

NATIONAL SPACE COUNCIL



USERS' ADVISORY GROUP

FIFTH PUBLIC MEETING

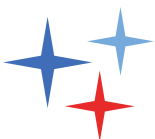
Telecon: 1-844-467-4685 or toll number 1-720-259-7012
passcode 106724#

WebEx: <https://nasaenterprise.webex.com/>
Meeting number: 199 379 7435
Password: tHiRkEk@574

Visit <https://www.nasa.gov/content/national-space-council-users-advisory-group/>
or search "National Space Council UAG" from any search engine

AGENDA

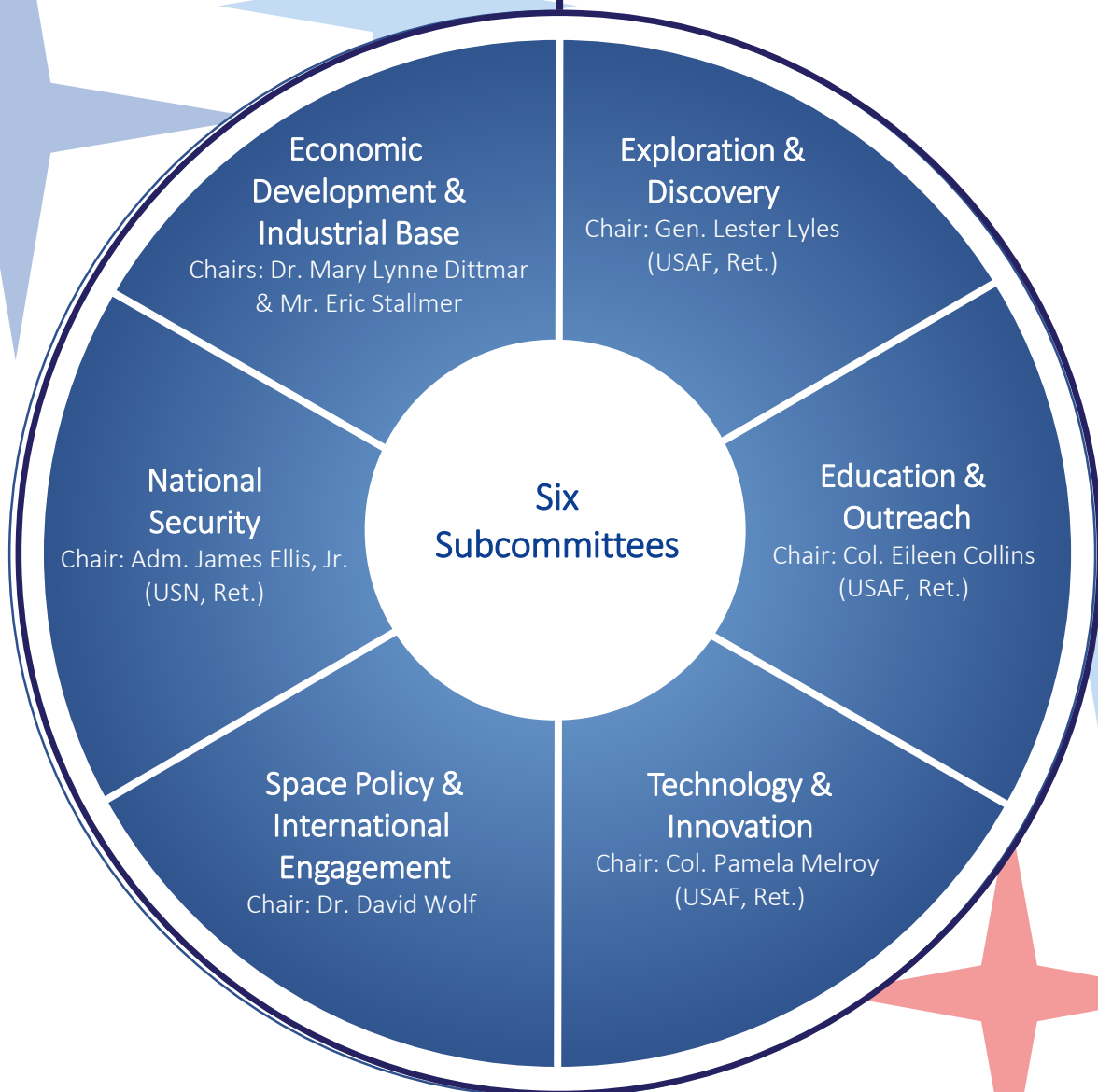
- 10:00-10:05** **CALL TO ORDER**
James Joseph “JJ” Miller –UAG Executive Secretary
- 10:05-11:00** **HISTORICALLY BLACK COLLEGES AND UNIVERSITIES:
AMERICA’S INNOVATIVE ASSET**
*Dr. Victor McCrary – Vice Chair, National Science Board and Vice President for
Research, University of the District of Columbia*
- 11:00-11:05** **UAG SUMMARY OF MEETING GOALS**
Admiral James Ellis, Jr., USN, Retired –UAG Chair
- 11:05-11:25** **EDUCATION & OUTREACH SUBCOMMITTEE REPORT**
***Including Findings and Recommendations**
Colonel Eileen Collins, USAF, Retired –Subcommittee Chair
- 11:25-11:45** **TECHNOLOGY & INNOVATION SUBCOMMITTEE REPORT**
***Including Recommendations on Space Data Solutions & Standards**
Colonel Pamela Melroy, USAF, Retired –Subcommittee Chair
- 11:45-12:05** **SPACE POLICY & INTERNATIONAL ENGAGEMENT SUBCOMMITTEE
REPORT**
***Discussion on Norms of Behavior in Space**
Dr. David Wolf –Subcommittee Chair
- 12:05-12:25** **ECONOMIC DEVELOPMENT & INDUSTRIAL BASE SUBCOMMITTEE
REPORT**
***Including Strategic Propellant Reserve White Paper**
Dr. Mary Lynne Dittmar and Eric Stallmer –Subcommittee Co-Chairs
- 12:25-12:35** **EXPLORATION & DISCOVERY SUBCOMMITTEE REPORT**
General Lester Lyles, USAF, Retired –Subcommittee Chair
- 12:35-12:45** **NATIONAL SECURITY SUBCOMMITTEE**
Admiral James Ellis, Jr., USN, Retired –UAG Chair
- 12:45-12:55** **PUBLIC COMMENT**
- 12:55-13:00** **NEXT STEPS & CLOSING REMARKS**
Admiral James Ellis, Jr., USN, Retired –UAG Chair
- 13:00** **ADJOURN**



