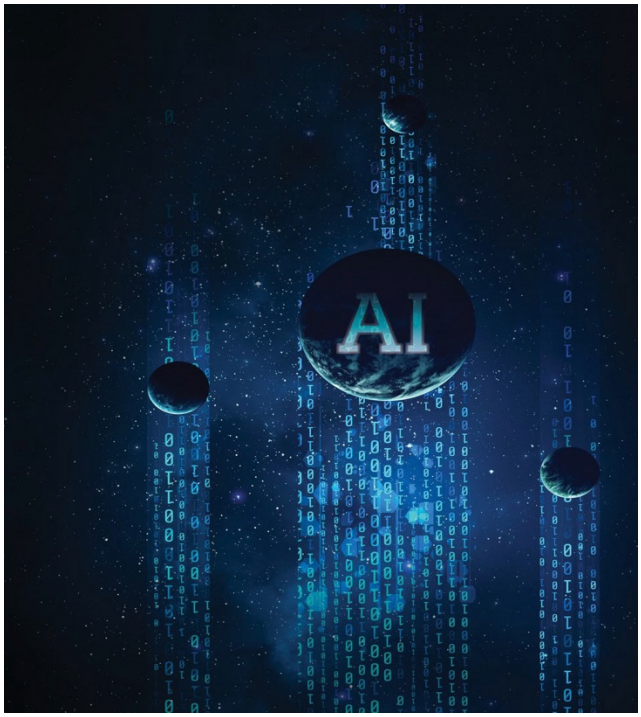
As of 3 March 2025

THE UNIVERSITIES SPACE RESEARCH ASSOCIATION
AND
THE SPACE POLICY INSTITUTE
PRESENT A SYMPOSIUM ON

ARTIFICIAL INTELLIGENCE FOR SPACE AND AERONAUTICS

RESEARCH AND DEVELOPMENT FOR EVOLVING MISSIONS

HOW CAN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING CONTRIBUTE TO SCIENCE, EXPLORATION, AND SECURITY?



THURSDAY, MARCH 27, 2025
Holiday Inn Washington DC National Mall
550 C Street SW, Washington, DC
Eventbrite link to Register

Live Stream Link
TBD

AGENDA

1:00 P.M. Welcome and Introductory Remarks

ELSAYED TALAAT, President and CEO, USRA
SCOTT PACE, Director, Space Policy Institute, George Washington University

1:10 P.M. Frederick A. Tarantino Memorial Address

JOHN PLATT, Google Fellow, Climate and Science

1:40 P.M. Artificial Intelligence for Scientific Discovery

Artificial Intelligence, to include Machine Learning (AI/ML), is an increasingly important tool for scientific discovery in many fields. Panelists will discuss the technical challenges as well as social, legal and ethical challenges in using AI for scientific research.

- JIM GREEN, former NASA Chief Scientist
- DAVID BELL, USRA Program Manager for the Quantum Artificial Intelligence Lab
- DAVID POTERE, Managing Director and Partner at BCG X
- STEVE CHIEN, JPL Fellow and Senior Research Scientist

2:40 P.M. Coffee Break

3:00 P.M. Artificial Intelligence for Space and Aeronautics

Panelists will discuss how AI/ML tools are being examined today to support civil and national security space missions – and how those tools may evolve in the next decade. Challenges are not purely technical, but include building infrastructure, skilled workforces, and adapting organizational cultures.

- RUPAK BISWAS, NASA Ames, Director of Exploration Technology
- TRUNG T. PHAM, FAA Chief Scientist and Technical Advisor for Artificial Intelligence
- SETH WHITWORTH, DCSO for Cyber and Data, U.S. Space Force
- BRYAN DORLAND, DoD Research & Engineering, Principal Director for Space Technology

4:00 P.M. International and Commercial Trends in Artificial Intelligence

Panelists will provide insights on international and commercial trends in space applications for AI/ML, including developments in Europe and China. AI/ML applications of global interest can and will drive investments in research, infrastructure, workforces, and create novel regulatory issues.

