NATIONAL SCIENCE FOUNDATION
AGENCY EQUITY ACTION PLAN SUBMITTED TO THE DOMESTIC POLICY
COUNCIL AND THE OFFICE OF MANAGEMENT AND BUDGET

Executive Summary

The National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." NSF supports all fields of science and engineering that create knowledge that transforms the future. This type of support:

- Is a primary driver of the U.S. economy;
- Enhances the nation's security; and
- Advances knowledge to sustain global leadership.

With an annual budget of $8.5 billion (FY 2021), NSF is the funding source for approximately 25 percent of all federally supported basic research conducted by America's colleges and universities. NSF invests in all 50 states and US territories through grants to nearly 2,000 colleges, universities, and institutions. Each year, NSF receives more than 40,000 competitive proposals and makes about 10,000 new awards. Those awards include support for cooperative research with industry, Arctic and Antarctic research and operations, and U.S. participation in international scientific efforts.

To promote the progress of science and maintain our Nation's scientific leadership and global competitiveness, the United States must educate, train, and retain more scientists, engineers, and computer scientists. Historically, underrepresented and underserved communities are the largest untapped Science, Technology, Engineering, and Mathematics (STEM) talent pools in the U.S. As such, NSF strives to encourage the full participation of all Americans and to remove barriers to their doing so. This is reflected in NSF's Strategic Plan which is intended to ensure all sectors of society have the opportunity to contribute to the scientific enterprise. NSF has undertaken a broad range of activities in that regard, and one of the biggest takeaways from this planning exercise is to fully appreciate the coordination required to ensure these activities are robust, consistent, well-executed and evidence based. The Foundation is working on developing a coordinating process to take on that role so that this plan and other activities realize their potential for U.S. science.

Summary of Action Plan

The successful implementation of this Executive Order (EO) is a top priority for the Foundation. To respond to EO 13985 specifically, the Director established the Agency Equity Team (AET), which has met regularly to plan for and conduct equity work. Continuing activities and steps include: addressing sexual and other forms of harassment, optimizing demographic data collection in support of equity assessments, increasing participation of disadvantaged entities, (including Minority Serving Institutions (MSIs)), on Federal Acquisition Regulation-based solicitation and awards, and removing barriers to enhanced participation by indigenous and Native American communities.

NSF recognizes the vulnerabilities associated with trying to remove barriers to program access for underserved communities without robust engagement activities. Therefore, NSF is prioritizing its commitment to stakeholder engagement through hosting collaborations with Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs). NSF seeks to host listening sessions and roundtables on HBCU, HSI, and TCU campuses. NSF will utilize these events as opportunities to engage the scientific community on equity issues at all academic levels, including students, senior scientists and engineers, educators, and administrators.

The goal of the listening sessions is to meet with the community to acquire a better understanding of the various barriers to program access to include technical assistance, awareness, harassment, etc. NSF plans to cross-pollinate common threads learned from those sessions across diverse stakeholders about removing barriers to program access.

NSF will begin the planning for the listening sessions and roundtables in FY22. NSF will develop a formal strategy for incorporating any lessons learned and promising practices into recommended program initiatives for implementation. NSF believes these efforts will potentially mitigate the blind spots that may exist about the effects of barriers to full and equal access for underrepresented and underserved communities.

Summary of Early Accomplishments

Since NSF's previous EO 13985 plan was submitted, NSF has made several efforts to address barriers to enhanced participation in the STEM enterprise by underserved Indigenous and Native American communities. NSF Director Sethuraman Panchanathan held a Town Hall with Tribal Nations in the Spring of 2021, with an accompanying 90-day comment period, ending June 12, 2021, designed to provide an opportunity for Tribal Nations to share their thoughts on how NSF could enhance its Tribal consultation efforts and build on its relationships with Tribal Nations. NSF continues to focus weekly on plans for continuous engagement with Tribal Nations. Currently plans include listening sessions with Tribal Leaders, to occur in March 2022.

