

Research Development & Grant Writing News

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As new faculty arrive on campus, learning how to write a successful research proposal will be a critical skill to master. Our eBook "[New Faculty Guide to Competing for Research Funding](#)" provides an invaluable tool to assist faculty in this process, or as a foundation used by research offices developing grantwriting workshops to help new faculty write more competitive proposals.

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Multidisciplinary University Research Initiative (MURI)

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By [Mike Cronan](#), co-publisher

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The [MURI program](#) supports [basic research](#) conducted in university science and engineering programs that potentially matches the research interests of the DoD. The program is ***focused on multidisciplinary research*** efforts in which multiple traditional disciplines interact to provide rapid advances in scientific areas of interest to the DoD. The DoD defines basic research” as “systematic study directed toward greater knowledge or understanding of the ***fundamental aspects of phenomena*** and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress.”

MURI supports the research of ***investigator teams whose backgrounds intersect multiple traditional science and engineering disciplines*** in order to accelerate research progress. The awards will be made by the Army Research Office (ARO), the Office of Naval Research (ONR), and the Air Force Office of Scientific Research (AFOSR), and are subject to successful negotiation between the institution and DoD. MURI awards provide greater ***sustained support for the education and training of students pursuing advanced degrees in science and engineering fields critical to DoD.***

For the 2012 fiscal year, DoD (ARO, ONR, AFOSR) awarded [23 MURI](#) projects involving 63 universities with a total of \$155 million over 5 years. The 21 eligible research topic areas received 251 white papers, which were followed by 78 proposals and 23 awards. Each MURI award will typically be directed to a team of 3 to 8 members. Grants made under the program are unclassified.

MURIs are highly competitive basic research grants through which multiple disciplines interact to provide rapid advances in scientific areas of interest to the DoD. In deciding whether or not to submit a MURI for the FY 2013 competition, keep in mind that the selection process itself starts with submitting a 4-page white paper **due October 9**. This is not a particularly onerous task and likely worth the investment if you feel you have a competitive idea that fits one of the 23 eligible research topic areas for FY2013. By contrast, the project narrative for the full proposal (**due December 10**) runs at 25 pages. The total amount of funding for 5 years available for grants resulting from the FY2013 MURI is estimated to be about \$250 million dollars, with awards funded at \$1M- \$2.5M per year.

The MURI proposal submission process occurs in two stages. You are encouraged to submit a white paper to minimize the labor and cost associated with producing a detailed full proposal with very little chance of being selected for funding. Based on an assessment of your white paper, the responsible Research Topic Chief will provide you an informal notification **to encourage or discourage your submission of a full proposal**. However, you may submit a full proposal even if your white paper was not identified as being of “particular value.” The initial evaluation of the white papers should give you some indication, *i.e., serious pause*, of whether or not a full proposal would likely result in an award, particularly in cases where your white

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paper was judged to be of “no particular value” and you were discouraged from submitting by the Topic Chief.

The white paper should provide sufficient information on the research being proposed (e.g., hypothesis, theories, concepts, approaches, data measurements and analysis, etc.) to allow for an assessment by a technical expert. White papers need not carry official institutional signatures. **The assessment of the MURI white paper will focus on (1) scientific and technical merits of the research, (2) potential for the research to significantly advance fundamental understanding in the topic area, and (3) potential DoD interest**, although other criteria described in the [64-page MURI solicitation](#) may also be used in making the assessment.

The assessment criteria will significantly influence how you organize and write a MURI white paper. Your success in writing this 4-page white paper will largely be determined by how successfully you use the characteristics of what constitutes good and persuasive writing to make your case—clear, concise, brief, and with sufficient detail and specificity to demonstrate the significance of your research and its contribution to one of the eligible topic areas. Of course, as always, **a well-written white paper presupposes a competitive idea** that addresses one of the 23 MURI research topic areas listed below. **However, good ideas are frequently disguised by poorly structured white papers; therefore, expect to create multiple iterations of this brief document that, over time, will sharpen its focus and create an increasingly concise statement of your idea. Writing multiple drafts contains the key to a white paper’s success.**

When writing a white paper, keep in mind Mark Twain’s comment in a letter to a friend, “if I had had more time I would have written you a shorter letter.” White papers are often a critical first step in establishing your competitiveness at funding agencies and they leave no room for the common Achilles Heels of inflated writing, ambiguity, and lack of clarity. One way to think about a well-written white paper is to view it as a mathematician might view an elegant proof—succinct, based on new and original ideas, and giving value-added benefits to other problems in the research field.

It is important to note that the **MURI Program is a basic research program**. In order to be considered for funding, white papers and full proposals, are **therefore required to be of a basic, rather than applied or advanced technological nature**. Note that basic research under MURI includes “scientific study and experimentation directed toward **increasing fundamental knowledge** and understanding” while, by contrast, applied research at DoD agencies asks for “the development of useful materials, devices, and systems or methods,” and “the design, development, and improvement of prototypes and new processes to meet general mission requirements.”

