

INTEGRATED AIR & MISSILE DEFENSE S Y M P O S I U M

Defense Against Emerging Threats

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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. Over the past century, NDIA and its predecessor organizations have been at the heart of the mission by dedicating their time, expertise, and energy to ensure that our warfighters have the best training, equipment, and support. For more information, visit NDIA.org

SCHEDULE AT A GLANCE

Registration 7:00 am - 4:30 pm

Continental Breakfast 7:00 – 8:00 am

General Session 8:00 – 10:00 am Networking Break 10:00 – 10:30 am

General Session 10:30 am – 12:00 pm

Lunch 12:00 – 1:15 pm

General Session 1:15 – 2:45 pm

Networking Break 2:45 – 3:15 pm

General Session 3:15 – 5:00 pm



WELCOME LETTER FROM NDIA'S PRESIDENT & CEO

I am pleased to welcome you to NDIA's 10th Annual Integrated Air and Missile Defense (IAMD) Symposium. This yearly event addresses a national defense imperative that is the subject of an increasingly complex, critical, and continuously growing body of military art.

Under this year's theme, "Defense Against Emerging Threats," we will explore how to deal with the fielding by potential adversaries of a range of deadly hypersonic weapons. We will examine the critical interactions among government, military, industry, and academia toward unprecedented levels of collaboration and cooperation to deliver the most effective missile defense capabilities to our warfighters and homeland defenders.

This event is a classified SECRET//NOFORN, not-for-attribution symposium that is jointly hosted by NDIA's Missile Defense and Strike, Land Attack, and Air Defense Division. Participants will hear unfiltered, unvarnished, straight talk about the priorities and challenges of the Defense Department -- from the services to the Joint Staff to the laboratories -- regarding all elements of global ballistic missile defense systems. When you leave this conference, you will have extensive knowledge of the current state of IAMD.

Best wishes,

Herbert J. Carlisle General, USAF (Ret) President & CEO



LEADERSHIP AND COMMITTEES

Thad Smith

Division Chairman

Dr. Stephen Woodall Vice Chairman

STRIKE, LAND ATTACK AND AIR DEFENSE (SL,AAD) DIVISION

WHO WE ARE

The focus of NDIA's Strike, Land Attack, and Air Defense (SLAAD) Division is conducting and reporting studies related to SLAAD. The group holds quarterly meetings at industry, laboratory, and government sites. Additionally, members annually visit the fleet commands, alternating between the Atlantic and Pacific fleets, to gain first-hand knowledge of current operating fleet issues and to help members incorporate relevant, timely Navy concerns into their studies. The Division teams with the NDIA Missile Defense Division to conduct an annual symposium on the state of integrated air and missile defense.

EVENT INFORMATION

LOCATION

The Johns Hopkins University Applied Physics Laboratory Kossiakoff Conference Center 11100 Johns Hopkins Rd. Laurel, MD 20723

WIFI

Network: NDIA19
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ATTIRE

Civilian: Business

Military: Uniform of the day

SURVEY AND PARTICIPANT LIST

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

EVENT CONTACT

Alissa Meehan

Meeting Planner (703) 247-2540 ameehan@NDIA.org

PLANNING COMMITTEE

RADM Matt Klunder, USN (Ret)

Thad Smith

Jeffery Morrow

Dr. Stephen Woodall

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.





7:00 am – 4:30 pm **REGISTRATION**

7:00 – 8:00 am CONTINENTAL BREAKFAST

8:00 – 8:13 am WELCOME AND ADMINISTRATIVE REMARKS

Johns Hopkins University Applied Physics Laboratory

Vishal Giare

Mission Area Executive, Air and Missile Defense, JHU/APL

Strike, Land Attack, and Air Defense Division

Thad Smith

Chairman, NDIA Strike, Land Attack, and Air Defense Division

Missile Defense Division

Jeffery Morrow

Chairman, NDIA Missile Defense Division

8:13 – 8:15 am SYMPOSIUM AGENDA OVERVIEW AND INTRODUCTION OF SPEAKERS

Dr. Stephen Woodall

Symposium Chairman & Vice Chairman, NDIA Strike, Land Attack, and Air Defense Division

8:15 – 9:15 am KEYNOTE ADDRESS – MDA VISION FOR THE FUTURE

OF INTEGRATED AIR AND MISSILE DEFENSE

Stan Stafira, Jr., ST

Director for External Technical Interface, Ballistic Missile Defense System Architect, Missile Defense Agency

9:15 – 10:00 am U.S. ARMY VISION FOR THE FUTURE OF JOINT

INTEGRATED AIR AND MISSILE DEFENSE

Richard De Fatta, SES

Director, Future Warfare Center, US Army Space and Missile Defense Command / Army Forces Strategic Command

10:00 – 10:30 am **NETWORKING BREAK**

10:30 – 11:15 am U.S. NAVY VISION FOR THE FUTURE OF

JOINT INTEGRATED AIR AND MISSILE DEFENSE

Brian O'Donnell, GS-15

Assistant Deputy for Combat Systems and Warfighting Integration, Surface Warfare Division, OPNAV N96

11:15 am – 12:00 pm U.S. AIR FORCE VISION FOR THE FUTURE OF

JOINT INTEGRATED AIR AND MISSILE DEFENSE

Todd Serres, GS-15

Associate Chief, C2, IAMD & IO Division (A3TY), Operations, Training & Readiness Directorate, DCS Operations, HQ USAF

