National Aeronautics and Space Administration





# 2016 MissionSTEM Summit

NASA Headquarters James E. Webb Auditorium August 8–9, 2016

### Meeting the Nation's STEM Challenge!



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www.nasa.gov

# 2016 MissionSTEM Summit

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### Message

#### From the Administrator



Since its inception, NASA has stood at the forefront of science, technology, engineering, and mathematics (STEM)—professional fields critical to the Nation's future. Just the words "space exploration and technology" or "aeronautics research" call to mind "NASA" for the American public and people around the globe. Today, the Agency is embarking on our greatest challenge: the journey to Mars. We know that the only way to achieve this challenging and amazing mission is by attracting and advancing a highly talented and skilled workforce that reflects the ever-increasing diversity of America.

NASA's MissionSTEM Web site is devoted to advancing equal opportunity among NASA grant recipient institutions. The initiatives on which the Summit will focus can be powerful tools for achieving greater diversity in STEM. That is why I am so excited and proud that NASA is hosting this first MissionSTEM Summit. It represents a tremendous opportunity to work hand in hand with our grantees in furthering national efforts to create more broadly diverse STEM academic and professional communities. But we are not just talking about numbers here. We are talking about creating STEM educational and workforce environments that are more inclusive for all who wish to participate. As I said in my recent communication to heads of universities receiving NASA grant awards, STEM is for everyone, and no one should be discouraged from fully participating.

That's what this Summit is about: bringing together NASA and its grantees and potential grantees to take the next step in meeting the challenges and seizing the opportunities we face in making the STEM fields more diverse. During the two days of the Summit, we will be able to discuss issues and concerns confronting our grantees, whether formal educational programs such as those at NASA-funded universities or informal education such as that at Agency-funded science centers, museums, and planetariums. This Summit is about working together to examine the issues and, just as importantly, to offer promising practices for addressing these issues and moving toward greater diversity and inclusion in STEM.

I look forward to learning about the MissionSTEM Summit's many positive outcomes. Working together, NASA, our grantees, and those seeking to become NASA grantees, will bring a renewed spirit of innovation and collaboration in seeking out and nurturing talent for the next generation of explorers.

Charles F. Bolden, Jr.

### Message

#### From the Associate Administrator for Diversity and Equal Opportunity



NASA shares in common with our grant recipient institutions the goals of ensuring equal opportunity (EO), increasing diversity, and making STEM more inclusive for all who wish to participate. As the Chief Civil Rights Officer for NASA, I cannot emphasize enough the criticality of efforts to evaluate compliance among recipients of NASA grant awards and other forms of financial assistance. A robust grantee civil rights program is a core aspect of NASA's efforts in the diversity and inclusion (D&I) and EO arenas.

However, our philosophy has always been that compliance is a floor, not a ceiling. We can and do look vigorously at STEM programs to evaluate the level of their compliance and work with them to fully address compliance issues. But we also look to see what the programs are getting right. We want to identify and share promising practices for STEM as well as assess compliance. That is why we are constantly seeking new and innovative ways to promote and advance opportunity and inclusion in STEM among all of our grantees.

The MissionSTEM Web site was designed for exactly this purpose: to reach out to as many of our grant recipients as possible. Since its inception in 2012, the site has offered grantees a wide array of written and visual information to help enhance their EO and D&I efforts. This has included everything from our D&I Leadership Series where national education leaders share their perspectives and promising practices for D&I in STEM, to our learning tool on implicit bias designed specifically for those in STEM program environments, to the Administrator's letter to grantee Presidents on NASA's zero-tolerance policy for sexual harassment forwarded to all of our grantees this past January.

We believe the MissionSTEM Summit is the next logical step in advancing efforts to make STEM more inclusive and accessible to everyone who wants to study and work in a STEM field. My personal commitment to NASA grantees, and those who wish to become grantees, is that we will share as widely as possible the rich information, especially promising practices, that comes out of this Summit.

The STEM programs are the pipeline to NASA's doors. We as an Agency have a vested interest both because of our legal obligation to ensure NASA dollars fund equal opportunity and because we want and need the best and the brightest in our workforce and in STEM across the board. With this in mind, we welcome you to the first NASA MissionSTEM Summit!

Brinda R. Manuel

Brenda R. Manuel

### About the MissionSTEM Web Site

NASA, like many Federal agencies, has obligations under civil rights laws intended to ensure equal opportunities in programs receiving Federal dollars. The MissionSTEM Web site is designed to assist programs and activities receiving NASA funding to meet their obligations under equal opportunity laws.

NASA awards approximately \$1.5 billion per year in Federal financial assistance, much of it in the form of grants for research and development, as well as Space Act and cooperative agreements. NASA currently has approximately 700 recipients, many of whom receive multiple grant awards annually. The Agency funds a wide variety of different kinds of recipients, from university and college STEM programs; to science centers, museums, and planetariums; to scientific research institutes, corporations, and consortiums.

Federal agencies awarding grants such as NASA are obligated to take steps to ensure that their recipients are not discriminating and are offering equal opportunities to their program beneficiaries, such as students or patrons of cultural institutions. Like other agencies awarding grants, NASA has its own civil rights regulations under Title VI of the Civil Rights of 1964 and related laws prohibiting discrimination by recipients, such as Title IX of the Education Amendments of 1972; Section 504 of the Rehabilitation Act of 1973; as well as its own guidelines, policies, and procedures for implementing the law's requirements. These include, for example, procedures for conducting compliance reviews of recipients to evaluate civil rights compliance.

Through MissionSTEM, NASA has broadened the reach of our civil rights technical assistance to our many grantees. As an integral component of NASA's civil rights compliance and technical assistance efforts, the site augments the Agency's ongoing civil rights compliance reviews of our grant recipients.

NASA continues to work with our grantees to pursue innovative ways to increase access to and interest in STEM fields. Along these lines, an important feature of MissionSTEM is our video series and virtual sessions, covering topics of interest and concern for our grantee institutions, their beneficiaries, and other stakeholders. These include our Diversity and Inclusion Leadership Series, our online learning tool on implicit bias in STEM environments, and our series on how NASA innovations impact the world. These series and tools seek to address common challenges through the active involvement of our NASA leadership and subject matter experts, as well as leadership and experts from your respective communities. We also continue to highlight and emphasize the many promising practices of our grant recipients and stakeholder organizations for creating greater diversity and inclusion in STEM.

We believe that through an ongoing collaborative effort, MissionSTEM has been and can continue to be a powerful tool for helping to realize the benefits of our shared interests in STEM excellence, equal opportunity, diversity, and inclusion.

### About the MissionSTEM Summit

#### **PROGRAM DELIVERY**

- Face-to-Face (NASA Headquarters Webb Auditorium; screening in the Glennan Conference Room)
- Virtual (NASA TV opening session; Ustream entire event)

#### **ANTICIPATED OUTCOMES**

The anticipated outcomes of the Summit are to advance the national dialogue and collectively seek solutions to STEM challenges with NASA grantees and other stakeholders by:

- Creating a forum for communicating information on NASA's workforce needs of the future, including sharing promising and emerging
  practices to help increase underrepresented and underserved populations at NASA and in STEM education and professions;
- Helping federally funded STEM education programs to address current civil rights issues in academic environments, such as sexual harassment, implicit bias, and non-inclusive climates;
- Increasing participation of minority serving institutions (MSIs) in NASA business and grant opportunities and education programs; and
- Advancing diversity through civil rights compliance for NASA's grantees, including STEM formal and informal education, such as science center and science museum grantees.

## About the MissionSTEM Summit

#### About the Sessions

#### Town Hall I: Leveraging the Power of Diversity and Inclusion in STEM: Challenges (60 minutes)

When it comes to advancing diversity and inclusion (D&I) in STEM education and employment, challenges remain. This session will explore the issues and opportunities in furthering D&I in 21st century STEM workplaces and academic programs. Our expert panelists from the Federal sector and academia will share their experiences, observations, and perspectives on addressing the need for greater diversity and more inclusion in our STEM environments.

#### Town Hall II: Promising Practices (60 minutes)

There is no one-size-fits-all answer to addressing the complexities of advancing D&I in STEM. Many strategies have proven effective or shown great potential in furthering D&I efforts. This session is designed to share some of these strategies and to spur innovation in creating new promising practices. Experts from academia and STEM advocacy organizations will lead this interactive idea generating session.

#### Accessing NASA Grants/Contracts (120 minutes)

The two moderated panel discussions for this session discuss ways to increase the inclusion of MSIs—Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Asian American Native American Pacific Islander Serving Institutions (AANAPISIs), and Tribal Colleges and Universities (TCUs)—in NASA grants and contracts. The first half of this session consists of an extensive industry and academia prospective on how MSIs can access NASA contracts utilizing the various avenues available within the Agency such as the Mentor-Protégé Program. The second half of this session promotes ways to increase inclusion of MSIs in the NASA grant activities by highlighting Agency programs like the Minority University Research and Education Project (MUREP) and recognized best practices currently in place at some MSIs. The final part of this session will be devoted to audience interaction and in-depth discussion on ways to increase access to NASA funding.

#### Increasing Workforce Diversity in STEM: The STEM Pipeline (120 minutes)

This session is intended to home in on the NASA workforce of the future. It focuses on how one can pursue a STEM career (especially at NASA) and the necessary skills to accomplish NASA's mission of the next few decades. Topics include programs such as Pathways, NASA Internships, Fellowships and Scholarships, and a summary of other avenues for entering the NASA workforce. The session includes discussion of current and future demographic data collection and discussion of workforce statistics.

#### Making STEM Academic Environments More Inclusive (120 minutes)

This moderated panel discussion examines the individual and institutional barriers that contribute to the underrepresentation of women and minority groups in STEM academic environments. The panelists reflect a diverse group of STEM professionals and academicians who have sought to identify and address critical barriers to advancement in STEM. Each panelist offers his or her perspectives, empirical studies, and experiences of STEM academic and related program environments. They also discuss methods of effectively addressing barriers such as harassing conduct and implicit biases. The focus of the dialogue among the panel and session participants is on making STEM academic programs more inclusive by recognizing and reducing barriers that impede success in the overall STEM environment.

#### Advancing Diversity through Civil Rights Compliance (120 minutes)

This moderated panel discussion focuses on key elements of civil rights compliance for recipients of Federal financial assistance in STEM. The panelists' presentations and interchange with audience members are intended to address compliance requirements for ensuring equal opportunity regardless of such factors as race, gender, or disability status. Panelists include Federal and grantee officials discussing the key challenges and best practices for civil rights compliance in STEM in a variety of contexts, such as program access for individuals with disabilities, Title IX self-evaluation and coordination, family friendly policies, and more. We expect participants to come away with innovative tools for attending to equal opportunity requirements while also addressing the need for greater diversity in STEM.

#### **Closing: The Path Forward (20 minutes)**

This final session is designed as a wrap-up for the Summit that reflects a path forward, including mechanisms for creating change. As such, the session serves as a preliminary means of gathering recommendations for promising practices from the participants, as well as an opportunity for participants to propose future action at their institutions. The closing session also serves as a reminder that NASA is actively seeking this input and feedback from grantees going forward. NASA will review the input provided, both at the closing session and after the Summit, to determine its appropriateness for inclusion in a publication to be posted on MissionSTEM. Dissemination of that material to all NASA grantees will be a key aspect of the follow-on from the Summit.

