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# Introduction to Selected Funding Opportunities:

- Faculty Early Career Development Program (CAREER)
- Building Research Capacity of New Faculty in Biology (BRC-BIO)
- Facilitating Research at Primarily Undergraduate Institutions (RUI/ROA)



# **NSF CAREER Program**

## **NSF 22-586**

**Due date: July 24, 2024**

Joanna Shisler, PhD  
Program Director, Symbiosis, Infection & Immunity (SII)  
Division of Integrative Organismal Systems (IOS)  
Directorate for Biological Sciences (BIO)



# CAREER Program Goals

- Emphasize the importance of **early development of academic careers**
- **Provide stable support** at a sufficient level and 5-year duration
- Encourage faculty and institutions to **support the integration of research and education**
- Note that a CAREER proposal is only appropriate for those PIs who are excited about integration of research and education.



# CAREER or Regular Proposal?

- CAREER proposals are **single PI projects** that include research and educational activities that are integrated, innovative and ambitious
- Are you at the right stage in your career to undertake the commitments of a CAREER award?
- Is there past evidence of commitment to both research and education?



# CAREER Grant Mechanics



# Investigator Eligibility

- Hold a doctoral degree in a field supported by NSF
- Be engaged in research in an area of science, engineering, or education supported by NSF
- Hold at least a 50% tenure-track (or tenure-track-equivalent\*) position as an assistant professor (or equivalent title)
- Be **untenured** at the time of submission
- Have not previously received a **CAREER** award. (OK to have other NSF awards)
- Have **not had more than two CAREER proposals** reviewed previously



# Ingredients for a CAREER Proposal:

- Research, Education and Broader Impacts;
- How the research and educational activities are integrated or synergistic;
- Other broader impacts, besides the education activities, that will accrue from the project; and
- Departmental Letter demonstrating commitment to the career development of the investigator



# Broader Impacts/Education & CAREER

- The education activities must be **well integrated** with the research. In some disciplines, reciprocal integration is the gold standard.
- **Feasibility** is important and can be demonstrated by established partnerships or previous successes.
- **Broadening participation** to underrepresented groups is valued.
- **Assessment Plan** to show that these activities are effective.
- You may wish to separate out an educational plan from **additional broader impacts** (e.g., outreach, partnerships with industry or conservation agencies).





# Advice on Broader Impacts

- It's not a formula
  - Do something that interests you, has measurable outcomes, and matches the time you are willing to devote
  - Go above and beyond what you are already paid to do
- **Ask for money if you need it**
- Use existing infrastructure, as appropriate
  - Obtain letters of support
- **Ask for help with assessment**
- Consider consulting <https://www.researchinsociety.org/>



# Departmental Letter

- Commitment to the PI's proposed CAREER research and education activities
- Description of how the PI's career goals and responsibilities mesh with that of the organization and department
- Description of **how the department will contribute** to the professional development of the PI with mentoring and whatever is needed to further the PI's efforts to integrate research and education
- Statement indicating the PI's eligibility for the CAREER program

