

Foundation for Assessing the Health and Vitality of the NASA Science Mission Directorate's Research Communities

Committee

Charles F. Bolden, Jr.

Co-Chair

CHARLES F. BOLDEN (NAE) nominated by President Barack Obama and confirmed by the U.S. Senate, Bolden began his duties as the twelfth Administrator of the National Aeronautics and Space Administration on July 17, 2009. As Administrator, Bolden oversaw the safe transition from 30 years of space shuttle missions to a new era of exploration focused on full utilization of the International Space Station and space and aeronautics technology development. He led the agency in developing a Space Launch System rocket and Orion spacecraft that will carry astronauts to proving ground missions in lunar orbit and enable the journey to Mars. He also established a new Space Technology Mission Directorate to develop cutting-edge technologies for the missions of tomorrow. During Bolden's tenure, the agency's support of commercial space transportation systems for reaching low-Earth orbit enabled successful commercial cargo resupply of the space station and advancement of commercial crew systems. During his 14 years as an astronaut, the South Carolina native logged more than 680 hours in space during four space shuttle missions, twice as commander and twice as pilot. A graduate of the United States Naval Academy in 1968, Bolden was commissioned as a second lieutenant in the Marine Corps. Bolden was promoted to his final rank of major general in July 1998 and named Deputy Commander of U.S. Forces in Japan. He later served as the Commanding General of the 3rd Marine Aircraft Wing at Marine Corps Air Station Miramar in San Diego, Calif., from 2000 until 2002, before retiring from the Marine Corps in 2003.

Wanda A. Sigur

Co-Chair

WANDA A. SIGUR (NAE) is an aerospace consultant for both emerging space exploration companies and traditional aerospace industry companies on strategic planning and program management. She retired from Lockheed Martin as vice president and general manager of the Civil Space business where she had executive responsibility for national space programs relating to human space flight and space science missions, including - planetary, solar, astrophysical, and Earth remote sensing for civil government agencies. These major programs included the Orion Multi-purpose Crew Vehicle, Hubble and Spitzer space telescopes, GOES-R weather satellites, Juno, GRAIL, MAVEN, Mars Reconnaissance Orbiter, Mars Odyssey, InSight, OSIRIS-REx planetary missions, and the company's nuclear space power programs. She received an MBA from Tulane University. Sigur serves as Chair, Space Technology Industry-Government-University Roundtable (STIGUR) of the National Academies of Sciences, Engineering, and Medicine. She is a member of the National Academy of Engineering (NAE) and The Academy of Medicine, Engineering and Science of Texas (TAMEST).

Gale J. Allen

Member

Gale J. Allen is executive director of the American Society for Gravitational and Space Research. Previously, Dr. Allen was the deputy chief scientist at NASA Headquarters for seven years. She began her NASA career at the Kennedy Space Center as chief of the Materials and Chemistry Branch and served NASA as the associate director of Technology Programs and Commercialization. At NASA HQ, Dr. Allen managed the Bioastronautics (human research and life support) Research Program, served as deputy for the Human Systems Research and Technology Program, and director of the Strategic Integration and Management Division before moving to her current position. Dr. Allen has received two NASA Exceptional Service Medals, and an Outstanding Leadership Medal. She is a member of Women in Aerospace and is president of the Zonta Club of Fairfax County. Dr. Allen holds an M.S. in chemistry from Old Dominion University, an M.B.A. in management from Brenau University, and a Ph.D. in business administration with an emphasis in high technology partnership development from Nova Southeastern University.

Roger D. Blandford

Member

Roger Blandford (NAS) is the Luke Blossom Professor in the School of Humanities and Sciences, and professor of physics and of particle physics and astrophysics at Stanford University. He previously served as the Pehong and Adele Chen Director of Kavli Institute for Particle Astrophysics and Cosmology. His current research interests include black hole and neutron stars, astrophysics, cosmology, gravitational lensing, cosmic ray physics, and biophysics. He chaired the National Academy of Sciences 2010 decadal survey, *New Worlds, New Horizons in Astronomy and Astrophysics*. He is the co-author of *Modern Classical Physics*. Dr. Blandford is a member of the American Astronomical Society, a fellow of the Royal Society, a fellow of the Royal Astronomical Society, and a fellow of the American Academy of Arts and Sciences. He is a recipient of the AAS Helen B. Warner Prize, the AAS Dannie Heineman Prize, the Royal Astronomical Society Eddington Medal, and the Humboldt Research Award. Dr. Blandford received his Ph.D. in astrophysics from Magdalene College, Cambridge, U.K.

Antonio J. Busalacchi, Jr.

Member

Antonio J. Busalacchi (NAE) is president of the University Corporation for Atmospheric Research (UCAR). An expert in Earth's climate system and ocean-atmosphere interactions, he helps guide NCAR's world-leading research into the Earth system sciences and its support of the research community through supercomputing, observing instruments, and community models.

His priorities include fostering a broad interdisciplinary approach to researching the Earth system, increasing diversity across the geosciences, and being a steward of the taxpayer investment in NCAR. Busalacchi has a distinguished career in geosciences; extensive experience in the management of academic, laboratory, and government programs; and broad knowledge of the research community. A nationally recognized expert on science policy, Busalacchi has advised policymakers and testified to Congress on the importance of continued federal support for Earth system science. He earned his Ph.D. in oceanography from Florida State University.