ORGANIZATION

National Space Council
Executive Secretary
Dr. Scott Pace

Chair of
Users' Advisory Group
Adm. James Ellis, Jr. (USN, Ret.)



SUBCOMMITTEES



ECONOMIC DEVELOPMENT AND INDUSTRIAL BASE

Dr. Mary Lynne Dittmar,
Co-Chair
Eric Stallmer, Co-Chair
DFO: Nate McIntyre

Tory Bruno
Tim Ellis
Homer Hickam
Fred Klipsch
Gwynne Shotwell
Dr. Bob Smith
Stuart Witt
Eileen Drake*
Lt. Gov. Jeanette Nuñez*

EXPLORATION AND DISCOVERY

Gen. Lester Lyles
(USAF, Ret.), Chair
DFO: James Miller

Col. Buzz Aldrin (USAF, Ret.)
Tory Bruno
David Calhoun
Dr. Mary Lynne Dittmar
Homer Hickam
The Hon. Kay Ivey
Fatih Ozmen
Gwynne Shotwell
Eric Stallmer
Pamela Vaughan
Kathy Warden
Stuart Witt
Eileen Drake*
Dr. Bruce Jakosky*
The Hon. John Culberson*
James D. Taiclet*

NATIONAL SECURITY

Adm. James Ellis, Jr.
(USN, Ret.), Chair
DFO: Jolene Meidinger

Tory Bruno
David Calhoun
Dean Cheng
Tim Ellis
Gen. Lester Lyles (USAF, Ret.)
Col. Pamela Melroy (USAF, Ret.)
Fatih Ozmen
The Hon. Harrison Schmitt
Gwynne Shotwell
Dr. Bob Smith
Mandy Vaughn
Kathy Warden
Stuart Witt
James D. Taiclet*

EDUCATION AND OUTREACH

Col. Eileen Collins
(USAF, Ret.), Chair
DFO: Barbara Adde
Alt. DFO: John Gaine

Homer Hickam
Fred Klipsch
Pamela Vaughan
Mandy Vaughn
Stuart Witt
Dr. Bruce Jakosky*
Lt. Gov. Jeanette Nuñez*

