Division of Environmental Biology Virtual Office Hour

## *How to Write a Great Proposal*

Please submit questions via the Q&A button available to you on Zoom.

Please set to "Send anonymously"

September 9, 2025

BIO News and Updates

Sign-up for emails on new solicitations; events; due date reminders; and BIO's quarterly newsletter, including information on new priorities and solicitations, highlights from the community, and more!
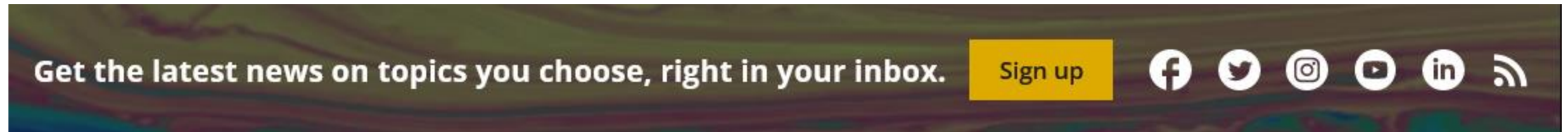
Visit www.nsf.gov and scroll down until you see the Sign up and social media banner, click on the yellow box, and follow the prompts.

Determine where your research fits

NSF Funding Search

https://new.nsf.gov/funding/opportunities

Past Awards Database

https://www.nsf.gov/awardsearch/advancedSearch.jsp

Talk to a Program Officer
Have a 1-page summary of proposed work

Read Carefully: Program Solicitation

NSF 24-543: Division of Environmental Biology

Core programs

Program Solicitation

Document Information

Document History

- **Posted:** February 14, 2024
- **Replaces:** NSF 23-549

View the program page

National Science Foundation
Directorate for Biological Sciences
Division of Environmental Biology

Full Proposal Deadline(s):

Proposals Accepted Anytime

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 120 each year, pending availability of funds.

Anticipated Funding Amount: $100,000,000 for new awards each year pending availability of funds.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members.Special Instructions for International Branch Campuses of US IHEs: If the proposal includes funding to be provided to an international branch campus of a US institution of higher education (including through use of subawards and consultant arrangements), the proposer must explain the benefit(s) to the project of performance at the international branch campus, and justify why the project activities cannot be performed at the US campus.

- Non-profit, non-academic organizations: Independent museums, observatories, research laboratories, professional societies and similar organizations located in the U.S. that are directly associated with educational or research activities.

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization:

There are no restrictions or limits.

Limit on Number of Proposals per PI or co-PI:

There are no restrictions or limits.

Proposal Preparation and Submission Instructions

Proposal components...

- Project Summary

- Project Description

- Mentoring Plan (if applicable)

- Safe and Harassment-free Fieldwork (SAHF) Plan (if applicable)

- Data Management and Sharing Plan

Project Summary

The Project Summary IS NOT an abstract of the proposal

Overview – contains clear statement of overarching goal/hypothesis; identifies gap in current knowledge that will be addressed by this research; includes aims and methods

Intellectual merit - potential to advance knowledge

Broader impacts - potential to benefit society or contribute to specific, desired societal outcomes

Informative to other scientists in the same field

Understandable to the broad audience within the scientific domain *– often the first thing a reviewer reads*

Project Description

- Consider these key questions for Intellectual Merit:

  - **What fundamental question does the research answer?**
  - **Why is the work important?**
  - **What has already been done (by you or others)?**
  - **How does the preliminary data support the hypothesis or justify the rationale?**
  - **What do you intend to do?**
  - **How does the proposed research move the field forward?**

Project Description: Broader Impacts

What is the societal benefit of the proposed project/activity?

- Advance discovery and understanding while promoting teaching, training, and learning
- Enhance infrastructure for research and education
- Broad dissemination to enhance scientific and technological understanding

When developing your broader impacts activities

- Make sure activities are related to the research
- Novelty is not a requirement, efficacy is paramount
- Use resources like ARIS (https://www.researchinsociety.org)

- Be clear on the target – who will benefit from the proposed activities
- Be specific!

Mentoring Plan- one page
Required by PAPPG if there is budget for graduate student or postdoc Fellow

What would a graduate student or postdoc Fellow gain out of coming to your lab?

How will you foster the graduate student or Fellow's career?

What resources does your institution have available to advance the graduate student or Fellow's professional development?

