ETI EMERGING TECHNOLOGIES INSTITUTE | NDIA

# EMERGING TECHNOLOGIES FOR DEFENSE

## CONFERENCE & EXHIBITION

**Delivering New Capabilities to the Warfighter at Speed and Scale**

August 28 – 30, 2023 | Washington, DC | NDIA.org/EmergingTech

# Table of Contents



## Who We Are

The National Defense Industrial Association is the trusted leader in defense and national security associations. As a 501(c)(3) corporate and individual membership association, NDIA engages thoughtful and innovative leaders to exchange ideas, information, and capabilities that lead to the development of the best policies, practices, products, and technologies to ensure the safety and security of our nation. NDIA's membership embodies the full spectrum of corporate, government, academic, and individual stakeholders who form a vigorous, responsive, and collaborative community in support of defense and national security. For more than 100 years, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensuring our warfighters have the best training, equipment, and support. For more information, visit **NDIA.org**

EMERGING TECHNOLOGIES INSTITUTE

## Who We Are

### Supporting Emerging Technologies to Secure U.S. National Defense and Advance U.S. Economic Strength

The National Defense Industrial Association's Emerging Technologies Institute (ETI) performs research, hosts events, and bolsters public awareness through educational products and webinars focused on defense technology modernization and innovation. ETI also works to create a policy environment most conducive to the efficient development and delivery of new systems and technologies for the defense enterprise. ETI engages industry, academia, policymakers, and the public to explore emerging technologies' impact on national security and opportunities for industry-government partnerships to increase U.S. competitive advantage.

ETI reports, events, and workshops support NDIA's membership and the defense science & technology enterprise as part of its nonpartisan 501(c)(3) mission.

ETI was founded in 2021 and is staffed by researchers and subject matter experts and backed by a preeminent advisory board.

For more information, visit **EmergingTechnologiesInstitute.org**


## Join the Conversation

@EmergingTechETI | @EmergingTechETI | eti-emerging-technologies-institute | @EmergingTechETI/ | @EmergingTechETI

# WELCOME TO THE 2023 NDIA **EMERGING TECHNOLOGIES FOR DEFENSE** CONFERENCE & EXHIBITION

Welcome to the 2023 NDIA Emerging Technologies for Defense Conference & Exhibition. I am thrilled to have you here for our inaugural emerging technologies conference, and I believe that this event will be a real value-add to NDIA members, the Department of Defense, and the warfighter.

Over the next three days, you will hear from expert speakers and panelists from government, industry, and academia, all focused on one goal: delivering the new emerging technologies that will shape national security this century at speed and scale. Our programming features perspectives from researchers, the acquisitions and contracting community, the warfighting community, and more. These leaders, technical experts, and movers and shakers will talk about the different ways that our entire community can move technologies from the laboratory to theaters around the world.

With support from the Department of Defense, NDIA has selected some of the highest priority joint mission areas as the focus for this year's conference: counter-unmanned aerial systems, operational energy, and contested logistics. You will also see a distinct focus on "game changing technologies" such as microelectronics and artificial intelligence, which will be critical to the twenty-first century warfighter. Between the main stage programming, our breakout rooms, and the detailed set of abstracts posters and presentations we have received, we are deeply focused on solving problems to enable more advanced technologies to be fielded over the next three to five years. NDIA and I are also hopeful that you, as an attendee, will have the chance to network and find common cause with fellow industry leaders, technical experts, and business development officers to move the needle for our warfighting community. I am hopeful that you will find many chances to discuss your work, meet potential partners, and understand what role you play in developing and deploying these emerging technologies no matter where you sit in the defense ecosystem.

I would like to express my thanks to the entire NDIA team for building towards such an important conference, including our Emerging Technologies Institute (ETI). Finally, I would like to thank our exhibitors and event sponsors. Their support is integral to this conference's existence, so I urge you to learn more about their organizations' offerings. On behalf of NDIA, I hope you enjoy the conference and look forward to seeing you.

Sincerely,

**Maj Gen Arnold L. Punaro, USMC (Ret.)**
*Immediate Past Board Chair, NDIA*
*Chair, Advisory Board, NDIA Emerging Technologies Institute*

# Schedule at a Glance

## Sunday, August 27

**Registration Open**
Capitol Foyer • 1:00 – 6:00 pm

## Monday, August 28

**Registration Open**
Capitol Foyer • 7:00 am – 6:00 pm

**Networking Breakfast**
Capitol Foyer • 7:00 – 8:00 am

**Keynote**
Salon I, II • 8:20 – 9:00 am

**Networking Break in the Exhibit Hall**
9:00 – 9:30 am

**Lunch**
Exhibit Hall • 11:25 am – 12:25 pm

**Networking Break in the Exhibit Hall**
2:30 – 3:00 pm

**Closing Fireside Chat**
Salon I, II • 3:45 – 4:30 pm

**Networking Reception in the Exhibit Hall**
4:35 – 6:00 pm

## Tuesday, August 29

**Registration Open**
Capitol Foyer • 7:00 am – 6:30 pm

**Conference Programing**
8:00 – 5:25pm

**Fireside Chat**
Salon I, II • 8:10 – 9:10 am

**Exhibit Hall Opens**
9:00 am – 6:30pm

**Networking Break in the Exhibit Hall**
9:10 – 9:40 am

**Lunch**
Exhibit Hall • 11:50 – 12:50 pm

**Networking Break in the Exhibit Hall**
1:50 – 2:20 pm

**Closing Fireside Chat**
Salon I, II • 4:20 – 5:20 pm

**Networking Reception in Exhibit Hall**
5:25 – 6:25 pm

## Wednesday, August 30

**Registration Open**
Capitol Foyer • 7:00 am – 12: 30 pm

**Networking Breakfast**
Capitol Foyer • 7:00 – 8:00 am

**Conference Programming**
8:00 am – 12:35 pm

**Keynote Speaker**
8:05 – 9:05 am

**Networking Break**
Capitol Foyer • 9:05 – 9:35 am

**Closing Keynote**
Salon I, II • 11:40 am – 12:25 pm

# Event Information

## Location

JW Marriott
1331 Pennsylvania Avenue NW
Washington, DC 20004

## WiFi

Network: ETConference
Password: NDIA2023

## Survey and Participant List

You will receive via email a survey and list of participants (name and organization) after the conference. Please complete the survey to make our event even more successful in the future.

## Mobile App

Make the most of your time at the NDIA's Emerging Technologies For Defense Conference & Exhibition with the mobile app available on the App Store for Apple devices and Google Play for Android devices by searching "ETI NDIA"

Download this FREE app for complete access to the Agenda, Clickable Floorplan, Exhibitor Listings, Slido, Social Media, Speakers, & Timely Event Updates. Build your personal itinerary, contact exhibitors by directly accessing their websites, and more!

## Real-Time Crowd-Sourced Q&A

Ask your question in the mobile app by selecting Slido! Slido is an audience engagement platform that allows users to crowd-source top questions to drive meaningful conversations and increase crowd participation. Participants can up-vote the questions they would most like to hear discussed. Simply tap the thumbs-up button to up-vote a question. Top questions are displayed for the moderator and speaker to answer. Visit Slido.com and enter event code "**ETI23**" to participate or select "Slido" in the Conference Mobile App.

## Event Code of Conduct

NDIA's Event Code of Conduct applies to all National Defense Industrial Association (NDIA), National Training & Simulation Association (NTSA), Emerging Technologies Institute (ETI), and Women In Defense (WID) meeting-related events, whether in person at public or private facilities, online, or during virtual events. NDIA, NTSA, ETI, and WID are committed to providing a productive and welcoming environment for all participants. All participants are expected to abide by this code as well as NDIA's ethical principles and practices. Visit NDIA.org/CodeOfConduct to review the full policy.

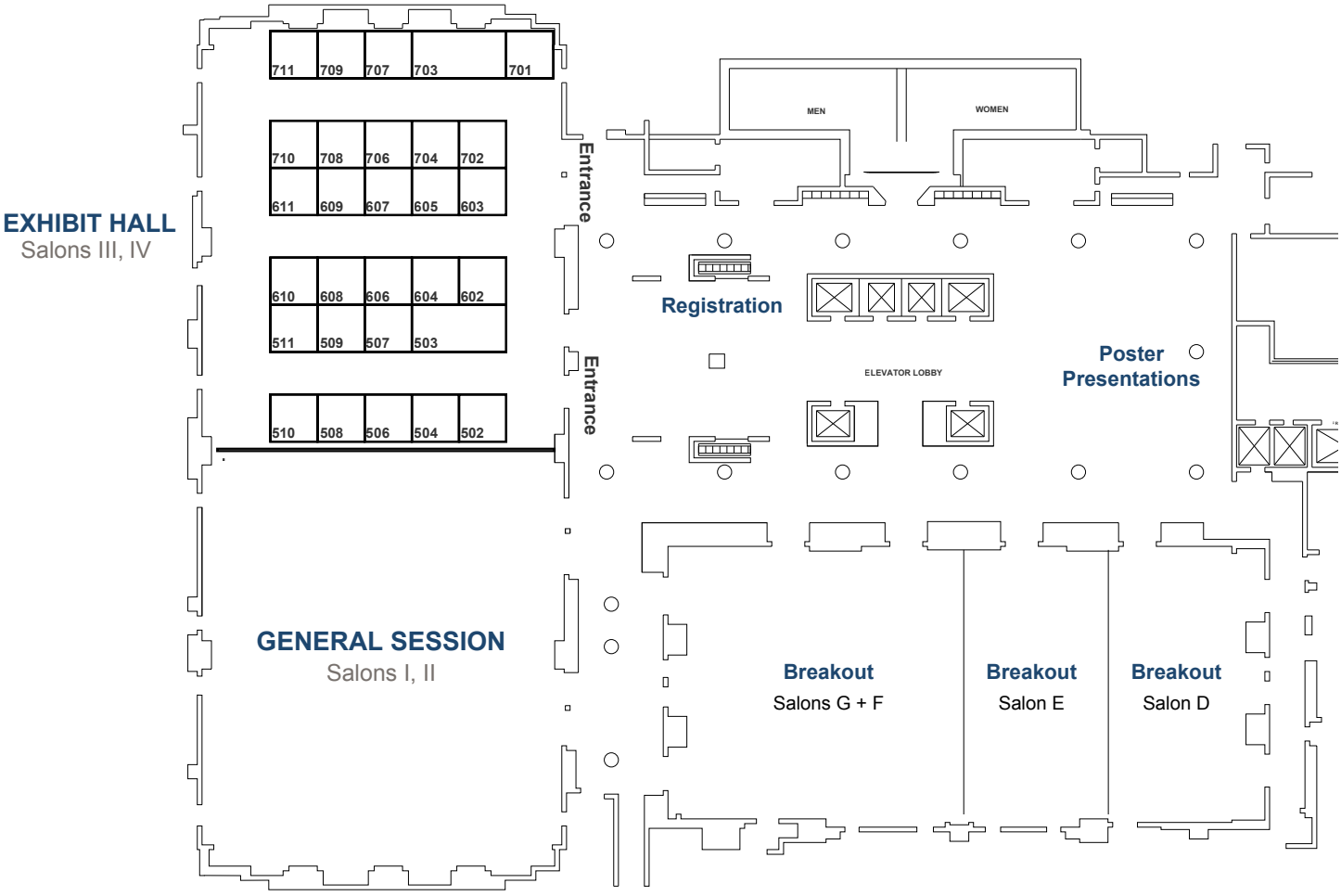
## Photography and Video Recording Consent