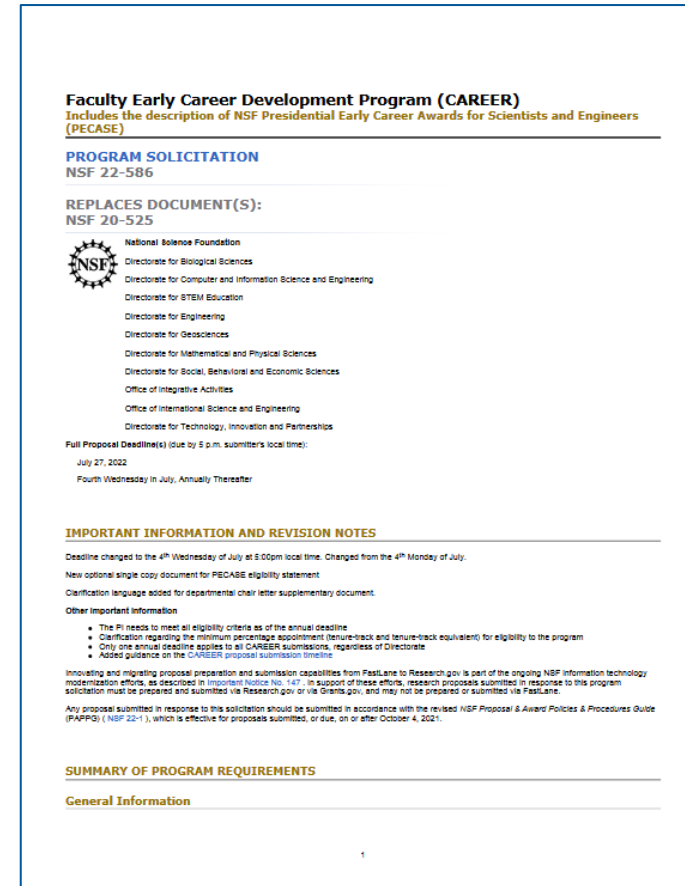
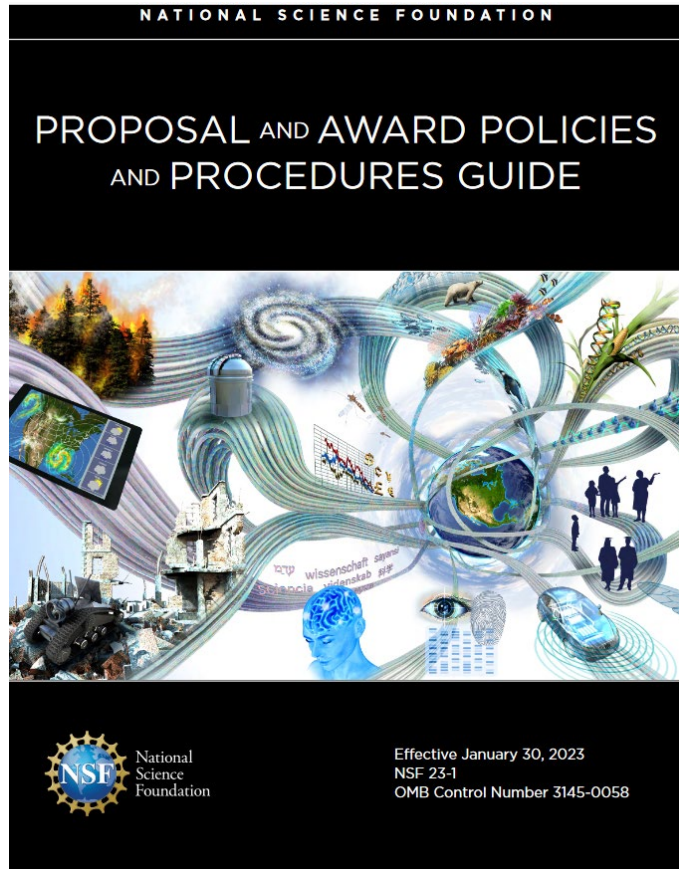


# NSF-wide Merit Review Criteria

- **Intellectual Merit (IM):**  
the potential to advance knowledge
- **Broader Impacts (BI):**  
the potential to benefit society and contribute to the achievement of specific, desired societal outcomes
- CAREER proposals are also evaluated on **integration** of research and education plan and **dept chair letter**



# Essential Documents



PAPPG



Solicitation









# Building Research Capacity of New Faculty in Biology (BRC- BIO)

***NSF 22-500***

*Submission window in June annually*

*Ishita Murkerji, MCB*

*Colette St. Mary, IOS*

*Amanda Simcox, DBI*

*Jeremy Wojdak, DEB*

**Contact: [BRC-BIO@nsf.gov](mailto:BRC-BIO@nsf.gov)**



# BRC-BIO: Building Research Capacity of New Faculty in Biology

Supports all fields within the purview of the BIO directorate including those projects with a marine focus.