Finally, significant changes in funding and researcher team sizes have been made in this current MURI BAA. Therefore, in considering a MURI white paper, look at the expanded description of the below topic areas in the [64-page MURI solicitation](#), particularly noting the anticipated funding available for each research topic area and the likely total number of researchers to be supported under each of the topic areas.

White papers and full proposals addressing the following topics 1 through 8 should be submitted to the Army Research Office (ARO):

1. Artificial Cells for Novel Synthetic Biology Chassis

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2. Molecular Co-Crystal Design and Synthesis
3. Reduced Cyber-system Signature Observability by Intelligent and Stochastic Adaptation
4. Non-equilibrium Many-body Dynamics
5. Materials with Spin Mediated Thermal Properties
6. Transforming Information within Nonequilibrium Nanosystems
7. Controlling Collective Phenomena in Complex Networks
8. Physiochemical Determinants of Cognition and Decision Making

White papers and Full proposals addressing the following topics 9 through 15 should be submitted to the Air Force Office of Scientific Research (AFOSR):

9. Measurement and Verification Methods in Quantum Information Science
10. New Quantum Phases of Matter
11. Multiphysics and Multiscale Failure Prediction through Peridynamic Theory
12. Electrochemical Dynamics in Nanoscale Systems
13. A New Paradigm in Sources and Physics of High-Power Ionospheric Modification
14. Magneto-electric Energy Conversion Materials: Terahertz Emission and Efficient Energy Conversion in Unbiased Dielectrics
15. Photonic Synthetic Matter

White papers and full proposals addressing the following topics 16 through 23 should be submitted to The Office of Naval Research:

16. Random Lasers, Nano-spasers and Optical Rogue Waves
17. Free Space Optical Quantum Key Distribution (QKD)
18. Integrated Nanophotonics
19. Exploitation of Natural and Anthropogenic Noise for Ocean Exploration
20. Rare Element Replacement Strategies
21. Acoustic Metamaterials
22. Cognitive Neuroscience of Memory Consolidation across Sleep Stages and Efficient Learning
23. Computational Foundations of Moral Cognition

The Value of Institutional Transformation Proposals

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By [Mike Cronan](#), co-publisher

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Institutional transformation proposals of various types are often collaborative efforts involving faculty, administrators, and professional staff at the department, college, university, or system level. The PI may be a distinguished professor, associate dean, or associate provost with the acknowledged experience, expertise, and respect to lead an effort requiring institutional transformation. The transformation typically aligns with a strategic plan or institutional advancement mission already in place or in development.

For example, the NSF [ADVANCE](#), [LSAMP](#), and [AGEP](#) programs, among many similar cross-cutting programs at NSF, and to a lesser extent at other agencies and foundations (e.g. NIH [Bridges to Baccalaureate](#) and [Bridges to Doctorate](#); [Ford Foundation Diversity Fellowships](#)), advance the institutional mission in some way, such as by changing the culture, programmatic configurations, and/or operational strategies focused on a key institutional goal. The three cited NSF programs all have due dates, either for a letter of intent or full proposal, this October, and are likely well underway at many universities by now.

Institutional transformation grants offer challenges to those who plan, develop, and write them, and typically require university-wide coordination among many participants, some of whom may and others of whom may not have, experience writing complex grants to federal agencies. Nevertheless, these grants are worth pursuing as they offer many advantages, chief among them that they can be woven into university strategic research planning efforts allowing, over time, for a coalescence of institutional expertise in various competitive configurations. These new configurations will, in turn, enable long-term success in obtaining external funding to support institutional goals.

Moreover, institutional transformation grants and other grants advancing such common university goals as undergraduate research, graduate training, diversity, international research experiences, and innovation,, have the potential to form an institutional capabilities matrix of expertise, experience, and success that can play an important role in large research center proposals to federal agencies.

For example, those currently writing an AGEPE proposal due this October 30 will have already identified (hopefully) highly qualified social science researchers. These faculty will ensure (1) that the activities proposed will increase the number of underrepresented minorities entering and completing STEM graduate education, as well as advancing to the professoriate; and (2) that the plan for this advancement will be based on and justified by relevant social science and education research. The current solicitation requires that the social science researcher write a five-page social science research component for studying the project to be included in the submittal as a supplemental document .

Those who develop competitive, well reviewed (even if not funded) AGEPE proposals using evidence-based research to support the configuration of programmatic activities will have put in place a very valuable institutional capacity for integrating social science research into institutional transformation efforts. This effort will provide their institution with a competitive

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advantage on future grants. For example, a model developed for AGEP might be adopted or adapted for the graduate training component of a research center grant. Keep in mind, also, that institutional transformation grants, as well as research center grants, are most often awarded following a history of focused persistence, whereby researchers reconsider and rewrite declined grants in response to reviewer comments, and then resubmit them, often several times.