I understand that NDIA may use photography and video to record, reproduce, and distribute the photos and video recordings of this event (webinar, conference, meeting, etc). I understand that photos or videos may be taken, and any remarks, questions, and comments that I make will/may be included in any such recording. I hereby give my consent for my name, likeness, image, voice, and appearance (as recorded by video or photography) to be used in marketing and/or video recording by NDIA or its affiliates for any purpose associated with this event(webinar, conference, meeting, etc.).

## Harassment Statement

NDIA is committed to providing a professional environment free from physical, psychological and verbal harassment. NDIA will not tolerate harassment of any kind, including but not limited to harassment based on ethnicity, religion, disability, physical appearance, gender, or sexual orientation. This policy applies to all participants and attendees at NDIA conferences, meetings and events. Harassment includes offensive gestures and verbal comments, deliberate intimidation, stalking, following, inappropriate photography and recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome attention. Participants requested to cease harassing behavior are expected to comply immediately, and failure will serve as grounds for revoking access to the NDIA event.

# Venue Map




## Thank You to our Sponsors

EXIGER

J.H. WHITNEY
INVESTMENT MANAGEMENT, LLC

EPIRUS

Booz Allen

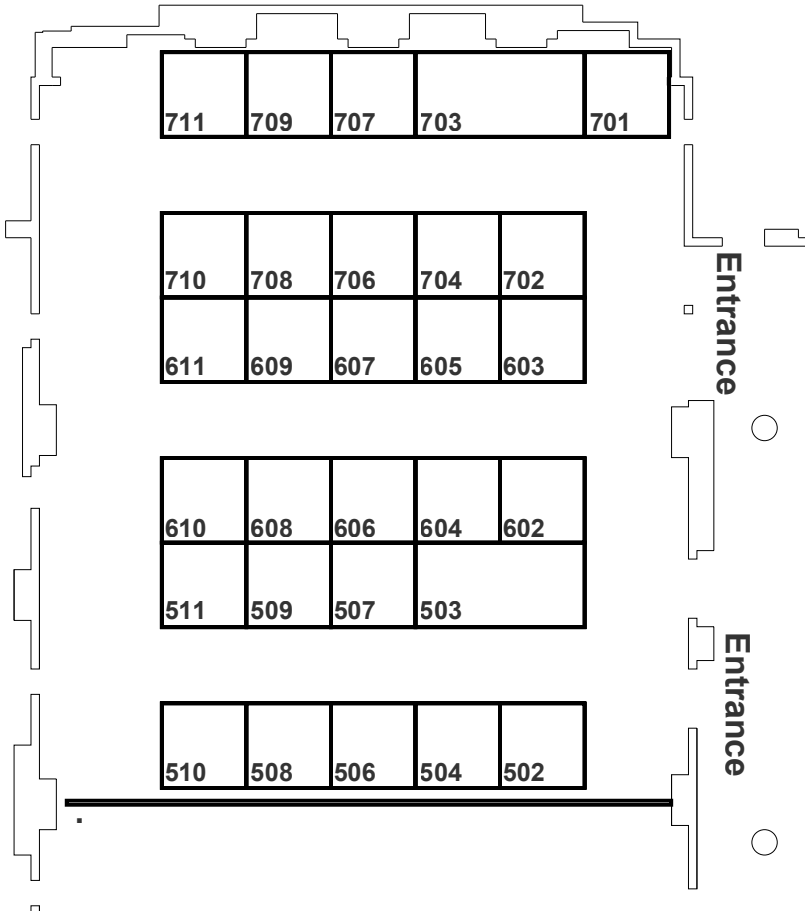
ELROY AIR

LEWIS–BURKE
ASSOCIATES LLC

ark.ai™
BUILT BY govini

Public Spend Forum

# Exhibit Hall Map




ETi | NDIA
EMERGING TECHNOLOGIES FOR DEFENSE

**Download the conference mobile app to view more Exhibitor details**

## Exhibit Hall Hours

**Monday, August 28**
9:00 am – 6:00 pm

**Tuesday, August 29**
9:00 am – 6:30 pm

# Exhibitors by Company

# Agenda

## Sunday, August 27

1:00 pm – 6:00 pm **Registration Open**
CAPITOL FOYER

SPONSORED BY EPIRUS

1:00 pm – 6:00pm **Exhibitor Move-In**
SALON III, IV

## Monday, August 28

7:00 am – 6:00 pm **Registration Open**
CAPITOL FOYER

SPONSORED BY EPIRUS

7:00 – 8:00 am **Networking Breakfast**
CAPITOL FOYER

8:00 – 8:20 am **Welcome Remarks**
SALON I, II

**The Hon. David L. Norquist**
President and CEO, National Defense Industrial Association

**The Hon. Michael Bayer**
Chair of the Board, National Defense Industrial Association
President, Dumbarton Strategies, LLC

9:00 am – 6:00 pm **Exhibit Hall Open**
SALON III, IV

8:20 – 9:00 am **The Urgency to Innovate**
SALON I, II

**The Hon. Dr. Kathleen Hicks**
Deputy Secretary of Defense, U.S. Department of Defense

**The Hon. William "Mac" Thornberry**
NDIA ETI Advisory Board Member and Former Chairman of the House Armed Services Committee
*Moderator*

9:00 – 9:30 am **Networking Break in the Exhibit Hall**
SALON III, IV

SPONSORED BY LEWIS–BURKE ASSOCIATES LLC

9:30 – 10:15 am

## Warfighter Perspectives on Emerging Technologies

SALON I, II

**ADM John Aquilino, USN**
Commander, U.S. Indo-Pacific Command

**Gen Joseph Dunford, USMC (Ret)**
19th Chairman of the Joint Chiefs of Staff
*Moderator*

## Concurrent Breakout Sessions

10:15 – 10:25 am **Transition**

10:25 – 11:25 am

### Contested Logistics Technical Presentations

SALON D

**Dr. Mark Lewis**
CEO, Purdue Applied Research Institute
*Moderator*

#### Balancing Research Security with Delivering New Capabilities At Speed: Tips & Tools

**Dr. Jessica Appler**
Director, Maintaining Technology Advantage, OUSD (R&E)

#### Mobilized Large-Format Additive Manufacturing Bolsters Tactical Readiness

**Jeremy Heerdink**
Vice President of Business Development, Snowbird Technologies

#### Mission Adaptive Autonomy on a Black Hawk Helicopter

**Matthew Whalley**
Capability Area Lead, Autonomous and Unmanned Systems, U.S. Army DEVCOM

#### Digitally Connected Solutions for the Modern Navy

**Trey Taylor**
Director of Digital Innovation, Fairbanks Morse Defense

### Game Changers: Leveraging Commercial Microelectronics Into Future DoD Capabilities, Part I

SALON E

**Dr. Dev Shenoy**
Principal Director for Microelectronics, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Jim Brinker**
President and General Manager, Intel Corporation

**Dr. William "Bill" Angerer**
Director and Chief Engineer, Lockheed Martin Spectrum Convergence

**Doug Bostrom**
General Manager of Defense and Aerospace, Qorvo, Inc.

### Game Changers: Biotechnology

SALON G+F

**Dr. Kate Sixt**
Principal Director for Biotechnology, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Dean Kamen**
Executive Director of ARMI/ BioFabUSA (Advanced Regenerative Manufacturing Institute)

**Dr. Doug Friedman**
CEO, BioMADE

11:25 am – 12:25 pm

## Networking Lunch in the Exhibit Hall

SALON III, IV

12:25 – 1:25 pm

### C-UAS Technical Presentations

SALON D

**Dr. Michael Fritze**
Senior Fellow and Former Vice President, Potomac Institute for Policy Studies
*Moderator*

#### Advances in Atom-Based Sensors for PNT

**Dr. Dana Anderson**
Founder & Chief Strategy Officer, Infleqtion

#### The Counter UAS Mission Set: A Case for Directed Energy

**Mark Neice**
Former Executive Director, Directed Energy Professional Society

#### Quantum RF Sensing

**Dr. William Clark**
Vice President, Quantum Development, Infelqtion

### Accelerating Transition Across Manufacturing Readiness Levels: From Basic Research to ManTech

SALON E

**Dr. Michelle Atchison**
Director of Federal Relations, University of Texas, San Antonio
*Moderator*

**Dr. Bindu Nair**
OSD R&E Director, Basic Research Office

**Tracy Frost**
Director, DoD Manufacturing Technology (ManTech) Program

### Renewable Energy, Generation, and Storage: Strategy & Roadmap Way Forward

SALON G+F

**Dr. Robert Mantz**
Principal Director, Renewable Energy Generation & Storage, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Dr. Andrew Higier**
Director, Renewable Energy Portfolio, Defense Innovation Unit

