



# Division of Molecular and Cellular Biosciences (MCB) Virtual Office Hours

Welcome to the MCB Virtual Office Hours, **we will begin at 2pm EST!**

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





# MCB Virtual Office Hour

## Question and Answers

Submit your questions via the Q&A box on your screen

- You may elect to submit your question anonymously.
- For specific questions about your project, please contact a Program Director.

Next MCB Virtual Office Hour: June 7<sup>th</sup>, 2023



# MCB Virtual Office Hour

## Today's Topic

# Faculty Early Career Development Program (CAREER)

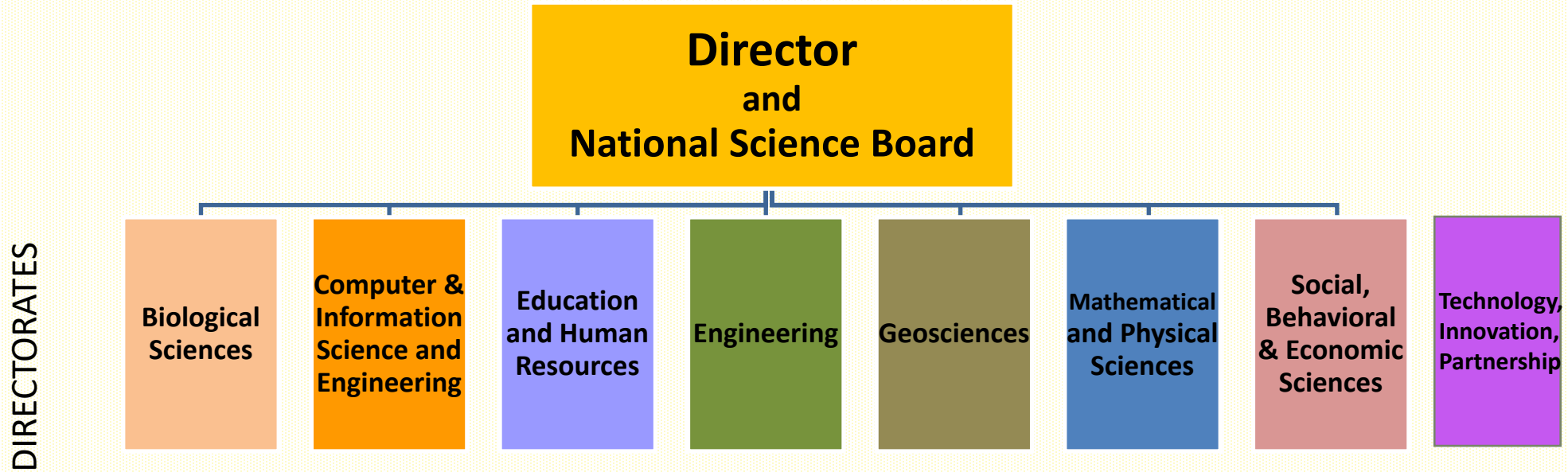
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[View past Office Hours Presentations here](#)

Copy of this and past presentations at  
<https://mcbblog.nsfbio.com/office-hours/2/>



# National Science Foundation





# Molecular and Cellular Biosciences (MCB)

- Supports quantitative, predictive and theory-driven research to understand complex living systems at the molecular, subcellular, and cellular levels
- Encourages use of approaches at intersections of biology and other disciplines
- Promotes activities that build capacity and ensure diversity, equity and inclusion in the scientific enterprise.

**MCB Core Solicitation: NSF [23-548](#)**

- **Molecular Biophysics**
- **Genetic Mechanisms**
- **Cellular Dynamics and Function**
- **Systems and Synthetic Biology**



