

National Security Space Defense and Protection

Committee

James O. Ellis, Jr., USN

Co-Chair

James O. Ellis, Jr. (NAE) currently serves as an Annenberg Distinguished Visiting Fellow at the Hoover Institution at Stanford University. He retired as President and Chief Executive Officer of the Institute of Nuclear Power Operations (INPO), located in Atlanta, Georgia, on May 18, 2012. In 2004, Admiral Ellis completed a distinguished 39-year Navy career as Commander of the United States Strategic Command during a time of challenge and change. In this role, he was responsible for the global command and control of U.S. strategic and space forces, reporting directly to the Secretary of Defense. A 1969 graduate of the U.S. Naval Academy, Admiral Ellis was designated a Naval aviator in 1971. His service as a Navy fighter pilot included tours with two fighter squadrons, and assignment as Commanding Officer of an F/A-18 strike/fighter squadron. In 1991, he assumed command of the USS Abraham Lincoln, a nuclear-powered aircraft carrier. After selection to Rear Admiral, in 1996 he served as a carrier battle group commander leading contingency response operations in the Taiwan Straits. His shore assignments included senior military staff tours directing operations for the U.S. Atlantic Fleet and as Deputy Chief of Naval Operations (Plans, Policy, and Operations). He also served as Commander in Chief, U.S. Naval Forces, Europe and Commander in Chief, Allied Forces, Southern Europe during a time of historic NATO expansion and led United States and NATO forces in combat and humanitarian operations during the 1999 Kosovo crisis. Mr. Ellis holds an M.S. in aerospace engineering from the Georgia Institute of Technology and, in 2005, was inducted into the school's Engineering Hall of Fame. He also has an M.S. in aeronautical systems from the University of West Florida. He completed U.S. Navy Nuclear Power Training and was qualified in the operation and maintenance of naval nuclear propulsion plants. He is a graduate of the Navy Test Pilot School, the Navy Fighter Weapons School (Top Gun), and the Senior Officer Program in National Security Strategy at Harvard University. In 2013, Mr. Ellis was elected to the National Academy of Engineering. His personal awards include the Defense Distinguished Service Medal (three awards), Navy Distinguished Service Medal (two awards), Legion of Merit (four awards), Defense Meritorious Service Medal, Meritorious Service Medal (two awards), and the Navy Commendation Medal, as well as numerous campaign and service awards. He was presented the Order of Merit of the Republic of Hungary, the Star of Merit and Honor from the Greek Ministry of Defense, and the Joint Forces Medal of Honor, and the Grand Order of Merit of the Italian Republic. Mr. Ellis currently serves on the board of directors of the Lockheed Martin Corporation, Dominion Resources, and Level 3 Communications, where he is the non-executive Chairman of the Board. In 2009, he completed three years of service as a Presidential Appointee on the President's Intelligence Advisory Board and in 2006 he was a member of the Military Advisory Panel to the Iraq Study Group.

Martin C. Faga

Co-Chair

Martin C. Faga is a retired President and Chief Executive Officer of the MITRE Corporation. He was a member of the MITRE Board of Trustees until 2012. Before joining MITRE, Mr. Faga served from 1989 until 1993 as Assistant Secretary of the Air Force for Space, where he was responsible for overall supervision of Air Force space matters. At the same time, he served as Director of the National Reconnaissance Office (NRO), responsible to the secretary of defense and the Director of Central Intelligence for the development, acquisition and operation of all U.S. satellite reconnaissance programs. Mr. Faga is a Fellow of the National Academy of Public Administration, and is a member of the Board of Directors of the Association of Former Intelligence Officers. He served from 2006-2009 on the President's Intelligence Advisory Board and was a member of the Public Interest Declassification Board from 2006 to 2014. Since retiring from MITRE, Mr. Faga has been elected to the Boards of Directors of Alliant Techsystems, DigitalGlobe and Inmarsat Government. He is Chairman of the Board of Thomson Reuters Special Services. He has also served on the Board of Electronic Data Systems. Mr. Faga received master and bachelor of science degrees in electrical engineering from Lehigh University in 1964 and 1963.