**Paul Farnan**
Principal Deputy Assistant Secretary of the Army for Installations, Energy and Environment

**Anthony Di Stasio**
Director of Manufacturing Capability Expansion & Investment Prioritization, Office of the Under Secretary of Defense for Acquisition and Sustainment

1:25 – 1:30 pm **Transition**

1:30 – 2:30 pm

## Emerging Tech Game Changers Technical Presentations

SALON D

**James Chew**
Global Group Director, Aerospace & Defense, Cadence Design Systems
*Moderator*

### Data Abyss: Empowering the Warfighter with Secure Research Intelligence and Actionable Insights

**L.J. Eads**
Director of Research Intelligence, Parallax Advanced Research

### Enhancing Security Against the Targeting of Emerging Technologies by Adversaries While Increasing Private Capital Flows to Defense Industrial Base Companies

**John O'Connor**
Chairman and CEO, J.H. Whitney Investment Management, LLC

### The Crisis in Ukraine - the Needs and Results of New Technologies of the Most Modern Battlefield on the NATO Frontiers

**Malgorzata Kieltyka**
Founding Partner, KG Legal

**Jakub Gladkowski**
Founding Partner, KG Legal

### Advanced Sphere Brake Kits

**Aaron Lewis**
CEO, Sphere Brake Defense, Inc.

## Future G

SALON E

**Dr. Tom Rondeau**
Principal Director for FutureG & 5G, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Lizy Paul**
Director of 5G .MIL, Lockheed Martin

**Mike Murphy**
CTO for North American, Ericsson

**Juan Ramirez**
Deputy Director, DoD Chief Information Officer – C3I

**Dr. Paul Jacobs**
Chairman and Chief Executive Officer, XCOM

## Contested Logistics: Current Operational Challenges and Needs

SALON G+F

**Maj Gen Lee Levy, USAF (Ret)**
Chair, NDIA Logistics Division
*Moderator*

**The Hon. Christopher Lowman**
ASD (Sustainment)

**Lt Gen Leonard J. Kosinski, USAF**
Director of Logistics, J4 Joint Staff

**LTG John Sullivan, USA**
Deputy Commander, U.S.TRANSCOM

**Brad Bunn**
Vice Director, Defense Logistics Agency

2:30 – 3:00 pm

## Networking Break in the Exhibit Hall

SALON III, IV

SPONSORED BY LEWIS–BURKE ASSOCIATES LLC

3:00 – 3:45 pm

## Working with DARPA

SALON I, II

**Dr. Stefanie Tompkins**
Director, Defense Advanced Research Projects Agency

3:45 – 4:30 pm

## Fireside Chat

SALON I, II

**The Hon. Dr. William LaPlante**
Under Secretary of Defense for Acquisition and Sustainment, U.S. Department of Defense

**Marcus Weisgerber**
Global Business Editor, Defense One

4:30 – 4:35 pm

## Closing Remarks

SALON I, II

**The Hon. David L. Norquist**
President and Chief Executive Officer, National Defense Industrial Association

4:35 – 6:00 pm

## Networking Reception in the Exhibit Hall

SALON III, IV

SPONSORED BY EXIGER J.H. WHITNEY INVESTMENT MANAGEMENT, LLC

# Tuesday, August 29

7:00 am – 6:30 pm

## Registration Open

CAPITOL FOYER

SPONSORED BY EPIRUS

7:00 – 8:00 am

## Networking Breakfast

CAPITOL FOYER

9:00 am – 6:30 pm

## Exhibit Hall Open

SALON III, IV

8:00 – 8:10 am

## Welcome Remarks

SALON I, II

**Maynard Holliday**
Performing the Duties of Assistant Secretary of Defense for Critical Technologies, U.S. Department of Defense

8:10 – 9:10 am

## Fireside Chat

SALON I, II

**The Hon. Heidi Shyu**
Under Secretary of Defense for Research and Engineering

**The Hon. Ellen Lord**
NDIA ETI Advisory Board Member and Former Under Secretary of Defense for Acquisition and Sustainment
*Moderator*

9:10 – 9:40 am

## Networking Break in the Exhibit Hall

SALON III, IV

SPONSORED BY ELROY AIR

## Concurrent Breakout Sessions

9:40 – 10:40 am

### C-UAS Technical Presentations

SALON D

**Mark Neice**
Former Executive Director, Directed Energy Professional Society
*Moderator*

#### Improving Dynamic Target Localization for Future Autonomous Counter-UAS

**Daniel Gil**
Program Manager, Ultra Labs

#### Leonidas High-Power Microwave System for Counter-Electronics Effects

**Mara Motherway**
Chief Growth Officer, Epirus Inc.

#### ZeroMark: Auto-Aiming Small Arms for Counter UAS

**Joel Anderson**
CEO, ZeroMark

#### Unpredictable Space-Based ISR Capability

**David Balser**
CSO/COO, Honu Consulting LLC

### Contested Logistics: DoD Technical Roadmap and Business Opportunities

SALON E

**The Hon. Alan Shaffer**
NDIA ETI Distinguished Visiting Fellow and Former Deputy Under Secretary of Defense for A&S
*Moderator*

**Dr. Vic Ramdass**
Deputy Assistant Secretary of Defense for Materiel Readiness

**Jeffrey Singleton**
Director for Technology, Office of the Assistant Secretary of Acquisition, Logistics, and Technology, US Army

**Erica Plath**
Deputy Assistant Secretary of Navy - Sustainment

**Angie Tymofichuk**
Deputy Assistant Secretary of the Air Force for Logistics and Product Support

### Attracting and Scaling Private Capital for National Security

SALON G+F (9:40 – 10:10 AM)

**ML Mackey**
Chair, NDIA Small Business Division and CEO and Co-Founder, Beacon Interactive Systems
*Moderator*

**Dr. Eric Volmar**
Chief Strategy Officer, Office Strategic Capital, Office of the Under Secretary of Defense for Research and Engineering

#### Bridging The Valley of Death: APFIT and SBIR

SALON G+F (10:10 – 10:40 AM)

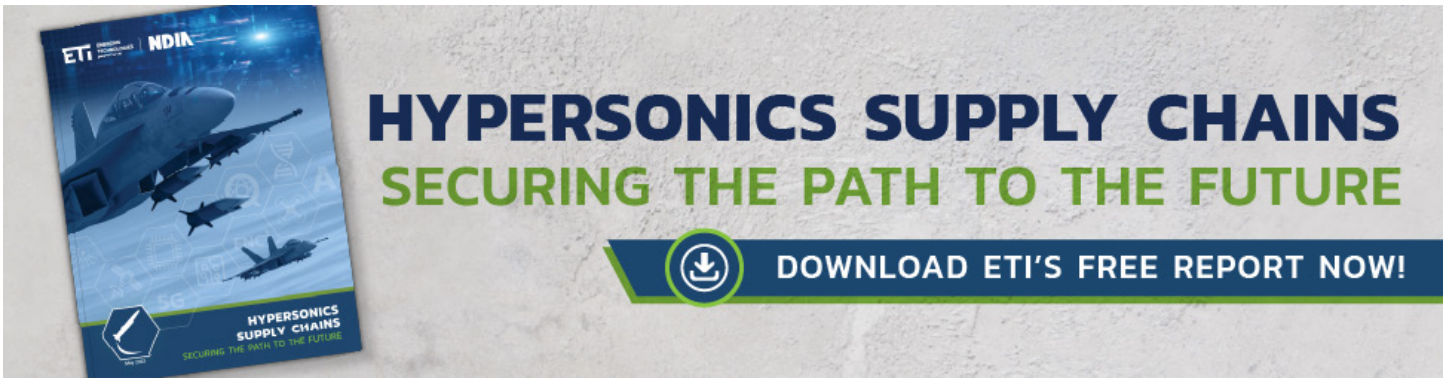
**ML Mackey**
Chair, NDIA Small Business Division and CEO and Co-Founder, Beacon Interactive Systems
*Moderator*

**Matt Williams**
Director, OSD Transitions SBIR/STTR Technology (OTST) Program, OSD R&E Technology Portfolio Manager

**Devin Bohanan**
APFIT Project Manager, Office of the Under Secretary for Research and Engineering

10:45 – 10:50 pm

## Transition




10:50 – 11:50 am

## Emerging Tech Game Changers Technical Presentations

SALON D

**Dr. Mark Lewis**
CEO, Purdue Applied Research Institute
*Moderator*

### Artificial Intelligence and Future Analytic Tools Improve Discovery

**Christopher Thomas, SES**
Administrator, DoD Defense Technical Information Center (DTIC)

**Yvette Jacks**
Deputy Administrator, DoD Defense Technical Information Center (DTIC)

### Hypersonics Supply Chains: Securing the Path to the Future

**Rebecca Wostenberg**
Research Fellow, NDIA Emerging Technologies Institute

### The Rapidly Expanding Need for Quantum Atomic Clocks

**Dr. Judith Olson**
Atomic Clock Portfolio, Technical Lead, Infleqtion

## Operational Energy: Current Operational Challenges and Needs

SALON E

**Kevin Sampels**
Vice Chair, NDIA Logistics Division and Associate Vice President, Defense Logistics, LinQuest
*Moderator*

**Oliver Fritz**
Director for Operational Energy, Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilience

**RuthAnne Darling**
Director, Operational Energy – Innovation, OUSD R&E

**R. Troy Warshel**
Associate Deputy Assistant Secretary of the Air Force for Operational Energy

## Game Changers – Artificial Intelligence Part I: Transforming Decision Making Through AI

SALON G+F

**Dr. Kim Sablon**
Principal Director for Trusted AI and Autonomy, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Bharat Patel**
Product Lead, Project Linchpin – Sensors AI, PEO Intelligence Electronic Warfare Sensors

