

Increasing Diversity and Inclusion in the Leadership of Competed Space Missions

Committee

Frances Bagenal

Co-Chair

FRANCES BAGENAL is the senior research scientist for the Laboratory for Atmospheric and Space Physics (LASP) at the University of Colorado, Boulder, leading its Magnetospheres of the Outer Planets Group. She is also professor emerita in the department of astrophysical and planetary sciences. Before that, she was a professor of astrophysical and planetary sciences at the same institution. Her research interests focus primarily on gas giants' planetary physics, explicitly understanding the magnetospheres by combining data analysis and theoretical models. She was a co-investigator on the Plasma Science instrument on the Voyager mission; an interdisciplinary scientist on the Galileo mission; a Deep Space 1 team member; a New Horizons mission co-investigator and Particles Theme lead; and a Juno co-investigator and co-chair of the Magnetospheres Working Group and the Science Planning Working Group. She has been active in workforce issues, including as the advisory committee chair for the 2020 Planetary Science Workforce Survey, a survey which has been incorporated into the 2020 AAS/Division on Planetary Science Membership survey. She is the recipient of numerous awards, including the James Van Allen Lecture Award from the American Geophysical Union and the Boulder Faculty Assembly's Excellence in Research Award. She earned her Ph.D. in Earth and planetary sciences from the Massachusetts Institute of Technology.

Wanda Ward

Co-Chair

WANDA E. WARD is an executive associate chancellor for administration and university relations at the University of Illinois at Urbana-Champaign (UIUC), where she serves as chief of staff to the chancellor. Additionally, Ward chairs the COVID-19 Return to On-Campus Operations: Community and Public Engagement Committee; co-chairs the Call to Action to Address Racism and Social Injustice: Community Action and Public Engagement Committee; and is a member of the Carle Foundation (Urbana) and the Community Coalition Executive Committee (Champaign). Before joining UIUC, Ward served in several senior leadership positions throughout her 26 years at the National Science Foundation, including senior advisor to the director; head of the Office of International and Integrative Activities; deputy assistant director for social, behavioral and economic sciences; and deputy assistant director for education and human resources. Also, she has served as assistant director for broadening participation at the Office of Science and Technology Policy (OSTP), White House Executive Office of the President; on the U.S. President's National Science and Technology Council subcommittees and interagency working groups in the areas of the social, behavioral and economic sciences, and science education and workforce development; and at the international level, as a member of the International Social Science Council (ISSC) Committee for Developing and Transition Economies (CoDATE) and the ISSC Executive Committee. She was awarded the American Psychological Association (APA) Presidential Citation, the Federation of Behavioral, Psychological and Cognitive Sciences Richard T. Louttit Award, and the U.S. Presidential Rank Award of Distinguished Executive. Ward was also selected as a fellow in the University of Illinois System President's Executive Leadership Program. She earned a B.A. in psychology with an Afro-American Studies Certificate from Princeton University and a Ph.D. in psychology from Stanford University.

Claude R. Canizares

Member

CLAUDE R. CANIZARES (NAS) is Bruno Rossi Professor of Physics at the Massachusetts Institute of Technology (MIT). His research is in space astronomy and astrophysics and he is a principal investigator on NASA's Chandra X-ray Observatory. At MIT, he served as director of the Center for Space Research, associate provost, vice president for research & associate provost, and vice president. He is a member of the National Academy of Sciences and the International Academy of Astronautics and is a fellow of the American Academy of Arts & Sciences. He served on the Board of Directors of L-3 Technologies (now L3Harris) and has served on numerous advisory committees including the NASA Advisory Council, the National Advisory Council on Innovation and Entrepreneurship of the Department of Commerce, and the Air Force Scientific Advisory Board, and chaired the National Academies' Space Studies Board. He has also received several awards including the Goddard Medal, a decoration for Meritorious Civilian Service to the United States Air Force, and two NASA Public Service Medals. He earned his B.A., M.A. and Ph.D. in physics from Harvard University.

