U.S. NATIONAL SCIENCE FOUNDATION
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NSF 24-019

Frequently Asked Questions (FAQs) for NSF Trailblazer Engineering Impact Award (TRAILBLAZER) Program

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GENERAL INFORMATION

1. **What type of projects and PIs will the NSF Trailblazer Impact Award (TRAILBLAZER) support?**

   The TRAILBLAZER program will support individual PIs with a demonstrated history of creativity, innovation, and leadership. Each PI will have their own unique blend of characteristics that illustrates their excellence and potential to be a Trailblazer. In the Project Description (subsection *Evidence of Research Excellence and Innovation*), the PI must provide evidence for their "capacity for research excellence, creativity, and impactful innovations (i.e., an inclination to question paradigms; a willingness to work with intellectual uncertainties; persistence in the face of failure; ability to work collaboratively and convergently across diverse disciplines; demonstrated ability to support inter- and/or multidisciplinary teams)."

   The TRAILBLAZER program will support groundbreaking research projects that seek to significantly advance engineering research and innovation beyond what is currently being done in engineering and beyond the PI's recent and prior research activities. In the Project Description (subsection *Research Approach and Research Plan*), "PIs must describe how the proposed research reflects a fundamental new insight, and whether it involves the development of innovative and creative approaches and/or the posing of radically unconventional hypotheses; these should not be logical extensions or scale-up of ongoing or prior research efforts."

2. **What makes a proposed TRAILBLAZER project different from a project submitted to an Engineering core program, especially since NSF already funds transformative work?**

TRAILBLAZER projects do not require preliminary data nor an established research path. NSF-funded projects typically build directly on existing work. TRAILBLAZER projects are expected to have larger, potentially paradigm-shifting leaps and hypotheses guiding the research activities. In the Project Description (subsection *TRAILBLAZER Suitability*), "PIs must describe how the planned research satisfies the stated TRAILBLAZER goals (i.e., address a national need or grand challenge, advance US leadership; demonstrate convergence of engineering and science domains; show innovative and transformative impacts), and describe why the proposed research is suited to the TRAILBLAZER program rather than to an NSF core program."

3. **How different does the proposed TRAILBLAZER project need to be from the PI's past or current research?**

   "TRAILBLAZER PIs are expected to propose a new research direction that is distinct from any research currently or previously conducted by the proposer. TRAILBLAZER is not intended to expand the PI's previous or current research into the proposed area of research. Projects that are extensions or scale-up of the PI's ongoing or previous research are not eligible under this program." In the Project Description (subsection *Distinction from Current and Previous Research*), proposers must provide a description of how this new area of research is distinct from their other work.

4. **Is there a threshold of preliminary data or publication that will disqualify a project?**

   The TRAILBLAZER program does not request preliminary data or detailed experimental plans. There is no established threshold of preliminary data or publication history that, if exceeded, would disqualify a project.

5. **Will technology development be allowed or just hypothesis-driven research?**

   PIs proposing either hypothesis-driven research or those proposing the development of new tools and technologies are both encouraged, as long as the proposed research is relevant to the NSF mission.

6. **Does this program support translational research with commercialization goals?**

   The proposed project can include translational research with the potential for commercialization; however, the focus of TRAILBLAZER is on innovation, impact, and the significant advancement of fundamental engineering research and knowledge.

ELIGIBILITY REQUIREMENTS

7. **Who is eligible to serve as PI?**

At the time of proposal submission, the PI must hold a tenured or tenure-eligible faculty appointment at the Associate or Full Professor rank or equivalent at an organization that is eligible to submit as described under the "Who May Submit Proposals" section of the TRAILBLAZER solicitation. Additionally, the PI must have an appointment in an Engineering School or College and/or have earned an Engineering Doctorate degree.

Rank	Engineering School/College Appointment	Engineering Doctorate Degree	Eligible?
Associate/Full Professor	Yes	Yes	Yes
Associate/Full Professor	Yes	No	Yes
Associate/Full Professor	No	Yes	Yes
Assistant Professor	-	-	No

8. **If the PI is at the Assistant Professor rank at the time of proposal submission, but will be an Associate Professor by the time the project would start, are they eligible to submit?**

   No - The PI must be of an eligible rank at the time of proposal submission.

9. **If the PI is at the Assistant Professor rank at the time of proposal submission, but has an official letter or offer indicating they will be an Associate Professor by the time the project would start, are they eligible to submit?**

   No - The PI must be of an eligible rank at the time of proposal submission.

10. **Can a PI submit to both the BRITE Fellows Track described in NSF 23-592 and TRAILBLAZER?**

    Yes, however, a PI cannot have two NSF proposals under consideration at the same time that describe the same proposed research activities. To be eligible for submission to both programs, the PI's projects in the two proposals need to be different.

PREPARATION & SUBMISSION

11. **May I provide additional supplementary documents to support my proposal?**

    All information submitted for the review of your proposal must be included in the allowed sections of the proposal, within the specified limits of space. The only Supplementary Documents that are allowed are described in the TRAILBLAZER Solicitation NSF 23-

629. Any other materials will not be accepted, and proposals with additional materials will be returned without review.

12. **May I provide letters of support or letters of collaboration as part of the proposal?**

    Letters of Support/Collaboration from potential team members will not be accepted. Potential team members can be discussed in the Project Description; however, letters of support and team member Biographical Sketches are not permitted. Proposals containing letters of support or letters of collaboration will be returned without review.

BUDGET

13. **How can a PI describe their proposed team structure without including co-PIs and/or subawards?**

    In the Project Summary, subsection *Management Plan*: PIs must "describe how a strong and effective team will be convened and led by the PI to conduct the proposed research, including team member expertise, team development, means of communication, management of personnel within the project group. Additional personnel can be from outside the PI's institution. While potential team members may be named, letters of support and team member Biographical Sketches are not permitted."

14. **May a collaborator be funded by this award?**

    TRAILBLAZER proposals with Co-PIs and/or subawards will be returned without review. Addition of personnel and/or subawards to a TRAILBLAZER project will be done prior to award recommendation and/or as a post-award action.

15. **How do I put together a budget request?**

    A budget and a budget justification are required. Funds may be requested for personnel, supplies, equipment, and other allowable costs. If a proposal is to be recommended for an award, the NSF TRAILBLAZER Program Director will negotiate a more detailed budget with the PI prior to award.

REVIEW & SELECTION

16. **What criteria will be used to evaluate TRAILBLAZER proposals?**

    In addition to the two NSF review criteria (intellectual merit and broader impacts), the following criteria will be used in the review of all TRAILBLAZER proposals.

    - **Investigator** - To what extent does the investigator provide strong evidence of creativity and impactful innovations?

- **Leadership** - To what extent does the investigator provide evidence of their established ability to lead and describe how they will form and lead a team appropriate for the proposed project?
- **Transformative** - To what extent does the proposed research represent an opportunity for a significant leap or paradigm shift in fundamental engineering and/or science knowledge?
- **National Need or Grand Challenge** - To what extent does the proposed research have the potential to make significant progress on a national need or grand challenge?
- **Broadening Participation Plan** - To what extent does the plan actively promote, increase, and enhance the participation of the full spectrum of diverse talents in the field of engineering?
- **Management Plan** - To what extent does the plan describe how a strong and effective team will be convened and led by the PI to conduct the proposed research?