## **NOT**

Projects that have a strictly applied focus (all proposals should pose basic research questions)  
Biomedical research

**Contact: [BRC-BIO@nsf.gov](mailto:BRC-BIO@nsf.gov)**



# Goals of BRC-BIO

- **Enhance research capacity by supporting new faculty** of biology at minority-serving institutions (MSIs), predominantly undergraduate institutions (PUIs), and other universities and colleges that are not among the nation's most research-intensive institutions
- **Broaden participation by expanding the types of institutions** that submit proposals to BIO
- **Expand opportunities to groups underrepresented in biology,** including Blacks and African Americans, Hispanics, Latinos, Native Americans, Alaska Natives, Native Hawaiians and other Pacific Islanders, and persons with disabilities, especially those serving at under-resourced institutions





# Eligibility

- **Institutions not among the nation's most research intensive:**
  - Predominantly Undergraduate Institutions (PUIs), including some Minority-serving Institutions (MSIs)
  - Other institutions classified as R2, D/PU, or M1-3
- PIs must be at the Assistant Professor rank (or equivalent), with service at that rank for **no more than 3 years by the proposal submission date**
- The PI's appointment must have **both research *and* educational** responsibilities
- **Members of groups typically underrepresented in the biological sciences are especially encouraged to apply**



# What do awards support?

- Awards will support **new faculty to initiate and build independent research** programs by enhancing their research capacity
- Projects **can include biology-focused research collaborations:**
  - Among faculty within the same institution
  - Across peer-, or research-intensive institutions, or
  - Partnerships with industry or other non-academic partners that advance the candidate's research program
- Projects should enable the **establishment of sustainable research programs** for faculty and enrich undergraduate research experiences and thereby grow the STEM workforce.



# Proposals

- Project Descriptions **limited to 6 pages**
- **Intellectual Merit** section should articulate a compelling overarching research goal for their research program, specific research questions to be addressed by this project, and a brief but feasible research plan
  - **All fields supported** by the BIO directorate are eligible
  - Research should provide a solid foundation upon which to build a long-term, **sustainable research program**
- **Broader Impacts** section should include how the proposed activities will increase participation of underrepresented students of biology including participation in research



# Proposals: Other Documents

- **Required Supplementary Document: Impact Statement (reviewed)**
  - 2 pages describing the likely impact of the project to launch the PI's research program
  - Impact on the career development and the research capacity of the faculty participant(s)
  - Impact on undergraduate research experiences
- **Required Single Copy Document: Institutional Letter of Support**
  - 1 page from the PI's department head (or other senior organizational official)
  - Statement that the PI is eligible for this program
  - Statement of support for the proposed plan of research and teaching





# Budgets

- Up to \$450,000 in research costs and up to \$50,000 in justified equipment costs over 3 years
- Costs may include 50% teaching release time/year + 2 months of summer salary
- Personnel such as undergraduates, post-baccalaureate associates, laboratory technicians and postdoctoral support are allowed
- Other acceptable costs:
  - Research and conference related travel
  - Contractual administrative services as needed
  - Strongly justified subawards to collaborating institutions