### Monday, August 8, 2016

8:00 a.m.	Registration and NASA/Participants Networking Opportunity NASA West Lobby and James E. Webb Auditorium
9:00 a.m.	<b>Greetings and Opening Remarks</b> Brenda R. Manuel, Associate Administrator, NASA Office of Diversity and Equal Opportunity (ODEO) Dr. Dava Newman, NASA Deputy Administrator
9:30 a.m.	Opening and Keynote Address NASA James E. Webb Auditorium
	Welcome Message Brenda R. Manuel, Associate Administrator, NASA ODEO
9:35 a.m.	Opening Videotaped Remarks and Introduction of Congressional Video Charles F. Bolden, Jr., NASA Administrator
9:40 a.m.	Presentation of Congressional Video
9:50 a.m.	Introduction of Keynote Speaker and White House Guest Dr. Dava Newman, NASA Deputy Administrator
9:55 a.m.	Keynote Speaker Dr. Jo Handelsman, Associate Director for Science, White House Office of Science and Technology Policy (OSTP)
10:40 a.m.	Message on Behalf of the First Lady Christina M. "Tina" Tchen, Assistant to the President and Chief of Staff to the First Lady
10:50 a.m.	BREAK
11:00 a.m.	Town Hall 1 Panel: Leveraging the Power of Diversity and Inclusion in STEM: Challenges NASA James E. Webb Auditorium
	Introductions: Dr. Dava Newman, NASA Deputy Administrator Speaker: Dr. France Cordova, Director, National Science Foundation (NSF) Moderator: Dr. Ellen Stofan, NASA Chief Scientist Panelists: Alice Bowman, New Horizons Mission Operations Manager, Johns Hopkins University Applied Physics Laboratory Dr. Michelle V. Manuel, Assistant Professor, University of Florida Constance V.A. Thompson, Director, External & Government Affairs, National Society of Black Engineers (NSBE)
12:00 p.m.	LUNCH - Interface with NASA Mission Directorates Room 2E39

### Monday, August 8, 2016

1:15 p.m.	Town Hall 2 Panel: Leveraging the Power of Diversity and Inclusion in STEM: Promising Practices NASA James E. Webb Auditorium	
	Introduction: Dr. Dava Newman, NASA Deputy Administrator Moderator: Dr. Alma Clayton-Pedersen, Senior Associate, Curtis Lewis & Associates (CLA) Panelists: Dr. Ann Weaver Hart, President, University of Arizona Janet Bandows Koster, Executive Director and CEO, Association for Women in Science (AWIS) Dr. Michele V. Manuel, Professor, University of Florida Dr. Stephen M. Ruffin, Professor, Georgia Institute of Technology, and Director, NASA Georgia Space Grant Consortium	
2:15 p.m.	BREAK	
2:30 p.m.	Panel: Accessing NASA Grants/Contracts NASA James E. Webb Auditorium	
	<ul> <li>Introduction:         <ul> <li>Dennis Andrucyk, Deputy Associate Administrator, NASA Space Technology Mission Directorate Contracts Panel:</li> <li>Moderator:                  <ul></ul></li></ul></li></ul>	
4:30 p.m.	ADJOURN	

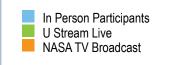


### Tuesday, August 9, 2016

7:45 a.m.	NASA/Participant Networking Opportunity NASA West Lobby			
8:30 a.m.	Panel: Increasing Workforce Diversity in STEM: The STEM Pipeline NASA James E. Webb Auditorium			
	Introduction Robert Lightfoot, NASA Associate Administrator Moderator Donald James, Associate Administrator, NASA Office of Education (OE) Panelists Susan Fonseca Lanham, CEO and Founder of Women@TheFrontier Jill L. Prince, Manager, NASA Engineering and Safety Center Integration Office Dr. Wanda Ward, Assistant Director, Broadening Participation, White House OSTP Dennis Woodfork, Assistant Division Chief for Technology, NASA Goddard Space Flight Center Speaker (Pathways Program) Keith Lowe, Pathways Program Manager, NASA Office of Human Capital Management			
10:30 a.m.	BREAK			
11:00 a.m.	Panel: Making STEM Academic Environments More Inclusive NASA James E. Webb Auditorium			
	<ul> <li>Introduction         Lesa Roe, NASA Deputy Associate Administrator     </li> <li>Moderator         Dr. Ellen Stofan, NASA Chief Scientist     </li> <li>Panelists         Dr. Jedidah Isler, Astronomy &amp; Astrophysics Postdoctoral Fellow, Vanderbilt University - NSF         Dr. Neill Reid, Space Science Operations Lead for the Hubble Space Telescope, The Space Telescope Science Institute         Dr. Beverly Daniel Tatum, President Emerita, Spelman College         Dr. Claudia "Meg" Urry, Professor of Physics and Astronomy, Yale University/Past President, American Astronomical Society     </li> </ul>			
12:45p.m.	LUNCH - Interface with NASA Mission Directorates Room 2E39			

### Tuesday, August 9, 2016

2:00 p.m.	Panel: Advancing Diversity Through Civil Rights Compliance NASA James E. Webb Auditorium
	<ul> <li>Introduction         Brenda R. Manuel, Associate Administrator, NASA ODEO     </li> <li>Moderator         David Chambers, Acting Director, Program Planning and Evaluation Division, NASA ODEO     </li> <li>Panelists         Dr. Joni Baker, Director of Equal Opportunity and Diversity, Texas A&amp;M University System         Dr. Lorelle Espinosa, Assistant Vice President, Center for Policy Research and Strategy, American Council on Education         Rachel Gettler, Attorney, Office for Civil Rights, U.S. Department of Education     </li> </ul>
4:00 p.m.	Closing Session – The Path Forward NASA James E. Webb Auditorium
	Introduction Brenda R. Manuel, Associate Administrator, NASA ODEO Co-Moderators Dr. Ellen Stofan, NASA Chief Scientist Dr. Alma Clayton-Pedersen, Senior Associate, CLA
4:20 p.m.	Closing Remarks Dr. Dava Newman, NASA Deputy Administrator
4:30 p.m.	ADJOURN



### **Distinguished Guests**

#### Christina M. "Tina" Tchen

Assistant to the President and Chief of Staff to the First Lady

Tina Tchen is an Assistant to the President and Chief of Staff to the First Lady Michelle Obama. Within the Obama Administration she also serves as the Executive Director for the Council on Women and Girls and the past Director of the White House Office of Public Engagement. Tchen was previously a partner in corporate litigation at Skadden, Arps, Slate, Meagher & Flom LLP. In that capacity, Tchen represented public agencies in state and Federal class actions, including the Illinois Department of Children and Family Services, the Illinois Department of Public Aid, and the Chicago Housing Authority. Tchen is the recipient of many awards, including the Leadership Award from the Women's Bar Association of Illinois (1999); "Women of Achievement" award from the Anti-Defamation League (1996); and Chicago Lawyer "Person of the Year" (1994).

#### Dr. Jo Handelsman

Associate Director for Science at the White House Office of Science and Technology Policy

Dr. Jo Handelsman is the Associate Director for Science at the White House Office of Science and Technology Policy (OSTP), appointed by President Obama and confirmed by the Senate in June of 2014. Dr. Handelsman helps to advise President Obama on the implications of science for the Nation, ways in which science can inform U.S. policy, and on Federal efforts in support of scientific research.

Prior to joining OSTP, Dr. Handelsman was the Howard Hughes Medical Institute Professor and Frederick Phineas Rose Professor in the Department of Molecular, Cellular and Developmental Biology at Yale University. She previously served on the University of Wisconsin-Madison faculty as a professor in Plant Pathology from 1985 to 2009 and as professor and chair of the Department of Bacteriology from 2007 to 2009. In 2013, she served as president of the American Society for Microbiology.

Dr. Handelsman is an expert in communication among bacteria that associate with soil, plants, and insects and helped pioneer the field of metagenomics, bridging agricultural and medical sciences. Handelsman is also recognized for her research on science education and women and minorities in science, and received the Presidential Award for Excellence in Science Mentoring in 2011. Dr. Handelsman also co-chaired the PCAST working group that developed the 2012 report, "Engage to Excel," which contained recommendations to the President to strengthen STEM education to meet the workforce needs of the next decade in the United States.

Dr. Handelsman co-founded the Wisconsin Program for Scientific Teaching, the Yale Center for Scientific Teaching, and the National Academies Summer Institute on Undergraduate Education, programs focused on teaching principles and practices of evidence-based education to current and future faculty at colleges and universities nationwide.

Dr. Handelsman received a B.S. from Cornell University and a Ph.D. in molecular biology from the University of Wisconsin-Madison.





# Distinguished Guests

### Dr. France A. Córdova

**Director, National Science Foundation** 



Dr. France A. Córdova is an astrophysicist and the 14th director of the National Science Foundation (NSF), the only Government agency charged with advancing all fields of scientific discovery; technological innovation; and STEM education. NSF is a \$7.5 billion independent Federal agency; its programs and initiatives keep the United States at the forefront of science and engineering, empower future generations of scientists and engineers, and foster U.S. prosperity and global leadership.

Dr. Córdova is president emerita of Purdue University, and chancellor emerita of the University of California, Riverside, where she was a distinguished professor of physics and astronomy. Córdova was the vice chancellor for research and professor of physics at the University of California, Santa Barbara.

Previously, Córdova served as NASA's chief scientist. Prior to joining NASA, she was on the faculty of the Pennsylvania State University where she headed the department of astronomy and astrophysics. Córdova was also deputy group leader in the Earth and space sciences division at Los Alamos National Laboratory. She received her B.A. from Stanford University and her Ph.D. in physics from the California Institute of Technology.

More recently, Córdova served as chair of the Board of Regents of the Smithsonian Institution and on the board of trustees of Mayo Clinic. She also served as a member of the National Science Board (NSB), where she chaired the Committee on Strategy and Budget. As NSF director, she is an ex officio member of the NSB.

Dr. Córdova's scientific contributions have been in the areas of observational and experimental astrophysics, multi-spectral research on x-ray and gamma-ray sources and space-borne instrumentation. She has published more than 150 scientific papers. She has been awarded several honorary doctorates, including ones from Purdue and Duke Universities. She is a recipient of NASA's highest honor, the Distinguished Service Medal, and was recognized as a Kilby Laureate. The Kilby International Awards recognize extraordinary individuals who have made "significant contributions to society through science, technology, innovation, invention and education." Córdova was elected to the American Academy of Arts and Sciences and is a National Associate of the National Academies. She is also a fellow of the American Association for the Advancement of Science (AAAS) and the Association for Women in Science (AWIS).

# NASA Office of the Administrator

### Dr. Dava Newman

**Deputy Administrator** 



Dr. Dava Newman was nominated in January 2015 by President Barack Obama and confirmed by the U.S. Senate in April 2015 to serve as the Deputy Administrator of the National Aeronautics and Space Administration. She was sworn in on May 15, and began her duties with the Agency on May 18.

Along with NASA Administrator Charles Bolden, Newman is responsible for providing overall leadership, planning, and policy direction for NASA. Newman performs the duties and exercises the powers delegated by the Administrator, assists the Administrator in making final Agency decisions, and acts for the Administrator in his absence by performing all necessary functions to govern NASA operations and exercises the powers vested in the Agency by law. Newman also is responsible for articulating the Agency's vision and representing NASA to the Executive Office of the President, Congress, heads of Federal and other appropriate Government agencies, international organizations, and external organizations and communities.

Prior to her tenure with NASA, Newman was the Apollo Program Professor of Astronautics at the Massachusetts Institute of Technology (MIT) in Cambridge. Her expertise is in multidisciplinary research that encompasses aerospace biomedical engineering.

Dr. Newman's research studies were carried out through space flight experiments, ground-based simulations, and mathematical modeling. Her latest research efforts included advanced space suit design, dynamics and control of astronaut motion, mission analysis, and engineering systems design and policy analysis. She also had ongoing efforts in assistive technologies to augment human locomotion here on Earth.

Newman is the author of *Interactive Aerospace Engineering and Design*, an introductory engineering textbook published by McGraw-Hill, Inc., in 2002. She also has published more than 250 papers in journals and refereed conferences.

She earned her B.S. in aerospace engineering from the University of Notre Dame in 1986. As a student at MIT, Newman earned her M.S. degrees in aerospace engineering and technology and policy in 1989 and her Ph.D. in aerospace biomedical engineering in 1992.

"Although the overall face of the workforce throughout our country is changing—particularly with a higher representation of younger and minority individuals—the demographics of science, technology, engineering and math fields have remained largely unchanged. Nationwide, Census Bureau statistics tell us that women make up only about 26% of the STEM workforce, and racial/ ethnic minorities make up only 29%. This data should make us pause, and upon our reflection, turn to immediate action. We in the STEM community can and must do more to achieve diversity and excellence if we want to continue to lead the world in scientific research and space exploration. To achieve better representation in STEM education and professions, we must approach this challenge with a sense of urgency."

# NASA Office of the Administrator

### Robert M. Lightfoot, Jr.

Associate Administrator



Robert M. Lightfoot, Jr., became Associate Administrator for NASA, the Agency's highest-ranking civil servant position, effective September 25, 2012. He previously was director of NASA's Marshall Space Flight Center in Huntsville, AL. Named to the position in August 2009, he headed one of NASA's largest field installations, which plays a critical role in NASA's space operations, exploration, and science missions. Lightfoot managed a broad range of propulsion, scientific, and space transportation activities contributing to the Nation's space program. He served as acting director of the Center from March 2009 until his appointment as director.

From 2007 to 2009, Lightfoot was deputy director of the Marshall Center. Lightfoot served as manager of the Space Shuttle Propulsion Office at Marshall from 2005 to 2007, where he was responsible for overseeing the manufacture, assembly, and operation of the primary shuttle propulsion elements: the main engines, external tank, solid rocket boosters, and reusable solid rocket motors.

From 2003 to 2005, he served as assistant associate administrator for the Space Shuttle Program in the Office of Space Operations at NASA Headquarters in Washington. His responsibilities included Space Shuttle return to flight activities following the Columbia tragedy, technical and budgetary oversight of the \$3 billion annual budget, and initial transition and retirement efforts for Shuttle infrastructure.

In 2002, Lightfoot was named director of the Propulsion Test Directorate at NASA's Stennis Space Center. He served as deputy director of the organization beginning in 2001, until his appointment as director.

Lightfoot began his NASA career at the Marshall Center in 1989 as a test engineer and program manager for the Space Shuttle main engine technology test bed program and the Russian RD-180 engine testing program for the Atlas launch vehicle program.

