

Technical Program



Joint Conference on T&E Support to Prototyping & Experimentation

Hosted by
International Test and
Evaluation Association
and
Directed Energy
Professional Society

27 - 30 January 2020

MONDAY

Short Courses / Tutorials

0700 Registration

0800 Morning Tutorials Begin

TUTORIAL I (Limited Distribution C)

T&E of HEL Systems

Dr. Larry McKee

TUTORIAL II (Limited Distribution C)

T&E of HPM Systems

Dr. Jeff Schleher

TUTORIAL III (Limited Distribution D)

Combat Systems Engineering of DEWs T&E

Douglas H. Nelson

1200 Lunch

1300 Afternoon Tutorials Begin

TUTORIAL IV (Limited Distribution D)

**Design of Tests for Transitioning DE Weapon
Systems to Acquisition Programs for Warfighter
Fielding**

Robert Newton

TUTORIAL V (Limited Distribution D)

Introduction to the DoD Test & Evaluation Process

Harry Sinsheimer

TUESDAY MORNING

Plenary Session

Ballroom A-C

- 0700 **Registration Desk Opens**
Continental Breakfast in the Exhibit Area
- 0800 **Welcome**
Mr. Edward Trzecienski, 2020 Conference Program Co-Chair
Posting of the Colors and National Anthem
- 0815 **Opening Remarks**
ITEA Vice President
Mr. Mark Neice, DEPS Executive Director
- 0830 **Remote Video Remarks**
U.S. Senator Martin Heinrich (D-N.M.)
- 0835 *Mr. Tim Dare, Deputy Director, Developmental Test, Evaluation and Prototyping*
- 0915 *Dr. Kelly Hammett, Director, Air Force Research Laboratory Directed Energy Directorate*
- 1000 **Break**
- 1030 *Dr. Michael Jirjis, DEW Experimentation Campaign, AF Strategic Development Planning & Experimentation (SDPE)*
- 1115 *TBD*
- 1200 **Announcements and Introduction to Afternoon Technical Sessions**
Introduction of Lunch Speaker
Mr. Mark Henderson, Conference Technical Program Chair
- 1200 **Lunch**

TUESDAY AFTERNOON

Measurement and Calibration

Session Chair: *Dr. Subrata Sanyal*, Naval Surface Warfare Center

Ballroom A

- 1300 **Emerging Metrology RDT&E Supporting Electric Weapons (C)**
Subrata Sanyal, Naval Surface Warfare Center
- 1330 **HPM and HPRF Weapons: METCAL Support (C)**
Andrew Doan, Naval Surface Warfare Center
- 1400 **Empirical Derivation of Power Measurement Scaling Factor for Beam Irradiance on Target System (BITS) utilizing Novel In-situ Primary Standard (C)**
David Ward, SemQuest
- 1430 **METCAL Support to HEL Atmospheric Characterization Efforts (C)**
Kevin Janosky, Naval Surface Warfare Center
- 1500 **Break**
- 1530 **Toward Zero Chain Traceability by GPS (A)**
John Lehman, NIST
- 1600 **In the QUEST for Fundamentally New SI-Traceable Electric Field and Power Measurement Techniques: From Atoms to Radiation Pressure (A)**
Chris Holloway, NIST
- 1630 **LIDAR Calibration for Directed Energy Atmospheric Characterization (A)**
Christopher Valenta, Georgia Tech Research Institute
- 1700 **Session Adjourns**
- 1730 **Exhibitors Reception**

TUESDAY AFTERNOON

HPM Sensors and Sources 1

Session Chair: *Jeff Schleher*, American Systems

Ballroom B

- 1300 **Directed Energy Test Science and Technology Developmental Projects 2019-2020 (A)**
Jeff Schleher, PEO STRI
- 1330 **Directed Energy Test Science and Technology High Power Microwave Instrumentation for Aerial Platforms (HIAP) (C)**
John Sanchez, Verus
- 1400 **Enhanced Sensor Network Array (C)**
Dustin Jones, Verus
- 1430 **Vertical Sensor Network Array (C)**
Laury Decker, Verus
- 1500 **Break**
- 1530 **In-Situ Measurement of Induced Currents with Minimized Interference (D)**
John F. Whitaker, Advanced Fiber Sensors, Inc.
- 1600 **Comparison of a D-dot Sensor with a Non-intrusive Three-axis Electro-optic Field Sensor for HPM, HPRF, and EMP Test and Evaluation (A)**
Dong Wu, NRL
- 1630 **Session Adjourns**
- 1730 **Exhibitors Reception**

