OER Seminar Series 2020
National Science Foundation

July 13, 2020
2:30 p.m. – 3:30 p.m.

Welcome

- We will be recording this meeting for faculty who are unable to attend the live session.
- Please mute your microphones.
- If you have a question, either raise your hand or type your question in the chat box.
- We will end the meeting with an opportunity for Q & A.

Discussion Topics

- NSF Research Areas
- Recent NSF Funding and Potential Funding Opportunities
- From the Desk of NSF-Funded COE Faculty
- Merit Review Criteria: Broader Impacts and Intellectual Merit
- Broadening Participation
- New Templates for Biosketch and Current and Pending Documents
- OER Services Provided
- Some Take-Home Messages

NSF Research Areas

NSF is divided into seven directorates. The UF College of Education (COE) primarily engages in the research area of EHR although some funding opportunities overlap to include multiple directorates, divisions, and offices.

1. Biological Sciences (BIO)
2. Computer and Information Science and Engineering (CISE)
3. **Education and Human Resources (EHR)**
4. Engineering (ENG)
5. Geosciences (GEO)
6. Mathematical and Physical Sciences (MPS)
7. Social, Behavioral and Economic Sciences (SBE)

Recently Funded NSF Projects in the COE

CISE Directorate, Division of Computer and Network Systems (CNS), Special Projects

CISE Directorate, Division of Information and Intelligent Systems (IIS), Cyberlearning for Work at the Human-Technology Frontier

EHR Directorate, Division of Research on Learning (DRL), Discovery Research PreK-12 (DRK-12)

EHR Directorate, DRL, Innovative Technology Experiences for Students and Teachers (ITEST)

EHR Directorate, DRL, STEM + Computing K-12 Education (STEM+C)

EHR Directorate, Division of Undergraduate Education (DUE), Advanced Technological Education (ATE)

EHR Directorate, DUE, Improving Undergraduate STEM Education (IUSE)

EHR Directorate, DRL, Math and Science Partnerships (MSP)

EHR Directorate, DUE, Robert Noyce Teacher Scholarship Program

ENG Directorate, Division of Engineering Education and Centers (EEC), Engineering Education

SBE Directorate, Office of Multidisciplinary Activities (SMA): Science of Learning Collaborative Networks (SL-CN)

Potential NSF Programs for the COE to Pursue

EHR Directorate, DRL, Advancing Informal STEM Learning (AISL)

EHR Directorate, DRL, Computer Science for All (CSforAll)

EHR Directorate, DRL, EHR Core Research (ECR): Building Capacity in STEM Education Research (ECR: BCSER)

EHR Directorate, DRL, Improving Undergraduate STEM Education: Computing in Undergraduate Education (IUSE: CUE)

EHR Directorate, Division of Human Resource Development (HRD), ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)

EHR Directorate, HRD, Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM)

EHR Directorate, Faculty Early Career Development Program (CAREER)

EHR Directorate, HRD, Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

SBE Directorate, Ethical and Responsible Research (ER2)

SBE Directorate, Science of Broadening Participation (SBP)

SBE Directorate, SMA, Research Experiences for Undergraduates (REU) Sites

From the Desk of NSF-Funded COE Faculty

Now we turn over the webinar to Pasha Antonenko. Some of Pasha's currently funded NSF projects include the following:

- **EHR Directorate, Division of Research on Learning (DRL): Innovative Technology Experiences for Students and Teachers (ITEST)**
  STRATEGIES: Codebreakers: Cultivating Elementary Students' Interest in Cryptography and Cybersecurity Education and Careers
  03/2019–02/2022; Award Amount: $956,733

- **EHR Directorate, Division of Research on Learning (DRL): Innovative Technology Experiences for Students and Teachers (ITEST)** STRATEGIES: iDigFossils: Engaging K-12 Students in Integrated STEM via 3D Digitization, Printing and Exploration of Fossils
  02/2016–12/2020; Award Amount: $1,194,054

- **SBE Directorate, Office of Multidisciplinary Activities (SMA): Science of Learning Collaborative Networks (SL-CN)**
  Project LENS: Leveraging Expertise in Neurotechnologies to Study Individual Differences in Multimedia Learning
  09/2015–08/2020; Award Amount: $817,500

Merit Review Criteria: Broader Impacts and Intellectual Merit

- All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. NSF will employ additional criteria as required to highlight specific objectives of certain programs and activities.

- The two merit review criteria Broader Impacts (BI) and Intellectual Merit (IM) are necessary but neither by itself is sufficient. Therefore, proposers must fully address both criteria.

Source: https://www.nsf.gov/pubs/policydocs/pappg20_1/pappg_3.jsp#IIIA2

Broader Impacts

- The statement on BI should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes.
- BI may be accomplished through the research itself, through activities directly related to specific research projects, or through activities supported by, but are complementary to the project.
- NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes.