12:00 - 1:15 pm

LUNCHEON AND PRESENTATION - LOOKING AROUND THE CORNERS OF THE FUTURE: ANTICIPATING CHALLENGES OF THE FOUR MAYHEM BROTHERS

Dr. Peter Huessy

Director of Strategic Deterrent Studies at the Mitchell Institute on Aerospace Studies, Air Force Association, and President, Geostrategic Analysis and PRH&CO

1:15 - 2:45 pm

PANEL DISCUSSION - HYPERSONIC CAPABILITIES TO ADDRESS EMERGING THREATS

RADM Matthew "Gucci" Klunder, USN (Ret)

Vice President, DoD Strategy and Technology, Harris Corporation Moderator

Lt Col Charles "BB" Bris-Bois, USAF

Strategist, HAF/A5AC Concepts Division (Skunks)

Dr. Ken Iwanski

Hypersonics Lead, SAF/AQR

Denise Spencer

Lead Engineer, Hypersonics Defense, Missile Defense Agency/DE-HD

2:45 - 3:15 pm

NETWORKING BREAK

3:15 – 4:00 pm JOINT STAFF IAMD UPDATE

MG Sean Gainey, USA

Deputy Director for Force Protection, J-8

4:00 – 4:45 pm

2019 NAVY IAMD WARFIGHTING PRIORITIES

Paige Rumberg, GS-15

N8/N9 Branch Head, IAMD Capability Development, Naval Surface and Mine Warfighting Development Center

4:45 – 4:50 pm

CLOSING REMARKS AND ADJOURN

Thad Smith

Chairman, NDIA Strike, Land Attack, and Air Defense Division

Jeffery Morrow

Chairman, NDIA Missile Defense Division

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.

BIOGRAPHIES





LT COL CHARLES BRIS-BOIS, USAF

Strategist
HAF/A5AC Concepts Division (Skunks)

Lieutenant Colonel Charles P. Bris-Bois is a strategist in the Air Force Futures

and Concepts Division (Skunks) under the Headquarters Air Force Deputy Chief of Staff for Strategy, Integration, and Requirements. As a key leader, he provides warfighting expertise and strategic guidance to ensure integrated, multi-domain future force design development.

Born in San Antonio, Texas, Lt Col Bris-Bois later entered the Air Force in 1999. After graduating from the U.S. Air Force Academy, his first operational assignment was at Los Angeles Air Force Base as a Program Manager. In 2003, he was selected to become part of the initial cadre of Combat Rescue Officers in the U.S. Air Force. After two years of training through the Pararescue Indoctrination Course, Combat Dive School, Military Freefall Jump School, and the Combat Rescue Officer Apprentice Course, he graduated from the training pipeline and was assigned to the 31st RQS at Kadena Air Base, Japan, where he served as both a Flight Commander and Director of Operations. In 2012, Lt Col

Bris-Bois attended the School of Advanced Military Studies in Fort Leavenworth, Kansas. Afterward, Lt Col Bris-Bois took command of the 31st Rescue Squadron and soon became the first Combat Rescue Officer to command the 83rd Expeditionary Rescue Squadron at Bagram Air Base, Afghanistan. Following Command, Lt Col Bris-Bois served on the Headquarters Air Force Staff and then attended the Eisenhower School for National Security and Resource Strategy. His wife's name is Maggie and he has two daughters, Carolina and Margaret, and a son, Jack.



RICHARD DE FATTA

Director, Future Warfare Center
US Army Space and Missile Defense Command / Army Forces Strategic Command

Richard De Fatta joined USASMDC/ ARSTRAT and the Senior Executive

Service in 2013 with more than 38 years of professional leadership experience, 34 of which are specific to acquisition. Mr. De Fatta contributed to many significant programs, including Pershing II, Laser Countermeasure Weapons, Combat Vehicle Survivability, Kwajalein Missile Range, Medium Extended Air Defense System, and STINGER. He currently serves as the Acting Director, Future Warfare Center, USASMDC/ARSTRAT, and is responsible for Space and Global Ballistic Missile Defense Doctrine and Training, Concept Developments, Decision Support, and the TRADOC Capability Managers for Space and High Altitude and Global Ballistic Missile Defense. He previously served as the acting Technical Center Director and Air and Missile Defense Director to oversee developing technology while providing support in the areas of directed energy, interceptors, research and advanced concepts, space, advanced hypersonic weapons, and the Reagan Test Site.

Upon retiring from the Army as a colonel in 2005, Mr. De Fatta spent more than seven years in senior contractor positions providing systems engineering, integration, test, program management, and technical support to Department of Defense programs related to missile defense weapon systems.

Mr. De Fatta's previous military assignments are diverse: project manager, Cruise Missile Defense Systems (formerly SHORAD), Program Executive Office for Missiles and Space; chief of staff to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology; product manager for the U.S. Medium Extended Air Defense System, Program Executive Office for Air and Missile Defense; director, Kwajalein Missile Range, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command; product manager, Combat Vehicle Signature Management Program, Program Executive Office for Armored Systems Modernization; PEO Air Defense liaison officer for Europe: Laser Countermeasure program manager, Directed Energy Directorate, U.S. Army Missile Command Research Development

Engineering Center; and Research and Development coordinator, Pershing Project Office.