NSF has included Indigenous community acknowledgments as part of its programmatic agreements (PA) for some of its astronomical facilities. For example, the PA for the Daniel K. Inouye Solar Telescope (DKIST), which is located on the summit of Haleakala in Maui, HI, requires researchers who base their research on data collected in whole or in part from DKIST to include an acknowledgement of the use of this site of significant importance to Native Hawaiians in any publication resulting from DKIST related research. There are likewise research acknowledgments required by NSF funded researchers at Gemini North telescope, located within the Maunakea Science Reserve and adjacent to the summit of Maunakea, and for visiting astronomers at NSF's NOIRLab at Kitt Peak National Observatory. A more general land acknowledgment (see Focus Area #4) has been proposed and will be reviewed by stakeholders.

The Foundation is currently revising the next version of the "NSF Proposal and Award Policies and Procedures Guide" to specifically identify Tribal Governments as eligible organizations to submit proposals for funding to NSF. This specific enhanced eligibility is a key action intended to set the stage for increasing Native American STEM participation at NSF.

NSF recently focused on additional efforts to address sexual and other forms of harassment associated with NSF-funded programs, specifically those supporting travel. In the latest version of the *NSF Proposal and Award Policies and Procedures Guide* (PAPPG) (NSF 22-1) (effective on October 4, 2021), the Foundation included new requirements for NSF travel proposals. For such proposals, the Authorized Organizational Representative must now certify that prior to the proposer's participation in the meeting, the proposer will assure that the meeting organizer has a written policy or code-of-conduct that addresses sexual harassment, other forms of harassment, and sexual assault, and that includes clear and accessible means of reporting violations of the policy or code-of-conduct. The policy or code-of-conduct must address the method for making a complaint as well as how any complaints received during the meeting will be resolved.

NSF has preliminary findings from an evaluation that was comprised of qualitative and quantitative components designed to obtain valuable insights to (1) influence NSF's actions to increase the efficacy of NSF's anti-harassment policies and (2) determine next steps in NSF's continued efforts to evaluate its harassment prevention policies.

Equity action plan

Focus Area # 1 – Efforts to Address Sexual and Other Forms of Harassment

Barrier to Equitable Outcome(s)

Sexual and other forms of harassment are barriers to full participation by underrepresented groups (URGs) in the scientific endeavor.

Action and Intended Impact on Barrier

The latest efforts by the Foundation in addressing harassment as a barrier are focused on (1) evaluating existing policies and (2) extending the reach of NSF harassment prevention efforts to research activities at field sites and on research vessels.

(1) The evaluation of NSF's harassment prevention efforts focused on the term and condition and the conference policy. Currently under review, preliminary findings provide useful information for next steps in NSF efforts to dismantle barriers to the participation of URGs in STEM. For example, the analysis of communications shows that, on average, universities submitting proposals to NSF have adopted an anti-harassment policy and disseminate it through their websites. This is not true of businesses. The analysis also shows that NSF's conference policy had a positive impact on adherence to the guidance provided by NSF. This finding holds overall and by type of institution (R1 versus R2), but not for all types of MSIs. *These and other findings will inform ongoing NSF efforts to develop targeted approaches to accelerate the impact of harassment prevention efforts, particularly given NSF's Strategic Goal of increasing participation in the STEM enterprise and the Plan's focus on private sector partnerships and MSIs. Findings will also inform next steps in monitoring and evaluation activities.*

(2) Fieldwork is in many STEM fields and presents unique challenges that can increase the likelihood of harassment, including but not limited to challenging physical conditions, social isolation, and limited communication methods. Work conducted out in the field or at sea on vessels has also been associated with higher risks of harassment, especially for individual minorities within the field team. *A new internal NSF working group was recently formed to consider the next steps for the Foundation in this important area such as potential language for addition to the next version of the Proposal and Award Policies and Procedures Guide (PAPPG), and new opportunities for internal/external outreach on this topic. NSF's vision and goal is that all research should be done in an environment free from harassment.*

Tracking Progress

NSF will track its progress through continued monitoring and evaluation activities. Activities in the planning stages include interviews with NSF grantee institutions to gain more in-depth understanding about how NSF harassment prevention efforts are received and interact with institutional processes and practices, as well as surveys to gauge grantee awareness, elicit opinions, and measure impacts over time.