Lightfoot received a bachelor's degree in mechanical engineering in 1986 from the University of Alabama. In October 2007, he was named Distinguished Departmental Fellow for the University of Alabama, Department of Mechanical Engineering. He was selected as a University of Alabama College of Engineering fellow in 2009. Lightfoot serves on the University of Alabama Mechanical Engineering Advisory Board. In 2010, he was inducted into the State of Alabama Engineering Hall of Fame.

Lightfoot has received numerous awards during his NASA career, including a NASA Outstanding Leadership medal in 2007 for exemplary leadership of the Shuttle Propulsion Office, assuring safety for the return to flight of the Space Shuttle. In 2006, he was awarded the Presidential Rank Award for Meritorious Executives, and in 2010 he received the Presidential Rank Award for Distinguished Executives— the highest honors attainable for Federal Government work. In 2000, Lightfoot received a Spaceflight Leadership Recognition Award, which recognizes leaders who exemplify characteristics necessary for success. In 1999, NASA's astronaut corps presented him with a Silver Snoopy Award, which honors individuals who have made key contributions to the success of human space flight missions. He also received the NASA Exceptional Achievement Medal in 1996 for significant contributions to NASA's mission.

# NASA Office of the Administrator

#### Lesa Roe Deputy Associate Administrator



Appointed as NASA's Deputy Associate Administrator in May 2014, Lesa Roe assists the Associate Administrator in performing the Agency's chief operating officer duties and is leading an Agency-wide initiative across all of NASA's Centers to establish a more efficient operating model that maintains a minimum set of capabilities and meets current and future mission needs.

Roe has had a long and distinguished career that includes positions at multiple NASA Centers, including her most recent post as the director of NASA's Langley Research Center. As Center Director, Roe was the senior management official of the center, overseeing facilities valued at more than \$3.3 billion, and employing over 3,600 engineers and scientists. She was responsible for the Center's technical implementation of aeronautical, space, and science programs, as well as the overall management of the Center's facilities, personnel, and administration.

Prior to Langley, she served as manager of the International Space Station Research Program at Johnson Space Center in Houston, where she led the efforts of more than 900 engineers and scientists on the \$450 million annual research program, delivering the first research to the space station.

In her more than 15 years of program and project management at Kennedy Space Center in Florida, Roe developed systems and flight tests for flight elements that are now in orbit as part of the Space Station. She also served as a manager and as a systems engineer on 38 Space Shuttle flights. Her engineering career began in the private sector, performing satellite communications analysis.

She holds a B.S. in electrical engineering from the University of Florida and an M.S. in electrical engineering from the University of Central Florida.

Her honors include the 2015 Senior Executive Service Presidential Distinguished Rank Award and the 2006 Presidential Meritorious Executive Rank Award; NASA Exceptional Service Medal; University of Florida's Distinguished Career Achievement and Outstanding Leadership in Engineering Awards; the 2010 Women in Aerospace Leadership Award; the 2010 YWCA Women of Distinction in Science and Technology; the Virginia Hispanic Chamber of Commerce 2012 Bridge Builder Award; and selection by WOW magazine as one of the Nation's top 90 women for mentoring women with potential without resources.

### Moderators

### Glenn A. Delgado



Associate Administrator, NASA Office of Small Business Programs

Glenn A. Delgado is the Associate Administrator of NASA's Office of Small Business Programs. As the Associate Administrator, Delgado provides executive leadership and policy direction for developing and implementing policies and initiatives throughout NASA to ensure that all categories of small businesses are afforded opportunities to compete for Agency contracts. Since Delgado's arrival at NASA in fiscal year 2007, the dollars awarded to small businesses have increased every year. In fiscal year 2006, NASA awarded \$1.94 billion directly to small businesses. At the end of fiscal year 2011, NASA awarded \$2.48 billion directly to small businesses. That amounts to approximately a 28-percent increase in direct awards made to small businesses, which equates to approximately \$541 million. The number of prime contracts awarded to small businesses also rose 42 percent during this timeframe, from 15,141 to 21,456.

During his tenure as the Associate Administrator of NASA's Office of Small Business Programs, Delgado and his team have worked very closely with the Office of General Counsel and Office of Procurement to publish several new policies, contract clauses, and NASA Federal Acquisition Regulation (FAR) Supplement changes that were very beneficial to the Agency's small business program. In 2009, the Small Business Administration (SBA) recognized some of the new policies/procedures that NASA implemented for its small business program as a Federal Government Best Practice. Delgado also served as the chairman of the Executive Committee of the Federal Office of Small and Disadvantaged Business Utilization (OSDBU) Directors Council for fiscal year 2009.

In 2010, Delgado received the second highest award bestowed by NASA, the NASA Outstanding Leadership Medal, which is awarded to NASA employees for notably exceptional leadership. Delgado received this award for his innovative practices and excellent stewardship of NASA's small business programs in supporting the Agency's mission, goals, and objectives. In September 2010, the Congressional Black Caucus honored Delgado with the 2010 Small Business Champion Living Legends award.

Prior to his appointment to NASA, Delgado served as the Acting Director of the Department of the Navy's Office of Small Business Programs. He also served as the Director of Small Business for the Naval Air Systems Command (NAVAIR). He has over 29 years of acquisition experience. While at NAVAIR, he worked on several major weapon system programs and served as the Procuring Contracting Officer (PCO) for the A-6, EA-6B, and F/A-18 C/D aircraft.

In September 2006, Mr. Delgado was awarded the Superior Civilian Service medal, the second-highest award that can be presented to a civilian in the Navy, for his exceptional service to the Navy Small Business Programs Office. Mr. Delgado was awarded two Department of the Navy Meritorious Civilian Service medals for his innovative approaches in the acquisition process while serving as a PCO for the EA-6B aircraft and for his performance as the Director of Small Business at the Naval Air Systems Command. Mr. Delgado also received the Department of the Navy Competition and Procurement Excellence Award. Delgado earned his B.S. at the University of New Hampshire and his M.B.A. from Marymount University; he also graduated from NAVAIR's Senior Executive Management Development Program. He is Level III–certified in the Acquisition Professional field of Contracting and is a member of the Acquisition Professional Community.

### Moderators

### **Donald G. James**

Associate Administrator, NASA Office of Education



Donald G. James was appointed NASA's Associate Administrator for the Office of Education effective September 8, 2014. In this position, James is responsible for developing and implementing NASA's education programs that strengthen student involvement and public awareness about its scientific goals and missions. In this role, he leads the Agency in inspiring interest in science, technology, engineering and mathematics (STEM) through NASA's unique mission, workforce, facilities, research, and innovations.

James chairs the Education Coordinating Committee (ECC), an Agency-wide collaborative structure that maximizes NASA's ability to manage and implement its education portfolio. The ECC works to ensure the Agency's education investments are focused on supporting the Nation's education efforts to develop the workforce needed to achieve NASA's goals and objectives.

He is the United States representative on the International Space Education Board (ISEB), a global collaboration in space education between NASA, the Canadian Space Agency, the European Space Agency, the Japan Aerospace Exploration Agency, and the Centre National d'Études Spatiales. The ISEB shares best practices and unites efforts to foster interest in space, science, and technology among the student community worldwide.

James works with the Office of Science and Technology Policy's Committee on STEM (Co-STEM) to continue coordinating and leveraging NASA's education programs, opportunities, and offerings with those of other Federal agencies. This increased collaboration is intended to lead to maximum impact and, as it is implemented, will lead to strategies for closer and more effective coordination among agencies with STEM investments.

Prior to his appointment, James was the director of the Strategic Communications and Education Directorate at NASA's Ames Research Center in Mountain View, CA. In this capacity, he oversaw the operations of all communications, education, and public outreach functions for the Center and supported initiatives to engage a variety of internal and external audiences.

James began his NASA career in 1982 as a Presidential Management Intern at the Goddard Space Flight Center in Greenbelt, MD. During more than 30 years at the agency, he has served in numerous capacities, including public affairs, human capital management, and strategic communications. From 2002 to 2003 he was the senior advisor and executive officer for the NASA Education Enterprise at NASA Headquarters.

James received a B.A. in international relations from the University of Southern California in Los Angeles and an M.A. in economic development and public administration from the American University in Washington. James received a three-year fellowship from National Science Foundation for his graduate studies. He has participated in numerous executive development education programs at Cambridge University in England and Harvard University in Cambridge, MA.

The son of a former U.S. diplomat, James lived and traveled extensively in Africa, Europe, and Thailand. He also is the son of a former teacher, which has instilled in him a strong passion for the value of education.

#### Dr. Ellen Stofan NASA Chief Scientist



Dr. Ellen Stofan was appointed NASA Chief Scientist on August 25, 2013, serving as principal advisor to NASA Administrator Charles Bolden on the Agency's science programs and science-related strategic planning and investments.

Prior to her appointment, Stofan was vice president of Proxemy Research in Laytonsville, MD, and honorary professor in the department of Earth sciences at University College London in England. Her research has focused on the geology of Venus, Mars, Saturn's moon Titan, and Earth. Stofan is an associate member of the Cassini Mission to Saturn Radar Team and a co-investigator on the Mars Express Mission's MARSIS sounder. She also was principal investigator on the Titan Mare Explorer, a proposed mission to send a floating lander to a sea on Titan.

### Moderators

### Dr. Ellen Stofan (continued)

Her appointment as chief scientist marks a return to NASA for Dr. Stofan. From 1991 through 2000, she held a number of senior scientist positions at NASA's Jet Propulsion Laboratory in Pasadena, CA, including chief scientist for NASA's New Millennium Program, deputy project scientist for the Magellan Mission to Venus, and experiment scientist for SIR-C, an instrument that provided radar images of Earth on two Shuttle flights in 1994.

Stofan holds an M.S. and a Ph.D. in geological sciences from Brown University in Providence, RI, and a B.S. from the College of William and Mary in Williamsburg, VA. She has received many awards and honors, including the Presidential Early Career Award for Scientists and Engineers. Stofan has authored and published numerous professional papers, books, and book chapters, and has chaired committees including the National Research Council Inner Planets Panel for the recent Planetary Science Decadal Survey and the Venus Exploration Analysis Group.

### Dr. Alma Clayton-Pedersen

Senior Associate, Curtis Lewis & Associates

Dr. Alma Clayton-Pedersen is the Chief Executive Officer of Emeritus Consulting Group, a Chicago-based firm that uses organizational development principles to assist nonprofit, public, and education entities in enhancing their efficacy for the public good. She is also an Association of American Colleges and Universities (AAC&U) Senior Scholar directing the work of a three-year (2010–2013) project "Preparing Critical Faculty for the Future," funded by the National Science Foundation.

From 2001 to June 2010 she was AAC&U's Vice President for Education and Institutional Renewal. Her portfolio included three of AAC&U's ongoing programs and several grant-funded projects. Clayton-Pedersen also directed AAC&U's partnership with the Pathways to College Network, which focuses on college access and success for underserved students. She served 18 months as senior policy director and special assistant to AAC&U's president prior to becoming vice president. She established AAC&U's national initiative Inclusive Excellence, which advanced the association's strategic priority: Aim High and Make Excellence Inclusive.

Dr. Clayton-Pedersen joined AAC&U after more than 15 years at Vanderbilt University, where she served in senior administrative roles within student affairs, academic affairs, athletic affairs, and Vanderbilt's public policy center. She also served as a research associate and an assistant professor of the practice in human and organizational development. While at Vanderbilt she conducted more than 20 studies of student retention, campus climate for diversity, and student use and impact of campus student programming and services. She has co-authored many publications, including "Making a Real Difference with Diversity: A Guide for Institutional Change," which focuses on changing the diversity paradigm from an add-on to an essential dimension of 21st century learning and on how to monitor progress in achieving institutional goals for diversity; and "Enacting Diverse Learning Environments: Improving the Climate for Racial/Ethnic Diversity in Higher Education," which provides a framework of the dimensions of campus climate. Both illustrate promising practices to enhance the climate for diversity. She is also the author of "The Revolving Door for Underrepresented Minority Faculty," which underscores that institutions be as conscientious about retaining as recruiting faculty of color, and provides critical guidance about how to monitor efforts.

During her nearly 35-year career in education, Dr. Clayton-Pedersen has directed projects funded by BellSouth, Ford, George Gund, James Irvine, and Lumina Foundations, as well as the Carnegie Corp of New York, the Lilly Endowment, the Fund for the Improvement of Post Secondary Education (FIPSE), the National Science Foundation, and the Metropolitan Nashville Government.

Clayton-Pedersen is a dynamic speaker who provides consultation on faculty professional development, program evaluation, diversity, and institutional change to Trustees, academic departments, administrative units, and entire campus endeavors including two- and four-year, public and private colleges and universities, as well as K–12 school districts and organizations. She has consulted nationally from Maine to California and internationally in Canada, China, and the United Kingdom. She advises foundations, businesses, regional consortia, and national associations.

She holds a B.S. from the University of Wisconsin-Milwaukee, and both the M.Ed. and Ph.D. from Vanderbilt University.

### **Dennis Andrucyk**

Deputy Associate Administrator, NASA Space Technology Mission Directorate



Dennis Andrucyk was appointed Deputy Associate Administrator of the Space Technology Mission Directorate (STMD) in April 2015. In this role, Andrucyk manages the day-to-day operations of the directorate and helps plot the strategic direction of the Agency's space technology program.