- ELIZABETH DAVISON, Data Science and AI Department, Aerospace Corporation
- ROBIE I. SAMANTA ROY, Managing Director, Cerberus Capital Management
- RACHEL LINDBERGH, Congressional Research Service
- LAURA McGORMAN, Director, Data for Good, Meta
- CHAD OHLANDT, The RAND Corporation

5:15 P.M. Closing Remarks and Discussion

- DAVID BELL, USRA
- SCOTT PACE, Director, Space Policy Institute, George Washington University

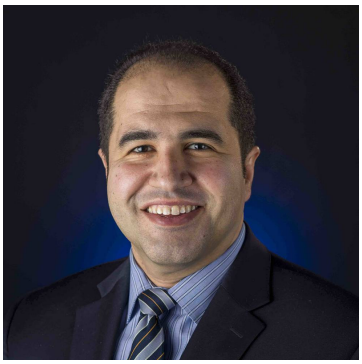
5:30 P.M. Invitation to the Reception

- JOAN RAMAGE, Chair, USRA Council of Institutions

SPEAKER BIOGRAPHIES

Dr. Scott Pace is the Director of the Space Policy Institute and a Professor of the Practice of International Affairs at George Washington University's Elliott School of International Affairs. He is also a member of the faculty of the Trachtenberg School of Public Policy and Public Administration. His research interests include civil, commercial, and national security space policy, and the management of technical innovation. Dr. Pace rejoined the faculty of the Elliott School in January 2021 after serving as Deputy Assistant to the President and Executive Secretary of the National Space Council from 2017-2020.

From 2005-2008, he served as the Associate Administrator for Program Analysis and Evaluation at NASA. Prior to NASA, Dr. Pace was the Assistant Director for Space and Aeronautics in the White House Office of Science and Technology Policy (OSTP). From 1993-2000, Dr. Pace worked for the RAND Corporation's Science and Technology Policy Institute (STPI). 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. He received a Bachelor of Science degree in Physics from Harvey Mudd College in 1980; Master's degrees in Aeronautics & Astronautics and Technology & Policy from the Massachusetts Institute of Technology in 1982; and a Doctorate in Policy Analysis from the RAND Graduate School in 1989.



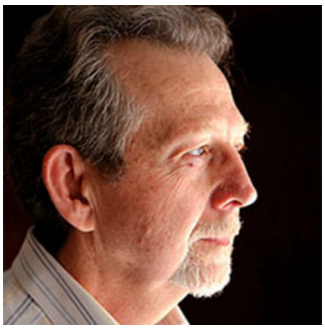
Dr. Elsayed Talaat is the President and CEO of the Universities Space Research Association (USRA). A distinguished leader in space and atmospheric sciences, he brings extensive experience from senior leadership roles at NOAA, NASA, and the Johns Hopkins University Applied Physics Laboratory (APL).

Throughout his career, Dr. Talaat has played a pivotal role in advancing scientific research and technology development. He has led programmatic and technical coordination with the White House Office of Science and Technology Policy (OSTP), the Department of Defense, federal and non-federal agencies, industry partners, and international organizations. Before joining USRA, Dr. Talaat served as Director of the Office of Space Weather Observations at NOAA's National Environmental Satellite, Data, and Information Service (NESDIS). In this role, he provided strategic leadership and oversight in the development, acquisition, and integration of major system elements for NOAA's operational and environmental satellite programs. Prior to NOAA, he held leadership positions at NASA and APL. As Chief Scientist of NASA's Heliophysics Division, he guided scientific strategy and program direction for the study of the Sun and its interactions with Earth and the solar system. Before that, he was Supervisor of the Earth and Planetary Atmospheres Section at APL, where he led research on atmospheric and space sciences.

