Ethical and Responsible Research (ER2) Program



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# Responsible and Ethical Conduct of Research (RECR)

"The responsible and ethical conduct of research (RECR) is critical for excellence, as well as public trust, in science and engineering. RECR involves not only a responsibility to generate and disseminate knowledge with rigor and integrity, but also a responsibility to:

- a. conduct peer review with the highest ethical standards;
- b. diligently protect proprietary information and intellectual property from inappropriate disclosure; and
- c. treat students and colleagues fairly and with respect.

Consequently, education in RECR is considered essential in the preparation of future scientists and engineers."

**Source**: NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 23-1): Chapter IX: Recipient Standards.



# History of the Program

### Ethics Education in Science and Engineering (EESE)

- EESE ran from 2005 to 2013.
- It aimed to "...deepen the understanding of ethical dilemmas in science and engineering, and provide cutting edge, effective research and educational materials to train the next generation of scientists and engineers"
- Largely focused on graduate education

# Cultivating Cultures for Ethical STEM (CCE STEM)

- CCE STEM ran from 2014 to 2018.
- It focused on "What constitutes responsible conduct for research (RCR), and which cultural and institutional contexts promote ethical STEM research and practice and why?"
- In 2015, the program added the option of **Institutional Transformation**

# History of the Program (continued)

### Ethical and Responsible Research (ER2)

- Began in 2019
- As of 2023, it involves a partnership of 8 Directorates & 1 Office
- Typically funds between 10-15 awards per year
- Added the options of Conference Proposals & Project Incubation Proposals

### ER2: A Cross-Directorate Program







STEM Education





**Biological Sciences** 

Computer & Information Science & Engineering

Engineering

Geosciences (including Polar Programs)



International Science and Engineering



Mathematical & Physical Sciences



Social, Behavioral & Economic Sciences



Technology, Innovation & Partnerships

### ER2 Program Website

The home link is: <u>https://new.nsf.gov/funding/opportunities/ethical-responsible-research-er2</u>



# ER2 Program Solicitation

The next ER2 proposal target date is:

January 25, 2024

The solicitation link is:

https://www.nsf.gov/pubs/2023/ nsf23630/nsf23630.htm

### **Ethical and Responsible Research (ER2)**

### PROGRAM SOLICITATION NSF 23-630

### REPLACES DOCUMENT(S): NSF 22-526



#### **National Science Foundation**

Directorate for Social, Behavioral and Economic Sciences SBE Office of Multidisciplinary Activities Office of International Science and Engineering Directorate for Biological Sciences Directorate for Computer and Information Science and Engineering Directorate for Engineering Directorate for Geosciences Directorate for Mathematical and Physical Sciences Directorate for STEM Education Directorate for Technology, Innovation and Partnerships

#### Full Proposal Target Date(s):

January 25, 2024

Fourth Thursday in January, Annually Thereafter

### **IMPORTANT INFORMATION AND REVISION NOTES**

### ER2 Program Scope

The Ethical and Responsible Research (ER2) program aims to support fundamental research about what constitutes or promotes responsible and ethical conduct of research (RECR). The ER2 program seeks to encourage science, technology, engineering and mathematics (STEM) researchers, practitioners and educators at all career stages to conduct research with integrity and to educate others about RECR.

### Research Questions of Interest

Research questions of interest to the program include the following:

- What constitutes responsible and ethical conduct of research (RECR) and why?
- What are the similarities and differences between RECR norms in different STEM fields or sectors (for example, academia, industry and non-profit), and what can these fields or sectors learn from one another in terms of promoting ethical research practice?
- Which organizational practices, contexts and incentives promote ethical and responsible STEM research and why?
- Which practices contribute to establishing and maintaining ethical cultures, and how can these practices be transferred and integrated into other research and learning settings?

# Research Topics

Topics of interest to the program include but are not limited to ethical dimensions of:

- Environmental, environmental justice, geoengineering or climate change research.
- Research involving emerging technologies such as gene editing, synthetic biology, artificial intelligence, robotics or cryptography.
- Emerging technologies and their impacts on research practices such as authorship, collaboration, mentoring, peer review or research misconduct.
- Research that is co-designed with practitioners or users or that involves bringing together teams from multiple sectors (for example, academia, industry and nonprofit).

# Research Topics (continued)

Topics of interest to the program include but are not limited to ethical dimensions of:

- Data-related research practices such as collection, governance, access, ownership, management, sharing and reporting.
- Diversity, equity, inclusion and accessibility in STEM research, including mentoring of students and postdocs with disabilities.
- The prevention of sexual harassment in STEM fields.
- STEM research in international contexts.
- Research with Indigenous populations or other historically underrepresented groups in STEM or in locations that are owned or considered sacred by Indigenous communities.

### Submitting Organizations and Collaborations

- Proposals from or involving substantial collaboration with institutions in EPSCoR-eligible jurisdictions,\* minority-serving institutions, women's colleges, or organizations primarily serving persons with disabilities are strongly encouraged.
- Proposals that include international collaborations are encouraged if the unique resources, expertise, facilities, or locations of international partners enhance the merit of the proposed work.

\*<u>EPSCoR</u> = Established Program to Stimulate Competitive Research

### Mentoring

- **Postdoctoral Fellows**: a proposal that requests funding for a postdoctoral fellow must include a Postdoctoral Researcher Mentoring Plan as a supplementary document.
- **Student Researchers**: a proposal that requests funding for undergraduate or graduate students to conduct research is expected to include a section that describes mentoring-related activities. This section must appear in the Project Description under the title, "Mentoring Student Researchers."

### For more information...



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https://new.nsf.gov/funding/opportunities/ethica I-responsible-research-er2