Prior to joining STMD, Andrucyk held many positions at NASA's Goddard Space Flight Center. He was Director of the Applied Engineering and Technology Directorate, serving as Director of Engineering, Deputy Director of Engineering, Chief of the Software Engineering Division, and Chief of the Mission Engineering and Systems Analysis Division. He also served as Goddard's Chief Technologist and as the Associate Chief of the Electrical Engineering Division. While enrolled in the Senior Executive Service Candidate Development Program, he spent a short time at NASA Headquarters as a Division Chief where he was the Director of the Mission and Science Measurement (MSM) Theme/Division. In 2000, he was selected as a Goddard Senior Fellow.

Andrucyk has served on several national and international space partnership teams including the U.S.-based Space Technology Alliance as one of three voting members on the North Atlantic Treaty Organization's (NATO) Sensors and Electronics Technology (SET) panel.

Before joining NASA in 1988, Andrucyk served at the Department of Defense as both a contractor and a civil servant. He has worked at the National Security Agency, the Naval Research Laboratory, Westinghouse Electric, General Electric, and the Northrop Grumman Corporation.

Andrucyk has earned the Senior Executive Service Meritorious Presidential Rank Award, the NASA Medal for Outstanding Leadership, the NASA Exceptional Service Medal, the Goddard Outstanding Leadership Honor Award, and the Goddard Exceptional Achievement Award in Diversity and Equal Employment Opportunity.

Andrucyk holds a B.S. in electrical engineering from the University of Maryland.



Dr. Joni Baker

Director, Office of Equal Opportunity and Diversity Title IX Coordinator, Texas A&M University System

Dr. Joni Baker is the Director of Equal Opportunity and Diversity for the Texas A&M University System, a consortium of 11 universities and 7 state agencies. She has been with The Texas A&M University System since 1995. Prior to that, she was a diplomat with the U.S. Department of State's Foreign Service, having assignments in Asia and Africa.

Dr. Baker has a B.S. with a double major in Political Science and Urban Affairs from American University, an M.A. in Government from Georgetown University, and a Ph.D. in Natural Resources Development from Texas A&M University. She is on the Advisory Board of the Association of Title IX Coordinators (ATIXA). Dr. Baker has traveled to more than 70 countries and speaks Swahili, Mandarin Chinese, French, and Spanish.

### Alice Bowman

New Horizons Mission Operations Manager, Johns Hopkins University Applied Physics Laboratory

Alice Bowman is the mission operations manager of the New Horizons Mission to Pluto/Charon and the Kuiper Belt and group supervisor of the Space Mission Operations group at the Johns Hopkins University Applied Physics Laboratory. She has worked in the fields of drug research, computer modeling of wave propagation, long wave infrared detector research, and military and civilian satellite operations. She graduated from the University of Virginia with a double major in chemistry and physics.

### **David Chambers**

Acting Director, Program Planning and Evaluation Division, NASA Office of Diversity and Equal Opportunity

David Chambers is an equal opportunity (EO) professional with over 20 years' experience in the field. This includes serving for four years as a civil rights analyst with the U.S. Commission on Civil Rights, where he developed policy recommendations for the President and Congress on Federal civil rights statutory enforcement. He has been with NASA since 2000 and currently serves as the Acting Director for the Program Planning and Evaluation Division in the Agency's Office of Diversity and Equal Opportunity. Among his wide-ranging portfolio of EO roles and responsibilities, he serves as the External (Grantee) Civil Rights Team Lead, the Agency Anti-Harassment Coordinator, and the Executive Secretary of the NASA Diversity and Inclusion Strategic Partnership (DISP). In these roles and others, he has developed broad-based expertise in diversity and EO, which he brings to NASA's efforts in creating greater diversity and more inclusive educational and working environments in the STEM arena.

### Dr. Ahsan Choudhuri

Director, NASA MIRO Center for Space Exploration Technology Research, University of Texas at El Paso

Dr. Ahsan Choudhuri is professor and chair of the mechanical engineering department and director of the NASA MIRO Center for Space Exploration and Technology Research (cSETR) at The University of Texas at El Paso (UTEP). He also holds the endowed Mr. and Mrs. MacIntosh Murchison Chair II in Engineering. He leads a department of more than 860 graduate and undergraduate students. In past years, the department of mechanical engineering has had over \$13.0 million in funded research, including the MIRO cSETR. Under the direction of Dr. Choudhuri, the cSETR performs frontier research in aerospace and energy engineering while training underrepresented minorities in the fields of STEM. The cSETR supports an average of 70 students.

Dr. Choudhuri has received numerous awards and recognitions including the Faculty Award for Research Innovation from NASA and an Outstanding Leadership Award from UTEP. Professor Choudhuri has published over 90 peer-reviewed articles and has supervised over 40 graduate students. Many of these students have been recruited to the job market, obtaining positions within academia, Federal agencies, and aerospace and defense industries.

Dr. Choudhuri received a B.S. in engineering from Khulna University of Engineering and Technology in Bangladesh and an M.S. and Ph.D. from the University of Oklahoma School of Aerospace and Mechanical Engineering.







### Tania Davis



Acting Manager, NASA Minority University Research & Education Project

Tania B. Davis is the Acting Minority University Research and Education Project (MUREP) Manager in the NASA Office of Education. While on this detail assignment, she is responsible for management of the budget; oversight of eight MUREP activities; coordination of Center specific activities; participation on several Interagency Working Groups; and collaboration and coordination with Lines of Business Managers, other Education Managers, Office of Diversity and Equal Opportunity, and the Office of Small Business Programs.

In her prior role, Davis was the Headquarters Office of Procurement Lead Procurement Analyst for the Johnson Space Center and advisor to the Headquarters Office of Education. Ms. Davis provided acquisition expertise to the procurement and technical personnel on procurement activities associated with Human Exploration and Operations Mission Directorate (HEOMD) portfolio of contracts that have national and international significance; namely, the Orion Multi-Purpose Crew Vehicle and the International Space Station (ISS). In this position, she developed procurement strategies, applied project management principles to ensure critical procurement milestones were achieved, reviewed draft and final solicitations for contracts, reviewed solicitations for grants or cooperative agreements, and provided day-to-day advice and guidance to ensure that critical acquisitions were executed in support of the Agency's mission. Davis was a key player in the strategy development for the Commercial Resupply Services 2, the ISS Vehicle Sustaining Engineering Contract Extension, and the Integrated Mission Operations Contract II procurement requirements. She was recognized as a 2015 Space Flight Awareness Honoree in light of her contributions to the NASA mission. Additionally, Davis was the primary Procurement Liaison to the Office of Education and was responsible for ensuring solicitations for grants and cooperative agreement Manual.

Prior to arriving at NASA, Davis' contracting career began at the Naval Air Systems Command (NAVAIR) as a Naval Acquisition Intern in the Outstanding Scholars Program, working on programs such as the High-speed Anti-Radiation Missile (HARM), F/A-18 F-404/414 Engines, and Avionics. In 2001, she transitioned to the IRS Office of Procurement as a senior contract specialist and later became a contracting officer with an unlimited warrant in support of the Business Systems Modernization Program and promoted to Branch Chief supporting the Office of Modernization Acquisition, Total Information Processing Support Services (TIPSS)-4 Pre-award Team, and Office of Information Technology Acquisition, Modernization Branch.

Davis is a native of Shallotte, NC, and a graduate of North Carolina Central University with a B.S. in Biology and minor in Chemistry. In 2000, she received an M.B.A. from Johns Hopkins University. She is DAWIA and FAC-C Level III in Federal Government Contracting, holds a Master's Certificate in Program Management from George Washington University School of Business, and is an adjunct professor with Webster University. She is a member of the National Contract Management Association, National Black MBA Association, former National President of the North Carolina Central University Alumni Association, Inc., member of Alpha Kappa Alpha Sorority, Inc., and Trustee-in-Training at The Sanctuary at Kingdom Square.

### Dr. Lorelle Espinosa

Assistant Vice President, Center for Policy Research and Strategy, American Council on Education



Dr. Lorelle L. Espinosa serves as assistant vice president for ACE's Center for Policy Research and Strategy, where she is responsible for the co-development and management of the center's research agenda which focuses on issues of diversity and equity in 21st century higher education, public finance and higher education systems, and transformational leadership.

### Dr. Lorelle Espinosa (continued)

Espinosa has served the higher education profession for nearly 20 years, beginning in student affairs and undergraduate education at the University of California, Davis; Stanford University; and the Massachusetts Institute of Technology. Espinosa has contributed opinion and scholarly works to peer-reviewed journals, academic volumes, and industry magazines on a variety of topics. Her most recent report,

"Race, Class, and College Access: Achieving Diversity in a Shifting Legal Landscape," examines how legal challenges to raceconscious admissions are influencing contemporary admissions practices at colleges and universities nationwide. Prior to ACE, Espinosa served as a senior analyst at Abt Associates, Inc. and as director of policy and strategic initiatives for the Institute for Higher Education Policy.

Espinosa holds an A.A. from Santa Barbara City College, a B.A. from the University of California, Davis, and an M.A. and Ph.D. in higher education and organizational change from the University of California, Los Angeles.

### Rachel Gettler, J.D.

Attorney, Office for Civil Rights, U.S. Department of Education

Rachel Gettler is a staff attorney with the U.S. Department of Education's Office for Civil Rights (OCR). She primarily works on policy issues related to Title IX, including sexual harassment and sexual violence, pregnant and parenting students, and providing opportunities for women and girls in math and science.

Before joining OCR, Gettler worked on early childhood education and reading policy in the Department's Office of Elementary and Secondary Education. Gettler earned her J.D. from the University of Southern California in 2006, and graduated from the University of California, San Diego, where she studied political science.

### **Consuelo Grier**

Director of Constituency Engagement, Excelencia in Education

Consuelo A. Grier serves as Director of Constituency Engagement and leads planning and implementation of the Excelencia in Action Network, and the development of expanded engagement and partnership opportunities for Excelencia's constituents. She brings to her service at Excelencia 15 years of blended leadership experiences in the for-profit, non-profit, and higher education sectors, where she focused on issues of equity and access to quality education for underrepresented communities.



### Dr. Ann Weaver Hart

President, University of Arizona



Dr. Ann Weaver Hart is the 21st President of the University of Arizona (UA), a role she assumed in July 2012.

President Hart has successfully led efforts to create and implement a fully integrated strategic academic and business plan for the first time in the UA's history. That plan, "Never Settle," guides strategic decision-making so that the University will remain a source of worldclass education, research, and impact despite the many challenges facing public higher education today. Key achievements include a historic agreement with Banner Health that will support the UA's biosciences research initiatives while creating a foundation for statewide excellence in clinical healthcare, groundbreaking international partnerships with the National Autonomous University of Mexico and Expo 2020 Dubai, and a renewed commitment to invest in higher education from Arizona's State Government.

Dr. Hart came to Tucson from Temple University, where she served as president from July 2006 to July 2012. Previously, she served as president of the University of New Hampshire and provost and vice president for academic affairs at Claremont Graduate University in Claremont, California. At the University of Utah, she served as professor of educational leadership, dean of the Graduate School and special assistant to the president.

In addition to her role at the UA, President Hart is a member of the Association of American Universities, the Association of Public and Land-Grant Universities, and the Association of College and University Educators (ACUE) Board of Advisors. She is also an advisor for the Lincoln Project: Excellence and Access in Public Higher Education at the American Academy of Arts and Sciences. Dr. Hart is also a member of the Board of Directors of DeVry Education Group. President Hart serves with a number of organizations in and around Arizona, including the Greater Phoenix Economic Council's Executive Committee and Greater Phoenix Leadership. She is also a member of the Executive Committee of the Southern Arizona Leadership Council, the Sun Corridor Chairman's Circle, the Arizona State Board of Education, the Udall Foundation, and the Board of the Tucson Festival of Books.

Dr. Hart has received numerous professional and community service awards for her work, including the Michael P. Malone International Leadership Award from the Association of Public and Land-Grant Universities, the Girl Scouts of the USA Take the Lead Award, the Jack Culbertson Award in Educational Administration from the University Council for Educational Administration, and the PoWer Award from the Professional Women's Roundtable. She was named one of Arizona's 50 most influential women by *Arizona Business Magazine* in 2013, continuing a record of community recognition that includes being named one of the "Ten to Watch in 2010" as the "Transformer" as well as many other accolades.

President Hart received three degrees from the University of Utah: a B.S. and M.A. in history, and a Ph.D. in educational administration. In addition to serving as the president of the University of Arizona, Dr. Hart holds an appointment as professor of educational policy studies and practice in the College of Education.

### Dr. Jedidah Isler

Astronomy & Astrophysics Postdoctoral Fellow, Vanderbilt University – National Science Foundation (NSF)

Dr. Jedidah Isler is an award-winning astrophysicist, TED Fellow, and a nationally recognized speaker and advocate for inclusive STEM education. She is also the creator and host of the monthly web series "Vanguard: Conversations with Women of Color in STEM."