Erin Cech

Member

ERIN CECH is an assistant professor of sociology at the University of Michigan. Previously, she was a postdoctoral fellow at the Clayman Institute for Gender Research at Stanford University and was on faculty at Rice University. Cech's research examines cultural mechanisms of inequality reproduction, especially through seemingly innocuous cultural beliefs and practices. Her work on inequality in science, technology, engineering, and math (STEM) professions focuses on the recruitment and retention of women, people of color, and LGBTQ-identifying persons in STEM degree programs and STEM jobs, and the role of professional cultures in this inequality. Cech examines how cultural definitions of "good work" and "good workers" can anchor inequality in the workforce. For example, she examines the role of the "passion principle" in the reproduction of occupational inequalities: how seemingly voluntary and self-expressive career decisions help reproduce processes like occupational sex segregation. She also studies how cultural understandings of the extent and origin of inequality help to uphold unequal social structures. She has worked with NASA previously (Goddard and JSC) on diversity issues as it relates to LGBTQ+ populations. Cech's work is funded by multiple grants from the National Science Foundation, and her research has appeared in the Proceedings of the National Academy of Sciences, the American Journal of Sociology, and the American Sociological Review. Her research has also been covered by The New York Times, Washington Post, CNN, Time, Harvard Business Review, and the news sections of Science and Nature. In 2020, she was named one of Business Equality Magazine's "40 LGBTQ+ Leaders Under 40" and was honored with the University of Michigan's Henry Russel Award. She earned a Ph.D. in sociology from the University of California, San Diego.

Annmarie Eldering

Member

ANNMARIE ELDERING is the deputy project scientist for the Orbiting Carbon Observatory-2 (OCO-2) and the project scientist for OCO-3 at the Jet Propulsion Laboratory (JPL). She has been at JPL since 1999, adapting her knowledge of radiative transfer and light scattering to algorithm development for the Tropospheric Emission Spectrometer (TES) as well as validation of AIRS data. She served as the TES deputy principal investigator and then principal investigator between 2006 and 2010. That led to leadership roles as the deputy section manager and section manager in Earth Atmospheric Sciences section before she joined the OCO-2 project in 2010. In her recent project and management roles, she provides dynamic technical leadership for teams focused on the extraction of information about clouds, aerosols, and trace gases in the Earth's atmosphere. She is the principal investigator or a co-investigator on a number of competitively awarded research tasks and has worked on the development of several mission concepts. She earned a Ph.D. in environmental engineering science from the California Institute of Technology.

Elena A. Erosheva

Member

ELENA A. EROSHEVA is a professor of statistics and social work and associate director of the Center for Statistics and the Social Sciences at the University of Washington. Her research focuses on the development and application of statistical methods and models for complex and heterogeneous data in the social, behavioral, medical, and health sciences. Her work includes statistical methodology development for multivariate and longitudinal data analysis, text analysis, survey methodology, and analysis of survey data. She is a first prizewinner of the 2014 America Competes Act Challenge competition to maximize fairness in NIH peer review in the category Most Creative Idea for Detection of Bias in Peer Review. In line with this award, she recently published findings on disparities in peer review scores between white and black applicants for NIH R01 grants. Erosheva is currently serving as an ArXiv moderator for Statistics, and her current and past editorial board service includes Annals of Applied Statistics, Journal of the American Statistical Association, Journal of Educational and Behavioral Statistics, and Psychometrika. She earned a Ph.D. in statistics from Carnegie Mellon University.

Orlando Figueroa

Member

ORLANDO FIGUEROA is president at Orlando Leadership, LLC. He is retired from NASA where he served as former NASA director for Mars Exploration, director for the Solar System Division in the Office of Space Science at NASA Headquarters, and as deputy center director for science and technology of the Goddard Space Flight Center. Figueroa's career with NASA spanned 33 years; throughout which he demonstrated a record of consistent achievements in the planning, design, development and oversight of multi-faceted scientific space missions. He is well versed in interacting with national and international government and non-government organizations. He is considered a highly competent strategist and director of scientific space systems and technology, the management of large multi-disciplinary engineering organizations; and experienced in the management of complex multi-project programs with total budgets in excess of \$4 billion. He earned a B.S. in mechanical engineering from the University of Puerto Rico at Mayaguez.

