirmed) (Introduction by Mark Neice)

1200 Mr. Mark Henderson– Conference Technical Program Co-Chair: Announcements and Introduction to Afternoon Technical Sessions, Introduction of Lunch Speaker

1200 **Lunch**

STEAM Speaker,Steve Woffinden

1300 **Technical Track Sessions**

**Measurement and Calibration *(******Location TBD)***

**Session Chair: Dr. Subrata Sanyal (NSWC Corona)**

*(Lim Dis/Export Controlled to Open)*

1300 - **Expanding Capabilities of HEL Target Boards to Meet Optical Dazzler Laser Testing Needs (Unclassified, Dist C, Export Controlled)** Caleb Hoover, SemQuest

1330 - **Comparison of High Energy Laser Primary Standards (Unclassified, Dist C, Export Controlled)** Tam Vo, NSWC Corona

1400 - **DoD HPM and HPRF Weapons: METCAL support (Unclassified, Dist C)** Ignacio Espinosa, NSWC Corona

1430 - **Establishing METCAL Support for Atmospheric Characterization Instruments for HEL propagation (Unclassified, Dist C)** Kevin Janosky, NSWC Corona

1500 - Break

1530 – **Navy METCAL and ATWG: DE Measurement Confidence (Unclassified, Dist C)** Subrata Sanyal, NSWC Corona

1600 - **Demonstration of High-Accuracy Characterization of Combined Laser Beams for Operation at 100 kW and Beyond** **(Unclassified, Dist A)** Tam Vo, NSWC Corona

1630 - **Characterization of High Energy Laser Systems using External and Internal Photodiode Power Monitors (Unclassified, Dist A)** Tam Vo, NSWC Corona

1700 - **Conference ends for the day**

**T&E Capabilities for Directed Energy Systems 1 *(Location TBD)***

**Session Chair: Mr. Alex Clark (Blue Halo LLC)**

*(Lim Dis/Export Controlled to Open)*

1300 **– Deployment of DELTA-Wx Deep-Learning Field Terminals for HEL Weapon Prototype Testing and Experimentation (Unclassified/Dist D/Export Controlled)** Matthew Whiteley, MZA Associates Corporation

1330 **- Scaling HEL Characterization with the Small Measurement and Analysis System (SMASH) (Unclassified/Dis D/Export Controlled)** Dr. John Mason, Radiance Technologies

1400 **– Differences between KE testing and DE testing (Unclassified/Dist D/Export Controlled)** David Loomis, DNL Consulting (Pending)

1430 **– HEL-PETT M&S software platform for predictive performance analysis of HEL DE systems (Unclassified/Dist C/Export Controlled)** Stephen Nowalk, II-VI Aerospace & Defense

1500 **- Break**

1530 **– Recoverable, Reusable Airborne Engagement (RRAE) (Unclassified/Dist C/Export Controlled)** William White, Verus Research

1600 **- Remote Target Status Sensor (RTSS) (Unclassified/Dist C)** James Barlow, Verus Research

1630 **- New tools and opportunities provided by the fourth generation of optics for metrology (Unclassified/Dist A)** Nelson Tabiryan, BEAM Engineering for Advanced Measurements Co.

1700 **- Conference ends for the day**

**HPM Sensors and Sources 1 (*Location TBD)***

**Session Chair: Mr. Jeff Schleher (American Systems)**

*(Open Dis A to Limited Distribution/Export Controlled)*

1300 - **Introduction to Developing High Power RF Sources (Unclassified/Dist A)** Jeffrey Schleher, American Systems

1330 - **Introduction to High Power RF Sensors and Data Acquisition Systems (Unclassified/Dist A)** Jeffrey Schleher, American Systems

1400 - **HPM Sensor on Instrumented sUAS Update (Unclassified/Dist C/Export Controlled)** Mark Henderson, AEgis Technologies a Blue Halo Company

1430 - **Time- vs. Spectral-Domain Magneto-Optic Sensing for HEMP- and HPM-Induced Current Effects (Unclassified/Dist C/Export Controlled)** John Whitaker, Advanced Fiber Sensors, Inc.

