AT THE HEART OF THE MISSION

NDIA

1919 2019

20TH ANNUAL SCIENCE AND ENGINEERING TECHNOLOGY CONFERENCE

Enabling the National Defense Strategy Through Science & Technology

April 2 – 4, 2019 | San Diego, CA | NDIA.org/SET19

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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. NDIA is proud to celebrate 100 years in support of our warfighters and national security. The technology used by today's modern warfighter was unimaginable 100 years ago. In 1919, BG Benedict Crowell's vision of a collaborative team working at the intersection of science, industry, government and defense began what was to become the National Defense Industrial Association. For the past century, 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**

SCHEDULE AT A GLANCE

TUESDAY APRIL 2, 2019

Registration
Rio Vista Foyer
7:00 am - 5:45 pm

Display and Posters Open
Rio Vista Pavilion
7:00 am - 7:15 pm

General Session
Rio Vista Ballroom
8:00 am - 5:30 pm

Networking Reception
Rio VIsta Pavilion
5:30 - 7:15 pm

WEDENSDAY APRIL 3, 2019

Registration
Rio Vista Foyer
7:00 am - 4:00 pm

Concurrent Breakout Session
Rio Vista Ballroom and Rio Vista Pavilion
8:00 am - 4:00 pm

THURSDAY APRIL 3, 2019

Bus Transportation to Admiral Kidd Center
6:30 am - 4:00 pm

Registration
Admiral Kidd Center - pre-registration required
7:00 am - 4:00 pm

Slassified Session
Admiral Kidd Center - pre-registration required
7:00 am - 4:00 pm

LEADERSHIP AND COMMITTEES

James Chew
Division Chair

SCIENCE ENGINEERING & TECHNOLOGY DIVISION

WHO WE ARE

The Science & Engineering Technology Division was formed to examine all aspects of science and technology affecting national defense. The division provides a venue for discussion of the nation's defense needs by examining existing capabilities and suggesting ways to overcome deficiencies in defense research and development (R&D). Individuals from industry, government and academia have the opportunity to examine vital information in an open forum on technical needs and planned efforts. The division is dedicated to raising interest in meeting Department of Defense technology requirements through creative research and advanced development across industry, government and academia.

EVENT INFORMATION

LOCATION

San Diego Marriott Mission Valley
8757 Rio San Diego Drive
San Diego, CA 92108

EVENT WEBSITE

NDIA.org/SET19

EVENT THEME

Enabling the National Defense Strategy Through Science & Technology

ATTIRE

Civilian: Business Casual
Military: Uniform of the day

SURVEY AND PARTICIPANT LIST

You'll receive via email a survey and list of attendees (name and organization) after the conference. Please complete the survey, which helps make our event even more successful in the future.

EVENT CONTACT

Britt Sullivan, CMP
Associate Director, Meetings & Special Projects
(703) 298-1514
bsullivan@ndia.org

PLANNING COMMITTEE

James Chew
Event Chair

Raj Aggarwal

Dr. Michelle Atchison

Bob Baker

Charles Botello

Roger Garay

Dr. David Lambert

Charles Marchefsky

Brian Reinhardt

Jeffrey Singleton

Mark Stephen

Dr. David Walker

SPEAKER GIFTS

In lieu of speaker gifts, a donation is being made to the Fisher House Foundation.

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.

AGENDA

TUESDAY, APRIL 2

7:00 am – 5:45 pm

REGISTRATION
RIO VISTA FOYER

7:00 – 8:00 am

CONTINENTAL BREAKFAST
RIO VISTA FOYER

8:00 – 8:30 am

WELCOME REMARKS
RIO VISTA BALLROOM

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

General Hawk Carlisle, USAF (Ret)
President and CEO, NDIA

OUSD (R&E) DIRECTOR KEYNOTES
RIO VISTA BALLROOM

8:30 – 9:15 am

Focus of the DoD S&T Program and the FY 2020 DoD S&T Budget Request

Mary Miller
Principal Deputy to the Director of Defense Research and Engineering for Research and Technology (PD, DDR&E for R&T)

9:15 – 10:00 am

Prototyping, Integration and Open Architecture Development

James Faist
Director of Defense Research & Engineering (Advance Capabilities)

10:00 – 10:30 am

NETWORKING BREAK AND DISPLAYS/POSTERS OPEN
RIO VISTA PAVILION

SESSION 1: OPPORTUNITIES FOR COLLABORATION
RIO VISTA BALLROOM

Dr. Raj Aggarwal
Session Chair
President & CEO, RK Global Technology Consulting, LLC