## Faculty Early Career Development Program (CAREER) (NSF22-586)

The main changes of 22-586

- a. Deadline change to the 4<sup>th</sup> Wednesday in July (July 26<sup>th</sup>, 2023 is the next submission date)
- b. Addition of a clarification sentence in the departmental chair letter to state that the Chair Letter is not a support letter.
- c. Edits in the PECASE language that adds the additional requirement for the PI candidate to reflect commitment to STEM equity, diversity, accessibility, and/or inclusion. The language also updates the new allocation of PECASE candidates for NSF.
- d. Inclusion of new single copy document for PIs to include that states their eligibility for PECASE. It is not a required document. There is an opportunity for the PI to submit this "certification" post award via an interim report to the cognizant program officer if they did not have the required status as of their submission date.
- e. CAREER submission will be through Research.gov or Grants.gov. **Fastlane will no longer be used for submission for the July 2023 deadline.**



## Main Changes Cont'd

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**



NSF-wide CAREER webinars (3-4:30 PM EDT) :  
May 15,2023 and  
May 25,2023 3-4:30 PM

[https://nsf.zoomgov.com/webinar/register/WN\\_LLftvBWnS5uFUFZQbkLCrg](https://nsf.zoomgov.com/webinar/register/WN_LLftvBWnS5uFUFZQbkLCrg)





## CAREER proposal Submission Logistics

As part of the Spring 2023 NSF Virtual Grants Conference, a representative from NSF's Division of Information Systems will present an overview of CAREER proposal submission logistics:

- **Tuesday, June 6, 2023, from 3:00 to 4:00 PM Eastern time**

A demo of how to prepare a CAREER proposal in Research.gov, review of the system-related requirements in the CAREER proposal submission timeline guidance, and a Q&A segment will be included. Submit questions in advance to [careerproposalprep@nsf.gov](mailto:careerproposalprep@nsf.gov).

**There is no cost to attend the Spring 2023 NSF Virtual Grants Conference but registration is required.** Registration will open on May 10<sup>th</sup> and will be available on the [conference website](#). To stay informed about NSF proposal & award-related policy, news and upcoming events, please visit the [conference website](#) and select "Get Notified."

The session presentation and on-demand recording will be posted in the conference [Resource Center](#).

Any questions about this technical webinar may be directed to [careerproposalprep@nsf.gov](mailto:careerproposalprep@nsf.gov).



## Proposal Submission Timeline

9 Days	July 17, 2023	Submit CAREER proposal through Grants.gov	Proposals submitted via Grants.gov must go through additional processing before they are accepted at NSF. For this reason, we recommend allowing extra time to resolve any system errors and avoid high volume delays at the NSF Help Desk if problems arise.
6 days	July 20, 2023	Submit CAREER proposal through Research.gov	Aim to submit your proposal by this date to allow time to resolve any system errors in advance of the deadline and avoid high volume delays at the NSF Help Desk. Print the file to a PDF and view it online to make sure the correct version was submitted. Corrections are automatically accepted before the deadline.
0 days	July 26, 2023	Proposal submission deadline	Proposals are due by 5 p.m. submitter's local time. <b>System does not allow submission after the deadline.</b>



## CAREER Program Aims

- Emphasize the importance of **early development of academic careers** in which the excitement of research is enhanced by inspired teaching.
- **Provide stable support** at a sufficient level and 5-year duration to enable awardees to develop careers as outstanding researchers and effective, committed educators
- Encourage faculty and institutions to **support the integration of research and education**, in which the process of discovery stimulates learning to ensure quick and effective communication of research findings to a large audience.



## 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
- Have not previously received a CAREER award. (OK to have other research awards)
- Have not had more than two CAREER proposals reviewed previously



# Tenure-track Equivalency

**Must meet all of the following requirements:**

- (1) The employee has a continuing appointment that is **expected to last the five years** of a CAREER grant.
- (2) The appointment has substantial research *and* educational responsibilities.
- (3) The proposed project relates to the employee's career goals and job responsibilities as well as to the mission of the department or organization.
- (4) The Departmental Letter must affirm that the investigator's appointment is at an early-career level equivalent to pre-tenure status, and the **Departmental Letter must clearly and convincingly demonstrate how the faculty member's appointment satisfies all the above requirements of tenure-track equivalency.**

Faculty members who are **Associate Professors** or in equivalent appointments, with or without tenure, are **not eligible** for the CAREER program.

Faculty members who hold **Adjunct Faculty** or equivalent appointments are **not eligible** for the CAREER program.



