

Dear Colleague Letter: NSF INCLUDES Research Experience and Mentoring (REM) Supplemental
Funding Opportunities

Additional Information

Preparation and Submission of Supplemental Funding Requests

Participant Research Plans

The plan should include:

- Example projects, including descriptions of the types of tasks appropriate for research participants, any specialized equipment or setting, and what the research participants will be expected to contribute
- Significance of the research area and, when appropriate, the underlying theoretical framework, hypotheses, research questions, etc.
- Expected outcomes from the research activities (research products, publications, skills, perspectives, etc.)

Research Participant Mentoring Plans

Mentoring activities may include, but are not limited to:

- Establishing a mutually agreed-upon list of expectations and goals;
- Meeting in advance of the research experience in order to orient research participants, learn their research interests/preferences, and arrange placements;
- Providing or arranging for didactic training in advance of the laboratory experience;
- Providing timely evaluations of progress towards expected goals;
- Providing professional development activities such as career/educational counseling, workshop participation, networking and internships;
- Providing guidance in effective scientific writing and oral communications training for publications and presentations at conferences/meetings;
- Accompanying research participants at professional conferences and/or funding their participation;
- Providing opportunities for research participants interaction in seminars or symposia;
- Encouraging networking among research participants, mentors, and principal investigators at periodic working lunches or occasional outings (off-site research team meetings or retreats);
- Providing guidance on ways to improve teaching, leadership, communication, and mentoring skills;
- Providing guidance on how to collaborate effectively with researchers from diverse backgrounds and inter-disciplinary areas; and
- Providing field trips to related facilities and/or local facilities of STEM interest.

Evaluation Plans

Quantitative and qualitative methods for measuring outcomes. Interviews and/or instruments that assess the effectiveness of mentoring and its impact on research participants should include pre- and post-surveys of research participants (and possibly mentors, especially if graduate students serve as mentors), and may also include assessments that capture changes in research participants' skill sets, understanding of science/engineering principles, attitudes toward research, and career trajectories as a result of their participation in the program.

Use of an external evaluator is encouraged but not required. NSF requests evaluation data to be provided in annual and final reports to enable NSF to gauge the value of providing these experiences.

Budget

The maximum annual amount that may be requested (including any associated indirect costs) is \$250,000.

The budget must include travel/registration expenses for research participants and mentors to participate in the Emerging Researcher National Conference to be held in Washington, DC in 2025. Conference details can be found at <http://www.emerging-researchers.org/>.

Costs related to hosting research participants may vary from laboratory to laboratory; the budget should include expenses related to providing research participants with appropriate mentoring, materials, and laboratory access.

Research participants must be provided with a stipend for their participation in research and mentoring activities. Awardee organizations and principal investigators are responsible for determining the appropriate stipend amounts for their project based on organizational policy or guidelines, location, cohort intended to attract, and the value of the REM experience to the research participant. Housing stipends may be provided for out-of-town research participants, 18 years of age or older. Local high-school students or recent graduates (under 18 years of age) should be lodged with a parent or guardian or may be housed in on-campus housing facilities if the university has a record of successfully housing minors (documentation should be provided). Travel stipends, such as those to attend the annual Emerging Researcher National Conference may be provided for the research participants. Research participants under 18 years of age may travel with the research team to the annual Emerging Researcher National Conference. Appropriate safety waivers and transportation waivers should be obtained from all participants but are mandatory for those under 18 years of age.

Stipends may be offered during Summer 2025 if research participants continue with research and mentoring activities.

All student costs should be entered as Participant Support Costs. Indirect costs (F&A) are not allowed on Participant Support Costs.

Citations

1. Ko, L.T., Kachchaf, R.R., Hodari, A.K., and Ong, M. (2014). Agency of women of color in physics and astronomy: Strategies for persistence and success. *Journal of Women and Minorities in Science and Engineering*, 20(2), 171-195.
2. Kim, Ann Y., Sinatra, Gale M., Seyranian, Viviane. (2018). Developing a STEM Identity Among Young Women: A Social Identity Perspective. *Review of Education Research*, 88(4), 589-625.
3. Stelter Rebecca L., Kupersmidt Janis B., Stump, Kathryn N. (2021). Establishing effective STEM mentoring relationships through mentor training. *Ann. N.Y. Acad. Sci.* 1483, 224-243.
4. Thiry, H., Laursen, S.L., and Hunter, A.B. (2011). What experiences help students become scientists? A comparative study of research and other sources of personal and professional gains for STEM undergraduates. *Journal of Higher Education*, 82(4), 357-388.
5. Chang, M.J., Eagan, M.K., Lin, M.H., and Hurtado, S. (2011). Considering the impact of racial stigmas and science identity: Persistence among biomedical and behavioral science aspirants. *Journal of Higher Education*, 82(5), 564-596.
6. National Academies of Sciences, Engineering, and Medicine (2016). *Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways*. Washington, DC: The National Academies Press. <https://www.nap.edu/catalog/21739/barriers-and-opportunities-for-2-year-and-4-year-stem-degrees>
7. Crawford, Melissa B., Wilson-Kennedy, Zakiya S., Thomas, Gloria A., Gilman, Samuel D., Warner, Isiah M. (2018). LA-STEM Research Scholars Program: A Model for Broadening Diversity in STEM Education. *Technology and Innovation* 19, 577-592.
8. Carpi, Anthony, Ronan, Darcy M., Falconer, Heather M., Lents, Nathan H. (2017). Cultivating Minority Scientists: Undergraduate Research Increases Self-Efficacy and Career Ambitions for Underrepresented Students in STEM. *Journal of Research in Science Teaching* 54(2), 169-194.
9. Atkins, Kaitlyn, Dougan, Bryan M., Dromgold-Sermon, Michelle S, Potter, Hannah, Sathy, Viji, Panther, A.T. (2020). Looking at Myself in the Future”: how mentoring shapes scientific identity for STEM students from underrepresented groups. *International Journal of STEM Education*, 7(42),

10. National Science Board (2010). Preparing the Next Generation of STEM Innovators: Identifying and Developing Our Nation's Human Capital (2010). NSB-10-33.
11. Sithole, Alec, Chiyaka, Edward T., McCarthy, Peter, Mupinga, Davison M., Bucklein, Brian K., Kibirige, Joachim. (2017). Student Attraction, Persistence and Retention in STEM Programs: Successes and Continuing Challenges. Higher Education Studies 7(1), 46-59.