

7TH ANNUAL **DIRECTED ENERGY** SYMPOSIUM

SEPTEMBER 11-12, 2024 | NATIONAL HARBOR, MD



OFFICIAL AGENDA



UTILIZING DIRECTED ENERGY TO BOLSTER WARFIGHTING CAPABILITY

SYMPOSIUM OVERVIEW

Program Design & Goal:

The 7th Annual Directed Energy Symposium will convene leading experts, policymakers, leaders, and innovators across the Directed Energy community to explore the latest advancements and applications in directed energy systems and technologies to support the Warfighter and national defense objectives. Discussions at the event will provide valuable insights into the evolving landscape of directed energy warfare and the associated opportunities and challenges.

DoD is spending an average of \$1 billion a year to develop and test directed-energy weapons. According to Senior DoD officials, directed energy has matured to the point where it can be fielded and operationalized. Directed energy has the potential to help the U.S maintain its technological superiority over adversaries and defeat a multitude of aerial threats such as missiles and drones. This year's Symposium will highlight how DoD and the Military Services are working to develop directed energy systems and integrate them into offensive and defensive capabilities. A panel at the event will focus on developing and fielding high-powered microwaves. The 2024 event will explore current and future innovations, challenges, and benefits of integrating the technology onto the battlefield.

DSI's team specializes in the extensive research and development of our Symposium's content and focus areas. We will assemble the most respected minds in the Directed Energy community, including DoD, federal, and industry. Our non-partisan approach allows us to reach across all services and organizations to bring together a truly holistic group of decision makers and solution providers.

Operating Guidelines:

DSI's Symposium directly supports DoD, Military Services, & Industry priorities by providing a conduit for officials to efficiently reach audiences outside of their respective offices that directly impact their department's mission success, at no charge to the government, and in an efficient expenditure of time.

DSI's Symposium will provide a forum to address and improve internal and external initiatives, meet with and hear from partner organizations, disseminate vital capability requirements to industry, increase visibility within the larger community, and generally support their mission.

The Symposium is open and complimentary to all DoD and Federal employees and is considered an educational training forum, a widely attended gathering.

(Industry and academia members are charged a fee for admission)

Symposium is CLOSED TO PRESS / NO RECORDINGS

SYMPOSIUM OVERVIEW

General Target Audience:

U.S. Military Services, Government Agencies, Academia, and U.S. Technology Solution Providers and Contractors

Specific Topics to be Discussed Include:

- Supporting military readiness & modernization priorities
- Leading a technology-driven & mission focused approach to provide directed energy capabilities
- Expanding the use of directed energy to address emerging challenges & missile threats
- Accelerating the integration of directed energy capabilities across the DoD
- Addressing the C-UAS threat by deploying directed energy
- Developing directed energy weapon capability to support the surface force
- Delivering warfighting capabilities to support DoD mission success
- Harnessing high powered microwaves (HPMs) for next-generation warfare



SPEAKER OVERVIEW



Lt Gen Heath Collins, USAF
Director, Missile Defense Agency



Dr. Frank Peterkin, ST
Principal Director, Directed Energy, OUSD (R&E), DoD



RADM Theodore LeClair, USN
Deputy Commander, Naval Surface Forces, U.S. Pacific Fleet
Fleet Director, Task Force Littoral Combat Ship



Dr. Amy Smith-Carroll, SES
Director, Surface Warfare, Deputy Assistant Secretary of Defense for Platform & Weapon Portfolio, OUSD (A&S)



Dr. Neset Aközbek, ST
Senior Research Scientist for DE, Technical Center, U.S. Army Space & Missile Defense Command



CAPT Dave Stoner, USN
Deputy Director for Weapons and Sensors (N96), Office of the Chief of Naval Operations



Dr. Mark Spencer
Director, Joint Directed Energy Transition Office, Office of the Under Secretary of Defense for Research & Engineering



Dr. Donald Shiffler
Chief Scientist, Directed Energy Directorate, AFRL



Dr. Steve Fiorino
Director, Center for Directed Energy, Air Force Institute of Technology



Bonnie Johnson, PhD
Senior Lecturer, Systems Engineering, Naval Postgraduate School



Adam Clark
Principal Program Manager, HPM Weapons Systems Division, NSWC Dahlgren



