



MPS/PHY Broadening Participation Programs

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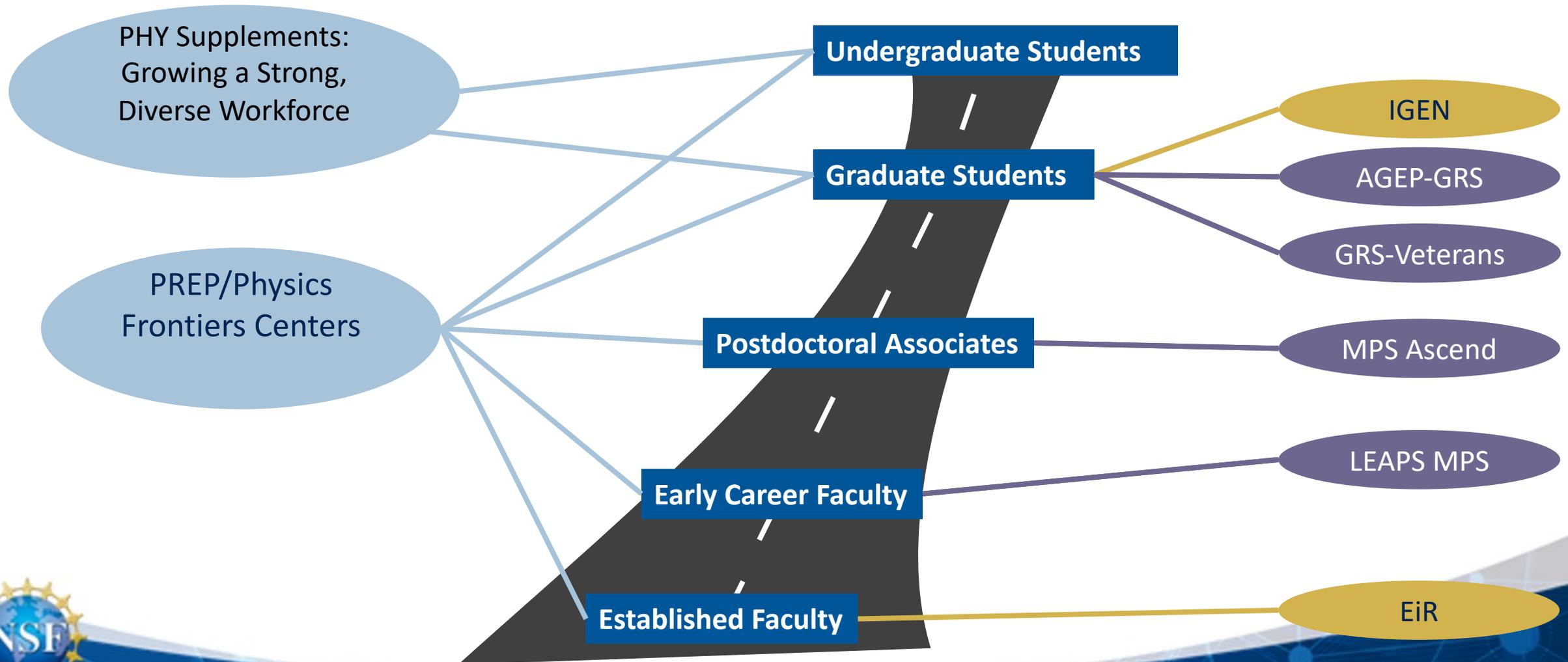
(not an official NSF document)

How NSF works: Standard Review Criteria

- Intellectual Merit: the potential to advance knowledge
- Broader Impacts: The potential to benefit society and contribute to the achievement of specific, desired societal outcomes
 - What is the potential for the proposed activity to
 - Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - Benefit society or advance desired societal outcomes (Broader Impacts)?
 - To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
 - Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
 - How well qualified is the individual, team, or organization to conduct the proposed activities?
 - Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?



