Advanced Battle Management System Consensus Study

Committee

Philip S. Anton

Chair

Philip S. Antón is chief scientist at the Acquisition Innovation Research Center at the Stevens Institute of Technology. Previously, he was a senior information scientist at the RAND Corporation, where he conducted research on acquisition and sustainment policy; cybersecurity; emerging technologies; technology foresight; process performance measurement and efficiency; data science and analytics; aeronautics test infrastructure; and military modeling and simulation. From 2011 to 2016, Dr. Antón served two tours in the Pentagon, filling a senior executive service position directing the Acquisition Policy Analysis Center (APAC). Reporting directly to the Under Secretary of Defense for Acquisition Technology & Logistics, he conducted strategic initiatives to improve the performance of the Department of Defense's policies and institutions, crafted affordability policy, and brought new analytic insights into the performance of acquisition and sustainment policies, processes, and tradecraft. For these contributions, Dr. Antón received the Secretary of Defense Medal for Outstanding Public Service in 2017. From 2004 to 2011, Dr. Antón was the director of the Acquisition and Technology Policy Center in RAND's National Security Research Division. This center addressed how accelerating technological change and modernization efforts will transform the U.S. national security establishment. It also explored new acquisition and management strategies and ways to maintain core defense technology and production bases. Dr. Antón earned his M.S. and Ph.D. in information and computer science from the University of California, Irvine, specializing in computational neuroscience and artificial intelligence. His B.S. is in engineering from the University of California, Los Angeles, specializing in computer engineering.

Sharon Beermann-Curtin

Member

Sharon A. Beermann-Curtin is an independent consultant with over 30 years of government experience in technology and product development. Prior to leaving government service Ms. Beermann-Curtin served as the Acting Director and the Deputy Director in the Office of the Under Secretary of Defense - Research & Engineering, Strategic Capabilities Office (SCO), whose mission is to identify, analyze and accelerate the development and transition of capabilities to counter strategic adversaries. In these roles Ms. Beermann-Curtin grew the organization from a startup task force to an office of innovation within the Department of Defense (DoD). Prior to joining SCO, she served as the Technical Lead for Power & Energy at the Office of Naval Research (ONR) between 2010-2014 managing the organization's high power electrical ship systems, power source and conversion technologies, alternative fuels, and Future Naval Capabilities Power & Energy Pillar. In 2004, Ms. Beermann-Curtin joined the Defense Advanced Research Projects Agency (DARPA) serving as a Program Manager for 5 years. She served in both the Defense Sciences Office and the Microsystems Technology Office with a portfolio of programs focused on power and energy generation and electrical system components, including: batteries, fuel cells, high power capacitors, high power semiconductors (silicon carbide based), and biofuels through chemical synthesis (sunlight to fuel). From 2002-2003 she was a visiting scholar to the Massachusetts Institute of Technology. Ms. Beermann-Curtin has a vast knowledge of DoD acquisition, serving from 1999-2001 as the first Chief Technology Officer for the Program Executive Office – Aircraft Carriers, responsible for the transition of new technologies to both in-service and future aircraft carriers. She also held numerous positions at ONR, including: Acting Deputy Department Head of the Materials and Physicals Sciences and Ship Hull Mechanical & Electrical Science & Technology (S&T) Department; Technology Manager for Ship Systems in the Hull, Mechanical and Electrical S&T Division; and Program Manager for Underwater Weapons Countermeasures. Ms. Beermann-Curtin holds a M.S. in electrical engineering from the University of Rhode Island and a B.S. in electrical engineering from Missouri University of Science and Technology.

