



12th Annual Strategic Multilayer Assessment (SMA) Conference

**Biographies of Panel Members, Moderators,
and Speakers**

21-22 May 2019

**Joint Base Andrews
The Gen. Jacob E. Smart Conference Center
1359 Arkansas Road
Phone: (240) 612-6500**

KEYNOTE SPEAKER

General Paul J. Selva

Gen. Paul J. Selva serves as the 10th Vice Chairman of the Joint Chiefs of Staff. In this capacity, he is a member of the Joint Chiefs of Staff and the nation's second highest-ranking military officer.

General Selva graduated from the U.S. Air Force Academy in 1980, and completed undergraduate pilot training at Reese AFB, Texas. He has held numerous staff positions and has commanded at the squadron, group, wing and headquarter levels. Prior to his current assignment General Selva was the commander of U.S. Transportation Command, Scott AFB, Illinois.

General Selva is a command pilot with more than 3,100 hours in the C-5, C-17A, C-141B, C-37, KC-10, KC-135A and T-37.



EDUCATION

1980 Bachelor of Science in Aeronautical Engineering, U.S. Air Force Academy, Colorado Springs, Colo.

1983 Squadron Officer School, Maxwell AFB, Ala.

1984 Master of Science in Management and Human Relations, Abilene Christian University, Abilene, Texas

1992 Air Command and Staff College, Maxwell AFB, Ala., distinguished graduate

1992 Master of Science in Political Science, Auburn University, Montgomery, Ala.

1996 National Defense Fellow, Secretary of Defense Strategic Studies Group, Rosslyn, Va.

ASSIGNMENTS

1. June 1980 - July 1981, student, undergraduate pilot training, Reese AFB, Texas

2. July 1981 - December 1984, co-pilot and aircraft commander, 917th Air Refueling Squadron, Dyess AFB, Texas

3. January 1984 - December 1988, co-pilot, aircraft commander, instructor pilot, and flight commander, 32nd Air Refueling Squadron, Barksdale AFB, La.

4. January 1989 - July 1991, company grade adviser to Commander, Strategic Air Command, later, manager of offensive aircraft systems and executive officer, Deputy Chief of Staff, Plans and Resources, Headquarters Strategic Air Command, Offutt AFB, Neb.

5. August 1991 - July 1992, student, Air Command and Staff College, Maxwell AFB, Ala.

6. July 1992 - June 1994, instructor pilot and flight commander, 9th Air Refueling Squadron, later, Commander, 722nd Operations Support Squadron, March AFB, Calif.

7. June 1994 - June 1995, Commander, 9th Air Refueling Squadron, later, Deputy Commander, 60th Operations Group, Travis AFB, Calif.

8. July 1995 - June 1996, National Defense Fellow, Secretary of Defense Strategic Studies Group, Rosslyn, Va.

9. July 1996 - August 1998, assistant to the Director, Office of the Secretary of Defense for Net Assessment, the Pentagon, Washington, D.C.

10. August 1998 - July 2000, Commander, 60th Operations Group, Travis AFB, Calif.

11. July 2000 - June 2002, Commander, 62nd Airlift Wing, McChord AFB, Wash.

12. June 2002 - June 2003, Vice Commander, Tanker Airlift Control Center, Scott AFB, Ill.

13. June 2003 - November 2004, Commander, Tanker Airlift Control Center, Scott AFB, Ill.

14. December 2004 - August 2006, Director of Operations, U.S. Transportation Command, Scott AFB, Ill.

15. August 2006 - June 2007, Director, Air Force Strategic Planning, Deputy Chief of Staff for Strategic Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.

16. June 2007 - October 2008, Director, Air Force Strategic Planning, Deputy Chief of Staff for Strategic Plans and Programs, Headquarters U.S. Air Force, and Director, Air Force QDR, Office of the Vice Chief of Staff, Washington, D.C.

17. October 2008 - October 2011, Assistant to the Chairman of the Joint Chiefs of Staff, Washington, D.C.
18. October 2011 - November 2012, Vice Commander, Pacific Air Forces, Joint-Base Pearl Harbor-Hickam, Hawaii
19. November 2012 - May 2014, Commander, Air Mobility Command, Scott AFB, Ill.
20. May 2014 - July 2015, Commander U.S. Transportation Command, Scott AFB, Ill.
21. July 2015 - present, Vice Chairman of the Joint Chiefs of Staff, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS

1. September 1996 - August 1998, Assistant to the Director, Office of the Secretary of Defense for Net Assessment, the Pentagon, Washington, D.C., as a lieutenant colonel
2. November 2004 - July 2006, Director of Operations and Logistics, U.S. Transportation Command, Scott AFB, Ill., as a brigadier general
3. October 2008 - October 2011, Assistant to the Chairman of the Joint Chiefs of Staff, Washington, D.C., as a lieutenant general
4. May 2014 - July 2015, Commander U.S. Transportation Command, Scott AFB, Ill.
5. July 2015 - present, Vice Chairman of the Joint Chiefs of Staff, Washington, D.C.

FLIGHT INFORMATION

Rating: command pilot

Hours flown: more than 3,100

Aircraft flown: C-5, C-17A, C-141B, C-37, KC-10, KC-135A and T-37

MAJOR AWARDS AND DECORATIONS

Defense Distinguished Service Medal
 Distinguished Service Medal
 Defense Superior Service Medal
 Legion of Merit with two oak leaf clusters
 Defense Meritorious Service Medal
 Meritorious Service Medal with three oak leaf clusters
 Air Force Commendation Medal
 Air Force Achievement Medal
 Joint Meritorious Unit Award

Combat Readiness Medal with two oak leaf clusters
 National Defense Service Medal with bronze star
 Armed Forces Expeditionary Medal with two bronze stars
 Southwest Asia Service Medal with bronze star
 Global War on Terrorism Service Medal
 Armed Forces Service Medal

EFFECTIVE DATES OF PROMOTION

Second Lieutenant May 28, 1980
 First Lieutenant May 28, 1982
 Captain May 28, 1984
 Major Jan. 1, 1990
 Lieutenant Colonel March 1, 1994
 Colonel Sept. 1, 1998
 Brigadier General Jan. 1, 2004
 Major General June 2, 2007
 Lieutenant General Oct. 8, 2008
 General Nov. 29, 2012

KEYNOTE SPEAKER

Lieutenant General John N.T. “Jack” Shanahan

Lt Gen John N.T. “Jack” Shanahan is the Director, Joint Artificial Intelligence Center, Office of the Department of Defense Chief Information Officer, the Pentagon, Arlington, Virginia. General Shanahan is responsible for accelerating the delivery of AI-enabled capabilities, scaling the department-wide impact of AI and synchronizing AI activities to expand joint force advantages.

General Shanahan received his commission in 1984 as a distinguished graduate of the ROTC program at the University of Michigan. He has served in a variety of flying, staff and command assignments, most recently as the Director for Defense Intelligence Warfighter Support, Office of the Under Secretary of Defense for Intelligence, the Pentagon, Arlington, Virginia. He was also the Director of the Algorithmic Warfare Cross-Functional Team (Project Maven), where he led the artificial intelligence pathfinder program charged with accelerating integration of big data, machine learning, and artificial intelligence.



General Shanahan also served as the Commander, 25th Air Force, Joint Base San Antonio-Lackland, Texas, where he led 30,000 personnel in worldwide intelligence, surveillance and reconnaissance operations and also served as the Commander of the Service Cryptologic Component. In this capacity he was responsible to the Director, National Security Agency, and Chief, Central Security Service, as the Air Force's sole authority for matters involving the conduct of cryptologic activities, including the spectrum of missions directly related to both tactical warfighting and national-level operations.

EDUCATION

1984 Bachelor of Science degree in chemistry, with distinction, University of Michigan, Ann Arbor
1990 Distinguished graduate, Squadron Officer School, Maxwell AFB, Ala.
1996 Distinguished graduate, Master of Arts degree in national security and strategic studies, College of Naval Command and Staff, Naval War College, Newport, R.I.
2001 Distinguished graduate, Master of Science degree in national security strategy, National War College, Fort Lesley J. McNair, Washington, D.C.
2006 Program for Senior Executive Fellows, John F. Kennedy School of Government, Harvard University, Cambridge, Mass.
2007 Air Force Senior Leadership Course, Center for Creative Leadership, Greensboro, N.C.
2008 Air Force Enterprise Leadership Seminar, Kenan-Flagler Business School, University of North Carolina at Chapel Hill
2010 Joint Force Air Component Commander Course, Maxwell AFB, Ala.
2011 Senior Joint Information Operations Applications Course, Maxwell AFB, Ala.
2013 Joint Flag Officer Warfighting Course, Maxwell AFB, Ala.

ASSIGNMENTS

1. November 1984 - June 1985, student, undergraduate navigator training, 451st Flying Training Squadron, Mather AFB, Calif.
2. June 1985 - June 1986, student, F-4 Operational Training Course, 308th Tactical Fighter Training Squadron, Homestead AFB, Fla.

3. June 1986 - June 1989, F-4E/G instructor weapons system officer, 90th Tactical Fighter Squadron, Clark Air Base, Philippines
4. June 1989 - February 1991, F-4E instructor weapons system officer and standardization and evaluation flight examiner, 334th Tactical Fighter Squadron, Seymour Johnson AFB, N.C.
5. February 1991 - June 1991, student, F-15E Transition Course, 550th Tactical Fighter Training Squadron, Luke AFB, Ariz.
6. July 1991 - July 1993, F-15E instructor weapons system officer and standardization and evaluation flight examiner, 334th Fighter Squadron, Seymour Johnson AFB, N.C.
7. July 1993 - December 1993, student, F-15E USAF Weapons Instructor Course, Nellis AFB, Nev.
8. December 1993 - July 1995, F-15E Chief of Weapons and Tactics, 334th Fighter Squadron, Seymour Johnson AFB, N.C.
9. July 1995 - June 1996, student, College of Naval Command and Staff, Newport, R.I.
10. September 1996 - September 1997, Theater Battle Management Flight Commander, 607th Combat Operations Squadron, Osan Air Base, South Korea
11. September 1997 - October 1998, operations officer, F-15E Division, USAF Weapons School, Nellis AFB, Nev.
12. October 1998 - July 2000, Commander, USAF Weapons School Support Division, Nellis AFB, Nev.
13. August 2000 - June 2001, student, National War College, Washington, D.C.
14. June 2001 - August 2003, Chief, Regional Exercise Branch, Operations Directorate (J3), Headquarters U.S. Pacific Command, Camp Smith, Hawaii
15. December 2003 - May 2005, Commander, 480th Intelligence Group, Langley AFB, Va.
16. May 2005 - August 2007, senior military assistant to the Assistant Secretary of Defense for International Security Affairs, the Pentagon, Arlington, Va.
17. August 2007 - April 2009, Commander, 505th Command and Control Wing, Hurlburt Field, Fla.
18. April 2009 - March 2011, Commander, 55th Wing, Offutt AFB, Neb.
19. March 2011 - April 2013, Deputy Director for Global Operations (J39), Operations Directorate, Joint Staff, the Pentagon, Arlington, Va.
20. April 2013 - June 2013, Special Assistant to the Deputy Chief of Staff for Intelligence, Surveillance and Reconnaissance, Headquarters U.S. Air Force, Arlington, Va.
21. June 2013 - September 2014, Commander, Air Force Intelligence, Surveillance and Reconnaissance Agency, Joint Base San Antonio-Lackland AFB Texas
22. September 2014 - August 2015, Commander, 25th Air Force, Joint Base San Antonio-Lackland Texas
23. August 2015 - April 2017, Director for Defense Intelligence (Warfighter Support), Office of the Under Secretary of Defense for Intelligence, the Pentagon, Arlington, Va.
24. April 2017-December 2018, Director for Defense Intelligence (Warfighter Support) and Director, Algorithmic Warfare Cross-Functional Team (Project Maven), Office of the Under Secretary of Defense for Intelligence, the Pentagon, Arlington, Va.
25. December 2018 - present, Director, Joint Artificial Intelligence Center, Office of the Department of Defense Chief Information Officer, the Pentagon, Arlington, Va.

SUMMARY OF JOINT ASSIGNMENTS

1. June 2001 - August 2003, Chief, Regional Exercise Branch, Operations Directorate (J3), Headquarters U.S. Pacific Command, Camp Smith, Hawaii, as a lieutenant colonel and colonel
2. May 2005 - August 2007, senior military assistant to the Assistant Secretary of Defense for International Security Affairs, the Pentagon, Arlington, Va., as a colonel
3. March 2011 - April 2013, Deputy Director for Global Operations (J39), Operations Directorate, Joint Staff, the Pentagon, Arlington, Va., as a brigadier general and a major general
4. August 2015 - December 2018, Director for Defense Intelligence (Warfighter Support), the Office of the Under Secretary of Defense for Intelligence, the Pentagon, Arlington, Va., as a lieutenant general
5. December 2018 - present, Director, Joint Artificial Intelligence Center, Office of the Department of Defense Chief Information Officer, the Pentagon, Arlington, Va., as a lieutenant general

BADGES

Master Intelligence Occupational Badge

FLIGHT INFORMATION

Rating: master navigator

Flight hours: more than 2,800

Aircraft flown: F-4D/E/G, F-15E and RC-135

MAJOR AWARDS AND DECORATIONS

Distinguished Service Medal

Defense Superior Service Medal with oak leaf cluster

Legion of Merit with two oak leaf clusters

Defense Meritorious Service Medal

Meritorious Service Medal with two oak leaf clusters

Air Medal

Aerial Achievement Medal with four oak leaf clusters

Air Force Commendation Medal

Combat Readiness Medal with two oak leaf clusters

National Defense Service Medal with bronze star

Southwest Asia Service Medal with bronze star

Global War on Terrorism Service Medal

Korea Defense Service Medal

Kuwait Liberation Medal (government of Kuwait)

(Current as of December 2018)

OTHER ACHIEVEMENTS

1985 Distinguished graduate, undergraduate navigator training

1993 Top academic graduate and outstanding graduate, F-15E Course, U.S. Air Force Weapons School, Nellis AFB, Nev.

1994 Warrior of the Year, 4th Wing, Seymour Johnson AFB, N.C.

1996 Co-winner, Chairman of the Joint Chiefs of Staff essay contest

1999 Outstanding Instructor Weapons System Officer, F-15E Div., U.S. Air Force Weapons School, Nellis AFB, Nev.

2000 Outstanding Academic Instructor, F-15E Division, U.S. Air Force Weapons School, Nellis AFB, Nev.

2001 Commandant's Award for Excellence in Writing, National War College

EFFECTIVE DATES OF PROMOTION

Second Lieutenant Sept. 2, 1984

First Lieutenant Sept. 2, 1986

Captain Sept. 2, 1988

Major Dec. 1, 1995

Lieutenant Colonel Sept. 1, 1998

Colonel July 1, 2003

Brigadier General June 26, 2009

Major General Sept. 14, 2012

Lieutenant General Aug. 11, 2015

INVITED SPEAKER

Rear Admiral Jeffrey J. Czerewko

Rear Admiral Jeffrey Czerewko is a native of Saginaw, Michigan and a graduate of the U.S. Naval Academy. He also holds a master's degree from the National War College.

At sea, he deployed aboard USS Enterprise (CVN 65) with Attack Squadron -75 (VA-75) flying A-6E Intruders. He flew F/A-18C Hornets on USS Dwight D. Eisenhower (CVN 68) with Strike Fighter Squadron-81 (VFA-81), USS John F. Kennedy (CV 67) and USS George Washington (CVN 73) with VFA-136. He deployed twice with USS John C. Stennis (CVN 74) as commanding officer of Strike Fighter Squadron 146 (VFA-146). He flew F/A-18Cs, F/A-18E/Fs and EA-18Gs while serving as commander of Carrier Air Wing 2 (CVW-2) while assigned on USS Ronald Reagan (CVN 76) as strike warfare commander for Carrier Strike Group 9.