**Dr. Steven Rogers**
Senior Scientist for Automatic Target Recognition and Sensor Fusion, Air Force Research Laboratory

**Dr. John (Jack) Long**
Deputy to Navy Chief AI Officer, Office of Naval Research

11:50 am – 12:50 pm

## Networking Lunch in the Exhibit Hall

SALON III, IV

12:50 – 1:50 pm

## Operational Energy Technical Presentations

SALON D

**Dr. Maren Leed**
Independent Consultant
*Moderator*

### Green Batteries for High-Performance Grid Storage

**Dr. Lin Xu**
Postdoctoral Associate, Department of Material Sciences and Engineering, University of Maryland College Park

### Long Life 3D Printed Silicon Anode Reserve Batteries

**Yash Mirchandani**
President & CEO, Myoniks

### Hybrid-Electric Energy in Aviation Assets

**David Friedmann**
AFC, DEVCOM, AvMC, Technology Development Directorate

### Enabling Autonomous, Persistent, and Resident Capabilities in Critical Maritime Environments

**Reenst Lesemann**
CEO, C-Power

## Counter UAS: Current Operational Challenges and Needs

SALON E

**Megan Milam**
NDIA Policy Committee Co-Chair and Senior Vice President, Government Relations, Anduril Industries
*Moderator*

**Dr. Amy Sunshine Smith-Carroll**
Director for Surface Warfare, Office of the Under Secretary of Defense for Acquisition and Sustainment

**COL Michael Rodick, USA**
Chief, Operations Division, Joint Counter-Small Unmanned Aircraft Systems Office

## Game Changers – Artificial Intelligence Part II: Operationalizing AI for Defense

SALON G+F

**Dr. Kim Sablon**
Principal Director for Trusted AI and Autonomy, Office of the Under Secretary of Defense for Research and Engineering
*Moderator*

**Ryan Luley**
Senior Mathematician, Information Directorate, Air Force Research Laboratory

**Dr. Matthew Gaston**
Director, SEI Artificial Intelligence Division, Carnegie Mellon University

**Dr. Bruce Swett**
Chief AI Architect & NG Fellow, Northrop Grumman

1:50 – 2:20 pm

## Networking Break in the Exhibit Hall

SALON III, IV

SPONSORED BY ELROY AIR

2:20 – 3:20 pm

## Working with The Defense Innovation Unit (DIU): Opportunities for Defense and Industry

SALON I, II

**Doug Beck**
Director, Defense Innovation Unit

**Paul Madera**
NDIA ETI Advisory Board Member and Co-Founder, Meritech Capital Partners
*Moderator*

3:20 – 4:20 pm

## Advancing Strategic Missions and Technologies Security

SALON I, II

**Jason Zander**
Executive Vice President, Strategic Missions and Technologies, Microsoft Corporation

4:20 – 5:20 pm

## Fireside Chat: Service Perspectives

SALON I, II

**The Hon. Lisa Disbrow**
Former Under Secretary of the Air Force
*Moderator*

**The Hon. Gabe Camarillo**
Under Secretary of the Army

**The Hon. Erik Raven**
Under Secretary of the Navy

**The Hon. Kristyn Jones**
Performing the Duties of Under Secretary of the Air Force

5:20 – 5:25 pm

## Closing Remarks

SALON I, II

**Dr. Arun Seraphin**
Executive Director, NDIA Emerging Technologies Institute

5:25 – 6:25 pm

## Networking Reception in the Exhibit Hall

SALON III, IV

# Wednesday, August 30

6:00 am – 12:30 pm

## Registration Open

CAPITOL FOYER

7:00 – 8:00 am

## Networking Breakfast

CAPITOL FOYER

8:00 – 8:05 am

## Welcome Remarks

SALON I, II

**Dr. Steve Wax**
Performing the Duties of Assistant Secretary of Defense for Science and Technology, (OUSD(R&E))

8:05 – 9:05 am

## Developing on Government Data

SALON I, II

**Margie Palmieri**
Deputy Chief Digital and Artificial Intelligence Officer, US Department of Defense

9:05 – 9:35 am

## Networking Break

CAPITOL FOYER

NDIA

# FUZE/FFC/DEMIL

# THREE CONFERENCES. ONE LOCATION.

## Armaments • Robotics • Munitions • EOD • Fuze • Demil

Take advantage of NDIA's unique three-in-one conference opportunity this fall. Three separate conferences will be held at the Von Braun Center in Huntstville, AL: the **66th Annual Fuze Conference, Future Force Capabilities Conference & Exhibition**, and the **23rd Global Demilitarization Symposium & Exhibition.** Co-locating these conferences will allow attendees to experience a wider variety of educational and networking opportunities and expose them to the latest innovations across three sectors. Don't miss your chance to attend this rare event! See you in September!

**Register Now!** **September 25 – 28, 2023 • Huntsville, AL • NDIA.org/FFC**

## Concurrent Breakout Sessions

9:35 – 10:35 am

### Emerging Tech Gamer Changers Technical Presentations

SALON D

**Dr. Mark Lewis**
CEO, Purdue Applied Research Institute
*Moderator*

#### Better, Faster, Cheaper

**James Chew**
Global Group Director, Aerospace & Defense, Cadence Design Systems
Chair, NDIA Science and Engineering Technology Division

#### Adaptive Engineering, A Gamechanger in the Evolution of Systems Development

**Vincent DiGirolamo**
NC3 Program Manager, Northrop Grumman

#### Digital Engineering in the Organic Industrial Base

**Matt Taylor**
Vice President of Projects and Engineering, MxD

#### Using Digital Twins for Drone Swarm Data Aggregation, Presentation, Mission Planning, and Control

**Dr. Dirk Reiners**
Associate Professor, University of Central Florida

### Counter UAS – DoD Technical Roadmap and Business Opportunities

SALON E

**Mark Neice**
Former Executive Director, Directed Energy Professional Society
*Moderator*

**BG Frank Lozano, USA**
Army PEO Missiles and Space

**Mr. Stephen Bowdren**
USMC PEO Land Systems

**LTC Gabriela Arraiz, USA**
Deputy Chief Technology Officer, Joint Special Operations Command

### Strengthening the Defense Industrial Base to Build Resiliency

SALON G+F

**Moshe Schwartz**
NDIA Senior Fellow for Acquisition Policy
*Moderator*

**Halimah Najieb-Locke**
Deputy Assistant Secretary of Defense for Industrial Base Resilience

**Danielle Miller**
Director of Policy, Analysis, and Transition; Office of the Assistant Secretary of Defense for Industrial Base Policy

**David Busigo**
Senior Advisor, Department of Defense Office of Small Business Programs

**Josh Pavluk**
Director of Industry Engagement, Office of the Assistant Secretary of Defense for Industrial Base Policy

10:35 – 11:35 am

## Contested Logistics Technical Presentations

SALON D

**Dr. Richard "Doc" Klodnicki**
President and CEO, AERETI, Inc.
*Moderator*

### Supersonic Mobility Aircraft to Mitigate Contested Logistics

**Nathan Forbes**
Vice President, Defense Programs, Boom Supersonic

### Solving Contested Logistics Challenges with Energetics

**John Wilkinson**
Director, Energetics Futures, NSWC IHD

### Drift Adaptation in Contested Logistics: Rapid Convergence Through Bayesian Deep Learning

**Ramaswamy Srinivasan**
Vice President, iWorks Corporation

**Chris Angelini**
Radar Systems Engineer, Lockheed Martin

### Code As Logistics: Transparency in Software Supply Chains

**Munish Walther-Puri**
Vice President, Cyber Risk, Exiger

**JC Herz**
Senior Vice President, Exiger Cyber Supply Chain

## Game Changers: Leveraging Commercial Microelectronics Into Future DoD Capabilities, Part II

SALON G+F

**Dr. Erik Hadland**
Director of Technology Policy at the Semiconductor Industry Association (SIA)
*Moderator*

**Mujtaba Hamid**
General Manager, Silicon and ModSim Strategic Missions and Technologies, Microsoft

**Dr. Wesley Allen**
Advanced Electronics Director of RF, Electronics, Cyber (R3), BAE Systems FAST Labs

**Dr. May Casterline**
Principal Solutions Architect, NVIDIA

11:35 – 11:40 pm **Transition**

11:40 am – 12:25 pm

## Chip War: The Fight for the World's Most Critical Technology

SALON I, II

**Dr. Chris Miller**
Author of *Chip War* and Associate Professor of International History at the Fletcher School, Tufts University

12:30 – 12:35 pm

## Closing Remarks

SALON I, II

**The Hon. David L. Norquist**
President and Chief Executive Officer, National Defense Industrial Association

# Abstract Presentations

## Contested Logistics Technical Presentations

### Balancing Research Security with Delivering New Capabilities At Speed: Tips & Tools

**Dr. Jessica Appler**
Director, Maintaining Technology Advantage, OUSD (R&E)

This presentation walks through the recent changes in U.S. Government research security policies for emerging technologies, and reviews available guidance and tools for the current landscape.

### Mobilized Large-Format Additive Manufacturing Bolsters Tactical Readiness

**Jeremy Heerdink**
Vice President of Business Development, Snowbird Technologies

The availability of repair and replacement parts for equipment in contested environments remains a critical need for expeditionary forces as traditional supply chain and logistics channels fail. Mobile large-format additive manufacturing machines can deliver new capabilities at speed and scale.

### Mission Adaptive Autonomy on a Black Hawk Helicopter

**Matthew Whalley**
Capability Area Lead, Autonomous and Unmanned Systems,
U.S. Army DEVCOM

Development and flight testing of an autonomy system on a U.S. Army Black Hawk helicopter for logistics support in complex environments. It incorporates obstacle avoidance, landing site selection, and pilot/autonomy coordination. Flight testing result included.

### Digitally Connected Solutions for the Modern Navy

**Trey Taylor**
Director of Digital Innovation, Fairbanks Morse Defense

The Navy faces mounting challenges with complex assets, technical support, and secure data systems. Furthermore, the rise of minimally crewed and uncrewed platforms necessitates remote support and management. AI and digital media present fresh avenues for navigating the Navy's dynamic landscape.