Dr. Talaat holds a Bachelor of Science in Aeronautics and Astronautics Engineering from the University of Washington and a Ph.D. in Atmospheric and Space Sciences from the University of Michigan. He has authored or co-authored over 60 peer-reviewed journal articles and contributed to more than 400 conference papers.

John Platt is a Google Fellow, being a technical leader for both Climate and Science. John is best known for his work in machine learning: the SMO algorithm for support vector machines and calibrating the output of models. But, he is an applied mathematician who has worked on numerous fields, such as neural networks, computer graphics, planetary science, analog circuits, quantum computing, numerical analysis, computer vision, human-computer interface, support vector machines, data systems, Python, and computational geometry. He has discovered two asteroids, and won a Technical Academy Award in 2006 for his work in computer graphics.

While at Google, he led the Colab notebook product and helped bring quantum computing to a point where it has surpassed classical computing on individual tasks. John currently leads the Applied Science branch of Google Research, which works at the intersection between computer science and physical or biological science. His latest goal is to help to solve climate change. He was previously a Deputy Director of Microsoft Research, where he led the machine learning, computer vision, mathematics, database, and cryptography groups. He was the co-inventor of ClearType and of multiple well-known machine learning algorithms.



Dr. James L. Green worked at NASA for 42 years before retiring in December 2022. He received his Ph.D. in Physics from the University of Iowa in 1979 and worked at Marshall Space Flight Center, Goddard Space Flight Center, and NASA Headquarters. During Jim's distinguished career at NASA, he has been NASA's Chief Scientist and was the longest serving director of NASA's Planetary Science Division with the overall programmatic responsibility for the New Horizons spacecraft flyby of Pluto, the Juno spacecraft to Jupiter, and the landing of the Curiosity rover on Mars, just to name a few. Jim has received the Exceptional Achievement Medal for the New Horizons flyby of the Pluto system and NASA's highest honor, the Distinguished Service Medal. He has written over 125 scientific articles in refereed journals and over 100 technical and popular articles. In 2015, Jim coordinated NASA's involvement with the film *The Martian*. In 2017 Asteroid 25913 was renamed Jamesgreen in his honor. He now teaches students around the world about space and planetary science in the Metaverse.

Dr. David Bell is Director of the USRA Research Institute for Advanced Computer Science (RIACS), and is Vice President and Chief AI Officer of USRA's wholly owned small business subsidiary – E Street Technologies. David co-founded the Generative AI Lab for Science & Engineering and the Quantum AI Lab, significant programs engaging academia, industry and government advancing state of the art in artificial intelligence and high performance computing. Prior to joining USRA, David was a member of the research staff in the Scientific & Engineering Reasoning Area of the Xerox Palo Alto Research Center and held an appointment at MIT where he led a research program in the Center for Innovation in Product Development. David received his Ph.D. from Cornell University.

Dr. David Potere is a technology leader focused on building integrated, applied science platforms that reliably inform large-scale challenges where location intelligence and machine learning can get to the heart of the problem. For more than a decade, David has used geospatial technology to tackle complex business problems. For the past several years, he has focused on building a living map of the world's food supply. He believes that new, more reliable maps, metrics, and models are essential to help farmers grow crops that are more profitable, safe, and sustainable. Prior to joining Indigo, David was co-founder and CEO of TellusLabs, which provided actionable agricultural intelligence to customers across the food value chain. TellusLabs provided early, accurate reads on some of the world's most important harvests.

Before starting TellusLabs, David co-founded and grew Boston Consulting Group's analytics practice from its inception into a thriving global business (BCG Gamma). David's roles at Tellus and Gamma centered on building and leading fast-moving, cross-functional teams that span machine learning, engineering, remote sensing, geospatial science, and product development. David served as a Surface Warfare Officer in the US Navy. David received an AB from Harvard College, an MA in satellite remote sensing from Boston University, and a PhD in geo-demography from Princeton.