Who else will mentor the graduate student or Fellow, and why that person?

What type of networking opportunities are available?

Safe and Harassment Free Work Environments

Required 2-page supplement including:

1. a brief description of the field setting and unique challenges for the team;

2. the steps the proposing organization will take to nurture an inclusive off-campus or off-site working environment, including processes to establish shared team definitions of roles, responsibilities, and culture;

3. communication processes within the off-site team and to the organization(s) that minimize singular points within the communication pathway; and

4. the organizational mechanisms that will be used for reporting, responding to, and resolving issues of harassment if they arise.

Data Management and Sharing Plan (DMSP)

General Policy (PAPPG XI.D.4)

Expectation to share primary data, samples, physical collections and other supporting materials
- at no more than incremental cost
- within a reasonable time

Proposal Requirement

Supplementary document (≤2 pages) outlining plans must be included in proposal

Guidance (PAPPG II.D.2(ii))

Plans may include:
- Types of data, samples, collections, etc. to be produced
- Standards for data and metadata
- Policies for access and sharing
- Polices for reuse and redistribution
- Plans for archiving

BIO-specific Guidance and Notes for DMSPs

Guidance

Plans should:
- Be consistent with FAIR principles
- Describe provisions taken to protect sensitive personal data
- Consider developing best practices regarding CARE Principles for Indigenous Data Governance
- Outline roles and responsibilities of all parties
- Use recognized, accessible, community-accepted repositories where they exist
- Include description of accessioning plans (when appropriate)

Costs
- Are allowable expenses (including personnel costs).
- If applicable, should be included in budget and budget narrative.

Post-award Notes

Info on production; dissemination; deposition; standards used; and unique, resolvable and persistent identifiers should be included under "Products" in project reports document (≤2 pages) outlining plans must be included in proposal

Merit Review Criteria

Intellectual Merit
The potential for the proposed project to advance knowledge and understanding within its own field or across different fields.

Broader Impacts
The potential for the proposed project to benefit society and contribute to the achievement of specific, desired societal outcomes.

In addition to assessing a proposal's intellectual merit and broader impacts, the following elements are considered for both review criteria:

- To what extent do the proposed activities suggest and explore creative, original or potentially transformative concepts?
- 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?
- How well qualified is the individual, team or organization to conduct the proposed activities?
- Are there adequate resources available to carry out the proposed activities?

Proposal vs. Paper (Article)

Proposal	Paper
Work to be done	Work already done
Addresses criteria and adheres to directions	No criteria to address
Accessible, persuasive language	Explanatory, rhetorical language

Strengthen your proposal by...

CONTACTING A PROGRAM OFFICER

CATERING BROADER IMPACTS TO YOUR STRENGTHS

THINKING ABOUT THE REVIEWERS

NOT GETTING DISCOURAGED

Give Your Proposal Energy: Structure Around 5 Review Elements

1

How will this advance science & benefit society?
State upfront what you want to do, why, and why it is exciting and important.

2

Is the work creative or transformative?
Lay out the hypothesis and why previous studies haven't been able to address the question.

3

Is the work plan clear?
Explain why your approach was taken, the timeline of tasks, and how steps connect to the hypothesis.

4

Is the team qualified?
Clarify everyone's role and show the work is doable in the time allotted.

5

Do they have adequate resources and facilities?
Include needed funding in your budget, use the Facilities, Equipment, & Other Resources section wisely, and include letters of collaboration