Michael A. Fantini

Member

Michael A. Fantini retired from the United States Air Force as a Major General after a 34 year career. He most recently served as the Acting Deputy Chief of Staff for Strategy, Integration and Requirements and Director, Air Force Warfighting Integration Capability (AFWIC), where he led enterprise-wide integration and future force design to enable the Air Force to rapidly transition into a networked, multi-domain 21st century force. Prior to his AFWIC assignment, he was the director of Global Power Programs in the Office of the Secretary of the Air Force for acquisition, technology, and logistics (SAF/AQ). Previously, Gen. Fantini served as Commander, Kandahar Airfield (COMKAF-NATO), Afghanistan. As COMKAF, he was responsible for the operational efficiency and readiness of Kandahar Airfield. He acted as senior airfield authority and a task force commander-equivalent in defense of the airfield exercising centralized coordination of airfield operations, logistics, NATO assets and real estate management, while leading all force protection actions in defense of nearly 22,000 assigned and attached personnel. Gen. Fantini has served in a variety of operational assignments as an F-16 pilot, instructor pilot and weapons officer. He has commanded a fighter squadron, the 332nd Expeditionary Operations Group in Balad, Iraq, the 82nd Training Wing, Sheppard Air Force Base, Texas, and the 451st Air Expeditionary Wing, Kandahar, Afghanistan. He has served in multiple staff positions, including Chief of the Fighter Weapons Branch, Secretary of the Air Force Office of Special Programs; Operations Officer and Deputy Division Chief of Global Force Management at the Joint Operations Directorate; Director, Combat Force Application and Operational Capabilities Requirements. Gen. Fantini earned his B.S. in mechanical engineering from the Catholic University of America, a masters in aviation science from Embry-Riddle University, and a masters in national security studies from the National War College. Gen. Fantini was a command pilot with more than 3,400 hours in the MQ-9, F-16, T-37 and T-38.

Priscilla E. Guthrie

Member

Priscilla E. Guthrie is a Fellow in the Information Technology and Systems Division at the Institute for Defense Analyses. Previously, she served as special command advisor, Cyber Security/Information Technology/Information Assurance for U.S. Cyber Command. Prior to that, she was a vice president at ViaSat, Inc. In 2009, Ms. Gutherie was confirmed by the Senate as the chief information officer in the Office of the Director of National Intelligence (ODNI). She also served as the director of the Information Technology and Systems Division at IDA and the Deputy Assistant Secretary of Defense (Deputy Chief Information Officer) at the Department of Defense (DoD). Before moving to the Pentagon, Ms. Gutherie was a vice president of TRW Inc., where she led business units in defense, intelligence, automotive, and information technology. Ms. Gutherie supports various advisory groups for the DoD, primarily in the areas of cybersecurity and information technology, including the United States Strategic Command’s Strategic Advisory Group, the Defense Science Board, and several outside advisory boards including Penn State’s Outreach and Online Advisory Board, and the Society of Distinguished Alumni executive board. She has an M.B.A. from Marymount College and a B.S.E.E. from the Pennsylvania State University.

Paul G. Kaminski

Member

Paul G. Kaminski (NAE) is chairman and chief executive officer of Technovation Inc., a consulting company dedicated to fostering innovation and the development and application of advanced technology. He is a former Undersecretary of Defense (Acquisition, Technology, and Logistics) and was responsible for all Department of Defense (DoD) research, development, and acquisition programs. During his Air Force career, he served as director for low observables technology, with responsibility for overseeing the development, production, and fielding of major “stealth” systems (e.g., F-117, B-2). He also led the initial development of a National Reconnaissance Office space system and related sensor technology. His government advisory memberships have included the Senate Select Committee on Intelligence Technical Advisory Board, the Defense Science Board (chairman two times) the President’s Intelligence Advisory Board, the Director for National Intelligence’s Senior Advisory Group, and the FBI Director’s Advisory Board. He is a fellow of the Institute for Electrical and Electronics Engineers (IEEE) and a Fellow & Honorary Fellow of the American Institute of Aeronautics and Astronautics (AIAA). He has authored numerous publications dealing with inertial and terminal guidance system performance, simulation techniques, and Kalman filtering and numerical techniques applied to estimation problems. He received a Bachelor of Science from the Air Force Academy, Master of Science degrees in both Aeronautics and Astronautics and in Electrical Engineering from the Massachusetts Institute of Technology, and a Ph.D. in Aeronautics and Astronautics from Stanford University. He received the National Medal of Technology in 2006. Department of Defense Medal for Distinguished Public Service - 5 awards, Defense Distinguished Service Medal, Director of Central Intelligence Director’s Award, DIA Director’s Award, Air Force Academy 2002 Distinguished Graduate Award, the Ronald Reagan Award for Missile Defense, the Perry Award for precision strike, the Reed award for Aeronautics, The IEEE Simon Ramo award for Systems Engineering, the IISS Possony Medal for Outstanding Contributions to Strategic Progress through Science and Technology, and was elected to the National Aviation Hall of Fame in 2020.