Dr. John Mason
Physicist, Missile Defeat Directorate, U.S. Army Space & Missile Defense Command

8:00—8:45 **Registration and Light Breakfast Reception Open**

8:45—9:00 **Moderator's Opening Remarks**

Dr. James Trebes (Confirmed)

Former Principal Director, Directed Energy
OUSD (R&E)

9:00—9:40 **Expanding the Use of Directed Energy to Address Emerging Challenges & Missile Threats**

- Developing and sustaining the missile defense system to safeguard against growing threats
- Increasing sensing and tracking tools to combat threat proliferation
- Near-term initiatives utilizing directed energy for future missile defense

Lt Gen Heath Collins, USAF (Confirmed)

Director
Missile Defense Agency

9:40—10:20 **Developing Directed Energy Weapon Capability to Support the Surface Force**

- Accelerating the fielding of directed energy weapons on surface warships across the Pacific fleet
- Utilizing directed energy to increase offensive weapons on current and future platforms
- Expanding directed energy warfighting capabilities to counter and combat adversary drone activity in the Red Sea

RADM Theodore LeClair, USN (Confirmed)

Deputy Commander, Naval Surface Forces, U.S. Pacific Fleet
Director, Task Force Littoral Combat Ship

10:20—10:30 **Tech in Ten: High Power Amplifiers & Higher Frequency Alternatives, Both Beam Driven & Solid-State for HPM Applications**

Michael Worthington, Engineering Director, Stellant Systems (Confirmed)

10:30—11:10 **Networking Breaks & Exhibits— Sponsored by American Systems**

11:10—11:50 **Overseeing the Development & Integration of DE Weapon Systems & Technologies to Support Army Modernization Priorities**

- Advancing DE technologies to enhance Army operational capability and maintain technological superiority
- Guiding the testing and evaluation of DEW systems to ensure performance, safety, and operational effectiveness
- Ensuring DE technologies are effectively integrated into existing weapon systems and platforms

Shannon Murphy, SES (Invited)

Director, Weapons Portfolio
U.S. Army ASA-ALT R&T

11:50—12:30 Accelerating the Integration of Directed Energy Capabilities Across the DoD

- Advancing DE technologies from research and development to operational deployment
- Supporting DoD priorities to advance critical and emerging defense technologies
- Collaborating with academia, industry, and government partners to leverage DE capabilities to address emerging threats and warfighting needs

Dr. Mark Spencer (Confirmed)

Director, Joint Directed Energy Transition Office
Office of the Under Secretary of Defense for Research & Engineering

12:30—1:30 Networking Lunch

1:30—2:10 SMDC Perspective: Executing Research to Develop Critical Technologies & Enhance Defense Capabilities

- Managing science and technology, research and development, and conducting test programs for directed energy
- Overseeing the critical technologies enabling warfighter effectiveness in directed energy
- Increasing the development of laser weapons for combat and missile defense

Dr. Neset Aközbek, ST (Confirmed)

Senior Research Scientist for DE, Technical Center
U.S. Army Space & Missile Defense Command

2:10—2:50 Researching How Atmospheric Conditions Affect Directed Energy Weapons Effectiveness

- Progressing and applying directed energy weapons use to enhance Air Force capability
- Advancing laser and microwave technologies and improving the development of directed energy weapons
- Collaborating with military, government, industry, and academic partners to advance directed energy technology and its integration into Air Force warfighting capabilities

Dr. Steve Fiorino (Confirmed)

Director, Center for Directed Energy
Air Force Institute of Technology

2:50—3:00 Tech in Ten: Machined Silicon Carbide Optics & Structures— How to Leverage the Graphite Conversion Process

Hugo Vargas, Optics Product Manager, Entegris (Confirmed)

3:00—3:40 Networking Break & Exhibits

3:40—4:20 Expanding Naval Surface Warfare Capabilities to Ensure an Operational Advantage

- Identifying, evaluating, and integrating emerging technologies and innovations into surface warfare operations to enhance Naval warfighting capability
- Prioritizing investments in directed energy capabilities to accelerate development and deployment
- Challenges of laser weapon development and integration

CAPT David Stoner, USN (Confirmed)

Deputy Director for Weapons and Sensors (N96)
Office of the Chief of Naval Operations

4:20—5:00 NPS Perspective: Applying Innovative Tech to Support Directed Energy Weapon Systems

