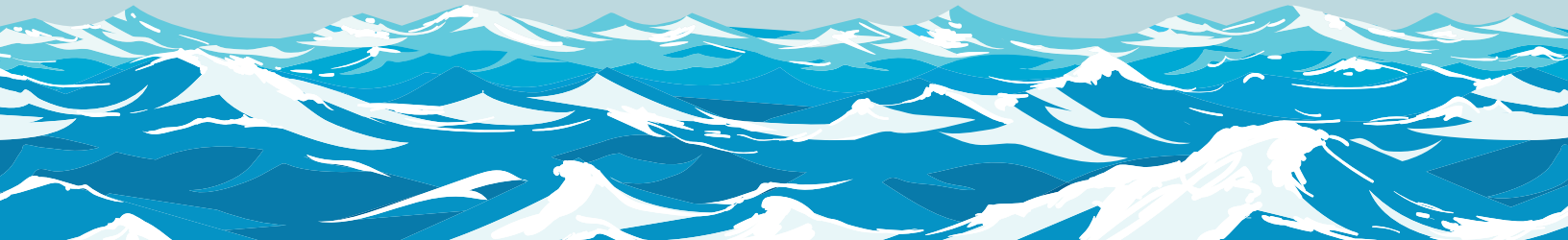
Working Group Prospectus

01/07/2025

Table of Contents

WG 01 – Homeland Security Analysis 1
WG 02 – Chemical, Biological, Radiological, Nuclear, and Advanced Explosives 2
WG 03 – Infrastructure Analyses, Protection, & Recovery 3
WG 04 – Analytical Capability Development 4
WG 05 – Cyber Operations Research 5
WG 06 – Command and Control (C2) 6
WG 07 – Intelligence Surveillance and Reconnaissance (ISR) 7
WG 08 – Space Acquisition, Testing and Operations 8
WG 09 – Air and Missile Defense 9
WG 10 – Joint Campaign Analysis 10
WG 11 – Land and Expeditionary Warfare 11
WG 12 – Maritime Operations 12
WG 13 – Power Projection and Strike Warfare 13
WG 14 – Air Warfare 14
WG 15 – Military Health, Casualty Estimation, and Human Performance 15
WG 16 – Strategic Deployment and Distribution 16
WG 17 – Logistics, Reliability and Maintainability 17
WG 18 – Manpower and Personnel 18
WG 19 – Readiness 19
WG 20 – Analytical Support to Training and Education 20
WG 21 – Energy 21
WG 22 – Military Assessment 22
WG 23 – Process & Performance Improvement 23
WG 24 – Test and Evaluation (T&E) and Experimentation 24
WG 25 – AoAs and Capability Development 25
WG 26 – Cost Analysis 26
WG 27 – Decision Analysis 27
WG 28 – Advances in Modeling and Simulation Techniques 28
WG 29 – Emerging and Adapting Computational Solutions within OR 29
WG 30 – Wargaming 30
WG 31 – Operational Environments 31
WG 32 – Special Operations and Irregular Warfare 32
WG 33 – Social Science Methods and Applications 33
WG 34 – Data Science and Analytics 34
WG 35 – Artificial Intelligence and Autonomous Systems 35
DWG 01 – Emerging Operations Research 36
DWG 02 – Unmanned Systems 37



WG 01 – Homeland Security Analysis

Overview: Homeland Security Analysis fosters the use of analytic approaches, techniques, and methodologies to engage the Homeland Security enterprise and further their missions. Homeland security stakeholders exist within national, state, and local governments, NGO's, and the private sector. Their efforts overlap with defense, health, and other mission areas to solve large complex challenges including terrorism, cybersecurity, border security, modernizing ports of entry, optimizing our immigration system, responding to and recovering from disasters, responding to climate change, and combatting crime of all forms including: drugs, human trafficking, labor exploitation, and child exploitation.

Seeking Submissions: WG 01 seeks submissions that are targeted to the Homeland Security portfolio described above that use analytic concepts/solutions as a force multiplier to solve Homeland Security challenges. These could include techniques that enable personnel/systems to do "more with less" in relation to deterring cyber criminals, minimizing immigration bottlenecks, combatting human trafficking or analytic techniques to uncover these operations. All submissions should be tailored to not only the MORSS theme, but also to the Homeland Security portfolio.

Past Submissions: USCG International Engagement Efforts (methodology development); National Laboratory Partnerships for Homeland Security Solutions (engagement and partnerships); Analysis to Support the USBP National Prioritization Framework (strategic risk analysis); Southwest Border Migrant Encounter Projections (forecasting model); Determining USCG Enforcement Cutter Fleet (fleet optimization); Mobile Nuclear Power for Future DoD Needs (recovery, climate change); Network-of-Networks Framework for Analyzing Functions-based Critical Infrastructure Risk and Resilience (resilience); and The Aviation Security Screening Optimizer for Risk and Throughput (ASSORT, risk analysis).

WG 01 Leadership

Position	Name	Email
Chair	Jesse Coleman	Jesse.coleman@associates.hq.dhs.gov
Co-Chair	Doug Baals	Douglas.Baals@associates.hq.dhs.gov
Co-Chair	Robert Brigantic	Robert.Brigantic@pnnl.gov
Co-Chair	Hannah Conner	hconner@ara.com
Co-Chair	Chris Prather	Christopher.Prather@associates.hq.dhs.gov
Co-Chair	Julianna Puccio	Julianna.Puccio@pnnl.gov
Co-Chair	Blair Sweigart	blair.sweigart@pnnl.gov
Advisor	Dan Maxwell	DMaxwell@kadsci.com
Advisor	Julie Seton	Julie@indentus.com

back to Table of Contents

WG 02 – Chemical, Biological, Radiological, Nuclear, and Advanced Explosives (CBRNE) Defense

Overview: Chemical, Biological, Radiological, Nuclear, and Advanced Explosive (CBRNE) threats pose serious challenges to our national security, both at home and abroad. Threat areas specifically defined as: 1) *Chemical threats* are substances that are intentionally or unintentionally disseminated to affect a person's health or operational performance; *Biological threats* are microorganisms that are modified or efficiently spread to increase disease and may include genetic editing technology; *Radiological threats* are materials machined and/or dispersed to induce ionization causing lipid oxidation or DNA damage; *Nuclear threats* are the immediate effects of a bomb to include intense ionizing radiation, thermal radiation, and overpressure; and *Advanced (high-yield) Explosive threats* are those that produce a pressure shock wave. Engaging the National Security Community, this year's goal and fundamental challenge to preparedness is understanding and developing analysis techniques/materials to advance assessment, detection, proactive protections against or mitigation of CBRNE threats or hazards that present a risk to our national security.

Seeking Submissions: WG 2 seeks presentations on CBRNE analyses that tackle real-world analysis problems despite data shortfalls using analytical concepts/solutions to solve CBRNE challenges that ultimately engage the National Security Community. All submissions should be tailored to the MORS theme of "Engaging the National Security Community". Submissions topics could include: CBRNE topics related to Assessment, Protection, Detection, and Decontamination systems as it pertains to National Security; Engaging the National Security Community for CBRNE techniques/materiel/ methods for managing of CBRNE attacks (ultimately our focus is to mitigate risks by designing equipment/doctrine/tactics to protect ourselves while recovering from CBRNE attacks); Engaging the National Security Community for the development and use of data collection, along with CBRNE unique test and evaluation methodologies to prioritize candidate systems and approaches to better inform decision-making for our Warfighters; Development and use of novel and/or multi-disciplinary methodologies to enhance or inform CBRNE decision making; Modeling and simulation development to predict CBRNE threats, enhance CBRNE system survivability, or predict CBRNE-affected mission outcomes; War-gaming of CBRNE scenario analysis tools with CBRNE awareness capabilities; Predictive tools using design of experiments (DOE) and/or AI/ML to efficiently conduct CBRNE research; and Epidemiological and/or toxicological research on short and long-term outcomes from CBRNE exposure and its effect on National Security.

Past Submissions: Efficient Data Processing and Decision Support for Patient Movement in Mass Casualty Situations; Combining Adaptive Computer Agents, Human Wargamers, and AI to Improve CBRNE Outcomes; A Model that Accurately Predicts the Absorption of Chemical Warfare Agents on Activated Carbon; RadPlot: Rapid Assessment of Nuclear Effects; Analyzing a High-Altitude Electromagnetic Pulse's Effect on Air Force Operations; Studies of Fourth Generation Nerve Agents for Human Toxicity Estimates; Organoleptic Values of Chemicals in Food Matrices; Advancing U.S Military Aircraft Chemical, Biological, Radiological and Nuclear (CBRN) Purge; Adversary Chem-Bio Modeling and Analysis of Potential Signatures of Operational Intent; and Development of a Chemical Decontaminant for Critical Areas.

WG 02 Leadership

Position	Name	Email
Chair	Desiree Beverly	desiree.a.beverly.civ@us.navy.mil
Co-Chair	William T. Greer	william.greer.5@us.af.mil
Co-Chair	Joseph M. Olah	joseph.m.olah.civ@army.mil
Co-Chair	Dr. Richard Salisbury	richard_jr.salisbury@us.af.mil
Co-Chair	Kevin Ulmes	kevin.m.ulmes.civ@army.mil
Co-Chair	Walter X. Zukas	walter.x.zukas.civ@army.mil
Advisor	John Davies Jr	John.p.davies.civ@army.mil

back to Table of Contents

WG 03 – Infrastructure Analyses, Protection, & Recovery

Overview: The analysis, protection, and recovery of critical infrastructure systems requires innovative decision support tools and analysts. These systems consist of diverse interdependent physical and social networks with varied operating and ownership models, in both physical space and cyberspace, with myriad stakeholders. Due to their interconnected nature, infrastructure systems face the potential for large-scale disruption resulting from both deliberate threats (e.g., attacks, sabotage) and non-deliberate hazards (e.g., accidents, failures, natural disasters, climate). Recent disasters reveal that decision makers often struggle to identify key components and interdependency relationships in infrastructure systems, optimal resource allocation to increase resilience or reduce risk, and optimal response plans.