Allison Astorino-Courtois

Member

Allison Astorino-Courtois is executive vice president at National Security Innovations (NSI), Inc. She has served as technical lead on a number of multi-layer analysis projects sponsored by the Office of the Secretary of Defense in support of U.S. forces and combatant commands. Prior to joining NSI, Dr. Astorino-Courtois worked for Science Applications International Corporation (2004-2007) where she served as a U.S. Strategic Command liaison to U.S. and international communities, and was a tenured associate professor of international relations at Texas A&M University (1994-2003) where her research focused on the cognitive aspects of foreign policy decision making. She has received a number of academic grants and awards and has published articles in multiple peer-reviewed journals including International Studies Quarterly, Journal of Conflict Resolution, Political Psychology, Journal of Politics and Conflict Management and Peace Science. She has also taught at Creighton University and as a visiting instructor at the U.S. Military Academy at West Point. Dr. Astorino-Courtois earned her Ph.D. in international relations from New York University. She served as a co-chair of the NRC Committee on U.S. Air Force Strategic Deterrence Military Capabilities in the 21st Century Security Environment.

Owen C. Brown

Member

Owen C. Brown is currently chief technology officer of KTSi, a wholly-owned subsidiary of the Scitor Corporation. In this role he acts as the lead executive responsible for management, development, and integration of the company's intellectual offering, enabling and enhancing customer technical objectives. He provides direct support to the Defense Advanced Research Projects Agency (DARPA) and the U.S. Air Force on a variety of complex space system programs. His efforts include assessments of ongoing programs directly to the commander of Air Force Space Command. From 2003 to 2009 Dr. Brown was a program manager in DARPA's Tactical Technology Office, where he managed multiple small spacecraft programs. He led the MiTEx space program from design to highly successful on-orbit demonstration and was later recognized as one of DARPA's top program managers for this effort. While at DARPA Dr. Brown created the fractionated spacecraft architectural concept and led the initial stages of the associated System F6 program. He worked for several years as a spacecraft engineer at Space Systems/Loral supporting the design, test, build, and launch of multiple geosynchronous spacecraft for customers including Intelsat, NTT DoCoMo, NASA/NOAA, DishTV, and International Space Station. Dr. Brown served as a nuclear submarine officer onboard fast attack submarines and retired after completing 20 combined years of active duty and reserve service. He holds a Ph.D. in aeronautical and astronautical engineering from Stanford University.

Vincent Chan

Member

Vincent W. S. Chan is the Joan and Irwin Jacobs Chair Professor of electrical engineering and computer science at the Massachusetts Institute of Technology (MIT). From 1974 to 1977, he was an assistant professor of electrical engineering at Cornell University. He joined MIT Lincoln Laboratory in 1977 and had been Division Head of the Communications and Information Technology Division until becoming the Director of the Laboratory for Information and Decision Systems (1999–2007) at MIT. He founded and is currently a member of the Claude E. Shannon Communication and Network Group at MIT's Research Laboratory of Electronics of. In July 1983, he initiated the Laser Intersatellite Transmission Experiment Program and in 1997, the follow-on GeoLITE Program. In 1989, he led the All-Optical-Network Consortium (1990-1997) formed among MIT, AT&T, and the Digital Equipment Corporation. He also served as PI of the Next Generation Internet Consortium, ONRAMP (1998-2003) formed among AT&T, Cabletron, MIT, Nortel and JDS; and a Satellite Networking Research Consortium funded by the National Science Foundation formed between MIT, Motorola, Teledesic, and Globalstar. In 2009 he founded and served as the Editor-in-Chief of the Journal of Optical Communications and Networking until 2012. He has served in many government advisory boards and is currently a Member of the Corporation of Draper Laboratory and was on the Board of Governors of the IEEE Communication Society as Vice President of Publications. He is currently serving on the NSAAB's R and T Panels and was on the most recent Intelligence Science Board of the Office of the Director of National Intelligence. He is an elected member of Eta-Kappa-Nu, Tau Beta Pi, and Sigma Xi, and the Fellow of the IEEE and the Optical Society of America. Throughout his career, Professor Chan has spent his research focus on communication and networks, particularly on free space and fiber optical communication and networks and satellite communications. His work has led the way to the first successful ultra-high rate laser communication demonstration in space and early deployment of WDM optical networks. His recent research emphasis is on heterogeneous (satcom, wireless and fiber) network architectures with stringent performance demands. He received his Ph.D. in electrical engineering from MIT.