Hence, researchers can realize a significant value over time by competing for institutional transformation grants, particularly when they recognize that success most often meets these efforts after several revisions of the original document.. The value of competing for institutional transformation grants of various kinds and scales comes from many factors:

- a base of experience and expertise is established among institutional participants that becomes increasingly competitive over time,
- team members are identified and tested during the development and writing of proposals and can be reconfigured for future efforts,
- experience is gained in addressing the core, and often common, topics that are addressed in transformation grants,
- research and educational models contextually embedded in the institution can be tested and evaluated, as well as reviewed by agency program officers and reviewers when proposals are submitted,
- key institutional support data can be identified, and, when essential data are lacking, they can be supplied,
- the social and behavioral sciences can be integrated with STEM disciplines for evidence-based activities in a way that helps develop competitive, institutionally-based models adaptable for future efforts,
- fluency in competitive arguments that advance institutional transformation can be enhanced
- proposal development and writing activities can be continuously refined and improved, and
- a core of faculty, faculty administrators, and research and proposal development professionals will accrue a competitive advantage based on their experience in planning, developing, and implementing highly effective components of institutional transformation that will enhance the institution's overall competitiveness at federal agencies and foundations.

Finally, institutional transformation grants are increasing common, not only at NSF but at other federal agencies and foundations as well. To be competitive and successful, these grants benefit significantly from a core team representing the institutional capacity and expertise needed to compete successfully. Moreover, the best way to learn how to write successful grants is to plan, develop, and write more grants and learn from the process. Institutional transformation grants, like large center grants, are most often won after several submittals, whereby each effort significantly improves after undergoing a rigorous review process and subsequent resubmittal. Success in grant writing is a learned skill and the best way

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to learn it is by doing it, a process of particular importance and value on grants that require an integrated team effort, such as the effort required by institutional transformation grants.

Too Much Data?

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By [Mike Cronan](#), co-publisher

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Winston Churchill was once asked during the Cold War why he refused to fund additional nuclear weapons to increase the British stockpile. He replied that their only purpose “would be to make the rubble bounce.” Similarly, the successful proposal relies on knowing the difference between sufficient and excessive information to ensure the wise use of allocated space and an appropriately balanced project narrative. For example, knowing how much background information-- technical detail, preliminary data, etc.--will satisfy your readers is a key factor in writing a well-balanced proposal narrative. Finding this level is not always an easy task.

This is particularly the case when writing an institutional proposal of the type discussed in the companion article in this newsletter (*Value of Institutional Transformation Proposals*). These types of proposals, in particular, can lend themselves to data excess with the result that the proposal ends up looking more like an Excel document than a Word document. Sometimes the project narrative can be distorted by a blizzard of data used to substitute for a clear sense of precisely those data needed to best support a specific argument. But blizzards will not convince reviewers to fund the proposal.

Finding the right amount of data is somewhat like the trial and error test used by pasta chefs that gave rise to the expression “throw it against the wall and see if it sticks” to determine whether pasta is done. The tactic of throwing excessive data at a proposal narrative assumes that, if you throw all the data you have at reviewers, then surely something will stick,, convincing them to recommend your proposal for funding. This is not a good bet. If the author of a proposal does not clearly know why some data are important to include and other data are not, then it is wishful thinking to assume the reviewers will take on this responsibility.

Excessive data in a proposal often appear when the solicitation leaves it up to the proposal author to select those data needed to make a case for funding rather than specifying which data do and do not need to be included. Of course, when solicitations are highly prescriptive about which data the agency wants to see in the proposal, then the task is fairly straightforward, at least it is if some office at your university actually gathers and keeps the required data in a usable format. In the case of institutional transformation proposals, the solicitation may require some specific core data, but leave the inclusion of most other data up to the principal investigators. Of course this forces you to think very carefully about which data you actually need to make your case. They may be fairly extensive, but they may not, depending on the proposed programmatic activities.

For example, it is often the case in institutional transformation proposals, as well in research center grants that may include institutional transformation components, that the data used to support your arguments are self selected (as opposed to agency prescribed) based on the programmatic activities you propose and such supporting factors as your success in past efforts that demonstrate your capacity to perform. However, keep in mind that institutional and programmatic performance data or research data are used to support arguments you make

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in the project narrative specific to what you will do, why you will do it, why it is significant, its value-added contribution to the field, and why your past performance and expertise will contribute to the proposed project. Supporting data need to be tightly aligned and focused on your research goals and objectives to make the case to program officers and reviewers that your proposal merits funding. Just as you would not make arguments in your project narrative that do not clearly advance your case for funding, it is equally important that you exclude data irrelevant to the goals and objectives you describe. Unfortunately, researchers are often tempted to add more rather than less data.

It is important to be mindful of reviewers' reluctance to sift through extensive data to determine the merit of your proposed project. That is not their job. It is the job of the author, however, to explain the significance of any data used in a narrative in the most economical way possible. A blizzard of data is likely to give reviewers a "brain freeze," along with heartburn. Proposals are about ideas, and data need to be judiciously selected to support the merit of the ideas described in the narrative. ***But data in and of themselves are not ideas.*** Rather, your narrative needs to explain and illuminate the significant patterns in the data you present rather than push that task onto reviewers. In a sense, project data can be thought of as three-dimensional coordinates that more precisely characterize your position than would be possible otherwise.