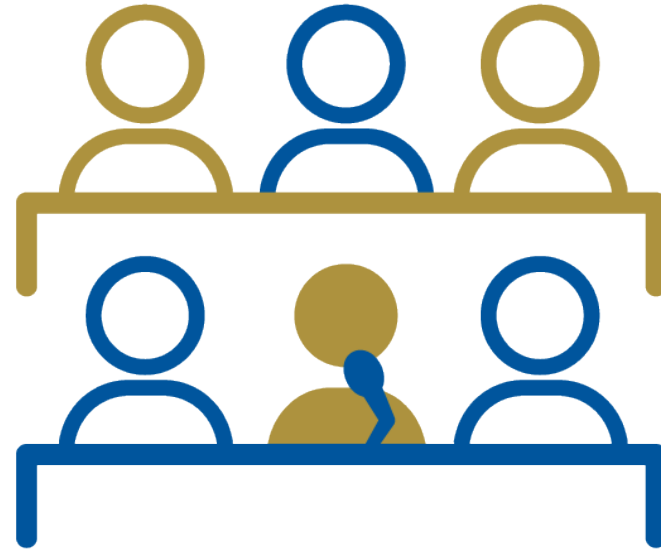
# Proposal Review

- Dedicated panels with reviewers from similar institution types well represented
- Includes solicitation-specific criteria, such as impact statement
- Proposals should be understandable by someone who is not a specialist in the proposed questions, techniques, and approaches



# Reviewers will evaluate these merit review criteria

- Intellectual Merit
- Broader Impacts
- Solicitation Specific Criteria



# Solicitation-Specific Criteria

- The potential of the project to increase the quantity, quality, and capacity of research of the PI
- The potential to increase the diversity and number of students engaged in authentic research experiences
- If applicable, the nature and impact of the proposed collaborations or partnerships



Program will also consider:

Institutional support for the activity, as described in the institutional support letter







# Facilitating Research at Primarily Undergraduate Institutions (PUIs):

Research in Undergraduate Institutions (RUI)  
Research Opportunity Awards (ROA)

*Kathryn Dickson (kdickson@nsf.gov)*





# The RUI and ROA programs are one component of NSF's efforts to broaden participation in research and to integrate research and education – with a focus on Primarily Undergraduate Institutions

- Empower STEM talent to fully participate in science and engineering
- Create new knowledge about our universe, our world and ourselves



# Eligibility and general information - [NSF 14-579](#)

Eligible PUIs are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sci. degrees in all NSF-supported fields during the combined previous two academic years. The institution must certify eligibility.

RUI and ROA proposals are evaluated and funded by NSF programs in the disciplinary areas of the proposed research.

Contact the appropriate program director or the general [RUI/ROA points of contact](#) prior to submitting an RUI or ROA proposal.





# Research in Undergraduate Institutions (RUI)

## RUI proposals:

- support PUI faculty in research that engages them in their professional field(s), builds capacity for research at their home institution, and supports the integration of research and undergraduate education.
- are submitted to existing programs (including all IOS core programs, but not the CAREER program) that accept RUI proposals.
- the title begins with RUI: and the proposal includes an RUI Impact Statement.
- are reviewed with other proposals in that program, based on NSF's two Merit Review Criteria and RUI solicitation-specific review criteria.



# Essential Documents

NATIONAL SCIENCE FOUNDATION

**PROPOSAL AND AWARD POLICIES AND PROCEDURES GUIDE**

National Science Foundation  
Effective January 30, 2023  
NSF 23-1  
OMB Control Number 3145-0058

## Division of Integrative Organismal Systems Core Programs

**PROGRAM SOLICITATION**  
NSF 23-547

**REPLACES DOCUMENT(S):**  
NSF 21-506



**Full Proposal Deadline(s):**7  
Proposals Accepted Anytime

### IMPORTANT INFORMATION AND REVISION NOTES

#### REVISION NOTES

IOS continues to accept unlimited no deadline full proposal submission: proposals may be submitted any day, any time with no limit on the number of proposals that may be submitted by an individual investigator.

This solicitation contains two submission tracks: The Core Programs Track and the IntBIO Track.

**IntBIO Track:** An Integrative Research in Biology (IntBIO) Track has been added.

Proposers should note that proposals to the IntBIO Track require additional information that reviewers will be asked to evaluate. These are described in the program description and in the additional solicitation-specific review criteria.