SPACE POLICY AND INTERNATIONAL ENGAGEMENT

Dr. David Wolf, Chair
DFO: Dr. Ben Ashman
Alt. DFO: Neal Newman

Col. Buzz Aldrin (USAF, Ret.)
David Calhoun
Dean Cheng
Dr. Mary Lynne Dittmar
Adm. James Ellis, Jr. (USN, Ret.)
Homer Hickam
Fred Klipsch
Col. Pamela Melroy (USAF, Ret.)
Eric Stallmer

TECHNOLOGY AND INNOVATION

Col. Pamela Melroy
(USAF, Ret.), Chair
DFO: Taylor Weeks

Dean Cheng
Tim Ellis
The Hon. Kay Ivey
Gen. Lester Lyles (USAF, Ret.)
Fatih Ozmen
The Hon. Harrison Schmitt
Dr. David Wolf
The Hon. John Culberson*



Dr. Victor R. McCrary, Jr.

**Vice Chair, National Science Board
Vice President for Research,
University of the District of Columbia**

Victor R. McCrary is the Vice President for Research and Graduate Programs at the University of the District of Columbia. Prior to this position, he was Vice Chancellor for Research at the University of Tennessee, Knoxville and before that the first Vice President for Research and Economic Development at Morgan State University, Baltimore, MD. He is a change agent and serial innovator responsible for developing a comprehensive research strategy, fostering cross-disciplinary research, expanding research programs via engagement with federal and state agencies (\$32M in FY16), increasing the University's intellectual property portfolio, and positioning Morgan State as Maryland's Public, Urban Research University. Previously, he was the Business Area Executive for Science & Technology at The Johns Hopkins University Applied Physics Laboratory (APL), where he directed investments totaling over \$60M for basic and applied research projects targeted for national security and space applications. In 2005, Dr. McCrary was selected to the rank of Principal Professional Staff at The Johns Hopkins University Applied Physics Laboratory. He is a former national president of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCChE), and a Fellow of the American Chemical Society.

McCrary has served on numerous committees including; the Intelligence Science and Technology Experts Group of the National Academies of Science, Engineering and Medicine; the advisory board for electrical and computer engineering at The Citadel, and the advisory board of the Applied Research Laboratory at Penn State. He served on the subcommittee for the U.S. Air Force Institute of Technology (AFIT) the board of the Maryland Innovation Initiative of the Maryland Technology Development Corporation (TEDCO); and the PubMed Central National Advisory Committee for the National Institutes of Health.

He has authored or co-authored over 60 technical papers and co-edited two books in his career at AT&T Bell Laboratories and the National Institute of Standards and Technology (NIST). He is blessed to have received a number of honors and awards during his career including: Most Promising Black Engineer in 1990; co-recipient of the U.S. Department of Commerce's Gold Medal in 2000; the 2002 NOBCCChE Percy Julian Award; in 2005, he was featured in Science Spectrum Magazine as one of the Top 50 Minorities in Science, and elected to the 2007 DVD Association's Hall of Fame. In 2011, he was honored as Scientist of the Year by the Annual Black Engineer of the Year Award-STEM Conference. In 2015 he received the Alumni Award for Research Excellence from The Catholic University of America, and Distinguished Alumni Award by Howard University in 2017.

McCrary was appointed by President Barack Obama to the National Science Board, which oversees the National Science Foundation, in October 2016.



Mr. David L. Calhoun

President and CEO, The Boeing Company

David Calhoun is president and chief executive officer of The Boeing Company. He oversees the strategic direction of the Chicago-based aerospace company. With roughly 150,000 employees across the United States and in more than 65 countries, Boeing is the world's largest aerospace company and one of the largest U.S. exporters. It is the leading manufacturer of commercial airplanes, military aircraft, and space and security systems, and a provider of global services; it supports airlines and U.S. and allied government customers in more than 150 nations. Calhoun, 62, became Boeing president and chief executive in January 2020. He has served as a member of Boeing's board of directors since 2009 and served as chairman of the company's board of directors from October to December 2019. Calhoun has extensive expertise in a wide array of strategic, business, safety and regulatory matters across several industries as a result of his executive, management and operational experience.