In this way, project data complement the narrative text and visuals. But be judicious in the use of data. Consider when data are best woven into the narrative arguments and when they are best presented in tables or other representational formats, such as bar charts. Too much data presented in the narrative text can quickly make it dense and impenetrable. The point of using data is to numerically illuminate and support your arguments, not to send reviewers in search of an Enigma machine to decode your narrative.

In your final review of a proposal before submittal, examine the narrative for verbosity and any lack of proportional balance in its allocation of space. This also applies to data.

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Training Topic: NSF GRF and Ford Foundation Fellowships

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By [Mike Cronan](#), co-publisher

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A training workshop for advanced undergraduates and graduate students focused on providing information about national graduate fellowships, competitive strategies for completing fellowship applications, and engaging faculty mentors is a productive way to make students aware of fellowship opportunities while teaching them the skills needed to write a competitive application. In many cases, what the sponsors describe as an application to be developed during the workshop is really the equivalent of a small proposal that will encourage the students to develop grant-writing skills.

A well-structured graduate fellowship training workshop can serve as an important introduction to the craft of writing proposals, a skill that will serve students well in any future research career. Many of the national graduate fellowship and related doctoral dissertation fellowship applications, when viewed as small proposals whose success depends upon following the same competitive strategies and grant-writing techniques required for success on a faculty research proposal, provide potential training opportunities for students with multiple benefits, both specific to the application and as a generic introduction to research grant writing.

An important distinction to keep in mind is that the training workshop for graduate fellowships of the type addressed here will focus on fellowships for which the students applies directly and, if successful, receives the award personally. This fellowship is usually portable, i.e., not linked to attendance at any particular university. By contrast, other common programs that fund fellowships awards are made to an institution through a PI that applies and awards the fellowships under criteria defined in the proposal, for example, in the case of the NSF IGERT or the DoED Graduate Assistance in Areas of National Need.

Two upcoming fellowship opportunities provide excellent training case studies that can assist advanced undergraduates and graduate students in learning the competitive strategies and grant-writing skills needed to compete nationally for fellowship and dissertation awards: the NSF [Graduate Research Fellowships](#) and the [Ford Foundation Fellowship Program](#).

As is the case in all successful grant writing, most of the competitive strategies and grant-writing skills needed to succeed at federal agencies and foundations are generic rather than program specific. In this instance, a training workshop to help students compete for the NSF or Ford fellowships will address the key strategic and grant-writing skills needed to apply for many similar fellowships that differ mostly by the specificity of the individual program process, e.g., eligibility, due dates, disciplinary requirements, etc.

For example, the National Defense Science and Engineering Graduate ([NDSEG](#)) Fellowship program, with applications due between September 1 and December 14, is a disciplinary complement to the NSF Graduate Research Fellowship, and students often apply for both. The Department of Energy [Computational Science Graduate Fellowship](#) (DOE CSGF) is another similar program. Moreover, several national fellowship databases have exhaustive listings of graduate fellowships and doctoral dissertation fellowships, including the UCLA Graduate & Postdoctoral Extramural Support ([GRAPES](#)) Database, [Cornell Fellowships](#)

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[Database](#), [Michigan State University Graduate Fellowships Database](#), [Duke Humanities & Social Science Fellowships](#), and [Externally Funded Fellowships, University of Texas, Arlington](#)

The NSF [Graduate Research Fellowships](#) applications have multiple due dates in November (Nov. 13-19) depending on program area. Over 2,000 fellowships will be awarded under the current competition. Success in this effort will significantly contribute to advancing the recipients' educational and career goals. However, while applicants will likely have a track record of success in academics and mentored research experiences, the key critical skill often lacking in this process is the knowledge needed to structure and write a competitive application, which is essentially a small proposal. Of course, this skill will also be important to all graduates who go on for advanced degrees and enter faculty positions with research expectations for promotion and tenure.

Through its Fellowship Programs, the [Ford Foundation](#) seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education of all students. The Ford Foundation offers three types of awards: [predoctoral](#), [dissertation](#), or [postdoctoral](#). These applications are due November 14 and 19, by fellowship type.

In many cases, ***the first important training task is to make students aware of fellowship opportunities*** in a coordinated and focused way sufficiently ahead of the due dates to allow them to learn some basic skills related to competitive application/grant writing. It is important for students to know also that there is a very large universe of fellowships available beyond those funded by the hundreds or thousands, such as at NSF. Many agencies, foundations, associations, and the like fund a smaller number of fellowships across a spectrum of disciplinary areas. The same skills emphasized for students applying for NSF fellowships or Ford Foundation Fellowships will also give students a competitive advantage applying for any fellowship from any organization. These skills are largely generic rather than fellowship specific.

The second key topic that needs to be addressed in any fellowship training workshop is to guide students on the close, and repeated, reading, or explication, of the fellowship solicitation. Just as in a solicitation for a research program, a close, thorough, and ***repeated*** reading of the fellowship application announcement is the critical first step towards success. For these purposes, using the NSF GRF as an example or model solicitation provides an excellent way to engage the students in the process of learning the importance of explicating the solicitation.

