Army Science and Technology Roundtable

Committee

Michael Bear

Chair

Dr. Michael Bear is a Vice President at Booz Allen Hamilton focusing on digital and systems engineering. Previously he was a Technical Director in BAE Systems' Electronics System Sector with over 30 years of experience migrating advanced technologies to national air and space systems. He also serves as the S&T Chair of the Air Force Scientific Advisory Board and led, or played major roles, in studies on mitigating cyber vulnerabilities in air and space embedded systems, data analytics for operational decision making, and improving the cyber hardness and reliability of the upcoming nuclear modernization platforms. He has co-authored a national space development standard for mission-critical electronics, and guidelines addressing cyber and physical threats to microelectronics throughout the supply chain. In addition to BAE Systems, Dr. Bear has worked at IBM, Loral and Lockheed Martin addressing all elements of microelectronics and electronic development from the underlying Physics of Failure to System-on-Chip (SoC) development through payload design, manufacturing and qualification. Additionally, Dr. Bear has taught seminars on the secure methods to develop microelectronics for mission-critical applications. He has led the development of many complex SoCs, including a multi-core Digital Signal Processor for space applications. He has been instrumental in creating programs to bring advanced analytics and machine learning to C4ISR platforms. Dr. Bear has worked on multiple DARPA programs, including thermal imaging and microelectronic reliability. He has authored multi-scale physical simulations to explore material processing techniques needed to produce advanced electronics and sensors. Dr. Bear is a standing member in the American Association for the Advancement of Science (AAAS), American Physical Society and IEEE, where he is a member of the IEEE Cyber-Physical Systems and Human-Systems Integration Technical Committees. He is a leader in the reliability and resilience of complex systems through cyber hardening and systems engineering with a range of publications and patents. He is an active member of National Academy of Science, Engineering, and Medicines' Intelligence Science & Technology Expert Group (ISTEG). He received five BAE Systems Chairman's Awards for work in microelectronics and systems development. Dr. Bear received his Ph.D. in Computational Physics and M.S in Applied Physics from George Mason University and a B.S. in Applied Physics from Purdue University, where he became a member of Phi Beta Kappa.

Stephen B. Bayne

Member

Dr. Stephen B. Bayne received his Ph.D., MS, and BS degrees in Electrical Engineering from Texas Tech University. After completing his doctoral studies, he joined the Naval Research Lab (NRL), where he was an electronics engineer designing advanced power electronics systems for space power applications. After two and a half years at NRL, Dr. Bayne transferred to the Army Research Lab (ARL), where he was instrumental in developing a high-temperature power electronic program. Dr. Bayne was promoted to Team Lead at ARL, where he led the power components team, which consisted of five engineers. As the Team Leader, Dr. Bayne was responsible for advanced research in high-temperature and advanced power devices for Army applications. After one and a half years as Team Lead, Dr. Bayne was promoted to Branch Chief of the Directed Energy Branch. After eight years at the ARL, Dr. Bayne transitioned to academia, where he is a Full Professor and Interim Dean of the College of Engineering at Texas Tech University. His research interests at Texas Tech are Power Electronics, Pulsed Power, Power semiconductors, and Renewable Energy.

With more than 227 publications, a book and a book chapter to his credit, Dr. Bayne also has two U.S. patents. He has earned several research and teaching awards, most notably the Barnie E. Rushing, Jr. Faculty Distinguished Research Award STEM Disciplines; TTU Lockheed Martin Excellence in Engineering Teaching award; Army Greatest Invention Award; and the Army Research Lab Achievement Award for Engineering.

Ratna B. Chinnam

Member

Dr. Ratna Babu Chinnam is an expert in AI, Big Data & Business Analytics and is a Professor and Chair of the Industrial & Systems Engineering Department at Wayne State University. He authored over 150 technical publications and his research interests include decision intelligence, big data, operations management, supply chain management, sustainability, and smart engineering systems. His research is funded by the U.S. NSF, DoT, DoD, DoEd, and VA. He carried out collaborative research with such companies as Ford Motor Company, General Dynamics, Intel, and Goodyear. He graduated over 45 doctoral students and is awarded the 2012 Outstanding Graduate Mentor Award by Wayne State University. In 2022, he received an Outstanding Professor Award from the Industrial Engineering & Operations Management Society. He is also the CEO for Agile Systems LLC, a small business developing decision intelligence platforms for the U.S. Army though multiple SBIR Phase-I and Phase-II grants. He received his B.S. degree in Mechanical Engineering from Manipal Institute of Technology of Mangalore University (India) in 1988 and the M.S. and Ph.D. degrees in Industrial Engineering from Texas Tech University (U.S.A.) in 1990 and 1994, respectively.

James J. Hvizd

Member

James Hvizd is Executive General Manager, C4ISR, Avionics, and Manned/Unmanned Systems, GE Aerospace. Prior to this he was the Vice President of Business Development for L3Harris Technologies' Integrated Mission Systems Segment. In this position, he reported directly to the segment president and partners closely with the business sector presidents to create and execute strategies that develop global opportunities for profitable & sustainable growth for L3Harris.