Prior to leading Boeing, Calhoun served as senior managing director and head of portfolio operations at The Blackstone Group from January 2014. During his time with the investment firm, he focused on creating and driving added-value initiatives with Blackstone's portfolio company CEOs. Previously, he also served as executive chairman of the board for Nielsen Holdings from January 2014 to January 2016. He joined Nielsen in 2006 as chief executive officer shortly after it was acquired through a consortium of private equity investors, including Blackstone. Throughout his seven-year Nielsen tenure, Calhoun led the company's transformation into a leading global information and measurement firm listed on the New York Stock Exchange and Standard & Poor's 500 Index. Calhoun began his career at The General Electric Company (GE), where he rose to vice chairman of the company and president and chief executive officer of GE Infrastructure, its largest business unit. During his 26 years at GE, he held a number of operating, finance and marketing roles, and led multiple business units, including GE Transportation and GE Aircraft Engines.

Calhoun is a member of the board of directors of Caterpillar Inc. He is a member of Virginia Tech's Pamplin Advisory Council. A native of Pennsylvania, Calhoun holds a bachelor's degree in accounting from Virginia Tech. He is co-author of the book "How Companies Win" and is an avid golfer and skier. He is married with four children.



The Honorable John Culberson

Former United States Congressman

Former Texas State Representative

Hon. John A. Culberson (Houston, TX) - JD, South Texas College of Law; BA, Southern Methodist University. John represented Houston's District 7 in the United States Congress from 2001-2019. He served on the House Appropriations Committee for 16 years chairing two subcommittees: Commerce, Justice and Science, (CJS); and Military Construction and Veterans Affairs. One of John's top priorities on the Appropriations Committee was to restore NASA funding to Apollo-era levels. In his four years as CJS chairman, he increased overall NASA funding by 20%, increased Science funding by 27%, and increased Planetary Science funding by 100%. He is a strong supporter of NASA's partnership with commercial space providers to help American astronauts return to low-Earth orbit and the moon and beyond. John enacted a 50-year blueprint for NASA that begins with the Ocean Worlds outer planet program and the search for life in the oceans of Europa, Titan and Enceladus, followed by development of the next generation of space telescopes, and a Starshade to identify the nearest Earth-like exoplanets with spectroscopic signatures of life. The 50-year blueprint would conclude in 2069 with the launch of humanity's first interstellar probe to the nearest Earth-like planet with the most promising signs of life.

In late 2019, NASA Administrator Jim Bridenstine recognized John's success in lifting NASA funding to near-record levels by presenting him with NASA's highest honor, the Distinguished Public Service Medal. In early 2020, John was appointed by The White House and Administrator Bridenstine to serve on the National Space Council's Users' Advisory Group to advise the President and Vice President on the future of America's space program. In 2019, John joined the law firm of Clark, Hill and Strasburger, (with offices in Washington, D.C. and Houston), where he advises primarily aerospace, healthcare, cyber and energy clients on state and federal governmental matters. Also, in 2019, John was appointed to the Board of Trustees of Dr. Robert Ballard's Ocean Exploration Trust, and to the Board of Trustees of the American Battlefield Trust.

These links provide more detail on the depth and breadth of John's work in Congress on behalf of America's space program and the National Science Foundation:

<https://www.pbs.org/newshour/show/stars-hold-trump-administration-heres-nasas-mission-change>

<https://www.sciencemag.org/news/2019/12/final-2020-spending-bill-kind-us-research>

<https://www.sciencemag.org/news/2019/01/congress-vote-previous-spending-deals-could-presage-final-2019-budgets>

<https://www.sciencemag.org/news/2018/05/surprise-house-spending-panel-gives-nsf-far-more-money-telescope-it-requested>

<https://arstechnica.com/science/2017/03/inside-nasas-daring-8-billion-plan-to-finally-find-extraterrestrial-life/>

<https://arstechnica.com/science/2016/05/four-wild-technologies-lawmakers-want-nasa-to-pursue/>



Ms. Eileen Drake

CEO and President, Aerojet Rocketdyne Holdings, Inc

Eileen Drake is chief executive officer and president of Aerojet Rocketdyne, responsible for defining the company's vision, guiding the strategic business plan, and building relationships with customers and stakeholders.

Ms. Drake joined Aerojet Rocketdyne in March 2015 as chief operating officer. She previously was with United Technologies Corporation (UTC), where she served as president of Pratt & Whitney AeroPower's auxiliary power unit and small turbojet propulsion business. She also served as the vice president of Operations and vice president of Quality, Environmental, Health & Safety, and Achieving Competitive Excellence (ACE) for UTC's Carrier Corporation, as well as for Pratt & Whitney.