For example, students must understand the fellowship eligibility requirements, role of faculty mentors, required letters of reference, and required fellowships essays, likely addressing such topics as a personal statement ([advice link here](#) and at [Purdue Owl](#)), previous research experience, and proposed plan of research. Students must also understand how their application will be reviewed and the review criteria by which their application will be judged. In the case of the NSF GRF, the student's application must address that agency's two overarching review criteria: intellectual merit and broader impacts, both of which will need to be explained to students in detail, since even experienced researchers sometimes struggle with understanding the broader impacts criterion. Moreover, in this regard, it is important to point

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out that when a fellowship application or solicitation is not well understood, asking for help from a graduate advisor, faculty mentor, research development office, or fellowship program officer is key to success.

A third key training topic to be addressed in a fellowship training workshop is the importance of students having a faculty mentor to help guide the application process. One key competitive factor in many fellowship applications is the research experience of the applicant gained under a faculty mentor. Therefore, it is important to engage current or prior mentors whenever possible in the application process.

A fourth key training topic to be addressed relates to the strategies, tactics, and writing skills needed to develop a compelling and convincing personal research statement, including finding readers to critique fellowship applications. Students can develop much more competitive applications if they are given guidance on the mechanics of writing a successful application and have the opportunity to show draft versions of the application to an experienced researcher, such as a mentor, or to professional staff in a research office, who can help critique narrative portions of the application. Moreover, engaging recipients of past fellowship awards on your campus in the process of helping new applicants will often result in better applications.

Helpful Training Resources: Preparing A Competitive Fellowship Application

The **Fellowships Office of the National Research Council** is often made aware of other sources that provide assistance with preparing competitive applications for national fellowship competitions, such as the Ford Foundation Fellowships. Fellowship applicants have reported finding the following publications to be particularly helpful (reprinted with permission; all in .pdf format):

- [*Preparing a Successful Fellowship or Grant Application*](#)

by **Ernesto Chávez, Miroslava Chávez-García and Luis Alvarez**; as published in the August 2009 newsletter of the Organization of American Historians

- [*Scholarly Pursuits: A Guide to Professional Development During the Graduate Years*](#)
(excerpt)

by **Cynthia Verba**; a publication of The Graduate School of Arts and Sciences, Harvard University

- [*How to Win a Graduate Fellowship*](#)

by **Michael Kiparsky**; Chronicle Careers, The Chronicle of Higher Education

- [*Suggestions for Personal Statement*](#)

Fellowships Office, National Research Council of the National Academies

- [*How to Prepare for Prestigious National Scholarships*](#)

University Honors College, Office of National Scholarships and International Education, New Mexico State University

Other Training Resources and Advice on Writing Fellowship Proposals

[Writing Fellowship and Grant Proposals](#), UCLA Writing Center

[Guide to Proposal Development in the Humanities For Graduate Students](#)

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Hall Center, Humanities Grant Development Office, The University of Kansas

[Writing Proposals for ACLS Fellowship Competitions](#)

Christina M. Gillis, American Council of Learned Societies

[Fellowship Personal Statements and Essays](#)

Worcester Polytechnic Institute

[Grant-Writing Tips for Graduate Students](#), The Chronicle Of Higher Education

By Lisa Patrick Bentley, a National Science Foundation postdoctoral fellow in bioinformatics at the University of Arizona's department of ecology and evolutionary biology.

[Developing Graduate Fellowship Proposals, A Guide for Students](#)

By Colgate University

[Writing and Presenting Your Thesis or Dissertation](#)

S. Joseph Levine, Ph.D., Michigan State University

[Dissertation Proposal Resources](#), University of California, Berkeley, IIS

Writing research and grant proposals is one of the most difficult -- and unavoidable -- requirements of graduate study in the social sciences. When it comes time to write them, however, many graduate students feel left to their own devices. This website is designed to help you navigate the hazards this process entails. This site comprises a collection of tips, samples, and links. It is not meant as a class, nor a substitute for feedback from colleagues and advisors. It is merely an amiable guide meant to help you through an important phase in your academic career. Although biased in favor of "area studies" specialists and those planning to spend extended periods overseas, the content of this workshop is intended to be useful for all students hoping to conduct empirical social-scientific fieldwork.

[UNC-Chapel Hill's Writing Center](#)

A handout provided by to help graduate students write and revise grant proposals for research funding in all academic disciplines.

[Preparing a Successful Fellowship or Grant Application](#)

Ernesto Chávez, Miroslava Chávez-García and Luis Alvarez

[Organization of American Historians.](#)

[Writing the Personal Statement](#)

[Tips on Writing Grant/Fellowship Proposals \(and other Research Proposals\)](#)

National Fellowship Databases

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[About GRAPES](#)

The GRAPES database catalogs extramural funding opportunities of interest to prospective and current graduate students, students working on a master's thesis or doctoral dissertation, and postdoctoral scholars. It contains information on over 500 private and publicly-funded awards, fellowships, and internships. Advanced search options allow users to refine their search by field, academic level, award type, award amount, and other criteria. GRAPES is maintained by the Graduate Outreach, Diversity and Fellowships Office, UCLA. **Access the database through the [GRAPES Search Form](#).**

[Cornell Fellowships Database](#)

[Michigan State University Graduate Fellowships Database](#)

[Duke Humanities & Social Science Fellowships](#) and Grants for Graduate and Professional Students.