## C-UAS Technical Presentations

### Advances in Atom-Based Sensors for PNT

**Dr. Dana Anderson**
Founder & Chief Strategy Officer, Infleqtion

Of high priority for situational awareness in conflicted environments is knowledge of where you are and where your resources are as well as where they are headed. Dr. Anderson will present an introductory overview of atom-based inertial sensors designed to overcome such obstacles.

### The Counter UAS Mission Set: A Case for Directed Energy

**Mark Neice**
Retired, Directed Energy Professional Society

Directed Energy (DE), the use of either High Energy Laser (HEL) or High Power Radio Frequency (HPRF) technology, has delivered multiple protype systems to the Department of Defense for the Counter UAS (CUAS) mission. This presentation will discuss the DE systems that have been successfully deployed with various services, the economics that DE systems can bring to this mission set, the inherent challenges that DE systems still have in operations, and the hurdles to overcome in establishing a defense industrial base for this DE capability.

### Integrating Multi-INT Sensor Data to Track UAVs, Nearly Eliminating Nuisance Detections with Multi-Tiered Algorithmic Open Architecture and High-Side/PAI Data Sources to Alert Operators to Action

**Gary Zimmerman**
Intelligence Business Development Manager,
Ultra Intelligence & Communications

Ultra is integrating multi-INT sensor data to indicate, detect, and track UAVs, minimizing nuisance detections to near zero with a multi-tiered algorithmic approach and open architecture, joining 3rd-party systems and high-side, PAI sources. This will lead to automated counter UAS mitigations.

### Quantum RF Sensing

**Dr. William Clark**
Vice President, Quantum Development, Infleqtion

Rydberg atom-based RF (aka Quantum RF) signal detection and processing is a reality. This technology has evolved rapidly over the past decade, from laboratory research and proof of concept experiments to early prototypes being evaluated for use in operationally relevant environments.

## Emerging Tech Game Changers Technical Presentations

### Data Abyss: Empowering the Warfighter with Secure Research Intelligence and Actionable Insights

**L.J. Eads**
Director of Research Intelligence, Parallax Advanced Research

Discover the power of Data Abyss, a cutting-edge research intelligence analytics platform developed by Parallax Advanced Research. This platform delivers new capabilities to the warfighter, providing automated data curation, advanced AI algorithms, and comprehensive risk analysis.

### Enhancing Security Against the Targeting of Emerging Technologies by Adversaries While Increasing Private Capital Flows to Defense Industrial Base Companies

**John O'Connor**
Chairman and CEO, J.H. Whitney Investment Management, LLC

As US-PRC strategic competition for global leadership escalates, success will require substantial capital to support technological capabilities and operational scale. We will discuss two fintech innovations we have created to enhance the financing of secure US technology in support of these goals.

### The Crisis in Ukraine - The Needs and Results of New Technologies of the Most Modern Battlefield on the NATO Frontiers

**Malgorzata Kieltyka**
Founding Partner, KG Legal

**Jakub Gladkowski**
Founding Partner, KG Legal

A discussion on new technologies tested in the Ukrainian crisis, including edge computing, AI, biotechnology, cybersecurity.

### Advanced Sphere Brake Kits

**Aaron Lewis**
CEO, Sphere Brake Defense, Inc.

The bolt-on sphere brake technology provides a holistic solution to existing mobility, maintenance, and life cycle costs. Hemispherical brake pads compress a sphere brake surface providing unprecedented value like the ability to change brake pads without any tools on ground tactical vehicles.

## C-UAS Technical Presentations

### Improving Dynamic Target Localization for Future Autonomous Counter-UAS

**Daniel Gil**
Program Manager, Ultra Labs

Novel localization and tracking techniques compatible with state-of-the-art Deep Reinforcement Learning (DRL) will improve the Counter-UAS performance of autonomous platforms. Here, we describe a framework that augments DRL with the ability to perform dynamic target localization (DTL).

### Leonidas High-Power Microwave System for Counter-Electronics Effects

**Mara Motherway**
Chief Growth Officer, Epirus Inc.

Traditional, legacy-based high-power microwave systems require massive scale to get the desired power output. Their lack of portability hinders market acceptance and effectiveness in combat zones. Epirus developed a system that is dramatically smaller without compromising power nor effectiveness.

### ZeroMark: Auto-Aiming Small Arms for Counter UAS

**Joel Anderson**
CEO, ZeroMark

Providing Counter UAS with the application of Computer Vision and AI combined with Small Arms and Robotics.

### Unpredictable Space-Based ISR Capability

**David Balser**
CSO/COO, Honu Consulting LLC

The USG has extensive capability for collecting lots of ISR data, but the access is predictable and known by our adversaries. Commercial space partners can provide the required unpredictability needed to augment space to space offensive/defensive dominance and operate in a contested domain.

## Emerging Tech Game Changers Technical Presentations

### Artificial Intelligence and Future Analytic Tools Improve Discovery

**Christopher Thomas, SES**
Administrator, DoD Defense Technical Information Center (DTIC)

**Yvette Jacks**
Deputy Administrator, DoD Defense Technical Information Center (DTIC)

### Hypersonics Supply Chains: Securing the Path to the Future

**Rebecca Wostenberg**
Research Fellow, NDIA Emerging Technologies Institute

A discussion of ETI's recent report assessing the current state of hypersonic systems' supply chains and providing actionable policy recommendations for their development, health, and resilience.

### The Rapidly Expanding Need for Quantum Atomic Clocks

**Dr. Judith Olson**
Atomic Clock Portfolio, Technical Lead, Infleqtion

Dr. Judith Olson will introduce the audience to where Infleqtion, the industry at large, and the research/academic world, are predicting atomic clocks will go, and what performance would be unlocked by having high-performance, commercially available optical atomic clocks.

## Operational Energy Technical Presentations

### Green Batteries for High-Performance Grid Storage

**Dr. Lin Xu**
Postdoctoral Associate, Department of Material Sciences and Engineering, University of Maryland College Park

Researchers from the University of Maryland have developed a cutting-edge battery technology utilizing natural materials like crab-shells and wood. This innovation not only boasts high performance and safety but also ensures a robust supply chain within the US. It's particularly well-suited for grid-scale energy storage applications.

### Long Life 3D Printed Silicon Anode Reserve Batteries

**Yash Mirchandani**
President & CEO, Myoniks

Myoniks Inc. gives groundbreaking Mini-Zee Silver Zinc batteries for ICBM energy storage. With unmatched reliability and advanced manufacturing techniques like 3D printing, they meet specific requirements and offer improved performance. They revolutionize power supply solutions for military applications.

### Hybrid-Electric Energy in Aviation Assets

**David Friedmann**
AFC, DEVCOM, AvMC, Technology Development Directorate

Operational energy demand (fuel use) may be reduced, and operational objectives met, through implementation of hybrid-electric technology in aviation assets. Hybrid systems combine electric propulsion components with fuel-burning propulsion such as diesel or turboshaft engines.

### Enabling Autonomous, Persistent, and Resident Capabilities in Critical Maritime Environments

**Reenst Lesemann**
CEO, C-Power

Ensuring maritime domain awareness through uncrewed assets requires reliable power and real-time data communications capabilities. C-Power's Autonomous Offshore Power System enables persistent, self-contained, and self-powered ISR and reporting offshore all while reducing cost and complexity.

## Emerging Tech Gamer Changers Technical Presentations

### Better, Faster, Cheaper

**James Chew**
Global Group Director, Aerospace & Defense, Cadence Design Systems

A common commercial practice, hardware accurate digital twinning allows program offices and depots to develop firm, fixed requirements, ensure backward compatibility and interoperability.

### Adaptive Engineering: A Gamechanger in the Evolution of Systems Development

**Vincent DiGirolamo**
NC3 Program Manager, Northrop Grumman

Adaptive Engineering (AE) introduces an innovative systems engineering approach, combining best practices from Digital Engineering, MBSE, and Mission Engineering. It integrates AI tools, promises a user-centric, adaptable system development method, and is suitable for technology-intensive programs.

### Digital Engineering in the Organic Industrial Base

**Matt Taylor**
Vice President of Projects and Engineering, MxD

### Using Digital Twins for Drone Swarm Data Aggregation, Presentation, Mission Planning, and Control

**Dr. Dirk Reiners**
Associate Professor, University of Central Florida

While swarms of small, cheap drones are possible, they are not practical due to pilot and video integration needs. We are presenting a Digital Twin-based approach to both show the data from an arbitrary number of drones in one view, and control them automatically to keep everything up to date.

## Contested Logistics Technical Presentations of Technological Cooperation

### Supersonic Mobility Aircraft to Mitigate Contested Logistics

**Nathan Forbes**
Vice President, Defense Programs, Boom Supersonic

Boom Supersonic proposes to mitigate contested logistics by improving logistical speed, agility and resiliency with a multi-capable supersonic transport aircraft.

### Solving Contested Logistics Challenges with Energetics

**John Wilkinson**
Director, Energetics Futures, NSWC IHD

In a fight burdened by contested logistics, we must improve our munitions' lethality, speed, range, and signatures. Advanced energetics can enable our forces to deliver a stronger punch, prosecute additional targets, and keep our platforms more survivable, ultimately remaining in the fight longer.

### Drift Adaptation in Contested Logistics: Rapid Convergence through Bayesian Deep Learning

**Ramaswamy Srinivasan**
Vice President, iWorks Corporation

**Chris Angelini**
Radar Systems Engineer, Lockheed Martin

Our proposed approach accelerates the ability to digest quantities of sensor data, apply Subject Matter Expert guidance, and allow for rapid prediction convergence, supporting faster data-driven decision-making (Go/No Go) and logistical operations in the presence of adversarial factors.

## Code as Logistics: Transparency in Software Supply Chains

**Munish Walther-Puri**
Vice President, Cyber Risk, Exiger

Open Source software code runs on virtually every computer on the planet and keeps critical infrastructure running. Code developed outside enterprise boundaries is subject to opaque security criteria; dangerous discontinuities create emergent risk in the software supply chain.

# Monday: Technical Poster Presentations

## 1. C-UAS

**Yash Mirchandani**
President & CEO, Neoskye

Neoskye will present its Counter UAV system, which enhances maneuverability, reduces operator workload, and improves threat detection. It integrates state-of-the-art technology for navigation, sensor fusion, energy management, and signal processing, offering advanced target recognition and tracking.