Ashore, Czerewko's tours include VFA-106 as a fleet replacement squadron instructor pilot and assistant safety and assistant training officer; electronic warfare branch chief with the Joint Staff, J 39 deputy director for Global Operations; resource sponsor for Naval intelligence, surveillance and reconnaissance (ISR) capabilities as director of battlespace awareness (N2N6 F2); acting director of the Digital Warfare Office on the Navy Staff and most recently chief of staff for Commander, Naval Air Forces.

Additional tours of duty include a tour with the Naval Special Warfare Development Group and as battle director for the Combined Air and Space Operations Center, Al Udeid, Qatar.

He is the recipient of various personal awards and unit decorations and received the Navy and Marine Corps Leadership award in 2002 and 2004.

INVITED SPEAKER

Mr. Brian Murphy

Brian Murphy is the Principal Deputy Under Secretary for the Office of Intelligence and Analysis. In that role, he advises and assists the Under Secretary and is responsible for the conduct of key intelligence activities supporting the Department of Homeland Security; State, Local, Tribal, Territorial and Private Sector partners; and the Intelligence Community, including: intelligence collection, production, dissemination, watch and warning, watch-listing and partner engagement. He also serves as the Deputy Chief Intelligence Officer for DHS.



Prior to this selection, he served as the Acting Principal Deputy for Intelligence and Analysis. Before joining DHS, Mr. Murphy was responsible for the Federal Bureau of Investigation's national level counterterrorism programs, intelligence sharing within the intelligence community and state and local law enforcement. In this role, he developed and implemented the FBI's counterterrorism program, including policy and budget development, training, and the buildout of several pilot field offices.

A distinguished law enforcement professional, Mr. Murphy began his FBI career in 1998 as a Violent Crime Inter-Agency Task Force Agent in the New York field office. He gained in-depth leadership and operational experience in his 20-year career through a variety of positions, including National Mission Manager, CT Division, 2006-2009; CT Attaché, US Embassy Algiers, 2009-2011; Joint Terrorism Task Force Supervisor, Pittsburgh Regional Area, 2011-2013; and Special Agent in Charge, Chicago Regional Area FBI Counterterrorism Office, 2013-2015.

Mr. Murphy was appointed into the Senior Executive Service in 2016. He earned a Bachelor of Arts in Government from the College of William & Mary, and a Master's degree in Islamic studies from Columbia University. He is also a veteran of the U.S. Marine Corps.

INVITED SPEAKER

Dr. Charles W. Perkins

Dr. Perkins serves as Principal Deputy for Emerging Capability & Prototyping in the office of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)). Previously he served as the Principal Deputy to the DASD (EC&P). In addition to his responsibilities for oversight and direction of EC&P programs and activities, Dr. Perkins also serves as a member of the OSD Special Program for Missile Defeat, as an advisor to the OSD Strategic Capabilities Office and chairs the Joint Special Operation Command Science and Technology Task Force (JSTTF). Dr. Perkins also serves on a number of DoD and Intelligence Community committees.

Prior to his current assignment, Dr. Perkins served as the Technical Advisor to the Director of Mission Integration Directorate of the National Reconnaissance Office. He was detailed to this position from EC&P. In that position, he provided advice pertaining to solving intelligence problems posed by the Combatant Commands, National Intelligence Managers and other members of the military, US Government agencies and other members of the Intelligence Community.



Prior to Oct 2010, Dr. Perkins was the Director of Complex Systems (CS) in the Rapid Fielding Directorate (now EC&P). CS was responsible for speeding the introduction of new technology and concepts into the hands of warfighters and achieving this innovation in a sustainable manner so that these advanced capabilities could endure. Dr. Perkins was responsible for a number of programs to achieve these goals including the Joint Capabilities Technology Demonstration (JCTD) program, the Comparative Technology program, the Program Integration Office (PIO) and the Technology Integration Office (TIO). Dr. Perkins joined this organization in April 1994.

Prior to joining the Government, Dr. Perkins served various positions in industry including a Senior Technical Advisor at SRI International in Menlo Park, California, Vice President for Technology for SWL Inc., and Vice President and Director of the Special Projects Division of General Research Corporation.

From 1964 to 1966, he served as a First Lieutenant in the U.S. Army at the White Sands Missile Range in New Mexico. There he was a missile flight safety officer and chief of a section providing real-time computing support to the range.

Dr. Perkins holds Doctor of Science (1964) and Masters (1960) degrees from the Massachusetts Institute of Technology in Aeronautics and Astronautics and a Bachelor of Aeronautical and Astronautical Engineering degree from Rensselaer Polytechnic Institute (1959). He is a member of Tau Beta Pi, Sigma Gamma Tau, and Sigma Xi honorary societies and holds two U.S. Patents.

DAY ONE HOST

Colonel Anthony Gibbs

COL Anthony Gibbs, a native of Davisville, Missouri, received his commission as an Infantry Officer through the Reserve Officer Training Corps in May, 1997. In his first assignment, he served as a Rifle Platoon Leader and Battalion Adjutant in 1st Battalion, 8th Infantry Regiment (Mechanized), at Fort Carson, Colorado. He was subsequently assigned to the 172d Infantry Brigade (Separate), Fort Wainwright, Alaska, where he served as the Assistant Plans Officer. COL Gibbs then moved to Fort Richardson, Alaska, where he commanded A Company and Headquarters and Headquarters Company, Task Force 1-501 Airborne (Geronimo). While the A Company Commander, he deployed in support of Operation Enduring Freedom, leading his company through ten months of combat operations in Khowst Province, Afghanistan. Following Company Command, COL Gibbs served as an Infantry Branch Career Manager at the Army Human Resources Command, Alexandria, Virginia, responsible for professional development and assignments for all Senior (post-company command) Infantry Captains.



In 2009, COL Gibbs transitioned into the Army Acquisition Corps. He was initially assigned as a Contingency Contracting Officer with the 632nd Contingency Contracting Team at Fort Knox, Kentucky, again deploying in support of Operation Enduring Freedom. He also served as the Operations Officer for the 904th Contingency Contracting Battalion and Mission Contracting Office – Fort Knox. In 2012, COL Gibbs moved to Warren, Michigan where he served as Assistant Product Manager, Self-Propelled Howitzer Systems and as Executive Officer for Program Executive Office, Ground Combat Systems. In 2014, he transitioned to Program Executive Office Combat Support and Combat Service Support, where he served as a Product Director in Joint Project Office, Joint Light Tactical Vehicles. From July 2015 through July 2017, COL Gibbs served as Product Manager, Guided Precision Munitions and Mortar Systems at Picatinny Arsenal, New Jersey, responsible for life cycle management of mortar weapons and fire control systems, as well as precision munitions to include the Precision Guidance Kit for 155mm artillery, the Accelerated Precision Mortar Initiative, and the High Explosive Guided Mortar. He currently serves on the Joint Staff as the Program Support Division Chief, J-39 Deputy Director for Global Operations.

COL Gibbs is a graduate of the Infantry Officer Basic Course, Infantry Captain's Career Course, Combined Arms Services Staff School, Airborne School, Ranger School, Jumpmaster School, the Bradley Leader's Course, and Army Intermediate Level Education. His awards include the Bronze Star Medal, Defense Meritorious Service Medal, Meritorious Service Medal with 6 Oak Leaf Clusters, Army Commendation Medal with 1 Oak Leaf Cluster, Army Achievement Medal with 3 Oak Leaf Clusters, the Combat Infantryman Badge, Expert Infantryman Badge, and Senior Parachutist Badge.

COL Gibbs is a graduate of the University of Missouri-Rolla in Rolla, Missouri, where he earned a Bachelor of Science degree in Mechanical Engineering. He also holds a Master of Business Administration from the Naval Postgraduate School in Monterey, California, and a Master of Science in National Resource Strategy from the Dwight D. Eisenhower School for National Security and Resource Strategy, Fort McNair, Washington, DC.

DAY TWO HOST

Ms. Gia Harrigan

Gia Harrigan is currently employed by the Department of Homeland Security, Science and Technology Directorate and serves as the Program Manager for DHS Centers of Excellence. Ms. Harrigan is on-site at the Naval War College, War Gaming Department and supports Homeland Security/ Homeland Defense activities. Prior to joining DHS, Ms. Harrigan served as Science Advisor at the CNO Executive Panel in Washington, DC. She began government service at the Naval Undersea Warfare Center Division, Newport, Rhode Island and has led strategic initiatives for organizational transformation, in the areas of Technology Insertion Strategies, Business War Gaming, Balanced Scorecard, and Knowledge Management.

Ms. Harrigan has completed an Advanced Studies Program in System Dynamics at the Massachusetts Institute of Technology. She has a Master of Business Administration degree from the University of Rhode Island and an undergraduate degree in Mathematics from Boston College.



Panelists and Moderators

Mr. Collin A. Agee

Collin Agee became the Senior Army Operations Advisor to the NGA in July 2017. Prior to his current assignment, he served as the Army Intelligence Senior Advisor for IC Engagement for six years, following two years as the Deputy for NGA's Future Warfare Systems Office. In 2008, he served as Deputy CJ2 Forward, the senior military intelligence officer in the US Embassy Baghdad and the Green Zone, where his duties included providing intelligence to the MNF-I staff and Strategic Intelligence Engagement with the Iraqi intelligence services and senior Iraqi officials. He was the Army's Director for ISR Integration for two years, highlighted by the Actionable Intelligence Initiative and numerous intelligence Quick Reaction Capabilities in support of OIF and OEF, most notably Constant Hawk, which redefined Wide Area Persistent Surveillance. This followed four years as a contractor for Booz Allen Hamilton in support of the Army G-2 as a member of Task Force Actionable Intelligence, the US Army G2 ISR Integration Directorate and the Army Intelligence Master Plan (AIMP), where he was a co-author of the Army Intelligence Transformation Campaign Plan (AI-TCP). He served over 20 years as an Army Intelligence Officer, with assignments including J2 Operations for US forces in Haiti, XVIII Airborne Corps ACE Chief, and Senior Intelligence Officer (G2) of the 10th Mountain Division. He commanded Headquarters Company, 125th MI Battalion, Schofield Barracks, Hawaii and the Los Angeles Recruiting Battalion.



Mr. Agee has a Masters in Military Arts and Science from the School for Advance Military Studies (SAMS), a BS in National Security and Public Affairs from the US Military Academy at West Point and is a graduate of the Post Graduate Intelligence Program (PGIP). Mr. Agee is co-chair of the Geospatial Training, Tradecraft and Professional Development Subcommittee (GT2PDS) for the Geospatial Functional Manager. He is the US lead for the US Army-French Army Intelligence Working Group. In his last assignment, he was a charter member of the Intelligence Community Senior Studies Group (ICSSG); and is a member of the Special Multilayer Assessment (SMA) program, the Armed Forces Communications and Electronics Association's (AFCEA) Intelligence Committee; the US Technology Leadership Council (USTLC) and a high school and collegiate umpire as a member of the Northern Virginia Baseball Umpires Association (NVBUA).

Mr. Fergus Anderson

Mr. Fergus Anderson is a Senior Principal in UK MOD. He has worked in Defence, Security, and Law Enforcement for over 16 years and has expertise in intelligence analysis, counter terrorism, UK operations and civil contingencies. His academic background is Theology (Sheffield) Counter Terrorism (St Andrews), Intelligence and Security (Kings college). He has served in a number of UK Government Departments providing liaison, analysis and advice on a range of security issues. He has set up an innovation hub in the FCO and has been embedded in cross Government assessment teams. He has recent expertise in threat agnostic approaches for countering adversary networks and has served as Head of Strategy in the Home Office. He is currently seconded to the Operations Directorate in MOD where he serves as Principal Advisor on Influence, Future Threat Understanding and Disruption and specialises in cross Government



capabilities. He has authored a number of papers on terrorism, CT policy, lone actors and threats to the Defence and Security enterprise. His interests include opportunities and threats from emerging technology.

Dr. Allison Astorino-Courtois

Dr. Allison Astorino-Courtois is Executive Vice President at NSI, Inc. She has also served as co-chair of a National Academy of Sciences study on Strategic Deterrence Military Capabilities in the 21st Century, and as a primary author on a study of the Defense and Protection of US Space Assets. Dr. Astorino-Courtois has served as technical lead on a variety of rapid turn-around, Joint Staff-directed Strategic Multi-layer Assessment (SMA) projects in support of US forces and Combatant Commands. These include assessments of key drivers of political, economic and social instability and areas of resilience in South Asia; development of an analytic approach used to identify PACOM requirements for humanitarian support in a Megacity (case study: Dhaka, Bangladesh); development of a methodology for conducting provincial assessments for the ISAF Joint Command; production of a "rich contextual understanding" (RCU) to supplement intelligence reporting for the ISAF J2 and Commander; projects for USSTRATCOM on deterrence assessment methods; and, work for USSOCOM on operationalizing its "gray zone" concept.



Previously, Dr. Astorino-Courtois was a Senior Analyst at SAIC (2004-2007) where she served as a STRATCOM liaison to U.S. and international academic and business communities. Prior to that Dr. Astorino-Courtois was a tenured Associate Professor of International Relations at Texas A&M University in College Station, TX (1994-2003) where her research focused on the cognitive aspects of political decision making and how to "market" peaceful conflict resolution to adversarial actors. She has received a number of academic grants and awards and has published articles in multiple peer-reviewed journals. She has also taught at Creighton University and as a visiting instructor at the U.S. Military Academy at West Point. Dr. Astorino-Courtois earned her Ph.D. in International Relations and MA in and Research Methods from New York University. Her BA is in political science from Boston College. Finally, Dr. Astorino-Courtois also has the distinction of having been awarded both a US Navy Meritorious Service Award and a US Army Commander's Award.

Ambassador Erica Barks-Ruggles

Ms. Barks-Ruggles was the Ambassador of the United States of America to the Republic of Rwanda from January 2015- March 2018. She previously served for three years as U.S. Consul General in Cape Town, South Africa. From January 2009- July 2011, Ms. Barks-Ruggles served as the Deputy to the United States Permanent Representative to the United Nations, leading the Washington office and serving on the Deputies Committee. She is a career Foreign Service Officer, serving since 1991. From 2004-2008 she was the Deputy Assistant Secretary for Democracy, Human Rights and Labor, where she led U.S. support for Iraq's first democratic elections in 2005, and managed over \$210 million in human rights and democracy programming in the Middle East and South and Central



Asia. From 1996-1999 she was a Director for African Affairs at the National Security Council at the White House, where she led the successful effort to pass the Africa Growth and Opportunity Act. She has also been posted to India and Norway. She has served as a Visiting Fellow at The Brookings Institution and an International Affairs Fellow at the Council on Foreign Relations. Ms. Barks-Ruggles speaks French and Norwegian.

Dr. Fotis Barlos

Dr. Fotis Barlos is a DARPA program manager in the Strategic Technology Office (STO). Dr. Barlos' interests include data analytics, computational science, and planning technologies. His DARPA programs seek to develop tools to support situation awareness and decision-making in highly complex, highly dynamic operational environments. The Collection and Monitoring via Planning for Active Situational Scenarios (COMPASS) program specifically aims to better understand and respond to adversaries actions in the “competition” phase of conflict (also referred to as Phase 0 or Gray Zone). COMPASS seeks to leverage advanced AI and other technologies to provide theater-level operations and planning staffs with robust analytics and decision-support tools that reduce ambiguity of adversarial actors and their objectives.



The Hallmark program seeks to provide a full spectrum of breakthrough real-time systems and capabilities to help address both technical and strategic challenges related to command and control in the space-domain. The envisioned Hallmark system will fuse information from diverse sources, allow potential actions to be simulated and effects determined in advance, and vastly reduce the overall time required to make and execute decisions and observe results.