NSF will track:
  a. Progress toward adhering with agency anti-harassment policies across grantees overall and by different types of institutions (such as private sector, academia, and different types of MSIs)
  b. Progress toward understanding factors that enhance or inhibit grantees' adherence to NSF policies to adapt implementation as needed

Long term success will have the following characteristics:
  a. Increasing share of grantees demonstrating knowledge of NSF policies, overall and by type of institution
  b. Increasing share of grantees adhering to NSF policies, overall and by type of institution

Accountability

NSF will use the following actions:
  a. Continued oversight. NSF's Equity Team, under the leadership of its members from NSF's Office of Equity and Civil Rights, along with the program office, will oversee implementation and monitor progress toward the goals identified in the "Tracking Progress" section.
  b. Enhanced programming. Based on findings from ongoing monitoring and evaluation, NSF will revise and continue to expand its programming to promote equity in participation in NSF programs through the promotion of anti-harassment efforts.

Focus Area # 2 – Optimized demographic data collection in support of equity assessments

Barrier to Equitable Outcome(s)

To evaluate the impacts of NSF's existing investments with respect to equity, response rates from beneficiaries of NSF programs (such as Principal Investigators [PIs], reviewers, post-doctoral fellows, teachers, and students) need to be increased to ensure NSF has robust demographic data for analysis.

Action and Intended Impact on Barrier

NSF's earlier reports indicated that the agency would develop a plan for optimized demographic collection from PIs. As it progressed, and in recognition of the value of this work to the agency, this effort was expanded to include other participants of NSF programs, namely, undergraduate students, graduate students, post-docs, and teachers. To increase response rates across this wide range of beneficiaries of NSF programs, NSF is developing (and implementing already) a suite of approaches that should improve data quality, including enhancements to existing data collections. These include (1) piloting changes to the user interface used to collect demographic data from PIs and (2) enhancing a system to collect data from students and other potential beneficiaries of NSF programs.

(1) **Improving collection of demographic data from PIs**. The demographic questions will display upon entry into Research.gov (instead of requiring that respondents click on an icon to display the questions). Previously responses were not required, and users could skip over the questions entirely. As part of the pilot, users must provide some response, and "Do not wish to provide" is consistently offered as a response category to retain the voluntary nature of the inquiry. The experiences of other agencies and data collections suggest that these changes should result in improved response rates. This approach is being pilot tested on PIs registering with NSF for the first time as of September 2021. Ongoing monitoring suggests that the pilot is driving a sharp increase in response rates for new users with a PI role. Out of more than 3,000 users in the pilot, more than 95 percent provided gender information and more than 90 percent provided race, ethnicity, and disability information, compared with rates of 45 percent for gender and below 40 percent for the other demographic information in the same period a year ago. As the pilot continues, these estimates might change, but these early results are encouraging.

(2) **Improving collection of demographic data among applicants and participants in NSF programs, and greatly enhancing NSF's ability to conduct rigorous evaluations.** NSF is also expanding its Education and Training Application (ETAP) to collect information from a broader range of potential participants in NSF programs: undergraduate and graduate students, post-doctoral fellows, and teachers. The FY 2022 pilot launched at the end of November 2021. As of mid-January, preliminary results from 339 users with completed applications (among more than 6,000 current users expected to submit applications) show response rates above 90 percent for most demographic

questions, and as high as 98 percent (for sex and gender identity, for example). This suggests that ETAP, once scaled up, will provide NSF with access to high quality data to monitor (in real time) and rigorously evaluate (using comparison group designs) its efforts to develop the STEM workforce and contribute to the scientific enterprise.

The importance of having high quality demographic data on actual and potential participants in NSF programs cannot be overstated, as these data are crucial for NSF to assess equity in participation over time and adapt its programming as the context of implementation changes to promote equity.

Tracking Progress

NSF will use quantitative indicators to track:
   a. Progress toward achieving high response rates in demographic data collections
   b. Progress toward receiving useful responses from respondents to NSF data collections (instead of opting out)

Long term success will have the following characteristics:
   a. Increasing and high response rates in demographic data collections
   b. Decreasing refusals (respondents who opt out from providing a response)

Accountability

NSF will use the following actions:
   a. Continue to support efforts to improve data collections
   b. Provide updates to NSF leadership to support the adoption of successful pilot initiatives and expansion across agency programs to scale up impacts

Focus Area # 3 – Increase Participation of Disadvantaged Entities, including MSIs, on Federal Acquisition Regulation-based solicitation and awards

Barrier to Equitable Outcome(s)

Creating an equitable and inclusive contracting environment for MSIs and small disadvantaged businesses (SDBs), including those owned by women and people of color, is challenging. Increasing access to NSF procurement staff and solicitations/awards for NSF procurement actions and an inclusive contracting strategy will result in income and jobs for disadvantaged entities.