Michael D. Griffin

Member

Michael D. Griffin (NAE) is the chairman and chief executive officer of Schafer Corporation, a leading provider of scientific, engineering, and technical services and products in the national security sector. He was previously King-McDonald Eminent Scholar and Professor of Mechanical and Aerospace Engineering at the University of Alabama in Huntsville, was the Administrator of NASA from 2005-2009, and prior to that was the Space Department Head at the Johns Hopkins University Applied Physics Laboratory. He has also held numerous executive positions with industry, including President and Chief Operating Officer of In-Q-Tel, Chief Executive Officer of Magellan Systems, General Manager of Orbital Science Corporation's Space Systems Group, and Executive Vice President and Chief Technical Officer at Orbital. Dr. Griffin's earlier career includes service as both Chief Engineer and Associate Administrator for Exploration at NASA, and as the Deputy for Technology at the Strategic Defense Initiative Organization. Prior to joining SDIO in an executive capacity, he played a key role in conceiving and directing several "first of a kind" space tests in support of strategic defense research, development, and flight testing. These included the first space-to-space intercept of a ballistic missile in powered flight, the first broad-spectrum spaceborne reconnaissance of targets and decoys in midcourse flight, and the first space-to-ground reconnaissance of ballistic missiles during the boost phase. He also played a leading role in other space missions in earlier work at the JHU Applied Physics Laboratory, NASA's Jet Propulsion Laboratory, and the Computer Science Corporation. Dr. Griffin was an adjunct professor for thirteen years at the University of Maryland, the Johns Hopkins University, and George Washington University, offering courses in spacecraft design, applied mathematics, guidance and navigation, compressible flow, computational fluid dynamics, spacecraft attitude control, astrodynamics, and introductory aerospace engineering. He is a Registered Professional Engineer in Maryland and California, and is the lead author of over two dozen technical papers and the textbook *Space Vehicle Design*. Griffin is a member of the National Academy of Engineering and the International Academy of Astronautics, an Honorary Fellow and the current President of the American Institute of Aeronautics and Astronautics, a Fellow of the American Astronautical Society, and a Senior Member of the Institute of Electrical and Electronic Engineers. He is the recipient of numerous honors and awards, including the NASA Exceptional Achievement Medal, the AIAA Space Systems Medal and Goddard Astronautics Award, the National Space Club's Goddard Trophy, the Rotary National Award for Space Achievement, the Missile Defense Agency's Ronald Reagan Award, and the Department of Defense Distinguished Public Service Medal, the highest award which can be conferred on a non-government employee. He received his Ph.D. in aerospace engineering from the University of Maryland and has been recognized with honorary doctoral degrees from Florida Southern College and the University of Notre Dame.

Raymond Jeanloz

Member

Raymond Jeanloz (NAS) is Professor in Earth and Planetary Science and in Astronomy at the University of California, Berkeley. His specialties include the constitution and evolution of planetary interiors, and properties of materials at high pressures and temperatures. After completing his Ph.D. at the California Institute of Technology, Jeanloz was on the faculty of Harvard University and then moved to UC Berkeley. Dr. Jeanloz has served on numerous scientific boards and advisory committees, including as chair of the NRC Board on Earth Sciences and Resources (from 2000 to 2002) and as a member of the NRC Committee on International Security and Arms Control (since 2002; chair 2005-2014). Dr. Jeanloz is a member of the Science and Technology Committee advising the LLCs that manage Los Alamos and Livermore laboratories. He is a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Geophysical Union. Dr. Jeanloz received a Ph.D. in geology and geophysics from the California Institute of Technology.

David E. Koplow

Member

David A. Koplow is Professor of Law at Georgetown University. Professor Koplow specializes in the areas of public international law and national security law. He joined the Georgetown Law faculty in 1981. His principal courses have been International Law I (the introductory survey of public international law topics), a seminar in the area of arms control, non-proliferation and terrorism, and the pro-seminar for LLM students in national security law. In addition, he has directed a clinic, the Center for Applied Legal Studies, in which students provide pro bono representation to refugees who seek asylum in the United States because of persecution in their homelands. His government service has included stints as Special Counsel for Arms Control to the General Counsel of the Department of Defense (2009-2011); as Deputy General Counsel for International Affairs at the Department of Defense (1997-1999); and as Attorney-Advisor and Special Assistant to the Director of the U.S. Arms Control and Disarmament Agency (1978-1981). He is a graduate of Harvard College and Yale Law School and a Rhodes Scholar. Most of his scholarly writing concentrates on the intersection between international law and U.S. constitutional law, especially in the areas of arms control and national security and treaty negotiation and implementation. He received a J.D. from Yale University.