Prior to joining DARPA, Dr. Barlos was a research scientist with BAE Systems for 13 years, culminating as a technical director in the Technology Solutions division. In his role he oversaw a portfolio of programs focusing on decision support and data mining; artificial intelligence; knowledge representation and reasoning; machine learning and forecasting; uncertainty management; command and control and wargaming; and computational social science. Prior to BAE Systems, Dr. Barlos worked in the commercial sector developing data analysis technologies for consumer behavior and purchasing activities. Dr. Barlos earned a doctorate in computer science and engineering, and a Master of Science in electrical and computer engineering from George Mason University; as well as a Bachelor of Science in computer and information sciences from the University of Patras in Greece.

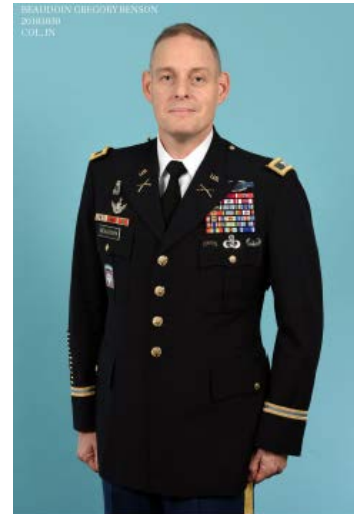
Colonel Gregory Beaudoin

COL Beaudoin commissioned as an Infantry Officer in 1993 from North Georgia College and is a graduate of the Air Command and Staff College and the National War College.

His previous assignments include duty with the 3-325th ABCT, 1-508th ABCT, 2nd Ranger Battalion, 1-505th PIR and command of 1-506th IN. He has also served as the Aide-de-Camp to the XVIII ABC CG. COL Beaudoin has deployed in support of operations to Rwanda, Bosnia, and to support Hurricane Katrina Relief efforts. He has also deployed in support of Operation Enduring Freedom five times, Operation Iraqi Freedom two times and Operations New Dawn and Inherent Resolve.

His awards and decorations include the Bronze Star Medal with 3 Oak Leaf Clusters, the Defense Meritorious Service Medal with Oak Leaf Cluster, the Master Parachutist Badge, the Combat Infantryman Badge and the Expert Infantryman Badge and the Ranger Tab.

COL Beaudoin and his wife, Allison have one son, Butler.

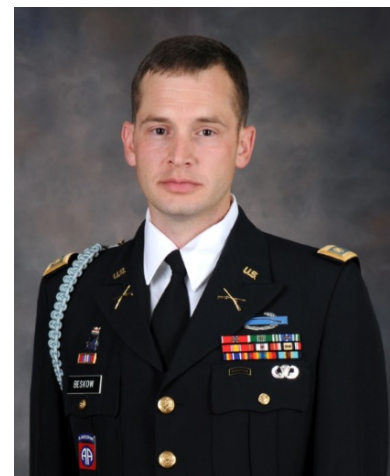


Lieutenant Colonel David M. Beskow

Lieutenant Colonel David M. Beskow is a US Army Operations Research and Systems Analyst. He is currently a Doctoral Candidate in the Societal Computing Program at Carnegie Mellon University in Pittsburgh, Pennsylvania, where his research focuses on developing machine learning algorithms to detect social media bots and characterize the disinformation campaigns they inhabit.

LTC Beskow was commissioned in 2001 from the United States Military Academy at West Point, New York. In 2002 he was assigned to the 82nd Airborne Division, where he served as a Rifle Platoon Leader, Rifle Executive Officer, and Headquarters and Headquarters Company Executive Officer. Major Beskow deployed to Afghanistan in 2003 and Iraq in 2004 with the 82nd Airborne Division. After attending the Infantry Captain Career Course in 2005, he was assigned to the Infantry Officer Basic Course at Fort Benning, Georgia, where he served as a platoon trainer for five classes of Infantry 2nd Lieutenants. Upon assignment to Fort Hood, Texas, Major Beskow served as an Assistant Operations Officer in 1st Special Troops Battalion. After returning to Iraq in 2008, he served on the Brigade Infrastructure Coordination where he assisted in overseeing \$100 million dollars of infrastructure improvement projects in Southern Baghdad. While deployed, Major Beskow assumed command of Bravo Company, 1-66 Armor Battalion, supervising battle space in the Eastern Baghdad regions of Fedaliyah and Kamaliyah (containing a combined Iraqi population of 200,000 people). While under his command, Bravo Company assisted in rebuilding security and governance following the Shia uprising in the Spring of 2008.

In 2011 he was assigned to the Systems Engineering Department at West Point where he served as an Instructor, Assistant Professor, and Analyst. While assigned there, he taught classes in Operations Research Modeling as well as Small Unit Leadership. He has assisted in numerous research projects for the Department of Defense, including modeling stability/peace, portfolio optimization with open



source microfinance data, geospatial modeling, installation services cost modeling, and process improvement.

In 2015 he was assigned to the US Army Intelligence and Security Command, where he assisted in incorporating data science into intelligence workflows. While there he stood up the first data science course for Open Source Intelligence Analysts and assisted in other data science efforts that supported insider threat security operations, human intelligence operations, as well as other intelligence projects.

Lieutenant Colonel David Beskow is a graduate of Ranger School, Airborne School, Sniper Employment Course and the Stryker Leader's Course. He graduated from the Infantry Captain's Career Course in December 2005 and from Command and General Staff College in August 2014. He holds a Bachelors of Science Degree in Civil Engineering from the United States Military Academy and a Master of Science in Operations Research from the Naval Postgraduate School.

Mr. Rick Bremseth

Rick Bremseth served as the Deputy Senior Director of the Integration Support Directorate (ISD) for the Department of the Navy (DON). As such, he was a key advisor to the Secretary, Under Secretary and Deputy, Under Secretary of the Navy for sensitive activities. He was responsible for the synchronization, facilitation, overall planning, coordination, and execution within the DON for Sensitive Activities, Irregular Warfare, and Special Operations Forces support. He served as a primary liaison and interface for these areas from the DON to the Office of the Secretary of Defense, the Chief of Naval Operations, the Commandant of the Marine Corps, the Naval Criminal Investigative Service, and various other departments and agencies of the U.S. Government.



Mr. Bremseth was appointed to the Defense Intelligence Senior Level on 26 August 2012. He worked in the ISD for over six years and served as the Director, Operations and Executive Director prior to his appointment as Deputy Senior Director. He retired from the Navy in 2006 with twenty-nine and a half years of service. He earned a Bachelor of Arts degree in psychology from the University of California, Riverside, and a Master of Science degree in Strategic Studies from the U.S. Marine Corps War College.

Mr. Bremseth's naval service was all within the Naval Special Warfare community. His assignments were varied and included tours of duty at three separate Theater Special Operations Commands. He commanded SEAL Team EIGHT (1996-1998) and his major command tour was at Naval Special Warfare Group THREE (2003-2005). He served as Deputy Commander, Special Operations Command, Pacific and Deputy Commander, Combined/Joint Special Operations Task Force, Bosnia-Herzegovina. He also commanded the Joint Special Operations Task Force, Operation Enduring Freedom – Philippines.

His military awards include the Defense Superior Service Medal, Legions of Merit, and associated joint, unit, and campaign awards and decorations by the Department of Defense and the Department of the Navy.

Colonel Jeffrey A. Brewster

Colonel Jeff Brewster serves as the deputy director/division chief for the United States Central Command (USCENTCOM) J5's Combined Strategic Analysis Group (CSAG). CSAG is unique among combatant commands: a "think tank" composed of two-dozen international officers providing unvarnished strategic-level analysis for the CENTCOM commander, staff, and countless "area of responsibility" stakeholders.

Colonel Brewster is an Army Reserve officer with over 17 years of active duty and 35 years of total military service. He previously served as a strategic planner (Central Gulf) and Deputy Chief, Coalition Coordination Center within USCENTCOM J5 and as an Emergency Preparedness Liaison Officer (EPLO) to Oregon.



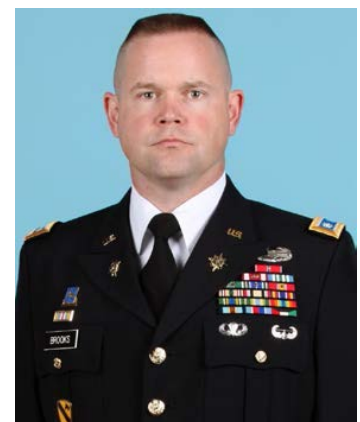
Brewster enlisted in the Army in 1984 and served as an infantryman with the 101st Airborne Division (Air Assault) at Fort Campbell, KY. He was commissioned in 1989 through ROTC at the University of Washington in Seattle, graduating in 1990. Shortly after completing the officer basic course, he deployed to Saudi Arabia and Iraq in support of Operation Desert Storm. Afterwards he served in several motor and watercraft transport units, commanding a medium boat company from 1995-97 in Tacoma, WA. Following a decade of staff assignments, he commanded a chemical battalion at Joint Base Lewis-McChord, WA from 2008-2011. He deployed in support of Operation Enduring Freedom from 2011-12 with duty in Afghanistan, Kuwait, and Qatar as a senior logistics planner with US Army Central, primarily supporting retrograde operations in Afghanistan.

Colonel Brewster is a 2005 graduate of the resident US Army Command and General Staff College and earned graduate degrees from the University of Washington (MPA -1996) and the US Army War College (Strategic Studies - 2013). As a citizen-soldier, Colonel Brewster served in municipal government for fifteen years, most recently as Director, Communications and Government Relations for the City of Lakewood, WA from 2007-2013.

Colonel Paul "Tim" Brooks

COL Paul "Tim" Brooks was born and raised in Syracuse, New York. He received his Bachelors of Arts from the University of Notre Dame in May 1990. In March 2004, he earned a Masters of Science degree in Information Operations from the Naval Post Graduate School in Monterey, California.

In May of 1990 he was commissioned through the Reserve Officer Training Corps program as a 2LT in the Armor Corps and was assigned to Germany where he served as a tank platoon leader, tank company XO and Headquarters and Headquarters Company XO with the 2nd Armored Cavalry Regiment and the 2nd Battalion, 37th Armored Regiment, 3rd Infantry Division.



COL Brooks transitioned to the Military Intelligence Corps in 1994 and was posted to Fort Campbell, KY where he served in a variety of intelligence positions including Battalion and Brigade S-2 as well

as Direct Support Military Intelligence Company Commander in the 101st Airborne Division (Air Assault). After command COL Brooks was reassigned to the Battle Command Training Program in Fort Leavenworth, KS, where he had the opportunity to work with Army National Guard units throughout the U.S. to develop their staff skills and procedures.

Following his promotion and selection as an IO Officer, he was reassigned to Camp Red Cloud, Korea, as the 2nd Infantry Division's IO Officer for 15 months. Upon returning from Korea, COL Brooks was assigned to the 1st Cavalry Division in Ft Hood, TX where he served as the Effects Coordinator for the 3rd "Greywolf" Brigade, the Secretary to the General Staff and the Division G-7. While assigned to the division he deployed to Iraq twice from 2006 to 2008 and later from 2009 to 2010, serving in IO leadership positions during both tours.

Upon completion of his tour with the 1st Cavalry Division, COL Brooks was assigned as the IO Plans and Policy Lead for NATO International Military Staff focusing on enabling committees and working groups tasked with developing various Alliance policies and doctrine. In JUL 14, upon promotion and completion of the U.S. Army War College, COL Brooks was assigned as the G-7, 8th Army in Yongsan, Korea. His duties included coordinating IO activities and strategic communications for the command.

COL Brooks returned to the U.S. in JUL 16 and was assigned as the Mission Assurance Division Chief, Department of the Army Management Office – Cyber, HQDA G-3. He was responsible for the development of cyber vulnerability assessment programs for critical weapon systems as well as installations. COL Brooks was subsequently assigned to his current position as the Chief, Communication Strategy Analysis Division, Joint Staff, J-39 where he is responsible for supporting the CJCS's role as global integrator in the development and synchronization of military messaging guidance for the Joint Force.

Ms. Sarah A. Canna

Ms. Sarah A. Canna is a Principal Analyst at NSI. In this capacity, Ms. Canna applies her open source analysis skills to regions of vital concern to US Combatant Commands, particularly the Middle East and South Asia. To help military planners understand the complex socio-cultural dynamics at play in evolving conflict situations, Ms. Canna developed a Virtual Think Tank (ViTTa) tool, which is designed to rapidly respond to emergent crises by pulsing NSI's extensive subject matter expert (SME) network to provide deep, customized, multidisciplinary analysis for defense and industry clients. This tool has been used to study the so-called Islamic State as well as Eurasian cooperation and conflict. Ms. Canna is also a lead editor and integrator of white papers, reports, and proceedings focused on violent extremism, influence and deterrence, and adversarial intent. Ms. Canna also supported durability analyses using the NSI State Stability (StaM) model for Afghanistan, Pakistan, Nigeria, and (at the megacity level) Dhaka, Bangladesh.



Prior to joining NSI, she was an associate within the Social Science Program at Strategic Analysis, Inc. (SA), where she supported multidisciplinary projects ranging from developing and assessing computational social science models, evaluating state instability forecast models, and developing cultural aptitude taxonomies. Additionally, Ms. Canna provided analytic

support to the Defense Science Board (DSB) 2008 task force on Understanding Adversaries, the 2007 DSB summer study on Challenges to Military Operations in Support of US Interests, and the 2006 DSB summer study on 21st Century Strategic Technology Vectors. Prior to joining SA, she was a research associate at Intellibridge Corporation in Washington, D.C. where she provided daily open source analysis to the Commander, US Southern Command and the Commandant, US Coast Guard. She also managed a network of 200-plus subject matter experts, upon whose knowledge Intellibridge analysts relied. Ms. Canna has a MA degree from Georgetown University in Technology and Security Studies. Ms. Canna holds a translation certificate in Spanish from American University and is learning Dari.

Dr. Kathleen M. Carley

Experience Dr. Carley is a Professor of Computer Science in the Institute for Software Research, IEEE Fellow, and Director of the Center for Computational Analysis of Social and Organizational Systems at Carnegie Mellon University. She joined Carnegie Mellon in 1984 as Assistant Professor Sociology and Information Systems. In 1990 she became Associate Professor of Sociology and Organizations, in 1998 Professor of Sociology, Organizations, and Information Technology, and in 2002, attained her current role as Professor of Computation, Organization, and Society. She is also the CEO of Carley Technologies Inc. aka Netanomics.



Dr. Carley's research combines cognitive science, sociology, and computer science to address complex social and organizational issues. Her most notable research contribution was the establishment of Dynamic Network Analysis (DNA) – and the associated theory and methodology for examining large high-dimensional time variant networks. Her research on DNA has resulted in tools for analyzing large-scale dynamic networks and various multi-agent simulation systems. Her group has developed tools for extracting sentiment, social and semantic networks from social media and other textual data (AutoMap), simulating epidemiological models (BioWar), simulating covert networks (DyNet), and simulating changes in beliefs and practice given information campaigns (Construct). Her ORA system is one of the premier network analysis and visualization engines supporting geo-temporal analysis of social network and meta-network data. It is used worldwide and at several of the combatant commands. Illustrative projects include assessment of IRS outreach activities, assessment of impact of NextGen on airline re-rerouting, counter-terrorism modeling, counter-narcotics modeling, assessment of design of public-health departments, mapping the global cyber-attack network, and social media based assessment of crises such as Benghazi, Darfur, and the Arab Spring.

Education Dr. Carley received SB degrees in Economics and in Political Science from M.I.T., and a PhD degree in Sociology from Harvard University.

