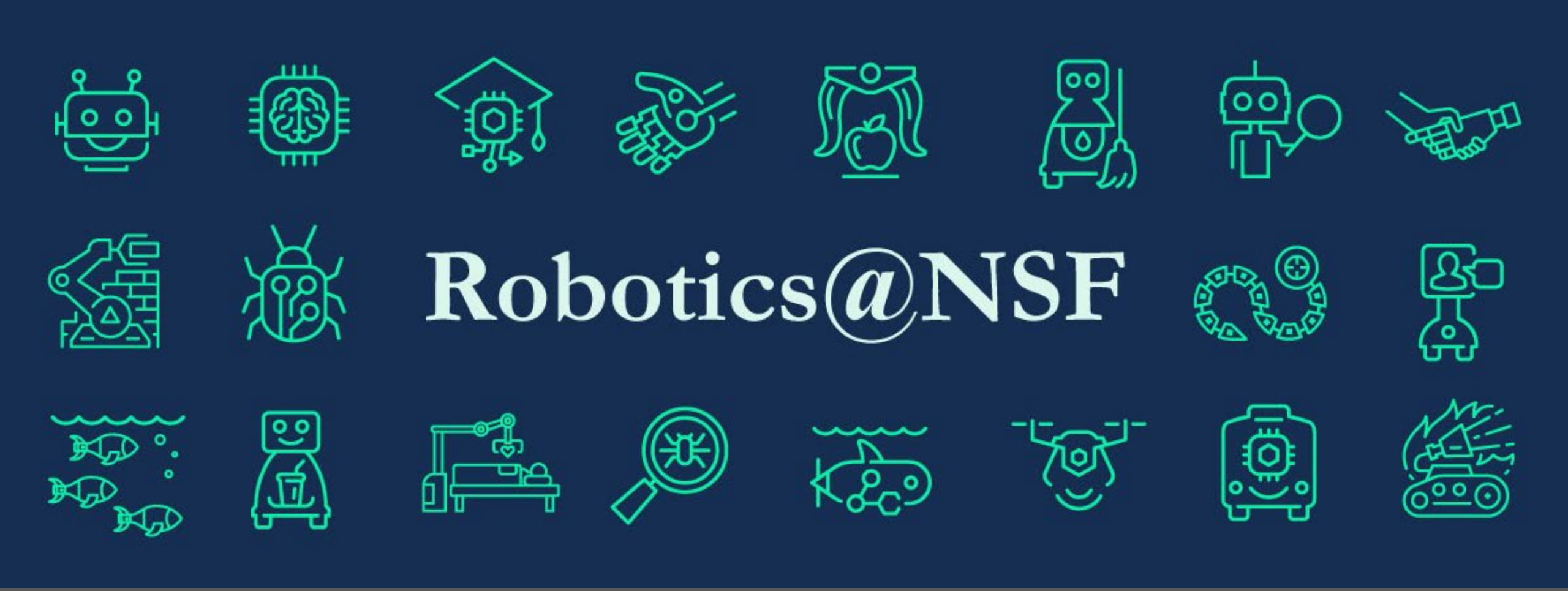

FRR: Foundational Research in Robotics (PD 20-144Y)

CAREER Panel Briefing

October 2020

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FastLane
www.fastlane.nsf.gov

FastLane is an interactive real-time system used to conduct NSF business over the Internet. FastLane is for official NSF use only. More About FastLane...

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1-800-437-7408

Proposals, Awards and Status | Proposal Review | Panelist Functions | Research Administration | Financial Functions
Honorary Awards | Graduate Research Fellowship Program | Postdoctoral Fellowships and Other Programs

Quick Link

- Panelist Login Help
- About Panel Review Proposal Review
- About Travel and Reimbursement
- Merit Review: Letter from the Director, NSF
- Guidance for Reviewers of Career Proposals

Panelist Functions

Log in for the following permission based functions:

Alert: Computer Scanning Policy - Important Information for NSF Visitors and Panelists.

- Panel Review
- Interactive Panel System
- Travel and Reimbursement System
- Panelist Personal Information

Notice: After you log in, check your Reviewer Information and verify that the e-mail address shown is correct. If you forget your password, we will send your re-set password to this e-mail address. Access to the **Interactive Panel System requires** that JavaScript be enabled on your browser.