[Externally Funded Fellowships, University of Texas, Arlington](#)

[National Postdoctoral Association](#)

Headquartered at AAAS; an independent voice for postdocs.

Why Halloween Is Bad for Proposals, Part 6

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By [Mike Cronan](#), co-publisher

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There are many scary Halloween costumes you might *inadvertently* wear to mask the identity of the research idea put forward in your proposal, and unfortunately, any one of them will result in more tricks than treats when it comes to the success of your grant. Of course, ***the premise here assumes that a fundable idea lies cloaked beneath a number of correctable grant-writing mistakes identified sufficiently before the due date to allow for their correction.*** Unlike Halloween, when scary costumes earn treats, program officers and reviewers will not reward ideas cloaked in ghoulish disguises. Unfortunately, a number of all too common scary costumes can so successfully ***disguise a potentially fundable idea that the idea becomes unrecognizable to the reviewers.*** To avoid spooking reviewers, don't submit your proposal cloaked or masked, or wearing one of the more common scary costumes guaranteed to horrify, as addressed in the below ***examples of possible proposal disguises.***

The “Why Should I Bother to Write a Budget Justification” Mask

It is wise to treat the budget justification section of the proposal as an opportunity to write a more competitive proposal rather than as an inconvenient boilerplate disconnected from the project description. Whether through inattention or disregard, a poorly written description of the budget justification unlinked to the research narrative risks missing an opportunity to give additional detail and specificity about the operational and management structure of the project, or other factors unique to your proposal.

At the core of a successful proposal must lie a good idea that reviewers judge to be significant, compelling, and meritorious for funding. But it is also the case that your success will depend upon convincing program officers and reviewers that you have the operational and management expertise to manage a research award wisely and successfully over several years or longer, particularly a major award that may involve multiple researchers, post docs, and graduate students, along with other possible program components aligned with the research objectives.

A funded award, after all, represents a major, strategic investment by a research agency in your capacity to perform. Of course, your case for funding is made in the project description in various sections, including in the management and operations sections. However, the budget justification section allows you additional space to explain the budget request at a level of detail that space constraints in the project description may prohibit. In this respect, the budget justification section serves as a functional bridge between the project narrative and the raw budget numbers. It is a place where narrative text and budget numbers may be joined to give reviewers a clearer and deeper understanding of the operational logic of your proposed research and how it will be accomplished using the sponsor's money.

While the format and content of the budget justification section will vary by agency, and often by program and program size within an agency, it is another important factor in the success of your proposal (if it is a specified component of the solicitation) and, as such, should

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be approached by the proposal writing team to ensure that it will serve as an illuminating complement to the project description. After all, successful proposals are the sum of an accumulation of marginal advantages, as economists might describe it, whereby every required component of a proposal is brought as close to perfection as possible, recognizing that the aggregate of these factors cumulatively determines the outcome. Failing to give the budget justification section of a proposal the attention it deserves squanders an opportunity to gain further competitive advantage and hence a funded proposal.

The Freddy Krueger Mask

In the seemingly endless series of Freddy Krueger movies beginning with *Nightmare on Elm Street*, the victims all have recurring nightmares and die in their sleep. Program officers and reviewers might also welcome this fate when the “Freddy Krueger Proposal” is submitted to their agency for review with every indication that it has come to them by a circuitous route of prior ***serial rejections by other research agencies***. Some of the most egregious examples of horror stories recounted by program officers and reviewers include having to read proposals containing obvious artifacts of prior submittals, such as instances in which a project timeline or most of the research narrative has been clearly copied and pasted into the current proposal from a prior proposal, occasionally so hurriedly as to incorrectly identify the agency to which the “perennial proposal” is currently being submitted.

But even if the most obvious tell-tale signs of a recycled proposal are deleted from the most current resurrection, most reviewers and other readers will quickly recognize other “crime scene” evidence indicating that the proposal’s author is attempting the grant-writing equivalent of “speed dating” funding agencies, perhaps using the same logic that people use in buying lottery tickets. It is fairly easy to recognize when a proposal does not respond to the specific solicitation to which it is being submitted, perhaps because the authors assume such a greatness in the proposed ideas that program officers and reviewers will not care, or eagerly overlook, the fact they are not relevant to the agency mission priorities. Or perhaps authors of recycled proposals assume that all research funding agencies and their programs are fungible, and so a proposal submitted in the past to one of the defense agencies can be tweaked a bit and submitted for an NSF CAREER award.

Unfortunately, the Freddy Krueger Mask is scalable, as the PI’s of large research proposals have likely learned. PI’s should take note when a potential research team member provides an “off the shelf” narrative contribution that has likely been inserted in many past efforts.