Publications Among Dr. Carley's many scientific publications, she co-authored papers "Exploring Characteristics of Suspended Users and Network Stability on Twitter" (2016), "Transition Networks in a Cohort of Patients with Congestive Heart Failure" (2015), "Remote assessment of countries' nuclear, biological, and cyber capabilities: joint motivation and latent capability approach" (2015), "Destabilizing Terrorist Networks" (2003), "The Impact of US Cyber Policies on Cyber-Attacks Trend" (2016), "Rapid Modeling and Analyzing Networks Extracted from Pre-Structured News Articles" (2012), "An Incremental Algorithm for Updating Betweenness Centrality and k-Betweenness Centrality and Its Performance on Realistic Dynamic Social Network Data" (2015).

Honors Dr. Carley is an IEEE Fellow. She is the recipient of the Allen Newell award for research excellence. She has served as President of the North American Association for Computational and Organizational Simulation (2003-2004) and of the Mathematical Sociology Section of the American Sociological Association (1999-2000). She received the Lifetime Achievement Award from the Sociology and Computers Section of the ASA (2001). In 2011 she received the Simmel Award for advances in the area of social networks from INSNA and became a senior member of the IEEE. She has served as a Task Force Member of the Defense Science Board and of Geographic Information Science Panel of the Strategic Command. She has served on a committee and several panels of the National Research Council including ones on the military, big data, and geo-spatial analytics and was a member of the DHS-HSSTAC.

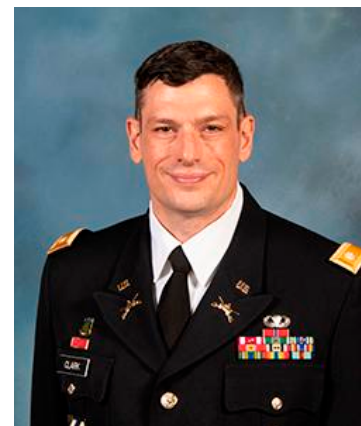
Mr. Michael A. Ceroli, Colonel (Retired)

Michael A. Ceroli is a retired Army Colonel who served in the Infantry and Psychological Operations Branches. He began his military career upon graduation from the Virginia Military Institute with a Commission as an Infantry Officer. Mr Ceroli served with the 2nd Infantry Division in Korea, 3rd Infantry Division in Germany and twice in the 82d Airborne Division. As a PSYOP officer Mr. Ceroli served in every position from detachment commander in the 8th PSYOP Battalion to Commandant of the PSYOP Branch. Most notably he served as the Battalion Commander for 8th PSYOP BN, deploying the battalion to Baghdad, Iraq from 2003 to 2005. Mr Ceroli also served as the commander of the Joint Military Information Support Task Force based in Qatar from 2008 to 2009. His assignments as a PSYOP officer outside of the Special Operations Community included III Corps PSYOP Officer and Chief of Information Operations for US Army Pacific (USARPAC). He studied Jihadi maneuver in the information environment as an Army Fellow to the Naval Postgraduate School. Mr. Ceroli has earned the Combat Infantryman's Badge, is ranger and pathfinder qualified, and a master rated paratrooper.



Lieutenant Colonel (Promotable) J.P. Clark

Lieutenant Colonel (Promotable) J.P. Clark is the Deputy Director for Academic Engagement at the Strategic Studies Institute and senior editor for War Room, the Army War College's on-line journal. Prior to that assignment, he was the chief of the Joint Concepts Branch of the Army Capabilities and Integration Center and lead author for The U.S. Army in Multi-Domain Operations, 2028 and the Joint Concept for Integrated Campaigning. LTC Clark has held staff and command positions as an armor officer in the United States and Republic of Korea, and as a strategist in Iraq, the Office of the Secretary of the Army, and the Initiatives Group of the British Chief of the General Staff. He is the author of Preparing for War: The Emergence of the Modern U.S. Army, 1815-1917. LTC Clark holds a Ph.D. and M.A. in history from Duke University and a B.S. in Russian-German from the U.S. Military Academy.



Dr. Vincent P. Clark

Dr. Vincent P. Clark is Director of the Psychology Clinical Neuroscience Center and a Professor of Psychology and Neuroscience at the University of New Mexico, and is the former Scientific Director and currently Professor of Translational Neuroscience at the Mind Research Network. Dr. Clark uses neuroimaging (EEG, MEG, sMRI, fMRI, DTI/DSI and MRS) and neurostimulation (electrical, magnetic, light, and ultrasound) to examine neural mechanisms of attention, perception, and memory. His 97 publications examine the use of neuroimaging and neurostimulation for the study of healthy humans, diagnosis and treatment of neurological and psychiatric disorders, and for the development of new technologies for cognitive enhancement in healthy volunteers, including neurostimulation guided using neuroimaging, mindfulness, and other techniques. His research in neuroimaging and brain stimulation has been supported by DARPA, ARL, NRL and AFRL, along with DOE, IARPA, NIH, NSF and private foundations, and has been described in print, online and on TV, including *Nature*, *Science*, *The New York Times*, *The New Yorker*, *Forbes*, *NPR*, *BBC*, *ABC Nightline*, *SmartDrugSmarts* and other media outlets in the US and internationally. He has chaired a number of scientific meetings and has helped to organize 20 different courses and seminars on cognitive neuroscience in the US, Canada, Asia, Australia, and Europe. He is also founder and Chair of the Brain Stimulation and Imaging Meeting (BrainSTIM, <http://brainstim-meeting.org>), with its 5th annual meeting scheduled for June 2019 in Rome.



Lieutenant Colonel (Promotable) George I. Corbari

LTC(P) George I. Corbari currently serves as a strategic advisor and Acting Director of the Combined Action Group supporting the dual roles of the Commander, United States Cyber Command – Director, National Security Agency. LTC Corbari served for 17 years as an Air and Missile Defense Officer and is now an Army Strategist. In support of the Commanding General, 94th Army Air and Missile Defense Command, LTC Corbari drafted a comprehensive strategy for ground-based Integrated Air and Missile Defense for the Pacific Theater that now serves as the foundation for defending the homeland against missile attack. The Army selected LTC Corbari for attendance at the Eisenhower School for National Security and Resource Strategy, National Defense University for his next assignment and for promotion to Colonel this fall.



Prior to joining the Army 26 years ago, George Corbari was a coach and studied leadership, coaches, athletes, and exceptional performance, earning a Master's Degree in education with an emphasis in Human Performance Enhancement. George and his wife of 35 years, Denise, have six children ranging in age from 3 to 33, and three grandchildren.

Mr. Timoth S. Curry

Tim Curry is the Deputy Chief, Information & Cyberspace Operations Division (J39) at US Africa Command in Stuttgart, Germany. In this capacity, he serves as the leading civilian supervisor, analyst, and subject matter expert on a wide portfolio of operations: including Offensive Cyberspace Operations (OCO), Military Information Support Operations (MISO), Electronic Warfare, Military Deception (MILDEC), Special Activities Programs (SAP)/Special Technical Operations (STO), and Sensitive Activities. He currently focuses his extensive experience in leading interoperability efforts between DoD's Cyberspace and Information Operations' communities & interagency/inter-government 3D (Defense, Diplomacy, Development) initiatives with DoS's Global Engagement Center, to further critical theater strategic/operational initiatives in troubled areas of AFRICOM's area of responsibility.



Prior to his current position, Tim Curry retired as a Commander in the US Navy after 23 years in Naval Aviation, flying 3000+ hours of combat and operational support missions in fighter and reconnaissance aircraft, and ashore at varied joint staff assignments with US Africa Command, US Forces Japan, US European Command, and Strike Fighter Wing Atlantic. Tim holds a Bachelor of Science in Engineering (Biomedical Engineering) from Duke University and Master of Business Administration from University of Phoenix.

Dr. Douglas Derrick

Dr. Douglas C. Derrick is an Associate Professor of IT Innovation, Mutual of Omaha Distinguished Chair of Information Science and Technology, and the Director of the Center for Collaboration Science at the University of Nebraska at Omaha (<http://research.unomaha.edu/ccs>). Doug received his PhD in Management Information Systems from the University of Arizona. He holds a master's degree in computer science from Texas A&M University and a master's degree in business of Administration from San Jose State University. He is a Distinguished Graduate of the United States Air Force Academy. His research interests include human-machine collaboration, intelligent agents, cyber-facilitate influence, collaboration technologies, decision support systems, and persuasive technology. Prior to joining UNO, Dr. Derrick worked as a Program Manager at MacAulay-Brown, Inc. and also served as an Air Force officer. He has extensive experience working with the Department of Defense. As a contractor and academic, he has been awarded contracts and grants totaling \$43.5 Million over the last 16 years (principle investigator awards over \$19 Million). Doug has published over 60 peer-reviewed journal articles and conference proceedings.



Dr. Diane DiEuliis

Dr. Diane DiEuliis is a Senior Research fellow at National Defense University. Her research areas focus on emerging biological technologies, biodefense, and preparedness for biothreats. Dr. DiEuliis also studies issues related to dual use research, disaster recovery research, and behavioral, cognitive, and social science as it relates to important aspects of deterrence and preparedness.

Prior to joining NDU, Dr. DiEuliis was the Deputy Director for Policy, (and served as Acting Deputy Assistant Secretary for Policy and Planning) in the Office of the Assistant Secretary for Preparedness and Response (ASPR), U.S. Department of Health and Human Services. While there, she coordinated policy in support of domestic and international health emergency preparedness and response activities, including implementation of the Pandemic All-Hazards Preparedness Act, the National Health Security Strategy, and the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE).

From 2007 to 2011, Dr. DiEuliis was the Assistant Director for Life Sciences and Behavioral and Social Sciences in the Office of Science and Technology Policy (OSTP) in the Executive Office of the President. During her tenure at the White House, she was responsible for developing policy in areas such as biosecurity, synthetic biology, social and behavioral science, scientific collections, ethics, STEM education, and biotechnology. Dr. DiEuliis also worked to help coordinate agency response to public health issues such as the H1N1 flu.

Prior to working at OSTP, Dr. DiEuliis was a program director at the National Institutes of Health (NIH), where she managed a diverse portfolio of neuroscience research in neurodegenerative diseases. She completed a fellowship at the University of Pennsylvania in the Center for Neurodegenerative Disease Research, and completed her postdoctoral research in the NIH Intramural research program, where she focused on cellular and molecular neuroscience. Dr. DiEuliis has a Ph.D. in biology from the University of Delaware, in Newark, Delaware.

Areas of Expertise: Biodefense; Biosecurity; Deterrence (Neuroscience & Neurobiology); Emergency Management; Ethics & Leadership (Life Sciences/Human Subjects); WMD Preparedness/Response



Dr. David Dorondo

David R. Dorondo earned the degree of B.A. cum laude in history from Armstrong State College in 1980 and the M.A. in German and European diplomatic history from the University of South Carolina in 1984. From 1984 to 1987, he was a member of St. Antony's College, Oxford and was admitted to the degree of D.Phil. from the University of Oxford in 1988. He earned a Fulbright Fellowship to attend the Otto-Friedrich-Universität Bamberg in the Federal Republic of Germany for the academic year 1985-1986, having already spent the year 1981-1982 at the same institution as a graduate exchange student. Since 1987, he has served as a member of the Department of History of Western Carolina University and teaches both graduate and undergraduate courses in modern European military and political history and the history of international relations. His most recent publications is "The US Army, the



Nuclear Posture Review, and Nuclear Deterrence: A European Historical Context.”

Dr. Dorondo is a member of US Strategic Command’s Deterrence and Assurance Academic Alliance; the Society for Military History; the Association of the US Army; and the US Army Historical Foundation. He serves on the Executive Council and the Brewster Award Committee of the North Carolina Association of Historians. From 2013 to 2016, he served as Creighton Sossoman Professor of History at Western Carolina University. He received WCU’s Last Lecture Award for teaching in 2011-2012 and the College of Arts and Sciences Teaching Award for the year 2000-2001. Since 2000 he has served as Faculty Advisor to the Pi Psi Chapter of Phi Alpha Theta History Honor Society. In 1996 he received the Medal of Scholarship from Pi Gamma Mu International Honor Society in Social Sciences. He founded and moderates The Carolina Round Table on the World Wars and co-founded and co-moderates WCU’s Global Spotlight Series on International Affairs. An avid horseman and hiker, he lives below Flat Gap in the Cowee Mountains of Jackson County, North Carolina.

Lieutenant General (Retired) Robert Elder, D.Engr

Lt General Robert Elder (USAF, retired) joined the George Mason University faculty as a research professor with the Volgenau School of Engineering following his retirement from military service as the Commander of 8th Air Force and U.S. Strategic Command’s Global Strike Component.

He currently conducts research in the areas of command and control, deterrence, escalation control, competition short of armed conflict, crisis management, and international actor decision-making. General Elder served as the Central Command Air Forces Deputy Commander for Operation Enduring Freedom, Air Operations Center Commander and Deputy Air Component Commander for Operation Iraqi Freedom, and Commandant of the Air War College. He was the first commander of Air Force Network Operations and led the development of the cyberspace mission for the Air Force. He received his Doctorate in Engineering from the University of Detroit.



Mr. Adam Fields

Adam Fields joined the Department of State in 2010, serving overseas tours in Hanoi and Kuala Lumpur. After returning to Washington in 2015, Adam worked as a Special Assistant to the Assistant Secretary of State for Intelligence and Research, in the Department of State’s Executive Secretariat, and as a Special Assistant to the Secretary of State. Adam earned a master’s degree in strategic studies from National Defense University in 2018. His current role in the Bureau of Conflict and Stabilization Operations focuses on great power competition, civil-military cooperation, and violent extremism in the southern Philippines. Prior to joining the Foreign Service, Adam managed Southeast Asia operations for an ethical sourcing consultancy. He speaks Mandarin Chinese and Vietnamese.

Lieutenant Colonel Christopher D. Forrest

Lieutenant Colonel Christopher D. Forrest is an Active Duty Air Force A-10C fighter pilot and Airpower Strategist, serving as the Division Chief of Air Force Checkmate's Indo-Pacific Division. Air Force Checkmate directly serves the Air Force Deputy Chief of Staff for Operations and the Chief of Staff of the Air Force with operational strategy and best military advice on current and near-term future operations. His portfolio entails assessment, operational planning support, innovation, and clean-sheet strategy and concepts for the China and North Korea problem sets. His recent work involves a deep-dive project on Great Power competition and China competitive strategy.



Prior to his assignment to Air Force Checkmate in 2018, Lt Col Forrest served as the Chief of Strategy and Plans and Chief of Targeting in the 613th Air Operations Center, HQ Pacific Air Forces, Oahu Hawaii. In his role as Chief of Strategy and Plans in the Strategy Division of the Air Operations Center, Lt Col Forrest conducted operational planning, CONOP development, and strategy directly for the Commander, Pacific Air Forces, and Theater Joint Force Air Component Commander to CDRUSINDOPACOM. In his role as Chief of Targeting, Lt Col Forrest was responsible for targeting strategy and operational planning for INDOPACOM operational plans in crisis and contingency. Prior to assignment in Hawaii, Lt Col Forrest served in various roles and locations as an A-10C combat fighter pilot, to include leadership positions as Director of Operations for the 455th Expeditionary Operations Support Squadron, Bagram Air Base Afghanistan, and Chief A-10C Evaluator and Instructor Pilot at the 23rd Fighter Group, Moody Air Force Base Georgia. In addition to his roles and assignments in the A-10C, Lt Col Forrest completed multiple tours as an Instructor Pilot in the T-38C as a lead instructor and initial cadre for the Air Force Introduction to Fighter Fundamentals course at Randolph Air Force Base Texas. He is a Command fighter pilot with over 3000 hours and multiple combat deployments to the Middle East.

