 Increasing Diversity in the STEM Workforce by Mitigating the Impact of Bias

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

INTRODUCTION

The NASA workforce is approximately two-thirds STEM occupations; as a result, a significant portion of our equal employment opportunity (EEO) and diversity and inclusion (D&I) efforts are directed at STEM disciplines. However, NASA generally takes a holistic approach and our efforts aim to mitigate bias in our entire work environment. Also, while NASA views the “type of bias” as relevant in an analysis of bias reduction, our strategic efforts are not primarily built around the kinds of bias we seek to address. Rather, they reflect broad goals and objectives such as 1) the concerns that have surfaced at the Agency or Center levels that need to be addressed, and 2) the vehicles or tools available or that need to be put in place to address the issues at both the institutional and individual levels. For these reasons, the following discussion describes our efforts to reduce bias around broad themes identified as highest priority for NASA. These strategic efforts, while not exhaustive, are intended to show how reducing bias is addressed through the policies, programs, and initiatives NASA has put in place, and the managerial and employee behaviors that we seek to encourage Agencywide.

AGENCY WORKFORCE RELATED EFFORTS

NASA’s Current and Planned Efforts to Reduce the Impact of Bias in the STEM Workforce

A. Implicit – Individual

At the individual level, NASA has focused its efforts on addressing workplace concerns raised by employees regarding their workplace interactions and experiences. We have also focused on targeted training that goes beyond awareness to emphasize means of addressing conflict and mitigating bias in the workplace environment.

1. Proactive Programs and Initiatives

   a. Anti-Harassment Program (AHP)

   This program provides an additional avenue of relief for employees who wish to raise allegations of harassing conduct based on a protected basis, e.g., racial, sexual, or to address other inappropriate behavior, such as bullying. The program is designed to provide prompt, impartial, and effective processing of harassment allegations. As addressing such allegations is a management obligation, the responsibility lies squarely with managers and supervisors to take the steps needed to maintain harassment-free work environments. Issues of bias can be addressed through this program in the actions taken by management.

   b. Conflict Management Program (CMP)

   The Conflict Management Program (CMP) is designed to help organizations Agency-wide maintain open and effective lines of communication needed to optimize mission success at all levels. It does so through an array of different modalities – these include basic conflict management training, Web-based refresher training, Team training, Executive Sessions, Webinars, and individual conflict consultations, as well as one-on-one consultations. CMP provides managers and employees with conflict management tools and techniques to explore the sources of conflict and to create an environment in which effective methods of communication and engagement are consistently utilized. This enables both individuals and organizations to respond more constructively to workplace conflict when it arises and also to address underlying causes for the conflict.

2. D&I Education
NASA provides below several current examples, at both the Agency and Center levels, to illustrate our efforts regarding training to address bias.

a. **All In D&I Training**

NASA’s efforts related to implicit bias in the individual context are in part focused on our FY 15-16 D&I training initiative, the All In Training, which includes a significant component on implicit bias. Overall, the training introduces **three foundational concepts** that affect the advancement of diversity and inclusion efforts:

- Culture
- Values
- Unconscious bias

The training is designed to help the Agency workforce recognize challenges and seek vehicles to change behaviors as part of a cultural shift that aligns with diversity and inclusion goals. In keeping with this objective, NASA designed the training utilizing information obtained from the Agency’s D&I Assessment Survey, which revealed a significant percentage of respondents did not find awareness training to be particularly effective in carrying out their daily responsibilities, nor did it address unconscious bias in a meaningful way. The methodology also included five focus groups from across the Agency, including senior leaders, mid-level leadership, the Human Capital community, the EO and D&I communities, and non-supervisory employees. The All In training was piloted in September – October 2015. The roll out of the actual training will begin in the second quarter FY 2016.