Source: https://www.nsf.gov/pubs/policydocs/pappg20_1/pappg_3.jsp#IIIA2

Broader Impacts

Societally relevant outcomes include, but are not limited to, the following examples. Proposers may include appropriate outcomes not covered by these examples:

- Broadened participation of underrepresented groups, (e.g., gender, ethnicity, disability, geographic areas such as rural, etc.), including full participation of underrepresented minorities in STEM
- Improved STEM education and educator development at any level
- Increased public scientific literacy and public engagement with science and technology
- Improved well-being of individuals in society
- Development of a diverse, globally competitive STEM workforce
- Increased partnerships between academia, industry, and others
- Improved national security
- Increased economic competitiveness of the U.S.
- Use of science and technology to inform public policy
- Enhanced infrastructure for research and education

Source: https://www.nsf.gov/pubs/policydocs/pappg20_1/pappg_2.jsp#IIC2d

Broadening Participation

- Include quantifiable measures of Broadening Participation (BP) such as disaggregated baseline measures of student, faculty, and staff engagement.
- Involve formative and summative measures of tracking and assessing mentoring; matriculation to graduate programs; and transition to the STEM workforce.
- Integrate BP into the entire framework of your project.
- Support the BI/BP plan with your budget.
- Hire an evaluator to support research related to BI/BP.
- Create formative and summative assessments.
- Do more than just track participants.
- Helpful Resource (Thank you Ester de Jong!) https://bpcnet.org/resources-one-page/

Source: Waisome, J. A. M. (2020, May 27). *Broader impacts: Broadening participation in STEM*. Presented at the University of Florida Grant Workshop: Writing Broader Impacts for NSF Proposals, Gainesville, FL.

Intellectual Merit

The statement on IM should describe the potential of the proposed activity to advance knowledge within its own field or across different fields.

Source: https://www.nsf.gov/pubs/policydocs/pappg18_1/pappg_3.jsp#IIIA2a

Intellectual Merit

To help identify your project's intellectual merit, ask yourself the following questions:

- What are we doing that is generating new knowledge or improved understanding?
- Are we using a unique approach or investigating a novel topic to better understand an aspect of the research?
- Is our project transformative, bringing about extraordinary or innovative change?
- Are we improving STEM education and broadening participation in STEM especially for underrepresented groups?

Source: EvaluATE blog, a project supported by NSF under grant numbers 0802245, 1204683, 1600992, and 1841783

New Templates for Biosketch and Current and Pending

NSF-approved formats go into effect **October 5, 2020**. NSF encourages the use of these formats prior to October to provide feedback as NSF makes modifications for October implementation. There are two approved formats:

- NSF has partnered with the National Institutes of Health (NIH) to use SciENcv: Science Experts Network Curriculum Vitae as an NSF-approved format. SciENcv will produce an NSF-compliant PDF version of the biosketch and current and pending support documents.
- NSF is providing a fillable PDF for the biosketch and current and pending support documents.

Source:
NSF-Approved Formats for the Biographical Sketch

NSF-Approved Formats for Current and Pending Support

OER Services Provided

- Assist in development of cross-departmental and cross-university collaborative teams.
- Establish strategic partnerships.
- Provide samples of successful proposals.
- Provide consultation to help guide PIs through the proposal submission process.
- Review requests for proposals to assist with funding agency requirements.
- Present suggestions for project design.
- Develop budgets.
- Coordinate subcontract processes.

OER Services Provided (Continued)

- Assess cost-sharing requests.
- Provide feedback on proposal drafts when sufficient time is allotted by PI.
- Prepare supplemental materials and boilerplate text.
- Provide editing, proofreading, and formatting services.
- Perform UFIRST uploads.
- Assure funding agency forms are completed accurately.
- Serve as liaison with various university offices (e.g., Division of Sponsored Programs, Contracts and Grants, Graduate School, Institutional Review Board, Provost's Office).

Some Take-Home Messages

- Form meaningful partnerships.
- Start planning WAY earlier than you think for the BI initiatives. Your partners need time to get onboard.
- Start co-developing your BI plans as you envision your research project.
- Plan a suite of BI initiatives. Weave them into a cohesive plan.
- Show continuity between BI and IM sections of your proposals, demonstrating you have thought about how the research plan and BI are intricately linked.
- Understand who your audience is.
- Don’t try to do everything; think of those activities that make sense and align with your project goals.

Some Take-Home Messages (Continued)

- How will you demonstrate success with your plan (evaluation)?
- Broadening participation is fundamentally important.
- Find your communication officers and get to know them. Ask about press releases, ask about promotion on social media, ask about their contacts with good science writers and other journalists.
- Get your social media plan in order. Increase your social presence to share your project.

Source:

MacFadden, B. J. (2020, May 27). *NSF's broader impacts 101*. Presented at the University of Florida Grant Workshop: Writing Broader Impacts for NSF Proposals, Gainesville, FL.

Reed, D. (2020, May 27). *How to find partners*. Presented at the University of Florida Grant Workshop: Writing Broader Impacts for NSF Proposals, Gainesville, FL.

Q&A

Save the Date

- The next OER Seminar Series 2020 will be held Wednesday, September 9, 2020 from 2:00 p.m. – 3:00 p.m.
- The discussion topic will be Tenure & Promotion.