PHY invests in people throughout the STEM pathway via PHY-specific, MPS-wide, NSF-wide and initiatives



Inclusive Graduate Education Network



Professional Societies: The **American Physical Society**, the **American Chemical Society**, the **American Geophysical Union**, the **American Astronomical Society**, and the **Materials Research Society**

Other Major Players: CIMER, Rochester Institute of Technology, University of Southern California, WestEd

Bridge Program	Year 1	Year 2	Year 3	Total
APS (Since the inception of IGEN)	• 47 APS Bridge Students	• 53 APS Bridge Students	• 37 APS Bridge Students	• 137 APS Bridge Students
ACS	• 10 ACS Bridge Students	• 21 ACS Bridge Students	• 25 ACS Bridge Students	• 56 ACS Bridge Students
AGU	• 0 AGU Bridge Students	• 7 AGU Bridge Students	• 20 AGU Bridge Students	• 27 AGU Bridge Students
Total	• 57 IGEN Bridge Students	• 81 IGEN Bridge Students	• 83 IGEN Bridge Students	• 221 IGEN Bridge Students

Main Goals:

- catalyzing graduate enrollment through new application and holistic review processes
- supporting programs to create more inclusive graduate education environments
- improving the mentoring of students.

IGEN Bridge programs have supported 221 students (95% retention)



Information and table from WestEd

Inclusive Graduate Education Network



Advancing inclusive practices (The Inclusive Practices Hub):

- In year three delivered 26 workshops focused on a variety of topics, including holistic admissions strategies, and fostering graduate student well-being.
- Twenty-seven Bridge departments associated with IGEN have participated in workshops
- Trained 10 facilitators to lead workshops

Disseminating knowledge about equity and inclusion in graduate education (The Research Hub):

- racial equity statement
- summarize and synthesize published work into practice formats that are easily digestible
- 13 publications. One such publication is the book *Equity in Science: Representation, Culture, and Dynamics of Change in Graduate Education*, released in September 2020 by Stanford University Press.



Mathematical and Physical Sciences Ascending Postdoctoral Research Fellowships – MPS-Ascend (NSF 21-573)

EXCELLENCE THROUGH DIVERSITY

- Purpose. To support postdoctoral Fellows who will broaden the participation of underrepresented minorities in MPS fields in the U.S., enabling Fellows to develop as future leaders in science.

RESEARCH FELLOWSHIP WITH SIGNIFICANT BROADENING PARTICIPATION AND PROFESSIONAL DEVELOPMENT COMPONENTS

- Intent. To recognize and support beginning investigators of significant potential
 - research experiences that will broaden perspectives, facilitate interdisciplinary interactions, and help broaden participation within MPS fields.
 - Prepare fellows for their next career stage (e.g., faculty position).



ASCEND ELIGIBILITY

- Awards in any scientific area within the purview of the five MPS Divisions: Astronomical Sciences (AST), Chemistry (CHE), Materials Research (DMR), Mathematical Sciences (DMS), and Physics (PHY).
- PROPOSALS ARE SUBMITTED BY THE POTENTIAL POSTDOC (NOT POSTDOC MENTOR OR MENTOR INSTITUTION).
- MUST BE U.S. CITIZENS (OR NATIONALS) OR PERMANENT RESIDENTS WHEN THE PROPOSAL IS SUBMITTED.
- MUST HAVE ALL REQUIREMENTS FOR A DOCTORAL DEGREE COMPLETED BEFORE STARTING POSTDOCTORAL TENURE. (NO LATER THAN OCT 1, 2022).
- IT IS ANTICIPATED THAT THE FELLOW WILL CONDUCT RESEARCH AT AN INSTITUTION DIFFERENT FROM THEIR PHD-GRANTING OR CURRENT POSTDOCTORAL INSTITUTION.