Having graduated in 1978 from the U.S. Military Academy with a Bachelor of Science in engineering, Mr. De Fatta earned both a Master of Science in engineering physics from the Air Force Institute of Technology and a Master of Science in systems management from the Florida Institute of Technology. He attended the U.S. Army War College and U.S. Army Command and General Staff College. As a member of the Army Acquisition Corps since its inception, he also completed the Executive PM, Advanced PM, and Military Acquisition Management courses, earning him level III certification in program management.

During his military career, Mr. De Fatta received the Distinguished Service Medal, Legion of Merit (two oak leaf clusters), Meritorious Service Medal (three oak leaf clusters), Army Commendation Medal (three oak leaf clusters), the Army Achievement Medal, Army Staff Identification Badge, and Parachutist Badge.

MG SEAN GAINEY, USA

Deputy Director for Force Protection J-8

Major General Sean Gainey is the Deputy Director for Force Protection

on the Joint Staff, J-8. Upon graduating from Georgia Southern University in 1990, he joined the Air Defense Artillery as a Second Lieutenant. His professional military education includes the Air Defense Officer Basic and Advanced Courses, Command and General Staff College, and Senior Service College at the Dwight D. Eisenhower School for National Security. He holds a BBA, an MS in Personnel Management from Central Michigan University, and an MS in National Security and Resource Strategy from the Dwight D. Eisenhower School for National Security.

General Gainey's first duty assignment was in 5th Battalion, 2d Air Defense Artillery Regiment, Bamberg, Germany, as a Chaparral/Stinger Platoon Leader, Avenger Battery Executive Officer, and Assistant Operations Officer. He then joined 3d Battalion, 43d Air Defense Artillery

Regiment, Fort Bliss, Texas, as an Assistant Operations Officer and Commander of Charlie Battery. While in command, he deployed his battery to Bahrain in support of OPERATION SOUTHERN WATCH. He was then assigned to the Combat Maneuver Training Center, Hohenfels, Germany, as an Air Defense Artillery Observer/Controller and G3 Plans Officer. He was later assigned to 5th Battalion, 7th Air Defense Artillery, U.S. Army Europe, as the Battalion Executive Officer and later Brigade Operations Officer while deploying in support of OPERATION IRAQI FREEDOM.

General Gainey then joined the U.S. Army Human Resources Command, Alexandria, Virginia, as the Lieutenant Colonel Assignment Officer and Executive Officer to the Director of Officer Personnel Management Directorate. Next, he commanded 5th Battalion, 7th Air Defense Artillery, Kaiserslautern, Germany. While in command, he deployed his battalion in support of OPERATION JOINT TASK FORCE-EAST. Afterwards, he was the Chief

of Air and Missile Defense Division, U.S. Army Europe, and then the Commander, 108th Air Defense Artillery Brigade, Fort Bragg, North Carolina. Having deployed his brigade in support of OPERATION ENDURING FREEDOM during his command, he later served as the Chief, Global Force Management Division, Joint Staff, J3, Washington, DC. Prior to his current assignment, General Gainey was the Deputy Commanding General, U.S. Army Cadet Command, Fort Knox, Kentucky, and Commanding General, 94th Army Air and Missile Defense Command, Hickam Air Force Base, Hawaii.

General Gainey's awards and decorations include the Defense Superior Service Medal, Legion of Merit, Bronze Star Medal, Meritorious Service Medal (w/4 OLCs), Army Commendation Medal (w/3 OLCs), Joint Service Achievement Medal, Army Achievement Medal (w/1 OLC), Air Force Achievement Medal, Meritorious Unit Citation, and Parachutist Badge.



VISHAL GIARE

Mission Area Executive, Air and Missile Defense Johns Hopkins University Applied Physics Laboratory

Vishal Giare became the Mission Area Executive for Air and Missile Defense at the

Johns Hopkins University Applied Physics Laboratory in 2017. He is responsible for providing leadership and setting direction for a mission area conducting over 1000 staff years in annual sponsored work focused on developing advanced Ballistic Missile Defense (BMD) and Air Defense systems to provide Integrated Air and Missile Defense (IAMD) for the nation, deployed forces, and allies. He oversees the Laboratory's portfolio of Air and Missile Defense programs such as AEGIS and STANDARD Missile to perform research and development on behalf of the Department of Defense, the intelligence community, the National Aeronautics and Space Administration, and other federal agencies.

Mr. Giare previously served as the Program Area Manager for Aegis BMD to foster programs covering combat and missile systems engineering, future system development, flight test and evaluation, and capability introduction to the warfighter. He managed a team of 300 staff charged with the Technical Direction Agent role to ensure the technical integrity of the integrated Aegis BMD system. As a chief technical advisor to the Missile Defense Agency's Aegis BMD office, he served on the Executive Review Panel for all Aegis BMD flight test firings and combat and missile system design reviews. Under his leadership, the Laboratory contributed to numerous successful Aegis BMD "firsts," including flight demonstrations of Launch-on-Remote, Launch-on-Space Sensors, Aegis Ashore, and AEGIS Baseline 9 IAMD.