10:30 – 11:00 am

NAVAL INFORMATION WARFARE CENTER – PACIFIC
Christopher Raney
Deputy Executive Director/Technical Director, Naval Information Warfare Center - Pacific

11:00 – 11:30 am

THE DOD TEST & EVALUATION / SCIENCE & TECHNOLOGY PROGRAM

George Rumford
Test & Evaluation/Science & Technology Program Manager, Defense Test Resource Management Center

11:30 am – 12:00 pm

DEFENSE INNOVATION UNIT – COMMERCIAL INNOVATION

Steve Butow
Space Portfolio Director

12:00 – 1:00 pm

NETWORKING LUNCH

WEST LAWN

1:15 – 1:45 pm

DEFENSE THREAT REDUCTION AGENCY (DTRA)

Dr. Rhys Williams
Director, Research & Development, Defense Threat Reduction Agency

1:45 – 2:30 pm

STRATEGIC ASSESSMENT AND TECHNOLOGY FUTURES

George Galdorisi and Rachel Volner
Corporate Strategy Group, Naval Information Warfare Center - Pacific

SESSION 2: SERVICE SCIENCE & TECHNOLOGY PROGRAMS

RIO VISTA BALLROOM

Mark Stephen
Session Chair
Strategic Technology Development, Lockheed Martin Missiles & Fire Control

2:30 – 3:15 pm

THE ARMY SCIENCE & TECHNOLOGY PROGRAM

Dr. Thomas Russell
Deputy Assistant Secretary of the Army (Research & Technology) and Chief Scientist

3:15 – 4:00 pm

NETWORKING BREAK AND DISPLAYS/POSTERS OPEN

RIO VISTA PAVILION

4:00 – 4:45 pm

THE NAVAL SCIENCE & TECHNOLOGY PROGRAM

Dr. David Walker
R&D Portfolio Director, Office of Naval Research

4:45 – 5:30 pm

THE AIR FORCE SCIENCE & TECHNOLOGY PROGRAM

Jeffrey Stanley
Deputy Assistant Secretary of the Air Force for Science, Technology and Engineering

5:30 – 7:15 pm

NETWORKING RECEPTION

RIO VISTA PAVILION

WEDNESDAY, APRIL 3

7:00 am – 5:00 pm

REGISTRATION

RIO VISTA FOYER

7:00 – 8:00 am

CONTINENTAL BREAKFAST

RIO VISTA PAVILION

SESSION 3: COI PRESENTATIONS CONCURRENT SESSIONS

RIO VISTA PAVILION

Robert Baker
Session Chair

8:00 – 8:30 am

The Role of the Communities of Interest

Mr. Dale Ormond
Director, Science and Technology, OUSD (R&E)

8:30 – 8:55 am

Space

Dr. Thomas Cooley
AFRL Sensors, U.S. Air Force Research Laboratory

8:55 – 9:20 am

Air Platforms

Layne Merritt
Director, Aviation Development, U.S. Army Futures Command

9:20 – 9:45 am

Advanced Electronics

Dr. Romeo Del Rosario
Associate Director, Sensors & Electron Devices Directorate, U.S. Army Research Laboratory

DOD S&T PRIORITY AREAS CONCURRENT SESSIONS

RIO VISTA BALLROOM

Dr. Michelle Atchison
Session Chair

8:00 – 8:15 am

Welcome Remarks

Dr. Michelle Atchison
University of Texas System

8:15 – 9:00 am

Cyber

Dr. Daniel Ragsdale
Assistant Director for Cyber

9:00 – 9:45 am

Quantum Science

Paul Lopata
Assistant Director for Quantum Science

9:45 – 10:15 am

NETWORKING BREAK AND DISPLAYS/POSTERS OPEN

RIO VISTA PAVILION

10:15 – 10:40 am

MATERIALS & MANUFACTURING PROCESSES

Dr. Tim Bunning
Chief Scientist, Materials & Manufacturing Directorate, U.S. Air Force Research Laboratory

10:40 – 11:05 am

Weapons Technologies

Dr. David E. Lambert,
Chief Scientist, Munitions Directorate, U.S. Air Force Research Laboratory

11:05 – 11:30 am

Ground & Sea Platforms

Alfred Grein
Executive Director, Research & Technology Integration, Ground Vehicle Systems Center