1500 - Break

1530 - **Development and Test of a UAS-Borne HPM Acquisition and Recording Capability (HARC) (Unclassified/Dist D/Export Controlled)** Michael Kranz, Kratos Defense

1600 - **HPM T&E field tests using nonintrusive, three-axis electro-optic field probes (Unclassified/Dist C/Export Controlled)** Dong Ho Wu, Naval Research Laboratory

1630 - **HPM Beam Evaluation Tool (HBET) (Unclassified/Dist C)** Laury Decker, Verus Research

1700 - **Conference ends for the day**

**Atmospheric Characterization & Effects** **1 *(Location TBD)***

**Session Chair: Dr. Steve Hammel (NIWC Pacific)**

*(Limited Distribution/Export Controlled to Lim Dis C)*

1300 - **Development and Test of a Tethered Flying DE Atmospheric Monitoring and Scoring System (****Unclassified/Dist D/Export Controlled)** Michael Kranz, Kratos Defense

1330 **- Optical Turbulence Comparisons Between Operational Mesoscale Numerical Weather Prediction and Measurements Collected on The Potomac River Test Range (Unclassified/Dist D/Export Controlled)** Jordan McCammon, Naval Surface Warfare Center Dahlgren Division

1400 **– ATMOS: Atmospheric Turbulence Measurement Event (Unclassified/Dist D/Export Controlled)** Svetlana Lachinova, II-VI Aerospace & Defense

1430 **- Propagation path characterization with the High Energy Laser Performance Estimation Test Technology (HEL-PETT) computational platform based on numerical weather prediction data** **(Unclassified/Dist C/Export Controlled)** Mr. Theron Henderson, Scientic Inc.

1500 **- Break**

1530 **- Atmospheric and Propagation Measurements on Churchill Test Range (Unclassified/Dist C)** William Filkoski, Naval Surface Warfare Center Dahlgren Division

1600 **- Use of aerosol extinction and optical turbulence from NWP enhanced with nodal/point sonic anemometer and particle count measurements for HEL propagation** **(Unclassified/Dist C)** Dr. Steven Fiorino, Air Force Institute of Technology

1630 **- The High Energy Laser Atmospheric Characterization System (HACS) – Real-time atmospheric characterization for HEL Test and Evaluation support (Unclassified/Dist C)** Don Harris, Georgia Tech Research Institute (GTRI)

1700 **- Conference ends for the day**

**Implications of Using Conceptual,**

**Developmental, and Operational Prototypes (****Location TBD)**

**Session Chair: Dr. Chris Valenta (Georgia Technology Research Institute (GTRI)**

*(Limited Distribution/Export Controlled to Open)*

1300 **- Integrating Airspace Awareness for Enhanced DE Performance (Unclassified/Dist D/Export Controlled)** Samuel Gutierrez, Gryphon Technologies, DE-JTO SETA

1330 **- WSMR 19 Thermal Blooming: LBADS Measurements vs HELCOMES and ACS Analysis** **(Unclassified/Dist C/Export Controlled)** Bo Henderson, Scientic Inc.

1400 **- Dual Receiver Turbulence Lidar (Unclassified/Dist C/Export Controlled)** Sivanesan Ponniah, Intellisense Systems

1430 **- Counter Directed Energy Warfare Strategies, Solutions and Tactics – Pathways for Experimentation and Prototyping (Unclassified/Dist D)** Bonnie Worth Johnson, Naval Postgraduate School

1500 **- Break**

1530 **- Design, Build, & Operation of a Recoverable Surrogate MANPADS for Testing Aircraft Survivability Equipment (Unclassified/Dist A)** Anthony Lanza, Blue Halo LLC

1600 **-**

1630 **-**

1700 **- Conference ends for the day**

1730 **Reception with Exhibitors**

**Wednesday (Feb 2 - Day 3)**

0700 **Registration Desk Opens**

**Continental Breakfast in the Exhibit Area**

0800 Welcome: Ms. Whitney Winchester, 2022 Joint Conference Program Co-Chair

Posting of the Colors and National Anthem

Introduction and Sendoff for the STEAM Competition Teams

0815 **STEAM Competition -** Begins in the Ballroom E

Participating schools include:

**Middle Schools**

Cien Aquas International School

Bosque School

Albuquerque Institute for Mathematics and Science (AIMS)

**High Schools**

Albuquerque High School

West Mesa High School

Technology Leadership High School

Albuquerque Institute for Mathematics and Science (AIMS)

0815 Marcia Holmes, Deputy Director for Hypersonics, Directed Energy, Space and Rapid Acquisition, Army Rapid Capabilities and Critical Technologies Office (RCCTO) (PENDING) (Introduction by Jay Vaughan) (PENDING)

0900 Dr. Kelly Hammett, Director, Air Force Research Laboratory Directed Energy Directorate (Pending) (Introduction by Trzcienski)

0945 **Break – Extended, Attendees to walk the STEAM Competition in *(Location TBD)***

1030 **Panel on Testing Lessons Learned and Suggested Improvements for Rapid Prototyping / Rapid Acquisition**

Moderated by – **TBD** (Pending), Lead, Army Range Oversight for T&E Resources, Test Resource Management Center

***Panelists:***

TBD – AFRL (Pending)

TBD – USSPACECOM (Pending)

Steve Squires – WSMR (Pending)

TBD – AFLCMC (Pending)

**NOTE: Panel for 90 Minutes**

1200 Dr. Tim Andreadis – Conference Technical Program Co-Chair: Announcements and Introduction to Afternoon Technical Sessions

1200 **Lunch**

**STEAM Co-Chairs**, Announcement of STEAM Competition Awards

1330 **Technical Track Sessions**

**HPM Sensors and Sources 2 (*Location TBD)***

**Session Chair: Mr. Jeff Schleher (American Systems)**

*(Limited Distribution C/ Export Controlled)*

1300**- New Sources - Supporting MIL STD 464C and 464D Testing (Unclassified/Dist C)** Jeffrey Schleher, American Systems

1330 **- S-Band Test and Evaluation Source (STES) (Unclassified/Dist** **C/Export Controlled)** Daniel Szenasi, Verus Research

1400 **- Joint Agile Non-kinetic Upgradeable System (JANUS) Project (Unclassified/Dist C/Export Controlled)** John Osowski, Verus Research

1430 **- High Average Power Pulsed (HAPP) Project (Unclassified/Dist C/Export Controlled)** Jonathon Heinrich, Verus Research

1500 **- Break**

1530 **- Update and Delivery of an Advanced Wide Band Test System for Supporting Test and Evaluation (****Unclassified/Dist C/Export Controlled)** Matthew Lara, Verus Research

1600 **-**

1630 **-**

1700 **- Conference ends for the day**

**Atmospheric Characterization & Effects 2 *(Location TBD)***

**Session Chair: Dr. Steve Hammel (NIWC Pacific)**

*(Limited Distribution/Export Controlled to Open)*

1300 **- ATMOS: Atmospheric Turbulence Measurement Event** **(Unclassified/Dist D/Export Controlled**) Bo Henderson, Scientic Inc.

1330 **- Atmospheric characterization efforts for laser weapon testing on the Potomac River Test Range (PRTR) at the** **Naval Surface Warfare Center Dahlgren Division (NSWCDD) (Unclassified/Dist D/Export Controlled)** Evan Bates, Naval Surface Warfare Center Dahlgren Division (NSWCDD)

1400 **- Verification and Validation Efforts for sUAS DEW Profiler (Unclassified/Dist D)** Alex Clark, Blue Halo LLC

1430 **- Near Surface Maritime Atmospheric Measurements for LASER Test and Evaluation (Unclassified/Dist A)** Robi Garcia, Naval Air Warfare Center, Weapons Division (NAWCWD)