The complexity of federal contracting frustrates existing and new entrants to the Federal acquisition process. Contracting inequities can be internal to the government (e.g., business practices) and driven by how large prime contractors provide subcontracting opportunities. Further, category management practices and best-in-class solutions negatively impact the ability of disadvantaged entities and new entrants to position themselves access to compete and secure awards. The barriers we seek to address are a

lack of understanding of how to do business with NSF and access to program/technical experts.

Action and Intended Impact on Barriers:

1) **Increased outreach to MSIs and SDBs.** The NSF Senior Procurement Executive (SPE) and Office of Small and Disadvantaged Utilization (OSDBU) revised the Division of Acquisition and Cooperative Support's (DACS) outreach and communications plan. The plan promotes fair, frequent, and constructive dialogue with the community on matters of mutual interest, as appropriate, and in a manner that protects sensitive information, operation, sources, methods, and technologies.

   The SPE and Deputy (Director), OSBDU will conduct a series of outreach sessions for SDBs and MSIs. The sessions will specifically address how to effectively do business with NSF, introductions to program office staff, and upcoming requirements of interest to these entities. By providing access to DACS, OSDBU, and program offices while targeting diverse suppliers, the focused outreach will assist NSF in reducing the barrier to equitable outcomes.

   The OSDBU will revise its public-facing website to provide SDBs and MSIs a better understanding of how to do business with NSF and reduce the uneven advantages of communication and access to NSF between small and large businesses.

2) **Improved market research and acquisition planning.** Effective market research will produce procurements that efficiently meet NSF needs and enable mission success in a way that ensures a resilient vendor base, meets Small Business Administration (SBA) goals, and complies with the Federal Acquisition Regulation.

   Creating a diverse vendor base ensures a diversity of approaches when it comes to problem-solving. This gives NSF a better opportunity to guarantee the flow of new and competing ideas and enhances the availability of those ideas. Finally, a diverse vendor base will ensure opportunities for non-traditional vendors and vendors that have not previously worked at or for NSF.

Strategies and tools identified for use include:

   a. Requests for Information (RFI) – RFIs are a way of requesting information from the vendor community and will be posted publicly to www.sam.gov or reserved for response by small and disadvantaged entities.
   b. One-on-One Briefings – NSF engages one-on-one with small and disadvantaged entities to receive input and identify vendors capable of supporting its mission.
   c. Hosting Industry Days – Industry days allow interested vendors to ask questions of NSF personnel, contribute ideas, and interact with NSF procurement and program personnel. It provides an opportunity for vendors to gain a clear understanding of the NSF goals and objectives.

3) **Increased subcontracting opportunities and enforcement of subcontracting plans.** Not all contracts and awards are suitable for small and disadvantaged entities. In those cases, NSF must provide opportunities for small and disadvantaged entities to subcontract. For all contracts not set aside for small businesses, DACS must coordinate with the owner of the requirements and the OSDBU to design reasonable subcontracting goals.

NSF will clearly identify goals for small business participation in all prime contracts and actively track compliance with and achievements of those goals. Including small business provides those entities with the revenue and experience to help them grow to bid on future procurements and increased competition, which drives down the cost to the government.

Tracking Progress

Reduction of barriers will be tracked as follows:
a. Progress towards achieving/exceeding small business prime goals
b. Progress towards achieving/exceeding small business subcontracting goals
c. NSF will solicit feedback on outreach sessions and industry days from participants

Long term success will have the following characteristics:
a. Successful achievement of small business goals, including the SDB goal which is increasing from 5% to 15% of total annual contract obligations
b. Increase in the number of small and disadvantaged entities receiving prime and subcontract awards

Accountability

NSF will use the following actions:
a. Include the achievement of small business contracting goals as a part of the performance plans for Senior Executive Service (SES) officials
b. Ensure agency small business contracting offices have access to senior leadership

Focus Area # 4 – Efforts to remove barriers to enhanced participation of underserved Indigenous and Native American communities in the Science, Technology, Engineering and Mathematics (STEM) enterprise

Barrier to Equitable Outcome(s)

Lack of robust connections based on trust between NSF and Indigenous and Native American communities is a barrier to full participation in NSF's programs and activities.