TUESDAY AFTERNOON

Atmospheric Effects

Session Chair: *Steve Hammel*, NIWC Pacific
Ballroom C

- 1300 **Atmospheric Sensor Development at SMDC (D)**
Jay Land, US Army-SMDC
- 1330 **High Energy Laser Requirements Validation System for Characterizing the DE-MSHORAD Prototype Systems (D)**
Brett Hokr, Radiance Technologies
- 1400 **Nodal Atmospheric Characterization Payload for Directed Energy Testing Development and Results (D)**
Alex Clark, IERUS Technologies
- 1430 **T&E Instrumentation for EO/Laser Systems Modeling and Simulation (D)**
Bryan Kelchner, Teknicare
- 1500 **Break**
- 1530 **New Developments of a METCAL-Focused M&S Effort for HEL Propagation (C)**
Joseph Fiordilino, Naval Surface Warfare Center
- 1600 **Measured At-Sea Path Transmission and Turbulence with Comparison to Numerical Weather Prediction (A)**
Galen Cauble, Naval Information Warfare Center
- 1630 **Laser Propagation Diagnostics for HELS at Low Elevations - The Need for Greater Precision (A)**
Martin Richardson, University of Central Florida
- 1700 **Session Adjourns**
- 1730 **Exhibitors Reception**

WEDNESDAY MORNING

Plenary Session

Ballroom A-C

- 0700 **Registration Desk Opens**
Continental Breakfast in the Exhibit Area
- 0800 **Welcome**
Mr. Patrick Cannon, 2020 Joint Conference Program Co-Chair
- Posting of the Colors and National Anthem**
- Introduction and Sendoff for the STEAM Competition Teams**
- 0815 **STEAM Competition Challenge (Ballroom E)**
- 0815 *Mr. George Rumford*, Principal Deputy Director, Test Resource Management Center
- 0900 *Ms. Marcia Holmes*, Deputy Director for Hypersonics, Directed Energy, Space and Rapid Acquisition, Army Rapid Capabilities and Critical Technologies Office (RCCTO)
- 0945 **Extended Break - Attendees to walk the STEAM Competition in Ballroom E**
- 1030 **Panel: High Energy Laser Testing - Addressing Future Demand Signal and Challenge**
- Moderator: *Marty Arnwine*, Lead, Army Range Oversight for T&E Resources, Test Resource Management Center
- Panelists:**
Michelle Hedrick, AFRL
Lt Col Douglas Hale, USSPACECOM
Roberto Garcia, NAWC-WD
Steve Squires, WSMR
- 1200 **Announcements and Introduction to Afternoon Technical Sessions**
Mr. Mark Henderson, Conference Technical Program Chair
- 1200 **Lunch**
Announcement of STEAM Competition Awards by STEAM Co-Chairs

WEDNESDAY AFTERNOON

T&E Capabilities

Session Chair: *Whitney Winchester*, PEO-STRI

Ballroom A

- 1330 **TENA & JMETC for Distributed T&E Experimentation (C)**
Gene Hudgins, TRMC
- 1400 **Lethality, M&S / AP TAWG / T&E Technical Interface Meetings (TIMS) (D)**
David Loomis, DNL Consulting
- 1430 **Directed Energy Systems Integration Laboratory - MILCON P777 (A)**
Marcos Gonzales, NSWC PHD
- 1500 **TBD**
- 1530 **Break**
- 1600 **Extended Laser Propagation Testing Capabilities at the TISTEF Laser Range on Merritt Island (A)**
Robert Bernath, University of Central Florida
- 1630 **Mobile High Energy Laser Measurement (MHELM) and DE Instrumentation (A)**
Raquel Astorga, TRMC
- 1700 **Modeling and Simulation of Blue Aircraft Survivability to HEL Irradiation (MSAS) - Thermal Propagation, Penetration, and Testing Update (A)**
Ron Dexter, SURVICE
- 1730 **Session Adjourns**