Seeking Submissions: WG 03 welcomes analysis, research, applications, and techniques from all disciplines that highlight the use of operations research methods for critical infrastructure. We welcome discussions of infrastructure protection, resilience, and recovery in the face of both human and natural threats and hazards. Presentations should discuss the impacts to national security considerations and offer insights for future multi-disciplinary analyses.

Past Submissions: Network Shaping for Critical Infrastructure Exploitation and Protection (new approaches to attacker-defender scenario analysis); Climate Surprise and Military Response: A Case Study of Marine Corps Base Camp Lejeune and Hurricane Florence (analytic study results of emergency response and decisions); and Assessing the Perception and Comprehension of Adversarial Cyber Activity in Operational Technology Environments Using Bayesian Network (new approaches to cyber infrastructure risk assessment and defense).

WG 03 Leadership

Position	Name	Email
Chair	Ms. Jessica Lyons	Jessica.W.Lyons@usace.army.mil
Co-Chair	Mr. Jaison D. Desai, Ph.D.	jdesai@smxtech.com
Co-Chair	Mr. Daniel A. Eisenberg, Ph.D.	daniel.eisenberg@nps.edu
Advisor	Prof. David L. Alderson	dlalders@nps.edu

back to Table of Contents

WG 04 – Analytical Capability Development

Overview: Analytical Capability Development acts as a construct to around which to build, develop, and enhance the analytical capability of organizations active in the national security domain. This working group evolves around the familiar 'man, train, equip' paradigm—with the goal of improving the analyst around each of these three themes. This covers a broad range of topics such as new training initiatives, acquisition of appropriate analytical based software, new cloud based platforms and workforce retention modeling.

Seeking Submissions: The ACD working group welcomes presentation submissions from active practitioners and professional development leaders that cover one of the three following main themes, all of which directly act as an analytical force multiplier:

- "Man" refers to the professional development of the analyst in terms of career path
- "Train" refers to the training and education opportunities available
- "Equip" enables the analyst, through the provision of hardware and cutting-edge software, to conduct the necessary and appropriate analysis—as well as advocacy for safe, analyst friendly IT policies

Past Submissions: How Much AI/ML do I need to Learn? (Man/Train); Air Force VAULT Platform: Enabling Distributed Analysis and Data Driven Decisions (Equip); Planning a Cloud Migration Effort: Cost Estimating Considerations (Equip); A Little Knowledge is a Dangerous Thing (Man); and Building Data Culture—a Blueprint (Man/Train/Equip).

WG 04 Leadership

Position	Name	Email
Chair	Melissa Sayers	melissa.l.sayers.mil@mail.mil
Co-Chair	Scott Cohick	dscohick@nps.edu
Co-Chair	Nick Ulmer	nicholasulmer@gmail.com
Co-Chair	John Woodcock	john.h.woodcock2.civ@army.mil
Co-Chair	Chad Wynkoop	chad.wynkoop.1@us.af.mil
Advisor	Christopher Santos	christopher.p.santos71@gmail.com

back to Table of Contents

WG 05 – Cyber Operations Research

Overview: The transition of cyber operations from a support role into a distinct function of spectrum warfare has secured its place as a force multiplier, but also necessitates the use of Operations Research to integrate mature cyber tactics and technologies. Further, the progression toward decision centric warfare, distributed systems, and cross-domain kill webs is requiring more complex and nuanced analysis. The offensive and defensive technologies supporting cyber operations are continuously evolving and these technologies require reimagined policy, doctrine, and systems design to maximize the impact of cyber operations as a force multiplier.

Seeking Submissions: WG 05 seeks innovative applications of cyber technology, design, and doctrine that demonstrate force multiplying enhancement on military maneuver. Such submissions may incorporate cyber as an offensive capability or cyber systems integrated with other military operations. The working group emphasizes communications on game-changing technologies in development and preliminary deployment stages as well as studies on cyber modelling, analysis, doctrine, and policy stateside and abroad.

Past Submissions: Characterizing the Joint Distribution of Cyber Data and Generating Synthetic Training Examples; Meta-learning for Robust Intrusion Detection; An Analysis of C/C++ Datasets for Machine Learning-assisted Software Vulnerability Detection; Demonetizing Cyber Crime; Tracing Funds through Blockchain Analytics; Vulnerability Prioritization Based on OSINT and Scan Data; A Systematic Framework for Simulating Cyber Conflict; Applying Artificial Intelligence to Energy Monitoring Data for Cyber-attack Detection; Evolution of Defensive Cyber Operations; The Logistics of Data in the FutureG Fitness Landscape; and Tactical Network Optimization Using Algorithmic Slice Creation and Dynamic Resource Allocation.

WG 05 Leadership

Position	Name	Email
Chair	Marc Chalé	marc@marcchale.com
Co-Chair	John-Paul Erickson	jerickson@technomics.net
Co-Chair	Eva Lee	eva.evalee.lee64@gmail.com
Co-Chair	Gary Williams	gary.e.williams@lmco.com
Advisor	Michael Woudenberg	mpwouden@mtu.edu

back to Table of Contents

WG 06 – Command and Control (C2)

Overview: The Command and Control (C2) Working Group fosters multi-discipline analysis of C2 capabilities that enable forces to respond dynamically to asymmetric threats; to deter nation-states from military aggression; to collaborate with joint, interagency, intergovernmental, and multinational entities; and to generally plan, employ, organize, direct, coordinate, control, and protect military forces. Operations Research analysts are uniquely equipped with the tools and methodologies to study the processes, networks and systems comprising C2 to help commanders utilize these networks to the fullest extent possible to enable and influence critical operational decision making.

Seeking Submissions: For the 93rd MORSS, WG 06 will provide an opportunity for military, government, and civilian operations research analysts to examine topics, methodologies, analyses, and innovations pertinent to the challenge of advancing analytical leadership through C2. WG 06 invites papers and discussions regarding the current and future analysis of C2 issues, systems, architectures, investment strategies and processes as well as educational programs, training programs, and tools that support the continued growth and development of the nation's C2 capabilities. Presentations may include completed studies or work-in-progress.

Past Submissions: Command Post Survivability: Using Simulation to Identify Trades between Situational Understanding and Network Requirements; Developing a Domain Specific Language for Complex Military Operational Analysis using Simulation; Analysis and Evaluation of Kill Webs via Graph Theoretic Methods; Cyber Resilience Analysis of Tactical Networks using Elastic and Reconfigurable Software defined Network Slices; Dreamcatcher: Integrating Distributed All-Domain Fires, Maneuver, and Logistics Planning; Interoperability Challenges of the Combined Joint Force: Technologies, People, Processes, Permissions, and Authorities; Machine Learning and Operations Research to Minimize the Risk of Detection by Adversarial Assets; Offensive Cyberspace Operations: Using Markov Kill Chains to Justify Tactical Delegation Authority; and Multi-Domain Multi-Objective Weapon-Target Assignment Problem.

WG 06 Leadership

Position	Name	Email
Chair	Gabrielle LaRosa	gabrielle.m.larosa.civ@mail.mil
Co-Chair	Anthony Castañares	anthony.castanares.civ@army.mil

back to Table of Contents

WG 07 – Intelligence Surveillance and Reconnaissance (ISR)

Overview: ISR promotes the exchange of innovative analytical techniques, permits the peer review of methods and results, and provides a means for continued growth of military operations research as applied to ISR analysis across the spectrum of peace, crisis, Stability and Support Operations, and Major Combat Operations. ISR seeks to provide a forum for analysts to present their work across all intelligence disciplines, focusing on optimizing ISR assets, demonstrating ISR modeling and simulation techniques and case studies, providing actionable intelligence to commanders and decision makers, and the use of operations research techniques in support of ISR planning or execution.

Seeking Submissions: WG 07 seeks submissions targeted to the capabilities and processes described above that engage with the National Security Community to solve ISR challenges. These may include techniques that will enable the United States to maintain the technological edge in "battlefield awareness" that will be threatened in the coming decades with special emphasis placed on the ability of ISR assets to provide high target location accuracy in cover, concealment, camouflage, denial, and deception environments. All submissions should be tailored to the MORSS theme as well as provide information to improve and grow ISR analysis to best support current and future operations.

Past Submissions: Proliferated Radar – Using Cell Networks to Detect Aerial Targets (Novel Target Acquisition Methods); Quantitative Modeling of Text-Based Intelligence Source Uncertainty (Intelligence Processing); Pacific WINDS II: A Tabletop Intelligence Wargame Suitable for use in Maneuver Centric Wargames (ISR systems in Wargaming); and AFSIM Sensor Coverage Diagram Tool (ISR modeling and simulation techniques and analysis).

WG 07 Leadership

Position	Name	Email
Chair	Steven Wolbach	steven.d.wolbach.civ@army.mil
Co-Chair	Jonathan Hixson	jonathan.g.hixson.civ@army.mil
Advisor	Eric Harclerode	eric.s.harclerode.civ@army.mil

back to Table of Contents

WG 08 – Space Acquisition, Testing and Operations

Overview: Space Acquisition, Testing and Operations seeks to share OR techniques and analytical best practices to enable our military and intelligence communities to effectively acquire, test, and operate on a global scale. Given that our competitive advantages within the Space warfighting domain are rapidly eroding, WG 08 advocates analysis of technological challenges and solutions that do (or could) help maintain our unrestricted use of space and space-enabled assets.

Seeking Submissions: WG seeks presentations touching tactical, operational, and strategic contributions from space capabilities/systems, space families of systems, or space architectures, whether in the concept, R&D, acquisition, or operational phase(s). We welcome and encourage presentations that address innovative analytical processes, methodologies, use of models and simulations, or techniques as these are applied to space capabilities/systems acquisition, testing, or operations.

