

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

PROGRAM SOLICITATION NSF 22-503

REPLACES DOCUMENT(S): NSF 21-570



National Science Foundation

Directorate for Mathematical and Physical Sciences
Division of Astronomical Sciences
Division of Chemistry
Division of Materials Research
Division of Mathematical Sciences
Division of Physics

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

January 07, 2022

IMPORTANT INFORMATION AND REVISION NOTES

The deadline has been moved to earlier in the year from June to January.

Proposals submitted in response to this solicitation are submitted directly to the appropriate program in one of the five MPS Divisions. The list of cognizant Program Officers is updated.

The Program Introduction has been updated, and highlights the importance of the LEAPS-Impact statement, and clarifies two objectives to address diversity both in institutional support to institutions that do not traditionally receive significant amounts of NSF-MPS funding, and in support to new investigators. Clarification that the term underrepresented refers to Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians, and other Native Pacific Islanders.

The LEAPS-MPS Impact Statement has been moved to within the 15 page narrative. The importance of this section is emphasized. Its length is specified as 2-3 pages.

Results from prior NSF awards with research components are added to the narrative. Very brief comment on non-NSF current and pending support is added.

The Chair's letter must endorse the tenure track or equivalent status of the PI.

Emphasis is added that allowable prior PI activity on instrumentation proposals refers to instrumentation infrastructure proposals. Research Opportunity Awards (ROA) is added to the list of allowable prior activity. Clarification is added that eligibility is restricted to those on the tenure-track or in tenure-track equivalent positions. Definition of tenure-track equivalency is provided. Other eligibility restrictions on prior activity as a Principal Investigator (PI) or co-Principal Investigator (co-PI) remain.

The additional review criteria have been updated to align better with the objectives of the program and the required LEAPS-MPS Impact Statement.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 22-1), which is effective for proposals submitted, or due, on or after October 4, 2021.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

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

Synopsis of Program:

The Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (LEAPS-MPS) call has an emphasis to help launch the careers of pre-tenure faculty in Mathematical and Physical Sciences (MPS) fields at institutions that do not traditionally receive significant amounts of NSF-MPS funding,

I. INTRODUCTION

To address the need for initiating competitive research programs across an array of institutions and to enhance diversity in its programs, the Directorate for Mathematical and Physical Sciences (MPS) offers Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (LEAPS-MPS) grants.

One objective of the LEAPS-MPS awards is to increase funding to institutions that do not traditionally receive significant amounts of NSF-MPS funding, such as some MSI, PUI, and R2 institutions. Another objective is to provide funding for PIs for whom LEAPS funding would enable the PI to submit a subsequent successful proposal in a traditional already-existing grant competition, such as individual investigator award programs, CAREER competitions, etc.. The intent of these LEAPS-MPS awards is to initiate the research careers of pre-tenure faculty in tenure-track positions, particularly those at MSI, PUI, and R2 institutions, while also promoting the participation of scientists from all segments of the MPS scientific community, including those from underrepresented groups (Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians, and other Native Pacific Islanders).

A goal of this solicitation is that awards funded through the LEAPS program will in turn increase the number of proposals to MPS from targeted institutions, both to the regular research programs and to the CAREER program, and provides early federal funding to help launch the academic careers of individuals. Another critical goal is to support innovative plans for recruiting and retaining a broad representation of researchers in research programs supported by these grants.

The LEAPS-MPS Impact Statement is a critical part of the proposal. It allows an opportunity to provide reviewers with information on the potential impact of the project on i) the institutional research environment, especially in terms of enhancing research capabilities, ii) the career of the faculty participant, and iii) the ability of the involved department to better prepare students for entry into advanced-degree programs and/or careers in science and engineering, including any provisions that will increase the participation of groups underrepresented (including Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians, and other Native Pacific Islanders) in science and engineering.