## Sections of the Proposal

Summary: It should address both Intellectual Merit and Broader Impacts in separate sections

Panelists who are not assigned to your proposal will read only the summary.

Project Description: should include Intellectual Merit and Broader Impacts, and-if applicable- Prior support sections. It may also include some background information, rationale for undertaking this research, how the research will be conducted, and what are the expected outcomes and their significance



# Additional Parts of CAREER Proposals

<https://www.nsf.gov/pubs/2022/nsf22586/nsf22586.htm>

- **Facilities, Equipment, and Other Resources** must document the nature of all project collaborations:
  - Intellectual contributions to the project
  - Permission to access a site, use instrumentation or facility
  - Offer to furnish samples / materials for research
  - Logistical support / evaluation services
  - Mentoring of U.S. students at a foreign site, if applicable
- **Letters of Support** should consist of a single-sentence statement of collaboration:
  - "If the proposal submitted by Dr. [name of PI] entitled [proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description."
  - **Must NOT recommend or endorse PI or project**



## 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





## More Information

- Co-PIs on cover sheet are not allowed
- Request for support of other senior personnel, consultants, or sub-awards is allowed, commensurate with **a limited role** in the project
- International activities are encouraged and may be supported by the Office of International Science and Engineering (OISE)
- Programs may support buy-out of academic year time for teaching-intensive institutions (**check with your Program Director**)
- If you are not sure about budget **check with your Program Director**



## Five Review Elements

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



# How to Start Preparing a Grant proposal?

- **Ask yourself**
  - What do you intend to do that others want to know?
  - Why is the work important, innovative and exciting?
  - What has already been done and why is your way better?
  - How are you going to do the work to answer the question(s) uniquely?
  
- **Prepare yourself and demonstrate knowledge**
  - Literature survey and discussions with others
  - Get preliminary data
  - If you do not have access to the best facilities, who will you collaborate/partner with?



# Ingredients of a Highly Competitive Proposal

- **Novel idea/research question/sound rationale**
- **Well balanced feasibility and boldness**
- **Research plan addresses the question(s)**
- **Well justified**
- Well written
- The PI is qualified
- Meaningful collaborations are in place (if needed)
- Facilities are available (at the institution or through collaboration)



## Background and Introduction

Avoid extensive literature review, **this is not a review article**. Review only relevant work to the proposed research (make sure to cite the most relevant articles and players of the field).

Describe the rationale and the plan to address the needs, gaps, and hypotheses

Make sure to communicate your overall goal/central hypothesis within the first few paragraphs

Avoid using excessive jargon (remember every reviewer is not in your area of research)



## Research Design

- Choose experimental approach that answers the question directly and has the required sensitivity and resolution for the problem (not necessarily the fanciest technique)
- Know strengths and weaknesses of experimental techniques you will use (you don't need to be an expert in all)
- Explain what type of data you will acquire from each experiment and provide interpretation and how it stands with respect to the current state of knowledge. Make sure to discuss alternative interpretations
- Make sure to address potential pitfalls and how you plan to use alternative approaches to address them



## Research Design (cont'd)

Don't be afraid of saying that a given set of experiments in an aim may not yield the overall goal.

In that case explain significance of even a partial result

Every aim does not need feasibility data. There should be a good balance between feasibility and boldness

After writing this section, take a look at your hypotheses and see whether the experimental design actually tested them or it is made up of "doable" experiments

You may want to include a timeline to demonstrate your plan how you will accomplish the work



## Research Design (cont'd)

Aims of a proposal should not be dependent on the success of the first aim. They should be complementary towards the overall goal but independent of each others successful completion





## Some Additional Comments

- This is a proposal and not a manuscript - Know the difference
- All parts of the proposal help communicate your ideas to the reviewers and Program Directors
- Do not compress the font or squeeze the margins - use your allowed page limits wisely
- Embed the figures correctly and make it look good on the page
- The care you take with this proposal communicates the care you will take with your research and education program
- If you have trouble writing well - Take a class!