- Expanding the role of AI in DE weapon development to enhance warfighting capability
- Assessing the capabilities and limitations of advanced military DE system technologies in complex military operations
- Challenges of incorporating automation, artificial intelligence, and machine learning into DE warfare operations

Bonnie Johnson, PhD (Confirmed)

Senior Lecturer, Systems Engineering
Naval Postgraduate School

5:00

End of Day One

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SYMPOSIUM SCHEDULE

SEPTEMBER 12, 2024

8:15—8:45 **Registration and Light Breakfast Reception Open**

8:45—9:00 **Moderator's Opening Remarks**

Dr. James Trebes (Confirmed)
Former Principal Director, Directed Energy
OUSD (R&E)

9:00—9:40 **Leading a Technology-Driven & Mission Focused Approach to Provide Directed Energy Capabilities**

- Working to deliver advantages of DE technologies across all domains to ensure Joint Force operational success
- Prioritizing DE development and use across the DoD to expand warfighting capabilities
- Enhancing the defense industrial base to support future directed energy weapon production and deployment

Dr. Frank Peterkin, ST (Confirmed)
Principal Director, Directed Energy
OUSD (R&E), DoD

9:40—10:20 **Delivering Warfighting Capabilities to Support DoD Mission Success**

- Managing, analyzing, and informing acquisition and resourcing decisions in major platforms and weapons portfolio across the DoD
- Integrating directed-energy systems into offensive and defensive capabilities
- Addressing the C-UAS threat by expanding directed energy weapon implementation

Dr. Amy Smith-Carroll, SES (Confirmed)
Director, Surface Warfare, Deputy Assistant Secretary of Defense for Platform & Weapon Portfolio Management
OUSD (A&S)

10:30—11:00 **Industry Perspective**

11:00—11:30 **Networking Break & Exhibits**

11:30—12:30 Panel Discussion: Harnessing High Powered Microwaves (HPMs) for Next-Generation Warfare

Amid a constantly evolving threat environment, high-powered microwave (HPM) weapons have the potential to play a crucial role in defeating new threats, specifically aerial targets. HPM weapons can provide non-lethal means of neutralizing threats, disable enemy systems, and interrupt adversary communication capabilities. HPMs can provide new means of neutralizing threats and enhancing operational effectiveness in diverse mission scenarios. Panelists will discuss the development and deployment of HPM technology to the warfighter, future prospects and challenges of utilizing these capabilities as well as ethical considerations.

Moderator:

Dr. Edl Schamiloglu (Confirmed)

Director, Directed Energy Center, University of New Mexico

Panelists:

Martin Rivas (Confirmed)

Directed Energy Test & Evaluation Lead, NSWC Port Hueneme

Dr. Donald Shiffler (Confirmed)

Chief Scientist, Directed Energy Directorate, AFRL

Adam Clark (Confirmed)

Principal Program Manager, HPM Weapons Systems Division, NSWC Dahlgren

12:30—1:30 Networking Lunch

1:30—2:10 Developing DE Capabilities that Provide Warfighters a High-Tech Advantage at Sea

- Advancing high energy laser development and integration to enhance Naval warfighting capability
- Increasing naval platform protection, lethality, and survivability against a range of threats
- Overcoming laser weapon systems integration challenges to provide a lethal defense platform for the Navy

Zach Sherrod (Confirmed)

DE Software Systems Portfolio Manager
NSWC Dahlgren

2:10—2:50 Developing & Characterizing DE Weapon Systems that Support Army Modernization Efforts

- Guiding research, development, and engineering advancement in directed energy strategic weapons
- Supporting validation and testing of high energy laser components, subsystems, and systems to support Army operational needs
- Fostering collaboration and partnership with government and industry to achieve critical technological superiority against adversaries

Dr. John Mason (Confirmed)

Physicist, Missile Defeat Directorate
U.S. Army Space & Missile Defense Command

SYMPOSIUM SCHEDULE

SEPTEMBER 12, 2024

2:50—3:30

Researching Directed Energy to Support National Security Needs

- Developing innovative solutions to challenges posed by directed energy
- Providing R&D and trained personnel to the defense industry, government labs, and academic institutions
- Current research initiatives and future opportunities

Dr. Martin Richardson (Confirmed)

Director, Center for Directed Energy
University of Central Florida

3:30

End Of Symposium