He holds a Masters in International Relations from the Fletcher School of Law and Diplomacy, Tufts University, and a Bachelor of Science in Political Science as a Distinguished Graduate of the US Air Force Academy. Additionally, Lt Col Forrest earned advanced certificates in Nuclear Policy and Nuclear Surety from the Defense Nuclear Weapons School (Defense Threat Reduction Agency), is an alumni Fellow at the National Defense University's Center for the Study of Weapons of Mass Destruction (Program for Emerging Leaders) and is a 2014 White House Fellowship Program Regional Finalist. He has completed multiple Fellowships for the Chief of Staff of the Air Force, to include DARPA's Service Chiefs Fellows Program and Johns Hopkins School of Advanced International Studies summer fellowship on China competitive strategy. He is a published author in multiple peer reviewed journals, most recently publishing in Joint Forces Quarterly on new Strategic Shaping concepts for deterrence and escalation control. He and his family live in the National Capital Region.

Captain Geoffrey Gage

Captain Geoffrey “Strain” Gage currently serves as Deputy Director of Strategy on the Navy staff, OPNAV N50B. A career naval aviator with over 4,500 flight hours and 688 arrested landings during training and combat, he has flown in support of Operations DENY FLIGHT, DELIBERATE FORCE, SOUTHERN WATCH, IRAQI FREEDOM and ENDURING FREEDOM. Captain Gage graduated with honors from Harvard College in 1987; graduated with highest distinction from the College of Naval Command and Staff in 2005, where he was a member of the Halsey Group; and attended the North Atlantic Treaty Organization Defense College Senior Course in 2008. During 2016-17, he served at the Brookings Institution in Washington, DC, as a Federal Executive Fellow, focusing on U.S. strategic interests in the Indo-Pacific.



Dr. James Giordano

James Giordano PhD is Professor in the Departments of Neurology and Biochemistry, and Chief of the Neuroethics Studies Program of the Pellegrino Center for Clinical Bioethics at the Georgetown University Medical Center, Washington DC, where he also is Chair of the Sub-Program in Military Medical Ethics, and Co-director of the O’Neill-Pellegrino Program in Brain Science and Global Law and Policy. He is Distinguished Visiting Professor of Brain Science, Health Promotions and Ethics at the Coburg University of Applied Sciences, Coburg, Germany, and was formerly Fulbright Visiting Professor of Neuroscience and Neuroethics at the Ludwig-Maximilians-University, Munich, Germany. Prof. Giordano currently serves as Chair of the Neuroethics Subcommittee of the IEEE BRAIN Project; as 2019 Donovan Fellow in Biowarfare and Biosecurity at USSOCOM; and as an appointed member of the Neuroethics, Legal and Social Issues Advisory Panel of the Defense Advanced Research Projects Agency (DARPA).



Previously, he has served as Senior Fellow and Task Leader of the European Union Human Brain Project Sub-project on Dual Use Neuroscience; as a consultant in brain science, neurotechnology and biological and chemical weapons to the Organisation for Economic Cooperation and Development (OECD); as an appointed member of the Department of Health and Human Services (HHS) Secretary’s Advisory Committee for Human Research Protection (SACHRP); and as Senior Science Advisory Fellow of the Strategic Multilayer Assessment Group of the Joint Staff, Pentagon. Additionally, he has served as scientific advisor to the United States Navy and Marine Corps, US Naval War College, United States Air Force, Federal Aviation Administration, Lawrence Livermore National Laboratory, and the German Air Force (Deutsche Bundesluftwaffe). His current work focuses upon the international use, misuse and control of brain science as bioweapons, and the engagement of advanced biotechnologies to assess and affect advanced neuro-cognitive capabilities to optimize the training and operational effectiveness of Special Forces’ intelligence and warfighter personnel. A neuroscientist and ethicist with over 30 years’ experience in basic and translational research, he is the author of over 290 publications, 7 books, and 15 governmental whitepapers on bioscience, biotechnology and biosecurity. His recent book, *Neurotechnology in National Security and Defense: Practical Considerations, Neuroethical Concerns* (CRC Press) is widely used in a number of national defense, security and policy curricula. In recognition of his ongoing work and achievements, Prof. Giordano has been elected to the European Academy of Science and Arts (EC); the Dana Alliance of Brain

Initiatives (DABI), is an Overseas Fellow of Royal Society of Medicine (UK), and has been named as a Distinguished Lecturer of the Institute for Electrical and Electronics Engineers (IEEE).

Dr. Rebecca Goolsby

Dr. Goolsby currently serves as a program officer for the Office of Naval Research in Arlington, Virginia. For the past eighteen years, she has developed research in social network analysis and computational social science, the first to hold the position of computational social scientist in the U.S. government. She taught at the University of Washington and Evergreen State College in Washington State before joining ONR in 2000, where she collaborated with ONR-funded scientists to address the problem of understanding big data of terror networks. Her early program involved the development of computational social science models, algorithms, and visualizations for understanding unique and novel threats. She has published many articles in peer-reviewed journals on a variety of topics including understanding terrorist networks, ethics in military research, humanitarian disaster communications concerns, and diffusion of propaganda via social media. Well known internationally for her research and program development in strategic communication, her 2013 publication for the Woodrow Wilson Center for International Scholarship was the first to identify the potential of Internet and mobile phone communications as a vector for rumor, crowd manipulation and social hysteria propagation.¹ Among her honors, she was awarded a Fulbright Award and a Special Commendation from the Navy. She is the lead on NATO Research Technology Group, HFM-293 "Digital and Social Media Assessment For Effective Communication And Cyber Diplomacy." She is a technical advisor for the NATO Digital Working Group, and a member of the NATO Digital Working Group's Core "Tiger" Team for Information Environment Assessment project.



¹Goolsby, Rebecca (2013). "On Cybersecurity, Crowdsourcing and Social-Cyber Attack," Woodrow Wilson Science and Technology Innovation Program, Commons Lab Memo. Number 1. <https://www.wilsoncenter.org/publication/cybersecurity-crowdsourcing-and-social-cyber-attack>

Mr. Mark Hoffman

Mr. Mark A. Hoffman is the manager for the Model Based Reasoning Group at Lockheed Martin Advanced Technology Laboratory. He has over 30 years of experience specializing in the development and management of advanced concepts and systems that incorporate state of the art information technology and analytics into revolutionary Transportation Logistics, Intelligence Analysis, and Decision Support systems.

Mr. Hoffman has been the Program Manager and Principle investigator for more than 30 DARPA, IARPA, and Service Lab programs and projects. This includes that DARPA Integrated Crises Early Warning System (ICEWS) demonstrating social science analytics and forecasting of worldwide unrest events. These capabilities represent the first successful transition of computational social science to a DOD Program of Record. He was also the Principle Investigator for the DARPA Genoa (Crisis-Net) Program, and was instrumental in the development of the DARPA



Dynamic Analysis and Replanning Tool (DART) for USTRANSCOM for visualizing and managing troop deployments during Desert Shield.

Mr. Hoffman served as a member of the US DoD Defense Science Board summer study in 2016 on Constrained Military Operations (Gray Zone conflicts). Mr. Hoffman has authored over 25 scientific peer-reviewed conference papers and publications, and three book chapters. He has a B.S. in Computer Science and Numerical Analysis from the University of Washington and an M.S. in Computer Science from Rensselaer Polytechnic Institute. He is a member of the ACM, IEEE, AFCEA, and AFHE.

Dr. Molly Jahn

Dr. Molly Jahn is a professor at the University of Wisconsin-Madison where she holds appointments in the Department of Agronomy, the Nelson Institute, and the Global Health Institute. She is Adjunct Senior Research Scientist at Columbia University, Guest Scientist at Los Alamos National Laboratory, and a Special Government Employee at NASA. She previously served as the 12th Dean of the College of Agricultural and Life Sciences, Director of the Wisconsin Agricultural Experiment Station, Deputy and Acting Under Secretary of Agriculture where she oversaw four USDA research and statistical agencies, and was appointed Joint Faculty at Oak Ridge National Laboratory from 2012-2018.



Dr. Jahn has >100 peer-reviewed publications, >60 active commercial licenses, holds several patents, and has authored a series of influential reports on defense and intelligence implications of changing risk profiles of global food systems with partners such as Lloyd's of London, Cargill, the Geneva Association, Thomson Reuters the US Army War College, the US National Geospatial Intelligence Agency, the International Institute for Applied Systems Analysis, the International Food Policy Research Institute and NASA. Her innovative approaches to inter-sector partnership and integrated large projects have been highlighted widely in the academic and popular press. She has served on many boards and expert advisory panels globally including the US National Academies of Science Board on Agriculture and Natural Resources, NASA's Applied Sciences Advisory Committee, the Santa Fe Institute Science Board, the International Agricultural Research Center System (CGIAR) Consortium Board, Government of Canada Standing Selection Committee for National Centres of Excellence, the International Life Sciences Institute Research Foundation Board of Trustees, the Advisory Board to the UN Special Representative for Disaster Risk Reduction, the Science Board of Conservation International, and for universities and company science and strategy advisory boards in N. America, Europe, Asia and Australia. In 2016, she was selected to lead a Cooperative Research and Development Agreement for the US Government entitled "Food security, food systems and national security interests." From 2013 to the present, Dr. Jahn co-directs a major USDA grant on U.S. dairy and, from 2017 to present, serves as director of strategic outreach for NASA's Harvest Consortium where she supports outreach to operational USG agencies to catalyze decision-relevant science on risk at the land/water/energy/human security nexus.

Dr. Jahn received the BA with Distinction in Biology from Swarthmore College, holds graduate degrees from MIT and Cornell University, and has been awarded Honorary Doctor of Science degrees in both the US and UK. She was named the first Lilian Martin Fellow at the University of Oxford's Martin School in 2015, is a Fellow of the American Association for the Advancement of Science and of the Wisconsin Academy of Arts, Sciences and Letters. She has received numerous awards,

fellowships including USDA Secretary's Honor Award, the highest honor at the department, for her work in government. In 2017, her team of partners in the Milwaukee Public Schools was recognized with their top honor, the Excellence in Education Award. Professor Jahn consults globally for business and finance, governments, philanthropic organizations, and international multi-lateral institutions focused on agriculture, food systems, risk, life sciences, development, national security and environment.

Mr. Steve Jameson

Mr. Steve Jameson was a program manager in DARPA's Information Innovation Office (I2O), having joined DARPA in August 2014. His current research focuses on technologies to enable situation understanding, improve effectiveness and timeliness of decision-making, and build trust between humans and autonomous reasoning systems. Specific interests include knowledge representation, techniques for causal modeling, reasoning, and inference, as well as technologies to support mixed initiative reasoning, with a focus on enabling non-expert users to effectively interact with automated reasoning systems.



Mr. Jameson manages three programs at DARPA. Causal Exploration seeks to develop a modeling platform to aid military planners in understanding and addressing underlying causal factors that drive complex conflict situations. The technologies embodied in the Causal Exploration platform will enable users to rapidly create, maintain, and interact with a causal model that has been tailored for the operational environment they are facing.

Big Mechanism aims to develop technologies for a new kind of science in which research is integrated more or less immediately—automatically or semi-automatically—into causal, explanatory models of unprecedented completeness and consistency. The domain of the program is cancer biology with an emphasis on signaling pathways. Big Mechanism technologies read research abstracts and papers to extract pieces of causal mechanisms, assemble these pieces into more complete causal models, and reason over these models to produce explanations.

Insight addresses the need for new tools and automation to enhance intelligence analyst capabilities and performance, developing an adaptable, integrated system for intelligence, surveillance and reconnaissance (ISR) information to augment intelligence analysts' support of time-sensitive operations on the battlefield. The Insight system receives, indexes and stores incoming data from multiple sources; analyzes and correlates that information; and requests and shares other relevant information with analysts and data providers. Insight's analysis capabilities include pattern analysis and course of action assessment algorithms to help analysts discover and identify potential threats and explore hypotheses about those threats' potential activities.

Mr. Jameson joined DARPA following a 27-year career in advanced technology development at Lockheed Martin Corporation where his research focused on artificial intelligence, sensor and data fusion, and unmanned autonomous systems. He holds a Bachelor of Science degree in electrical engineering from Johns Hopkins University and a Master of Science degree in computer science from the University of Pennsylvania.

Lieutenant Colonel (Retired) David E. A. Johnson

LTC David Johnson, US Army (Ret.) is the Executive Director of C4ADS (the Center for Advanced Defense Studies), a Washington, DC-based, non-partisan non-profit dedicated to addressing cross-cutting global security challenges. The Center, an innovator in multi-disciplinary analysis of publicly available information, is a technology partner and test bed for Palantir, Windward, and Amazon Web Services among others. A graduate of the United States Military Academy at West Point, the Command and General Staff Course, and the Joint Defense College at the Ecole Militaire



in Paris, Dave holds a Master's degree in the History of Strategy from La Sorbonne. He also studied cognitive informatics at the Centre de Recherche en Informatique under Dr. Colette Rolland and Dr. Newton Howard. A decorated Special Forces combat veteran and Army strategist with service on six continents and multiple overseas contingency operations, his career is outlined in the Congressional Record. Before coming to C4ADS, he worked for Intel Corporation as Director of Digital Security Products in the Software and Solutions Group. Dave presented to the Defense Science Board summer study group on Constrained Military Operations in 2016. He has written and spoken about the application of artificial intelligence, serving as the security chair for the 2017 IEEE Intelligent Systems Conference. LTC Johnson was also a panelist at Brain Bar 2018 in Hungary, discussing the challenges of a resource constrained future. He speaks French, Russian, and Arabic.

Mr. Robert C. Jones

Bobby Jones is a retired U.S. Army Special Forces Colonel; a former Deputy District Attorney; and the Senior Strategist at U.S. Special Operations Command. Currently serving as a member of the SOCOM J5 Donovan Group, Mr. Jones is responsible for leading innovative thinking on the strategic environment and understanding how it impacts factors critical to national security, such as competition, the character of conflict, deterrence and societal stability.



Mr. Jones's principle focus is on the fundamental human aspects of political conflict. In a rapidly evolving strategic environment, good strategy is rooted in understanding what remains constant and why; while good tactics demands a realistic appreciation for what is different or changed. Successful campaigning demands a fusion of the two. He enjoys "wire brushing" concepts by routinely standing in front of tough audiences. None of these is tougher than those he faces in his role as a fixture in the Joint Special Operations University's Enlisted Academy, applying a commonsense perspective to bring our most experienced Special Operators strategic insights they can actually use. This is also the third consecutive year that Mr. Jones has addressed the Air War College class during the Operational Design phase of their curriculum, sharing practical insights gleaned from his experiences.

He has been a featured speaker at Universities as storied as Oxford, St Andrews, Stanford, and Harvard; and has led professional development events with operational units across the SOCOM enterprise. Mr. Jones is also a Fellow with the Center for Advanced Defense Studies (C4ADS).

"If war is the final argument of Kings, then revolution is the final vote of the people." RCJ

Ms. Regina Joseph

Regina Joseph is the co-founder of pytho, a US-based firm, and the founder of Sibylink, an international consultancy based in The Hague. Both organizations provide strategic foresight through quantitative forecasting, training programs and decision science-led solutions development. Joseph is an IARPA ACE program Superforecaster and was a member of the IARPA- funded Good Judgment Project research team.



An information systems designer with a record of award-winning product development over 25 years, Joseph is also a political scientist whose work and research assists public and private sector organizations. Her corporate work spans the world, from Sony to Hearst to Liberty Global. Her public sector work aids European government agencies and multilateral organizations. Her most recent endeavors include developing a cyber forecasting program (for the Netherlands' National Cyber Security Centre and TNO); the creation of a strategic foresight training program for The Ministry of Foreign Affairs of The Netherlands; and the invention of digital tools like NEUERtm, a quantified structural analytic technique (patent pending). She also continues her applied research into the nexus between foresight, information design and human-machine interaction as a performer in IARPA's current Hybrid Forecasting Competition (HFC) program.