Past Submissions: Advanced Analytic Tools for Space Modeling & Simulation (a multi-year effort to integrate optimization, experimentation, and post-run analytics with the Synthetic Theater Operations Research Model, Advanced Framework for Simulation, Integration, and Modeling, and System Effectiveness Analysis Simulation tools); Space Kill Chain Time Line Study (analysis of how space assets will affect the MDTF's kill-chain and its timeline during competition, crisis, and conflict during the Army 2030 and 2040 timeframes); and Space Demand Study (creation of a tool to produce quantitative results for a Space Control Electronic Warfare capability that will be fielded by the Army).

WG 08 Leadership

Position	Name	Email
Chair	Shelby Rowe	shelby.a.rowe@saic.com
Co-Chair	Ryan Pierce	ryan.h.pierce@saic.com
Advisor	Paul Fall	paul.h.fall@saic.com
Advisor	Steve Toler	steven.g.toler.civ@army.mil

back to Table of Contents

WG 09 – Air and Missile Defense

Overview: WG 9 is dedicated to discussing all components of Air and Missile Defense (AMD). Air and missile threats continue to grow in complexity and quantity and are a mainstay in our adversaries' ability to project power. Conducting analysis on AMD is vital for overall mission success, as engaging the National Security community serves to inform key decision makers. AMD analysis also provides the data necessary to support the acquisition lifecycle, from research and development all the way through employment concepts for the warfighter.

Seeking Submissions: WG 9 is seeking submissions from the AMD community for this year's symposium that demonstrate "Engaging the National Security Community". Submissions should relate to AMD operations research and demonstrate National Security community engagement such as informing research and development, providing data for acquisition strategies, analyzing defense planning, and assessing employment options. WG 9 provides a conduit to inform the broader missile defense community of AMD analysis techniques, efforts, and results at unclassified or classified levels.

Past Submissions: Counter UAS Defense Posture Analysis using AFSIM; Ground Based Air Defense; Airborne High Energy Laser Operational Effectiveness; Generating Sorties Under Attack Leaker Study; and Future Shipboard Coordination of Kinetic and Directed Energy Weapons.

WG 09 Leadership

Position	Name	Email
Chair	Robert Smith	Robert.Smith@TorchTechnologies.com
Co-Chair	Scott Meyerhoff	Scott.A.Meyerhoff.civ@army.mil
Co-Chair	Carla Ortega	Carla.Y.Ortega.civ@army.mil
Advisor	Jon Francis	Jon.Francis@TorchTechnologies.com
Advisor	David Halloran	David.Halloran@TorchTechnologies.com

back to Table of Contents

WG 10 – Joint Campaign Analysis

Overview: The Joint Campaign Analysis Working Group (WG 10) concentrates on the integration of land, sea, air, space, cyberspace, special operations, and interagency concerns related to all phases of campaign operations. The primary goal of WG 10 is improving the quality of all aspects of campaign analysis and thereby supporting better-informed decision making at all levels.

Seeking Submissions: WG 10 provides a forum for presentations and discussions that primarily relate to joint campaigns. Of special interest to WG 10 are models, analytical simulations, and automated tools supporting decision making based upon joint campaign analysis. Our working group seeks to highlight analysis tools and efforts that help clarify decision space for further analysis work, increase productivity using novel techniques and tools, or leverage inter-service/agency efforts to improve the quality or speed of analysis. Preference for classified slots will be given to work releasable to FVEYES or which utilizes the Defense Planning Scenarios and Analysis Working Group Control Case inputs.

Past Submissions: OPNAV N81's Approach to Analytic Robustness; Anti-Submarine Warfare (ASW) Weapon Procurement Mix Study Enhancements to Air and Missile Defense Analysis Using AFSIM; BEAM: Opening Doors for Campaign Analysis; Assessing Deterrence with Value Modeling and Campaign Analysis; and Peer Strike ISR Complex: The Need for Rational Fires Coordination.

WG 10 Leadership

Position	Name	Email
Chair	Mr. Eric Taylor	Eric.a.taylor@usmc.mil
Co-Chair	Ms. Christine Anderson	christine.l.anderson42.civ@army.mil
Co-Chair	Mr. Adrian Benson	Adrian.s.benson.civ@mail.mil
Co-Chair	Ms. Jillian Hannah	discontinuity@gmail.com
Co-Chair	Mr. Stephen McCarty	stephen.mccarty@west-point.org
Co-Chair:	Mr. Steve Notarnicola	steve.notarnicola@lmco.com
Co-Chair	Mr. Kyung Park	kyung.park.1@us.af.mil
Co-Chair	Mr. Kirill Sukhorukov	kirill.sukhorukov.civ@army.mil
Advisor	Mr. Michael Warme	Michael.a.warme.civ@army.mil

back to Table of Contents

WG 11 – Land and Expeditionary Warfare

Overview: The application of land and expeditionary warfare is essential to achieving strategic success, advancing national interests, deterring future conflict, and building partners. We face a dynamic environment with ever-changing threats. We are reminded of this by our uncertain relationships with North Korea, Russia, Iran, and China. Middle Eastern terrorist networks also continue to pose a threat. It is more crucial than ever to advance analytics to support national security by informing decisions about concept development, acquisition, force design, force mix, and tactics, techniques, and procedures.

Seeking Submissions: WG 11 is seeking presentations from the land and expeditionary warfare domain that enhance analysts' professional development in military operations, operations research techniques, methodologies, and models in the following areas: operations against peer and near-peer threats, operations in complex and urban environments, operations against non-state actors, interoperability between conventional and special operations forces, influence of social, cultural, political, and historical knowledge on land operations, combat and stability operations involving non-military and multinational partners, and future concepts in the analytical field as they relate to land and expeditionary warfare.

Past Submissions: Infantry Fighting Vehicle Modernization Options Assessment; Army Aviation Air Movement Automation for the Mission Planner; Operational Research is Deciding the Next Generation of Land Equipment; and Starting Conditions for Optimal Wargaming.

WG 11 Leadership

Position	Name	Email
Chair	Matthew Wesloh	matthew.e.wesloh.civ@army.mil
Co-Chair	Vincent Gantz	vincent.gantz@raytheon.com
Co-Chair	Benjamin Soderstrom	benjamin.m.soderstrom.civ@army.mil
Advisor	Melissa Stafford	melissa.a.stafford7.civ@mail.mil

back to Table of Contents

WG 12 – Maritime Operations

Overview: Maritime operations are actions performed by forces on, under or above the sea to either gain or exploit control of the sea, or to deny the use of the sea by an enemy. Operations research/systems analysis (OR/SA) has played a critical role supporting the maritime domain: providing operational commanders with tools to more effectively and efficiently employ their current forces, while influencing the design and acquisition of future ships, aircraft, sensors, networks and weapons.

Seeking Submissions: Working Group 12 (WG12) is seeking abstracts that exemplify OR/SA methods, processes, and approaches applicable to the operation, design and acquisition of naval forces. In keeping with the 93rd Symposium's theme "Engaging the National Security Community", abstracts are sought that show engagement, collaboration and synergy across multiple organizations.

Past Submissions: Surface, Undersea, Mine and Air Warfare; Maritime Logistics (particularly in contested environments); Maritime Security and Counter-piracy; Analysis of Real-world Operations; Force Structure/Force Design; Unmanned Maritime Systems; Wargaming in a Maritime Environment; Use of New Modeling and Simulation Techniques; Search Theory; and Mission Engineering and Model Based Systems Engineering.

WG 12 Leadership

Position	Name	Email
Chair	Matthew Cosner	matthew.s.cosner.civ@us.navy.mil
Co-Chair	Allan Cahill	Allan.m.cahill.civ@us.navy.mil
Co-Chair	Nupur Patel	nupur.s.patel.civ@us.navy.mil
Co-Chair	Danika Whitford	Danika.p.whitford.civ@us.navy.mil
Co-Chair	Daisy Young	daisy.m.young.civ@us.navy.mil

back to Table of Contents

WG 13 – Power Projection and Strike Warfare

Overview: The U.S. capability for global projection of power continues to be a crown jewel for the nation. This capability requires our military programs and analysts to discover new ways to apply precision force in support of national security objectives. It also requires us to examine the constraints that our adversaries invent to prevent strike weapons concepts from succeeding. Both of these areas challenge us in the uncertainty within both the operational and the programmatic arenas.

Seeking Submissions: WG13 seeks presentations that focus on analysis, tools, and experiments in support of power projection and strike that align with "Engaging the National Security Community", this year's MORSS theme. WG13 encourages submissions that cover the development and evaluation of concepts of operations; tactics, techniques, and procedures; systems engineering; and new technologies that utilize analytics to show projection and strike warfare as a force multiplier. This can include studies and analysis, test and evaluation, experimentation, training exercises, and real world operations.

Past Submissions: Modeling, Simulation & Analysis of Multi-Domain Dynamic Targeting Operations; Directed Energy Utility Concept Experiment (Virtual wargame using kinetic and directed energy weapons with virtual cockpit simulation); The Standoff Weapon We Need (campaign-level simulation analysis identifying key attributes for an air-launched standoff weapon); Resilient Tasking and Basing Model (RTBM) – a unique capability for modeling air power basing and force projection in peer-to-peer conflicts; and A Simulation Framework of Multi-objective Evolutionary Algorithms and Surrogate-based Optimization for Guided Weapon Design.