Allison N. Jaynes

Member

ALLISON N. JAYNES is an assistant professor of physics and astronomy at the University of Iowa, where she researches space and plasma physics. Her primary research interests include pulsating aurora, radiation belts, and the connection between the two. She is co-investigator on NASA's MMS and Van Allen Probes missions, as well as on a NASA-funded CubeSat, GTOSat, and a NASA-funded sounding rocket mission, LAMP. She served on the Nomination Task Force within AGU's Space Physics and Aeronomy (SPA) section assembled to increase the diversity of honors and awards winners at AGU. She earned a Ph.D. in physics from the University of New Hampshire.

Lindsey Malcom-Piqueux

Member

LINDSEY MALCOM-PIQUEUX is the senior institutional research analyst at the California Institute of Technology (Caltech). Malcom-Piqueux's primary interest centers on postsecondary access and success for minority women and men in STEM fields. Following this interest, she has conducted research in several areas including the relationship between financial aid and STEM outcomes, the role of four-year minority-serving institutions and community colleges in creating educational equity in STEM, and gender equity in STEM among minoritized populations. Malcom-Piqueux also studies the educational experiences and outcomes of students of color at Historically Black Colleges and Universities, predominantly Black institutions, Hispanic-serving institutions, and Tribal Colleges; and examines the congruence of the minority-serving designation and academic outcomes among their target populations. Her work has appeared in *Educational Researcher*, the *Review of Higher Education*, and *Harvard Educational Review*, among other journals, and in volumes edited by Routledge, SUNY Press, Johns Hopkins University Press, and Stylus Publishing. She recently authored a commissioned paper for the NASEM Symposium on Imagining the Future of Undergraduate STEM Education entitled "Transformation in the U.S. Higher Education System: Implications for Racial Equity". Additionally, she has previously served on the National Academies study Developing Indicators for Undergraduate STEM Education. Malcom-Piqueux earned a Ph.D. in urban education with an emphasis on higher education from the University of Southern California, and an M.S. and S.B. in planetary science from the California Institute of Technology and the Massachusetts Institute of Technology, respectively.

David J. McComas

Member

DAVID J. MCCOMAS is vice president for the Princeton Plasma Physics Laboratory and professor of astrophysical sciences at Princeton University. He has participated in numerous solar science missions, including as principal investigator for NASA's IBEX and TWINS missions and a lead co-investigator for instruments on the ACE and New Horizons missions. McComas has invented a variety of instruments and missions for space applications and has authored papers in the fields of heliospheric, magnetospheric, solar, and planetary science, as well as on space instrument and mission development. His numerous honors include the 2014 COSPAR Space Science Award, a NASA Exceptional Public Service Medal, and AGU's James B. Macelwane Medal. McComas serves on the board of directors of the Brookhaven National Laboratory Science Associates. He recently served on the NASA Advisory Council (NAC) and chaired the NAC Science Committee. Previous service includes chairing NASA's Sun-Earth Connections Advisory Subcommittee, chairing two Solar Probe and Solar Probe Plus Science and Technology Definition Teams, and serving as a member of NASA's Space Science Advisory Committee. He earned a B.S. in physics from Massachusetts Institute of Technology and a Ph.D. in geophysics and space physics from the University of California, Los Angeles.