In her career, Joseph has been recognized as a pioneer and thought leader in both the analog and digital worlds: she was the founder and editor-in-chief of Blender, the world's first digital magazine; she was the founder and creative director of Engine.RDA, one of the earliest digital development agencies; and she has been responsible for several technical firsts in the fields of media technologies and telecommunications. She is a published author, and her writing has appeared in a variety of outlets including Reuters, the Washington Post, the New York Times, Forbes, AdWeek, the International Relations & Security Network at ETH-Zurich, Foreign Policy and many others. Joseph is a Thomas J. Watson Fellow and holds a B.A. from Hamilton College (magna cum laude and Phi Beta Kappa) and an M. Sci from New York University.

Ms. Elsa Kania

Elsa B. Kania is an Adjunct Fellow with the Technology and National Security Program at the Center for a New American Security (CNAS). Her research focuses on Chinese military innovation in emerging technologies in support of the Artificial Intelligence and Global Security Initiative at CNAS, where she also acts as a member of the research team for the new Task Force on Artificial Intelligence and National Security. Her analytic interests include Chinese military modernization, information warfare, and defense science and technology. She has been invited to testify before the House Permanent Select Committee on Intelligence (HPSCI) and the U.S.-China Economic and Security Review Commission (USCC). Elsa is an independent analyst, consultant, and co-founder of the China Cyber and Intelligence Studies Institute. She was a 2018 Fulbright Specialist and is a Non-Resident Fellow with the Australian Strategic Policy Institute's International Cyber Policy Centre. Elsa works in support of the China Aerospace Studies Institute through its Associates Program, and she is a policy advisor for the non-profit Technology for Global Security. Elsa has been named an official "Mad Scientist" by the U.S. Army's Training and Doctrine Command.



Elsa is a PhD student in Harvard University's Department of Government, and she is also a graduate of Harvard College (summa cum laude, Phi Beta Kappa). Her thesis on the evolution of the PLA's strategic thinking on information warfare was awarded the James Gordon Bennett Prize. Her prior professional experience includes time with the Department of Defense, the Long Term Strategy Group, FireEye, Inc., and the Carnegie-Tsinghua Center for Global Policy. While at Harvard, she has worked as a research assistant at the Belfer Center for Science and International Affairs and the Weatherhead Center for International Affairs. Elsa was a Boren Scholar in Beijing, China, and she has professional proficiency in Mandarin Chinese.

Mr. Scott Kendrick

Scott Kendrick is an advocate of sound and relevant doctrine, concepts, and campaign/war planning. He currently serves on the Joint Staff in the J-33's Integrated Operations Division. Prior to that, he served with the Army Capabilities Integration Center (ARCIC) as chief of the Strategic Landpower Task Force in Arlington, VA. At ARCIC, he primarily focused on the creation, development, and broad socialization of the Joint Concept for Integrated Campaigning (JCIC). For the past few years, he has championed revisions to joint doctrine's characterization and logic of campaigning and for the eradication of legacy phasing (Ph 0-V) as a conception of warfare. Previously, he served as the Division Chief for Joint Operational Warplanning on the Joint Staff, J-5 for three years after attending senior service college at NDU/Ft Myer. Prior to that, he spent most of the previous decade at Fort Hood, serving in III(US) Corps G3 Plans, the 4th Infantry Division, and on two separate occasions in the 1st Cavalry Division. Before that he attended Army CGSC and the School of Advanced Military Studies (SAMS). Finally, he is a retired armor officer and a graduate of Clemson University and St Mary's College.

Dr. Brian Kettler

Dr. Brian Kettler is a Program Manager in the DARPA Information Innovation Office (I2O). Prior to that, he was a Lockheed Martin Fellow and Chief Scientist for the Informatics Lab of Lockheed Martin Advanced Technology Laboratories. He has over 25 years' experience in applying Artificial Intelligence and other advanced technologies to research and development programs for DARPA, the Air Force Research Lab, the Office of Naval Research, and the Intelligence Advanced Research Projects Activity (IARPA). These include applications in multi-domain command and control, computational social science for decision support in complex operational environments (e.g. megacities), and knowledge discovery for intelligence analysts. At ATL, he was the Principal Investigator for a flagship effort at DARPA in computational social science, the Integrated Crisis Early Warning System (ICEWS), that transitioned into operational use for worldwide country instability tracking and forecasting. His current research interests also include human-computer symbiosis, automated planning systems, and understanding cyber-social systems. Prior to ATL, Dr. Kettler worked for ISX Corporation, Brightware, IBM, and Digital Equipment Corporation. He received his PhD in Computer Science (Artificial Intelligence) from the University of Maryland College Park. He received his BS in Computer Science from the University of Massachusetts at Amherst.



Mr. Richard Leigh

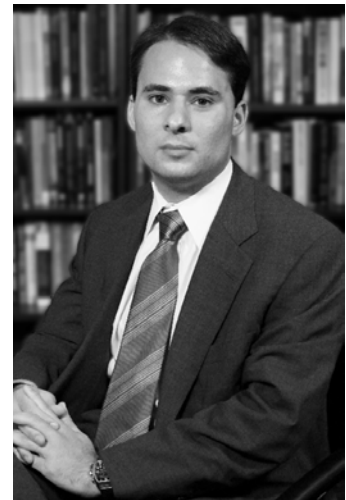
Mr. Leigh is the programme manager for the UK MOD's Influence Science and Technology Research Programme. Under Richard's leadership the programme is instrumental in driving forward UK MOD research on the understanding and shaping of behaviours and the application of military activity to achieve behavioural effects.

Richard has more than 30 years' experience in the UK MOD science and technology organisations as an operational analyst and programme manager. During his career Richard has worked on most of the UK defence capabilities, including operational tours in Bosnia, Iraq and Afghanistan as a civilian analyst.



Dr. Barnett S. Koven

Barnett S. Koven is the Training Director, a Senior Researcher, and the Political Instability, Counterterrorism and Gray Zone Portfolios Lead at the University of Maryland's (UMD) National Consortium for the Study of Terrorism and Responses to Terrorism (START), a U.S. Department of Homeland Security (DHS) Center of Excellence. He is also the Founder and CEO of BSK Consulting, L.L.C., a boutique consultancy specializing in practitioner education and mixed-methods (quantitative and qualitative) research in support of national security practitioners and policy-makers. In addition, Koven is a Fellow at the Jack D. Gordon Institute for Public Policy at Florida International University, a Professorial Lecturer in Political Science & International Affairs at the George Washington University (GWU), an Associate Member of the Graduate Faculty and a Lecturer in Public Policy at the UMD, an Adjunct Presenter at the U.S. Air Force Special Operations School and a Quantitative Social Scientist at Performance Systems, LLC. He received his Ph.D., M.Phil. and M.A. in Political Science, as well as a B.A. in International Affairs and Latin American and Hemispheric Studies from the GWU. Koven also holds a Certificate in Conflict Analysis from the United States Institute of Peace and a Certificate in Advanced Security in the Field from the United Nations System Staff College.



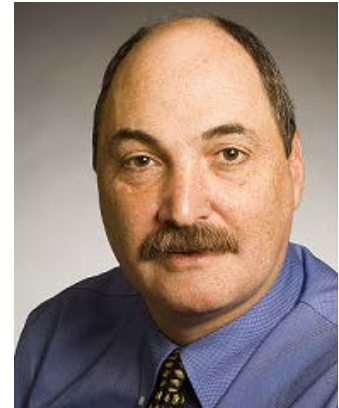
Koven has conducted extensive overseas research in conflict and post-conflict zones. His work employs cutting-edge quantitative and qualitative methods to answer pressing defense and homeland security questions. Specifically, he focuses on issues pertaining to counterinsurgency, counterterrorism, countering violent extremism, counter-narcotics, gray zone conflict, security cooperation, organized criminal violence, weapons availability and conflict onset, post-conflict reconstruction, and the material and non-material sources of military power. Koven has received research funding from the U.S. Department of Defense (DoD), the U.S. Department of State, the DHS and the National Nuclear Security Administration, as well as from the Horowitz Foundation for Social Policy, the GWU and the UMD. A complete list of journal articles, book chapters and policy publications can be found on his personal website: barnettkoven.weebly.com.

In addition to his aforementioned academic affiliations, Koven regularly instructs Combating Terrorism Seminars at the Federal Law Enforcement Training Center in Charleston, SC. He has also lectured during Joint Special Operations University's Special Operations Forces Interagency Collaboration Course, the Defense Intelligence Agency's Advanced Counterterrorism Analyst Course

and overseas as part of the Diplomatic Security Service's Global Anti-terrorism Training Assistance/Special Program for Embassy Augmentation and Response Executive Forum on Foreign Terrorist Fighters Consultation. In addition, Koven has taught at the National Reconnaissance Office as part of the Executive Master of Public Management Program. Moreover, he is also a frequent presenter during the various lecture series and conferences curated by the Strategic Multi-layer Assessment Branch of the DoD, as well as to myriad other U.S. government and university audiences. Finally, Koven routinely provides terrorism analysis on national and international media broadcasts.

Dr. James Andrew Lewis

James A. Lewis is a Senior Vice President and Program Director at CSIS where he writes on international affairs and technology. Before joining CSIS, he worked at the Departments of State and Commerce as a Foreign Service Officer and as a member of the Senior Executive Service. His government experience includes work on a range of politico-military and intelligence-related issues. Dr. Lewis led the US delegation to the Wassenaar Arrangement Experts Group on advanced civil and military technologies. He was assigned to US Southern Command and US Central Command. He has authored numerous publications since coming to CSIS, including the bestselling "Cybersecurity for the 44th Presidency," and is an internationally recognized expert on cybersecurity. Dr. Lewis was the Rapporteur for the UN's 2010, 2013 and 2015 Group of Government Experts on Information Security and has led a long running Track II Dialogue on cybersecurity with the China Institutes of Contemporary International Relations. He received his Ph.D. from the University of Chicago.



Mr. Vern Liebl

Vernie Liebl is an analyst currently sitting as the Middle East Desk Officer in the Center for Advanced Operational Culture Learning (CAOCL). Mr. Liebl has been with CAOCL since 2011, spending most of his time preparing Marines and sailors to deploy to Afghanistan, Iraq, Syria and other interesting locales. Prior to joining CAOCL, Mr. Liebl worked with the Joint Improvised Explosives Device Defeat Organization as a Cultural SME, and before that with Booz Allen Hamilton as a Strategic Islamic Narrative Analyst. Mr Liebl retired from the Marine Corps, but while serving, he had combat tours to Afghanistan, Iraq and Yemen, as well as numerous other deployments to many of the countries of the Middle East and Horn of Africa. He has an extensive background in intelligence, specifically focused on the Middle East and South Asia.



Mr Liebl has a Bachelor's degree in political science from University of Oregon, a Master's degree in Islamic History from the University of Utah, and a second Master's degree in National Security and Strategic Studies from the Naval War College (where he graduated with "Highest Distinction" and focused on Islamic Economics). He has also published extensively on topics ranging from the Caliphate to Vichy French campaigns in WW2. Current projects are chapters for a book on Strategic Culture and a book on Environment and Security, as well as a series of historical articles on conflict between the Ottoman, Mughal, Safavid and Abdali empires.

Dr. Gina Ligon

Dr. Gina Ligon is The Jack and Stephanie Koraleski Professor of Collaboration Science at the University of Nebraska at Omaha. She received her PhD in Industrial and Organizational Psychology with a Minor in Measurement and Statistics from the University of Oklahoma. She is a non-Resident Fellow for the George Washington University Program on Extremism, and has been part of the Department of Homeland Security (DHS) Centers of Excellence since 2010. She is the Principal Investigator and originator of the Leadership of the Extreme and Dangerous for Innovative Results (LEADIR) database.



Her research interests include profiling leaders from afar, violent ideological groups, expertise and leadership development, and collaboration management. Prior to joining UNO, she was a faculty member at Villanova University in the Department of Psychology. She also worked in St. Louis as a management consultant with the firm Psychological Associates. She has published over 50 peer-reviewed publications in the areas of leadership, innovation, and violent groups, and she is the editor to the academic journal *Dynamics of Asymmetric Conflict: Pathways toward Terrorism and Genocide*.

Lieutenant Colonel Mike P. Maloney

Lieutenant Colonel Mike P. Maloney currently serves at the United States Army Special Operations Command, culminating two decades working within the Special Operations community. His experience areas include counter-terrorism, transnational criminal activity, and international affairs in Europe, the Middle East, and Latin America. He is currently focusing research on the contemporary and emerging global security environment and the United States' return to the great power competition space and the role of Special Operations Forces within that arena.



Mr. Jim Maltby

Jim Maltby is a Principal Scientist. After serving as Army Officer for 6 years, he spent 4 years in Government Departments looking at crisis and CT response, before joining Dstl 10 years ago.

He is a Biologist and Social Scientist; now providing research on long-term planning, science and technology, and strategy and policy advice to senior Decision-Makers in National Security. His interests are rooted in the future changes in society and how this is shaped by adoption of technology, from a socio-technical systems perspective.



He is currently a RSA Fellow and a Fellow of the Institute of Civil Protection and Emergency Management (ICPEM). On the Advisory Board to the Humanitarian Innovation Fund and a technical advisor to the Virgin Earth Challenge.

Dr. Robert McCreight

Robert Robert McCreight retired in 2004 after 20 years with the State Department and other federal agencies, along with 23 years of military service in US Army Special Operations and intelligence work. He has worked on nuclear, chemical and biological weapons issues, treaty verification, global scientific exchanges, counter-terrorism, threat analysis and Soviet defense policy. He has authored or contributed to five books and published over 34 journal articles. His post doctoral work has focused on political science and public administration and he continues to teach graduate school at several universities. He has also been a periodic lecturer at National Defense University and the US Army War College. His current research interests involve advanced dual use technology, foreign and defense policy, intelligence analysis, strategic wargaming and issues central to homeland security and homeland defense. He remains focused on future advanced technologies with pernicious convergent threat aspects and co-chairs a NATO work group on nano-neuro biochemical influences shaping human enhancement and soldier optimization.



Dr. Ian McCulloh

Ian McCulloh is the chief data scientist for Accenture Federal Services. His current work focuses on the application of artificial intelligence to improve democracy and government services. He also maintains adjunct faculty appointments at Johns Hopkins University in the Bloomberg School of Public health and the Whiting School of Engineering. His most recent academic papers have been focused on the neuroscience of persuasion and implementation of artificial intelligence programs. He is the author of "Social Network Analysis with Applications" (Wiley: 2013), "Networks Over Time" (Oxford: forthcoming) and has published 55 peer-reviewed papers. Prior to joining Accenture, McCulloh served as associate professor at the Johns Hopkins University School of Public health, senior lecturer in Hopkins' Whiting School of Engineering and senior scientist at the University' Applied Physics Laboratory. His latest research focused on strategic influence in online networks. McCulloh retired as a Lieutenant Colonel from the U.S. Army after 20 years of service with expertise in social network analysis, special operations and improvised explosive device forensics. During his military tenure, he founded the West Point Network Science Center and created the Army's Advanced Network Analysis and Targeting (ANAT) program. In addition, he led interdisciplinary teams of scientists at Special Operations Command Central (SOCCENT) and Central Command (CENTCOM) to conduct global, data-driven, social science research to inform strategy for countering extremism and assessing military operations. McCulloh holds a Doctorate and Master's degree from the Carnegie Mellon University School of Computer Sciences, Masters degrees in Industrial Engineering and Applied Statistics from Florida State University, and a Bachelor's degree in Industrial Engineering from the University of Washington.