WG 13 Leadership

Position	Name	Email
Chair	Jessie Thomas	jessica.r.thomas40.civ@mail.mil
Co-Chair	Railey Conner	rconner@anyarinc.com
Co-Chair	Katherine McCartney	kmccartney@anyarinc.com
Co-Chair	Kalen Mullin	kmullin@anyarinc.com
Advisor	Kathy Flynn	Kathryn.flynn@us.af.mil

back to Table of Contents

WG 14 – Air Warfare

Overview: The Air Warfare Working Group is focused on the employment of combat air power. Our focus includes the effective utilization of relevant sub-systems, operational employment concepts, and the integration of air assets during the conduct of joint and combined military operations that support national strategic and theater operational objectives. The primary focus of this working group is on conventional combat missions intended to destroy, degrade, defeat, or disrupt enemy forces. These missions include Counter-Air (Offensive and Defensive), Counter-Land (Close Air Support and Interdiction), Counter-Sea, and Strategic Attack.

Seeking Submissions: WG 14 strives to assist in developing capabilities to cope with emerging threats, new environments, and technological breakthroughs. In keeping with the 93rd MORS Symposium theme, "Engaging the National Security Community", this working group focuses on supporting decision makers via the development of new analytical tools, processes, applications, methodologies, and metrics to increase knowledge and exchange of ideas among members. We provide a forum for discussions and presentations relating to the unique challenges faced when attempting to conceptualize, model, simulate, analyze, and experiment with the employment of combat air power and improve our understanding of air warfare.

Past Submissions: Airborne Weapons Layer Analysis; AFSIM Kill-Chain Research; Airborne Defense in AFSIM Including Zoned Battle Management; Fighter and Drone Ratios; Investigating Air Base Resiliency; and M&S Powered Wargames for Concept of Employment Experimentation.

WG 14 Leadership

Position	Name	Email
Chair	David Collins	david.collins.55.ctr@us.af.mil
Co-Chair	Kristi Bane	klbane@infoscitex.com
Advisor	Christopher Huffman	chuffman@infoscitex.com christopher.huffman.1.ctr@us.af.mil

back to Table of Contents

WG 15 – Military Health, Casualty Estimation, and Human Performance

Overview: The Military Health System supports the Joint Force and the warfighter as the human weapon system with medical support for various peacetime and wartime operations. The analysis community has many opportunities for operations research innovation to support analytical and technological advances in Military Health, Casualty Estimation, and Human Performance. Military Health involves Health Service Support (including casualty care, operational medicine, medical logistics) and Force Health Protection (including casualty prevention, preventive medicine, and occupational and environmental health). Casualty estimation is the development and application of quantitative methods for estimating casualties due to combat or non-combat related causes and is an essential component of providing health service support and force health protection. Human Performance involves a holistic view of the warfighter as a human weapon system, including their wellbeing, fitness, readiness, and effectiveness as individuals and as teams. Together, these functions minimize the risk to the mission and warfighter by ensuring the force is healthy, fit, and well supported medically.

Seeking Submissions: In alignment with the 93rd MORS Symposium theme, "Engaging the National Security Community" the Military Health, Casualty Estimation, and Human Performance working group welcomes participants whose research engages stakeholders across the DOD and national security community to impact military health and human performance decisions in their broadest sense. Relevant topics include but are not limited to: casualty care; medical treatment facility capabilities and functions; patient movement and evacuation; medical staffing; replacement personnel requirements; medical logistics; medical planning; blood management; casualty prevention; preventive medicine; health surveillance; occupational and environmental health; combat stress control; suicide prevention; risk assessment; conventional and CBRNE casualty estimation; toxicity estimation; medical readiness; physiological resilience; high performance training; return to duty; physical and cognitive sleep and fatigue; performance nutrition; and human-machine teaming.

Past Submissions: Agent-based Simulation for Mass Casualty Operations and Planning; Developing Natural Language Processing Algorithms to Medically Code Clinical Notes in Electronic Health Records; CONUS Patient Distribution: A Quasi-Discrete Event Simulation Model Leveraging Linear Optimization Embedded in an R Shiny Application; Casualty Evacuation Given Survivability Expected Values on the African Continent; Forecasting Limited Duty Burden on Navy Units; Requirements for the Implementation of COVID-19 Control Measures Given Prevailing Rates of Vaccine Compliance; Daily Critical Care Air Transport Team Estimator; ICBM Community Cancer Registry Analysis: A Focus on Non-Hodgkin Lymphoma Cases in Missileers; and Improving Training Risk Assessment for Heat Related Injuries.

WG 15 Leadership

Position	Name	Email
Chair	Ms. Jamie Yannayon	jamie.yannayon@jhuapl.edu
Co-Chair	Mr. Andrew Gravel	andrew.gravel@teledyne.com
Advisor	Mr. Patrick Givens	patrick.givens@teledyne.com

back to Table of Contents

WG 16 – Strategic Deployment and Distribution

Overview: The strategic and efficient deployment of military cargo and personnel is paramount in ensuring a successful military campaign. Beyond deployment, the optimal distribution or placement of critical assets while in theater can greatly improve the overall readiness and sustainment of United States military forces and their allies. Given the many factors that can complicate the timely transportation and optimal placement of military assets, problems of this nature pose a challenging military logistics problem that lends itself well to operations research and analysis.

Seeking Submissions: Given the theme of the 93rd MORS symposium, "Engaging the National Security Community," there is particular interest in analytical efforts that determine efficient and effective movement, placement, and transportation of military cargo and personnel in contested environments and that involved the wider national security community.

Past Submissions: Optimization Modeling to Assess Sustainment in Theater; Stochastic Optimization for Military Transportation Logistics Under Uncertainty; Contested Sustainment Wargaming and Modeling; Enabler Force Demand Analysis for Total Army Analysis; Multi-Domain Task Force Sustainment Table-Top Exercise; Modeling Adaptive Basing and Resiliency in a Contested Environment; Determining Optimal Resource Requirements and Locations for Logistics Support; and Strategic Distribution.

WG 16 Leadership

Position	Name	Email
Chair	Mr. Joel Van Dyke	joel.t.vandyke.civ@mail.mil
Co-Chair	LTC Rob Froberg, Ph.D.	robert.froberg@nps.edu
Co-Chair	Mr. Josh Muckensturm	joshua.r.muckensturm.civ@mail.mil
Co-Chair	Mr. Austin Winter	austin.w.winter2.civ@mail.mil

back to Table of Contents

WG 17 – Logistics, Reliability and Maintainability

Overview: Working Group 17 provides a forum for discussing a wide variety of logistics analyses, including but not limited to support to deployed forces, logistics impact on readiness, supply chain management, system reliability, designing for improved system maintainability, operational effectiveness, support for joint and coalition operations, inter-agency support, and reverse logistics. Important insights in solving problems in other areas of logistics are also valued.

Seeking Submissions: With this year's theme of "Engaging the National Security Community", we are especially interested in how you are employing analytics methods and techniques that are giving the war fighter greater benefits to accomplish their mission more effectively. In addition to existing analytical techniques including mathematical modeling, statistical analyses, optimization, forecasting, and simulation, we want to hear about approaches that take full advantage of diverse analytical backgrounds and specialized skill sets to explore multidisciplinary alternatives and analytical processes.

Past Submissions: Using Model Based Systems Engineering (MBSE) Tools to Represent Sustainment Architecture to Support Digital Transformation for Major Acquisition Programs; Digital Twin Approach to System Reliability-driven Demand Forecasting; A Probabilistic Approach to Monitor Supervised Machine Learning Models with Natural Language Processing in Production; Stochastic Optimization for Military Transportation Logistics Under Uncertainty; and Probabilistic Isolation of Faults Using Analytical, Predictive and Historical Data-driven Algorithms.

WG 17 Leadership

Position	Name	Email
Chair	Kenney Crooks	kenneth.crooks@ngc.com
Co-Chair	Stephanie Brown	sdbrown@lmi.org
Co-Chair	Chris Copley	christoper.coplye.1.ctr@us.af.mil
Co-Chair	Virginia McMinn	Virginia.McMinn@ngc.com
Advisor	David Fulk	dfulk@lmi.org

back to Table of Contents

WG 18 – Manpower and Personnel

Overview: The individual and collective talents, skills, and capabilities of the total force of active duty, reserve, civilian, contractor, and interagency personnel are required to accomplish the mission and goals of our national security strategy. Integral to this success is the analytical support the manpower and personnel research community brings to bear on the toughest personnel challenges facing civilian and military leaders.

Seeking Submissions: In keeping with the theme of the 93rd MORSS, "Engaging the National Security Community," the Manpower and Personnel Working Group aims to promote research, analysis, and discussion from various sources. We welcome participation from diverse communities to bring fresh perspectives and innovative approaches to address all challenges in this field. Our focus is on generating discussions and sharing ideas so presentations can cover completed analysis, ongoing research, and emerging techniques. Submissions should relate to all matters in the personnel domain tied to the symposium theme and can explore various topics of interest, such as:

- How is your organization advancing the technical skills of your data citizens (i.e., how is your organization influencing the National Security Community to be better, more critical consumer of data and analytics)?
- How can new technologies or computational methods be incorporated and leveraged for manpower and personnel research and practice?
- What are the issues involved in ethics, privacy, equity, misuse, policy, or governance regarding the use of people data across the National Security Community?
- How is the trend towards data-informed decision-making and the use of machine learning driving change in your organizational design, structure, and team competencies?
- How can we use advanced analytics to analyze employee feedback, sentiment analysis, or recruiting processes?

Past Submissions: Forecasting Impact of Recruiting Shortfalls on Navy Manning; Pulse of Army Accessions: Developing Leader Decision Space; Automated Scoring of Army Officer Evaluation Reports; Growing the USCG Data, Analytics, and AI Workforce of the Future; Partially Autoregressive Machine Learning: Development and Testing of Methods to Predict United States Air Force Retention; The Cost and Effects of the BRS Retirement System for the USMC; and An OSD Policy Analysis Framework with an Analysis of DoD Characterization of Military Separations.