Panel ID P21XXXX

Log In

If you are using a screen reader please check this box to disable the automatic refresh function:

Panel ID:

Panelist Last Name: (Admin. Users: Use your User ID)
Privacy Act

Password: (Admin. Users: Use your Password)

Log In

Forgot Password?

Click to work on:

- Travel and Reimbursement
- Meeting Sign-in
- Panel Review System
- Interactive Panel System

sign in both days!

Two–Day Panel Agenda

Day 1

- Self Introductions
- Panel Briefing/Logistics
- Discussion and Preliminary Recommendations (HC/C/LC/NC)
- Start Panel Summaries

Day 2

- Final Recommendations (HC/C/LC/NC) and Rankings (HC/C)
- Finish Panel Summaries
- Approve Panel Summaries
- Final Revision to Individual Reviews

Panel Objectives

- Provide ***quality feedback*** to the PIs, keeping in mind that proposals may be among the first ones the PI has written

- Provide ***advice*** to NSF Program Directors for funding recommendations

Conflicts of Interest

- To ensure that all proposals are **reviewed on their merits**, free from other confounding issues, we identify Conflicts of Interests (COIs).

- COIs arise when individuals have multiple interests, one of which may corrupt the decision-making process.

- NSF is responsible for ensuring that the review process is free of both **actual** conflicts of interest, as well as the **appearance** of conflicts of interest.

Conflicts of Interest may arise from a disqualifying relationship

- Close friend or relative
- Business or professional partnership
- Institution
  - As current employee, previous employee (last 12 months), or being considered for employment, formal or informal
  - As a member of an advisory committee or similar body
  - Academic department where your family member is currently enrolled
  - Received an honorarium or award in the last 12 months
- Thesis student or thesis advisor (lifetime COI)
- Collaboration
  - Co-author of proposal, paper (past 48 months)
  - Co-editor of book, journal, proceedings (past 24 months)

… or from a financial interest

- Stock ownership (you, your spouse, your children) of more than $15K of a company that is part of the proposal (diversified mutual funds excepted)

… OR

- from any relationship that might be perceived by a reasonable person familiar with the relationship as affecting your judgement

How We Handle COIs

- It is necessary that you declare all conflicts at the beginning of each panel meeting or as soon as you become aware of the conflict.
- We must have a signed COI form from each panelist.
- Persons with conflicts must recuse themselves (by leaving the room) from all **discussions** relating to proposals with which they have a conflict.
- If you have **even the slightest doubt** about whether you have a COI with a proposal, please let us know and the division COI officer will determine whether you have a conflict and whether it can be waived.

Confidentiality and Ethics

- Your participation is confidential!
  - **OK** to say you participated in an NSF panel
  - **Not OK** to say which one, which day!
- Panel recommendations are confidential!
  - Do not discuss recommendations and panel proceedings
- Proposals contain sensitive information
  - Proposals are not in public domain
  - Do not copy, distribute or quote from them
  - Delete all review related files after the panel

Hatch Act

- During the time you are serving on panel, you are considered an employee of the Federal Government
- Time and Place Restrictions
  - You may not engage in political activities while on NSF time or located in the NSF building.
  - This includes posting on social media, discussing on the phone, sending emails, or discussing among each other.
  - You may not wear anything with political implications.
  - This applies to on-site and virtual panels.

NSF Harassment Policy

- As the primary funding agency of fundamental science and engineering research in the U.S., NSF is committed to promoting safe, productive research and education environments for current and future scientists and engineers, including at NSF headquarters and other locations where the Foundation conducts its business.
- Panel reviewers are an integral part of the Foundation's commitment to identifying and funding science, technology, engineering, and math proposals of the highest quality.
- NSF is committed to fostering an atmosphere of frank, open, and respectful communication in the proposal review process so that all reviewers can participate fully and expects all review panel participants to comport themselves in a responsible and accountable manner while employed by NSF as panel reviewers.
- Individuals serving as panel reviewers are Special Government Employees and as such fall under NSF's complaint procedures for employees.
- Any reviewer who believes they are being subjected to harassing or threatening behavior during the course of their NSF panel review activities should contact NSF's Office of Diversity and Inclusion at (703) 292-8020 or eeo@nsf.gov.
- This policy applies to all panels, both on-site and virtual.