Dr. Isler received her bachelor's degree at Norfolk State University's Dozoretz National Institute for Mathematics and Applied Sciences (DNIMAS) before earning an M.S. in physics from the Fisk-Vanderbilt Master's-to-Ph.D. Bridge Program, a pioneering effort to increase the attainment of advanced STEM degrees by students of color. Dr. Isler continued her education at Yale University, where her research

### Dr. Jedidah Isler (continued)

on supermassive, hyperactive black holes was supported by fellowships from NASA, the National Science Foundation, and the Ford Foundation. In 2014, she became the first African-American woman to receive a Ph.D. in astrophysics from Yale, completing an awardwinning study that examined the physics of particle jets emanating from black holes at the centers of distant galaxies called blazars. Dr. Isler's current research focuses on using simultaneous infrared, optical, and gamma-ray observations to better understand the physics of these blazar jets.

Dr. Isler has served as a Chancellor's Faculty Fellow at Syracuse University, an affiliate of the Future Faculty Leader Fellowship at the Harvard-Smithsonian Center for Astrophysics, and is currently a National Science Foundation Astronomy & Astrophysics Postdoctoral Fellow at Vanderbilt University. She was recognized as a 2015 TED Fellow for her astrophysical research and innovative efforts to inspire a new generation of STEM leaders from underrepresented backgrounds. She has been invited to Astronomy Night at the White House and featured in various publications including *Wired, Diversity in Action, Ebony, NPR: Code Switch, and The Crisis* magazine. Her writing has appeared in the *New York Times*.

As a speaker, Dr. Isler works with schools, museums, libraries, and nonprofit organizations across the country to advance the cause of truly inclusive STEM engagement and has established herself as a champion of access and empowerment in STEM education from middle school and beyond.

#### **Carolyn Knowles**

Director, NASA Internships, Fellowships and Scholarships



Carolyn E. Knowles joined NASA in November 2003. As the Executive Officer to the Associate Administrator for Education, she is responsible for maintaining an overall view of the problems, issues, policies, and program development activities of the Agency's education programs and activities. She specifically supports the Associate Administrator for Education by collaborating with colleges, universities, Government agencies, and private corporations to achieve NASA's objectives; provides advice and support in all phases of the functional management of NASA Education Programs by evaluating and analyzing program information; presents and interprets management views to appropriate audiences; and provides leadership, oversight, and direction for administrative actions and management issues.

Prior to this assignment, Knowles served as the Senior Manager for NASA Programs at the United Negro College Fund Special Programs Corporation. In this capacity, she was responsible for three programs: the NASA Administrator's Fellowship Program, the Harriett G. Jenkins Pre-doctoral Fellowship Program, and the Curriculum Improvement Partnership Award Program.

Knowles received her B.A. in business management from Saint Augustine's College in 1977 and received a regular army commission into the Adjutant General Officer Corps. She completed several military schools including the Adjutant General Officer Basic and Advanced Courses, the Systems Automation Course, the Reserve Officer Training Corps Instructor Course, and the Command and General Staff College. Knowles also holds an M.A. in management from Central Michigan University.

Upon retirement from the Army, Knowles returned to her alma mater to serve as assistant professor of business and director of the Saint Augustine's College Learning Community Program, a mentoring system for first-year and transfer students.

Knowles' military and civilian background provides a wealth of experience in leadership, program management, teaching, training, and development. She is a member of the National Association of Female Executives, the Retired Officers Association, and the Young Women's Christian Association Academy of Women.

#### **Janet Bandows Koster**

Executive Director and CEO, Association for Women in Science

Janet Bandows Koster, M.B.A., assumed her position as Executive Director of the Association for Women in Science (AWIS) in July 2006. She is responsible for the day-to-day management of the 5,000-member organization, which is the largest multidisciplinary scientific organization for women in the United States. She has more than 20 years' experience in international association and nonprofit management, including a strong background in membership marketing and communications. Most recently, she served as executive director of the United German-American Committee of the USA, Inc. She has also held senior leadership positions in AARP and Volunteers of America. Bandows Koster earned a B.A. in diplomacy and world affairs from Occidental College in Los Angeles, an M.A. in international relations from Troy State University, and an M.B.A. from the Keller Graduate School of DeVry University. She is a member of the American Society of Association Executives. She serves on the Advisory Board for the NPA ADVANCE Project, From Postdoc to Faculty: Transition Issues for Women Scientists.

### Susan Fonseca Lanham

CEO and Founder of Women@TheFrontier

Susan Fonseca Lanham is the Founder and CEO of Women@TheFrontier (W@F) a convergence of female innovators from around the world unleashing exponential impact through cutting-edge science, technology, policy, and entrepreneurship.

Her focus is to find-fuel-fund the next generation of female pioneers and game-changers that shift mindset, empower a region, and inspire new global leadership.

Susan is also a founding member of Singularity University (SU), an accelerator of global entrepreneurs and future leaders launching impact driven start-ups. Described by Peter Diamandis and Ray Kurzweil as the heart of SU, she is titled "Founding Architect" for her role in building the initial DNA that is SU today.

An anthropologist and lawyer prior to SU and W@F, Susan helped negotiate international and diplomatic agreements between Central American presidents, ambassadors, U.S. State officials, private industry, and NGOs that culminated in the successful vote and passage of a multinational trade agreement called DR-CAFTA (United States–Dominican Republic–Central American Free Trade Agreement). Raised in Honduras by parents in the Peace Corps, Susan is passionate about amplifying the voice of a new generation of women and girls to solve the world's biggest challenges!

### Keith Lowe

Pathways Program Manager, NASA Office of Human Capital Management

Keith Lowe is NASA's Pathways Program Officer. Within the NASA Office of Human Capital Management, he is a team lead responsible for policy and programs in the areas of hiring, recruitment, compensation, and Pathways. He started his NASA career in 1991 at the Goddard Space Flight Center in Greenbelt, Maryland, where he held positions as human resources (HR) management specialist, project support specialist, HR systems analyst, and workforce planning specialist. He transferred to NASA Headquarters in 2006, where he was a workforce planning program specialist until becoming a team lead in 2013. He is currently on a detail assignment as Director of Executive Resources. Lowe has a B.A. in English Literature from the University of Virginia and a Master of Public Administration from the University of Southern California.







### Dr. Michele V. Manuel

Professor, University of Florida



Dr. Michele V. Manuel received her B.S. in materials science and engineering at the University of Florida and a Ph.D. in materials science and engineering at Northwestern University. She worked for NASA and General Motors Corporation before joining the faculty in the Department of Materials Science and Engineering at the University of Florida in January 2008.

Dr. Manuel is recognized for her research in the advanced design of alloys and composites. She uses thermodynamic modeling, advanced processing methods, and state-of-the-art characterization tools in her research; many of the processing and characterization methods used were pioneered by members of the American Vacuum Society (AVS) community and are featured in AVS symposia. Areas of particular emphasis in Dr. Manuel's research include design of specialized alloys, microstructural design of materials for extreme environments, and development of materials for biomedical applications. She has been recognized for her research accomplishments through several awards, including the ASM Bradley Stoughton Award for Young Professors in 2013, the NASA Early Career Award in 2012, the NSF CAREER Award in 2009, and the TMS Young Professional Development Award in 2009. A critical component of Dr. Manuel's research is the engagement of graduate and undergraduate students in advanced research practices, something at which she has been especially successful.

#### Jon Montgomery

Deputy Associate Administrator for Management, NASA Aeronautics Research Mission Directorate

Jon Montgomery is responsible for leading the institutional responsibilities of the mission directorate, ensuring strategic business processes are in place to effectively plan and implement the Aeronautics Research Mission Directorate (ARMD) mission, as well as leading development and execution of ARMD strategies with respect to technical capabilities, partnerships, external communication, human resources, and review and evaluation of programs for program planning and execution.

Previously Montgomery was director of the Integration and Management Office in ARMD, where he was responsible for key directorate processes and activities including strategic communications; education and outreach; integration of ARMD and agency strategic planning and performance reporting; various program support activities including internal reviews; and program, human capital, and mission support resources and technology requirements.

Prior to joining NASA in 2009, Montgomery was responsible for policies related to research and development, international trade, and global competitiveness of the U.S. aerospace industry in the U.S. Department of Commerce's International Trade Administration. He participated in multilateral negotiations related to aviation environmental standards, research and development and trade finance policies. He also represented the Department of Commerce in several national initiatives to foster the health of the U.S. aeronautics enterprise, including creation of the National Aeronautics Research and Development Policy and Plan, establishment of the Next Generation Air Transportation System (NextGen) initiative, and assessment of federal policies as the Global Issues staff lead for the Presidential Commission on the Future of the U.S. Aerospace Industry. Montgomery previously served as policy advisor to senior Commerce Department officials coordinating trade policies related to aerospace, information technology, and all other U.S. industrial sectors.

He has received several group and individual commendations from the Department of Commerce, the Department of State, and the Executive Office of the President. He has published multiple reports and given presentations at national and international conferences on competitiveness policies affecting U.S. aerospace manufacturers, and served as guest lecturer at the University of Wisconsin's School of Business for several years.

Montgomery began his career in 1993 at the U.S. Department of Commerce as a presidential management intern. He received a B.S. in economics from Knox College in Illinois, and an M.A. in public affairs from the University of Wisconsin's La Follette Institute of Public Affairs.



### **Dr. Jeffrey Newmark**

Deputy Associate Administrator for Research, NASA's Science Mission Directorate



Dr. Jeffrey Newmark is the Deputy Associate Administrator for Research within NASA's Science Mission Directorate (SMD) at NASA Headquarters. Principal responsibilities encompass ensuring scientific quality and integrity of research processes, including oversight of SMD scientific competition processes for research awards and missions; representing SMD research goals, policies, and programs inside and outside NASA; overseeing SMD's relationship with the National Research Council; managing Directorate-level coordination of suborbital-class flight programs, SMD education and communications efforts, and overseeing and ensuring the integration of technology efforts within SMD projects.

In his more than 25-year career, Dr. Newmark gained broad experience in leading teams of scientists and engineers, developing and implementing annual budgets, and driving strategic initiatives. Previously, Dr. Newmark was Program Scientist for the Heliophysics Division in the SMD. In this position, he led a team and provided expert advice on strategies, technology development, grant selections, and program assignments to the Agency's senior leaders to enable timely and well-informed decisions related to Heliophysics science programs and strategic plans.

Prior to that, Dr. Newmark provided executive leadership, strategic direction, and management for the Heliophysics Division's programs and projects while serving as the Interim Division Director (2014–2015). During this period, he managed a staff of civil servants and contractors; established top-level program architecture, requirements, and budgets; allocated program and project responsibilities; selected and evaluated program managers; and conducted executive reviews of Division activities to ensure integration of performance and budget. As Director, he also strategically collaborated with other SMD divisions; other NASA Directorates; external organizations, including other Federal agencies; as well as with national and international partners. These collaborations leveraged Heliophysics science and fostered the safety and security of our technological society. Dr. Newmark supported the SMD Associate Administrator in defining and presenting the Heliophysics Program to NASA senior management, the Office of Management and Budget, and Congress.

Before joining NASA in 2009, Dr. Newmark worked at the U.S. Naval Research Laboratory, where he helped lead the team that developed NASA's Solar Terrestrial Relations Observatory mission's remote sensing suite and served as project scientist for two sounding rocket investigations. He graduated in physics and astronomy from the University of Rochester in 1985 and received his Ph.D. in astronomy in 1990 from the Pennsylvania State University. He subsequently held positions at NASA Goddard Space Flight Center working on the International Ultraviolet Explorer, the Cosmic Background Explorer, and the Solar and Heliospheric Observatory missions.

### Dr. Okenwa O.I. Okoli

Chair of Industrial and Manufacturing Engineering, Florida A&M University-Florida State University



Dr. Okoli is a professor and chair of the Industrial and Manufacturing Engineering Department at the FAMU-FSU College of Engineering, and the associate director of the High-Performance Materials Institute (HPMI), at the Florida State University. He is also a co-founder of the Nano-Patronas Group (NPG), which is a spin-off from his research efforts. Dr. Okoli joined the Florida A&M-Florida State University College of Engineering in 1998 to assist with the budding composite materials research program.

Dr. Okoli's innovative research efforts encompass the cost effective manufacture of customizable multiscale multifunctional composites, re-engineering and optimization of UHMWPE recipe in combination with the confinement of ceramic structures to achieve enhanced personnel protective armor, and a paradigm shift creating inherent and ubiquitous damage sensing in advanced composite structures. His research efforts have led to the award of over \$27M as Principal Investigator (PI), or Co-PI in external funding. He has 8 U.S. patent applications (awarded and pending) in the areas of advanced composites and multiscale composites manufacture, structural ceramics, ubiquitous real-time structural health monitoring, and energy harvesting. He has received several recognitions for his innovative work, including the R&D 100 Award (2004), the ACMA Best Processing Technical Paper (2004), and the SAMPE Outstanding Paper Award (2015). Since joining the Florida A&M-Florida State University College of Engineering, he has advised 16 M.S., 13 Ph.D., and 6 honors thesis students, as well as 4 postdocs. He has also contributed significantly to research education through efforts to recruit and retain U.S. students in STEM graduate programs with a special focus of bridging the achievement gap in the underrepresented minorities. He is a chartered engineer and a chartered scientist of the Engineering and Science Councils (U.K.) respectively.