**Safe and Inclusive Working Environments:** The Directorate for Biological Sciences requires that proposers who include off-campus or off-site research as part of their project submit, as supplementary documentation, a Plan for Safe and Inclusive Working Environments. Proposals submitted after April 18, 2023 that involve off-campus or off-site research, defined as data/information/samples collected off-campus or off-site, must include a Safe and Inclusive Work Environments Plan. For this solicitation, this document replaces the required plan associated with the certification in Chapter II.E.9 of the Proposal and Award Policies and Procedures Guide (PAPPG, NSF 23-1). Instructions for inclusion of the Plan for Safe and Inclusive Working Environments can be found in the additional proposal preparation instructions in this solicitation.

Any proposal submitted in response to this solicitation should be submitted in accordance with the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG).

### SUMMARY OF PROGRAM REQUIREMENTS

#### General Information

**Program Title:**  
Division of Integrative Organismal Systems Core Programs (IOS)

#### Synopsis of Program:

The Division of Integrative Organismal Systems (IOS) **Core Programs Track** supports research to understand why organisms are structured the way they are and function as they do. Proposals are welcomed in all of the core scientific program areas supported by the Division of Integrative Organismal Systems (IOS). Areas of inquiry include, but are not limited to, developmental biology and the evolution of developmental processes, development, structure, modification, function, and evolution of the nervous system, biomechanics and functional morphology, physiological processes, symbiosis and microbial interactions, interactions of organisms with biotic and abiotic environments, plant and animal genomics, and animal behavior. Proposals should focus on organisms as a fundamental unit of biological organization. Principal Investigators are encouraged to apply systems approaches that will lead to conceptual and theoretical insights and predictions about emergent organismal properties.

## Facilitating Research at Primarily Undergraduate Institutions: Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA)

**PROGRAM SOLICITATION**  
NSF 14-579

**REPLACES DOCUMENT(S):**  
NSF 00-144



Directorate for Computer and Information Science and Engineering  
Directorate for STEM Education  
Directorate for Engineering  
Directorate for Geosciences  
Directorate for Mathematical and Physical Sciences  
Directorate for Social, Behavioral and Economic Sciences  
Directorate for Technology, Innovation and Partnerships

**Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

Proposals Accepted Anytime

Submission deadlines vary by program and proposals must meet program-specific requirements to be considered for review. PIs should contact cognizant program officers for guidance.

### IMPORTANT INFORMATION AND REVISION NOTES

Prospective principal investigators (PIs) should contact disciplinary program officers to identify specific NSF programs and determine the feasibility and timing of a Research in Undergraduate Institutions (RUI) or Research Opportunity Awards (ROA) request. For general questions see: [https://www.nsf.gov/crsaprgm/rui\\_rola/contacts.jsp](https://www.nsf.gov/crsaprgm/rui_rola/contacts.jsp).

This solicitation uses the same definition of a "primarily undergraduate institution" (PUI) as the Major Research Instrumentation (MRI) program, another Foundation-wide opportunity. Eligible PUIs are accredited colleges and universities (including two-year community colleges) that award Associate's degrees, Bachelor's degrees, and/or Master's degrees in NSF-supported fields, but have awarded 20 or fewer Ph.D./D.Sc. degrees in all NSF-supported fields during the combined previous two academic years. See Section IV for further information.

This solicitation has been modified to indicate that support for instrumentation through this solicitation varies among divisions and offices, and that the Foundation-wide Major Research Instrumentation (MRI) program should be explored as a first choice for research instrumentation requests. Prospective principal investigators (PIs) should consult with disciplinary program officers to determine the appropriateness of such requests.

Emphasis within the solicitation is provided to indicate that RUI proposals and/or collaborative proposals with one component being a ROA must be submitted in accordance with guidelines and timeframes appropriate for the division programs that will be reviewing the proposal. Clarification is provided in this solicitation on other mechanisms (besides supplements) for ROAs such as re-budgeting of existing awards, and components of new proposals. ROA supplement requests (or requests to rebudget existing awards for ROA activities) can be made at any time.