With more than 20 years of experience in the system engineering, modeling and simulation, test and evaluation, and operational system analysis of complex IAMD systems, Mr. Giare has a diverse technical background. Additionally, he served as a trusted agent and technical advisor to senior U.S. Navy and Missile Defense Agency leaders. In 2016, Mr. Giare was appointed by the National Academy of Sciences, Engineering and Medicine to serve on the Naval Studies Board Committee on Defending Forward-Deployed U.S. Navy Platforms from Potential Enemy Missile and Rocket Attacks. He has also completed the Senior Executives in National and International Security Program at the Harvard University Kennedy School of Government.

Mr. Giare earned a BS in physics from the University of Tennessee and two MS degrees in physics and electrical engineering systems from the University of Michigan.





DR. PETER HUESSY

Director of Strategic Deterrent Studies at the Mitchell Institute on Aerospace Studies Air Force Association

President
Geostrategic Analysis and PRH&CO

Peter Huessy is
President of his own defense consulting
firm, PRH&CO, and its subsidiary,
Geostrategic Analysis. For 22 years, he
served in many positions, including senior
defense consultant at the National Defense
University Foundation and consultant to
several defense clients. He is now Director
of Strategic Deterrent Studies at the Mitchell
Institute for Aerospace Studies of the Air
Force Association.

Since 1983, Mr. Huessy has hosted nearly 1,750 Congressional breakfast seminars on Capitol Hill regarding topics such as missile defense, strategic nuclear modernization, space policy, arms control, and defense policy. Meanwhile, he has lectured at numerous academic institutions and written a variety of articles pertaining to major arms control, missile defense, and strategic nuclear modernization efforts. Accordingly,

Mr. Huessy has an authoritative knowledge of the history and politics of matters related to national security, nuclear deterrence, missile defense, and terrorism.

He is a Featured Writer for Frontiers for Freedom, and the Gatestone Institute, is a Contributing Editor to Family Security Matters and was an occasional columnist for the Washington Times. He also writes for RealClearDefense, The Hill, the Daily Caller, Defense News, Breaking Defense and other defense publications.

With an MA from the Columbia University School of International Affairs and degrees in anthropology, international relations, and national security policy from Beloit College, Mr. Huessy had the privilege to work for five U.S. Senators before becoming Chief Governmental Affairs Officer of The Environmental Fund, Assistant to the Director

of the Office of Surface Mining for Legislation and Congressional Affairs, Special Assistant for State Relations and International Energy Policy, and then Assistant Secretary of the Interior for Energy and Minerals.

He then served with the Reagan Administration defense transition team before creating PRH&CO and consulting for both the Science and Technology Program at The George Washington University and ANSER/ Anteon at the USAF acquisition office.

In addition to these experiences, Mr. Huessy wrote occasional columns for the 2005 Committee on the Present Danger, appeared on radio and television, and spoke at forums about national security and defense. He now writes regularly for The Hill, RealClearDefense, Gatestone Institute, Frontiers of Freedom, and Family Security Matters.



DR. KEN IWANSKI

Hypersonics Lead SAF/AQR

Dr. Ken Iwanski represents the USAF Hypersonics Prototyping

activities within the Office of the Deputy Assistant Secretary (Science, Technology & Engineering) – SAF/AQR.

Dr. Iwanski's previous assignments are extensive and varied. After acting as Program Officer in the Air Warfare & Weapons Department of the Office of Naval Research (ONR), Dr. Iwanski served as Operations Research Analyst in OSD's Cost Assessment & Program Evaluation (CAPE). He was especially qualified for this latter role as he spent time in both the ISR Programs Division

and Tactical Air Forces Division within the Program Evaluation Directorate. Later in his career, Dr. Iwanski was the Program Element Monitor (PEM) in SAF/AQRT, overseeing the USAF S&T investments in air vehicle technologies (AFRL/RQ). However, most of his career with the Air Force Research Laboratory (WPAFB) was spent as a program manager, long range strategic technology planner, and in-house/USAF Academy visiting researcher tasked with investigating experimental air vehicle aerodynamics.

With regards education, Dr. Iwanski has earned several degrees. First, he received a Bachelor of Science (cum laude). Then, he went on to complete a Master of Science in National Resource Strategy from the Industrial College of the Armed Forces (ICAF), National Defense University. Finally, Dr. Iwanka received a Doctor of Philosophy in aerospace engineering from the University of Notre Dame. In addition to these academic achievements, Dr. Iwanka completed Air War College (correspondence) and became Fellow of the Department of Commerce's Science & Technology (ComSci) Program and Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA).



RADM MATTHEW KLUNDER, USN (RET)

Vice President, DoD Strategy and Technology Harris Corporation

Matthew Klunder is vice president of the Department of Defense

(DoD) Strategy and Technology for Electronic Systems, which develops solutions in electronic warfare, avionics, wireless solutions, C4I systems, and mission networks.

Prior to his current position, Klunder was the vice president of DoD Strategy and Technology for Harris Corporation's Global Business Development (Global BD). Global BD supports the development, production, and integration of advanced intelligence, communications, and information systems that solve the critical challenges of defense, national intelligence, and civil agency customers worldwide.

Before assuming responsibility for Harris Corporation's Global BD, Kkunder was the Chief of Naval Research and Director of Innovation, Technology, and Test & Evaluation for the U.S. Navy and Marine Corps. In this position, he was responsible for over 3,500 scientists, engineers, and support personnel who executed scientific research and developed technology. Beforehand, he was the Director of Intelligence, Surveillance, Reconnaissance, and Unmanned Systems, overseeing cutting-edge ISR and unmanned system investments for the Department of the Navy.

