

Assessing the Physical and Technical Suitability of DoD Test and Evaluation Ranges and Infrastructure

Committee

Dana K. Jackson

Chair

Dana “Keoki” Jackson (NAE) is senior vice president and general manager, MITRE National Security Sector. In this role, he is responsible for the strategic growth and execution of MITRE’s national security programs, including support to the U.S. Department of Defense, the U.S. Department of Justice, and the Intelligence Community. He also leads the National Security Engineering Center. After more than two decades at Lockheed Martin, Jackson brings robust technical leadership and business experience, including directly contributing to the design, development, deployment, and flight operation of major national security spacecraft and programs. He also held management roles on the GPS III position, navigation, and timing program, and the Space-based Infrared System missile warning program. Jackson held several executive and senior management roles at Lockheed Martin, including chief technology officer and chief engineer, and vice president of engineering and program operations. He most recently served as vice president of supply chain and program performance and was responsible for program and supply chain management strategy, execution, and success across the enterprise. Before joining Lockheed Martin, Jackson was a NASA research fellow at the Massachusetts Institute of Technology (MIT) in the field of human adaptation to the space environment. Jackson is a fellow of the United Kingdom Royal Aeronautical Society and the American Institute for Aeronautics and Astronautics (AIAA). He is a member of the National Academy of Engineering, Sigma Xi, the International Academy of Astronautics, and the Institute of Electrical and Electronics Engineers. He previously served on the Sandia Corporation Board of Directors, the AIAA Foundation Board of Trustees, the Georgia Institute of Technology President’s Advisory Board, the University of Maryland Clark School of Engineering Board of Visitors, and the MIT Department of Aeronautics and Astronautics Visiting Committee. Jackson received his bachelor’s, master’s, and doctoral degrees in aeronautics and astronautics from MIT and completed the Stanford Executive Program at the Stanford Graduate School of Business.

Darryl Ahner

Member

Darryl Ahner is a Professor of Operations Research at the Air Force Institute of Technology (AFIT). He also serves as the Director of the Scientific Test and Analysis Techniques Center of Excellence (STAT COE) at AFIT. Dr. Ahner is a member of the Institute for Operations Research and the Management Sciences (INFORMS), the International Test and Evaluation Association (ITEA), and the Military Operations Research Society (MORS). Dr. Ahner graduated from the United States Military Academy at West Point, earned an M.S. in Applied Mathematics, an M.S. in Operations Research and Statistics, and his Ph.D. in Systems Engineering while serving as a Charles Stark Draper Laboratory Fellow. Dr. Ahner has earned awards including the 2019 Air Education and Training Command Analysis Team of the Year and the Wilbur B. Payne Award for the best Army analytical technical study.

Karen Butler-Purry

Member

Karen Butler-Purry is the Associate Provost for Graduate and Professional Studies at Texas A&M University where she also serves as a Professor of Electrical and Computer Engineering, and as the Assistant Director of the Power System Automation Laboratory. Dr. Butler-Purry conducts research at Texas A&M on protection and control of distribution systems and isolated power systems such as all electric power systems for ships, mobile grids, and microgrids, cybersecurity protection, intelligent systems for equipment deterioration and fault diagnosis, and engineering education. Prior to joining Texas A&M, Dr. Butler-Purry held technical positions at Hughes Aircraft Company Radar Systems Group, IBM, and MIT Lincoln Laboratory. She is a fellow at the Institute of Electrical and Electronics Engineers (IEEE). She holds her B.S. in Electrical Engineering from Southern University at Baton Rouge, an M.S. in Electrical Engineering from The University of Texas at Austin, and her Ph.D. in Electrical Engineering from Howard University.

Graham V. Candler

Member

Graham Candler is the Russell J. Penrose and McKnight Presidential Chair in Aerospace Engineering and Mechanics. He uses computational methods to study high-speed flight with application to future hypersonic flight systems and the entry of spacecraft into planetary atmospheres. He is recognized by the National Academy of Engineering for development and validation of computational models for high-fidelity simulation of supersonic and hypersonic interactions.

Candler and his research collaborators have developed widely-used computational methods and codes that are being used for the design and analysis of future hypersonic flight systems, including several NASA exploration missions. Recently, his work has focused on the development of high accuracy simulation methods for the exploration of hypersonic flight system design space. He has published extensively in the areas computational methods, high-temperature gas dynamics, boundary layer laminar to turbulent transition, and validation of computational simulations with hypersonic wind tunnel data.

Candler has been at the University of Minnesota since 1992, and leads a research group in hypersonic aerodynamics and computational fluid dynamics. He has received numerous awards, including the American Institute of Aeronautics and Astronautics (AIAA) Thermophysics Award (2007) and Fluid Dynamics Award (2012). He is a Fellow of the AIAA.