Emphasis is provided throughout the solicitation to indicate that funding for RUI and ROA awards is contained within research and education program allocations and not held as a separate allocation; funds are provided at the discretion of divisions and offices.

Any proposal submitted in response to this solicitation should be submitted in accordance with the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) that is in effect for the relevant due date to which the proposal is being submitted. The NSF PAPPG is regularly revised and it is the responsibility of the proposer to ensure that the proposal meets the requirements specified in this solicitation and the applicable version of the PAPPG. Submitting a proposal prior to a specified deadline does not negate this requirement.

**PAPPG**



**Program  
Solicitation**



**RUI  
Solicitation**



# RUI Proposal Elements and Review Criteria

- **Intellectual Merit:** the potential to advance knowledge the research goal, knowledge gap(s) to be filled and why it is important to fill the gap, specific research hypotheses or questions to be addressed by the project, a feasible research plan to test the hypotheses, alternative or back-up plans, and broader applicability or significance of the results
- **Broader Impacts:** the potential to benefit society and contribute to the achievement of specific, desired societal outcomes
- **RUI Solicitation-specific criteria** should be addressed in the required RUI Impact statement, which describes the expected effects of the proposed research on the research and educational environment of the PUI; these may overlap with the Broader Impacts.



# RUI Proposal Elements and Review Criteria

## Required Supplementary Documents:

- **RUI Impact Statement:** up to 5 pages describing the potential impact of the proposed research activity on:
  - the career of the PUI faculty member
  - the research environment of the PUI
  - the ability of the involved department to better prepare students for entry into advanced-degree programs and/or careers in science and engineering
- **The RUI Impact Statement should also**
  - describe plans to recruit qualified undergraduate students, including those from groups underrepresented in science, to participate in the project, and
  - may include information on factors affecting research productivity and on institutional support for research





# RUI Proposal Elements and Review Criteria

## Required Supplementary Documents:

- **RUI Eligibility Certification**  
executed by an Authorized Organizational Representative

**Deadlines?** If the Program Solicitation indicates that the program has a deadline, that applies to the RUI proposal as well. The IOS core programs have no deadlines; proposals may be submitted any time.



# Research Opportunity Award (ROA)

ROAs typically allow PUI faculty to work as visiting scientists at research-intensive organizations where they collaborate with other NSF-supported investigators.



# Research Opportunity Awards (ROA)

ROA opportunities include:

- A supplement to an existing NSF award to support ROA activities for PUI faculty, initiated by the institution holding the NSF award.
- Requests to rebudget funds in an existing NSF award to support ROA activities for PUI faculty, initiated by the NSF awardee.
- Submission of a new collaborative proposal between a PUI and another institution(s), with an ROA component as a subaward or as part of a linked collaborative proposal.



# ROA Proposal Elements and Review

- ROA supplement requests can be made at any time (no deadline) and are reviewed internally at NSF.
- Requests to rebudget existing awards for ROA activities can be made any time.
- Collaborative proposals that include an ROA are reviewed according to the program to which the proposal is submitted and may have a deadline. In IOS, the core programs have no deadlines; proposals are accepted any time.
- The ROA activity is reviewed based on how well it meets the **ROA goals** to increase or maintain the PUI visitor's research capability and effectiveness, to improve research and research teaching capabilities at the PUI, and to enhance the impacts and outcomes of the NSF-funded research of the host PI.





# NSF 14-579 - Facilitating Research at Primarily Undergraduate Institutions (PUIs)

- A great opportunity to support research by PUI faculty.
- Annually, NSF has invested on average approximately \$53 million each year in ~200 RUI research projects and over \$3 million in ~45 ROA awards.
- Contact the appropriate program director or the general [RUI/ROA points of contact](#) prior to submitting an RUI or ROA proposal.



Data from [NSF by the Numbers: Funding to 2-year, 4-year, and Master's granting institutions in Biology](#)