Klunder joined Harris in 2015 following over 32 years of service in the U.S. Navy. In the Navy, Klunder served as an Experimental Test Pilot, Squadron Commanding Officer, Carrier Air Wing Commander, and as the 83rd Commandant of Midshipmen at the U.S. Naval Academy. He played a key role

in eight major deployments and multiple surge operations to the Atlantic, Pacific, and Indian Oceans, and to the Mediterranean Sea and Arabian Gulf. He qualified in numerous aircraft, including the E-2C Hawkeye and F/A-18 E/F Super Hornet, and was Full Joint Staff certified. He was also qualified as Deputy Director for the Combined Air Operations Center in Al Udeid, Qatar.

Klunder holds a Bachelor's Degree in Ocean Physics from the U.S. Naval Academy, and two Master's Degrees—one in Aerodynamics from the University of Tennessee and another in Strategic Studies from the National War College. He is a graduate of the U.S. Army's C/JFLCC course, the National Defense University Capstone course, the Naval Post Graduate School Executive Business course, and the UNC Chapel Hill Senior Executive Strategic Development course.



JEFFERY MORROW

Director, Strategic Missile & Defense Systems Government Operations Boeing Defense, Space & Security

Jeff Morrow is the Director of Strategic Missile & Defense Systems

for Government Operations. In this role, he leads Government Operations activities, supporting the Vice President and General Manager of Boeing's Strategic Missile & Defense Systems.

Jeff was previously the Director of Government Operations supporting Boeing's Laser and Electro Optic Systems, a business within the Strategic Missile & Defense Systems. In this role, he was responsible for customer engagement, advocacy efforts, and contact with the various program stakeholders.

In 1981, Jeff joined Rockwell International as a member of the Space Shuttle Launch crew at Kennedy Space Center. In 1984, Jeff transferred to the Rockwell International Space Systems Division facility in Downey, California, as a member of the technical staff for Advanced Engineering projects.

Over the next four years, Jeff worked on a number of space-related advanced systems, both internally and contract funded, with ever increasing technical and management responsibilities. While working with the National Aerospace Plane (NASP) program, Jeff was assigned the technical and management responsibility for over \$26M in company discretionary resources to support the NASP program effort.

Upon being chosen as the first to complete a Program Manager's development program, Jeff was assigned to the Rockwell International Washington, DC, office to develop an understanding of how federal program funding and management systems worked.

Since his arrival in Washington, DC, Jeff has represented the Boeing Company on programs such as the Global Positioning Satellite System 2F (GPS-2F) contract procurement and win, the National Missile

Defense Lead System Integrator (NMD LSI) contract procurement and win, and the Air Borne Laser (ABL) program execution.

Jeff is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA). In the past, Jeff served as the chairman of the AIAA's standing committee on Career Enhancement, as a council member of the American Institute of Aeronautics and Astronautics-National Capital Section, and then as president of the National Space Club. He is presently the chairman of the National Defense Industrial Association's (NDIA) Missile Defense Information Group and the chairman of NDIA's Missile Defense Branch.

In addition to a BS in Aerospace Engineering from the University of Maryland, Jeff holds a Certified Manager designation from the Certified Professional Manager's Association.





BRIAN O'DONNELL

Assistant Deputy for Combat Systems and Warfighting Integration, Surface Warfare Division OPNAV N96

Born and raised in Yonkers, New York, Brian O'Donnell graduated from

the U.S. Naval Academy in 1988 with a BS in History, from the U.S. Naval War College with an MA in National Security and International Affairs, and from the Joint Forces Staff College.

While in the Navy, Brian served in numerous assignments at sea, including: USS RICHMOND K. TURNER (CG 20) as R-Division Officer, M-Division Officer, and Fire Control Officer, USS NORMANDY (CG 60) as Weapons Control Officer and

Combat Systems Officer, USS PHILIPPINE SEA (CG 58) as Executive Officer, and in US SEVENTH FLEET Staff as Fleet Surface Warfare Officer and Future Operations Officer. Brian commanded the guided missile destroyer, USS CURTIS WILBUR (DDG 54), and the guided missile cruiser, USS LEYTE GULF (CG 55).

Brian also served in numerous assignments ashore, including: United States Northern Command as the Ballistic Missile Defense Current Operations Branch Chief, Navy Air and Missile Defense Command as Chief of Staff, and on the Chief of Naval Operations (CNO) Staff as the Deputy to the Director

of Surface Warfare for Maintenance, Modernization, and Operations. Brian has also served ashore at the U.S. Naval Academy as a Naval Science Instructor, the Deputy Commandant of Midshipmen for Professional Development (PRODEV), and the Deputy Commandant of Midshipmen.

In 2018, Brian transitioned to the civilian sector and was employed by the Lockheed Martin Corporation in the Rotary Mission Systems (RMS) business area in Washington, DC. In 2019, Brian rejoined the staff of the Director of Surface Warfare at the Pentagon as the Assistant Deputy for Combat Systems and Warfighting Integration.



PAIGE RUMBERG

N8/N9 Branch Head, IAMD Capability Development Naval Surface and Mine Warfighting Development Center

Ms. Paige Rumberg serves as the N8/N9, Fleet Integrated Air and Missile Defense

(IAMD) Assessment, Requirements, and Experimentation Branch Head at the Naval Surface and Mine Warfighting Development Center, IAMD Division (SMWDC-IAMD)—the Navy's lead organization for IAMD capability and operational development.