## Most Common Scientific Mistakes

- Work is too close to what has been done before - i.e., **Incremental advance**
- Project has **too large a scope** or is **too narrowly focused** to be exciting
- Proposed methods/resolution/research plan are not likely to yield results that will address the stated goals of the project
- The experiment/theoretical/analytical **design is flawed**
- Resources not available or PI does not have demonstrated expertise in it
- Potential **pitfalls and alternate strategies** are not described
- Alternate interpretation of data is ignored
- The PI has **not been very productive** either during or since his/her Ph.D.



## Broader Impacts/Educational Activities

- The education activities must be **well integrated** with the research
- Use institutional activities relevant to your research
- Plans should reflect your disciplinary and educational interests and goals, as well as the needs of your organization
- Demonstration of previous results with successful education activities is a plus
- **Who will benefit** from the proposed activities?
- **Assessment Plan** to show that these activities are effective.
- A wide range of research and education activities are appropriate for the CAREER program
- Some investigators may wish to pursue an additional activity such as entrepreneurship, industry partnerships, or policy that enhances their research and education plans



## Most Common Mistakes

- Education component is generic and what is expected of any PI in your field - one more student in your lab is not enough!
- Unrealistic education activity - "This work will revolutionize K-12 education in the state of X"
- Reinventing the wheel - another blog, another website
- **Research and education plans are not integrated**
- Lack of understanding of what is effective in education  
A literature search helps here, too.



## Basis for Funding Decision

- **Peer Review**

- **Content** of the review **is more important** than rating
- **Panel Summary** shows what aspects of your proposal were considered most important for that rating.
- Program Director analyzes: Fairness and substance of the reviews; technical issues raised (can they be resolved swiftly and easily); reviewers' enthusiasm for the project; additional feedback from reviewers/panels or other program directors; sometimes also clarification from the PI if needed

- **Portfolio Balance**

- Research and education topics and their integration; potential for transformative impact in both; priority or timeliness of the area of research and systems; demographics of the PI population and diversity of institution types; stage of the career development of the PI; geographic diversity; gender balance; international partnerships



## Declination is a Part of the Process

- **Stay Calm and Do NOT Get Discouraged!**
  - **Read** the reviews and Panel Summary more than once
  - **Ask** others to interpret the reviews for you
  - **Reflect** on your next moves **after you have had time to digest** the feedback (Reviews, Panel Summary, PD Comments, Context Statement)
  - **Contact** your Program Director
- **Resubmit after addressing significant weaknesses**
  - Do you need more preliminary data?
  - What were the common themes in the reviews?
  - Is one component better than another?
  - Are there significant strengths that you can build upon for resubmission?



Questions?

CAREER Contacts

<https://www.nsf.gov/crssprgm/career/contacts.jsp>

CAREER Solicitation

<https://www.nsf.gov/pubs/2022/nsf22586/nsf22586.htm>

# Next MCB Virtual Office Hours

- **June 7<sup>th</sup>, 2023, at 2-3 pm EST**

**Let's Talk Broader Impacts**

Feel free to email topic suggestions to:

Olaf Corning: [ocorning@nsf.gov](mailto:ocorning@nsf.gov)



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

- **Who:** Primary investigators must hold at least a 50% tenure-track (or tenure-track equivalent) position as an assistant professor (or equivalent rank), who are untenured, have both research and teaching components to their appointment, and are within the first three years of their appointment.
- **What:** Proposed projects should enable the establishment of research programs for new faculty to position them to apply for future grants to sustain their research and should also enrich undergraduate research experiences and thereby grow the STEM workforce.
- **Where:** Minority-serving institutions (MSIs), predominantly undergraduate institutions (PUIs), and other universities and colleges that are not among the nation's most research-intensive and resourced institutions.
- **When:** Proposal windows are **June 1-30, 2023 and May 1-July 1, 2024**

• **How:**





•Chapter II.E.9, **Safe and Inclusive Working Environments for Off-Campus or Off-Site Research**, describes the new requirement for the AOR to certify that an organization has a plan in place for safe and inclusive research for any proposal that proposes to conduct off-campus or off-site research. This section also provides considerations for plan development, communication, and dissemination. <https://beta.nsf.gov/policies/pappg/23-1>