b. **Leadership Development Programs Inclusive of EO and D&I Components**

NASA’s leadership development programs, overseen by the Office of Human Capital Management (OHCM), include such offerings as its early career (NASA FIRST), mid-level (Mid-Level Leader Program), new supervisory (Practical HR Solutions for Supervisors) and senior level (SES CDP) programs. All of these programs now include EO and D&I components that address bias in the workplace.

c. **Power and Privilege Training**

The primary objective of the Power and Privilege workshops, which were pioneered at NASA by the Goddard Space Flight Center (GSFC), is to examine issues of power, privilege, diversity, inclusion, and bias, and how these issues affect the workforce. These workshops are two-day intense training workshops designed to increase participants’ understanding and comfort level discussing bias in the context of individual characteristics, such as race and disability. Training based on other dimensions is being explored. Supervisors and influence leaders are the primary audience, and opportunities are also offered to the Center’s Advisory Committees and Directorate Diversity and Inclusion Committees. The Power and Privilege workshops are important means of providing managers and supervisors with the tools they need to create and maintain more equitable and inclusive work environments.

### B. Implicit – Institutional/Explicit Bias

NASA’s efforts to address bias, both implicit and explicit, at the institutional level encompass strategic actions starting at the very top of the Agency, and flowing down. For example, the Administrator personally serves as the Agency’s D&I Champion, and he has directed that only Center Directors and Deputy Directors may serve as D&I Champions at the Center level. The policies, programs, and initiatives addressed below show how we are addressing institutional bias in a variety of contexts.

1. **Strategic Direction**

a. **NASA Strategic Plan**
NASA’s efforts to address both implicit bias at the institutional level, as well as explicit bias, flow first from the inclusion of the Agency’s EO and D&I efforts in the NASA Strategic Plan. By strategically integrating EO and D&I into the Agency’s strategic planning, NASA has institutionalized all of its efforts in these arenas, including our efforts to reduce bias. The main strategic objective relating to EO, D&I, and human capital in the current plan make it an Agency objective to “[a]ttract and advance a highly skilled, competent, and diverse workforce, cultivate an innovative work environment, and provide the facilities, tools, and services needed to conduct NASA’s missions.” The ways in which bias is addressed under this objective by the Agency’s Diversity and EO, Human Capital, and Education organizations are addressed below.

b. Strategic Frameworks for D&I and EO

i. D&I Framework

In implementing its D&I Framework, both prior to and since the issuance of Executive Order 13583, which established a coordinated government-wide effort on D&I, NASA developed an overarching Agencywide infrastructure based on a strategic, integrated approach. This approach includes comprehensive Agency and Center D&I Plans reflecting key principles, such as leadership commitment, accountability, employee engagement, education, technical assistance, and communications. It also includes senior leaders serving as D&I Champions at both the Agency and Center levels. The NASA Administrator is the Agency D&I Champion.

Another integral aspect of the framework is a formally chartered senior leadership body, the Agency D&I Strategic Partnership (DISP). The DISP is co-chaired by the Agency heads for Diversity-EO and Human Capital and serves to provide advice and guidance to the Administrator. The DISP also is inclusive of the full spectrum of senior leadership positions at both the Agency and Center levels, to better ensure diverse inputs into D&I decision making and fully shared accountability, as well as to create sustainability through an institutionalized D&I structure. This body assembles regularly to address myriad issues affecting the Agency, such as management accountability, meaningful measurements of organizational and individual success, mentoring, leadership development and training, as well as the impact of implicit bias on the NASA workplace. The DISP also exercises personal leadership in the development of NASA’s D&I Strategic Plans, developing both the FY 12-15 and the current Agency plan. The DISP structure has been mirrored at every NASA Center.