Prior to joining UTC, Ms. Drake managed production operations at both the Ford Motor Company and Visteon Corporation, where she was Ford's product line manager for steering systems and plant manager of Visteon's fuel system operation.

During her military career, Ms. Drake served on active duty for seven years as a U.S. Army aviator and airfield commander of Davison Army Airfield in Fort Belvoir, Virginia. Ms. Drake is a distinguished military graduate of the U.S. Army Aviation Officer School. She received a Master of Business Administration from Butler University and a Bachelor of Arts from The College of New Rochelle. She also received an honorary doctorate degree in Science from the University of Alabama in Huntsville. Ms. Drake holds commercial and private pilot's licenses in both fixed-wing and rotary-wing aircraft.

In February 2017 Ms. Drake was appointed to the board of Woodward, Inc. and also serves on the Audit Committee of the board. Woodward, Inc. is an independent designer, manufacturer and service provider of control system solutions and components for the aerospace and industrial markets.

Ms. Drake serves on the Board of Governors of the Aerospace Industries Association (AIA). In November 2018 she was elected as a member of AIA's Executive Committee. AIA helps shape the American aerospace and defense industries' future by advocating for policies and responsible budgets that keep our country strong, bolster our capacity to innovate, and spur our economic growth.

In January 2020 Girl Scouts of the USA (GSUSA) selected Ms. Drake to serve on their National Board of Directors. The 2.5 million member GSUSA is the nation's preeminent leadership development organization for girls, with programs coast to coast and across the globe.

Ms. Drake also serves on the National Space Council's Users' Advisory Group (UAG). Chaired by Admiral James Ellis, Jr., USN, Retired, the UAG is a federal advisory committee that advises the National Space Council on U.S. national space policy and approaches to strengthen U.S. leadership in space. Ms. Drake started serving a two year appointment in June 2020.



Dr. Bruce Jakosky

Professor of Atmosphere and Space Physics, University of Colorado

Dr. Bruce Jakosky is Associate Director for Science in the Laboratory for Atmospheric and Space Physics and Professor of Geological Sciences at the University of Colorado in Boulder. He received his Ph.D. in Planetary Science from Caltech in 1982. He has been carrying out research related primarily to the Mars surface, atmosphere, and climate since working on the Viking mission as an undergraduate starting in 1975. His publications include more than 275 papers in the refereed scientific literature, two single-author books on life in the universe, co-editor of a compendium book on Mars, and a co-authored textbook on astrobiology.

Dr. Jakosky is the Principal Investigator for the MAVEN mission to Mars. MAVEN, the Mars Atmosphere and Volatile Evolution mission, began development in 2003, launched in 2013, and has been collecting data in orbit around Mars since late 2014. Its objectives are to understand the Martian upper atmosphere and its interactions with the Sun and the solar wind, along with the effect that they've had on stripping the atmosphere away to space and changing the Martian climate through time. As Principal Investigator, Dr. Jakosky was responsible for the development, planning, financial, technical, and scientific success of the mission from concept through to on-orbit operations and science data analysis. For his work on MAVEN, he received the NASA Distinguished Public Service Medal, NASA's highest honor, and the Robert L. Stearns Award for Research from the University of Colorado. He is a co-investigator on the Hope Emirates Mars Mission, in partnership with the United Arab Emirates.

In addition, Dr. Jakosky has a strong interest in the societal and philosophical underpinnings of planetary science and astrobiology. His 2006 book *Science, Society, and the Search for Life in the Universe* addressed the nature of astrobiology as a science and the societal impact of our search for life elsewhere (and what it would mean to find it, or to search and not find it). He also teaches classes in geology, planetary science, and astrobiology, at both the undergraduate and graduate levels. His most recent class was a graduate seminar on "Human Missions to the Moon and Mars."



Lieutenant Governor Jeanette M. Nuñez

Chair of the Board, Space Florida

Jeanette M. Nuñez was born and raised in Miami, Florida. She was elected as Florida's first Latina Lieutenant Governor in 2018. As Lieutenant Governor, she has been tasked with overseeing the Florida Department of Health, as well as serving as the Chair of the Board of Space Florida, an entity responsible for all aspects of the state's aerospace industry. Additionally, she currently serves as Chair of Florida's Cybersecurity Task Force, Chair of Florida's Complete Count Committee for the 2020 U.S. Census, Chair of Florida's Women's Suffrage Centennial Commission, and a member of the Statewide Council on Human Trafficking.