Thomas A. Longstaff

Member

Thomas A. Longstaff is chief technology officer (CTO) at Carnegie Mellon University's Software Engineering Institute (SEI). As CTO, Dr. Longstaff is responsible for formulating a technical strategy and leading the funded research program of the institute based on current and predicted future trends in technology, government, and industry. Before joining the SEI as CTO in 2018, Dr. Longstaff was a program manager and principal cybersecurity strategist for the Asymmetric Operations Sector of the Johns Hopkins University Applied Physics Laboratory (APL), where he led projects on behalf of the U.S. government, including nuclear command and control, automated incident response, technology transition of cyber research and development, information assurance, intelligence, and global information networks. He also was chair of the Computer Science, Cybersecurity, and Information Systems Engineering Programs and co-chair of Data Science in the Whiting School at Johns Hopkins. His academic publications span topics such as malware analysis, information survivability, insider threat, intruder modeling, and intrusion detection. He maintains an active role in the information assurance community and regularly advises organizations on the future of network threat and information assurance. He is an editor for Computers and Security, and has previously served as associate editor for IEEE Security and Privacy; general chair for the New Security Paradigms Workshop and Homeland Security Technology Conference; and numerous other program and advisory committees. Prior to joining the staff at APL, Dr. Longstaff was the deputy director for technology for the Computer Emergency Response Team (CERT) Division at the Software Engineering Institute. In his 15-year tenure at the SEI CERT Division, he helped create many of the projects and centers that made the program an internationally recognized network security organization. His work included assisting the Department of Homeland Security and other agencies to use response and vulnerability data to define and direct a research and operations program in analysis and prediction of network security and cyber terrorism events. Dr. Longstaff received his bachelor's degree in physics and mathematics from Boston University and his master's degree in applied science and his Ph.D. in computer science from the University of California, Davis.

Katharina G. McFarland

Member

Katharina G. McFarland is currently serving as a commissioner on the National Security Commission on Artificial Intelligence (NSCAI) and the chair of the Board on Army Research and Development at the National Academies of Sciences, Engineering, and Medicine. She retired in January 2017 as the Assistant Secretary of Defense for Acquisition and Acting Assistant Secretary of the Army (Acquisition, Logistics & Technology) following designation by President Barack Obama on February 1, 2016. As Assistant Secretary of Defense for Acquisition, confirmed May of 2012, she served as principle acquisition advisor to the Secretary of Defense and the Undersecretary of Defense for Acquisition, Technology, and Logistics (AT&L) on all DOD and IC acquisition matters and had oversight of the Defense Acquisition University, The Human Capitol Office (All Acquisition Workforce), Program Assessment and Root Cause Assessment, and Defense Contract Management Agency. As Assistant Secretary of the Army (Acquisition, Logistics & Technology) and Army Acquisition Executive, Mrs. McFarland oversaw the execution of the Army's acquisition function, including life cycle management and sustainment of Army weapons systems and research and development programs, and managed the Army Acquisition Corps and greater Army Acquisition Workforce. Mrs. McFarland also served as the science advisor to the Secretary of the Army and as the Army's senior research and development official and senior procurement executive. Prior to these roles, she served as the president of the Defense Acquisition University (DAU). Under her leadership, DAU provided practitioner training, career management, and services to enable the acquisition, technology, logistics, and requirements community to make smart business decisions and deliver timely and affordable capabilities to the Warfighter. Prior to joining DAU, Mrs. McFarland was the Director for Acquisition for the Missile Defense Agency (MDA), a position she held since May, 2006. As MDA's principal acquisition executive, Mrs. McFarland advised the Director of MDA on all acquisition, contracting and small business decisions. Other core responsibilities included the development of process activities and program policy associated with the execution of the single integrated Ballistic Missile Defense System research, development and test program, and establishment of the Baseline Execution Review to ensure an integrated program execution of the BMDS occurred across the baselines of schedule, cost, performance, contracting, test and operational delivery. Mrs. McFarland began her civil service career in 1986 as a general engineer at Headquarters Marine Corps where she was accredited as a materials, mechanical, civil, and electronics engineer. She has received an Honorary Doctoral of Engineering from the University of Cranfield, United Kingdom; the Presidential Meritorious Executive Rank Award, the Secretary of Defense Medal for Meritorious Civilian Service Award, the Department of the Navy Civilian Tester of the Year Award, and the Navy and United States Marine Corps Commendation Medal for Meritorious Civilian Service. She is Defense Acquisition Workforce Improvement Act (DAWIA) Level-III-certified in program management, engineering, and testing as well as having a professional engineer license and having attained her Project Management Professional (PMP) certification.