ii. New Model EEO Framework

Building on the D&I Framework, in 2014, ODEO shifted to a new approach in developing its Model EEO Agency Plan, which agencies are required to submit annually to the U.S. Equal Employment Opportunity Commission (EEOC) under EEOC’s Management Directive (MD) 715. The purpose of the new approach is to focus attention on a limited number of high-priority challenges and define the overarching Agency challenges and strategies, but leave to the Centers how best to define the tactical actions they will use to address the challenges. A second key purpose is to capitalize on the synergies between EEO and D&I through an explicit emphasis on the shared aspects of the two arenas. In addition, this innovative approach provides greater flexibility for Centers to creatively and collaboratively address EEO challenges that are unique to their Center workforce, while still addressing key elements of the Model EEO Plan infrastructure, such as demonstrated leadership commitment and proactive efforts to prevent discrimination. Within the context of proactive efforts to prevent discrimination and foster a diverse and inclusive work environment, the Agency has put in place a number of strategies that can help to reduce bias. These are discussed in more detail below.

2. Accountability

a. Performance Management

In FY 2015, NASA added a second level review requirement to the Agency’s Performance Management Process to make sure all ratings are looked at above the level of the first-line supervisor. The new process enables the agency to
compensate for the variance that typically exists because of tough versus easy raters. In turn, this allows NASA to make sure ratings are more consistent and well-justified, and to see if performance plans are challenging enough. In furtherance of this requirement, Agency-standardized training regarding the review process is mandatory for second-level supervisors and above. The Agency's Associate Administrator communicated to senior leadership that performance ratings are a reflection of a larger, cultural issue around D&I and directed them to:

- Continue direct discussions about D&I through the DISP, with more frequent meetings to address specific issues.
- Continue Agency initiatives to focus on supervision as a discipline, with emphasis on culture and shared accountability with employees.
- Utilize information from the Employee Viewpoint Survey to help identify troubled organizations and design targeted improvement plans.

The Agency also has added to the performance plans for the Associate Administrator's direct reports (Center Directors and Mission Directorate Associate Administrators) the requirement to mentor at least two people from an underrepresented group (race/ethnicity or gender) and have a similar requirement in functional area leaders' plans. Particular focus is placed on engineering directors and chief engineers to share and encourage the technical path (ST) for careers, as a way to address the statistics around senior technical positions.

b. **EO Functional Review Program (FRP)**

This program, established by ODEO, provides a means for the Agency to assess EO operations at each NASA Center. This includes review and assessment of the six essential elements of a Model EEO Agency, such as demonstrated leadership commitment, strategic integration of EEO into mission, proactive prevention of discrimination, and management accountability. The reviews also assess Centers’ progress in the implementation of their D&I Plans. The FRP also encompasses an “employee satisfaction survey” designed to learn about employees’ perception of the functioning of EO and D&I at the Center, as well as an evaluation of facilities’ architectural and program accessibility.

3. **Employee Engagement and Effective Communications**

   a. **Special Emphasis Programs (SEPs) and Employee Resource Groups (ERGs)**

NASA is putting in place a new framework for SEP Management. The framework is based on guidance issued by ODEO on ERGs in 2014 and new guidance on SEPs that is forthcoming. Both documents serve as roadmaps for how the Agency can better utilize SEPs and ERGs to address EO and D&I issues and concerns. The new SEP Guidance both clarifies and redefines the roles and responsibilities of SEP managers, in such areas as workforce data and qualitative analysis; identification and mitigation of discrimination and implicit bias in workforce practices, for example, hiring, promotions, awards, and recognition; provision of education and awareness on bias; and participation in targeted outreach and recruitment. In addition, SEPs and ERGs interface with leadership and employees in structured ways to influence changes in practice, attitudes and behaviors.

   b. **Mentoring**

Mentoring is a critical part of NASA’s professional development resources, with activities being organized at the Center level. Mentoring is incorporated into both formal and informal career development programs and other various Center-unique programs. While there is not currently an Agency-level mentoring program, OHCM continues to support the NASA Centers in their mentoring related efforts. OHCM is also exploring and identifying new and innovative ways to engage and connect the mentoring community. For example, most recently, OHCM established a Community of Practice (COP) for Center mentoring representatives to have a centralized venue in which to share best practices; build stronger community ties, and be a conduit for enhanced communications. In addition, two emerging practices of note are:

   i. **Creating a Modern Mentoring Culture (Collaborative Learning)** -- Connecting people at all levels across the Agency to share critical knowledge and skills regardless of age, title or location. Potential benefits for the
Agency, such as increased retention, engagement, collaboration, innovation, knowledge transfer, and productivity, as well as the creation of a culture of learning and agility.