L. Roger Mason, Jr.

Member

L. Roger Mason, Jr., is Senior Vice President, National Security and Intelligence and Chief Security Officer at Noblis. Dr. Mason serves as senior vice president and corporate officer responsible for the overall direction of Noblis' national security missions including intelligence, defense, homeland security, and law enforcement. He returns to Noblis after 5 years of service in the Intelligence Community (IC) as the first Assistant Director of National Intelligence for Systems and Resource Analyses (ADNI/SRA). In this capacity, Dr. Mason served as the DNI's principal intelligence officer and trusted advisor on all matters dealing with intelligence capabilities, resources, requirements, systems analysis, program evaluation and cost analysis. He led the establishment of this new capability that combined operations research, decision sciences and business analytics to aid the DNI and senior intelligence agency leaders make difficult decisions on complex issues that spanned every aspect of intelligence from overhead space technologies to counterterrorism. In recognition of his service, Dr. Mason was awarded the National Intelligence Distinguished Service Medal—the IC's highest award. In addition, he led SRA to four National Intelligence Meritorious Unit Commendations and received numerous intelligence agency awards. Prior to federal service, Dr. Mason served in a number of senior executive positions in the national security sector including Vice President at Noblis, Director at the Institute for Defense Analyses, and General Manager of the Advanced Systems Group at General Dynamics (formerly Veridian). Earlier in his career, he led a number of advanced programs combining technology development, system integration, and field operations for military and intelligence missions. He is a nationally recognized expert in intelligence capabilities, operations research, overhead reconnaissance, systems integration, and change leadership. He has published over 35 papers in peer-reviewed journals and symposia and holds 2 U.S. patents dealing with advanced materials and collection devices. Dr. Mason earned his doctorate and master's degrees in engineering physics (nuclear) from the University of Virginia, a master's degree in business administration from the Northwestern University (Kellogg School) and a bachelor's degree in physics from The George Washington University. Additionally, he has been recognized with many professional awards including the Omicron Delta Kappa Leadership Honor Society, Alpha Nu Sigma Honor Society for nuclear science, and the University of Virginia Distinguished Student Award. Dr. Mason is an active leader in the Boy Scouts of America and has been a part of this organization for over 37 years including attaining the rank of Gold Palm Eagle Scout.

John A. Montgomery

Member

John A. Montgomery (NAE) is the Director of Research at the Naval Research Laboratory, where he oversees research and development programs with expenditures of approximately \$1.2 billion per year. He joined the Naval Research Laboratory (NRL) in 1968 as a research physicist in the Advanced Techniques Branch of the Electronic Warfare Division, where he conducted research on a wide range of Electronic Warfare (EW) topics. In 1980, he was selected to head the Off-Board Countermeasures Branch. In May 1985, he was appointed to the Senior Executive Service (SES) and was selected as Superintendent of the Tactical EW Division. He has been responsible for numerous systems that have been developed/approved for operational use by the Navy and other services. He has had great impact through the application of advanced technologies to solve unusual or severe operational deficiencies noted during world crises, most recently in Afghanistan, Iraq, and for Homeland Defense and in the Pacific theater. Dr. Montgomery received the Department of Defense Distinguished Civilian Service Award in 2001. He was recognized by the Department of the Navy Distinguished Civilian Service Award in 1999 and by the Department of the Navy Meritorious Civilian Service Award in 1986. As a member of the SES, he received the Presidential Rank Award of Distinguished Executive in 1991 and again in 2002, and the Presidential Rank Award of Meritorious Executive in 1988, 1999, and again in 2007. He also received the 1997 Dr. Arthur E. Bisson Prize for Naval Technology Achievement, awarded by the Chief of Naval Research in 1998. Further, he has received the Association of Old Crows (Electronic Defense Association) Joint Services Award in 1993. He was an NRL Edison Scholar, and is a member of Sigma Xi. He served as the U.S. National Leader of The Technical Cooperation Program's multinational Group on EW from 1987 to 2002, and served as its Executive Chairman. In 2006, Dr. Montgomery received the Laboratory Director of the Year award from the Federal Laboratory Consortium for Technology Transfer, and in 2011, he received the Roger W. Jones Award for Executive Leadership from American University's School of Public Affairs. Dr. Montgomery received his Ph.D. in physics from the Catholic University of America.

