EQUITY FOR UNDERSERVED COMMUNITIES

Description and Rationale

Equal opportunity is a fundamental promise of our Nation. Yet far too many people who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality have not achieved full participation in all aspects of our society. Their contributions and diverse perspectives are essential to the economic wellbeing, health, and security of our Nation and of the world. In January 2021, the President signed Executive Order (EO) 13985, *Advancing Racial Equity and Support for Underserved Communities*, with the goal of promoting equity to provide everyone in the U.S. the chance to achieve their full potential. NSF is currently supporting this EO through increased engagement with and support of Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Tribal Colleges and Universities (TCUs) as well as with those communities that are historically underrepresented and underserved.

NSF has long been committed to identifying and addressing barriers to equity, both within our agency and in how we deliver programs to the thousands of institutions we support. In recent years, NSF has invested over $1 billion each year in its Broadening Participation programs and projects at institutions across the country. National support for these programs is broad. For example, the National Science Board (NSB) in its *Vision 2030*[1] report states, "Faster progress in increasing diversity is needed to reduce a significant talent gap" and they name that talent gap the "Missing Millions." In an address to the American Association for the Advancement of Science (AAAS) in February 2021, the NSF Director, Dr. Sethuraman Panchanathan, stated that finding and addressing the gap between the demographics of the research community and the demographics of the whole Nation—or the "missing millions"—is paramount.

Today, we know that there is unrealized Science, Technology, Engineering and Mathematics (STEM) potential across the Nation. The National Science Board estimates that, in order for the Nation's science and engineering workforce to be representative of the U.S. population in FY 2030, the number of women in STEM must nearly double, Black or African Americans must more than double, and Hispanic or Latinos must triple the number who are in the 2020 U.S. S&E workforce. These estimates are based on projections from the U.S. Census and Bureau of Labor Statistics, together with data from the National Center for Science and Engineering Statistics (NCSES).

NSF believes in inspiring, nurturing, and advancing domestic talent wherever it is found. Increasing equity in underserved communities must cover a wide set of stakeholders, from *individuals* traditionally identified as underrepresented or underserved, to *institutions of higher education* that serve groups underrepresented in STEM, to those *communities, lands and jurisdictions* across the country that currently lack resources and opportunities for robust education, workforce development, and regional innovation.

In FY 2023, NSF intends to build on existing programs and develop new ones to strengthen and scale equity investments. For individuals, NSF will focus on groups that are underserved and underrepresented in STEM, but especially those who are extremely underrepresented in STEM (those with low presence and/or low visibility in NSF programs) as well as the relevant intersections or

[1] www.nsf.gov/nsb/publications/2020/nsb202015.pdf

configurations of gender, race, ethnicity, and geographical location that comprise identity. For institutions, NSF will be more intentional in how we engage Minority Serving Institutions (MSIs) in our programs, starting with those classified as MSIs, but also focusing on the importance of MSI-bridge programs (funding open to all institutions that encourage participation by MSIs). For jurisdictions, NSF will expand support for individuals and institutions in EPSCoR jurisdictions to ensure geographic diversity.

Goals of Investments

- **Accelerate Student Success in STEM**: Increase K-12, undergraduate, graduate, and post-doctoral success in STEM disciplines among those from racial, ethnic, and other groups who have been historically underrepresented in STEM disciplines and careers.

- **Strengthen Educational Institutions through Collaborative Programs and Partnerships**: Strengthen leadership development and advancement opportunities for faculty at minority-service institutions to foster PI and institutional success in STEM and STEM education research.

- **Accelerate Inclusion and Access in NSF's Research Portfolio**: Increase and strengthen institution and faculty engagement in disciplinary fundamental research programs and activities from those institutions not currently well represented in NSF's research programs, including those from EPSCoR jurisdictions.

Achieving these goals will strengthen the capacity and capabilities of those that are currently underrepresented and underserved. This will reduce the barriers to full participation and provide access to all science and engineering research and education resources with new scientific fields, new technologies, and new modes of employment, all of which are crucial to American prosperity.

Potential for Impact, Urgency, and Readiness

The Nation is at a defining moment in support of equity, providing an opportunity to transform the U.S. scientific workforce so that it benefits from the talents of all Americans. The impact of these efforts will be to support U.S. global leadership in STEM and to address longstanding goals to promote social justice and to find talent that leads to a well-paid workforce and a vibrant U.S. economy

Although the Nation has made progress in promoting STEM education and a STEM workforce that includes all Americans (*Women, Minorities, and Persons with Disabilities in Science and Engineering*, NCSES, 2021),[2] persistent inequities remain and are at risk of worsening in the post-pandemic environment. Along with other inequities, those in education and employment are extremely salient. NSF will accelerate its efforts in improving equity in STEM.

FY 2023 investments will build on NSF's agency-wide $1 billion annual investment in broadening participation in STEM, which has already created new knowledge and established broad community readiness. NSF is unique in that it supports all areas of science and engineering as well as encourage interdisciplinary science, engineering, and education in the many programs that it supports. The

[2] *Women, Minorities, and Persons with Disabilities in Science and Engineering*, NSF/SBE/NCSES. NSF 21-321, April 29, 2021. https://ncses.nsf.gov/pubs/nsf21321

science and engineering research communities are supportive and ready to tackle these challenges, as evidenced by the biannual Committee on Equal Opportunity in Science and Engineering (CEOSE) reports to Congress.[3] NSF is ready for a surge of investments targeting equity in STEM education and the STEM workforce as never before.