II. PROGRAM DESCRIPTION

LEAPS-MPS awards are for beginning investigators (see Additional Eligibility Information below) to undertake research activities that will improve the competitiveness of their future grant applications to NSF programs. These research activities might include the acquisition of preliminary data or other research results, or the development of collaborations for research. Another goal of the LEAPS-MPS award is to broaden the participation of and to increase opportunities for all scientists including those from groups underrepresented in MPS fields (Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians, and other Native Pacific Islanders), in order to encourage individuals to become actively and competitively engaged in research as independent investigators.

LEAPS-MPS awards are designed to help launch the research career of these early-career PIs, and in this way make MPS programs more inclusive.

Proposals to this program must demonstrate the context of the work within or across disciplines supported by MPS, which includes the Divisions of Astronomical Sciences (AST), Chemistry (CHE), Materials Research (DMR), Mathematical Sciences (DMS), and Physics (PHY). There may be proposals that are most appropriate for consideration by NSF programs outside of MPS or by other federal agencies. Please contact the program officer identified below for the appropriate division if you have any questions about the suitability of your proposal for the LEAPS-MPS program.

III. AWARD INFORMATION

MPS expects to invest up to \$10,000,000 in FY 2022. The duration for these awards is 24 months. They are for up to \$250,000 in total (direct plus indirect) costs.

Estimated program budget and number of awards are subject to the availability of funds and receipt of competitive proposals.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

Who May Serve as PI:

Co-investigators are not permitted, but collaborations with other scientists and/or visiting scientist status in other laboratories are permitted. Principal investigators must be U.S. citizens or permanent residents.

issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to the submitting organization by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award notice, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award notice; (4) the applicable award conditions, such as Grant General Conditions (GC-1)*; or Research Terms and Conditions* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award notice. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-8134 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF Proposal & Award Policies & Procedures Guide (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

Special Award Conditions:

Because LEAPS-MPS awards have an upper budgetary limit, they cannot be supplemented.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer no later than 90 days prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). No later than 120 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements and other important information on the administration of NSF awards is contained in the NSF Proposal & Award Policies & Procedures Guide (PAPPG) Chapter VII, available electronically on the NSF Website at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg.

For LEAPS-MPS awards, the Accomplishments section of the Final Report should include:

- An explanation of how the award contributed to broadening participation in the scientific workforce, particularly in the areas of the mathematical and physical sciences supported by MPS.
- A description of how the results of the award will contribute to the submission of a future NSF research proposal.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- James Higdon (AST), telephone: (703) 292-2389, email: jhigdon@nsf.gov
- Rebecca Peebles (CHE), telephone: (703) 292-8809, email: rpeebles@nsf.gov
- Souleymane O. Diallo (DMR), telephone: (703) 292-8302, email: somardia@nsf.gov
- Yuliya Gorb (DMS), telephone: (703) 292-2113, email: ygorb@nsf.gov
- Kathleen V. McCloud (PHY), telephone: (703) 292-8236, email: kmcccloud@nsf.gov
- Michelle Bushey (OMA), telephone: (703) 292-4938, email: mbushey@nsf.gov

For questions related to the use of FastLane or Research.gov, contact:

- FastLane and Research.gov Help Desk: 1-800-673-6188
- FastLane Help Desk e-mail: fastlane@nsf.gov.
- Research.gov Help Desk e-mail: rgov@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF [Grants Conferences](#). Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. "NSF Update" also is available on [NSF's website](#).

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this mechanism. Further information on Grants.gov may be obtained at <https://www.grants.gov>.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 55,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Arctic and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See the *NSF Proposal & Award Policies & Procedures Guide* Chapter II.E.6 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <https://www.nsf.gov>

- **Location:** 2415 Eisenhower Avenue, Alexandria, VA 22314

- **For General Information** (NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
 - Send an e-mail to: nsfpubs@nsf.gov
 - or telephone: (703) 292-8143
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See [System of Record Notices](#), NSF-50, "Principal Investigator/Proposal File and Associated Records," and NSF-51, "Reviewer/Proposal File and Associated Records." Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

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