Dr. Rupak Biswas is the Director of Exploration Technology at NASA Ames Research Center, Moffett Field, Calif., and has held this Senior Executive Service (SES) position since January 2016. In this role, he is in charge of planning, directing, and coordinating the technology development and operational activities of the organization that comprises of advanced supercomputing, human systems integration, intelligent systems, and entry systems technology. The directorate consists of over 900 staff with an annual budget of $246 million and includes two of NASA's critical and consolidated infrastructures: arc jet testing facility and supercomputing facility. Dr. Biswas received his Ph.D. in Computer Science from Rensselaer in 1991 and has been at NASA ever since. During this time, he has received several NASA awards, including the Exceptional Achievement Medal and the Outstanding Leadership Medal (twice). He is an internationally recognized expert in high performance computing and has published more than 170 technical papers, received many Best Paper awards, edited several journal special issues, serves on the IEEE/ACM Supercomputing Conference Steering Committee, and given numerous lectures around the world.

Steve Chien is a Technical Fellow in Artificial Intelligence and Co-head of the Artificial Intelligence Group at the Jet Propulsion Laboratory, California Institute of Technology. He has spent decades deploying AI/Autonomy to numerous space missions including: Earth Observing One, Sensorweb, ESA's Rosetta Orbiter, and M2020 Perseverance Rover. He has been awarded four NASA Medals in 1997, 2000, 2007, and 2015 for development and deployment of AI technologies for space missions. He has supported numerous government bodies including the Defense Science Board and the Air Force Scientific Advisory Board. He was appointed by Congress to the National Security Commission on Artificial Intelligence (2018-2021). He currently serves on the Army Science Board and as an Advisor to the Senate Defense Modernization Caucus.

Dr. Trung T. Pham is the FAA's Chief Scientist and Technical Advisor (CSTA) for Artificial Intelligence (AI) – Machine Learning, supporting leadership in how AI & Machine Learning may be used in aviation systems, and how to evaluate integration of components based on AI & Machine Learning with aircraft software. Dr. Pham joined the FAA with more than 35 years of software and AI experience. Before the FAA, Dr. Pham was at the United States Air Force Academy (USAFA) in Colorado where he worked as an academic professor, teaching in the Department of Computer & Cyber Sciences, and conducting research & development in AI & Machine Learning applications in for the US Air Force Cyberworx (Center of Innovation in Cyber Security). Previously he taught Control Theory, AI, and Neural Networks at the University of Houston, and was a technical specialist and staff engineer at NASA Johnson Space Center working in the area of Automation & Robotics in the Space Station Program.

Throughout his career, Dr. Pham has produced more than 50 publications, two technical books, and many technical presentations. Dr. Pham is a Senior Member of the Institute of Electrical and Electronic Engineering (IEEE) and a Senior Member of the International Society of Automation (ISA). Dr. Pham obtained his B.S.E.E. (Rice Endowment Scholarship, Texas Valedictorian Scholarship, and the Welsh Foundation Scholarship), M.S. (Office of Naval Research Fellowship), and Ph.D. (The National Aeronautic & Space Administration Fellowship) from the Department of Electrical & Computer Engineering at Rice University in Houston, Texas, and his M.B.A. (McDonnell Douglas Scholarship) from the University of Houston – Clear Lake in Houston, Texas.

Dr. Bryan Dorland serves as the Office of the Assistant Secretary of Defense for Critical Technologies' principal director for Space Technology under the authority of the Office of Under Secretary of Defense for Research and Engineering. In this role, he is the chief technology officer for the Department of Defense on space and space-related capabilities, working across the department, with the intelligence community, NASA, commercial entities, and international allies and partners to ensure development of critical space capabilities. Prior to assuming his current duties, Dorland served as a senior project leader supporting requirements, cost, and effectiveness assessments for space missions under the Office of the Director of National Intelligence, director of the Celestial Reference Frame Department at the United States Naval Observatory (USNO), and astronomer and astrophysicist at USNO and the Naval Research Laboratory (NRL), respectively. Dorland holds Master of Science and doctorate degrees in physics from the University of Maryland and a Bachelor of Arts in liberal arts from St. John's College. Before attending college, Dorland served 4 years in the Marine Corps infantry. He completed his tour of duty as a sergeant and was stationed in Guam and at Camp Pendleton, with deployments to Okinawa, Panama, and at sea.