Dr. Richard McKinley

Dr. Andy McKinley is the chief of the Cognitive Performance Optimization Section, Applied Neuroscience Branch, Warfighter Interface Division, Airman Systems Directorate at Wright-Patterson Air Force Base. He also leads the Non-Invasive Brain Stimulation (NIBS) Team that is developing and evaluating non-invasive brain stimulation techniques and paradigms to enhance cognitive performance in Air Force environments.



His previous work has shown significant improvements in training times (~200% increase) and large increases in sustained attention, a skill important for many Air Force careers including air traffic control, image analysis, and remotely piloted aircraft operations. Likewise, Dr. McKinley has been evaluating the effectiveness of tDCS for remediating sleep-deprivation induced fatigue, improving multitasking performance, and increasing reaction time. He is working to optimize the paradigms and the effects of repeated stimulation over several days on memory and attention. Dr. McKinley is also performing basic science (6.1) to uncover the neural mechanisms of transcranial stimulation to better understand how the technology provides performance enhancement. Likewise, he is advancing the technology design through the modeling and development of new tDCS electrodes that improve safety and comfort for the user. Most recently, he has begun investigating the efficacy of peripheral nerve stimulation techniques to accelerate training as part of a larger DARPA program. Dr. McKinley also has extensive experience modeling cognitive performance and human physiology under high acceleration (i.e. high -G) stress (dissertation topic) and has worked on many projects relating to human factors including display design and multisensory integration. Dr. McKinley has over 60 peer-reviewed journal articles, book chapters, technical reports, and conference proceedings in these areas. He has served on multiple NATO International Panels and is currently leading a new international research task group.

Dr. Spencer B. Meredith III

Dr. Spencer B. Meredith III serves as an Associate Professor of National Security Strategy at the National Defense University (NDU), College of International Security Affairs (CISA). With two decades of research and support to governance and conflict resolution, his principle areas of expertise are Russian, Eastern European, and Middle Eastern politics. Focused on the Gray Zone and countering peer-adversary influence, he is a Subject Matter Expert for multiple Geographic Combatant Command, Intelligence Community, and Joint Special Operations efforts. He has briefed at the National Security Council, and his current work focuses on democratization and the human domain in Ukraine and the Baltics.



With a doctorate from the University of Virginia in Government and Foreign Affairs, as well as a Fulbright Scholarship to the Republic of Georgia, he has a broad record of scholarship. His first book, *Nuclear Energy Safety and International Cooperation: Closing the World's Most Dangerous Reactors* (2014) resulted from work with key US Interagency and partner nation elites in Eastern Europe. His articles have appeared in peer-reviewed journals ranging from *Communist Studies and Transition Politics*, *Peace and Conflict Studies*, *Central European Political Science Review*, to *Special Operations Journal*; as well as in professional publications including *Strategy Bridge*, *Small Wars*

Journal, Inter-Agency Journal, Special Warfare, and Foreign Policy Journal. He is a regular contributor to Joint Staff White Papers on cognitive factors in the contemporary and future operating environments.

Dr. Kay Mereish

Dr. Mereish is a Senior Level Intelligence Officer at the office of the Deputy Undersecretary for Intelligence Operations, Office of Intelligence and Analysis of DHS. She is currently the Chair of the Analysis and Production Board for DHS Intelligence Enterprise; coordinates the intelligence priority requirements, DHS/I&A representative to Counterproliferation Board, National Analytical Board, National Intelligence Board, Analytical Outreach, and Champion to Pharmaceutical Supply Chain of the Public-Private Analytic Exchange Program. A senior program reviewer and board member of several Centers of Excellence/ DHS/S&T. She served as Deputy Director for DHS at the National Center for Medical Intelligence in Fort Detrick, Maryland. She was acting Director, WMD and Health Assessment Division, Office of Intelligence and Analysis at the Department of Homeland Security. She joined DHS in Feb 2009 as Senior Level Medical Intelligence Officer.



As an army officer, COL Mereish served as Senior Manager at the DIA-National Media Exploitation Center. She deployed on several overseas tours in CENTCON and PACOM AOR as an Army Attaché. Dr. Mereish is DoD Certified Acquisition Professional –Highest level-Level III; Defense Attaché, North Africa/Middle East and Defense Linguist DPLTIV.

In her civil career, she held the position of Chief Inspector of the United Nations Monitoring and Verification Commission-and Deputy Director for Planning and Operation in New York from 2000-2008. She organized and led UNMOVIC biological and chemical weapons inspection team in Iraq and supported the IAEA operation. She also served as a weapon inspector for several years with UNSCOM (1994-1998). She contributed to the quarterly reports on arms control for the UN Security Council, and lead author of the compendium on Iraq's WMD. Dr. Mereish served as a senior technical advisor to the US Chief negotiator and a delegate to the Ad Hoc Group, the BWC expert meetings in Geneva, representing different government agencies, including Defense, State, Commerce, and the National Security Council. She continued her BWC non-proliferation efforts as UNMOVIC delegate to the BWC technical meetings, States Parties meetings and the Review Conferences in Geneva. Dr. Mereish led the development of RNA and DNA-based assay for biological agents; received a patent award in October 2001 for inventing an autonomous sampling device designed to investigate the presence of CB threat agents. She represented CB Defense of DTRA at several MASINT meetings and reviews; and supported the establishment of CBIST. As a scientist at the biodefence facility at Fort Detrick, Maryland (1986-1997) she published in peer reviewed journals many scientific articles on biodefence, nonproliferation, verification technologies and presented papers at national and international forums on arms control, disarmament, verification and nonproliferation of WMD.

Dr. Mereish is a doctoral degree graduate from the University of Nebraska Medical Center, in Omaha, Nebraska, a graduate of Executive Leadership from The Ross School of Business- University of Michigan and Leadership in Homeland Security at Harvard Kennedy School Executive Education Program.

Dr. Mereish received from the Secretary of Homeland Security the Outstanding Public Service Medal in 2009; the Defense Meritorious Service Medal 2008 and the U.S. Army Meritorious Service Medal.

Dr. Sabrina Pagano

Dr. Pagano has extensive experience leading teams and projects both in academia and industry, including both the government and commercial domains. Though supporting a wide variety of projects and proposals at NSI, her work has focused in four main areas: 1) providing support to DoD's Strategic Multilayer Analysis (SMA) projects, including rapid applied analysis for USCENTCOM, 2) serving as the Principal Investigator and Project Manager for a multi-year contract investigating progress in conflict environments, 3) providing project oversight as the project manager for two AAA titles at a top gaming company, and 4) contributing thought leadership as one of two developers for a corporate offering focused on enhancing dignity in interactions with customers and employees. Prior to NSI, Dr. Pagano served as the Director (Acting) of a growing behavioral sciences program, as well as a Faculty Fellow Researcher and Lecturer at UCLA. Her work has spanned a wide variety of topics, with particular depth in intergroup relations, injustice, basic and moral emotions (e.g., empathy, moral outrage), and prosocial/antisocial behavior. She maintains an active knowledge base in the broad field of social psychology, and knowledge that spans multiple fields given her experience and leadership on multidisciplinary projects. Dr. Pagano earned her Ph.D. in Social Psychology (minor in Statistics) from the University of California, Los Angeles, and a dual BA with highest honors in Psychology and Political Science from the University of North Carolina at Chapel Hill.



Dr. Amy Pate

Amy Pate is the Research Director at START. She earned a Ph.D. in Government and Politics (Comparative Politics and International Relations) from the University of Maryland in 2007. Prior to joining START as a researcher in 2011, Pate was research director (2007-2011) and project coordinator (2003-2005, 2006-2007) of the Minorities at Risk Project, based in the Center for International Development and Conflict Management at the University of Maryland. Pate is a specialist in international relations and comparative politics, with particular foci on ethnic politics, democratization, political instability, terrorism, transnational organized crime, and counterinsurgency/ counterterrorism.

Pate earned an M.A. in Government and Politics from the University of Maryland in 2005 and her B.A. in Political Science, History, and Russian from Miami University (Ohio) in 1998.



Dr. Fabiana Perera

Fabiana Sofia Perera is an Assistant Research Fellow at the William J. Perry Center for Hemispheric Defense Studies. Prior to joining the Perry Center, Fabiana was a Rosenthal Fellow at the Office of the Secretary of Defense, Under Secretary for Policy, Western Hemisphere Affairs. Fabiana has experience working in the public and private sectors. She worked as a research associate at Mitsubishi International Corporation focusing on Latin America and the energy and infrastructure sectors. She also has experience serving at the Department of Veterans Affairs and the US Agency for International Development (USAID).



Fabiana holds an MA in Latin American Studies from Georgetown University and earned a PhD in Political Science from The George Washington University. For her doctorate, Fabiana completed fieldwork in Venezuela and Ecuador. Fabiana has presented her research at the annual meetings of the American Political Science Association and the Latin American Studies Association. Her research and analysis have appeared in numerous policy-oriented publications including *War on the Rocks*, *The Monkey Cage*, and *Project Syndicate* and has been supported by numerous organizations including Columbia University's Women in Energy program and George Washington University's Center for International Business Education.

Dr. Moritz Schuberth

Dr. Schuberth is a political scientist with a penchant for interdisciplinary research, most notably on peacekeeping, non-state armed groups, security governance and urban violence. For the past two years he has been working as Monitoring, Evaluation and Research Manager for the global humanitarian agency Mercy Corps in the eastern Democratic Republic of the Congo, where he has been coordinating research projects with the London School of Economics and the London School of Hygiene and Tropical Medicine. Prior to this he has worked at the European Commission, the German Federal Foreign Office and the German Federal Office for Migration and Refugees. He completed his Ph.D. in Peace and Conflict Studies on the challenge of coordinating stabilization, conflict resolution and statebuilding efforts in fragile and conflict-affected states. He consults the US Institute of Peace on a USAID funded research project exploring the possibilities for engaging, managing, and transforming community-based armed groups in Sub-Saharan Africa.



Dr. Schuberth has contributed to a DoD SMA white paper on the implications of cultural cognitive diversity on decision-making and planning and he is the author of recent articles in *Africa Spectrum*; the *Journal of Eastern African Studies*, *Conflict, Security & Development*; the *Journal of Peacebuilding and Development*; *Contemporary Security Policy*; *Stability: International Journal of Security and Development*; *International Peacekeeping*, and *Environment and Urbanization*.

Dr. Nathan Schurr

Dr. Nathan Schurr is a Principal Scientist and Artificial Intelligence Czar at Aptima, Inc., where he has served as Principal Investigator (PI) for over 30 research and development programs ranging from software agents to robotics to cyber warfare. His interests center on allowing humans and artificially intelligent systems to collaborate and interact for improved team and mission performance.

He is currently a principal investigator for DARPA's CHES program enabling hackers and cyber reasoning systems to collaborate. He served as PI for DARPA's PlanX program, developing the cyber warfare platform of the future. In addition, he has lead projects ranging from developing an intelligent, mixed-initiative interface that can assist operators with multi-RPA planning strategies and developing models of RPA operators to embed in the Vigilant Spirit Control Station. He has also led projects in the domains of software personal assistants and human-multirobot teams. Dr. Schurr is also the creator of an Incident Command training system, DEFACTO, which allows human incident commanders to coordinate with fire fighter agents during a large-scale disaster response. The Los Angeles Fire Department has tested this system and has given invaluable input to its design. In addition, he has been working on hybrid techniques that leverage the strengths of theoretic and logic-based decision reasoning.

Dr. Schurr holds a Ph.D. in Artificial Intelligence from the University of Southern California, where he was awarded the Viterbi School of Engineering Homeland Security Center Doctoral Fellowship. He holds a M.S. in Computer Science from the University of Southern California and a B.S. in Computer Engineering from California Polytechnic State University San Luis Obispo.



Ms. Malin Severin

Malin Severin is a Swedish analyst currently seconded by the Swedish Armed Forces to the UK MoD's think tank Development, Concepts and Doctrine Centre, DCDC. As part of the DCDC Futures Team she works with Strategic Foresight, covering trends and developments in Europe, Russia, as well as issues relating to the future of governance. Prior to joining DCDC she worked at the Swedish Defence Research Agency, FOI, where her research focused on issues relating to 'grey zone' challenges, early warning and Total Defence. Malin has a background in journalism and political risk analysis, and has also worked at the Swedish Embassy in Washington, DC.

She holds a MA in War Studies from King's College London, a MSc in Political Science from Lund University, and a MA in Journalism from Uppsala University.



Dr. Melanie Sisson

Melanie W. Sisson is Senior Fellow with the Stimson Center Defense Strategy and Planning Program. Her work focuses on the relationship between defense strategic planning processes and the likelihood of achieving foreign policy and national security objectives. Prior to joining Stimson, Dr. Sisson was Senior Project Associate with the RAND Corporation, where she conducted research on force planning, strategic approaches to countering domestic and international terrorism, covert operations, and enhancing planning and management processes within the Department of Defense. Melanie is a former member of the U.S. Intelligence Community, earned a PhD in Political Science from the University of Colorado at Boulder, an MA from the Columbia University School of International Affairs, and has published in numerous national security and academic journals.

Dr. Laura Steckman

Laura Steckman, PhD, is a social scientist at the MITRE Corporation. Her work operationalizes theories and methodologies from the social and behavioral sciences to address approaches and solutions to mission-specific problems sets worldwide. She has supported Information Operations (IO) and Military Information Support Operations (MISO) for U.S. Central Command, U. S. Pacific Command and various interagency efforts, and is the former Command Social Scientist for the Marine Corps Information Operations Center (MCIOC). Her current research examines the relationship between societies and emerging technologies, specifically in how the two shape each other and the impact that technology and electronic communications have on culture, language, and behavior.

Captain Dan Stone

CAPT Stone received his commission through ROTC at Texas A&M University after completing his Bachelor of Science Degree in Animal Science (Pre-Veterinary Science Option), in May 1996. He also holds a master's degree from the Naval War College and a graduate of the Naval Operational Planner Course now known as Maritime Advanced Warfighting School.

CAPT Stone is a designated Naval Flight Officer (NFO) in the E-2C/D Hawkeye. At sea, he has deployed twice onboard USS Constellation (CV 64) with VAW-116 in support of Operation SOUTHERN WATCH, deployed in support of Operation IRAQI FREEDOM and Operation ENDURING FREEDOM onboard USS HARRY S. TRUMAN (CVN 75) with VAW-126, and deployed three times in support of Operation ENDURING FREEDOM onboard USS RONALD REAGAN (CVN 76) with VAW-113. He deployed in support of Operation INHERENT RESOLVE onboard USS CARL VINSON (CVN 70) while serving as commanding officer of VAW-116.

Ashore, his tours include VAW-120 as a fleet replacement squadron instructor NFO and Weapons Tactics Instructor; Homeland Defense Plans Branch Chief with NORAD and USNORTHCOM; Chief Staff Officer for Airborne Command & Control and Logistics Wing; a second tour as the Homeland Defense Plans Branch Chief with NORAD and USNORTHCOM; and is currently the Strategy, Policy, and Doctrine Division Chief at NORAD and USNORTHCOM.

Additional assignments include Operational Planner for USCENTCOM and USNAVCENT.

Dr. Gwyneth Sutherlin

Dr. Sutherlin is a leading expert in socio-cultural analysis--the translation of qualitative research into discrete technology design for decision-making. As a faculty member in the College of Information Cyberspace at the National Defense University, she develops curriculum across the college to advance the leadership concepts for Strategic Operations in the Information Environment. Her teaching and research focus on information influence, emerging technology, and data analysis. Formerly the Director of Human Geography & Analytics Research at a commercial firm, she led teams in technology development, geospatial analysis, and social science research to support the Joint Staff, Global Combatant Commands, the Department of State, and other USG and partner nations' teams. She draws from over a decade of field experience focused on multilingual communications, risk evaluation, and cognitive pattern analysis in conflict environments. Her hands-on experience in designing intercultural conflict resolution and strategic communication programs in North Africa garnered UN recognition for innovation. Dr. Sutherlin speaks and publishes frequently on cultural cognitive variation in UX, social science driven ML, crowdsourcing for decision-making, and localized data analysis models supporting national security policy decisions. Her research appears in security training, textbooks on emerging technology for conflict analysis, UN and NATO special reports. Dr. Sutherlin has a degree in political science from Indiana University and a PhD in peace and conflict studies from the University of Bradford. She has worked in seven languages.