Scott N. Pace

Member

Scott Pace is the Director of the Space Policy Institute and Professor of the Practice of International Affairs at the George Washington University's Elliott School of International Affairs. His research interests include civil, commercial, and national security space policy, and the management of technical innovation. From 2005-2008, he served as the Associate Administrator for Program Analysis and Evaluation at NASA. In this capacity, he was responsible for providing objective studies and analyses in support of policy, program and budget decisions by the NASA Administrator. He previously served as Chief Technologist for Space Communications in NASA's Office of Space Operations where he was responsible for issues related to space-based information systems. He participated in negotiations that resulted in the 2004 GPS-Galileo Agreement between the United States and the European Commission. Dr. Pace also previously served as the Deputy Chief of Staff to NASA Administrator Sean O'Keefe. His primary areas of responsibility included oversight of the President's Management Agenda in Human Capital, Competitive Sourcing, Expanding e-Government, Financial Management, and Integrating Budget and Performance. Prior to NASA, Dr. Pace was the Assistant Director for Space and Aeronautics in the White House Office of Science and Technology Policy (OSTP). There he was responsible for space and aviation-related issues and coordination of civil and commercial space issues through the Space Policy Coordinating Committee of the National Security Council. From 1993-2000, Dr. Pace worked for the RAND Corporation's Science and Technology Policy Institute (STPI) — a federally funded research and development center for the Office of Science and Technology Policy. Dr. Pace was a key member of a successful international effort to preserve radio navigation satellite spectrum at the 1997 World Radiocommunication Conference (WRC-97) and the addition of new spectrum for satellite navigation at WRC-2000. He also was a member of Department of Defense Senior Review Group on Commercial Remote Sensing and the National Research Council's Committee on Earth Sciences. From 1990 to 1993, Dr. Pace served as the Deputy Director and Acting Director of the Office of Space Commerce, in the Office of the Deputy Secretary of the Department of Commerce. Dr. Pace represented the Department to the National Space Council and participated in efforts affecting export controls for space technologies, space trade negotiations with Japan, Russia, China, and Europe, the licensing process for private remote sensing systems, missile proliferation, and the U.S. space industrial base. Dr. Pace received a Ph.D. in policy analysis from the RAND Graduate School.

Thomas E. Romesser

Member

Thomas E. Romesser (NAE) is an independent consultant. Dr. Romesser was chief technology officer for Northrop Grumman Aerospace Systems until the start of 2012 and sector vice president of Aerospace Systems. In these roles he provided senior leadership representation with customers, universities, industry and the rest of the corporation. He also was responsible for technology development to support future programs while maintaining close linkage to legacy programs. Prior to this assignment, Romesser was sector vice president and general manager of Technology & Emerging Systems Division for Northrop Grumman's former Space Technology sector. In this role, he was responsible for the development and execution of Space Technology's strategy to support both near-and long-term business objectives, system enhancements and technology leverage for new business pursuits. He oversaw activities of the Directed Energy Systems and Advanced Concepts organizations as well as the Space Technology Research Laboratories. Previously, Romesser was vice president of Technology Development; responsible for the identification, development, and acquisition of Space Technology's strategic technologies; and managed discretionary investments in technology and product development. Romesser joined Northrop Grumman via the acquisition of TRW in 2002. A vice president since 1998, he previously served as vice president and deputy of the Space & Electronics Engineering organization. Prior to that, he was vice president and general manager of TRW's Space & Technology Division; responsible for spacecraft hardware and software engineering; manufacturing, testing and space vehicle production; as well as chemical and solid-state laser design and development; sensor systems, space and tactical propulsion systems; and research in the physical, chemical and engineering sciences. Since joining the company in 1975, he has been involved in the development and management of a broad range of high technology capabilities that have established and maintained Northrop Grumman's reputation and enabled technological differentiation in the marketplace. Romesser earned a bachelor's degree in physics from Manhattan College and master's and doctorate degrees from the University of Iowa. He is also a graduate of the USC Executive Management Program. Romesser was elected a fellow of the Directed Energy Professional Society in 2002 and a member of the National Academy of Engineering in February 2003. Northrop Grumman Corporation is a leading global security company whose 120,000 employees provide innovative systems, products, and solutions in aerospace, electronics, information systems, shipbuilding and technical services to government and commercial customers worldwide.

William L. Shelton, USAF, Ret.

Member

William L. Shelton retired from the U.S. Air Force in September 2014. His last assignment was as Commander, Air Force Space Command, Peterson Air Force Base, Colorado, where he was responsible for organizing, equipping, training and maintaining mission-ready space and cyberspace forces and capabilities for North American Aerospace Defense Command, U.S. Strategic Command and other combatant commands around the world. General Shelton oversaw Air Force network operations; managed a global network of satellite command and control, communications, missile warning and space launch facilities; and was responsible for space system development and acquisition. He led more than 42,000 professionals assigned to 134 locations worldwide. General Shelton entered the Air Force in 1976 as a graduate of the U.S. Air Force Academy. He served in various assignments, including research and development testing, space operations, and staff work. The general has commanded at the squadron, group, wing and numbered air force levels, and served on the staffs at major command headquarters, Air Force headquarters and the Office of the Secretary of Defense. Prior to assuming his final position, General Shelton was the Assistant Vice Chief of Staff and Director, Air Staff, U.S. Air Force, the Pentagon, Washington, D.C. He holds an M.S. in astronautical engineering from the U.S. Air Force Institute of Technology, Wright-Patterson AFB, Ohio.