33 MPS Ascend FY21 Fellows

12 to 36 Months, \$100,000 per year

- A monthly stipend of \$5,833 (up to \$70,000 annually)
- An annual allowance of \$30,000 for:
 - a) expenses directly related to the conduct of the research and/or
 - b) support of fringe benefits, dependent care, and moving expenses.
- Mentoring is important and the first meet and greet will be 10/29

Preparing for the next cohort

NSF 22-503 MPS-ASCEND, DEADLINE JAN. 6, 2022

INFORMATIONAL [WEBINAR](#), WED. NOV. 10 2021, 2 PM



Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (LEAPS-MPS) - NSF 22-503

EXCELLENCE THROUGH DIVERSITY

- Purpose. To help to launch the careers of **pre-tenure faculty** in MPS fields at **U.S. minority-serving institutions (MSIs)**, **predominantly undergraduate institutions (PUIs)**, and **Carnegie Research 2 (R2) universities**.
- Intent. To initiate viable independent research programs for researchers attempting to launch their research careers in MPS supported fields.
- Goal: achieving excellence through diversity and broadening participation to include members from groups underrepresented in the Mathematical and Physical Sciences, including African Americans, Hispanics, Native Americans, Alaska Natives, and Native Hawaiians, and other Pacific Islanders.

24 Months, \$250,000 (Total Costs). Most begin ~9/2021.



Eligibility (PIs) and details

- Supports: Principal Investigators in MPS research disciplines early in their careers (**tenure track but pre-tenure**), particularly at the aforementioned institutions.
- Must not have been a PI or co-PI on an NSF research grant, with the exception of Fellowship, Conference/Workshop, Equipment, Travel, Instrumentation infrastructure, and Research Opportunity Award (ROA) grants.
- Principal Investigators must be U.S. citizens or lawfully admitted U.S. permanent residents at the time of proposal submission; other visa-holders are not eligible.
- This LEAPS-MPS solicitation welcomes proposals from principal investigators who share NSF's commitment to diversity.



LEAPS-MPS FY21 Awardees

Important Aspects of the Proposal

- A discussion of how activities will facilitate development of a subsequent research proposal.
- A specific plan on broadening participation activities will increase (1) the participation of scientists from underrepresented groups and (2) the numbers of such individuals that serve as role models for the scientific workforce of the future.
- LEAPS Impact Statement (3 pages): (1) impact on institutional research environment, (2) impact on career of PI and department's ability to prepare students to enter STEM careers, including provisions for increasing broader participation.

NSF 22-503 LEAPS-MPS, DEADLINE JAN. 7, 2022

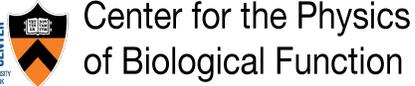
INFORMATIONAL [WEBINAR](#), WED. NOV. 9 2021, 1 PM EST



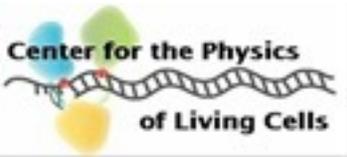
Partnerships for Research and Education in Physics (PREP)



- Awards to Minority Serving Institutions to partner with Division supported Physics Frontiers Centers.



- Increase the participation of members of underrepresented groups through excellent research and education endeavors



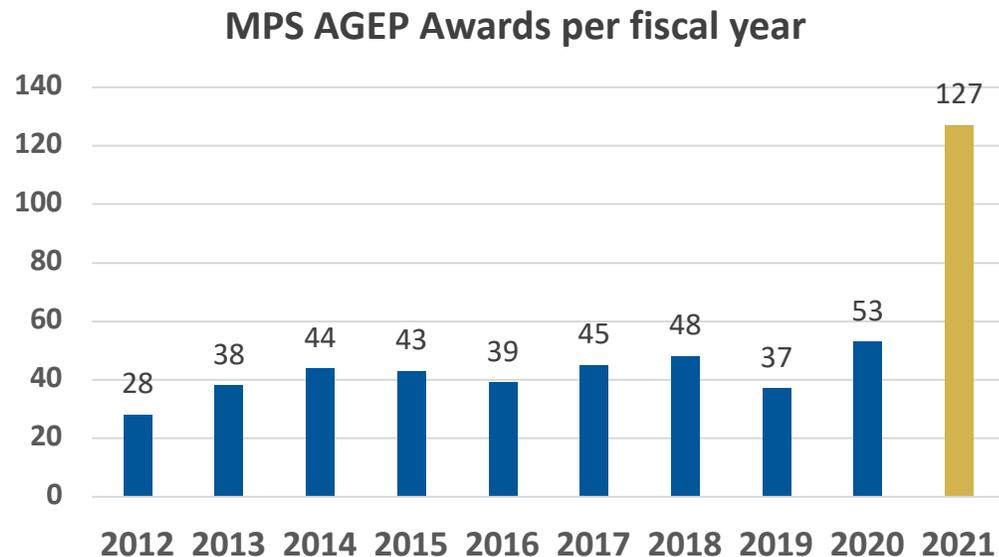
- Full intellectual engagement on both sides: partners are more than a source of students.