Action and Intended Impact on Barrier

The kinds of connections NSF is seeking with Indigenous and Native American communities require sustained outreach and consistent relationship building. These relationships, moreover, must be based in trust. Many members of Indigenous and Native American communities are skeptical of researchers and/or funding agencies, and therefore demonstrating an understanding and respect for tribal sovereignty and the status of tribes is paramount.

An informal working group comprised of staff with expertise in working with Tribal nations and indigenous researchers was immediately formed to develop NSF's response. This group was so successful and motivated for long term results that the Director approved elevating the status of the group to an official permanent Office of the Director (OD) Working Group.

To launch NSF's renewed tribal consultation efforts, the Director held a Town Hall with Tribal Nations in Spring, 2021, with an accompanying 90-day comment period (ending June 12, 2021) designed to provide an opportunity for Tribal Nations to share their thoughts on how NSF could enhance its Tribal Consultation efforts and build on its relationships with Tribes. NSF received 22 written and verbal responses, including responses from the Chief of the Shawnee Tribe (who commented that "Nothing [should be] about us without us"), the Chair of the Cherokee Nation Environmental Protection Commission, the President of Little Big Horn College (a tribal college), Tribal members, representatives of Tribal organizations, and Tribal researchers. From these responses, NSF identified approximately 60 separate comments concerning the following broad topics: NSF/Program outreach and relationship building; solicitation and proposal development; and the merit review process.

After analyzing the comments received, the OD Working Group developed an Action Plan, which was submitted to OMB on April 26, 2021. Following submission of NSF's Action Plan, NSF posted materials related to the Director's Town Hall, the Action Plan, and comments received during the 90-day comment period to the NSF webpage. NSF's analysis of comments, which included both internal (NSF) and external comments, also enabled the agency to identify topics to focus on for future listening sessions. NSF sought advice from other federal agencies with expertise in Tribal consultation regarding the format and logistics for holding listening sessions with Tribal Nations.

The NSF Director further acted on his commitment to enhance NSF's Tribal consultation efforts by formally establishing the Tribal Consultation and Engagement Working Group (TCE Working Group). The TCE Working Group is charged with continuing the work of the informal Working Group. This includes completing the initial gathering of information through listening sessions and an accompanying comment period and developing formal recommendations for long-term implementation of the Action Plan.

The TCE Working Group is in the final stage of planning listening sessions on two topics to be held between March 22, 2022, and May 5, 2022. The first topic will address

"Promoting Meaningful Government-to-Government Consultation and Engagement" and the second topic will address "Enhancing Collaboration on Research." Three sessions will be held on different days and times for each topic to provide flexibility to participants and to accommodate those in different time zones. In addition, NSF will hold a 60-day comment period that will begin before the first listening session and end on May 14, 2022. Tribal Nations can provide comments via email or regular mail during this comment period. In addition, NSF is planning in-person, one-on-one, or small group stakeholder engagement activities to provide another means communication between Tribal Nations and NSF.

NSF also plans to make an interactive virtual meeting room available to Tribal Nation representatives during the comment period as an additional way to participate in this process. This virtual meeting room is a creative and innovative tool that provides participants with an accessible, convenient, and interesting space to access information about NSF (in general), NSF's Action Plan, and the listening sessions. It also provides an opportunity for participants to easily submit comments during their visit to the virtual meeting room. We view the implementation of this tailored technology as a critical step in promoting inclusivity and overcoming barriers to participation in that it is readily available regardless of geographic location or time zone and, not only inviting, but easy to use and navigate.

Following the conclusion of the listening sessions and comment period, NSF will analyze all written and verbal comments received from Tribal Nations and work to develop specific recommendations regarding ways in which: 1) NSF's consultation and engagement efforts can be improved through research policies and practices and potential strategies for addressing issues of concern to Tribal Nations; and 2) NSF can enhance its research policies and practices to encourage more participation from Tribes in STEM research and respect tribal sovereignty.