WG 18 Leadership

Position	Name	Email
Chair	Tom Malejko	thomas.p.malejko.mil@army.mil
Co-Chair	Kelson McCollum	kelson.mccollum@usmc.mil
Co-Chair	LT Carlos A. Martinez	Carlos.a.martinez@uscg.mil
Advisor	J.D. Moffitt	james.d.moffitt2.mil@army.mil

back to Table of Contents

WG 19 – Readiness

Overview: The 2022 National Security and National Defense Strategy places a renewed emphasis on force readiness and generating the necessary capabilities to deter near-peer aggression while being prepared to prevail in conflict. Specifically, the National Defense Strategy includes a priority line of effort to rebuild military readiness as we build a more lethal, resilient, sustainable, agile, and responsive Joint force. In support of these efforts, WG 19 looks to advance the body of knowledge associated with readiness analysis.

Seeking Submissions: This WG focuses on readiness analytics and how readiness is a force multiplier. We consider analytic techniques and tools that allow for real improvements in how we plan, manage, and assess the readiness of our organizations and individuals to meet real world missions. The questions of readiness can focus on the component parts—personnel, supply, and training—and the force management/force generation processes that combine those parts into ready forces.

Past Submissions: Advancing Unit Commanders' Ability to Monitor and Maintain Equipment Through Visualizations; Future Attack Reconnaissance Aircraft Analysis of Alternatives Trades Analysis; Real-Time Analysis for the Army's Fleet of Apache Attack Helicopters; USAFRICOM's Successful Assessments Taxonomy; Integrated Air and Missile Defense (IAMD) Mix Study Phase 1 Overview; Readiness Decision Impact Model; ReARMMing for Success: Phasing Out Friction Points; USAF Warfare Center "SAVAGE" Data Driven Debrief Project; Army Future Force Strategy Options; Assessment of Engineer Tank Variant Readiness; Endurance Supply Analysis for Naval Aviation Weapon Systems; Operator Training Pipeline Simulator; Stochastic Integrated Military Aircraft Fleet Management; The Delphi fleet planning tool; How Good is Good Enough: Mapping Model Quality to Equipment Readiness; Simulation of Army Readiness; Dynamic Ordnance Load Mix Probabilistic Risk Model; Enhancing Decision-Making and Strategic Planning through Advanced Analytics: A Case Study; and Bulk Fuel Feasibility Assessment.

WG 19 Leadership

Position	Name	Email
Chair	Ms. Caroline R. Earle	cearle@ida.org
Co-Chair	Mr. Ben Hull	benjamin.a.hull.civ@mail.mil
Co-Chair	Mr. Chad Verbano	chad.r.verbano.civ@mail.mil
Co-Chair	MAJ Ray Vetter	raymond.t.vetter.mil@army.mil
Advisor	Mr. Joe Adams	jadams@ida.org
Advisor	LTC John R. Ferguson	John.r.ferguson12.mil@army.mil

back to Table of Contents

WG 20 – Analytical Support to Training and Education

Overview: The primary deterrence challenge facing the United States today is preventing aggression and escalation in limited conventional conflicts with a nuclear-armed adversary. Data analytics, measurement, and other evaluation-related training and education methodologies are critical for DoD to address it. The Training and Education Working Group will provide a forum to exchange ideas, lessons learned, and best practices using a mix of advanced data analytics, commercial-off-the-shelf tools, and simpler approaches in support of Integrated Deterrence.

Seeking Submissions: The 93rd MORS Symposium offers an opportunity to review recent work, training evaluation and assessment concepts, and new training and education developments. Taking a different approach to the decision-making process and emphasizing training and education will provide commanders and DoD civilians efficacy using limited resources leveraging data analytics. We seek analytical presentations addressing any of the mission priorities and concerns outlined above. Both completed work and works-in-progress are welcome.

Past Submissions: Application of Network Flow Optimization to Accession Planning Challenges at Submarine Learning Center; Forging the Future at the National Training Center; Structured Analytic Techniques (SATs) improves Decision Making Capabilities for Intelligence, Surveillance, and Reconnaissance (ISR) Mission Environments; The Impact of Losing a Single Instructor on Undergraduate Pilot Training Production; and Virtual Reality Enhancement of Geospatial Military Intelligence Training.

WG 20 Leadership

Position	Name	Email
Chair	Mr. Anthony Trautman	anthony.trautman@us.af.mil
Co-Chair	Mr. Amir Saeed	amir.saeed@jhuapl.edu
Co-Chair	Dr. Alhassan Yasin	alhassan.yasin@jhuapl.edu
Advisor	Dr. June Rodriguez	juner@mitre.org

back to Table of Contents

WG 21 – Energy

Overview: Energy is a fundamental enabler for the US defense enterprise which includes Operational Energy (OE) and Installation Energy (IE). Title 10 U.S.C. defines OE as the energy required for training, moving, and sustaining military forces and weapons platforms for military operations. IE typically involves that energy required to operate more permanent DoD bases, facilities, and non-tactical vehicles. The nation's security depends on the assured delivery of secure and resilient power to operations on the battlefield and to the supporting installations. Working Group 21 analytically supports the DoD OE and IE Strategies by providing energy practitioners a forum for discussing analytical tools and a wide range of applications from the assessment of cutting-edge new technologies to critical foundational energy issues, such as the logistical supportability of military operations.

Seeking Submissions: In concert with the 93rd MORSS theme, "Engaging the National Security Community", WG 21 is seeking topics within, but not limited to, the four DoD Energy Strategy lines of effort: 1) Energy Demand Reduction (i.e., improve efficiency and enhance supportability); 2) Energy Substitution and Diversification (e.g., explore alternative energy resources); 3) Supply Chain Resilience (e.g., improve survivability and reduce risk); and 4) Enterprise-wide Energy Visibility (e.g., C2 Common Operational Picture of supply and demand with wargaming and predictive analytics in support of force development and operations). Each line of effort challenges the analysis community to develop techniques that lead to reducing fuel demand while improving operational effectiveness and installation energy resilience to achieve tactical, operational, and strategic objectives.

Past Submissions: DoD Operational Energy Overview; Air Force Operational Energy Overview; Simulating Future Battlefield Hybridized Power; M&S Framework for Vehicle Electrification Representation within Combat Simulations; Integrated Modeling of Fuel-Constrained Operations in Contested Environments; Cost Engineering an MVDC Power & Energy Design for Navy Surface Combatants; Evaluating Biogas Potential for U.S. Army Installations; Requirements Analysis for Liquid Air Energy Storage Prototype on a Military Microgrid; and Atmospheric Impacts on Future Hybridized Tactical Power… Using Machine Learning and Artificial Intelligence to Quantify Atmospheric Uncertainty.

WG 21 Leadership

Position	Name	Email
Chair	Gail Vaucher	gail.t.vaucher.civ@army.mil
Co-Chair	Dr. Andy Hernandez	ahernand@nps.edu

back to Table of Contents

WG 22 – Military Assessment

Overview: The purpose of military assessment, as an activity, is to study the operations of a military organization in the context of its environment and determine what it needs to do next to make the organization more effective at accomplishing its goals. Assessment is a continuous activity that looks at empirical evidence, determines its meaning in terms of the operating environment, and recommends ways in which the organization can adapt to its environment, and choose operations that will accomplish its goals most effectively.

Seeking Submissions: Since a proper understanding of an operating environment is reached by harnessing analytics to make best sense of empirical observations made, which in turn, makes future operations more effective, the working group seeks presentations on how to do this AND examples of analysts doing this right—we want presentations on solving assessment problems, innovations in techniques to understand operating environments, and in learning lessons quickly and at as low a cost as possible. That is why we share, so that we can learn from others' experiences. We are interested in what has worked, and also in what did not—and what you learned from that experience.

Past Submissions: The Effectiveness Paradigm and Most Common Errors in Assessment; Establishing a Standards-Based Assessments Approach; Providing a Framework and Data Science Solutions to Support U.S. Special Operations Command Decisions; Strategically Aligned Analysis at a COCOM: A Blueprint for Informed and Resourced Decision-Making; Ukrainian 2022 and 2023 Counteroffensives: A Comparative Analysis; USAFRICOM Campaign Assessment and the Standards-Based Process; USAFRICOM's Successful Assessments Taxonomy.

WG 22 Leadership

Position	Name	Email
Chair	Dr. Adam Shilling	adam.p.shilling.civ@army.mil
Co-Chair	LTC Janice Blane	janice.t.blane.mil@army.mil
Co-Chair	LTC Cardy Moten	cardy.moten3.mil@mail.mil
Advisor	Dr. Steven Lagan	steven.j.lagan.civ@army.mil

back to Table of Contents

WG 23 – Process & Performance Improvement

Overview: The Process & Performance Improvement Focus Group fosters the use of measurement, process mapping and documentation, root cause analysis, statistical analysis, other graphical and analytical techniques, predictive analytics, and performance monitoring solutions to enhance mission-relevant decisions and outcomes for defense and security programs and organizations. Process & Performance Improvement encompasses a broad range of quality management, process management, and organizational performance management topics, including techniques from Lean, Six Sigma, Business Process Reengineering, Theory of Constraints, Value Engineering, Robotic Process Automation, benchmarking, business intelligence, and artificial intelligence / machine learning, plus humanfocused insights from decision science and behavioral public administration research.

Seeking Submissions: WG 23 seeks submissions that demonstrate and promote the use of process- and performance-focused analytics to overcome program or organizational performance challenges and enhance decision-making. Submissions could include case studies, best practices, and novel techniques for enhancing performance planning, performance monitoring, identifying improvement opportunities, implementing improvements (such as DMAIC, A3, DFSS, BPR, VE, and RPA projects), and ensuring that improvements have the desired performance and workforce effects. Of particular interest are presentations that demonstrate the synergistic integration of process improvement techniques with the organization's performance management processes, including strategic planning, performance measurement, auditing, Agency Priority Goals, and program evaluation.