Mr. Seth Whitworth is the Acting Deputy for Acting Deputy Chief of Space Operations for Cyber and Data (SF/S6), Headquarters United States Space Force (HQSF), the Pentagon, Arlington, VA. In this role, he is charged with equipping Space Force Guardians with innovative technologies to digitally transform the USSF and gain an asymmetric advantage over our adversaries. Mr. Whitworth's portfolio of oversight includes software innovations such as Guardian One, USSF Portal, DevSecOps Enterprise Platform as a Service (PaaS) Pilot, Digital University, Remote Process Automation, and cloud hosting services. Additionally, he oversees the development of policy and strategy shaping Digital Infrastructure, Artificial Intelligence (AI), Machine Learning (ML), Data Strategy, and Digital Workforce Requirements. He represents USSF Cyberspace and IT interests on the Space Force Civilian Development Panel and the DAF Cyberspace and IT Career Field Advisory Panel. Mr. Whitworth entered the federal civilian service in October of 2022.

Mr. Whitworth serves as a Captain in the United States Air Force Reserves as an Officer Training School Instructor, helping to shape Warrior-Minded Leaders of Character for the Air and Space Forces. His military assignments include Orbital Warfare Officer assigned to the 310th Space Wing, Colorado Springs, CO operating the nation's premier on-orbit Space Domain Awareness constellations. He holds a Bachelor of Science degree in Information Technology from Colorado State University, Fort Collins, CO.

Dr. Liz Davison is the Associate Principal Director of the Integrated Data and Applications Subdivision at the Aerospace Corporation and a Professor of Practice in the Fowler School of Engineering at Chapman University. The Integrated Data and Applications Subdivision includes departments dedicated to Data Science, Data Engineering/Architecture, Visualization, and more. Dr. Davison's research centers around the application and development of mathematical methods from an engineering and physics perspective to examine complex dynamical systems. Dr. Davison completed her Ph.D. as an NSF Graduate Research Fellow in the Dynamical Control Systems Lab in the Mechanical and Aerospace Engineering Department at Princeton University and obtained dual Bachelors' of Science in Physics and Mathematical Science from the University of California, Santa Barbara.

Dr. Robie I. Samanta Roy is a managing director at Cerberus Capital Management, a private equity firm with strategic interests in the national security sector. Prior to joining Cerberus in 2022, Robie was the Chief Operating Officer and Chief Federal Strategy Officer at Electra.aero, an advanced air mobility startup. He came to that position from Lockheed Martin where he was the Corporate VP for Technology Strategy and Innovation (Deputy CTO) and then the VP for Technology for Government Affairs. Robie joined Lockheed Martin after almost a decade of service in the Federal Government, including the Congressional Budget Office as the Strategic Analyst, the Assistant Director for Space and Aeronautics at the White House Office of Science and Technology Policy – under both the Bush and Obama Administrations, and as a Professional Staff Member on the Senate Armed Services Committee overseeing the Department of Defense's science and technology portfolio.

Robie started his career as a Research Staff Member in the Systems Evaluation Division of the Institute for Defense Analyses. Robie earned his Ph.D., Master's, and Bachelor's degrees in aeronautics and astronautics at MIT as well as a master's degree in space policy from George Washington University and

diplomas from the International Space University and Institut d'Etudes Politiques de Paris. He continues to serve in the U.S. Air Force Reserve and is also a Fellow of the American Institute of Aeronautics and Astronautics and a member of the Board of Regents of the Potomac Institute for Policy Studies.