Implicit Evaluation Bias

- Implicit bias towards a group.
- Lack of critical mass (low numbers) may lead to a greater reliance on perceptions and generalizations.
- It may be unintentional, automatic, and outside our awareness. It may also be contradictory to our conscious beliefs.
- Accumulation of disadvantage.

Ways to Mitigate Implicit Evaluation Bias

- Increase awareness of how implicit bias might affect evaluation.
- Decrease time pressure and distractions in the evaluation process.
- **Rate on explicit criteria** rather than global judgments.
- **Point to specific evidence** supporting judgments.
- Each panelist should feel empowered to bring up the issue in a non-judgmental fashion if he or she questions an implicit bias.

2020 NSF CAREER Program Briefing NSF 20-525

NSF CAREER
Coordinating Committee

August 11, 2020

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**."

CAREER Proposal 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

Five Review Elements

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to:
   a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); or
   b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

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

CAREER: Points to Consider

- Does the PI propose creative, effective and integrated research and education plans as well as plans for assessing these components?

- Is it a well-argued and specific proposal for activities that will, over a 5-year period, build a firm foundation for a lifetime of contributions to research and education in the context of the PI's organization?

CAREER: Points to Consider (cont'd…)

- While excellence in both education and research is expected, activity of an intensity that leads to an unreasonable workload is not.

- The research and educational activities do not need to be addressed separately, if the relationship between the two is such that the presentation of the integrated project is better served by interspersing the two throughout the Project Description.

FRR: Foundational Research in Robotics

- Jointly managed by the Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE)

- 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 broader impact) of the proposed work. Robotics should be essential to the project, and not a convenient platform to demonstrate the research results. Choosing an application other than robotics for the project should significantly reduce its impact.

Panelist Roles

Lead Reviewer (L,R)

- writes review of proposal and submits with score
- presents proposal overview, kicks off discussion

Reviewer (R)

- writes review of proposal and submits with score
- discusses analysis during panel … only adding to what has been said

Scribe and Reviewer (S,R)

- writes review of proposal and submits with score
- keeps notes of discussion; drafts, revises, and submits Panel Summary for comments and then submits for approval

Panelist

- NOT expected to write review of proposal
- welcome to join the discussion, and may also provide a score and written review

Panel Recommendation Categories

- HC – *Highly Competitive*
  - Proposal is outstanding with respect to the review criteria.
- C – *Competitive*
  - Proposal is of good quality with respect to the review criteria, has some weaknesses, however, can be funded **without revision**.
- LC – *Low Competitive*
  - Proposal has merit, but has significant weakness in one or more of the review criteria; **needs revision**.
- NC – *Not Competitive*
  - Proposal is lacking in critical aspects of the review criteria.

Preparing Panel Summaries

The Panel Summary should reflect the entire discussion of the proposal.

Panel summary template has sections for:

- Brief statement of what the proposal is about: a couple of sentences only
- Intellectual merit: strengths *and* weaknesses
- Educational activities, including integration of research and education: strengths *and* weaknesses
- Other broader impacts, including enhancing diversity: strengths *and* weaknesses
- Other requirements – brief evaluation of:
  - Department support letter, Data management plan, and if applicable:
  - Postdoctoral mentoring plan, Proposed collaborations, and Results of prior NSF support
- Panel recommendation and justification: Check panel rating (HC/ C/ LC/ NC) and provide justification of that rating in a few sentences
- The following statement verbatim: *The summary was read by the panel, and the panel concurred that the summary accurately reflects the panel discussion.*

Feedback to PI

- **PI will receive**
  - All reviews
  - Panel summaries
  - Program Director's comments and recommendation (award/decline)
- **Reviews and Panel Summaries are important feedback**
- **A Good Panel Summary**
  - Constructively advises PI
    - does not make assumptions about the proposer (avoid comments like *"The proposers should read ..."* but instead, use *"The proposal does not reference ..."*)
  - Enables better research
  - Guides PI
  - Benefits Scientific Community

Robotics@NSF

- Your participation is very important to the research and education community!
- We appreciate your hard work prior to today and your effort during the panel meeting.
- Thanks to NSF administrative staff assisting in the logistics prior and during and after your participation.

Thank you!