In addition to the action items identified above, NSF has begun work on developing a land acknowledgment statement that could be used at the outset of NSF meetings and conferences. The draft recognizes that this land on which the NSF Headquarter is located holds great historical, spiritual, and personal significance to Indigenous people of the region and that the leaders of the meeting/conference are grateful and appreciative to be there.

Tracking Progress

Progress will be tracked through indicators such as:
  a. NSF's Tribal Consultation and Engagement Working Group (TCE) will track progress through the following indicators: Number of engagement activities completed by NSF (such as listening sessions) over time
  b. Number of participants in each activity, preferably with Tribal affiliations
  c. Number of comments received, overall, by mode of transmission (such as email, mail, or virtual meeting room), and if possible, by Tribal affiliation

    d. Traffic in the virtual meeting room, overall and by type of use (such as downloading information)

    e. Drafting and approval of the land acknowledgment statement and of guidance for NSF staff and contractors to promote its use

Long term success will have the following characteristics:

    a. Sustained consultation and engagement results in tangible changes to NSF practices, procedures, or policies to engage and support the participation of Tribal nations in NSF programs and activities

    b. The land acknowledgment statement is increasingly used in NSF meetings and conferences

    c. Participation of Tribal Nations and their members in NSF's portfolio increases over time (e.g., as measured by participation in NSF programs through research awards, scholarships, fellowships, research experiences, and so on)

Accountability

NSF's Tribal Consultation and Engagement Working Group will oversee implementation and report to the Office of the Director regularly on progress.

Focus area #5 – Efforts to enhance actions to establish and support the Civil Rights Program

Barrier to Equitable Outcome(s)

NSF is committed to ensuring the necessary resources are available to implement a robust civil rights program designed to mitigate and eliminate barriers to equity in program delivery.

Action and Intended Impact on Barrier

NSF is actively pursuing actions in four areas: (1) reviewing ongoing efforts to advance equity across the Agency, (2) revisiting the composition and organizational structure of OECR to amplify its effectiveness, (3) conducting an organizational assessment in support of OECR goals, and (4) acting on the findings of the Racial Equity Task Force report. These are described below.

NSF will continue ongoing reviews of offices and directorates' efforts to advance civil rights and include underrepresented, underserved, or disadvantaged communities in NSF's funding portfolio. These reviews will help monitor implementation, assess progress, and ensure adequate resources.

Consistent with these reviews, the Office of Equity and Civil Rights (OECR) recently established a new senior executive service (SES) position of Deputy Office Head. This position will ensure the reviews are robust and findings disseminated to leadership to ensure they are influential and will also support internal and external civil rights

programs, such as Title VI, IX, and harassment-prevention efforts. In addition, the OECR is reorganizing to align staff more efficiently, while adding new positions to support program expansion. This effort expands OECR's capability to serve internal NSF staff, as well as NSF's external community in ensuring equity in all areas of NSF's work.

OECR's reorganization will be supported through an organizational assessment. The agency's goal is to eliminate barriers to equity that can arise from having DEIA initiatives in silos throughout the agency without an overarching coordinating role. The plan is to assess the appropriateness of global DEIA policy guidance and coordination, develop strategic planning with meaningful and impactful metrics, and support annual performance reporting. The agency will make any business realignments and provide the necessary resources for a successful program.

NSF staff recently completed a report focused on racial equity. This report provided insights and recommendations in several areas, including employment and program delivery. NSF intends to incorporate, as applicable and appropriate, mitigating strategies to address potential barriers to equity identified in this report.

Tracking Progress

NSF will track progress as follows:
    a. Completion of assessments, such as the office/directorate reviews and the OECR organizational assessment
    b. Dissemination of findings to NSF leadership and co-creation of actionable recommendations for Agency adoption

Long term success will have the following characteristics:
    a. Findings from the assessments result in changes to NSF organizational structures, policies, or practices in support of DEIA efforts. Examples include: the reorganization of OECR in support of its mission; and anti-harassment policies are expanded or revised to ensure thorough coverage of research environments
    b. NSF continues to provide resources and leadership support for ongoing monitoring and evaluation of DEIA efforts

Accountability

The Office of the Director will monitor progress through monthly reports from OECR. OECR will disseminate findings, recommendations, and actions widely across the Agency.