Rachel Lindbergh is a space policy analyst at the Congressional Research Service, a legislative branch agency that provides Congress with objective, nonpartisan analysis. Previously, Rachel conducted space policy research for the Institute for Defense Analyses (IDA) Science and Technology Policy Institute (STPI), a federally funded research and development center that provides objective research to the White House Office of Science and Technology Policy and federal agencies with a science and technology mission. At STPI, Rachel's research spanned civil, commercial, and defense space policy, including norms of behavior in space; economic trends in Earth orbit and cislunar space; Russian space capabilities; planetary protection; and global competition in space. Prior to STPI, Rachel worked for the International Space Station National Laboratory, conducting an assessment of macromolecular crystallography research conducted in microgravity. Rachel studied public policy and Russian & Eastern European studies at the University of Chicago, writing an honors thesis on the commercialization of low-earth orbit. Rachel conducted metallurgical research on the International Space Station as a principal investigator. Her experience was profiled in *The Atlantic*, and in 2022, she gave a TEDx on space policy

Laura McGorman is the Director, Data for Good at Meta. Laura has over 15 years of experience leading data, analytics, and operations teams at technology companies and in the public sector. As the Director of Data for Good at Meta, she oversees a global program leveraging Meta's big data, data science expertise, and compute power to deliver innovative datasets to governments, universities and nonprofits working to expand economic opportunity, improve global health and support small businesses. Prior to joining Meta, she served as a political appointee in the Obama Administration leading an open data team at the US Department of Commerce focused on improving access to federal data and modernizing the US Government technology stack. Laura also worked at Opower, where she led a process analytics team, the World Bank, where she led field research and analysis on female entrepreneurship, and USAID, where she worked on malaria control programs.

Dr. Chad Ohlandt is a senior engineer at RAND, focusing on defense acquisition, technology policy, and Indo-Pacific issues. His work revolves around U.S. technological competitiveness broadly with a focus on the development and acquisition of advanced aerospace systems to meet civilian, commercial, and national security needs. Ohlandt has served as a senior acquisition analyst in the Office of the Undersecretary of Defense (Acquisition, Technology, & Logistics) providing analysis on the performance of the defense acquisition system from 2011-2013. He worked in Beijing at the Chinese Academy of Sciences with the NSF East Asia Summer Institute in the summer of 2004 and was a Fulbright scholar in Taiwan in 1999-2000. He has expertise in computational fluid dynamics, supercomputing, plasma physics, nuclear fusion, hypersonics, and space propulsion. Chad has a B.S. in astronautics from Massachusetts Institute of Technology, a M.S. aerospace engineering from Pennsylvania State University, and a Ph.D. in aerospace engineering and scientific computing from the University of Michigan.

Dr. Joan Ramage Macdonald is the Chair of the USRA Council of Institutions She is an Associate Professor, Earth and Environmental Sciences, and Faculty Director of the ADVANCE Center at Lehigh University. Dr. Ramage's research is on remote sensing of the cryosphere. She applies microwave satellite data to snow and glacier variations and hydrology in remote high latitude and mountain environments that are vulnerable to change. Her research is funded by NASA, NSF, National Geographic, and the US Army. She has been invited to share her expertise with the Canadian Government, the US Department of State, as well as NASA. As part of her efforts to diversify STEM fields at Lehigh and beyond, she is a member of the Earth and Environmental Sciences Department Committee on Diversity and Inclusion. Her work as ADVANCE Center Director fosters equity and success for faculty with an emphasis on removing barriers to success for historically minoritized faculty throughout STEM disciplines and academia in general.

Dr. Ramage is an FAA-licensed unmanned aerial system (UAS) remote pilot. She is interested in UAS capabilities, limitations, and potential in the arenas of scientific and community use. Ramage brings UAS technology into the classroom and is a member of the Eagle Fire Company UAS Search and Rescue Team. She also brings environmental expertise to the public via county and township watershed programs.

Dr. Ramage earned her Ph.D. in Geological Sciences from Cornell University, an M.S. in Geosciences from The Pennsylvania State University, and a B.A. in Geology from Carleton College.