Ms. Rumberg leads the Navy's IAMD Warfighting Capability Assessment, chairs the annual IAMD Warfare Improvement Program (WIP), and aligns Navy priorities for development based on warfighter feedback and capability/capacity gap analysis. She authors the annual IAMD Integrated Prioritized Capabilities List (IPCL), which is the authoritative voice of the Fleet to OPNAV for IAMD capability needs. Her service to SMWDC-IAMD (then Navy Air and Missile Defense Command) began in 2012 as the staff lead for surface combat system requirements and assessment, where she designed the Navy's first end-to-end assessment of Fleet IAMD warfighting capability.

Ms. Rumberg began supporting the Navy in 2003 as a private industry Operations Analyst for the Naval Surface Warfare Center, Dahlgren Division (NSWCDD). She began her government service in 2007 as a Management Analyst in the NSWCDD Electromagnetic and Sensor Systems Department, where she managed the Electromagnetic Environmental Effects (E3) engineering programs for air and missile defense systems. In this role, Ms. Rumberg provided systems engineering and test and evaluation support to Missile Defense Agency (MDA) programs, including Aegis Ballistic Missile Defense (BMD), Terminal High Altitude Area Defense, Ground-based Midcourse Defense, and the Arrow Weapon System. She also managed engineering and qualification efforts for various Navy weapon systems, including STANDARD Missile (SM)-2, SM-3, SM-6, Rolling Airframe Missile, Evolved Sea Sparrow Missile, NATO SEASPARROW Surface Missile System, and the Advanced Medium Range Air-to-Air Missile. She later served as the Combat System Safety Lead for Aegis Ashore and Aegis BMD 5.1/SM-3 Block IIA.

Ms. Rumberg supported the MDA Aegis BMD Program Office (MDA/AB) on external assignment as the Aegis Ashore Deputy Chief Engineer from early concept development through the program's Preliminary Design Review. She also served as the Aegis Ashore Radar System Integrated Product Team lead, overseeing the engineering effort to employ the AN/SPY-1D(V) radar ashore.

Ms. Rumberg is a 2001 graduate of Randolph-Macon College with a BA in Political Science. She earned her MS in Systems Engineering from the Naval Postgraduate School in 2009, where she was a recipient of the RADM Wayne E. Meyer Award for Excellence in Systems Engineering. She is a 2014 graduate of the Department of Defense Executive Leadership Development Program, where she was awarded the Rosemary E. Howard Award for Excellence in Leadership. She is a Certified Acquisition Professional and maintains Level III certifications in Engineering and Production, Quality, and Manufacturing (PQM).



TODD SERRES

Associate Chief, Command and Control (C2), Integrated Air and Missile Defense (IAMD), & Information Operations (IO) Division (AF/A3TY), Training and Readiness Directorate, DCS Operations HQ USAF

Mr. Todd Serres is the Associate Chief, Command

and Control (C2), Integrated Air and Missile Defense (IAMD), & Information Operations (IO) Division (AF/A3TY), Training and Readiness Directorate, DCS Operations, HQ USAF. A3TY is the USAF focal point for joint operational planning support and analysis for C2, IAMD, and IO. The division leads AF efforts related to command and control for operational and tactical organization and manpower, advises USAF on IAMD capability

requirements, and manages implementation of OPSEC, military deception, military information support operations and counter small UAS programs. As Associate Chief, Mr. Serres oversees a broad range of organizational issues to senior leaders.

Mr. Serres first entered the Air Force in May of 1986 from the United States Air Force Academy. His military career included aviation duties as a UH-1N pilot and B-1B instructor, evaluator and flight test pilot, airpower theory, and operational

arts instructor at the USA Command and General Staff College, Operations Officer and Commander of USAF Air Support Operations Squadrons, and a division chief for Homeland Defense Capability Based Planning Division. Since transitioning to the civil service in 2009, he has been the focal point for USAF IAMD planning, development, and exercising for the A3/5 and A3 Deputy Chief of Staff. Mr. Serres co-authored the SECAF/CSAF endorsed 2014 USAF IAMD Roadmap, and the JROC validated C2 of IAMD Joint DOTMLPF Change Recommendation.



THADEOUS SMITH

Director for Precision Standoff Strike Raytheon Missile Systems

Born in Hannibal, Missouri, Thadeous Smith graduated from the University of

Arizona with a BS in Nuclear Engineering. He also graduated from the Naval Postgraduate School in Monterey, California, with an MS in Mechanical Engineering.

Following college, Mr. Smith obtained a commission in the U.S. Navy from the University of Arizona Reserve Officer Training Corps Unit in Tucson, Arizona. He initially reported to USS CAPE ST GEORGE, CG-71, as a Division Officer. He served as Combat Information Center Officer, Main Propulsion Assistant, Cooperative Engagement Capability Officer, and Air Defense Officer. He received the Navy Commendation Medal at the end of his tour.

Following his shore tour at the Naval Postgraduate School, Mr. Smith reported to USS ANTIETAM, CG-54, as a Department Head. He served as the Weapons Control Officer and Combat Systems Officer. He received the Navy Commendation Medal in both December 2002 and June 2004. He was awarded Commander Carrier Group Three Tactician of the Year Award for 2003.