11:30 – 11:55 am

Autonomy

Jean-Charles Lede
U.S. Air Force Office of Scientific Research

11:55 am – 1:00 pm

NETWORKING LUNCH

WEST LAWN

1:00 – 1:25 pm

Cyber

Giorgio Bertoli
Director, C5ISR Center, Intelligence and Information Warfare Directorate, U.S. Army Combat Capabilities Development Command

1:25 – 1:50 pm

Electronic Warfare

Jeffrey Boksiner
U.S. Army Futures Command

1:50 – 2:15 pm

Energy and Power Technology

Dr. Edward C Shaffer, PE
Chief, Energy & Power Division, Sensors & Electron Devices Directorate, Army Research Laboratory, Combat Capability Development Command

2:15 – 2:45 pm

NETWORKING BREAK AND DISPLAYS/POSTERS OPEN

RIO VISTA PAVILION

10:15 – 11:00 am

Machine Learning/Artificial Intelligence

Dr. Mark H. Linderman
Senior Scientist for Command and Control, Decision Support, Information Directorate, Air Force Research Laboratory

11:00 – 11:45 am

Space

Dean Ridgely
Assistant Director for Space

1:00 – 1:45 pm

Autonomy

Wayne Nickols
Assistant Director for Autonomy

2:45 – 3:10 pm **C4I**

Mark Linderman
Senior Scientist for Command & Control, Decision Support and Information, U.S. Air Force Research Laboratories

3:10 – 3:35 pm **Human Systems**

Dr. John Tangney
Director, Human & Bioengineering Systems Division, Office of Naval Research

3:35 – 4:00 pm **Sensors and Processing**

Dr. James Campbell
U.S. Army Futures Command

THURSDAY, APRIL 4 – SEPARATE PRE-REGISTRATION REQUIRED

CLASSIFIED SESSION AT THE ADMIRAL KIDD CONFERENCE CENTER, NAVAL BASE POINT LOMA

Bus transportation will be provided between the Marriott and the Base*

7:00 am – 2:45 pm **REGISTRATION OPEN**
POINT LOMA PREFUNTION SPACE

7:00 – 8:00 am **CONTINENTAL BREAKFAST**
HARBOR LOUNGE

8:00 – 8:10 am **WELCOME REMARKS**

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

SESSION 4: CAPABILITIES NEEDED BY THE COMBATANT COMMANDERS

POINT LOMA

Roger Garay
Session Chair
Enterprise Portfolio Analyst, Defense Technical Information Center

8:10 – 8:55 am **USCENTCOM**

Martin Drake
Science Advisor, USCENTCOM

8:55 – 9:40 am **USINDOPACOM**

Cynthia Holland
Science Advisor, USINDOPACOM

9:40 – 10:10 am **NETWORKING BREAK**

10:10 – 10:55 am **USSOUTHCOM**
Dr. Andrew Higier
OUSD (R&E) LNO, SOUTHCOM

10:55 – 11:40 am **USTRANSCOM**
Lou Bernstein
RDT&E Program Director, USTRANCOM

11:40 am – 1:00 pm **NETWORKING LUNCH**

1:00 – 1:45 pm **USSTRATCOM**
Mike Byington
Technology/Experimentation Support Branch, USSTRATCOM

1:45 – 2:30 pm **USNORTHCOM**
Col Gregg Jerome, USAF
Chief, J8 Science and Technology, NORAD and USNORTHCOM

2:30 - 3:15 pm **USEUCOM**
Stephen Spehn
Deputy Science Advisor, USEUCOM

3:15 – 3:45 pm **HYPERSONICS**
Michael White
Assistant Director for Hypersonics, OUSD (R&E)

3:45 – 4:00 pm **CLOSING REMARKS**
James Chew
Chair, NDIA Science & Engineering Technology Division
Group Director, Aerospace and Defense, Cadence Design Systems

*A Shuttle bus will run between the hotel and base every hour.

The NDIA has a policy of strict compliance with federal and state antitrust laws. The antitrust laws prohibit competitors from engaging in actions that could result in an unreasonable restraint of trade. Consequently, NDIA members must avoid discussing certain topics when they are together at formal association membership, board, committee, and other meetings and in informal contacts with other industry members: prices, fees, rates, profit margins, or other terms or conditions of sale (including allowances, credit terms, and warranties); allocation of markets or customers or division of territories; or refusals to deal with or boycotts of suppliers, customers or other third parties, or topics that may lead participants not to deal with a particular supplier, customer or third party.