Gunasekaran Seetharaman

Member

Guna Seetharaman is the U.S. Navy Senior Scientist (ST) for advanced computing concepts and the Chief Scientist of computation, Center for Computational Sciences at the Naval Research Laboratory (NRL). He joined NRL in June 2015. He also served as a senior scientific advisor at the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaisance-Electronic Warfare (C5ISR-EW) Directorate in the Office of the Under Secretary of Defense Research and Engineering, between 2017-2020. He has worked on computer vision, parallel computing, and machine perception algorithms for over thirty years. He started his academic career at University of Louisiana, Lafayette in 1988. He joined the Air Force Institute of Technology (AFIT) in 2003. He moved to the Air Force Research Laboratory in 2008 before joining NRL. He also held visiting professor positions as a Centre National de la Recherche Scientifique (CNRS) research professor at the University of Paris XI and as a distinguished professor at the Indian Institute of Technology, Mumbai. At AFIT, he worked in a team for prototyping a wide area motion imaging (WAMI) platform that was transitioned to theater. He collaboratively led Team Cajun-Bot and fielded two unmanned vehicles at the Defense Advanced Research Projects Agency (DARPA) grand challenge named Cajun-Bot and Rajin-Bot. He is a fellow of the Institute of Electrical and Electronics Engineers (IEEE), recognized for his contributions to high performance computer vision algorithms for airborne imagery, and served as the elected section chair of IEEE Mohawk Valley Section Region 1. He was inducted into the Electronic Warfare Technology Hall of Fame in 2020, and is a member of Tau Beta Pi, Eta Kappa Nu, Upsilon Pi Epsilon, and Phi Beta Delta honor societies. Dr. Seetharaman serves as an associate editor of the Association for Computing Machinery journal of computing surveys. He earned his Ph.D. in electrical and computer engineering from the University of Miami, M.Tech. in electrical engineering from the Indian Institute of Technology, Madras, and B.E. in electronics and communication engineering from the University of Madras.

David M. Van Buren

Member

David M. Van Buren is chief executive officer of Crossroads Management, a business strategy and program development firm. He sits on multiple boards and consults for high technology, as well as internationally owned firms. Prior to Crossroads, Mr. Van Buren served as the L3 Technologies senior vice president for program development. His responsibilities included corporate business strategy, corporate international operations, classified program development and security infrastructure, and corporate quality and continuous program improvement. Before joining L3, Mr. Van Buren was the Air Force service acquisition executive (SAE) from 2009 to 2012, where he was responsible for all Air Force research, development and acquisition activities. He directed approximately $70 billion of annual investments that included major programs like the B-21, F-35, KC-46A and all space and weapons programs, as well as information technology, cyber, command and control and intelligence, surveillance, and reconnaisance (ISR) systems. He was also responsible for initiating the classified family of systems in 2010. Mr. Van Buren possesses more than 40 years of business experience in the Air Force, large defense corporations, and private equity owned small and medium aerospace and commercial high-technology firms. These technology areas included hyperspectral imaging; laser communications; alternative power sources; avionics; high-speed processing; compound semi-conductors; and satellite power systems. Previously, Mr. Van Buren was vice president and deputy program manager for the B-2 bomber at Northrop Corporation, and project manager on several classified airborne platforms, including the F-117A at Lockheed. Prior to his tenure at Lockheed, he served on active duty in fighter operations and program management in the Air Force for nine years, including two operational tours in Southeast Asia. Mr. Van Buren earned his B.A. degree in science and mathematics from the University of Illinois and his M.A. in industrial management from Central Michigan University. He has also completed an executive engineering program from Stanford University.

Ellen Chou

Staff Officer

Ellen Y. Chou is the Director of the Air Force Studies Board and is responsible for directing all program and research activities conducted under the auspices of the AFSB. Prior to joining the Academies, she worked as a Program Director in the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics in the Department of Defense, where she provided strategic leadership on the Department’s acquisition efficiency and improvement initiatives and directed industry relations. Ms. Chou also worked for more than 15 years in industry as a Program Manager, responsible for technical, financial, and contractual oversight of multiple professional services contracts in support of the United States Air Force. She earned her Master of Arts degree in security policy studies with honors from the Elliott School of International Affairs at the George Washington University and Bachelor of Arts degrees with honors in public policy studies and economics from the University of Chicago. She is a certified Contracting Officer Representative (COR) and has completed executive-level education at Harvard University’s Kennedy School.