## 2. All-In-One Infrastructure Maintenance Vehicle

**Steve Flaherty**
CEO, necoTECH

Airfields and other concrete/asphalt-based infrastructure are imperative to the DoD and commercial markets. necoTECH has received 12 SBIR/STTR awards focused on the sustainment and readability of these infrastructure assets, which will culminate into an All-in-one Infrastructure Maintenance Vehicle.

## 3. Investing in the Future: Trends in S&T Spending

**Jacob Winn**
Associate Research Fellow, NDIA Emerging Technologies Institute

NDIA ETI presents its analysis of DoD research and development funding data to help stakeholders throughout the policy, research and engineering, and business communities understand how the government is prioritizing cutting-edge emerging technologies. ETI analyzed S&T funding levels throughout the twenty-first century, placing them in the context of various eras of strategic guidance and policymaking.

## 4. Modeling and Simulation for Unmanned Aircraft System (UAS) Threat Assessment

**Randy Allen**
Chief Scientist, Director of Advanced Research & Development, Lone Star Aerospace

To enable UAS threat evaluation, a digital twin is built to estimate performance subject to uncertainties. Extracting minimal features from imagery or radar can be used to predict performance and aid in threat potential, determining probable engagement zones, and planning an appropriate response.

## 5. Data Integrity: The Key to Building Resilient Forces in Contested Environments

**Phil Doherty**
Senior Director, Strategic Accounts, DUST Identity

DUST Identity has developed Diamond Unclonable Security Tag (DUST), an unclonable physical object identifier. The DUST solution enables military forces to authenticate equipment quickly and securely while ensuring their provenance throughout the supply chain.

## 6. THOR: A High Power Microwave System for the CUAS Mission

**Daniel Guillette**
Electronics Engineer, Air Force Research Laboratory, High Power Electromagnetics Division

**Michael Lambrecht**
Senior Research Electrical Engineer, Air Force Research Laboratory, Directed Energy Directorate

Researchers at the Air Force Research Laboratory's Directed Energy Directorate teamed with several companies to design and build a counter-unmanned aerial system (C-UAS) demonstrator for base air defense. The Tactical High Power Operational Responder (THOR) is capable of disabling UASs by interrupting their electronic systems with high power microwave pulses. The system has been demonstrated effective against multiple targets, was deployed for an operational assessment, and successfully engaged and defeated a drone swarm.

## 7. Leveraging Commercially Available Data to View, Analyze, and Investigate Beyond the Traditional Security Perimeter

**Jared Dible**
Sr. Cyber Architect, Millenium Corporation

While privacy is a concern when it comes to commercial data, it can also provide a new level of visibility into the problems we face due to an ever-fading security perimeter. This presentation will show the impact these data sets can provide to your defensive cyber workflow when properly integrated.

## 8. Introducing Vertical Soldering

**Dr. Michael Santaspirt**
Deputy Chief of Staff, G2, and the Chief Futures Officer, US Army Combat Capabilities Development Command Armaments Center

A recently patented technology that enables micro miniaturization of electronic assemblies by soldering vertically to layers of electronic assemblies rather than soldering components horizontally.

## 9. NDIA ETI Overview

**Jordan Chase**
Associate Research Fellow, NDIA Emerging Technologies Institute

The National Defense Industrial Association's Emerging Technologies Institute (ETI) performs research, hosts events, and bolsters public awareness through educational products and webinars focused on defense technology modernization and innovation. ETI also works to create a policy environment most conducive to the efficient development and delivery of new systems and technologies for the defense enterprise. ETI engages industry, academia, policymakers, and the public to explore emerging technologies' impact on national security and opportunities for industry-government partnerships to increase U.S. competitive advantage.

## Tuesday: Technical Poster Presentations

### 1. Introducing Vertical Soldering

**Dr. Michael Santaspirt**
Deputy Chief of Staff, G2, and the Chief Futures Officer, US Army Combat Capabilities Development Command Armaments Center

A recently patented technology that enables micro miniaturization of electronic assemblies by soldering vertically to layers of electronic assemblies rather than soldering components horizontally.

### 2. Applying AI/ML to Improve C-UAS Combat Identification and Shorten the Kill Chain

**Dr. John Rivard**
Director, Advanced Concepts, Ultra Intelligence & Communications

Many disparate sensors are employed in C-UAS, but no single sensor can detect, characterize, and track adversary UASs and alert the appropriate warfighter(s) for decision/action. Ultra applies AI/ML solutions to correlate multi-source data to rapidly achieve combat ID and shorten the kill chain.

### 3. RedShred - Documents as a Database

**Jim Kukla**
Chief Technology Officer, RedShred

Redshred's solution offers a unique set of tech data understanding capabilities that is used to build modern, AI-enabled applications by extracting data and outputting structured content in a format that is easy to use and understand and improves the speed of innovation for enabling technologies.

### 4. Fuel Cell

**Yash Mirchandani**
President, Syrnatec Inc

Syrnatec, Inc presents an emerging integrated solution for operational energy in challenging environments, combining a box-shaped type 4 pressure vessel for hydrogen storage with an on-demand hydrogen generation system, revolutionizing fuel cell capabilities.

### 5. GigaMACS™: Empowering Real-Time Edge AI with Near-zero Latency and Extremely Favorable SWaP-C

**Jessica Jones**
Vice President of Marketing, Gigantor Technologies Inc.

GigaMACS™ stands at the forefront of Edge Artificial Intelligence (AI). This groundbreaking solution offers ultra-low latency in microseconds, power savings, optimal SWaP-C, seamless processing, high frame rates in high resolutions, and unlimited object recognition.

### 6. Tactical Innovations for Ukraine

**Joseph Ashley**
Strategic Planner Staff, Global Business Development and Strategy, Lockheed Martin

**Matthew Ingram**
Tactical Innovations Lead, Lockheed Martin

Tactical Innovations for Ukraine has taken a "MacGyver" approach in making use of and innovating on existing Lockheed Martin products to deliver rapid capabilities in response to DoD and allied RFIs. This effort illustrates how established defense contractors can move fast and solve problems differently by using similar business and process models to successful defense tech companies to provide low-cost capability to the Ukrainian armed forces.

### 7. Strategic Combine-Arms-Integrated Rapidly Adaptable Expeditionary Drone Swarms

**Jason Morrison**
Director Future Operations, LCDM Tech Inc

Right now, our potential adversaries can produce more for cheaper faster than we can. Our only recourse is to stay ahead of them technologically and in modernizing our military at such a rate that it severely diminishes the necessity of its use. This system demonstrates how to do it.

### 8. Investing in the Future of S&T

**Jacob Winn**
Associate Research Fellow, NDIA Emerging Technologies Institute

NDIA ETI presents its analysis of DoD research and development funding data to help stakeholders throughout the policy, research and engineering, and business communities understand how the government is prioritizing cutting-edge emerging technologies. ETI analyzed S&T funding levels throughout the twenty-first century, placing them in the context of various eras of strategic guidance and policymaking.

### 9. ETI Overview

**Jordan Chase**
Associate Research Fellow, NDIA Emerging Technologies Institute

The National Defense Industrial Association's Emerging Technologies Institute (ETI) performs research, hosts events, and bolsters public awareness through educational products and webinars focused on defense technology modernization and innovation. ETI also works to create a policy environment most conducive to the efficient development and delivery of new systems and technologies for the defense enterprise. ETI engages industry, academia, policymakers, and the public to explore emerging technologies' impact on national security and opportunities for industry-government partnerships to increase U.S. competitive advantage.

### 10. UTSA and the National Defense Ecosystem

**Dr. Michelle Atchison**
Director of Federal Relations, University of Texas, San Antonio

How the University of Texas at San Antonio is bringing Innovation from Research and Application for the National Security Ecosystem.

# Biographies

## The Hon. Dr. Kathleen Hicks

### Deputy Secretary of Defense

The Hon. Dr. Kathleen H. Hicks serves as the 35th Deputy Secretary of Defense. She was sworn into that office on Feb. 9, 2021.

Prior to becoming Deputy Secretary, Hicks held the position of senior vice president, Henry A. Kissinger Chair, and Director of the International Security Program at the Center for Strategic and International Studies. From 2009 to 2013, she served as a senior civilian official in the Department of Defense.

Confirmed by the United States Senate in 2012 as principal deputy undersecretary of defense for policy, she was responsible for advising the secretary of defense on global and regional defense policy and strategy. She also served as deputy undersecretary of defense for strategy, plans, and forces, leading the development of the 2012 Defense Strategic Guidance and the 2010 Quadrennial Defense Review and crafting guidance for future force capabilities, overseas military posture, and contingency and theater campaign plans.

Prior to becoming the DUSD for SPF, from 2006 to 2009 Deputy Secretary Hicks was a senior fellow at the Center for Strategic and International Studies. Deputy Secretary Hicks launched her career as a civil servant in the Office of the Secretary of Defense, serving from 1993 to 2006 in a variety of capacities and rising from Presidential Management Intern to the Senior Executive Service.

She holds a PhD in political science from the Massachusetts Institute of Technology, an MA from the University of Maryland's School of Public Affairs, and an AB magna cum laude and Phi Beta Kappa from Mount Holyoke College.

## The Hon. Heidi Shyu

### Under Secretary of Defense for Research and Engineering

The Hon. Heidi Shyu is the Under Secretary of Defense for Research and Engineering (OUSD (R&E)). In this role, she serves as the Chief Technology Officer for the Department of Defense (DoD), mandated with ensuring the technological superiority of the U.S. military, and is responsible for the research, development, and prototyping activities across the DoD enterprise. She also oversees the activities of the Defense Advanced Research Projects Agency (DARPA), the Missile Defense Agency (MDA), the Defense Innovation Unit (DIU), the Space Development Agency (SDA), the DoD Laboratory and Engineering Center enterprise, and the Under Secretariat staff focused on developing advanced technology and capability for the U.S. military

Previously, she served as the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA (ALT)), from September 2012 to January 2016. Prior to this, she was Acting ASA (ALT) beginning in June 2011 and appointed the Principal Deputy in November 2010. As the ASA (ALT), she served as the Army Acquisition Executive, the Senior Procurement Executive, the Science Advisor to the Secretary of the Army, and the Army's Senior Research and Development official. She had principal responsibility for all Department of the Army matters related to logistics. Ms. Shyu also led the execution of the Army's acquisition function and the acquisition management system. Her responsibilities included providing oversight for the life cycle management and sustainment of Army weapons systems and equipment from research and development through test and evaluation, acquisition, logistics, fielding, and disposition.