Jim joined L3Harris from Raytheon Space and Airborne Systems where he was the Vice President, Business Development, responsible for SAS' domestic and international business development, including shaping and growing the business, cultivating existing and developing new customer relationships, and aligning program execution and new business strategies. Jim was also responsible for architecting and executing enterprise-wide strategic programs, pursuits and cross-business campaigns.

Before rejoining SAS, Jim was Vice President of Transport and Mission Aircraft for Airbus Defense and Space (formerly EADS North America). There, he had profit and loss responsibility for U.S. missionized aircraft programs, such as the U.S. Coast Guard HC-144A, and campaign/P&L responsibility for the U.S. KC-45 Aerial Re-fueling Tanker. He led the Airbus/EADS KC-45 Tanker capture campaign and also served as U.S. representative on the Airbus Corporate Program Management steering council.

Prior to Airbus, Hvizd held positions of increasing responsibility at Raytheon SAS. As Director of Enterprise Pursuits, he oversaw strategy and program execution of multiple strategic campaigns. These included Space-based EO payloads, military aircraft AESA radars and passive targeting sensors, and missionized business jet ISR platforms. As Senior Manager for GPS Avionics, he led program execution and P&L responsibility for all anti-jam GPS avionics programs.

Before that, Jim worked for Lockheed Martin Advanced Development Programs, where he was technical director and project manager for guidance, navigation and control systems for a range of unmanned and manned platforms.

Jim graduated from the University of Illinois, Champaign-Urbana with a Bachelor of Science degree in Aeronautical and Astronautical Engineering. He also earned a master's degree in Engineering, Systems Science from the University of California, San Diego. He has completed Program Management certificate training at DEU and Executive Management training at Duke University. A published author, he has written technical articles for the Institute of Navigation.

Kevin T. Kornegay

Member

Dr. Kevin T. Kornegay received a B.S. degree in electrical engineering from Pratt Institute, Brooklyn, NY, in 1985 and an M.S. and Ph.D. in electrical engineering from the University of California at Berkeley in 1990 and 1992, respectively. He is the Eugene DeLoatch Endowed Professor and Director of the Cybersecurity Assurance and Policy (CAP) Center at Morgan State University in Baltimore, MD. His research interests include hardware assurance, reverse engineering, secure embedded systems, and smart home/building security. He serves on the technical program committees of several international conferences, including the IEEE Symposium on Hardware Oriented Security and Trust (HOST), the IEEE Secure Development Conference (SECDEV), USENIX Security 2020, the IEEE Physical Assurance and Inspection of Electronics (PAINE), and the ACM Great Lakes Symposium on VLSI (GLSVLSI). He also serves on the NIST IoT Advisory Board, the State of Maryland Cybersecurity Council, and the National Academy of Sciences Intelligence Community Science Board Cybersecurity Committee. He is the recipient of numerous awards, including He is the recipient of multiple awards, including the NSF CAREER Award, IBM Faculty Partnership Award, National Semiconductor Faculty Development Award, and the General Motors Faculty Fellowship Award. He is currently a senior member of the IEEE and a member of the Eta Kappa Nu and Tau Beta Pi engineering honor societies.

Robert A. Lieberman

Member

Dr. Robert Lieberman, President of Lumoptix LLC, is a Member of the U.S. National Academy of Engineering (NAE). Educated in solid-state physics and molecular biophysics at the University of Michigan, Dr. Lieberman worked for ten years at AT&T Bell Labs in the Semiconductor Development, Physics Research, and Materials Research Laboratories.

Dr. Lieberman became Vice President of R&D at Physical Optics Corporation (POC) in 1991, and in 1998 spun off his division of POC to found Intelligent Optical Systems (IOS). While serving as President and CTO, Dr. Lieberman maintained an active research career as Principal Investigator for NSF, NIH, DOE, NASA, DARPA, Army, and other U.S. agencies until his retirement from IOS in 2015. He now works on scientific and engineering research and policy through his consulting firm, Lumoptix.

Dr. Lieberman holds 34 U.S. patents on biological, physical, and chemical sensors and systems, has organized and chaired more than 30 conferences on optical sensors, and has helped found several companies. Dr. Lieberman is a Life Member of IEEE, a Fellow of SPIE, and was SPIE’s 2016 President. He was a founding member of the National Photonics Initiative and currently serves as a director and/or advisory board member of several for-profit and nonprofit organizations.

ML Mackey

Member

ML Mackey is the CEO and a Co-founder of Beacon Interactive Systems, a digital innovator and a non-traditional defense contractor headquartered in Waltham, MA. Beacon has successfully delivered multiple products derived from initial SBIR investments into DoD Programs of Record.