DISPLAYER DESCRIPTIONS

CAL POLY COLLEGE OF ENGINEERING

Nationally, the College of Engineering at Cal Poly Pomona ranks top five among undergraduate engineering programs in non-doctorate-granting institutions, according to the U.S. News & World Report. With 12 ABET-accredited undergraduate programs and 7 graduate programs, we enroll nearly 5,800 students and graduate approximately 1,300 every year. Our undergraduate student body is ethically and socioeconomically diverse—37 percent of its students are from underrepresented groups and nearly 50 percent of our recent graduates are first-generation and low-income. The college's learn by doing education philosophy links theory with practice to graduate day-one professionals that are highly sought after by industry. Students participate in real-world engineering problem solving through internships, senior class projects and senior capstone design experiences.

DARPA SBIR/STTR

The Defense Advanced Research Projects Agency (DARPA) was established in 1958 to prevent strategic surprise from negatively impacting U.S. national security and create strategic surprise for U.S. adversaries by maintaining the technological superiority of the U.S. military. To fulfill its mission, the Agency relies on diverse performers to apply multi-disciplinary approaches to both advance knowledge through basic research and create innovative technologies that address current practical problems through applied research. DARPA's scientific investigations span the gamut from laboratory efforts to the creation of full-scale technology demonstrations in the fields of biology, medicine, computer science, chemistry, physics, engineering, mathematics, material sciences, social sciences, neurosciences and more. As the DoD's primary innovation engine, DARPA undertakes projects that are finite in duration but that create lasting revolutionary change.

DSIAC

The Defense Systems Information Analysis Center (DSIAC) is a component of the U.S. Department of Defense's (DoD's) Information Analysis Center with a focus on nine communities of practices. As an information and knowledge resource for DoD, DSIAC leverages expertise and knowledge from other Government agencies, research laboratories, industry, and academia to help solve the toughest scientific and technical problems of the Defense Systems community. To support this community, DSIAC offers several products and services, such as a four-hours of free technical inquiries, task orders, scientific and technical information uploads, training and events, information research products, and promotions.

DTIC

The Defense Technical Information Center (DTIC) is the DoD's central authority for collecting, safeguarding, analyzing, and disseminating defense-related scientific and technical information to a broad spectrum of authorized users. Its flagship product, the R&E Gateway (https://www.dtic.mil), is the DoD's one-stop source for controlled-unclassified (NIPR) collections/workspaces to help military lab scientists, engineers, and researchers reduce duplication of efforts and build on past successes. Its classified (SIPR) site (https://dtic.smil.mil) support the requirements of the Combatant Commands (CCMDs). DTIC also manages the Information Analysis Centers (IAC) which provide essential technical analysis and data support to the CCMDs, the Office of the Secretary of Defense, other defense and federal agencies. Through the IACs, DTIC actively partners and collaborates with defense research and engineering focus groups and communities of interest in cyber, homeland defense, and defense systems.

GSA AAS / FEDSIM

GSA AAS & FEDSIM are the only full service, government-wide assisted acquisition organization that provides federal agencies with hands-on strategic direction and development through all phases of the federal government acquisition process. Each client receives tailor-made strategies, dedicated customer service, and unmatched technical expertise. Our comprehensive, integrated approach enables clients to focus accomplishing their agency mission, while we focus on the details.

MICROWAVE APPLICATIONS GROUP (MAG)

Microwave Applications Group (MAG) provides unique microwave components and subsystems to government, aerospace, and commercial markets worldwide. MAG's goal is to find creative, cost-effective solutions to customer requirements. Early growth of the company was fueled by development of the Phase Shifter Suite for the AWACS and the Phase Control Module for the B1-B. These efforts led MAG into the development of numerous Phased Array Antenna Systems where MAG built the antenna, electronic control circuitry and the Beam Steering Computer. MAG's core design concept naturally transitioned into the development of a line of single, double pole and up to four throw High Power Switches.

ZMICRO, INC.

ZMicro provides military grade computers, displays, storage, and video enhancements systems. We are committed to providing rugged computing solutions that meet your requirements for durability, reliability, and optimal performance. All our products are designed to be highly customizable to accommodate program specifications. Our extensive on-site engineering and manufacturing capabilities combined with our proven line of products enable us to provide fast turnaround on standard and build to spec products.