ii. OPM’s SES Situational Mentoring program – NASA Center mentoring leads assist mentees/mentors to register for the program, which consists of a network of senior executives who have volunteered to participate in a confidential, short term mentoring program for high impact issues, problems, challenges, and opportunities for new SES members or those transitioning to new roles.

c. **Vacancy Announcements**

NASA, through OHCM, is exploring two new efforts pertaining to vacancy announcements that can help in efforts to reduce bias. The first focused communication for Senior Technical opportunities, to broaden the applicant pool. The second is direct communication of all internal (high level) SES vacancy opportunities to all current SES, to encourage a broader pool for consideration of internal positions.

d. **Work/Life Balance**

NASA has some of the most widely recognized work-life balance programs anywhere in the Federal Government. Work-life balance at NASA encompasses maximally flexible work schedules, the Agency Office of Human Capital Management’s “Work from Anywhere” initiative, and multiple onsite lactation facilities, among others. These optimized flexibilities help to make NASA a very attractive Agency to many, especially those who are addressing issues such as child and elder care. Strategic balancing of work and life permeates NASA culture. Work-life is embedded at the policy level, included in a variety of Agency policy directives. It is also cultural norm at the Agency, with employees reporting great satisfaction regarding management’s support and attentiveness to work-life balance needs.

4. **Demonstrated Commitment to Community Partnerships**

   a. **Outreach and Recruitment**

NASA outreach and recruitment efforts are based on an ongoing collaboration between Agency and Center human resources, EO/D&I, Education, and other organizations. NASA fully engages its workforce, including those in STEM fields who can serve as role models to underrepresented groups at recruitment events. In addition, recruitment efforts designed to target a more diverse pool of candidates can help to address degree pedigree bias.

The following NASA efforts are examples of the breadth and depth of programs and activities conducted by NASA over just the last two months. These programs help to mitigate bias in STEM by helping underrepresented populations see themselves (or people like them) in science, technology, and space exploration. Many of these programs reflect the partnership between the Offices of Education, Diversity and Equal Opportunity, and Human Capital Management, at both the Agency and Center levels, as well as the Mission Directorates and other NASA organizations.

   i. Student Programs and Outreach (Higher Ed)

The Ames Research Center Office of Education was the lead organization coordinating Agency-wide activities for the national Society of Hispanic Professional Engineers (SHPE) event, which drew at least 7,000 participants. NASA participated in the Extreme Engineering 24-hour Challenge where a team of ten students worked through the night under the guidance of NASA expert coaches to meet deliverables. NASA also conducted two workshops to expose students to the excellent opportunities at NASA. One workshop was titled “Discovering NASA Through OSSI,” conducted by the Hispanic Scholarship Fund Institute while the second was entitled “NASA Pathways Intern Program,” moderated by Goddard Space Flight Center’s Office of Human Capital Management (OHCM). Students were also engaged by accomplished NASA personnel from across the Agency at the career fair event receiving further information regarding
internships and receiving feedback on their resumes. Representatives from Headquarters, Ames Research Center, and several other NASA Centers collected over 350 student resumes.