Following his sea tour, Mr. Smith reported to Commander Naval Surface Force, Atlantic Fleet in Norfolk, Virginia. He was assigned as the Warfare Certification and Readiness Officer in the N7 Training Department and as Flag Secretary to Rear Admiral Mike Nowakowski. He was awarded the Navy Commendation Medal at the end of his tour.

In 2006, Mr. Smith resigned his commission and joined General Dynamics Advanced Information Systems as a Program Manager on the Littoral Combat Ship Program. In 2008, he relocated from Massachusetts to Tucson, Arizona, and began working for Raytheon Missile Systems as the Evolved SeaSparrow Missile International Projects

Manager, focusing on International Sales. In 2009, Mr. Smith became the ESSM Business Development Manager for the Naval and Area Defense Systems. In April 2013, he was the Standard Missile 3 (SM-3) Business Development Manager. In 2015, he became the Standard Missile 6 (SM-6) Business Development lead. In August 2017, he assumed the role of the Griffin Missile Business Development lead. In early 2018, he also assumed the BD lead role for the Maverick and HARM missile programs. In January 2019, Mr. Smith became the Air Warfare Systems Business Development and Strategy lead for the product line. As of June 2019, Mr. Smith is the Director for Precision Standoff Strike the covers Tomahawk, JSOW, Naval Strike Missile, and the Joint Strike Missile.



DENISE SPENCER

Lead Engineer, Hypersonics Defense Missile Defense Agency/DE-HD

Ms. Denise Spencer has been involved in the design, development, and fielding of systems for Air Force and Missile Defense Agency for over 25 years. She arrived at Missile Defense Agency in June 2002. She currently serves as the Lead Engineer for the Hypersonic Defense program. She is responsible for developing the architecture and requirements to integrate systems (those of today and the future) to defend against hypersonic missiles. She previously served as the chair of the Joint System Engineering Team for the Integrated Air and Missile Defense Technical Authority. As the chair, she was responsible for the execution of a disciplined systems engineering process using a multi-service systems engineering team to support the integration of Joint IAMD systems. She leads the team in conducting system engineering analysis and developing technical integration requirements and interface control documents for the

IAMD assets across the services. Ms. Spencer was also the System Engineer for Command & Control, Communications, and Computers, Intelligence, Surveillance, and Reconnaissance portfolio of programs consisting of ground-, sea-, and spacedbased sensors and C2BMC systems. She is responsible for ensuring technical integration across the portfolio of programs systems. Previously, Ms. Spencer served as Chief Engineer for the design, development, testing, and deployment of Command and Control, Battle Management, and Communications (C2BMC) systems. C2BMC is the integrating element for the BMDS and is currently deployed in NORTHCOM, STRATCOM, PACOM, EUCOM, and CENTCOM.

Prior to Missile Defense Agency, Ms. Spencer held many positions as Air Force civilian at Electronic System Center at Hanscom AFB. As Chief Engineer, she integrated stateof-the-art Information Technology systems with Air Force Theater Battle Management Control System to conduct the first-ever, CSAF-directed, large-scale Expeditionary Force Experiments to demonstrate new warfighting concepts that have been adopted as standard practice in today's conflicts. As a Program Manager for Advanced Communications, she was responsible for the development, testing, production, and deployment of next-generation UHF antijam radio systems for aircrafts, vehicles, and ground units. In that role, she was the Designated Chairman and U.S. representative to the NATO working party responsible for establishing UHF line of sight communication standards for interoperability.



STAN STAFIRA, JR.

Director for External Technical Interface, Ballistic Missile Defense System Architect Missile Defense Agency

Mr. Stanley Stafira, Jr., is the BMDS Architect for the Missile Defense Agency (MDA). In this

capacity, he develops the vision for the future architecture of the Ballistic Missile Defense System (BMDS), assesses new concepts, and develops the BMDS Strategic Roadmap.

Mr. Stafira assumed the duties of Director for External Technical Interface in the Directorate of Engineering, MDA, on September 24, 2012. He serves as the single point-of-contact to the warfighter for all engineering and technical issues related to the BMDS.

He is responsible for being the agency's technical lead for all engineering aspects of MDA's international acquisition and international cooperative programs. He also serves as the Engineering lead for managing congressional interactions such as Government Accounting Office (GAO) activities, Questions for the Record (QFRs), and Reports to Congress (RTCs). Meanwhile, Mr. Stafira interfaces with the Office of the Secretary of Defense (OSD) and the White House on executive-level Ballistic Missile Defense analysis.

Mr. Stafira earned a Bachelor's degree in Aerospace Engineering from the University of Virginia in 1988 before completing four Master's degrees: Mechanical Engineering from Colorado State University in 1993; Operations Analysis from the Air Force Institute of Technology in 1995; National Security and Strategic Studies from the College of Naval Command and Staff in 2002; and National Security Studies from the Air War College in 2008.



STEPHEN WOODALL, PH.D.

President and CEO Strategic Synthesis, Ltd. (LLC)

Dr. Stephen Woodall has over thirty years of executive and operational experience

in strategic planning, vision development, long-range resource analysis, strategic forecasting, international operations and management, systems and operations analysis, systems engineering, warfare gaming and analysis, technology planning, and inspirational leadership. Additionally, he is a Consulting Senior Systems Engineer and Systems Analyst for a number of major defense and consulting firms. Dr. Woodall served as a naval officer from June 1967 until retirement as a Captain in February 1994. His naval service included three commands at sea, including the AEGIS Cruiser USS MOBILE BAY (CG 53), serving as the fourcarrier 'Battle Force ZULU' Anti-Air Warfare Commander (AAWC) during the 1991 Gulf War in the Northern Arabian Gulf, Other commands at sea include USS KING (DDG 41) and ocean-going tug and salvage ship USS LUISENO (ATF 156).