1500 **– Break/ Session Ends**

**HEL Sensors & Sources *(Location TBD)***

**Session Chair: Mr. Roger Russell (AEgis Technologies, A Blue Halo Company)**

*(Limited Distribution/Export Control)*

1300 **- Design and development of a ball calorimeter for range testing of 150 kW class laser systems (Unclassified/Dist C/Export Controlled)** Andrew Hall, Blue Halo LLC

1330 **- Design and development of a beam profiling system for range testing of 150 kW class laser systems (Unclassified/Dist C/Export Controlled)** Andrew Hall, Blue Halo LLC

1400 **-**

1430 **-**

1500 **– Break**

**T&E Best Practices for DE Systems**

**Dr. Sean Ross and Bryan Kelchner**

*(Limited Distribution)*

1530 - 1700 **(TBD)**

The Test and Evaluation team of the AIAA-DEPS committee will conduct a workshop on Test and Evaluation best practices for airborne laser systems and we want your help and insight! We have developed a taxonomy ranging from subcomponent to flight systems and using facilities from M&S to large test ranges. The document includes the full range of requirements that can be levied on a system from platform loads to system performance. Goal is to publish a document which can become the nucleus of an industry T&E standard. We have identified the full taxonomy but have only written about a third of the sections so far. What we are hoping for is audience feedback on what we may have missed and volunteers and nominations of who can help us write the rest of the sections. This will be a real-time working session.

**Designing Experimentation with Modeling & Simulation *(Location TBD)***

**Session Chair: Dr. Roger Campbell Jr. (Georgia Technology Research Institute (GTRI)**

*(Open to Limited Distribution/Export Controlled)*

1300 ***–* Simulation of High Energy Laser Discharge Signatures (Unclassified/Dist A)** Philip Cheney, Battelle

1330 **- Validation and development of models for near field laser propagation through realistic turbulence: theory, experiments, and models (Unclassified/Dist A)** Diego Donzis, Texas A&M University

1400 **- Designing and Implementing DEW Target Acquisition and Engagement Model for Prototype Development (Unclassified/Dist D/Export Controlled)** Roger Campbell, Georgia Technology Research Institute (GTRI)

1430 **- Creating a Predictive Modeling and Simulation Baselining Method for the Directed Energy Weapons Mission Analysis Tool Set (DEWMATS) (Unclassified/Dist D/Export Controlled)** Daniel Levy, Georgia Technology Research Institute (GTRI)

1500 **- Break**

1530 **- Nexus: A DoD Web Application for Optical Propagation Analysis, Operations, and Test Planning (Unclassified/Dist D/Export Controlled)** Yakov Diskin, MZA Associates Corporation

1600 **- Testing an Optical Inertial Refence Unit (OIRU) (Unclassified/Dis D/Export Controlled)** Edwin Ahn, Air Force Research Laboratory

1630 **-**

1700 **- Conference ends for the day**

**Thursday (Feb 3)**

**Session Chair: Dr. Sean Ross, AFRL (Offsite Location)**

**Classified Sessions (Some Pending Travel Approvals)**

0700 **Registration Desk Opens**

**Continental Breakfast**

0730 **Buses to the Offsite Location**

0830 **Using Design of Experiments Methodologies for Scenario Agnostic Evaluation of HEL Capabilities**

0900 **Directed Energy Utility Concept Experiments**

0930

1000 **Break/Session Ends**

**Host Hotel**

Albuquerque Marriott Pyramid North  
5151 San Francisco Road NE   
Albuquerque, NM  87109  
[*(505) 821-3333*](https://www.google.com/search?q=marriott+pyramid&sxsrf=AOaemvIno1dwjkpG4DRStu1EOJmcuLfhzQ%3A1637701213740&ei=XVadYe7DLNfRtQatyKroAw&gs_ssp=eJzj4tZP1zcsScmrSDazMGC0UjWosDA3MjI3MUk2sLRItTBNsrQyqDBJNDBJSzFMskhLtjC3SEvxEshNLCrKzC8pUSioLErMzUwBALh4FUI&oq=marriott+py&gs_lcp=&sclient=gws-wiz)