Past Submissions: Establishing a Strategic Management and Performance Improvement Framework for the Department of Defense's Enterprise: Challenges and Opportunities; Performance Measurement Case Study: From Strategy, to Metrics, to Dashboards for a Defense Research & Development Center; The Negative Effects of Defense Financial Obligation and Expenditure Benchmarks; Generating Value Through Process Automation; Maximizing Financial Benefit of Lean Six Sigma Projects through Optimized Selection Criteria; and Orchestrating Inspiration: A Framework for Enabling Better Decisions from Information Theory and Live Performance.

WG 23 Leadership

Position	Name	Email
Chair	Dr. Steven Lagan	steven.j.lagan.civ@army.mil
Co-Chair	Mr. Michael Bostrom	michael.l.bostrom2.civ@us.navy.mil
Co-Chair	Mr. Robert "Kevin" Fuqua	robert.k.fuqua@usace.army.mil
Co-Chair	Ms. Leslie Gilbert	lkgilb2@nsa.gov
Co-Chair	Mr. James Grenier	james.grenier@us.af.mil
Co-Chair	Ms. Meghann Johnson	meghann.w.johnson.civ@army.mil
Co-Chair	Mr. Richard Pater	richard.pater@tsa.dhs.gov
Co-Chair	SGM Jeremy Schlegel	jeremy.schlegel@westpoint.edu
Co-Chair	Mr. James Schwartz	james.schwartz1@navy.mil
Co-Chair	Ms. Susan Stuffle	susan.stuffle@usmc.mil
Co-Chair	Ms. Mackenzie Wells Drescher	mackenzie.w.drescher.civ@us.navy.mil
Advisor	Dr. Silvana Rubino-Hallman	silvana.rubino-hallman.civ@mail.mil

back to Table of Contents

WG 24 – Test and Evaluation (T&E) and Experimentation

Overview: The Test, Experimentation, and Evaluation Working Group (WG 24) provides an opportunity for operations research analysts to examine topics pertinent to all aspects of test and experimentation supporting the Department of Defense, industry, and other government departments and agencies. Test and experimentation are processes that produce knowledge about the true capability of a system by analyzing empirical observations obtained from stimulating a system to requirements and standards. The goal is to transform knowledge gained from testing into "decision-quality information" to inform key acquisition and national security decisions.

Seeking Submissions: WG 24 seeks submission from government, academia, industry, and military operations research analysts to share lessons learned and state-of-the-art methods and techniques that address the theme for this year's symposium, "Engaging the National Security Community", particularly in the following subject areas: Statistical Engineering in T&E, design of experiments in T&E, reliability and reliability growth, cybersecurity T&E, software T&E, modeling and Simulation (M&S) in T&E, interoperability T&E, capability Based T&E, T&E in Model Based System Engineering, T&E of autonomous systems, T&E for hypersonic systems, T&E for directed energy system, T&E policy, guidance, and facilities.

Past Submissions: In past years, WG 24 has welcomed briefs from all aspects of experimentation, particularly the following: Designing Credible Experiments with Limited Resources; Developing Coherent Strategies for Campaigns of Experimentation; Developing Meaningful Measures of Merit/Measures of Effectiveness; Conducting Experiments in Training Exercises or Field Tests; Effectively Visualizing and Presenting Test Results; Survey Development; M&S Verification, Validation, and Accreditation (VV&A); and Automated Software Testing.

WG 24 Leadership

Position	Name	Email
Chair	MAJ Victoria Sieck	vcarrillo314@gmail.com
Co-Chair	Ms. Corinne Stafford	corinne.stafford.ctr@us.af.mil
Co-Chair	Dr. James Wisnowski	james.wisnowski@adsurgo.com
Advisor	Dr. Luis A. Cortes	luis.cortes@alionscience.com
Advisor	Dr. Michael J. Sheehan	msheehan@mitre.org

back to Table of Contents

WG 25 – AoAs and Capability Development

Overview: Capability Development is the process used by the military Services to identify, evaluate, develop, field, and sustain capabilities in an environment of limited resources. Capability Development encompasses three major activities: 1) capability gap identification, 2) risk assessment, and 3) solution development. Additionally, WG25 examines innovative ways to define Measures of Merit (MOMs). MOMs quantitatively assess the effectiveness of future combat plans in the face of dynamic and emerging threats.

Seeking Submissions: Topics of interest include analyses which help DoD decisionmakers determine what capabilities in which to invest in the future. Specific sources of analysis include Capability Based Assessments, Analysis of Alternatives, Development Planning, pre-Materiel Development Decision (MDD) analyses, capability gap identification and prioritization, risk assessment, science and technology initiatives, experimentation and rapid prototyping, wellestablished as well as new methods for conducting analyses, and other emerging approaches that aim to identify value, mitigate capability gaps, and rapidly transition leading-edge capabilities into operational use.

Past Submissions: Using Digital Engineering to Inform Research Investment Decisions; Acquisition Readiness Assessment for Pre-Program of Record; Developing a New Space Architecture Resiliency Assessment; Building Threads to Identify and Analyze Cross-Portfolio Capabilities; Combat Modeling in Support of Optionally Manned Fighting Vehicle Analysis (identifying technology trades to inform capability requirements); Parametric Analysis in Support of the Future Attack Reconnaissance Aircraft Analysis of Alternatives (executing parametric analysis despite the parameters being unavailable until the end of the study); and Early Lifecycle Prediction of Reliability (developing models to estimate reliability Pre-Milestone A and assess the impact on performance and cost models).

WG 25 Leadership

Position	Name	Email
Chair	Tony Veerkamp	Alphonse.veerkamp.1@us.af.mil
Co-Chair	Alex Dessanti	adessan@sandia.gov
Co-Chair	Noelle Douglas	noelle.e.douglas.mil@army.mil
Co-Chair	Randal Hickman	randal.e.hickman.mil@army.mil
Co-Chair	Natalie Van Osch	natalie.w.vanosch.civ@us.navy.mil
Advisor	Karen Merritt	Karen.merritt@us.af.mil
Advisor	Charity Petrina	Charita.petrina.1@us.af.mil

back to Table of Contents

WG 26 – Cost Analysis

Overview: The Cost Analysis Working Group provides a forum within MORS to discuss better ways to provide credible cost and economic analyses in support of projects and programs. Detailed cost, affordability, and uncertainty analyses have far-reaching impacts on informing decisions regarding the development, procurement, operation, and sustainment of modern programs and on effective resource decisions made across organizations. Additionally, providing realistic cost estimates in support of trade-off decisions, at all program stages, presents a significant OR challenge. With the latest analytical tools, techniques, and best practices, analysts can generate accurate estimates to ensure resources are available to support warfighter requirements.

Seeking Submissions: Submissions or proposals relating to military cost analysis, resource analysis, economic analysis, cost risk and uncertainty analysis, and related disciplines are welcome. Preference will be given to study results that incorporate creative uses of OR tools to develop improved cost estimates and analysis to support better decisions, especially studies that support the theme of "Engaging the National Security Community." Effective methods for presenting the results of complex operational analysis in a clear, concise manner are always of interest. Presentations may be completed works or works-in-progress.

Past Submissions: Rate Effects in Aircraft Learning Curves; Best Practices to Develop Comprehensive, Accurate, Well-Documented, and Credible Cost Estimates; Cost Estimator Accuracy over Time and Program Characteristics that may Affect Accuracy; Marine Corps Long-Range Capital Planning/Force Design Affordability Analysis; Overcoming Cost Data Challenges for Early Acquisition; Adopting a Data Science Paradigm: Merging Traditional Cost Estimating Methodologies with Advanced Computational Analysis; An Analysis of Cloud Computing Migration Costs and Effects for DoD Applications; and Cost Analysis to Support Effectiveness-based Design of Rotorcraft.

WG 26 Leadership

Position	Name	Email
Chair	Rainey Southworth	rainey.southworth.ctr@us.navy.mil
Co-Chair	Capt Caleb Ahern	caleb.ahern@us.af.mil
Co-Chair	Capt Patrick Bennett	patrick.bennett.6@us.af.mil
Co-Chair	Dakotah Hogan	dakotah.hogan.1@us.af.mil
Co-Chair	Liz McMahon	elizabeth.mcmahon@jlha.com
Co-Chair	Capt Kyrie Rojo	kyrie.rojo@hotmail.com
Co-Chair	Samantha Stukes	samantha.stukes@usmc.mil
Advisor	Corey Boone	corey.boone@dau.edu
Advisor	John Moskowitz	john.j.moskowitz.civ@us.navy.mil
Advisor	Steve Tracy	stracy@n-s-i.us

back to Table of Contents

WG 27 – Decision Analysis

Overview: Decision Analysis (DA) provides the philosophies, theories, and methodologies needed to address challenging and complex decision situations in a formal manner. It encompasses the many procedures, methods, and tools leveraged by analysts to assist decision makers in making the best-informed decisions within the constraints of the problem space and time. DA methods are incorporated as components of multi-disciplined approaches that combine techniques such as data visualization, mathematical programming, simulation, Bayesian networks, Markov decision processes, artificial intelligence and machine learning.

Seeking Submissions: WG27 is seeking submissions in relation to the MORSS theme "Engaging the National Security Community" having emphasis on four general categories of practice: 1) assessment of the decision maker's biases and preferences in the evaluation of alternatives, 2) incorporation of uncertainty associated with the outcomes and the information used in the decision, 3) scaling the collection and synthesis of data for decision making, and 4) effectively communicating the trade-space to the decision maker.

Past Submissions: Papers describing completed work or work in progress that makes use of DA methods or models, and/or case studies in the application of DA showcasing: Innovations in Practice and Theory; Application of Soft Skills; Modeling Risk and Uncertainty in Decisions; Acquisition Applications and Risk Management; Portfolio Analysis; Modeling Human Decision Processes; Large Data, Business Analytics; and Decision Analysis for Product Development & Acquisition using Set-Based Design.