### **Barbara Orlando**

Senior Grant Policy Analyst, NASA Office of Procurement

Barbara Orlando comes to NASA with over 20 years of grants management experience. During that time she has managed grant programs for non-profits and government entities, winning several awards for her innovative program ideas. She started her Federal career in 2004 as a Grants Management Specialist. During her tenure she held various grant management positions within the Department of Health and Human Services, before coming to NASA as a Senior Grants Policy Analyst in October 2014. She has an M.S. from West Virginia University.

#### **Jill L. Prince**

Manager, NASA Engineering & Safety Center Integration Office

Jill Prince currently serves as the manager of the NESC Integration Office. She joined NASA Langley Research Center in 2001, where she has made significant contributions to several of NASA's Mars missions and other planetary systems analyses. From 2001 to 2002, she was a member of the Langley Mars Odyssey Aerobraking Operations Team. In 2003, she supported the Mars Exploration Rover Entry, Descent, and Landing (EDL) Flight Mechanics Team. She also served as the Langley flight mechanics lead for the Mars Reconnaissance Orbiter Aerobraking Operations Team in 2005–2006. She was responsible for the EDL simulation of the Mars Phoenix spacecraft that safely reached the surface of Mars on May 25, 2008. In addition to her technical work, she was the Assistant Branch Head in the Atmospheric Flight and Entry Systems Branch from 2007 to 2012: in 2010 she served a detail in the Office of Chief Technologist at NASA Headquarters; and in 2012 she was the Branch Head of the Structural and Thermal Systems Branch at NASA Langley Research Center. She joined the NESC in 2013 as the NESC Chief Engineer at Langley until her selection to the Manager of the NESC Integration Office in 2015.

Prince is the recipient of several honors and awards, including a NASA Exceptional Achievement Medal in 2006 and the 2010 Women in Aerospace Achievement Award. She earned a B.A. in physics and astronomy from Northwestern University and an M.S. in mechanical engineering from The George Washington University.

### Andres Quintanilla

Program Manager, Excelencia in Education

Andres Quintanilla serves as the Program Manager for Excelencia in Education's signature program Examples of Excelencia. In this capacity, Andres manages the selection of evidence-based programs that are accelerating Latino student success in higher education and promotes specific programs through the Growing What Works database to help them receive the deserved recognition for their success.

Quintanilla is a graduate of the University of Maryland, College Park, and received his B.A in Criminology with a minor in Human Development. He has a history of working with programs focused on college enrollment and completion not only as an employee but also as a student of those programs. He has always had an appreciation for programs that have served him and his community and hopes to continue to promote them through the efforts of Excelencia.







### **Dr. Neill Reid**

Space Science Operations Lead for the Hubble Space Telescope, The Space Telescope Science Institute

Dr. Neill Reid is the associate director for science at The Space Telescope Science Institute. He obtained his Ph.D. in astronomy from Edinburgh University in 1983 following a B.Sc. degree from St. Andrews University in 1979. He held postdoctoral positions at Sussex University and the Royal Greenwich Observatory (Herstmonceux) before taking up a research associate position at Caltech in 1986 as project scientist for the second Palomar Sky Survey. He held a lectureship at the University of Pennsylvania from 1999 to 2000, moving to Space Telescope Science institute in 2001. His research focuses on low-mass stars and brown dwarfs, with a specific focus on the stellar initial mass function and on Galactic structure. As associate director for science, he is maintains the research staff infrastructure and is responsible for science policy implementation for the Hubble Space Telescope and the James Webb Space Telescope. The latter duties include oversight of the Telescope Allocation Committee that assigns observing time on Hubble, and he has recently been involved in reviewing statistical trends in proposal success rates.

#### **Dr. Christine Reich**

Director of Exhibit Development and Conservation, Museum of Science, Boston

Dr. Christine Reich is Director of Research and Evaluation at the Museum of Science, Boston, one of the world's largest science centers, and oversees a department that conducts research and evaluation studies related to various aspects of the museum experience. The Museum of Science brings science, technology, engineering, and math to about 1.5 million visitors a year through its dynamic programs and interactive exhibits. Dr. Reich's passion and expertise focus on researching ways to advance the inclusion of people with disabilities in museum learning. Prior to her current position, Dr. Reich worked as a museum educator and an exhibit planner, specializing in the development of museums exhibitions and programs that are inclusive of people with disabilities. Christine Reich is being honored as a Champion of Change for leading education and employment efforts in science, technology, engineering and math for Americans with disabilities.

#### Dr. Stephen M. Ruffin

Professor, School of Aerospace Engineering Georgia Tech Director, NASA Georgia Space Grant Consortium

Dr. Stephen M. Ruffin is a professor in the School of Aerospace Engineering at Georgia Tech, Director of NASA's Georgia Space Grant Consortium, head of the Aerothermodynamics Research and Technology Laboratory and chair of the AE Aerodynamics and Fluid Mechanics Group.

Dr. Ruffin is a specialist in high temperature gas dynamics, compressible flow aerodynamics, and airframe propulsion integration. He is leading development of a 3-D Cartesian Grid based Navier-Stokes solver (NASCART-GT) for design applications and development of Cartesiangrid approaches for chemically reacting flows. He is developing novel approaches that allow for Navier-Stokes simulations using a purely Cartesian grid solver. His Aerothermodynamics Research and Technology Laboratory applied these techniques to applications as diverse as hypersonic planetary entry vehicles and flow physics, rotorcraft airframe interaction flows, transonic and supersonic missiles, and unsteady store separation problems.







### Dr. Stephen M. Ruffin (continued)

Dr. Ruffin is Director of NASA's Georgia Space Grant Consortium (GSGC) and is the national chair of the Council of Space Grant Directors. He leads the operations of the GSGC, which conducts student research and design team activities; internships; scholarships; fellowships; K–12 student hands-on activities and camps; K–12 teacher training programs; and public outreach activities at museums, science centers, and in the community. Through roughly 40 annual projects conducted by the GSGC, 30,000 Georgia residents and over 4,400 educators are trained annually. In his national chair role, he helps coordinate activities of space grant consortia from all states and helps set the direction for national STEM outreach efforts.

### Jenifer Scoffield

Small Business Manager, Orbital ATK



Jenifer Scoffield has been with Orbital ATK as the Small Business Liaison Officer (SBLO) since 1990 and is currently the Small Business Manager. She is responsible for the oversight of all the compliance with small business activities at eight locations in the Flight and Space Systems Divisions. Her primary function is working with and educating internal supply chain personnel in order to provide opportunities for the small business community to be involved with Orbital ATK's Government contracts.

As a Small Business Program Manager, Jenifer has had experience in purchasing chemicals, adhesives, and propellants for various Government programs. Knowledge in working with quality, logistics, and proposals has given her the experience and fundamental understanding needed to lead in the right direction those small businesses seeking to do business with Orbital ATK. In 2009, formerly ATK was awarded the NASA Agency-Level Large Business Prime Contractor of the Year and in 2012, Jenifer was awarded the Marshall Space Flight Center (MSFC) Program Leadership Award.

Jenifer continues to work with the Marshall Prime Contractors Supplier Council (MPCSC). She was instrumental in initiating the council for MSFC prime contractors and held the first chairperson position. She currently is the chairman for the Utah Supplier Development Council (USDC) and is a member of the NASA Industry Forum (NIF) that includes both Industry and NASA Centers. Jenifer holds a bachelor's degree in Organizational Communication from Utah State University in Logan, Utah.

### **Dr. Beverly Daniel Tatum**

President Emerita, Spelman College



On August 1, 2002, scholar, teacher, author, administrator, and race-relations expert Dr. Beverly Daniel Tatum became the ninth president of Spelman College. She set an expectation that Spelman College would be recognized as one of the finest liberal arts colleges in the country—a place where young women of African descent could say, "This place was built for me, and it is nothing less than the best!" Spelman is now widely recognized as one of the leading liberal arts colleges in the Nation.

Dr. Tatum is the former acting president of Mount Holyoke College in South Hadley, MA, where she served as a professor of psychology and education and later as chair of the Department. In 1998, Dr. Tatum was appointed dean of the college and vice president for Student Affairs. Prior to serving at Mount Holyoke, Dr. Tatum was a faculty member at Westfield State College from 1983 to 1989 and a lecturer at the University of California at Santa Barbara from 1980 to 1983. She earned a B.A. at Wesleyan College and an M.A. and Ph.D. in clinical psychology from the University of Michigan, as well as an M.A. in religious studies from Hartford Seminary.

### Dr. Beverly Daniel Tatum (continued)

A nationally recognized authority on racial issues in America and a licensed clinical psychologist, Dr. Tatum has toured extensively, leading workshops and presenting papers and lectures on racial identity development. She is the author of the critically acclaimed book, *Why Are All The Black Kids Sitting Together in the Cafeteria? And Other Conversations About Race*, which was released as a fifth anniversary edition in January 2003. Since its original publication in 1997, the book has been listed on the Independent Bookstore Bestseller list and was selected as the multicultural book of the year in 1998 by the National Association of Multicultural Education. The New York Times recommended the book as required reading for private school teachers and administrators in the greater New York area who were dealing with issues of race and class. Dr. Tatum is also the author of Assimilation Blues: Black Families in a White Community (1987) and has published widely in social science and education journals. In May 2007, Dr. Tatum released *Can We Talk About Race? And Other Conversations in an Era of School Resegregation*.

During her tenure, the Center for Leadership and Civic Engagement (LEADS) was created, and it established an annual Women of Color Leadership Conference. In 2008, the Gordon-Zeto Fund for International Initiatives was established with a gift of \$17 million that increased opportunities for international travel for students and faculty and provided additional financial aid for international students. Through the "Every Woman, Every Year" Initiative launched in 2006, alumnae support of the annual fund has grown to close to 40%.

Building on this momentum, the college implemented "Strengthening the Core: The Strategic Plan for 2015," which focuses on enhancing its academic core curriculum through Global engagement, Opportunities for research and/or internships, Alumnae connections, Leadership development, and Service learning (GOALS). In addition, a Quality Enhancement Plan (QEP), "Going Global," has been created to enhance the college's infrastructure to connect global experiences that cultivate international awareness and cross-cultural competencies in a more intentional way.

Under Dr. Tatum's leadership, Spelman College launched its Wellness Revolution in 2012. The Wellness Revolution is a holistic initiative designed to empower and educate Spelman women and the communities they will influence on key components of lifelong wellness—eating better, moving more, and sleeping well. In 2013, the Carnegie Corporation of New York named Dr. Tatum as a recipient of its 2013 Academic Leadership Award, recognizing her as an exceptional president of a U.S. college or university. She was the first college president in the state of Georgia and the first at a historically black college or university to win the award.

Dr. Tatum retired in July of 2015 as president emerita to focus on her work as an author, speaker, and expert on issues related to racial identity.

### **Constance V.A. Thompson**

Director, External and Government Affairs, National Society of Black Engineers



Constance V.A. Thompson serves as the Director for External and Government Affairs with the National Society of Black Engineers (NSBE), where she is responsible for developing strategic partnerships and policy initiatives that support NSBE's goal to graduate 10,000 black engineers annually by the year 2025. Thompson also serves as the Lead Project Manager for the 50k Coalition (a groundbreaking collaboration between our Nation's leading diverse engineering societies), the American Indian Science & Engineering Society, the National Society of Black Engineers, the Society of Hispanic Professional Engineers, and the Society of Women Engineers (aimed at graduating 50,000 female, Hispanic, black and Native American engineers annually by the year 2025).

Prior to her role with NSBE, Thompson served as Senior Manager for Diversity & Inclusion with the American Society of Civil Engineers, Manager for Diversity Programs with the American Chemical Society, the Inaugural Manager for Diversity and Recruitment with Cornell University, and Global Human Resources Recruiter/Outplacement Training Manager with Corning Incorporated.

Thompson is a Cornell Certified Diversity and Inclusion Practitioner with over 15 years of experience leading workforce engagement, development, management, and retention initiatives. Among the organizations that Thompson has served as D&I advisor/thought leader for are the National Academies, National Science Foundation, American Association of Engineering Societies, the Center for Association Management, Cornell University's College of Engineering, the Society for Women Engineers, and the American Institute of Architects, among others.