WEDNESDAY AFTERNOON

HPM Sensors and Sources 2

Session Chair: *Jeff Schleher*, American Systems

Ballroom B

- 1330 **Development of an Advanced Wide Band Test System for Supporting Test and Evaluation (C)**
Matt Lara, Applied Physical Electronics LC
- 1400 **Joint Agile Non-kinetic Upgradeable System (D)**
John Osowski, Verus
- 1430 **Solid State Replacement for Traveling Wave Tube Transmitter (A)**
Joseph Hurst, Georgia Tech Research Institute
- 1500 **TBD**
- 1530 **Session Adjourns**

WEDNESDAY AFTERNOON

HEL Sensors & Sources

Session Chair: *Roger Russell*, AEGIS Technologies
Ballroom C

- 1330 **Measuring Phase and Amplitude at the Aperture with a Big Aperture Shack Hartmann (D)**
Brett Hokr, Radiance Technologies
- 1400 **HEL Sensor Characterization over Wavelength and Temporal Variation (C)**
David Ward, SemQuest
- 1430 **HEL Test of a Target Board Posing as a Representative Threat (C)**
Caleb Hoover, SemQuest
- 1500 **sUAS Target Board Project (D)**
James Luke, AEGIS
- 1530 **Break**
- 1600 **Characterization of High Energy Laser Systems' Internal Power Detectors (C)**
Tam Vo, NSWC Corona, CA
- 1630 **Measuring High Power Lasers with Radiation Pressure - Accomplishments, Status, and the Path Forward (A)**
Paul Williams, NIST
- 1700 **Evaluation of InGaAs and HgCdTe Cameras and SWIR-band Laser Technologies to Support Next-generation Pulsed Tracking Illuminator Systems (A)**
Cameron Martus, Areté
- 1730 **Session Adjourns**

THURSDAY

Classified Session

Session Chair: *Dr. Diana Loree*, DE JTO

Offsite Location

- 0700 Registration Desk Opens
Continental Breakfast
- 0730 Buses to the Offsite Location
- 0830 Changing System Output Parameters, How
Improvements in Source Technology Will
Change Testing Requirements
- 0900 HPM Sensor on a Group 1 sUAS
- 0930 General T&E of HPM Systems, How
Improvements in Source Technology will
Change Testing Requirements
- 1000 Break
- 1030 HPM Radio Frequency Sensor
- 1100 AFRL Air-launched Missile Shoot-down
Results
- 1130 DE/EW ACC Advanced Programs
- 1200 Lunch at Offsite
- 1300 LASER Test and Evaluation on the Point
Mugu Sea Range: Evolution in Processes and
Products
- 1330 Phaser™ CUAS HPM System Design and
Demonstration
- 1400 Conference Adjourns

37th International Test and Evaluation Symposium

Test and Evaluation: Enabling
Acquisition and Capability Development

15 – 18 September 2020



Hosted by the ITEA
Central Florida Chapter



Tue, Sep 15 - Tutorials

Wed-Fri, Sep 16-18 - Plenary & Technical Sessions



DIRECTED ENERGY OUTREACH



Directed Energy to DC (DE2DC)

Sponsored by:

Joint Directed Energy Transition Office (DE JTO) and
Directed Energy Professional Society (DEPS)

Pentagon Courtyard & Rayburn Office Building

30 March -1 April 2020



JOIN US FOR THE

2020 DE SYSTEMS SYMPOSIUM
28 SEPTEMBER - 2 OCTOBER
WASHINGTON DC

Conference Organizers

Conference Co-Chairs

Pat Cannon, Edward Trzecienski

Conference Technical Chair

Mark Henderson

Tutorial Chair / Technical Program Coordinator

Cristina Crowson

Exhibits and Sponsorship Chair

Cynnamon Spain

STEAM Co-Chairs

Kathi Swagerty, Steve Woffinden

Conference Coordinator

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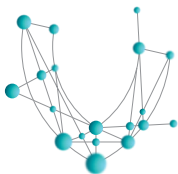
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