Christopher M. Keane

Member

Christopher Keane is the director of Geoscience Profession and Higher Education at the American Geosciences Institute (AGI). He has overseen AGI's Workforce Program activities, including data collection and analysis, student recruitment, diversity initiatives, and AGI's collaboration with the higher education community for the last 22 years. He also serves on the board of the International Raw Materials Observatory and as part of European Union's consortia examining future geoscience-related workforce needs. Most recently, he was a co-principal investigator for an NSF-funded project that developed the Vision and Change in the Geosciences-The Future of Undergraduate Geoscience Education report. He earned a B.S. in geology and a Ph.D. in marine, estuarine & environmental science from the University of Maryland.

Sheri Klug Boonstra

Member

Sheri Klug Boonstra is the principal investigator of NASA's Lucy Student Pipeline and Competency Enabler (L'SPACE) Program which is NASA's Lucy Asteroid Mission Student Collaboration at Arizona State University (ASU). She is the director of Strategic Partnerships and co-instructor for the ASU Space Works Program. Ms. Klug Boonstra has more than 20 years of experience in creating and implementing national NASA STEM education pipeline programs that stretch vertically from pre-college to workforce including as principal investigator for NASA's largest undergraduate internship program (Undergraduate Student Research Project). She is director of the Mars Education Program which produced and implemented NASA's award-winning Mars Student Imaging Project. She has worked on multiple NASA projects including Mars Odyssey, Mars Exploration Rovers, Lucy Asteroid Mission, Mars Sample Return, Lunar Reconnaissance Orbiter, and astrobiology projects. Ms. Klug Boonstra was selected to receive the Excellence in Earth and Space Science Education award from the American Geophysical Union in December 2020. She has an M.S. in earth science education from Boise State University, Idaho.

Rosalyn M. Lopes

Member

Rosalyn M. C. Lopes is chief scientist for the Planetary Science Directorate at NASA's Jet Propulsion Laboratory (JPL), California Institute of Technology. She is the editor-in-chief of the planetary science journal *Icarus*. Her major research interests are planetary and terrestrial geology and volcanology. She is principal investigator of a NASA Astrobiology Institute research project, leading an international team, and was a member of the science teams of the Galileo and Cassini missions, studying Io and Titan. She is a Fellow of the American Geophysical Union (AGU), Geological Society of America, and the American Association for the Advancement of Science. She has held several positions of leadership in the planetary science community, including chair of the Division for Planetary Sciences of the American Astronomical Society and president of the AGU's Planetary Science Section. She has a B.S. and Ph.D. from University College London.

Cora B. Marrett

Member

Cora Marrett is professor emerita in the Department of Sociology at the University of Wisconsin-Madison, where she served for over 20 years. She has also held appointments at the University of North Carolina at Chapel Hill, the University of Massachusetts-Amherst, the University of Wisconsin System, and the National Science Foundation. She has been a member of boards of directors and advisory committees for the Social Science Research Council; the Russell Sage Foundation; the Argonne National Laboratory; and divisions of the National Academies of Science, Engineering, and Medicine. She is a Fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science. Marrett is committed to inclusion in science - of fields of knowledge and all of human talent. The organization, Quality Education for Minorities, recognized her for "outstanding contributions to the field of Sociology and the participation of minorities in mathematics, science, and engineering." The American Sociological Association granted her the Cox-Johnson-Frazier Award for her lifetime of research, teaching, and service in the tradition of the three African American namesakes. She has a Ph.D. in sociology from the University of Wisconsin-Madison.

Mark Moldwin

Member

Mark Moldwin is an Arthur F. Thurnau Professor of Climate and Space Sciences and Engineering and Applied Physics within the University of Michigan's (UM) Department of Climate and Space Sciences and Engineering within the College of Engineering. He is also affiliated with the Space Physics Research Laboratory, the Engineering Education Research program, the African Studies Center, the Michigan Institute for Plasma Science and Engineering, and the Robotics Institute. He is the faculty director of UM's M-STEM's M-Engin program, president of the American Geophysical Union's Education Section, and executive director of NASA's Michigan Space Grant Consortium. Prior to joining the faculty of UM, Dr. Moldwin was a professor of space physics at UCLA, a professor of physics and space sciences at Florida Institute of Technology in Melbourne, and a postdoctoral research fellow in the Space and Atmospheric Sciences and Non-proliferation and International Security groups at Los Alamos National Laboratory. He was awarded a B.A. in physics with honors from the University of Alaska-Fairbanks and received his Ph.D. in astronomy and space physics from Boston University.

Ken Sembach

Member

Kenneth Sembach is the director of the Space Telescope Science Institute (STScI), a 700-person multi-mission operations center for NASA's flagship astronomical observatories and a world-class astronomical research center. Dr. Sembach has been deeply involved in scientific, operational, and managerial aspects of the Hubble Space Telescope for nearly two decades. He also leads the organization that will conduct the science and flight operations of NASA's next flagship observatory in space, the James Webb Space Telescope, as well as the center of science operations for the Nancy Grace Roman Space Telescope, which will continue the legacy of NASA's flagship observatories. As director, Dr. Sembach works closely with government, corporate, academic, international, and public partners to help humanity explore the wonders of the universe with advanced space telescopes and their data archives. He has a Ph.D. in astronomy from the University of Wisconsin-Madison.

Susan White

Member

Susan White is the director of the Statistical Research Center at the American Institute of Physics (AIP). Since joining AIP thirteen years ago, she has overseen and participated in a number of research projects examining physics education and the workforce. She and her colleagues have provided workforce data for a number of decadal surveys, including astronomy and astrophysics, planetary science, and solar and space physics. In addition to examining physics education and the workforce within the U.S., Dr. White helped direct the Global Survey of Science as part of a study examining gender differences in science disciplines around the world. Prior to joining AIP, Dr. White taught statistics and quantitative methods in business schools in Louisiana, Texas, and Washington DC. She has a Ph.D. in management science.