Christopher B. Newman

Member

CHRISTOPHER B. NEWMAN is associate professor in the Department of Higher Education at Azusa Pacific University (APU). Before joining the faculty at APU he was a professor at the University of San Diego. His research focuses primarily on outcomes, inequities, and undergraduate student experiences in Science, Technology, Engineering, and Mathematics (STEM). Additionally, he has interests in multicultural education in global contexts. Utilizing critical leadership and organizational change theoretical perspectives, Newman has worked with colleges and universities in the U.S. and abroad as they prepare for diversity, inclusion, equity, and/or racial justice action. He has worked, in collaboration with the National Society of Black Physicists (NSBP), on African American workforce development in physics and astronomy. Newman has served as a consultant to the National Science Foundation's (NSF) Colloquy on Minority Males in STEM and regularly serves as a review panelist for grant proposals to NSF. Newman earned a B.S. in sociology from the University of California at Santa Barbara, an M.S. in Leadership Studies from the University of San Diego, and a second M.S. and Ph.D. in Higher Education and Organizational Change from the University of California, Los Angeles.

Kunio M. Sayanagi

Member

KUNIO M. SAYANAGI is an associate professor in the Department of Atmospheric and Planetary Sciences at Hampton University. His core research expertise is in atmospheric dynamics. He applies his expertise to understand the atmospheres of solar system planets through theoretical analyses; numerical modeling; Earth-based telescopic observation analyses, space-based remote-sensing, and in-situ measurements; and planetary mission concept development. He was the principal investigator of the Small Next-generation Atmospheric Probe mission concept development funded by NASA's PSDS3 program. He was also an affiliate member of the NASA Cassini mission's Imaging Science Team. He has also been active in formulating and advocating for NASA's planetary exploration priorities and is currently on the Steering Committee of NASA's Outer Planets Assessment Group. He was selected to be on the first Forum for New Leaders in Space Science program in 2014 jointly organized by the Chinese Academy Sciences and the Space Science Board of the National Academies. He leverages his position as a professor at a Historically Black University (HBCU) to broaden participation in space science, and actively recruits undergraduate students to start research careers in space science while they are in college. He also regularly leads and participates in regional educational/public outreach activities at local schools and science museums. He earned a Ph.D. in physics from the University of Arizona.

Keivan G. Stassun

Member

KEIVAN G. STASSUN is the Stevenson Professor of Physics and Astronomy at Vanderbilt University. Stassun served on the AAS task force for promoting diversity and inclusion in astronomy graduate education. He's known for his leadership and distinction as a scientist and as an innovator in broadening the participation of underrepresented minorities in STEM fields. He is the founding director of the Fisk-Vanderbilt Master's to Ph.D. Bridge Program, is a recipient of the PAESMEM mentoring award, and has given testimony before the U.S. House of Representatives on the Bridge program and broadening participation in STEM fields. He has extensive National Academies committee experience, and specifically on projects requested by NASA, including the Decadal Survey on Astronomy and Astrophysics 2020 (Astro2020), the Panel on The State of The Profession and Societal Impacts In Astronomy, the Committee on the NASA Science Mission Directorate Science Plan, the Committee on Effective Mentoring in STEMM and the Committee on Understanding and Addressing the Underrepresentation of Women in Particular Science and Engineering Disciplines. He earned a Ph.D. in astronomy from the University of Wisconsin at Madison.

Louis-Gregory Strolger

Member

LOUIS-GREGORY STROLGER is the deputy head of the instruments division and observatory scientist in the Science Mission Office at the Space Telescope Science Institute. He is primarily concerned with clues to the nature of supernova progenitors through bulk analyses, rates, environmental effects (star-formation, metallicity, etc.), and the global evolution of these properties over the history of the Universe. He is also involved in projects on four robotic telescopes: three in space, the Hubble Space Telescope (HST), the James Webb Space Telescope (JWST), and the Nancy Grace Roman Space Telescope; and one on the ground, the RCT 1.3-meter. Strolger is active in several initiatives addressing underrepresented minorities in astronomy and physics, and looking at approaches to improve recruitment and retention. He earned a Ph.D. in astronomy and astrophysics from the University of Michigan, Ann-Arbor.