WG 27 Leadership

Position	Name	Email
Chair	Dr. Robert (Bob) Clemence	robert.d.clemence@usmc.mil
Co-Chair	Mr. Ralph Korthauer	ralph.korthauer@gmail.com
Co-Chair	Mr. Matt Murray	matt.murray@jdsat.com
Advisor	Ms. Launa E. Trotta	launa.trotta@usmc.mil

back to Table of Contents

WG 28 – Advances in Modeling and Simulation Techniques

Overview: WG 28 discusses advances in the application of modeling and simulation (M&S) techniques from systems engineering to the joint strategic level. Our focus is unique and innovative approaches to M&S development through: application, verification, validation, and simulation tools.

Seeking Submissions: WG 28 seeks submissions that highlight this year's theme of "Engaging the National Security Community", and give insight to: strategy, force structure, weapon systems, and system requirements. We welcome in-depth discussions of M&S techniques, such as agent based simulation, design of experiments, Bayesian methods, discrete event simulation, and machine learning. Presentations should emphasize modeling tools (R, Python, etc.) and utilized software (AFSIM, STK, etc.), more so than specific study results.

Past Submissions: Advanced Analytic Tools for Space Modeling & Simulation; Bayesian Networks to Analyze Electronic Warfare Capability; Ballistic Missile Discrimination Simulation and Analysis; Assessing Counter-UAS Detection and Defeat Capabilities in Arctic Environments; High-Value Target (HVT) Tracking in a Mixed Urban-Rural Environment; and A Reinforcement Learning and Optimization Scheme for Development of Novel Artificial Neural Network-based Guidance.

WG 28 Leadership

Position	Name	Email
Chair	Steven Heinlein	steven.heinlein@usmc.mil
Co-Chair	LTC Jimmy Archange	jimmy.archange.mil@army.mil
Co-Chair	Tony Artis	tony.n.artis.civ@usmc.mil
Co-Chair	Capt Colton Byers	colton.byers@usmc.mil
Advisor	Eric Taylor	Eric.a.taylor@usmc.mil

back to Table of Contents

WG 29 – Emerging and Adapting Computational Solutions within OR

Overview: The Emerging and Adapting Computational Solutions in Operations Research Working Group is focused on aiding analysts and equipping decisionmakers with new ways to handle complex decision-making. This group provides a forum for the discussion of emerging mathematical, statistical, and computational techniques which improve analysis capabilities, fidelities, and/or workflows. This encompasses a broad range of topics including multi-domain analysis, especially inclusion of cyber; high-dimensional data analysis; rapid design space exploration; uncertainty quantification; addressing computationally challenging problems; cluster optimization; and techniques for reusable and/or highly adaptable analytic solutions.

Seeking Submissions: WG 29 solicits presentations that delve into the creation and application of innovative algorithms, methodologies, or computational advances that enable "Engaging the National Security Community". Presentations should focus on the motivation, implementation, and resulting benefits of advances with regard to overcoming challenging problems within the OR domain. We welcome presentations on work currently under development or fully completed.

Past Submissions: Large-scale Parallelized Simulation on Heterogenous Clusters; Achieving Multi-Resolution Campaign Modelling In AFSIM; Enabling Course-of-Action Analysis in Wargames with Reinforcement Learning; Combining Machine Learning and Traditional Optimization Approaches to Solve Reconnaissance Mission Planning Problem; Remembering the Operator in Partially-Automated System Analysis; Safe Machine Learning Prediction and Optimization via Extrapolation Control; and Efficient Response Surface Estimation through Adaptive Sampling.

WG 29 Leadership

Position	Name	Email
Chair	Dr. John Robinson	jrobinson47@gatech.edu
Co-Chair	MAJ Nathaniel Bastian	nathaniel.d.bastian.mil@mail.mil
Co-Chair	Josh Deiches	joshua.deiches@lmco.com
Co-Chair	Dr. Mitchell Kerman	mckerman@gmail.com
Co-Chair	Jonah Sonnenshein	sonnen@ca.metsci.com
Advisor	Dr. Mac Brennan	matthew.a.guckenberger@lmco.com
Advisor	Dr. Alicia Sudol	alicia.sudol@gatech.edu

back to Table of Contents

WG 30 – Wargaming

Overview: A wargame is a dynamic representation of conflict or competition shaped by human decision-making and the responses or unforeseen consequences of those decisions. Wargaming provides valuable insights to senior leaders in their decision-making process and is a critical ingredient in the cycle of research and learning which integrates operational analysis, warfare simulation, and doctrine development. The spectrum of wargaming covers a wide range of methodologies, from "rigid-Kriegsspiel", with pre-defined rules and prescribed adjudication, to seminar wargames where there are few rules and only expert opinion. Determining the most appropriate wargame methodology is one of the most important and challenging tasks for a wargame designer and event execution team.

Seeking Submissions: WG30 seeks submissions that span the breadth and width of the wargaming spectrum and provide examples of currently planned or previously executed wargames. Emphasis is desired on game design, event shaping, wargame execution, and adjudication methodologies. We are interested in hearing about the recursive relationship between wargaming and analysis along with wargaming impacts on stakeholder decision-making.

Past Submissions: In the past we have heard results on historical tactical and regional battles, as well as modern and postulated future conflicts. Recent presentations have included: The Global Strategic Competition to Crisis Game (G-SC2); TTCP Scrum Event and Polar Operations TTX; Wargaming within the Nuclear Environment; and Incorporating Logistics Impact into the Center for Army Analysis Accelerated Wargame System (CAAAWS).

WG 30 Leadership

Position	Name	Email
Chair	Sandro Teixeira	steixeira@groupw.com
Co-Chair	Bob Chalmers	Robert.chalmers@jhuapl.edu
Co-Chair	Phillip Colón	pcolon@groupw.com
Co-Chair	Mike Laquet	Michael.r.laquet.mil@army.mil
Co-Chair	James Reichwein	jreichwein@dcscorp.com
Co-Chair	Paul Vebber	paulwvebber@gmail.com
Advisor	Mike Garrambone	mgarrambone@aol.com
Advisor	Mike Ottenberg	mottenberg@groupw.com
Advisor	Trey Smith	tsmith@groupw.com

back to Table of Contents

WG 31 – Operational Environments

Overview: The Operational Environments working group features discussions about the operational environment's role in the full spectrum of military operations from high end great power warfighting to humanitarian assistance and disaster relief. There are four major aspects of the operational environment: natural environment (terrain, ocean, atmosphere, weather trends, pathogens, nuclear or chemical contamination), human constructs (infrastructure, hardware, and software), human populations (the various demographic characteristics of the local residents), and social science factors (political, social, cultural, informational, and economic). These aspects often interact in complex ways to impact US military operations around the world and pose significant challenges to American military commanders in the field.

Seeking Submissions: WG 31 focuses on identifying and describing key operational environment subsets in new and innovative ways and then developing analytical methods and tools that can be used as a force multiplier in complex environments to better support and inform US military operations around the world and also to advance American analytical leadership in the field of military operational environments analysis. WG 31 is interested in innovative approaches to assessing operational environments, including advanced remote surveillance capabilities, improved sociocultural and economic analysis, political and demographic shifts forecasting, data analysis and visualization tools, methods for assessing various types of urban terrain, new modeling techniques for assessing the operational effects of different geographic configurations of USAF bases in overseas theaters, and improved natural environment data. We are also soliciting studies and experiments that describe the operational capabilities that will be required for the joint force to succeed across a full range of operational environments.

Past Submissions: Effects of Disruptions in CONUS Natural Gas Pipelines; Demography and Security in Ukraine and Belarus; Military Operations in a Nuclear Environment; Simulations of Covid-19 Transmission and Response in a Synthetic Population; Robotics for Engineer Operations; Numerical Weather Prediction Modeling for Decision Support at Smart Military Installations; Understanding the Urban Operational Environment through Urban Morphometric Analysis; and ICBM Community Cancer Registry Analysis.

WG 31 Leadership

Position	Name	Email
Chair	Dr. Brian Nichiporuk	briann@rand.org
Co-Chair	Leah Talaber	ltalaber@anl.gov

back to Table of Contents

WG 32 – Special Operations and Irregular Warfare

Overview: Special Operations and Irregular Warfare (IW) is a warfighting modality that stretches from pre-conflict to post conflict operations which seeks to achieve strategic objectives through the deployment of low density tactical teams primarily by nontraditional, indirect, or asymmetric means and is characterized by some of the following operations: counterterrorism, unconventional warfare (UW), counter UW, partisan force building, counterinsurgency, intelligence activities, computer network operations, foreign internal defense, and stability operations, military information support operations (formerly psychological operations), information operations, counter proliferation of WMD. The panoply of operations covers the gamut of asymmetric, gray zone and hybrid warfighting and is agnostic to the linear nature of larger conventional conflict.

Seeking Submissions: Organizations and stakeholders with interests in the SOF/IW arena will benefit from the analytical community in the areas of strategic and operational decision-making, campaign planning and analysis and policy determination using mission planning tools and analytical aids, modeling and simulations and analysis, and by systemic collection and dissemination of data and lessons learned from previous IW operations and interagency activities. These analytical capabilities include contributions from STEM and soft disciplines, as well as from traditional national security operations research.

Past Submissions: Developing a Country Level CBRN Readiness Metric; The Impossibility of Successful Western Counterinsurgency; Markov Model of Nuclear latency; Sensemaking-Decision-making Via Systems Thinking; and Antifragility and Counterinsurgency.