Candler received his undergraduate degree from McGill University in 1984 and his graduate degrees in Aeronautics and Astronautics from Stanford University in 1985 and 1988.

Gordon Fornell

Member

Lieutenant General Gordon Fornell (Ret.) served in the USAF until his retirement in 1993. During his time in the air force, he flew combat missions and served in several senior acquisition leadership positions. He was assigned to the Air Force Flight Test Center at Edwards AFB in 1969. LTG Fornell also served as program director of the Air Force Acquisition Logistics Division, working on the KC-10 system. He earned several awards during his time in the Air Force including the Defense Distinguished Service Medal. LTG Fornell holds a B.S. in mechanical engineering from Michigan State University and an MBA from Wharton School, University of Pennsylvania. LTG Fornell has also served on the Defense Support Initiatives Leadership Team.

Derrick Hinton

Member

Derrick Hinton serves as the vice president for Research and Engineering Services for the Scientific Research Corporation in the Advanced Technology Solutions Division. Prior to joining SRC in 2018, Mr. Hinton was a member of the Senior Executive Service with a 25-year civilian career in the Department of Defense (DoD). In his most recent role as Acting Director, Test Resource Management Center (TRMC), Mr. Hinton advised the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology and Logistics [USD(AT&L)] on all matters pertaining to the DoD Major Range and Test Facility Base (MRTFB), the Nation's critical range infrastructure for conducting effective test and evaluation (T&E). In addition, Derrick oversaw the management of the Central Test and Evaluation Investment Program (CTEIP), the Test and Evaluation / Science and Technology (T&E/S&T) Program, and the Joint Mission Environment Test Capability (JMETC) Program, whose annual budgets collectively totaled over \$300M. He also oversaw the management of the National Cyber Range Complex (NCRC) and served as the DoD Executive Agent for Cyber Test Ranges. Derrick began his career serving in the United States Marine Corps Reserve from 1985 to 1991, and entered the DoD civilian workforce in 1989 as a Test Engineer responsible for munitions T&E with the 46th Test Wing at Eglin Air Force Base, FL. In 1996, Mr. Hinton joined the AT&L team, initially serving in the Office of the Director, Test, Systems Engineering, and Evaluation. He transitioned to the Office of the Director, Operational Test and Evaluation (DOT&E) in 2001 and joined the TRMC in 2005, taking on the role of Principal Deputy Director, TRMC in 2009. Mr. Hinton holds a Bachelor of Science in Industrial Engineering from the University of Alabama, a Masters of Public Administration, and an Acquisition Core Level III Certification in Test and Evaluation from the Defense Acquisition University.

Rob Kewley

Member

Rob Kewley currently serves as a director and systems engineer at simlytics.cloud LLC. Prior to that, he served as the Acting Executive Director of the Office of the Chief Systems Engineer. In this position, Dr. Kewley was responsible for developing systems engineering capabilities and processes for Army modernization. At West Point, Dr. Kewley served as the Head of the Department of Systems Engineering and the UMSA Director of Operations Research. In this position, he led studies in support of Army and DoD analytic challenges. Dr. Kewley received his B.S. in Mathematics from West Point, an M.S. in Industrial and Management Engineering and a Ph.D. in Decision Science and Engineering Systems both from Rensselaer Polytechnic Institute.

Laura J. McGill

Member

Laura McGill (NAE) is the Deputy Vice President of Engineering at Raytheon's Missiles & Defense, a subdivision of Raytheon Technologies Corporation. Previously, she served as the vice president of engineering at Raytheon Missile Systems. Ms. McGill also served as the product line chief engineer for air warfare systems. Ms. McGill is an adjunct lecturer for Raytheon's onsite M.S. in systems engineering program in conjunction with Johns Hopkins Whiting School of Engineering. She is also a Lifetime Fellow of the American Institute of Aeronautics and Astronautics (AIAA). Laura McGill was elected to the National Academy of Engineering in 2019. She earned her Bachelor's in Aerospace, Aeronautical and Astronautical Engineering from the University of Washington. McGill also holds a Master's degree in Aerospace Systems from West Coast University.

Hans Miller

Member

Hans Miller is a system test engineer at the MITRE Corporation. Prior to that, Mr. Miller was the Division Chief of Policy, Programs and Resources at the USAF Headquarters for Test and Evaluation. He has twenty-five years of experience in the Air Force as a test pilot, program manager, and director of large flight and ground test organizations. Mr. Miller also has experience working with the NATO Foreign Comparative Test Program. Miller graduated from the United States Air Force Academy with a B.S. in Aeronautical Engineering. He also attended the USAF Air War College and USAF Test Pilot School. He also holds a Masters of Aeronautics and Astronautics, Aircraft Control Design and GPS Technology from Stanford University.