NASA’s Offices of Education, Diversity and Equal Opportunity, and Human Capital Management coordinated Agency-wide support for the Society of Women Engineers Conference and Career Expo in October 2015. Through workshops and panel discussions facilitated by accomplished female STEM professionals, the conference provided information to thousands of women (particularly students) about STEM professions, educational and employment opportunities, and work-life balance. NASA conducted a workshop titled “Women in STEM: Their Importance to NASA and Future Exploration,” with NASA Deputy Associate Administrator Lesa Roe as the moderator of a five-member panel of NASA female scientists and engineers from various Centers. A workshop entitled “NASA One Stop Shopping Initiative (OSSI) and NASA Pathways - How to Write Your Resume” was conducted by the NASA Office of Education, Marshall Space Flight Center (MSFC) recruiters, and engineering professionals. In addition, a booth at the career expo was staffed by NASA employees to inform conference attendees about NASA employment, missions, and activities. This event utilized NASA’s unique missions, discoveries, and assets to inspire student interest in STEM fields.

NASA supported the Society of Asian Scientists and Engineers (SASE) Conference and Career Expo in Houston, Texas in October. The SASE National Conference is the largest conference and career fair for Asian Americans in the U.S. The organization aims at preparing Asian heritage scientists, engineers, and technologists for success in the global market, and celebrating diversity on campuses and in the workplace. NASA provided a tour of Johnson Space Center to pre-registered students and conducted an educational workshop on NASA’s Pathways and NASA’s One-Stop Shopping Initiative to students, educators, and community members, titled “How to Write Your Resume.” A booth at the career expo included a team of personnel from Headquarters and several NASA Centers that informed conference attendees about NASA employment, missions, and activities.

The NASA Swarmathon challenge, an innovative swarming robotics competition, is administered by a NASA grant to the University of New Mexico, in partnership with a technical NASA Subject Matter Expert at Kennedy Space Center’s (KSC’s) Swampworks facility. During the competition, student robot teams operate in concert to autonomously search for, retrieve and map resources. The competition is targeted for Minority Serving Institution (MSI) team participation. The challenge will be held on April 18-22, 2016. Twelve robot kits, valued at $6K each, along with a $1K faculty stipend, are being awarded to twelve MSI teams for the 2016 competition, to be held at the KSC Visitors Complex. The period for a Notice of Intent (NOI) to apply closed on September 30, 2015, with an overwhelming response. Thirty-four NOIs were received, representing 15 states across the nation, with a wide diversity of institutions. An almost unlimited number of teams can compete through a virtual competition; the target metric for the first competition year in 2016 is an additional 12 teams in the fully virtual competition.

KSC representatives visited Puerto Rico for a week to showcase NASA and Ground Systems Development and Operations. The week kicked off at the University of Puerto Rico - Mayaguez, in Mayaguez on November 9, 2015, and ended at the Museo de Vida Silvestre, in San Juan on November 13. A workshop entitled “NASA’s Ground Systems Development & Operations: Constructing the Future of Deep Space Exploration through Engineering Design,” was provided to more than 100 teachers from local schools and NASA hosted two sessions for the UPR-Mayaguez student population. On November 10, representatives visited Escuela Libre De Musica-Ernesto Antonini and reached 220 students from regional schools in grades 5-9. On November 11 and 12, representatives visited Centro Residencial de Oportunidades Educativas de Villalba in Villalba, Puerto Rico, and reached 200 students in grades 9-12 each day. At each presentation, NASA team members showcased multiple concurrent sessions such as: a) Space Launch System (SLS) and Orion b) NASA and Technology c) Day in the Life of a Scientist/Engineer at NASA d) Careers at NASA e) Mars and Beyond f) EPDC opportunities challenges and more.
NASA's Digital Learning Network hosted a special education event in coordination with the U.S. Spacesuit Knowledge Capture Program. Dr. Zack Crues, a NASA Modeling and Simulation Expert with NASA’s Johnson Space Center (JSC) spoke to 20 high school students, 22 community college students, and nine teachers and administrators gathered at the Southwestern Indian Polytechnic Institute in Albuquerque, NM. NASA JSC employees were also able to attend at an additional location tied into the live interactive web conference. The event was also streamed out to the NASA JSC USTREAM channel which saw 38 total web views during the special program. The talk was on the Martian Moon Phobos and illustrated examples of simulation driven design for future exploration. This activity serves historically underrepresented groups in the STEM fields. It will hopefully provide future engineering and space professionals with the basic applied knowledge, expertise, and skills to succeed in a broad range of STEM careers.