The Achilles Heel of recycled proposals is that they ignore the basics of successful grant writing; specifically, they forget that competitive proposals must contain competitive ideas that respond clearly to the funding agency’s mission priorities or other research objectives defined in the solicitation. Recycled proposals are destined for rejection. Before trying to recycle an old proposal for a new program, it would be wise to heed U.S. House Speaker Sam Rayburn’s observation that “there is no education in the second kick of the mule.” A recycled proposal is most likely to have suffered a series of “mule kicks” by reviewers in the past, and this should be taken to heart for future efforts.

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Bottom line: if you are proposing new research ideas, express the significance of those new ideas, and all topic components of them, in newly-crafted writing for every word of the proposal narrative. Success in proposal writing will not be achieved using recycled parts—successful proposals are not renovations of the past but a creation for the future, together with the compelling arguments you make for the place and significance of your research ideas in that future.

The “I am a Researcher not a Wordsmith” Mask

Mark Twain once stated that he never trusted a person who could only spell a word one way. Unfortunately, Mark Twain will not be reviewing your proposal, but rather program officers and reviewers who may not be amused by errors in spelling, grammar, and punctuation, and the resultant ambiguities they create. When it comes to the mechanics of writing a research proposal, it is prudent to assume a level of perfection in grammar, spelling, and usage equivalent to that of writing a computer program with zero tolerance for coding errors.

While one or perhaps two errors in a major proposal may be tolerated by reviewers, or escape notice, anything more than that will likely draw attention, and not of a positive kind. Reviewers will likely assume, and justifiably so, that sloppy errors in language and usage will translate into sloppy errors in research. Unfortunately, there is no equivalent concept in grant writing to the “Navaho rug flaw,” whereby a purposeful imperfection is woven into a wool rug or blanket to allow evil spirits the opportunity to exit the design.

The last comment you want to read in your reviews is that the proposal was poorly written and contained numerous typos, or was in need of wordsmithing. Reviewers will occasionally comment on how well the research narrative was written, or how poorly it was written. But reviewers rarely recommend funding for poorly written proposals. Fortunately, errors of grammar, usage, and spelling are correctable by taking the time to closely proofread your narrative, or, better yet, by getting a fresh set of eyes on the proposal by an experienced editor.

Writing the NSF I/URC

The I/UCRC program is a long-standing program at NSF that is very different from most grant programs.

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By Lucy Deckard, co-publisher

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NSF's [Industry/University Cooperative for Research Centers \(I/UCRC\)](#) program, funded jointly by the [Directorate for Engineering](#) and the Directorate for [Computer & Information Science and Engineering](#), and administered by the [Division of Industrial Innovation and Partnerships](#), is unlike most standard NSF grant programs because NSF provides only a small amount of the funding for the Centers. Most of the funding comes from industry partners who are recruited by each Center. This can be discouraging to researchers who are simply looking for a grant to fund their research, but an I/UCRC grant can play an important role in a larger strategic approach to develop industry collaborations and build infrastructure to support a strong research area at your institution. An I/UCRC can help bring in more grant funding and lay the foundation for other Center-level funding such as an NSF [Engineering Research Center](#) grant. However, pursuing an I/UCRC grant requires extensive planning, so now is a good time to get started if you plan to pursue I/UCRC funding next year.

The I/UCRC Program

The goal of the I/UCRC program is to promote partnerships among university researchers, industry, and government in order to enhance the country's research infrastructure base, promote research at universities that is of interest to industry, and help train students. The program also helps fund international collaborations where appropriate. The Center typically includes more than one university with strengths in a particular research topic (a topic cannot be the focus of more than one I/UCRC) and a number of industry members who pay membership fees at various levels, which then provide funding for research projects of interest to the members. The industry members play a role in selecting research projects to fund and share access to intellectual property resulting from the research.

NSF sees the funds provided by the I/UCRC grant as seed funding to provide support for Center infrastructure and operations, with the lion's share of funding coming from industry members. Funding for I/UCRCs is provided in phases and is tied to income from industry members that the Center has been able to attract as follows (unless otherwise stated, amounts are for multi-university centers, which are preferred by NSF):

Phase I – First 5 years of the Center:

- Up to \$60K per year for Centers with \$150K - \$300K annual industry membership income
- Up to \$80K per year for Centers with \$300K or more industry membership income
- For single-university Centers, up to \$80K per year for \$400K or more industry memberships

Phase II – Second 5 years of the Center:

- \$40K per year for Centers with \$175K - \$350K industry membership income

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- \$60K per year for Centers with over \$350K industry membership income
- For single-university Centers, \$60K for Centers with over \$400K industry membership income

Phase III – Third 5 years of the Center:

- \$15K per year for Centers with over \$175K annual industry members income

In addition, lead institutions in multi-university Centers receive an additional:

- \$10K per year in Phase I and II for each added institution in the center to help cover **administrative costs**. In Phase III, it receives a flat \$25K for administrative costs.
- \$20K in years 1 and 2 and \$10K in years 3 and 5 to support innovative center **operations and communications**.
- \$9K to \$21K to support an **evaluator**, depending on the number of sites and phase.

An I/UCRC may also receive a \$25K per year supplement for an **international site or collaboration** (all funds must be used by U.S. participants).