Four Key Elements to a Successful Proposal

1. Great idea

2. Clearly demonstrates Intellectual Merit and Broader Impacts

3. Fit with your current research expertise & career development plans

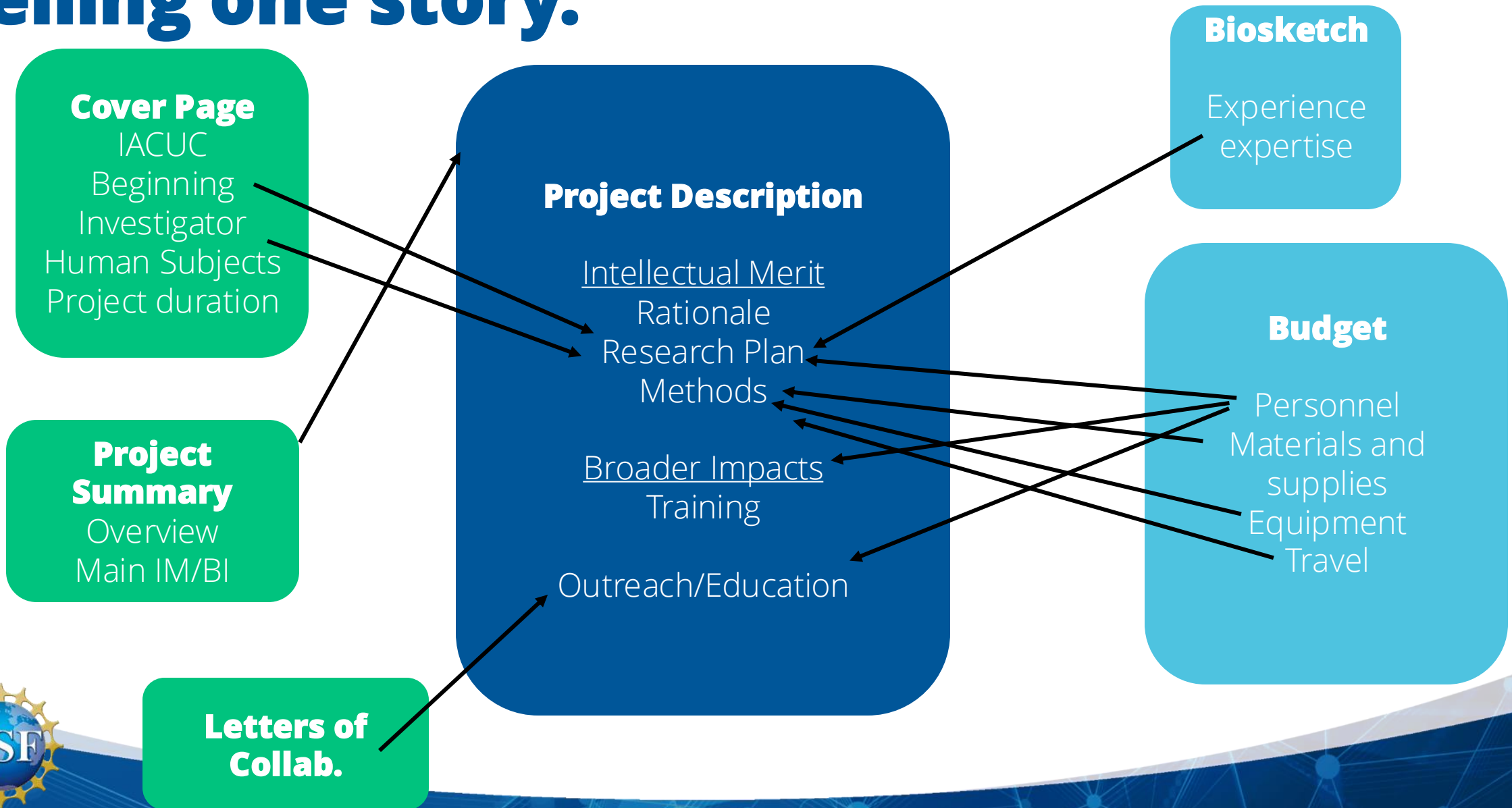4. Includes a clear strategy, including benchmarks, timelines, and metrics

Tips on Budgeting

1. Know what things will cost *(at least roughly)*

2. Ask for what you need *(for both the research and broader impacts)*

3. Stay within budget allowances

4. Carefully read the solicitation and Section II.D.2.f of the PAPPG

Proposal components should "align", telling one story.

Check over proposal before you submit

- All required documents?
- Clear and logical flow from the big questions?
- Use diagram and/or table if experimental design is complex
- Describe alternative outcomes, contingency plans
- Budget for what you need to accomplish
- Typos, clear images?
- Have others read your proposal
- Read the solicitation AGAIN- does proposal still fit?
- Read through the PAPPG proposal preparation checklist

BIO Virtual Office Hours (VOH)

Informational webinar focused on:
- New and ongoing funding opportunities
- Topics of general interest
- Questions from audience to be answered live

Monthly dates and times:
- DEB: 2nd Tuesday, 12-1 p.m.
- IOS: 3rd Thursday, 1-2 p.m.
- MCB: 2nd Wednesday, 2-3 p.m.