Budget Justification

The FY 2023 Request presents an intentional and multi-faceted strategy addressing equity within the U.S. science and engineering enterprise to support activities at the intersections of identity as well as underrepresented communities. Building on prior investments, focused funding in FY 2023 of almost $400.0 million will support programs that aim to reduce barriers to and increase participation in science and engineering from groups traditionally underrepresented in these fields. Additional funding is also provided to increase fellowship support among these same groups. Lastly, EPSCoR funding is provided at $247.25 million, or $47.25 million over the FY 2021 Enacted.

These resources will provide more opportunities to enhance student success in STEM, strengthen educational institutions, and promote equity in underserved communities by creating synergies across Administration and NSF priority investment areas. NSF's commitment to finding talent provides opportunities that build strong STEM pathways that lead to a well-paid workforce and support the U.S. economy. To that end, the following programs are increased in NSF's FY 2023 Budget Request.

- **Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED)** ($50.0 million) is a new initiative that will improve the Nation's research support and service capacity at emerging and underserved research institutions. GRANTED will use a variety of mechanisms and programs to further NSF's reach in advancing the geography of innovation and engaging the Missing Millions. GRANTED activities will support the enhancement of research administration and post-award management, as well as the implementation of effective practices for competitive proposal development, through mechanisms such as research-coordination networks (RCNs) and institutional partnership grants, ideas labs, and research enterprise hubs in different geographic regions. GRANTED funding in FY 2023 will focus on minority-serving institutions and aim to mitigate the barriers to competitiveness at underserved institutions within the Nation's research enterprise as NSF contributes to the Administration's priority on equity.

- **Alliances for Graduate Education and the Professoriate (AGEP)** ($14.0 million) aims to increase the number of African American, Hispanic American, Native American Indian, Alaska Native, Native Hawaiian and Native Pacific Islander (or AGEP population) faculty in STEM at all types of institutions of higher education. The program funds projects that increase the understanding of institutional policies and practices to help doctoral candidates, postdoctoral scholars, and faculty improve their academic pathways to tenure and promotion in the STEM professoriate.

- **Centers of Research Excellence in Science and Technology (CREST)** ($41.0 million) enhance the research capabilities of minority-serving institutions (MSI) through the establishment of centers that effectively integrate education and research. CREST promotes the development of new knowledge, enhancements of the research productivity of individual faculty, and an expanded presence of students historically underrepresented in STEM disciplines.

[3] CEOSE, www.nsf.gov/od/oia/activities/ceose/index.jsp. NSB, www.nsf.gov/nsb/NSBActivities/vision-2030.jsp

- The **Hispanic-Serving Institutions Program (HSI)** ($60.50 million) seeks to enhance the quality of undergraduate STEM education at HSIs and to increase retention and graduation rates of undergraduate students pursuing degrees in STEM fields at HSIs. The HSI program seeks to build capacity at HSIs that typically do not receive high levels of NSF grant funding.

- **Historically Black Colleges and Universities Excellence in Research (HBCU-EiR)** ($37.93 million) program supports projects that enable STEM and STEM education faculty to further develop research capacity at HBCUs and to conduct research.

- **Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)** ($48.50 million) is committed to enhancing the quality of undergraduate STEM education and research at HBCUs to broaden participation in the Nation's STEM workforce. HBCU-UP provides awards to develop, implement, and study evidence-based innovative approaches for improving the success of HBCU undergraduates so that they may pursue STEM graduate programs and/or careers.

- The **Louis Stokes Alliances for Minority Participation (LSAMP)** ($70.50 million) is an alliance-based program that works to increase the number of STEM baccalaureate and graduate degrees awarded to populations historically underrepresented in STEM disciplines.

- **NSF INCLUDES** ($50.50 million) is a comprehensive national initiative to enhance U.S. leadership in STEM discoveries and innovations focused on NSF's commitment to diversity, inclusion, and broadening participation in these fields. The vision of NSF INCLUDES is to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the population of the Nation.

- The **Tribal Colleges and Universities Program (TCUP)** ($23.0 million) provides awards to Tribal Colleges and Universities, Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high quality STEM education, research, and outreach.

- **Established Program to Stimulate Competitive Research (EPSCoR)** ($247.25 million) provides strategic programs and opportunities that stimulate sustainable improvements to EPSCoR jurisdictions' R&D capacity and capability. EPSCoR aims to stimulate research that enhances jurisdictional competitiveness in NSF disciplinary and multidisciplinary research programs, especially those that drive economic growth and geographic diversity.

- Expand support for **fellowship programs.** Some of this increase will support activities dedicated to promoting equity in underserved communities. Touching all NSF directorates, this funding will invest in programs across the agency, such as Research and Monitoring for Postbaccalaureates in Biological Sciences (RaMP), Entrepreneurial Fellows, Atmospheric and Geospace Sciences Postdoctoral Research Fellowships (AGS-PRF), and MPS-ASCEND External Mentoring. In addition to the Equity theme, this funding includes, but is not limited to, support for the goals described in the Discovery Engine theme.

The Broadening Participation table on the following pages gives a visual snapshot of the majority of NSF's equity programming.