An Executive Committee Board Member of the National Defense Industrial Association (NDIA) Ms. Mackey is also the Chair of NDIA's Small Business Division. She is a past Chair of the National Small Business Association (NSBA) and in 2022 was named the NSBA Small Business Advocate of the Year. In 2023 she was appointed by the SBA Administrator to be one of the 15 members of the Invention, Innovation, and Entrepreneurship Federal Advisory Committee. A group set up to advise the SBA on policy matters to foster a thriving and equitable national Small Business and Startup Innovation Ecosystem.
Ms. Mackey is a recognized thought leader on Small Business in the Defense Industrial Base and is frequently asked to contribute her expertise at both regional and national venues, including multiple Congressional Hearings, National Academies of Science engagements, and national media outlets including the Wall Street Journal, Washington Post and Politico.

Prior to co-founding Beacon, she worked at Digital Equipment Corporation where she began her career as a hardware engineer. Ms. Mackey is a proud graduate of Lehigh University where she received a Bachelors of Science in Electrical Engineering.

Philip Perconti

Member

Dr. Philip Perconti is the Leonardo DRS Chief Technology Officer leading the corporate research and development, accelerating technology innovation, and expanding partnerships for integrated technology solutions to produce enhanced warfighting capabilities. He was the Deputy Assistant Secretary of the Army for Research and Technology and Army Chief Scientist. He was responsible for oversight of the Army's Research and Technology program which spanned 17 Laboratories and Engineering Centers, employing 12,000 scientists and engineers. He served as Director of the U.S. Army Research Laboratory (ARL), the Senior Executive responsible leading strategy and programs for the Army's Corporate Research Lab. He holds a Doctor of Science degree from The George Washington University. He is a Federal Laboratory Consortium Laboratory Director of the Year. He is a Technical Fellow of the Military Sensing Symposium. His commendations include the Distinguished Presidential Rank Award, and the Army Distinguished Civilian Service Award. He has published extensively on many aspects of military sensing, machine learning and countermine/counter IED technology. He has authored and co-authored over 50 publications, including three book chapters.

Yvonne D. Rivera

Member

Ms. Yvonne Rivera is a pioneer in the male-dominated field of IT, having co-founded one of the most innovative cybersecurity companies in the nation. She joined the Army at 17, rising to the rank of Sergeant and receiving the Meritorious Service Medal (MSM) for introducing the Defense Connect Online (DCO) software to simplify communication between units. This software was highly successful and is still used today. During her time in the Army, Yvonne also served three tours of duty overseas, including two in Iraq and one in Afghanistan. She administrated the coalition network infrastructure for the International Security Assistance Force. Yvonne furthered her education in IT by earning her Bachelor of Science from DeVry University. Following her time in the Army, Yvonne spent 10+ years working for the government as an employee and contractor, providing support and insight into cybersecurity for the Army, Navy, Marines, FBI, and DoD. This experience gave her the knowledge to found her own company, CyberMyte, which helps small businesses bring their innovations to the federal government atop a secure and efficient platform. Yvonne's passion for enabling through cybersecurity and willingness to make herself heard earned her the nicknames Little Fury, Mighty Mouse, and the Short Stick of Dynamite.

Alissa C. Roath

Member

Ms. Alissa Roath serves as the Executive Director of the National Advanced Mobility Consortium (NAMC), the proven source of ground vehicle, automotive and intelligent systems technology for the U.S. military. Roath oversees the $200M nonprofit’s enterprise operations, strategy, and relationships. As the second longest running OTA-enabled consortium, NAMC has proven to be critical in the advancement of innovation within the Department of Defense. Roath was promoted to Executive Director after serving as the Director of Operations for 6-years in which she led the organization through a transition to a standalone enterprise in late 2020. As Executive Director she also leverages her extensive experience in process development, project management, grant writing, business administration, talent management and corporate leadership to advance innovation for the warfighter.

Roath also sits on the board of the Women in Defense Michigan Chapter as the Director of Communications. Ms. Roath holds a Bachelor of Arts in Art History from Wayne State University. She resides in Michigan with her family.

Imee G. Smith

Member

Dr. Imee Smith is a Science Integration Officer in the Office of the Chief Scientist at the Army Research Office (ARO), part of the U.S. Army Combat Capabilities Development Command (DEVCOM) Army Research Laboratory (ARL). In this capacity, she helps focus the ARO's strategic planning and corporate program investments, working to maximize the impact of the ARO's extramural investments. Previous to this position, Dr. Smith served as the Program Manager of the Army Small Business Technology Transfer (STTR), where she led the Army's program to stimulate technological innovation and bridge the gap between basic science and commercialization of resulting innovations by supporting partnerships between small businesses and nonprofit research institutions.

Dr. Smith began her career in the Army as a chemist with the U.S. Army Corps of Engineers with a research concentration on the development of real-time, portable environmental toxin sensing and responsive materials. Her work has been recognized with the ERDC Program Development Achievement Award, the ERDC Award for Outstanding Team Effort, and a Department of the Army Achievement Medal for Civilian Service. Dr. Smith earned her B.S. in Biochemistry from the University of Virginia and her Ph.D. in Bioanalytical Chemistry from the Pennsylvania State University.

Steven Darbes

Staff Officer