Dr. Griffin Thompson

Griff Thompson is responsible for establishing and managing the strategic direction and programmatic implementation of the office's mission in promoting U.S. foreign policy and national security goals through electricity system reforms, development of functioning power markets, and revised policy and regulatory frameworks necessary for investment in renewable energy and energy efficiency.

The office is focused on national and regional electricity system reform and market development; and the promotion of innovative policy, regulatory and finance renewable energy and energy efficiency models that drive economic growth and expand domestic and regional security. Under his direction, the office identifies the diplomatic linkages between energy service delivery and democracy and good governance; religious and cultural dynamics; conflict resolution; and, the broader contours of economic and political development.



Before joining the Bureau of Energy Resources, Dr. Thompson was Senior Climate Change Program Manager within the Department's Bureau of Oceans, Environment and Science, and Lead Negotiator on Technology for the U.S. Government at the UNFCCC. Previously Mr. Thompson has served as Director of the Office of Energy at the U.S. Agency for International Development (USAID), President of the International Institute for Energy Conservation, and Senior Policy Analyst at the National Renewable Energy Laboratory (NREL).

Dr. Thompson has a B.A. in English from Gonzaga University and a Ph.D. in Political Philosophy from Georgetown University.

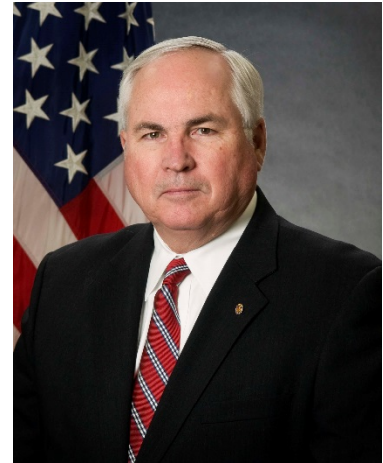
Mr. John William Wallace, Jr.

John Wallace is currently a Strategic Planner and Deputy Division Chief in the Joint Staff J33 Hampton Roads, Integrated Operations Division. Prior to his current duties, Mr. Wallace served as a Strategic Planner and Deputy Division Chief in the Joint Staff J35 Hampton Roads, Global Force Management (GFM) Future Operations Division and was previously a Branch Chief, Plans Policy and Adaptive Planning, Joint Staff J5 Joint Operational War Plans Division (JOWPD).

Mr. Wallace joined the Department of Defense Civil Service in January 2012 from Computer Sciences Corporation (CSC) where he was a Senior Member of the Advisory Staff / Program Manager for eleven years responsible for managing contract task order requirements supporting the US Joint Forces Command and later the Joint Staff Deputy Director, J31. In addition to task order management, Mr. Wallace provided functional subject matter expertise to guide the development of the Joint Capabilities Requirements Manager (JCRM) and the emerging Preferred Force Generator (PFG) force management software applications. Mr. Wallace is a recognized thought leader in the areas of strategy development, theater campaign and contingency plan development and assessment, the joint operation planning process, the joint deployment process, and global force management.

Prior to joining the civil sector, Mr. Wallace served as an active duty infantry officer in the US Army for 22 years. Mr. Wallace held various command and staff positions in air assault, airborne and light infantry units from the rifle platoon to Corps-staff level to include serving as an operations officer and planner for Task Force Atlantic, Joint Task Force (JTF) SOUTH, Republic of Panama, during OPERATION NIMROD DANCER, OPERATION JUST CAUSE, and OPERATION PROMOTE LIBERTY.

Mr. Wallace holds a Bachelor of Science in Engineering with an International Relations concentration from the United States Military Academy and a Master of Science degree in Community Mental Health from Long Island University. He is also a graduate of the US Army's Command and General Staff College. Mr. Wallace is married and has two sons.



Dr. Nicholas D. Wright

Dr Nicholas Wright is affiliated with University College London (UCL), Georgetown University, Intelligent Biology, and New America. His work combines neuroscientific, behavioural and technological insights to understand decision-making in politics and international confrontations, in ways practically applicable to policy.

He works with the US and UK Governments. On AI he advises Europe's largest tech company, SAP, and various parts of the US government (e.g., Joint Staff and State Department) as well as UK Government (e.g., Royal Navy). DARPA used his definition of Grey Zone conflict for their new AI programme on the Grey Zone. He conducts computational and cognitive science research at UCL, on which he also collaborates with China's top institution, Peking University. Foreign Affairs chose a recent piece on AI and the global order for its Top 10 of 2018 on the net.



He was previously an Associate in Nuclear Policy at the Carnegie Endowment for International Peace, Washington DC; in functional brain imaging at UCL and in the Department of Government at the London School of Economics; and was a clinical neurologist in Oxford and London. He has many academic (e.g. Proceedings of the Royal Society), general (e.g. the Atlantic and Foreign Affairs), and policy publications (e.g. www.intelligentbiology.co.uk) and has appeared on the BBC and CNN.

He has a medical degree from UCL, a BSc in Health Policy from Imperial College London, Membership of the Royal College of Physicians (UK), and an MSc in Neuroscience and a PhD in Neuroscience both from UCL.

Dr. Thomas Wright

Thomas Wright is the director of the [Center on the United States and Europe](#) and a senior fellow in the Project on International Order and Strategy at the Brookings Institution. He is also a nonresident fellow at the Lowy Institute for International Policy. Previously, he was executive director of studies at the Chicago Council on Global Affairs, a lecturer at the Harris School of Public Policy at the University of Chicago, and senior researcher for the Princeton Project on National Security.

Wright works on U.S. foreign policy and grand strategy, Donald Trump's worldview, the future of Europe, and Asian security. His book "[All Measures Short of War: The Contest For the 21st Century and the Future of American Power](#)" was published by Yale University Press in May 2017.



Wright has a doctorate from Georgetown University, a Master of Philosophy from Cambridge University, and a bachelor's and master's from University College Dublin. He has also held a pre-doctoral fellowship at Harvard University's Belfer Center for Science and International Affairs and a post doctoral fellowship at Princeton University.

Dr. Rachel Wurzman

Rachel Wurzman, PhD is a Neuroethics Consultant working with the DARPA N3 program team at Johns Hopkins University Applied Physics Laboratory. She is also the Director of Science for SeekHealing, a non-profit that is providing social connection-based interventions to make individuals and communities more resilient to opioid addiction and overdoses. Dr. Wurzman was recently a Fellow with the Center for Neuroscience and Society, and a Postdoctoral Research Fellow in Neurology with the Laboratory for Cognition and Neural Stimulation at the University of Pennsylvania, Philadelphia, PA, USA. Her ongoing research addresses neuroethical issues arising from the use of neuroscience in national security, defense, and intelligence; neuroethical obligations in public representations of brain science; the ethical, legal, and social issues pertaining to non-invasive brain stimulation; and biopsychosocial spectrum implications for addiction treatment and policy.



Rachel previously served as an Intern in the Science Division of the Office of Science and Technology Policy in the Executive Office of the President of the United States, an Independent Contractor for the World Technology Evaluation Center (dba WTEC, Inc.) in support of the National Nanotechnology Coordinating Center, a Neuroscience Scholar Program Fellow with the Society for Neuroscience, and a Researcher in Residence in the Neuroethics Studies Program of the Pellegrino Center for Clinical Bioethics at Georgetown University. Rachel is the author of 25 peer reviewed journal articles and book chapters on various topics in developmental and systems neuroscience, neuroethics, and science policy. She is also a 2017 TED speaker.

Rachel received her PhD in Neuroscience from Georgetown University's Interdisciplinary Program in Neuroscience, where she was an NIH Ruth L. Kirschstein National Research Service Award Fellow. She received her M.S. in Physiology and Biophysics from Georgetown University, and her B.A. in Neuroscience from Smith College.

She is also a contributing author in multiple Joint Staff/J-3 Strategic Multilevel Assessment (SMA) Group white papers on applications of cognitive neuroscience for national defense and intelligence. Her current neuroscience research is investigating mechanisms for neuro-plasticity in brain networks using non-invasive brain stimulation techniques, neuroimaging, and network neuroscience methods. Additionally, ongoing research in neuroethics addresses neuroethical issues arising from the use of neuroscience in national security, defense, and intelligence and neuroethical obligations in public representations of brain science. She also studies the ethical, legal, and social issues pertaining to non-invasive brain stimulation, and leads a Working Group on the same at the University of Pennsylvania.

SMA Program Office

Dr. Hriar Cabayan

Dr. Hriar “Doc” Cabayan is currently in the Joint Staff/J-39, DDGO where he manages the Strategic Multilayer Assessment (SMA) Program. SMA provides planning support to Commands with complex operational imperatives requiring multi-agency, multi-disciplinary solutions. Solutions and participants are sought from across USG, academia, think tanks, and industry. SMA is accepted and synchronized by Joint Staff/J-39 and executed by ASD (R&E)/RFD. Prior to his current position he was with ASD (R&E)/RFD/RRTO (2007-2013). From 1997 to 2007, he was Special Technology and Science Advisor in the JS Directorate of Operations (J-3) where he provided technical and scientific assistance to the Combatant Commands in the areas of deliberate and crisis action planning. In 2007, Dr. Cabayan received a Joint Distinguished Civilian Service Award by the Chairman of the Joint Chiefs of Staff.



His current focus is on counter-terrorism, counter-WMD (State and non-State), Global & regional socio-cultural assessments, and Individual, state and national-level deterrence studies.

Dr. Cabayan received his doctorate degree from the University of Illinois in Urbana, Illinois. After graduating, he taught mathematical physics for four years at New York University’s Courant Institute of Mathematical Sciences and McGill University. In 1977, he joined the Department of Energy’s LLNL where he worked on nuclear weapons effects, Strategic Defense Initiative related efforts, and directed energy programs.

Ms. Nicole Peterson

Nicole Peterson is an analyst who assists in qualitative research and strategic analysis in support of Strategic Multi-Layer Assessment (SMA) efforts primarily focused on national security issues and Department of Defense (DoD) concerns. She has contributed to NSI’s Virtual Think Tank (ViTTa®) and discourse analyses during her time at NSI.

Nicole coordinates SMA’s speaker series, which encompasses a broad range of topics from radicalization of populations and violent extremist organizations to artificial intelligence. She is also the publisher of SMA’s weekly newsletter, which summarizes SMA speaker sessions, outlines upcoming events, and disseminates relevant publications.



Nicole began her career at NSI as an undergraduate intern for its commercial sector. In June 2016, she transitioned to an Associate Analyst position and has since been promoted to Analyst. She graduated with honors from the University of San Diego where she received a BA in applied mathematics and a minor in accountancy.

Mr. J.C. Walker

J.C. Walker is the Senior Security Advisor for NSI, Inc., DDGO-IO/SMA Office of the Joint Chiefs of Staff. He is currently pursuing his B.A. in Government Security at American Military University.

He's known in the Pentagon as the "go-to-guy" concerning security matters. He's a great troubleshooter and problem solver in his area of expertise.

J.C. Walker is a Motivational Speaker that targets the adolescent population. He has been the guest speaker for Youth Programs, Graduations, School Assemblies, City & State programs, Juvenile Facilities and Adult Probation/Parole Orientations in the New Orleans Metropolitan Area.

J.C. has also been a guest on many talk shows in New Orleans speaking on topics regarding single parenting and forums on Fatherhood. He's recognized for his compassion for teens encouraging them to strive to do their very best.

He has also participated in programs such as "Baby, Think It Over!" and "The Empathy and Awareness Program" as the Motivational Speaker. JC is now residing in the Washington D.C. Metropolitan Area where he plans to tackle the issues here that are plaguing our youth.

You may have even seen J.C. on the big screen as he is a member of the Screen Actors' Guild with speaking and non-speaking roles in Ray, Skeleton Keys and Glory Road.

He is the Founder and President of the new and exciting Mardi Gras Organization, "The Krewe of Pyros Foundations, Inc." which raises funds for scholarships and aiding in times of need for Louisiana natives residing in the DMV.



Ms. Mariah Yager

Ms. Mariah Yager serves as Deputy for the Strategic Multilayer Assessment (SMA) Program under the Joint Staff/J-39, DDGO. She is a Senior Research Analyst with NSI. From 2010 to 2017, Ms. Yager helped to develop a scientifically valid, replicable, and operationally trainable discourse analysis methodology. This methodology has been used to examine insurgent writings, the expression of trust and worldview, and cognitive complexity, both in the vernacular and English translations.

Ms. Yager received her Master's in Professional Communication from Purdue University of Fort Wayne and Bachelor degrees in Anthropology and Interpersonal and Group Communication, from Indiana University and Purdue University, Fort Wayne (IPFW) respectively. Ms. Yager has taught fundamental communication theory and public speaking at IPFW and previously worked in the private sector in client management and assessments for an executive coaching and consulting firm.



INDEX

A

Agee, Collin	11
Anderson, Fergus	11
Astorino-Courtois, Allison	12

B

Barks-Ruggles, Erica	12
Barlos, Fotis	13
Beaudoin, COL Gregory	14
Beskow, LTC David	14
Bremseth, Rick	15
Brewster, COL Jeffrey	16
Brooks, COL Paul T.	16

C

Cabayan, Hriar	47
Canna, Sarah	17
Carley, Kathleen M.	18
Ceroli, Michael	19
Clark, LTC(P) J.P.	19
Clark, Vince	20
Corbari, LTC(P) George	20
Curry, Tim	21
Czerewko, RDML Jeffrey	5

D

Derrick, Douglas	21
DiEuliis, Diane	22
Dorondo, David	22

E

Elder, Lt Gen(Ret) Robert	23
---------------------------------	----

F

Fields, Adam	23
Forrest, Lt Col Christopher	24

G

Gage, CAPT Geoffrey	25
Gibbs, LTC Anthony	8
Giordano, James	25
Goolsby, Rebecca	26

H

Harrigan, Gia	9
Hoffman, Mark	26

J

Jahn, Molly	27
Jameson, Steve	28
Johnson, LTC (ret) Dave	29
Jones, Robert C.	29
Joseph, Regina	30

K

Kania, Elsa	30
Kendrick, Scott	31
Kettler, Brian	31
Koven, Barnett S.	32

L

Leigh, Richard	32
Lewis, James	33
Liebl, Vern	33
Ligon, Gina	34

M

Maloney, LTC Mike	34
Maltby, Jim	34
McCreight, Robert	35
McCulloh, Ian	35
McKinley, Richard	36
Meredith, Spencer B.	36
Mereish, Kay	37
Murphy, Brian	6

P

Pagano, Sabrina	38
Pate, Amy	38
Perera, Fabiana	39
Perkins, Charles W.	7
Peterson, Nicole	47

S

Schuberth, Moritz	39
Schurr, Nathan	40
Selva, General Paul J.	1
Severin, Malin	40
Shanahan, Lt Gen Jack	2
Sisson, Melanie	41
Steckman, Laura	41
Stone, CAPT Dan	41
Sutherlin, Gwyneth	42

T

Thompson, Griffin	42
-------------------------	----

W

Walker, J.C.	48
Wallace, John	43
Wright, Nicholas	44
Wright, Thomas	44
Wurzman, Rachel	45

Y

Yager, Mariah	48
---------------------	----