After an intensive five-week online experience, 162 students were invited to a fall workshop held at several NASA Field centers. These 162 scholars represent 86 community colleges in 21 states, 72 percent of which are Minority Serving Institutions. Armstrong Flight Research Center (AFRC), Jet Propulsion Laboratory (JPL), JSC and MSFC hosted the four-day workshops in October. A recent attendee stated, “This has been the best professional and personal experience in my adult life.” While at the workshops, students worked closely with NASA personnel. The NASA Community College Aerospace Scholars (NCAS) program is a direct response to the president’s call in to enhance the STEM experience of undergraduate students. NCAS encourages community college STEM students to complete a two-year degree or transfer to a four-year university in the pursuit of a NASA-related career.

NASA’s National Reconnaissance Office’s (NRO) launch included two student-built satellites. These launches represented two firsts: the first satellite designed, built, tested and operated by engineering and science students from Alaska and the first CubeSat designed, built, tested, and operated by tribal college students. The Alaska Research CubeSat from the University of Alaska Fairbanks was supported by the Alaska Space Grant Consortium. BisonSat from Salish Kootenai College was funded by a NASA Education Minority University Research and Education Project (MUREP) Tribal College and University Project (TCUP) award. The science data, a few of which will be images of the Flathead Indian Reservation in northwest Montana, will be used primarily for engaging tribal college students and tribal communities in NASA’s mission.

**ii. Student Programs and Outreach (K-12)**

NASA Administrator Charlie Bolden met with young engineers at Amidon-Bowen Elementary, an inner-city school in Washington, DC, on November 18, 2015, inspiring them in STEM by sharing his personal experiences. The engineers, students in Ms. Harper’s third grade class, demonstrated their knowledge of the engineering design process with Mr. Bolden and showcased the Mars orbiters they designed and built over the past five weeks. Mr. Bolden’s visit marked the conclusion of NASA’s sixth offering of “I’m an Engineer!” at Amidon-Bowen, a collaborative effort between HQ’s Office of Education and the HQ’s Equal Opportunity and Diversity Management Division. “I’m an Engineer!” emphasizes NASA’s Journey to Mars and is based on NASA’s BEST Students activity guides. Approximately six NASA volunteers joined Dr. Diane Clayton at the school as the activity unfolded over six sessions.

**b. STEM Educator Workshop**

NASA supported the 2015 Hispanic Engineering, Science, and Technology (HESTEC) Program in October. Three in-person workshop sessions engaged approximately 85 high school educators in a hands-on engineering design challenge while also promoting the new “STEM on Station” website and other ISS/One Year Crew resources. The sessions provided training for “Developing Scientific Process Skills through Engineering Design – Harnessing Thermal Transfer for Space Exploration.” The educators were asked to review and integrate important scientific processes in science along with science content knowledge while using the engineering design process. Educators received background content information and a hands-on introduction to prepare them to run an active learning lesson. The Education Specialist also modeled how to guide students in designing and building a solar hot water heater from “Feel the Heat.” Other programs across the Agency were also highlighted for the educators to share with their students.
c. Education Partnership

The NASA Headquarters Office of Education, in cooperation with the Agency’s four Mission Directorates, nine Center education offices, and the Jet Propulsion Laboratory education office, released the NASA Announcement for High Impact / Broad Implementation STEM Education Partnership via the NASA data system, NSPIRES (http://nspires.nasaprstrs.com), on November 16, 2015. NASA Education seeks to partner with eligible domestic or international organizations on a no-exchange-of-funds basis to reach wider and more diverse audiences and to achieve mutually beneficial objectives. The Announcement places a priority on collaboration involving the following: digital learning; engaging underrepresented groups in STEM; NASA-themed STEM challenges; and youth-serving organizations.