- Status:
- Solicitation 21-610
 - **First deadline Jan 21, 2022**



MPS AGEP Graduate Research Fellows



- Collaboration between the NSF Alliances for Graduate Education and the Professoriate (AGEP) program in the Education and Human Resources (EHR) Directorate and the Directorate of Mathematics and Physical Sciences (MPS).
- **PIs requesting a supplement must be either at or collaborating with faculty at an institution that has received an EHR AGEP award.**
- Supplement for a **current MPS research** awardee for one (additional) Ph.D.
 - **Improve diversity and retention** at the doctoral level within the mathematical and physical sciences.
- MPS supported **206** students through AGEP-GRS supplements from FY2012 -2020. In 2021, we supported **127**.



Graduate student eligibility

- Must be US citizens or permanent residents
- Working with a currently funded MPS PI at an AGEP Institution or working with a collaborator of such a PI.
- In a doctoral program, or in the final year of a terminal research-based Master's degree.
- Must not have other government- funded (NSF, NIH, DoE) support (stipend and tuition)
- Must in some way broaden the participation of underrepresented minorities in MPS fields
 - Justification required in the supplement request
- Up to three years of support can be requested (one year at a time) if the student remains in good academic standing.



MPS Graduate Research Supplements for Veterans

- Supports one (additional) Ph.D. student per research award
- Student must be a US veteran, as defined in the DCL (active duty)
- Renewable up to three years, if student remains in good academic standing
- Student must not have other government-funded support (stipend and tuition)
- See DCL for full details (NSF 20-097)

*Giving
back to
those
who
have
served*



Physics: Growing a Strong, Diverse Workforce

- Dear Colleague Letter NSF 21-065
- Undergraduate Students:
 - Supported through REU supplements
 - Students must be **US citizens, US nationals**, or **permanent residents** of the U.S.
 - PIs strongly encouraged to support students who are members of underrepresented groups
- Graduate Students:
 - Supplement for a **current MPS research** awardee for one (additional) Ph.D.
 - **Improve diversity and retention** at the doctoral level within Physics
 - Not limited to AGEP institutions



FASED Supplements

- Persons with disabilities eligible for facilitation supplements include PIs, other senior personnel, and graduate and undergraduate students.
- Funds may be requested to purchase special equipment, modify equipment or provide services required specifically for the work to be undertaken by a person with a disability
- The specific nature, purpose, and need for equipment or assistance should be described in sufficient detail in the proposal to permit evaluation by knowledgeable reviewers.



Career-Life Balance Supplements & Support

- Early career researchers are likely to be most impacted in their careers by the demands of dependent care. The Career-Life Balance supplements offer 3 months (\$12,000) salary for a technician to maintain some laboratory productivity during family leave.
- Special solicitations exist for some of NSF's most prestigious and high-impact programs, serving graduate students (GRFP), postdoctoral fellows, and early career academic awardees (CAREER).
- See <https://www.nsf.gov/career-life-balance/> for more details.
- Additionally, NSF awards can be extended due to a leave of absence and funds can be used for replacement personnel during such dependent-care leaves. The Award and Administration Guide in the PAPPG has more information on these standard policies.





Thank you!