FRR: Foundational Research in Robotics (PD 20-144Y) | CAREER Webinar
Outline

• FRR Webinar Team Introduction

• FRR Program Overview

• CAREER Goals and Review Criteria

• FAQs Submitted in Advance

• Open Q&A session
FRR: Foundational Research in Robotics

• Core program jointly managed by the Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE)
• Accepts CAREER proposals annually in July
• Accepts unsolicited proposals any time

• All proposals are handled as part of a single unified program, irrespective of the division that initially receives the proposal.
FRR: What is a Robot?

For the purposes of this program, a robot is defined as intelligence embodied in an engineered construct.

• Here intelligence includes a broad class of methods to process information that enable a robot to solve problems or make contextually appropriate decisions.

• Here an engineered construct exhibits appropriate levels of physical complexity to enable the robot to sense and move within, or substantially alter, its working environment.

Projects may focus on a distinct aspect of intelligence, computation, or embodiment; research is encouraged that considers inextricably interwoven questions of intelligence, computation, and embodiment.
FRR: What is Foundational Research?

The focus of the FRR program is on **foundational advances** in robotics.

• All proposals must convincingly explain how a successful outcome will **enable transformative new** robot functionality or **substantially enhance** existing robot functionality.

• Meaningful experimental validation on a physical platform is strongly encouraged.

The proposal should clearly articulate how the intellectual contribution of the proposed work addresses **fundamental gaps in robotics**.
FRR: What is responsive?

Is there a robot?

• The focus of the project should be a robot or a class of robots as defined in the program description.

Will a robot gain a new or significantly improved capability?

• Over the course of project a robot or class of robots should gain new and useful abilities or significantly improve on existing abilities.

Is robotics essential to the intellectual merit of the proposal?

• Robotics should be the intellectual merit (not just broader impact) of the proposed work. Robotics should be essential to the project, and not just a convenient platform to demonstrate the research results. Choosing an application other than robotics for the project should significantly reduce its impact.
Faculty Early Career Development (CAREER) Program (NSF 20-525): Goals

• “A Foundation-wide activity that offers the National Science Foundation’s most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization.”

• “Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research.”

• https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214
CAREER Proposal Review Criteria

• Evaluated using NSF’s two merit review criteria:
  • What is the intellectual merit of the proposed activity?
  • What are the broader impacts of the proposed activity?

• Additional Consideration for CAREER proposals
  • Integration of Research and Education
Integration of Research and Education

• All CAREER proposals must have an integrated research and education plan at their core.

• NSF recognizes that there is no single approach to an integrated research and education plan; but encourages all applicants to think creatively about how their research will impact their education goals and, conversely, how their education activities will feed back into their research.

• These plans should reflect the proposer's own disciplinary and educational interests and goals, as well as the needs and context of his or her organization.

• Because there may be different expectations within different disciplinary fields and/or different organizations, a wide range of research and education activities may be appropriate for the CAREER program.
FRR CAREER Budget guidance

• All CAREER awards should be no less than $500k.

• All CAREER awards should not exceed $600k (except in some rare and unique circumstances to ensure success of a specific project, e.g., specialized equipment, exceptional yet costly outreach/educational activity; such exceptions require the permission of an FRR program officer.)

• All CAREER awards must include at least 2.5 months of PI support for the 5-year project.

• Our “Desired Minimal Support” is 1mo PI + 1 student + 2 trips per year
Questions?

Contact Program Officers well in advance of the submission deadline!

contact robotics@nsf.gov with specific research ideas
FRR CAREER Frequently Asked Questions

• How does the FRR program relate and differ from the other NSF programs?
  • See www.nsf.gov/robotics

• What are the priority research areas for the FRR program?
  • There are not any – submit your best ideas

• How much preliminary work/data is ideal for the CAREER submission?
  • Enough to convince reviewers that it will work, but not so much that it looks like it is already done.

• How essential is it to have experimental validation on actual robots for a successful application?
  • The validation plan must convince reviewers.