5. Measurement and Assessment

a. Workforce Data Analysis

NASA conducts regular workforce data analysis to identify potential biases in the workforce and to measure and assess the impact of our EEO and D&I efforts in terms of workforce numbers. Workforce analysis is an integral component of the Agency’s annual EEO Plan update. We examine the participation of women, minorities, and individuals with disabilities in the NASA workforce, in different occupations and grade levels. We also examine leadership development programs, performance management systems, and award and recognition systems for potential bias. NASA leadership is apprised of inequities each year at a “State of EEO” briefing, as well as quarterly at Agency-wide Baseline Performance meetings.

Recently, NASA has begun exploring how we might use “big data” to further guide and assess our EEO and D&I efforts. This effort will tie together data from many different systems, such as the personnel database, training database, complaints management database, reasonable accommodation database, application database, and others to look for trends, biases, and predictors of employees’ success or lack of success at NASA.

b. D&I Assessment Survey

Commencing in 2010 and conducted biannually, ODEO has implemented an Agency-wide D&I survey. The purpose of the survey is to assess current workforce perceptions about D&I, such as employee views about the culture of diversity and inclusion at NASA, including how managers, supervisors, senior leaders, and Center leadership promote and practice NASA diversity and inclusion policies and personal perceptions of how inclusive our workforce is. ODEO used the initial survey to establish a diversity and inclusion snapshot, identify a baseline for our strengths and challenges, and design future activities for the continuing enhancement of D&I efforts at the Agency. The subsequent surveys are a measure of our successes and challenges. In keeping with the holistic approach embodied in the Agency’s D&I Framework, results of the survey are used to help shape the strategies and actions in the Agency D&I Strategic Implementation Plan, as well as Center reporting and Center D&I planning. This has included efforts to address implicit bias in the form of practical learning to specific NASA communities, e.g., senior leaders, managers and supervisors, tailored to their needs and concerns around the topic of implicit bias, recruitment expansion efforts, employee developmental opportunities, and leadership accountability.


This technical assistance document, published in July 2015, is a non-exhaustive catalogue that showcases a number of innovative and creative EO and D&I efforts we are spearheading as an Agency, and across our Field Centers. It reflects NASA’s long-standing commitment to continually strive for engagement, excellence, and innovation among our workforce
and to reach out to members of the public with our story. *Promising Practices* helps further this commitment by sharing a host of ways that we as an Agency are advancing the principles and practices of EO and D&I, whether it is helping to make our Web sites more accessible to individuals with vision disabilities, increasing work/life flexibilities, better ensuring that all of our employees have a meaningful opportunity to be heard by leadership, or partnering with our local educational and business communities to engage and inspire young people from all backgrounds, NASA endeavors to lead the way in advancing EO and D&I. *Promising Practices* also is intended to enhance cross-pollination among the NASA Centers.

**EXTERNAL CIVIL RIGHTS COMPLIANCE AND TECHNICAL ASSISTANCE**

**NASA’s Current or Planned Efforts to Reduce the Impact of Bias in NASA-Funded Institutions of Higher Education STEM Workforce and Educational Environment (e.g., Graduate/Postdoctoral Students; Faculty; Staff; Administrators; Institutional Climate)**

1. **Implicit - Individual**

   - **Unconscious Bias Learning Tool for Grantees (accessible at [http://missionstem.nasa.gov/eLearn.html](http://missionstem.nasa.gov/eLearn.html))**

   In September 2014, NASA published on its MissionSTEM website a learning tool on implicit bias. The tool, “*Unconscious Bias in STEM: Addressing the Challenges*,” is designed to assist administrators, faculty, staff, and students of programs funded by NASA by providing them with a better understanding of bias and how it can impact STEM educational environments.