Heidi C. Perry

Member

Heidi C. Perry is currently Assistant Division Head for the Air, Missile and Maritime Defense Technology Division at the Massachusetts Institute of Technology Lincoln Laboratory. In her role, she works strategic initiatives for undersea systems and serves as the chief innovation officer for the division. Previously, Ms. Perry was Director, System Engineering, at the Charles S. Draper Laboratory, Incorporated. She also served in other senior leadership roles, including Director, Algorithms & Software and Director, Internal R&D Portfolio. Her expertise includes guidance, navigation, and control; global position system anti-jam and ground control; autonomous systems; mission-critical software; and command, control, communications, computers, intelligence, surveillance, and reconnaissance systems. Ms. Perry began her career with General Electric as a systems engineer working on the AN/BSY-2 Sonar System before moving to IBM, as a systems engineer for avionics design and flight test programs. From IBM she moved to Draper Laboratory as task leader for the Dolphin Navigation System Upgrade and remained with Draper for over 20 years. In these years at the laboratory, she served as technical director for various research and development programs involving autonomous spacecraft, aircraft, robotics systems, and underwater vehicles. A member of the Institute of Electrical and Electronic Engineers and the American Institute of Aeronautics and Astronautics (AIAA), she was named AIAA Software Engineer of the Year 2004—New England Sector. A former member of the Naval Studies Board (2008-2013), she also served on the National Academies' Committee on Capability Surprise for U.S. Naval Forces, Committee on National Security Implications of Climate Change on U.S. Naval Forces, and Committee on the "1,000 Ship Navy"—A Distributed and Global Maritime Network. Most recently, she served as the co-chair of the National Academies' Committee on Mainstreaming Unmanned Undersea Vehicles into Future U.S. Naval Operations. She has also served as the chair for the Transportation Research Board's Committee for Review of the National Naval Responsibility for Naval Engineering Program. She received a B.S. in electrical engineering from Cornell University and an M.S. in computer engineering from the National Technical University. She currently serves as a member of the President's Council of Cornell Women.

Gary Polansky

Member

Gary Polansky is a senior scientist at Sandia National Laboratories with broad technical responsibilities across hypersonic flight systems, responsive space launch systems, and related technologies. For the last decade, Polansky has provided Sandia with technical and management leadership of hypersonic flight systems for NASA, DARPA, Air Force, Navy, and Army applications. This effort culminated in the Advanced Hypersonic Weapon flight test on November 11, 2001. He was the project manager over the development of both the booster and the hypersonic glide body for this groundbreaking test. The test was the first successful long range boostglide hypersonic flight and achieved all test objectives. The test team was recognized with a Lockheed Martin NOVA Award, and Gary was recognized by the Precision Strike Technical Association with Richard H. Johnson Technical Achievement Award for this accomplishment. Early in his career, Polansky pioneered the development of aerodynamic and aerothermodynamic analysis tools that became the standard at the laboratory for maneuvering hypersonic systems. Polansky led efforts to engineer reliable systems for manned space flight in support of the NASA Space Exploration Initiative. He also led a combined Department of Energy/Air Force program to develop hybrid nuclear power and propulsion systems for a new generation of satellites. Throughout his career, Polansky has sustained his involvement in Aerospace Nuclear Safety. He advised the Interagency Nuclear Safety Review Panel (INSRP) in the launches of Pluto New Horizons (PNH) and the Mars Science Laboratory (MSL). Polansky received a Ph.D. in Engineering at The University of Texas at Austin.

Karl F. Schneider

Member

Karl F. Schneider previously served as the senior official to perform the duties of the Under Secretary of the United States Army. The Under Secretary of the Army performs the duties of the Secretary of the Army's senior civilian assistant and principal adviser on matters related to the management and operation of the Army, including development and integration of the Army Program and Budget. Prior to this position, Mr. Schneider served as the Principal Deputy, Assistant Secretary of the Army (Manpower and Reserve Affairs), providing oversight of all planning, analysis and assessment support to the Total Force manpower and personnel policy. He served as the Acting Assistant Secretary of the Army (Manpower and Reserve Affairs) from September 20, 2013 until April 18, 2014.

William Wilson

Member

William Wilson is the acting director of the CERT Division at the Software Engineering Institute at Carnegie Mellon University. In this position, he works to identify new technologies, system development practices, and management practices to improve network systems. Previously, Mr. Wilson served as the technical manager of CERT's Survivable Enterprise Management (SEM) Initiative where he developed enterprise security management and information security risk assessment methods. Before joining Carnegie Mellon, Mr. Wilson worked as the technical director of the Engineering Center at the National Security Agency, where he served for twelve years. Mr. Wilson holds a bachelor's in computer science from Pennsylvania State University and a master's degree in computer systems management from the University of Maryland.