### Dr. Claudia "Meg" Urry

Professor of Physics and Astronomy, Yale University, President, American Astronomical Society

Dr. Meg Urry is the Israel Munson Professor of Physics and Astronomy and director of the Yale Center for Astronomy and Astrophysics; she served as chair of the Physics department at Yale from 2007 to 2013. She was the first woman ever to chair this department; when she arrived at Yale in 2001, she the first tenured female professor in the Physics department; and at the time she was the only woman faculty member. She is in her fourth and final year as president of the American Astronomical Society. Professor Urry received her Ph.D. from The Johns Hopkins University in 1984 and her B.S. in physics and mathematics *summa cum laude* from Tufts University in 1977. Her scientific research focuses on active galaxies, which host accreting supermassive black holes in their centers. She has published over 260 refereed research articles on supermassive black holes and galaxies and was identified as a "Highly Cited Author" by Thomson Reuters. Professor Urry is a Fellow of the American Academy of Arts and Sciences, the National Academies of Science, the American Association for the Advancement of Science, the American Astronomical Society's Annie Jump Cannon and George van Biesbroeck prizes. Prior to moving to Yale in 2001, Dr. Urry was a senior astronomer at the Space Telescope Science Institute, which runs the Hubble Space Telescope for NASA. Professor Urry is also known for her efforts to increase the number of women in the physical sciences, for which she won the 2010 Women in Space Science Award from the Adler Planetarium, and she writes regularly on science for *CNN.com*.

Dr. Wanda Ward

Assistant Director, Broadening Participation, White House Office of Science and Technology Policy

The National Science Foundation (NSF) has named Dr. Wanda E. Ward acting assistant director for its Directorate for Education and Human Resources (EHR). With over 14 years of NSF experience, Ward brings dedicated leadership to EHR and its mission to achieve excellence in U.S. science, technology, engineering and mathematics education.

During her tenure at NSF, Ward has served in a number of science and engineering policy, planning, and program capacities in both EHR and the Office of the Director. Ward serves as deputy assistant director for NSF's Directorate for Social, Behavioral, and Economic Sciences (SBE). In SBE, Ward provided critical leadership for development of several NSF-wide activities, including the Human and Social Dynamics priority area, the Science of Learning Centers program, Cyberinfrastructure and the Social Sciences, and the ADVANCE program. She also directed the launch and development of a major activity in SBE to broaden participation through strategic, regional alliances among the top 25 institutional producers of underrepresented minorities at the B.S. and Ph.D. levels. These endeavors led her to forge key international research and workforce development collaborations in both developed and developing nations.

Ward has also served on the President's National Science and Technology Council subcommittees and interagency working groups in the areas of science education and workforce development, and the social, behavioral, and economic sciences.

Prior to joining NSF, Ward was an associate professor of psychology and founding director of the Center for Research on Multi-Ethnic Education at the University of Oklahoma, Norman. She has also held visiting academic appointments at the University of Illinois at Urbana-Champaign and Johns Hopkins University. She received a B.A. in psychology as well as an Afro-American Studies Certificate from Princeton University, and a Ph.D. in psychology from Stanford University.

Ward was awarded a Ford Foundation Fellowship and the 2005 American Psychological Association (APA) Presidential Citation, the most distinguished honor given by the APA president. The APA award recognized her steadfast support of the advancement of behavioral science and her to devotion to enhancing the diversity of the science and engineering workforce.

Ward, who assumed her position as acting head of EHR on Aug. 18, 2006, manages an annual budget of approximately \$800 million.



### Gregory J. (Greg) Williams



Deputy Associate Administrator for Policy and Plans, NASA's Human Exploration and Operations Mission Directorate

Gregory Williams was named Deputy Associate Administrator for Policy and Plans in NASA's Human Exploration and Operations Mission Directorate (HEOMD) in August 2012. In this capacity he assists the HEOMD Associate Administrator in charting the future course of NASA's human space exploration programs. He works to both shape and respond to the policy environment in which human spaceflight programs are conducted both internal and external to the Agency.

Williams came to HEOMD from NASA's Science Mission Directorate, where he served as the Deputy Director of the Strategic Integration & Management Division. He led the development of two editions of the triennial Science Plan that defined NASA's Earth and space science objectives and programs for the next decade. He led the team of policy analysts that managed the Science Mission Directorate's interactions with the Executive and Legislative branch offices as well as its public engagement activities.

Earlier in his career, Williams was the Senior Policy Analyst for NASA's Earth Science Enterprise, leading strategic planning and communications activities during the challenging era of development and deployment of the Earth Observing System. He served as the Enterprise's liaison with the National Research Council as it developed the first decadal survey for Earth science and applications from space.

Williams' first decade at NASA was devoted to the formulation and development of what is now the International Space Station. He served in the Utilization and Operations Division of the Space Station Freedom Program Office, developing plans for Space Station operations and its resupply via the Space Shuttle, and crafting the first budget structure and cost estimates of Space Station operations. He served as the Operations member of the original Space Station International Agreements Negotiating Team.

Williams began his NASA career as a Presidential Management Intern in the Office of Space Station at NASA Headquarters. He is the recipient of two NASA Exceptional Service Medals. He holds a B.S. in economics from the University of Washington in Seattle and an M.S. in public administration and policy analysis from Carnegie-Mellon University.

### **Dennis Woodfork**

Assistant Division Chief for Technology at NASA Goddard Space Flight Center



Dennis Woodfork is currently the Assistant Chief for Technology in the Mission Engineering and Systems Analysis Division at NASA Goddard Space Flight Center. In this capacity, Dennis leads the Division's strategy development for technologies including spacecraft guidance, navigation, and control; systems engineering; in-space propulsion; and space situational awareness.

Previous to this assignment, Woodfork was the Deputy Lead of the NASA Robotic Space Protection Program providing policy, technical aerospace engineering advice, and guidance to the NASA Headquarters (HQ) Office of Chief Engineer on matters related to Space Asset Protection. Dennis assumed this post in April 2012. In this capacity, Dennis interfaced with NASA HQ and field Centers, commercial industry representatives, international partners, and the interagency to provide comprehensive protection for all unmanned civil spacecraft missions.

From 2010 to 2012, Dennis was the Associate Branch Head for the Navigation and Mission Design Branch at Goddard Space Flight Center in Greenbelt, MD. His specific duties included helping to manage over 30 engineers responsible for designing trajectories for Earth orbiting and deep space vehicles as well as studying advanced forms of spacecraft navigation. He also directly worked on spacecraft designs in the Mission Design Lab and was Principal Investigator for an IRAD related to x-ray pulsar navigation. Dennis has also published three technical papers related to satellite navigation throughout his career.

In 2011, Woodfork had the opportunity to spend 5 months working for the Department of Defense in the Office of the Deputy Assistant Secretary of Defense for Space Policy as a technical analyst and civil agency advisor. He was responsible for managing and advancing a variety of space policy issues related to orbital debris management, space traffic management, combined space operations with international partners, and NASA-DOD operational agreements.

Currently, Dennis holds the rank of Lieutenant Colonel in the United States Air Force Reserves. In that capacity, he is the division chief for a joint team of Army, Navy, and Air Force intelligence analysts supporting U.S. Strategic Command.

Woodfork is a graduate of the U.S. Naval Academy and Air Force Institute of Technology, where he earned a B.S. in aerospace engineering and a M.S. in astronautical engineering. In 2015 he earned an M.B.A. from the Robert H. Smith School of Business at the University of Maryland, College Park. He has received numerous scholarly, military, and NASA awards.

### Recognition

#### **Organizations and Team Members**

#### **Sponsoring Offices**

Office of Diversity and Equal Opportunity Brenda R. Manuel Sharon Wagner (Retired) David Chambers Crystal Moten Omega Jones Veronica Hill Dr. Rebecca Kraus Bob Cosgrove Barbara Spotts

> Office of the Administrator Mike French Clarissa Kornell Dr. Danielle Wood

#### **Partner Offices**

Aeronautics Research Mission Directorate Jon Montgomery

Facilities and Administration Services Division Eric Roundtree

Human Exploration and Operations Mission Directorate Gregory Williams

#### Office of the Chief Engineer Carrie Sorrels

Office of the Chief Scientist Dr. Ellen Stofan

Xaivian Raymond

#### **Office of Communications**

David Weaver Bob Jacobs Fred Brown Cliff Feldman Karen Northon Cindy Steele Anthony Stewart Glenn Posey

# Recognition

#### **Organizations and Team Members**

#### Partner Offices (continued)

Office of Education Donald James Dr. Roosevelt Johnson Valarie Burks

Office of General Counsel Sumara Thompson-King

Office of Human Capital Management Lauren Leo Charlotte Cannon

#### Office of Legislative Affairs

Seth Statler Jennifer Grove Palmer Tom Rivera

Office of Procurement Barbara Orlando

Office of Small Business Glenn Delgado Tabisa Kalisa

#### Science Mission Directorate

Kristen Erickson Jeff Newmark Dr. Christina Richey Mary Sladek

Space Technology Mission Directorate Dennis Andrucyk

#### **Vendor Services**

#### **Curtis Lewis & Associates**

Curtis Lewis Dr. Alma Clayton-Pedersen Maria Christina Ruales Brittany Harris

Institution	Name	Title
American Council on Education	Dr. Lorelle Espinosa	Assistant Vice President, Center for Policy Research and Strategy
Arizona State University	Dr. Linda T. Elkins-Tanton	Director of the School of Earth and Space Exploration
Association for Women in Science (AWIS)	Janet Bandows Koster	Executive Director and CEO
Auburn University	Dr. Jay Gogue	President
Boise State University	Steve Swasnon	Distinguished Educator in Residence
Boston Children's Museum	Charlayine Murrell-Smith	Vice President of External Relations
Boston Children's Museum	Loren Stolow	Manager of Public Programs
Brown University	John Mustard	Professor of Earth, Environmental and Planetary Sciences
California Institute of Technology	Cindy Weinstein	Professor of English. Vice provost. Chief Diversity officer
California Science Center	Jeffrey Rudolph	President and CEO California Science Center
California State University	Dr. Laura Kingsford	Dean of the College of Natural Sciences and Mathematics
California State University	Dr. Simon Kim	Associate Vice President for Research and
,		Sponsored Programs
California State University, Long Beach	Dr. Forouzan Golshani	Dean of the College of Engineering
California State University, Fresno	Dr. Ram Nunna	Dean of the Lyles College of Engineering
California State University, Fresno	Dr. Gregory Kriehn	Electrical and Computer Engineering Professor
Carthage College	Aidana Lira	Director, Sponsored Programs
Carthage College	Dr. Kevin Crosby	Director, Wisconsin Space Grant Consortium
Clarkson University	Suong lves	Chief Inclusion Officer
Cleveland State University	Dr. Julian M. Earls	Executive in Residence
College of New Jersey	Dr. Steven Schreiner	Dean, School of Engineering
Delaware State University	Harry Williams	President
Delaware State University	Saundra Delauder	Research Leader
Dillard University	Abdalla Darwish	Presidential Professor, Former Associate Provost, Associate Senior Vice President for Academic Affairs
Duke University	Dr. Brigit M. Carter	Program Director, Accelerated BSN Program, Project, Director, Health Equity Academy
Duquesne University	Alan Seadler	Associate Academic Vice President for Research
East Tennessee State University	Dr. Aimee Govett	Quillen Chair of Excellence in Education and Master of
Last termessee state oniversity		Arts in Teaching Coordinator
East Tennessee State University	Richard Ignace	Professor in Physics and Astronomy, Director of
-	•	Undergraduate Research & Creative Activities
East Tennessee State University	Anant Godbole	Executive Director of the Center of Excellence in STEM Education
Excelencia in Education	Andres Quintanilla	Program Manager
Excelencia in Education	Consuela Grier	Director of Constituency Engagement
Federal Asian Pacific American Council (FAPAC)	Grace Spence	President
Florida State University	Okenwa Okoli	Professor and Chair of Industrial & Manufacturing
Fordham College	Dr. Maura Mast	Dean of Fordham College at Rose Hill
Georgia State University	Mark Becker	President
Georgia State University	Dr. Rafal Angrvk	Professor of Computer Science
Georgia State University	Dr. D. Michael Crenshaw	Chair, Department of Physics and Astronomy
Georgia State University	Petrus C. Martens	Professor, Astrophysics
Georgia State University	Dr. Risa Palm	Senior Vice President of Academic Affairs
Georgia Tech University	Dr. Stephen M. Ruffin	Professor, School of Aerospace Engineering Georgia Tech and Director, NASA Georgia Space Grant Consortium
Illinois Institute of Technology	Natacha DePaola	Professor of Biomedical Engineering