NOTES

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BIOGRAPHIES

MR. JAMES "JIM" A. FAIST

Director of Defense Research and Engineering for Advanced Capabilities
Office of the Secretary of Defense

Mr. James "Jim" A. Faist is the Director of Defense Research and Engineering for Advanced Capabilities, reporting directly to the Under Secretary of Defense Research and Engineering within the Office of the Secretary of Defense. Jim directs an organization whose mission is to recognize, explore, and accelerate the development and integration of new technology to maintain U.S. technological superiority. He is responsible for establishing a Department of Defense joint mission engineering capability, oversight of developmental testing and test facilities as well as demonstration and validation of technology prototype and rapid fielding activities. Jim serves as the mission area advisor for warfighter portfolios in hypersonics, space, autonomy, and networked command, control, and communication architectures. He also provides independent technical risk assessments of major acquisition programs.

Jim has an extensive career in industry and government in national defense, including progressive responsibilities and experience in military operations, advanced technologies, system development, engineering leadership, and program management. He is a recognized expert in advanced sensors, weapons, and electronic warfare for space, air, and ground capabilities.

Faist was a chief engineer for the Northrop Grumman and Harris Corporations. He held senior executive positions at Schafer Corporation, Trident Systems Incorporated, and System Planning Corporation. Prior to his work in the industry, he served in the United States Air Force as a Weapons Systems Officer and an Electronic Warfare Officer in the F-4D/E Phantom II fighter aircraft.

Jim earned a Bachelor of Science in Electrical Engineering from Virginia Military Institute in Lexington, Virginia, and a Master of Science in Electrical Engineering from Cornell University in Ithaca, New York, with emphasis on microwave and power systems. During his career he received numerous performance awards and honors from the U.S. Air Force, academia, and industry.

MARY MILLER

Performing the Duties of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E))

Ms. Mary J. Miller is currently Performing the Duties of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)). In April 2016, she joined the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics as the Principal Deputy (PD) Assistant Secretary of Defense for Research and Engineering. As the PD, she is responsible for the Department of Defense (DoD) research and development strategies and plans to develop and leverage technologies needed to ensure U.S. technological superiority. She provides leadership and establishes guidance for the development and execution of the DoD Science and Technology (S&T) enterprise as well as lead joint prototyping and experimentation efforts, systems engineering and developmental test policies and procedures with an annual budget in excess of $12 billion. Ms. Miller oversees research efforts at 63 DoD laboratories, warfare centers, and engineering centers, in addition to prototyping, systems engineering, and developmental test efforts for the Department – all focused on delivering next generation capabilities to the U.S. warfighter. She promotes coordination and cooperation across DoD components, between DoD and other federal and non-federal agencies and organizations, and ensures technological exchange with allied and partner nations. Ms. Miller also serves as the U.S. Principal for The Technical Cooperation Program (TTCP), an international organization that collaborates in defense scientific and technical information exchange; program harmonization and alignment, and shared research activities between Australia, Canada, New Zealand, United Kingdom, and the U.S.

Prior to her current assignment, she served three years as the Deputy Assistant Secretary of the Army for Research and Technology (DASA(R&T)). In that role, she was responsible for policy and oversight of the research and technology programs, which span 16 Laboratories and Research, Development and Engineering Centers, employs nearly 12,000 scientists and engineers and had a yearly budget that exceeded $2.4 billion. Ms. Miller was charged with identifying, developing, and demonstrating technology options that informed and enabled effective and affordable capabilities for Soldiers. She was also responsible for developing an S&T strategy responsive to Army needs- near term (5 years) to far term (more than 20 years). Her S&T portfolio covered basic research through the development and demonstration of components, subsystems, Manufacturing Technology, and technology system prototypes.

Between 2010-2013, Ms. Miller served as the Deputy Program Executive Officer for Soldier, where she was the principal civilian for the Department of the Army responsible for the design, development, procurement, fielding, and sustainment of a portfolio with more than 460 products/systems and a $3 billion budget. Her work encompassed virtually everything a Soldier wears or carries. From 2005-2010, Ms. Miller served as the Director for Technology, within the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology. She was responsible for oversight and coordination of Army's S&T efforts to transition technology in support of acquisition programs.

Ms. Miller received a B.S. in Electrical Engineering from the University of Washington, an M.S. in Electrical Engineering, Electro-Physics, from George Washington University, and an M.B.A. from the University of Tennessee. She was selected in 2005 to the Senior Executive Service and is Defense AcquisitionWorkforce Level III certified in Program Management; Engineering; and Science and Technology Management.