James R. Thomson

Member

James Thomson is an aerospace consultant and appointed visiting Industry Director of the Cal Poly CubeSat program. He joined Lockheed Martin in 1981 as an aerodynamics engineer focused on the F-117, U-2 and Unmanned vehicle programs. He assumed a range of progressively more responsible leadership positions beginning with managing the payload and avionics subsystems for the Dark Star UAV program, evolving to his position as Vice President, Special Programs, leading several multi-billion dollar satellite development programs critical to national security. These satellite development programs spanned the entire procurement life-cycle: from the re-start of a cold satellite production line avoiding a national imagery gap, to the capture and start up of a brand new effort, to completing the integration, test and subsequent launch of a national asset. Bob's efforts resulted in more than \$12 billion dollars of new business for Lockheed Martin. Since his retirement in 2011, Bob has been engaged with the Dean of Engineering at Cal Poly on a variety of special topics. He has been named visiting Industry Director of the Cal Poly CubeSat program. Mr. Thomson is a 1981 graduate of Cal Poly with a B.S. in aeronautical engineering.

Dr. David M. Van Wie

Member

David Van Wie is the Chief Technologist of the Johns Hopkins University Applied Physics Laboratory (JHU/APL) Precision Engagement Mission Area addressing Science and Technology challenges in the areas of Fluid Dynamics; Structural Sciences; Detection System Information Fusion; Signal and Information Processing; Guidance, Navigation & Control; Command & Control Instrumentation and Analysis; and RF Technologies. His responsibilities also involve leading diverse research teams addressing asymmetric multi-domain system concepts for use in Anti-Access/Area-Denial (A2/AD) environments. Dr. Van Wie holds a research faculty position in the Department of Mechanical Engineering at the Johns Hopkins University and lectures in the Department of Aerospace Engineering at the University of Maryland. He served on National Academy of Science National Research Council committees addressing Conventional Prompt Global Strike, Civil Aeronautics, Future Air Force Needs for Survivability, Boost-Phase Missile Defense, and Reusable Booster Systems. Dr. Van Wie also served as a member of the USAF Scientific Advisory Board (SAB) conducting studies on hypersonic systems, small precision weapons, virtual training technologies, future launch vehicles, and munitions for the 2025+ environment, and he served as the Vice-Chair and Chair for the 2010 and 2011 Air Force Research Laboratory Science & Technology Reviews, respectively. Dr. Van Wie is a Fellow of the American Institute of Aeronautics and Astronautics (AIAA), an active member of the U.S. science and technology community, and has published extensively in the fields of high-temperature fluid dynamics, plasma aerodynamics, and hypersonic airbreathing propulsion systems.

Deborah Westphal

Member

Deborah L. Westphal is Managing Director of the strategy advisory firm, Toffler Associates. Recognized globally for her expertise in strategy, innovation and organizational transformation, Ms. Westphal helps organizations understand the forces that drive change in their industries and the world, and identifies the best courses of action to create enduring success. Ms. Westphal came to Toffler Associates in 1999 after 13 years as a senior government official in the U.S. Air Force. Her work in the area of technology and advanced concepts for air vehicles, missiles and space systems have been recognized with numerous awards from the California Air Force Association, a USAF Meritorious Civilian Award, an AFA Los Angeles Chapter Civilian of the Year award, and an Air Force Association Medal of Merit. Ms Westphal has also served on the US Army Science Board, the National Defense Industrial Association Greater Los Angeles Chapter Board of Directors and the Air Force Association, Schriever Chapter 147 Board of Directors. Currently, Ms. Westphal serves on the Air Force Studies Board. Managing Director of Toffler Associates since 2007, she is an acknowledged expert in the aerospace industry and brings a wealth of experience in a wide range of other sectors including materials, transportation, security, space, hospitality, and telecommunications, as well as U.S. defense, intelligence and civilian government. Ms. Westphal's success can be traced to her unique combination of education and experience. She holds an MBA from Webster University, and has completed executive education at Harvard Business School and the Wharton School of Business.