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Institution	Name	Title
Jackson State University	Dr. Carolyn Meyers	President
James Madison University	Dr. Marilou Johnson	Vice Provost for Academic Development
Kent State University	Dr. Mandy Munro Stasiuk	Associate Provost, Academic Affairs
Lehigh University	Dr. John P. Coulter	Interim Dean of the College of Engineering and Applied
Lehigh University	Dr. Patrick Farrell	Science Mechanical Engineer
Lehigh University	Dr. Henry Odi	Vice Provost for Academic Diversity
Los Angeles Harbor College	Otto W. K. Lee	President
Massachusetts Institute of Technology	Sarah Rankin	Title IX Coordinator
Massachusetts Institute of Technology	Dr. Judy "JJ" Jackson	Diversity and Inclusion Officer
Michigan State University	R. Sekhar Chivukula	Associate Provost, Undergraduate Education
Milwaukee Education Partnership	Gerard Randall	Executive Director
Missouri University	Ann Shenethia Manuel	Vice Chancellor for Human Resources, Equity and Inclusion
Museum of Science, Boston	Dr. Christine Reich	Director of Exhibit Development and Conservation
NASA Engineering and Safety Center Integration Office	Jill Prince	Manager
NASA Goddard Space Flight Center	Dennis Woodfork	Assistant Division Chief for Technology
NASA Goddard Space Flight Center	Dr. Robert Gabrys	Center Education Director
NASA MIRO Center for Space Exploration and Technology Research,	Dr. Ahsan Choudhuri	Chairman, Mechanical Engineering Department, Director of the UTEP NASA MIRO Center for Space Exploration
The University of Texas at El Paso		Technology Research
NASA MUREP	Tania Davis	Acting Manager
NASA Office of Human Capital Management	Keith Lowe	Pathways Program Manager
National Science Foundation	Dr. France Cordova	Director
New Horizons	Alice Bowman	New Horizons Mission Operations Manager
North Carolina A&T State University	Dr. Barry L. Burks	Vice Chancellor for Research and Economic Development
Northeastern University	Richard Harris	Assistant Dean and Director in College of Engineering, Director of Multicultural Engineering Programs
Northeastern University	Rachelle Reisberg	Assistant Dean, Engineering Enrollment and Retention & Director of Women in Engineering
Northeastern University	Blair St. Onge	Executive Assistant
Northwestern University	Dr. Jabbar R. Bennett	Associate Provost, Diversity and Inclusion; Associate Professor of Medicine
Northwestern University	Dr. Bruce A. Lindvall	Assistant Dean for Graduate Studies in the McCormick School of Engineering and Applied Science
Northwestern University	Dr. Fred W. Turek	Director, Center for Sleep and Circadian Biology
Old Dominion University	Dr. Morris Foster	Vice President for Research
Orbital ATK	Jenifer Scoffield	Small Business Manager
Oregon State University	Dr. Susan M. Shaw	PI on NSF ADVANCE Institutional Transformation grant
Oregon State University	Cynthia Sagers	VP for Research at Oregon State
Oregon State University	Dr. Jack Higginbotham	Director, Oregon Space Grant Consortium
Patricia and Phillip Frost Museum of Science	Lindsay Bartholomew	Director of Technology and Youth Development
Portland State University	Julie Caron	Associate Vice President, Global Diversity & Inclusion, Title IX and 504/ADA Coordinator
Rowan College at Burlington County	Dr. Edem Tetteh	Dean of the STEM Division
Rowan College at Burlington County	Dr. Elizabeth Price	Associate Dean and Acting Dean in STEM
Rowan University	Dr. Anthony Lowman	Dean of the Henry M. Rowan College of Engineering

Institution	Name	Title
Rutgers University	Dr. Peng Song	Associate Dean
Rutgers University	Thomas Farris	Dean, School of Engineering
Science Museum of Minnesota	Paul Martin	Senior Vice President, Science Learning
Society of Women Engineers	Jessica Rannow	President
Space Camp	Dr. Deborah Barnhart	Chief Executive Officer
Space Science Institute	Dr. Karlx Pitman	Executive Director
Space Telescope Science Institute	Dr. Neill Reid	Space Science Operations Lead for the Hubble Space Telescope
Spelman College	Dr. Beverly Daniel Tatum	President Emerita
SUNY Cortland	Dominick Fantacone	Statewide Coordinator for the New York State Master Teacher Program
SUNY Cortland	Dr. Gregory Phelan	Chair and Professor, Chemistry Department
SUNY Oneonta	Dr. Venkat Sharma	Dean, School of Natural & Mathematical Sciences
Syracuse University	Dr. Michelle M Blum	Assistant Professor and Director of Mechanical Engineering Undergraduate Program
Texas A&M System	Dr. Joni Baker	Director of Equal Opportunity and Diversity
Texas A&M University	Magda Lagoudas	Executive Director, Industry/Nonprofit Partnerships; Instructional Associate Professor
U.S. Department of Education	Rachel Gettler	Attorney, Office for Civil Rights
UNC Charlotte	Dr. Yvette Huet	Director of the ADVANCE Faculty Affairs and Diversity Office
UNC Charlotte	Dr. Andrea Dulin	Project Director of the UNC Charlotte ADVANCE Faculty Affairs and Diversity Office
University of Alaska, Fairbanks	Dr. Denise Thorsen	Associate Professor of Electrical and Computer Engineering, Director of the Space Systems Engineering Program at UAF
University of Arizona	Dr. Ann Weaver Hart	President
University of Arizona	Kristen Klotz	Deputy Director, Office of Institutional Equity
University of California, Irvine	Dr. Douglas M. Haynes	Professor of History, Vice Provost for Academic Equity, Diversity and Inclusion
University of California, Berkeley	Laleh Cote	Undergraduate Internship Coordinator for Workforce Development & Education at Lawrence Berkeley National Laboratory
University of Colorado, Boulder	Michael T. McGrath	LASP Engineering Director
University of Florida	Dr. Michele V. Manuel	Professor
University of Georgia	Dr. Angela Birkes-Grier	Director of the Center for the Advancement of Space Safety and Mission Assurance Research (CASSMAR)
University of Georgia	Timothy Burg	Director, STEM Education
University of Hawaii	Dr. John Rand	Director of STEM Education
University of Hawaii at Manoa	Dr. Luke Flynn	Professor at the University of Hawaii at Manoa, Director of the Hawaii Space Grant Consortium and the Hawaii Space Flight Laboratory
University of Maine	Dr. Jacqueline D. Hymes	EO Administrator
University of Maryland, Eastern Shore	Dr. Juliette Bell	President
University of Maryland, Eastern Shore	Ayodele Julius Alade	Professor and Dean School of Business and Technology
University of Maryland, Eastern Shore	Dr. Yuanwei Jin	Interim Chair, Department of Engineering & Aviation Sciences
University of Massachusetts, Amherst	Paul Sigueira	Director Microwave Remote Sensing Laboratory
University of Massachusetts, Lowell	Dr. Julie Chen	Vice Chancellor for Research and Innovation
University of Massachusetts, Lowell	Dr. Noureddine Melikechi	Dean, College of Sciences

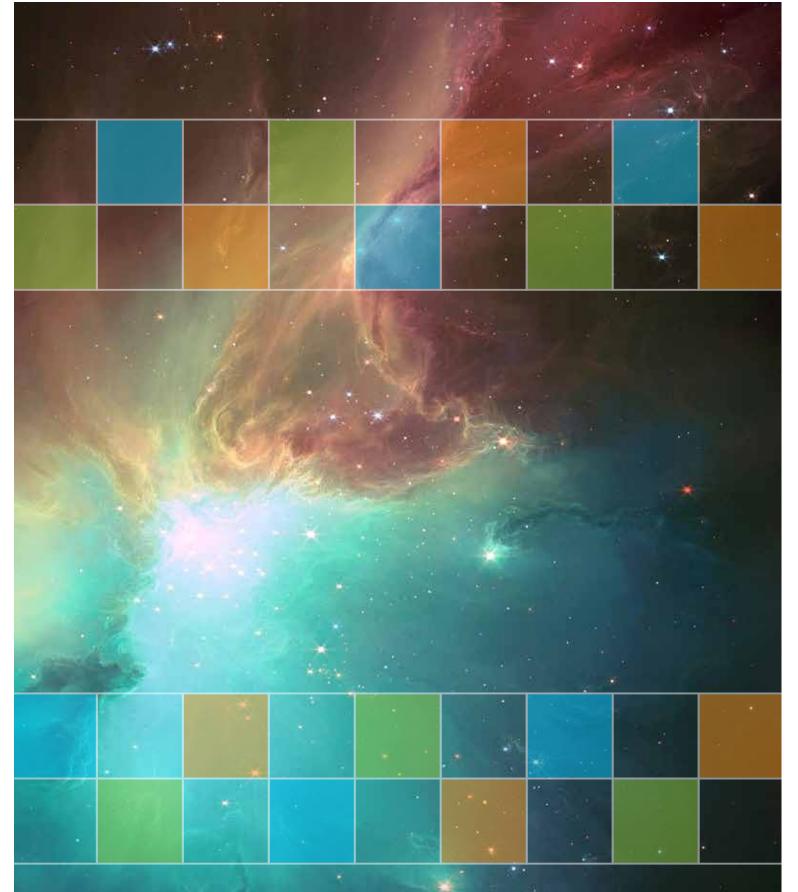
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Institution	Name	Title
University of Memphis	Dr. M. David Rudd	President
University of Michigan	Lionel Milton	Managing Director, Center for Engineering Diversity & Outreach programs
University of Nebraska, Omaha	Dr. Scott E. Tarry	Director of the NASA Nebraska Space Grant and EPSCoR Program, Director of the University of Nebraska's Aviation Institute
University of Nebraska, Omaha	Dr. Nancy Edick	Dean of the College of Education
University of New Hampshire	Dr. PT Vasudevan	Interim Provost and VP for Academic Affairs, NH Governor's STEM Task Force
University of North Carolina, Wilmington	Dr. Willie Guion	Chief Diversity Officer, Professor in Health and Human Services
University of Notre Dame	Dr. Mary Galvin	Dean of the College of Science
University of Pennsylvania	Arnalda J. Diaz	Assistant Dean for Research Training Programs, Director of Recruitment and Retention of Diversity Scholars
University of South Florida	Dr. Peter Stiling	Special Faculty Assistant, Office to the Provost STEM Initiative
University of Southern California	Dr. Timothy Pinkston	Vice Dean for Faculty Affairs
University of Southern California	Dr. Yannis Yortsos	Dean, USC Viterbi School of Engineering
University of Southern California	Dr. Joyce M. Richey	Chief Diversity Officer
University of Southern California	Glen Stimmel	Dean, School of Pharmacy
University of Southern California	Dr. Larissa Rodriguez	Associate Provost for STEM
University of Southern California	Walter Cathey	Program Administrator & Diversity Officer, School of Pharmacy
University of Southern California	Timothy M. Pinkston	Vice Dean for Faculty Affairs
University of Southern California	Dr. Clay C. C. Wang	Professor of Pharmacology and Pharmaceutical Sciences
University of Texas at El Paso	Nate V. Robinson	Administrator, Office of Research
University of Texas at El Paso	Dr. John Olivas	Center Director of UTEP CASSMAR, Center for the Advancement of Space Safety and Mission Assurance Research
University of West Florida	Dr. Kim LeDuff	Dean and Associate Vice Provost, Chief Diversity Officer
University of West Florida	Michael T. Huggins	Dean of the Hal Marcus College of Science and Engineering
Vanderbilt University	Dr. Jedidah Isler	Astronomy & Astrophysics Postdoctoral Fellow
Vaughn College	Kalli Koutsoutios	Assistant Vice President, Strategic Planning and Assessment
Virginia Air & Space Center, NASA	Andrea Karelitz	Program Manager
Virginia Air & Space Center, NASA	Danielle Price	Co-Principal Investigator
Virginia Commonwealth University	Joslyn Bedell	Associate Director, Employer and Experiential Development
Virginia Commonwealth University	Carrie Hawes	Employer and Experiential Development Specialist
Wesleyan University	Antonio Farias	Vice President for Equity & Inclusion
West Virginia State University	Dr. Ami M. Smith	Associate Vice President for Public Service
Western Michigan University	Dr. Andrew Kline	Engineering faculty member
Wheelock College	Dr. David J. Chard	President
Wheelock College	Dr. Ellen Faszewski	Co-Chair and Professor of Math and Science
White House OSTP	Dr. Wanda Ward	Assistant Director, Broadening Participation
Women@TheFrontier	Susan Fonseca	W@F Founder, CEO
Yale University	Priyamvada (Priya) Natarajan	Professor of Astronomy and Physics
Yale University	Dr. Claudia "Meg" Urry	Professor of Physics and Astronomy/Past President, American Astronomical Society

# Virtual Participants

Arizona State University **Boise State University Boston University** Center for Advancement of Informal Science Education (CAISE) **Duke University** Exploratorium Florida Atlantic University Florida Gulf Coast University Georgia Tech Idaho State University Kansas State University Millersville University NASA GSFC NASA Idaho Space Grant Consortium NASA JPL North Carolina A&T State University Northern Illinois University Northwestern University **Ohio State University** Ohio University **Oregon State University** Oregon State University College of Science Pacific Science Center (PSC) Patricia and Phillip Frost Museum of Science **Red Cloud Services** Rutgers University-Camden

Society of Asian Scientists & Engineers Southwest Research Institute Space Science Institute The University of Texas Medical Branch Tufts University **Tuskegee University** University of Arizona University of California, Berkeley University of California, Davis University of California, Santa Barbara University of Colorado, Boulder University of Hawaii University of Idaho University of Illinois at Urbana-Champaign University of Iowa University of Kansas University of Maine University of Massachusetts, Amherst University of Memphis University of New Hampshire University of Pennsylvania University of Texas at El Paso University of Texas System University of Wisconsin-Milwaukee West Virginia University Women@TheFrontier

# Notes

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