Prior to her government service, Shyu was the Vice President of Technology Strategy for Raytheon Company's Space and Airborne Systems.

Shyu holds a Bachelor of Science Degree in Mathematics from the University of New Brunswick (UNB) in Canada, a Master of Science Degree in Mathematics from the University of Toronto, Master of Science Degree in System Science (Electrical Engineering) from UCLA, and the Engineer Degree from UCLA. She received an Honorary Doctorate of Science from UNB. She is also a graduate of the UCLA Executive Management Course Program.

A member of the Air Force Scientific Advisory Board from 2000 to 2010, she served as the Vice Chairman from 2003 to 2005 and Chairman from 2005 to 2008. Shyu is a member of the National Academy of Engineering and AIAA Honorary Fellow.

## The Hon. Dr. William LaPlante

### Under Secretary of Defense for Acquisition and Sustainment

Senate-confirmed in April 2022, The Hon. William A. LaPlante serves as the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)). In this role, he is responsible to the Secretary of Defense for all matters pertaining to acquisition; contract administration; logistics and materiel readiness; installations and environment; operational energy; nuclear, chemical, and biological defense; the acquisition workforce; and the defense industrial base.

Prior to this appointment, LaPlante served as President and Chief Executive Officer of Draper Laboratory, a research and development company specializing in advanced technology solutions in national security, space exploration, health care, and energy. Previously, he was senior vice president and general manager at MITRE National Security, where he oversaw the operation of two federally funded research and development centers and the U.S. Department of Commerce's National Institute of Standards and Technology.

LaPlante served as the Senate-confirmed Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics from 2014 to 2017, where he aligned that Service's $43 billion acquisition enterprise budget with the Air Force vision and strategy. During his tenure, he forged a path forward on critical Air Force acquisition programs such as the B-21 long range strike bomber, while realizing nearly $6 billion in "should-cost" savings in other programs. Prior to this position, LaPlante spent 26 years at Johns Hopkins University Applied Physics Laboratory (APL), ultimately leading the Global Engagement Department where he was responsible for all of APL's work supporting offensive strike military capabilities. He also served as a member of the APL's Executive Council.

LaPlante has been a member of several scientific boards and commissions focused on maintaining national security, including the U.S. Strategic Command Senior Advisory Group, Naval Research Advisory Committee, and Defense Science Board. He joined other national experts as a commissioner on the congressionally-mandated Section 809 Panel, which performed a comprehensive review of Department of Defense acquisition policies and provided improvement recommendations, many of which became law.

LaPlante holds a Doctorate in mechanical engineering from the Catholic University of America, a master's degree in applied physics from The Johns Hopkins University, and a bachelor's degree in engineering physics from the University of Illinois.

## ADM John Aquilino, USN

### Commander, United States Indo-Pacific Command

ADM John Aquilino is the 26th Commander of the United States Indo-Pacific Command, the nation's oldest and largest combatant command. USINDOPACOM includes 380,000 soldiers, sailors, marines, airmen, guardians, coast guardsmen and Department of Defense civilians and is responsible for all U.S. military activities in the Indo-Pacific, covering 36 nations, 14 time zones, and more than 50 percent of the world's population.

A native of Huntington, NY, he graduated from the U.S. Naval Academy in 1984, earning a Bachelor of Science in physics. He subsequently entered flight training and earned his wings in August 1986.

Operationally, he served in numerous fighter squadrons flying the F-14 A/B Tomcat and the F-18 C/E/F Hornet. His fleet assignments included the Ghostriders (VF-142) and Black Aces (VF-41). He commanded the famous Red Rippers (VF-11) and Carrier Air Wing 2. His extended deployments were in support of Operations Deny Flight, Deliberate Force, Southern Watch, Noble Eagle, Enduring Freedom, and Iraqi Freedom.

Ashore, Aquilino's assignments included duties as an adversary instructor pilot flying the A-4, F-5, and F-16N aircraft for the Challengers (VF-43); operations officer for the Strike Weapons and Tactics School, Atlantic; flag aide to the vice chief of naval operations; special assistant for weapons systems and advanced development in the office of legislative affairs for the U.S. secretary of defense; director of air wing readiness and training for the commander, Naval Air Forces, U.S. Atlantic Fleet; and executive assistant to the commander, U.S. Fleet Forces Command.

His flag assignments included director of strategy and policy, U.S. Joint Forces Command; deputy director, joint force coordinator, the Joint Staff; commander, Carrier Strike Group 2 aboard USS GEORGE H.W. BUSH (CVN-77); director of maritime operations, U.S. Pacific Fleet; deputy chief of naval operations for operations, plans and strategy; and commander, U.S. Naval Forces Central Command/U.S. Fifth Fleet/Combined Maritime Forces. Prior to his assignment to U.S. Indo-Pacific Command, Aquilino served as the 36th commander of U.S. Pacific Fleet.

Aquilino graduated from Navy Fighter Weapons School (TOPGUN) and the Joint Forces Staff College. He completed Harvard Kennedy School's executive education program in national and international security.

He is entitled to wear the Distinguished Service Medal, Defense Superior Service Medal, Legion of Merit, Bronze Star Medal, and Air Medal as well as several other personal unit and campaign awards. He accumulated more than 5,100 mishap free flight hours and over 1,150 carrier-arrested landings.

## Dr. Stefanie Tompkins

### Director, Defense Advanced Research Project Agency

Dr. Stefanie Tompkins is the director of the Defense Advanced Research Projects Agency (DARPA). Prior to this assignment, she was the vice president for research and technology transfer at Colorado School of Mines.

Tompkins has spent much of her professional life leading scientists and engineers in developing new technology capabilities. She began her industry career as a senior scientist and later assistant vice-president and line manager at Science Applications International Corporation, where she spent 10 years conducting and managing research projects in planetary mapping, geology, and imaging spectroscopy. As a program manager in DARPA's Strategic Technology Office, she created and managed programs in ubiquitous GPS-free navigation as well as in optical component manufacturing. Tompkins has also served as the deputy director of DARPA's Strategic Technology Office, director of DARPA's Defense Sciences Office – the agency's most exploratory office in identifying and accelerating breakthrough technologies for national security – as well as the acting DARPA deputy director.

Tompkins received a Bachelor of Arts degree in geology and geophysics from Princeton University and Master of Science and Doctor of Philosophy degrees in geology from Brown University. She has also served as a military intelligence officer in the U.S. Army.

## The Hon. Gabe Camarillo

### Under Secretary of the Army

The Hon. Gabe Camarillo was confirmed by the U.S. Senate on February 2, 2022 and sworn in as the 35th Under Secretary of the Army on February 8, 2022. As the Under Secretary of the Army, he is the Secretary of the Army's senior civilian assistant and principal adviser on matters related to the management and operation of the Army. He is also the Chief Management Officer of the Army. Camarillo's prior career includes significant experience in law, government, national security and private industry. He previously served as Assistant Secretary of the Air Force (Manpower & Reserve Affairs) where he was responsible for military and civilian personnel and reserve component matters for the Air Force. He previously also served as the Principal Deputy Assistant Secretary of the Army (Acquisition, Logistics & Technology), helping to lead and supervise Army modernization programs, procurement, logistics, and R&D investment. His private sector experience includes legal practice at several law firms with emphasis in the areas of commercial litigation, campaign finance law and government ethics. Camarillo also taught campaign finance law as an adjunct professor at Georgetown University's McCourt School of Public Policy. Recently, Camarillo served as Senior Vice President at SAIC, where he led two business units for an engineering and IT services company. He received a BA in Government at Georgetown University and a law degree.

## The Hon. Erik Raven

### Under Secretary of the Navy

The Hon. Erik Raven assumed the responsibilities of the Under Secretary of the Navy on April 13, 2022. He serves as the Department of the Navy's Chief Operating Officer and Chief Management Officer. He is responsible for providing oversight and policy for defense and naval strategy, intelligence and intelligence-related activities, sensitive activities, special access programs, space activities, critical infrastructure, small business programs, and the naval audit service. Additionally, he is responsible for business operations, performance management, and risk management within the Department.

Raven has served in a variety of legislative senior leadership positions in the federal government. Before his nomination, Raven was the principal advisor to the Democratic Chairs and Vice-Chairs of the Committee on Appropriations and Subcommittee on Defense on budget matters relating to the Department of Defense and intelligence community. Raven also served as a principal advisor in the offices of Senators Feinstein, Kennedy, and Byrd, advising on defense, foreign affairs, homeland security, veterans, space, and transportation policy issues.

Raven holds a master's degree in the History of International Relations from the London School of Economics, and a Bachelor of Arts in International Relations from Connecticut College.

## The Hon. Kristyn Jones

### Performing the Duties of the Under Secretary of the Air Force

The Hon. Kristyn E. Jones is performing the duties of the Under Secretary of the Air Force, the Pentagon, Arlington, VA. She is responsible for the affairs of the Department of the Air Force, comprised of the U.S. Air Force and U.S. Space Force, to include organizing, training, and equipping Air and Space Forces and for the welfare of approximately 700,000 active duty, Guard, Reserve and civilian Airmen and Guardians and their families serving around the world. As the Under Secretary, she oversees the department's annual budget of more than $205 billion and directs strategy and policy development, risk management, weapons acquisition, technology investments and human resource management across a global enterprise.