WG 32 Leadership

Position	Name	Email
Chair	Mr. Bill Buppert	william.e.buppert@rtx.com
Co-Chair	Mr. Josh Deiches	joshua.deiches@lmco.com
Co-Chair	Mr. Carl J. Unis	cjunis1@comcast.net
Advisor	Mr. Joe Stallings	jlseagle101@gmail.com

back to Table of Contents

WG 33 – Social Science Methods and Applications

Overview: Working Group (WG) 33 explores multidisciplinary methodologies for understanding human, social, cultural, and behavioral dynamics, using both social science methods and quantitative techniques. The group supports research that leverages both traditional social science methodologies and quantitative approaches—such as mathematical modeling, computational simulations, and statistical analyses—to address complex social phenomena. The group also supports research on how computational and mathematical techniques can improve social science methodologies. Relevant fields include traditional social science disciplines like anthropology, economics, history, political science, psychology, and sociology, as well as computational fields like mathematical modeling, network analysis, data science, and societal computing. Presentations should highlight how qualitative and quantitative techniques can enhance decision-making, particularly in national security contexts and emerging security challenges.

Seeking Submissions: WG 33 welcomes submissions from researchers applying a range of methods, including anthropological case studies, economic analysis, data science, and computational modeling, to understand complex social behaviors such as online disinformation, economic markets and supply chains, and demographic and population modeling. This working group invites discussions on methods, models, and analytical tools that support decision-making across domains, fostering a dialogue on how both social science and quantitative techniques can effectively address contemporary security issues.

Past Submissions: Development of Workforce Analysis Tool to Support COVID-19 Response Efforts; Corona Virus Disease 2019 (COVID-19) Support to 9th Hospital; Developing a large-scale synthetic population of persons for simulating COVID-19 transmission and response; The Market Dynamics of Rare Earth Extraction from Unconventional Sources in the U.S.; Selecting performance measures for a defense process improvement program via consensus-based action research; Human-Centric AI-Driven Decision Intelligence: Descriptive, Predictive, and Prescriptive Analytics; Unpacking Deterrence: AI-Enabled Semantic Analysis of a Large Chinese Dataset; Improving Government Effectiveness, Efficiency, & Affordability: Accounting for the Human Domain in the Market of Public Goods; Weaponization of Language in Online Information Environment: Use of Metaphors in Disinformation Campaigns; and Demography and Security in Saudi Arabia.

WG 33 Leadership

Position	Name	Email
Chair	Maj. Iain J. Cruickshank, Ph.D.	iain.j.cruickshank.mil@army.mil
Advisor	Dr. Brandon Shapiro	bshapiro@ida.org

back to Table of Contents

WG 34 - Data Science and Analytics

Overview: Data Science and Analytics brings together practitioners of data mining, text analytics/natural language processing, machine learning, and social network analysis that solve a wide variety of problems. In this data and results focused discipline, this working group collaboratively enables decision-makers with descriptive, diagnostic, predictive and prescriptive analytics. We combine and tailor emerging tools and newly available data to the unique problems of the Department of Defense (DoD) and Intelligence Community (IC) domains. Above all, we remove barriers between practitioners, allowing them to benefit from the collaboration and cooperation that is necessary to sustain an effective data science and analytics community.

Seeking Submissions: We solicit presentations from data scientists, operations research analysts, statisticians, and machine learning practitioners who have results that:

- Demonstrate data science approaches and technologies including: open-source software, cloud environments & methods, parallel computing strategies, high-performance computing enabled analytics, streaming data, multi-media and multi-structured data, link and graph mining, semantic-based data mining, recommendation systems, and social web-mining.
- Have applied methods in any part of the data science pipeline (acquire/store data, munging, wrangling, modeling, visualization, human/computer interaction)
- Success stories: when data science and analytics methods were used to inform decisions or as a force multiplier.

Past Submissions: Detecting Emergent Discourse Dynamics in Online Social Media; Predicting Weapon Lethality for Asymmetric Warhead Technologies Using Neural Networks; Comparing Clustering Methods of Pharmacy Medications Among Combat-Related Amputations; and Evaluating the Performance of Fine-tuned Embedding Models for Defense-focused Large Language Model (LLM) Retrieval Augmented Generation (RAG) Applications.

WG 34 Leadership

Position	Name	Email
Chair	Mr. David Saranchak	saranchd@ctc.com
Co-Chair	MAJ Nathaniel Bastian	nathaniel.bastian@westpoint.edu
Co-Chair	Maj. Iain J. Cruickshank, Ph.D.	iain.cruickshank@westpoint.edu
Co-Chair	Ms. Erica Dretzka	erica.l.dretzka.civ@mail.mil
Co-Chair	Ms. Charlotte Ellison	Charlotte.L.Ellison@erdc.dren.mil
Co-Chair	Mr. Ian Kloo	ian.kloo@westpoint.edu
Co-Chair	Dr. Courtland VanDam	courtland.vandam@ll.mit.edu
Advisor	Mr. Dave Beskow	david.beskow@westpoint.edu

back to Table of Contents

WG 35 - Artificial Intelligence and Autonomous Systems

Overview: AI and Autonomous Systems encompass the spectrum of operational issues associated with AI-enabled autonomous military systems to 1) deconstruct the profound complexities posed by such systems and 2) develop new operations research methods and tools to analyze these problems in support of national security.

Seeking Submissions: WG 35 seeks submissions that showcase novel applications of AI and autonomous systems as well as rigorous analytical methods. Topics include but are not limited to wargaming, Test & Evaluation/Verification & Validation (T&E/V&V), applications to cybersecurity, spectrum operations, maintenance, safety and security, Governance and Trust, unmanned autonomous vehicles (UAV) and systems (UAS) across all domains, real-time tactical applications, system deployment considerations, application of large language models (LLMs) to augment operational workflows, and Modeling & Simulation (M&S).

Past Submissions: Combining Adaptive Computer Agents, Human Wargamers, and AI to Improve Conflict Outcomes; Biologically Inspired Swarm Intelligence for Military Applications; Enhancing Decision-Making in Digital Wargames & Simulation: Integrating Reinforcement Learning with Multimodal Models; Mapping Artificial Intelligence to the Naval Tactical Kill Chain; A Software-in-the-Loop Modeling and Simulation Environment for Autonomous Unmanned Ground Vehicles; and Ethical AI: Some Practical Practices.

WG 35 Leadership

Position	Name	Email
Chair	Dr. David Ellsworth	david.m.ellsworth3.civ@army.mil
Co-Chair	MAJ Nathaniel Bastian	nathaniel.bastian@fulbrightmail.org
Co-Chair	Dan Grahn	dan.grahn@altamiracorp.com
Co-Chair	Marina Kusok	marina.kusok@raytheon.com
Co-Chair	Jim Lockett	jdlockett@mitre.org
Co-Chair	Dr. John Monroe	john.g.monroe@erdc.dren.mil
Co-Chair	Mr. Todd Morehouse	tmorehouse@umassd.edu
Co-Chair	Carol Pomales	cpomales@mitre.org
Co-Chair	Mr. Jerry Schlabach	jerry.l.schlabach@raytheon.com
Co-Chair	Shawn Sloan	shawn.sloan@aero.org
Advisor	Dr. Lance Fiondella	lfiondella@umassd.edu
Advisor	Dr. George Mark Waltensperger	gmwaltensperger@gmail.com

back to Table of Contents

DWG 01 – Emerging Operations Research

Overview: DWG 01 benefits MORS constituents by helping them keep pace with rapidly changing methodologies. As innovative analysts create new methodologies to keep our analysis relevant, there may not be an area within the traditional MORS focus areas that is appropriate for a given presentation.

Seeking Submissions: DWG 01 seeks submissions that are targeted to Emerging OR that use analytical concepts and solutions as a force multiplier to solve unique National Security challenges. These include solutions, techniques, and methodologies that do "more with less" in relation to unique National Security challenges that do not fall in a traditional MORS focus areas or Working Groups. All submissions should be tailored to the MORSS theme.

Past Submissions: Assessing the United States Foreign Military Aid Impact on Conflict; Space Sensitivity Assessments Using Multi-Domain Kill Webs in AFSIM; An Adaptive Kill Web Framework for Mission Engineering and Concept Explorations Analysis.

DWG 01 Leadership

Position	Name	Email
Chair	Dr. June Rodriguez	juner@mitre.org
Co-Chair	Dr. Steve Oimoen	steven.oimoen.1.ctr.@us.af.mil
Co-Chair	Dr. Ben Rodriguez	benjamin.rodriguez@jhuapl.edu

back to Table of Contents

DWG 02 – Unmanned Systems

Overview: The Unmanned Systems distributed working group is focused on research and analysis of remotely operated, autonomous, and hybrid unmanned platforms in all warfighting domains including air, surface, undersea, and space. Unmanned systems continue to see rapid increases in capability and proliferation, and DWG 2 explores both potential threats and opportunities enabled by these improvements in sensing, maneuverability/endurance, cost, command and control, and deployment concepts and techniques.

Seeking Submissions: DWG 2 is seeking submissions describing efforts such as mission effectiveness or cost analyses, data collection/curation techniques, and modelling and simulation advancements related to this year's MORSS theme: "Engaging the National Security Community". Both completed and ongoing work that highlights the role of analysis in contributing to the real or potential increased impact of unmanned systems in operationally relevant scenarios and challenges are welcome.

Past Submissions: Assessing Counter-UAS Detection and Defeat Capabilities in Arctic Environments (Applied methodology to integrate C-UAS detection and defeat analysis into a geospecific scenario environment informing the development and employment of Counter-UAS capabilities); Soldier Lethality and the Emergence of small Unmanned Aircraft Systems (sUAS) on the Modern Battlefield; and Unmanned Aerial System (UAS) Launch and Retrieval System (LaRS) with Autonomous Operations Performance Analysis.

DWG 02 Leadership

Position	Name	Email
Chair	Bob Chalmers	Robert.Chalmers@jhuapl.edu
Co-Chair	John Pino	Johnathan.Pino@jhuapl.edu
Co-Chair	Tom Karnezos	Tck143@arl.psu.edu
Co-Chair	Eric Rose	eric.rose@jhuapl.edu

back to Table of Contents