Lieutenant Governor Nuñez previously served as a State Representative of the Florida House of Representatives from 2010 to 2018 and was named Speaker Pro Tempore from 2016 to 2018. As a legislator, she was appointed Chair of the Select Committee on Hurricane Response and Preparedness, was the Vice Chair of the Appropriations Committee and served on the Rules and Policy Committee. Prior to that, she chaired the Health Quality, Government Operations and Technology Appropriations, and Higher Education and Workforce Subcommittees. Notably, she was also a member of Florida's Constitution Revision Commission in 2017.

Lieutenant Governor Nuñez began her healthcare career working at Jackson Health System in 2004 as the State Director for Government Relations handling all aspects of the hospital's state affairs. In 2006, she was promoted to Vice President of Government Relations overseeing local, state and federal affairs. She has served on numerous boards and healthcare organizations, including the National Association of Public Hospitals Fellowship Program. In 2010, Lieutenant Governor Nuñez became Vice President of Community Affairs for Kendall Regional and Aventura Hospitals and Medical Centers. In late 2013, she began her own consulting firm, OnPoint Strategies, providing Jackson Health System with strategic advice on service line and business development. Lieutenant Governor Nuñez served on the US Department of Education's National Assessment Governing Board from 2016-2019.

Over the years, Lieutenant Governor Nuñez has demonstrated her ongoing commitment to the South Florida community with involvement in organizations such as the Greater Miami Chamber of Commerce, Leadership Miami, Women's Healthcare Executive Network, among others. In 2007, Lieutenant Governor Nuñez was named Hispanic Woman of Distinction. From 2007 to 2015, she served on the Board of Kristi House, an organization dedicated to children who are victims of sexual abuse.

Lieutenant Governor Nuñez is a proud graduate of Florida International University, where she earned a Bachelor of Arts in International Relations and Political Science and a Master's Degree in Public Administration. She also earned a Six Sigma Certificate from the University of Miami and is a graduate of Leadership Miami. Over the years, Nuñez has served as an adjunct professor and guest lecturer at Florida International University. She is married to her husband, Adrian Nuñez, and together they are the proud parents of three children: Megan, Justin, and Jason.



Mr. James D. Taiclet, Jr.
President and Chief Executive Officer,
Lockheed Martin Corporation

James Taiclet is president and chief executive officer of Lockheed Martin Corporation. He joined the company in this role in June 2020 and has been a director on the Lockheed Martin board of directors since January 2018.

Prior to joining Lockheed Martin, Taiclet was chairman, president and chief executive officer of American Tower Corporation, the fourth largest listed telecommunications company in the U.S. Under his leadership as CEO, the company's market capitalization grew from approximately \$2 billion to over \$100 billion. He guided the company's transformation from a primarily U.S. business to the only truly global player in its industry, with significant assets and operations in 19 countries around the world.

Prior to joining American Tower, Taiclet served as president of Allied Signal, subsequently Honeywell Aerospace Services, conducting worldwide aircraft engine and component overhaul and repair, parts sales and distribution, space operations, and technical services. Prior to that he served as vice president, Engine Services at Pratt & Whitney, responsible for both military and commercial jet engine overhaul and repair.

Taiclet began his career as a United States Air Force officer and pilot, where he logged over 5,000 flying hours as an aircraft commander, instructor pilot, and unit chief of Standardization and Evaluation. His rotational assignments included the Joint Staff and Air Staff at the Pentagon, and he served in the Gulf War and among other missions, was a pilot in one of the first transport aircraft deploying U.S. forces into Saudi Arabia during Operation Desert Shield, a Lockheed C-141B Starlifter.

He holds a master's degree from Princeton University, where he was awarded a Fellowship at the Woodrow Wilson School, and he is a distinguished graduate of the United States Air Force Academy with degrees in engineering and international relations.

Mr. Taiclet is a member of the Council on Foreign Relations, the Business Roundtable, and the Business Council. He also serves as a member of the Board of Trustees of Brigham and Women's Health Care, Inc., Lockheed Martin's Board of Directors, the U.S.-India Business Council board and the U.S.-India Strategic Partnership Forum board. In August 2015, Mr. Taiclet was appointed to the U.S.-India CEO Forum, and, in October 2018, he was appointed Co-Chair of the U.S.-India CEO Forum by the U.S. Department of Commerce.