Jones serves as the Senate-confirmed Assistant Secretary of the Air Force for Financial Management and Comptroller. In this role, she serves as the principal adviser to the Secretary, Chief of Staff of the Air Force and Chief of Space Operations on all financial matters. She is responsible for providing financial management and analytical services necessary for the effective and efficient use of the Department of the Air Force resources. This includes directing the development of the Air Force program and budget, overseeing the Air Force Cost Analysis Agency's acquisition and operational cost analysis, providing analytical services and conducting Air Force accounting and finance operations.

Prior to her current governmental service, Jones was a Managing Director in KPMG's Federal Advisory practice, where she supported the Department of Defense, Veterans Affairs, and other federal clients. Previously, Jones served in a variety of government positions. She entered the Senior Executive Service in June of 2008 serving as Director, then Deputy Assistant Secretary of the Army for Financial Information Management until 2014. From 2007 to 2008, Jones was assigned as the Special Assistant to the Assistant Secretary of the Army, Financial Management and Comptroller for Cost Management Transformation. Prior to this role, Jones was the Director of Enterprise Transition Planning at the Department of Defense Business Transformation Agency and served as a Financial Manager at the Office of Naval Research. Earlier in her career, Jones held management positions at two Fortune 500 companies, Capital One and Advanced Micro Devices. Jones also served as a Military Intelligence Officer in the U.S. Army, where she held a variety of leadership positions.

## Doug Beck

### Director, Defense Innovation Unit

Doug Beck is the Director of the Defense Innovation Unit (DIU), reporting directly to the Secretary of Defense. In this role, Beck oversees efforts to accelerate the Department's adoption of commercial technology throughout the military and also serves as a senior advisor to the Secretary and Deputy Secretary of Defense on technology innovation, competition, and strategic impact. In his previous experience with DIU, Beck founded and led its joint reserve component from the inception in 2015 through 2019.

Prior to joining DIU, Beck was Vice President at Apple, reporting directly to its CEO, Tim Cook from 2009-2023. At Apple, Beck co-led the worldwide business development and sales functions, led the company's businesses across Northeast Asia and the Americas, including five years resident in Tokyo, and, most recently, led several of Apple's purpose-driven businesses worldwide, including in health, education, and other institutions of public impact.

Before joining Apple, he served as Senior Vice President and Chief Strategy Officer at Charles Schwab. Prior to Schwab, he was a partner at McKinsey & Company, co-leader of McKinsey's global strategy practice, and a leader of other industry and functional practices in the United States and Asia. In 2000, he was elected as one of the youngest partners in McKinsey history while resident in Shanghai. He has lived and worked for many years in Asia, including in Japan, Hong Kong, Indonesia, Singapore, and across China.

Currently a Captain in the U.S. Navy Reserve, Doug served in Iraq and Afghanistan from 2006-2007 with a joint special operations task force. He has also served extensively throughout the Asia Pacific region during his 26 years of service, including command of a large joint reserve unit supporting U.S. Indo-Pacific Command in Pearl Harbor, HI. His personal and unit awards include the Defense Superior Service Medal (two awards), the Bronze Star Medal, the Combat Action Ribbon, and the Presidential Unit Citation.

As a civilian, Beck has served as a member of the Secretary of State's Foreign Affairs Policy Board, an executive advisor to three Chiefs of Naval Operations and to Special Operations Community leadership, and for over fifteen years as a formal and informal advisor to senior civilian and uniformed Defense Department leaders. He also served from 2015-2023 as a member of the Board of Directors of the Center for a New American Security. He is a Trustee of the Rhodes Trust, which oversees the Rhodes Scholarships worldwide, and a member of the Advisory Board of Yale's Jackson School of Global Affairs.

Beck holds a bachelor's degree summa cum laude from Yale and a Master of Philosophy in International Relations from Oxford, where he was a Rhodes Scholar.

## Margie Palmieri

### Deputy Chief Digital and Artificial Intelligence Officer

Margie Palmieri is currently serving as the United Deputy Chief Digital and Artifiical Intelligence Officer for the Department of Defense, following her service as the special assistant to the Vice Chief of Naval Operations. She has previously served as the Director of the Chairman of the Joint Chiefs of Staff  Action Group, the founding Director of the Navy Digital Warfare Office, the Director of Integrated Fires and the Deputy Director of Decision Superiority under the Deputy Chief of Naval Operations for Information Warfare, the Director of the Chief of Naval Operations Strategic Actions Group, and as a Presidential Management Fellow at U.S. Fleet Forces Command. She was appointed to the Defense Intelligence Senior Executive Service in 2013 and the Senior Executive Service in 2018.

Through her past assignments, she has experience in digital transformation, standing up new organizations and teams, managing change, strategic planning, strategic communication and engagement, requirements and resources management, system-of-systems integration, and concepts and capabilities related to integrated fires, warfighting, networks, electronic warfare, cyber operations, command and control, communications, computers, intelligence, surveillance, reconnaissance, and targeting.

Palmieri graduated from Rutgers University with a master's degree in public policy and a bachelor's degree in political science. She completed the MIT Seminar XXI program and is currently pursuing a master's in Systems Engineering Management at the Naval PostGraduate School.

## Jason Zander

### Executive Vice President, Strategic Missions and Technologies Division, Microsoft

Jason Zander is the executive vice president of the Strategic Missions and Technologies Division at Microsoft, where he leads the engineering and sales field organizations incubating technical products and driving scientific discovery for the future of cloud computing and continued company growth. He also serves as the Chief Technology Advisor of TitletownTech in Green Bay, WI—a partnership between the Green Bay Packers and Microsoft—to build and fund early-stage, high-growth businesses in the region

## Dr. Chris Miller

### Author of *Chip War* and Associate Professor of International History at the Fletcher School, Tufts University

Chris Miller is an expert on international politics, economics, and technology. He is the author of *Chip War: The Fight for the World's Most Critical Technology*, a book that explains how computer chips have made the modern world—and how the U.S. and China are struggling for control over this fundamental technology. A handful of companies control the manufacturing of all the world's semiconductors, giving them a chokehold over the computing power on which everything from the biggest data centers to the tiniest Internet-of-Things devices depend. The future of computing, the book argues, will be determined by who controls the ability to produce the world's most advanced chips. *Chip War* won Financial Times' Best Business Book of the Year award and was described by *The New York Times* as "a nonfiction thriller."

Miller serves as associate professor of international history at The Fletcher School at Tufts University and co-director of the school's Russia and Eurasia Program. He also serves as visiting fellow at the American Enterprise Institute, where he researches and writes on trends in international politics. He is also a Director at Greenmantle, a New York and London-based macroeconomic and geopolitical consulting firm that advises some of the world's largest hedge funds, venture capital firms, asset managers, and corporations.

Miller's previous books explored major trends in politics and economics that shaped the contemporary world. His book *Putinomics: Power and Money in Resurgent Russia* explores the origins of Vladimir Putin's rule over Russia and the economic impact Putin has had. Miller's book *We Shall Be Masters* examines major shifts in geopolitics in Europe and Asia over the past three centuries, exploring the rise and fall of prior empires and how this legacy shapes Russia and China today. Miller's first book, *The Struggle to Save the Soviet Economy,* examined the collapse of the Soviet Union and global demise of socialism.

Miller frequently writes for newspapers and magazines such as *The New York Times*, *The Wall Street Journal*, *Foreign Affairs*, *Foreign Policy*, and many others. He has published academic articles in leading journals of international politics and economics.

He has previously served as Associate Director of the Brady-Johnson Program in Grand Strategy at Yale, a lecturer at the New Economic School in Moscow, a visiting researcher at the Carnegie Moscow Center, a research associate at the Brookings Institution, and as a fellow at the German Marshall Fund's Transatlantic Academy. He received his PhD and MA from Yale University and his BA in history from Harvard University.

# NDIA Leading the Way in Engagement, Networking, and National Defense

## Plan Ahead for Success | 2023 – 2024 Featured Meetings, Conferences, and Events

### 2023 Undersea Warfare Fall Conference

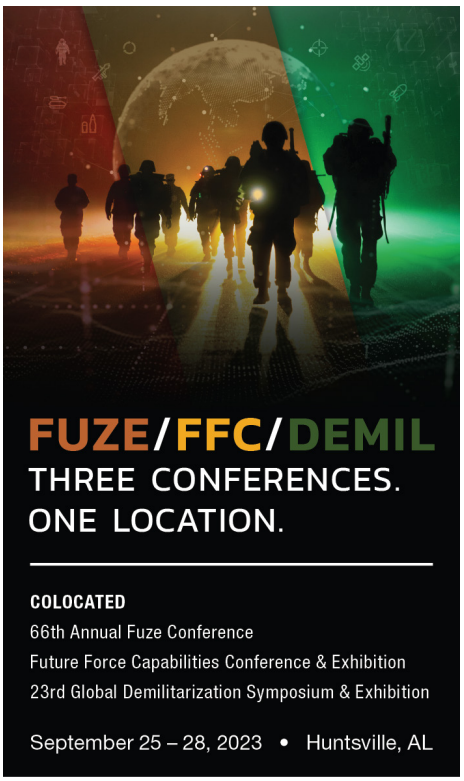
September 18 – 20*, 2023 | Groton, CT

### 26th Annual Systems & Mission Engineering Conference

October 16 – 19, 2023 | Norfolk, VA

### 38th Annual National Logistics Forum

February 6 – 7, 2024 | Oklahoma City, OK




### 34th Annual NDIA SO/LIC Symposium

October 30 – 31, 2023 | Washington, DC

### 2024 Tactical Wheeled Vehicles Conference

February 26 – 28, 2024 | Charlotte, NC

### 2023 Aircraft Survivability Symposium

October 31 – November 2, 2023* | Monterey, CA

### 2024 Human Systems Conference

March 21 – 22, 2024 | Arlington, VA


### 2023 WID National Conference

September 26, 2023 | Arlington, VA


### I/ITSEC 2023

November 27 – December 1, 2023 | Orlando, FL

### 2024 Ronald Reagan Missile Defense Conference

April 16 – 17, 2024 | Washington, DC

*All Classified | **Partially Classified

**Visit NDIA.org/Events for more information on all of our meetings, conferences, and events**