2. **Implicit – Institutional/Explicit**

   a. **Civil Rights Compliance Review Programs**

   NASA addresses issues of institutional bias in its compliance reviews of grantees, including STEM program departments and science museums and planetariums. As of the close of 2015, NASA has conducted 79 onsite and desk-audit reviews. NASA conducts compliance reviews of our 600-700 grantees to monitor the provision of equal opportunities in STEM Programs, pursuant to federal civil rights laws:

   - **Title VI** of the Civil Rights Act of 1964 (race, color, national origin, including limited English proficiency);
   - **Title IX** of the Education Amendments Act of 1972 (gender);
   - **Age** Discrimination Act of 1975 (age)
   - **Section 504** of the Rehabilitation Act of 1973 (disability)

   In assessing grantee compliance NASA reviews methods of administration that can have unintentional adverse impacts, including policies and practices, such as admission criteria, students’ advising, classroom, and research participation, to name a few areas. Result of reviews are written reports with findings and recommendations to university presidents or heads of museum/science centers, which include identifying and addressing implicit bias. NASA’s compliance reports have made recommendations to STEM programs to address the presence of unconscious bias in meaningful ways, such as training designed to resonate with a STEM program environment. In our Title IX and STEM series, we have noted promising practices of grantees relating to unconscious bias (see *Title IX and STEM: Promising Practices, accessible at [http://odeo.hq.nasa.gov/documents/71900_HI-RES.8-4-09.pdf](http://odeo.hq.nasa.gov/documents/71900_HI-RES.8-4-09.pdf)* as well as means of assessing the presence of bias and steps to address it (A Guide to Conducting Title IX Self-Evaluations, accessible at [http://odeo.hq.nasa.gov/documents/TITLE_IX_STEM_Self-Evaluation_Fillable.pdf](http://odeo.hq.nasa.gov/documents/TITLE_IX_STEM_Self-Evaluation_Fillable.pdf)).

   b. **Civil Rights Technical Assistance/MissionSTEM Website (accessible at: [http://missionstem.nasa.gov/](http://missionstem.nasa.gov/))**
NASA’s civil rights technical assistance for our grantees is anchored by the MissionSTEM website. MissionSTEM’s purposes are to:

- Broaden the reach of our technical assistance efforts to all of our grant recipients
- Provide readily available critical information on civil rights compliance requirements
- Serve as a vehicle for fostering active communication between NASA, our grant recipient institutions, and other stakeholders
- Showcase best practices and help to address common challenges, including implicit bias
- Reach out to the beneficiaries of our grants, e.g., STEM students and science museum patrons, to provide information and support for pursuing career paths in STEM.

Among the most recent offerings on the site (in addition to NASA’s Unconscious Bias Learning Tool for Grantees, mentioned above) and planned activities are the:

- **D&I Leadership Series** – Presidents of NASA grantee educational institutions share their ideas and best practices for developing the next generation of STEM graduates, and increasing the participation of America’s historically underrepresented groups

- **NASA Innovations Impact the World** – NASA scientists and technologists, including the Agency’s Chief Scientist, offer their experiences and perspectives on how STEM work impacts the society and the world. The diversity of the scientists and engineers sharing their work and the broad impacts on society of the STEM work discussed is intended to reach and resonate with a broadly diverse population and to help dispel myths about who does STEM work.

- **Featured Promising Practices of Grantees** – On this page, NASA showcases the progress being made by grantees in increasing diversity in STEM and in making their programs more inclusive. Examples include the MIT Physics program, which has significantly increased its gender diversity, the University of Maryland at College Park School of Engineering, which has a very strong Student Ambassadors program that has helped to increase the diversity of engineering programs at UMCP. NASA continues to work with grantees to disseminate new promising practices through MissionSTEM on a regular basis.

- **Upcoming Summit**: NASA is planning a summit in the summer of 2016 for our university and science museum/science center grantees. The summit will feature a panel of leaders in government and academia sharing best practices in D&I and EO, as well as a discussion of top priorities going forward. The event will be live-streamed so that all NASA grantees and other interested stakeholders can participate virtually.