Dr. Woodall's experience in strategic planning and vision development includes support of the Army Digitization Office (ADO), the future of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) for the Vice Chairman of the Joint Staff, and similar work for OSD (C3I), BMDO/MDA, JT/IAMDO, Navy PEO IT, the DoN Secretariat, CNET, Navy SEALs, Army SMDC, ONR, PEO IWS, USSOCOM, and many others.

Professionally, Dr. Woodall has supported the development and analysis of C4ISR-related systems and capabilities such as Athena, the Joint Interface Control Officer (JICO) capability, Y2K testing and analysis, the Area Air Defense Commander (AADC) capability, Land Attack and NSFS, TAMD, JBMC2, Joint Fires, the Navy Distributed Engineering Plant (DEP), Common C&D, and Open Architecture. He has also supported the New Design SSN, CV(X), CVN-76, CVN-78, DD-21, DD(X), the LCS, and the CG(X).

In addition to his consulting work, Dr. Woodall has been active as a member of the Executive Committee. In July 2014, he was re-elected as the Vice Chairman of the Strike, Land Attack, and Air Defense (SLAAD) Division of the National Defense Industrial Association (NDIA). He has served as Study

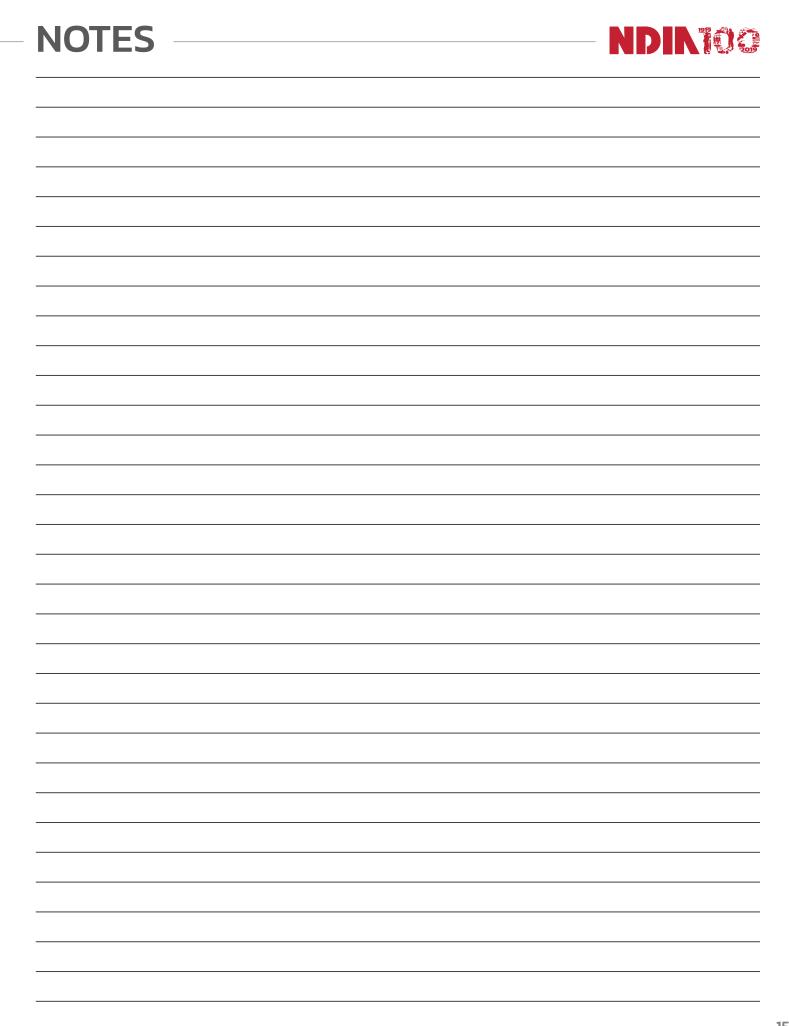
Director on a number of influential industry/ government study efforts, including "AADC Joint Air Defense Firepower Coordination," "Integration, Control, and Deconfliction of Joint Fires," "Roadmap to the Single Integrated Picture (SIP)," and "The Navy Path to Greater Roles in Global Integrated Air and Missile Defense (GIAMD)." Dr. Woodall has been awarded both the Admiral John H. Sides Award and the NDIA Gold Medal for his decades-long service to the NDIA SLAAD Division. He plans and chairs the annual NDIA classified "State of Integrated Air and Missile Defense (IAMD)" Symposium, held at JHU/APL.

Dr. Woodall is the author of both the book "Strategic Forecasting in Long-Range Military Force Planning" and numerous strategic plans, analyses, journal articles, and papers. He is the co-author of a new book, "Strategy with Passion – a Leader's Guide to Exploiting the Future." Additionally, Dr. Woodall served as an Adjunct Professor at Georgetown University's Edmund A. Walsh School of Foreign Service from 1994 to 1996. He has been a member of Sigma Xi, the Scientific Research Society, since 1990.

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