The I/UCRC program also provides targeted grants for specific I/UCRC activities, including

- [Collaborative Opportunity for Research Between I/UCRCs \(CORBI\)](#), which funds projects of mutual interest to multiple Centers (these used to be called TIE grants)
- [Fundamental Research Program for I/UCRCs \(FRP\)](#), which funds industry-defined fundamental research projects.

Planning and Writing Your I/UCRC Proposal

Just by reading the funding description above, it should be apparent that planning and writing an I/UCRC proposal is a complex undertaking. NSF has divided the proposal process into multiple stages:

- A required **Letter of Intent** for the planning grant (due the first Monday in January and the last Friday in June each year) – LOIs must specify the universities participating, the research thrust areas, and the potential industry members.
- The **Planning Grant** (due the first Tuesday in March and the last Friday in September each year) - \$11.5K per academic institution, plus an additional \$3K for an evaluator, for 12 months, which covers travel to the I/UCRC “boot camp” as well as activities required to work with potential Center members to identify 5 top research projects. The planning grant application must, in the **15-page Project Description**, describe the planned center (objectives, team, first-year deliverables, industrial relevance, etc.) as well as your planning strategy, arrangements for the planning meeting, and member recruitment plans. In the supplementary documents, you must include a center marketing plan, a staffing plan, and sample membership agreements.
- The **Full Proposal** (due the first Tuesday in March and the last Friday in September, annually) – The **30-page Project Description** requires a project overview, description of center structure and operations, and a research plan that describes envisioned research projects. **Supplementary documents** required include: a copy of the membership

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agreement, a list of participating center members and their letters of financial commitment, a list of collaborating additional institutions including international institutions if applicable, a list of key and participating individuals with diversity, institutional affiliation, etc., marketing plans, and more.

Clearly, NSF expects extensive thought and planning to go into these proposals. However, they do provide guidance and resources to help you in that planning process.

First, you'll need to make sure that your selected research focus is not already the focus of another I/UCRC (no more than a 10% overlap is allowed). Check the [I/UCRC Directory](#), which lists Centers by disciplinary field and provides links to each Center.

Second, your team will need to recruit potential industry members and assess industry relevance, potential impact, and expected interest for the research topic of your proposed Center. It's likely that the core of your proposed Center will be composed of researchers who already have extensive industry connections and have been funded by industry. The next step will be to explore with these industry collaborators their interest in expanding and formalizing these connections and to recruit new industrial partners. It will come as no surprise to anyone who has dealt with companies, and especially large corporations, that getting a commitment from them to pay for a Center membership will likely require a number of approvals up the administrative ladder and therefore will take a significant amount of time. NSF provides a number of resources to help you in this recruiting process on their [I/UCRC website](#) under "Industry Partners," including videos explaining the I/UCRC concept as well as sample membership agreements.

In parallel, you'll need to work with the office at your institution that deals with Intellectual Property (IP) issues, your other university partners, and your potential industry members to ensure that IP policies related to the research funded by the Center are acceptable to all parties. The [sample membership agreement](#) provided by NSF would be a good place to start. Depending on the policies and experience of the organizations involved, this may go very smoothly, or you may need some time to work out all the concerns related to IP, so it's important to start this conversation early.

Line up a program evaluator. There are a number of resources for I/UCRC evaluation on the North Carolina State University [I/UCRC evaluation website](#). You can also find a number of articles on I/UCRC best practices and evaluation authored or co-authored by [Dr. Denis Gray](#) at NCSU, who is Director of the I/UCRC Program Evaluation Project. In addition, you'll find a number of links related to [planning, implementing, and operating a Center here](#) (many of these resources focus on running your Planning Grant meeting and getting feedback on possible research projects from potential industry members).

As you go through the planning process, keep in mind the special review criteria for the planning grant, and later, for the full proposal. These are all listed near the end of the [I/UCRC solicitation](#). Effectively convincing reviewers that you can meet these criteria may require your team to bring in outside expertise, line up additional resources, and gather additional information. Below are a few that may be especially challenging (words were bolded by us for emphasis):

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- There is enough potential **university support**, faculty, and facilities involved to build a viable center.
- The planning study will effectively focus on the **research interests of an industry that is in a position to support the center**, so that it could meet the requirements to submit a center proposal.
- The center has an **effective marketing plan** to develop a strong contingent of firms and sufficient industry support to be successful and meet the I/UCRC criteria.
- The proposal requires **cross-disciplinary and cross-departmental** participation where appropriate to the research envisioned.
- For international collaborations, reviewers will consider: mutual benefits, **true intellectual collaboration** with the foreign partner(s), benefits to be realized from the expertise and specialized skills, facilities, sites and/or resources of the international counterpart, and **active research engagement of U. S. students and early-career researchers**, where such individuals are engaged in the research.

Remember also that later phase I/UCRCs will be judged on outcomes of the previous phase, including the number of members recruited, the number of graduate students graduated, and the number of patents generated. So as you structure your I/UCRC you'll want to ensure that these outcomes will be supported.

Why Should You Pursue an I/UCRC?

Increasingly, federal funding agencies are emphasizing the importance of collaborations between university researchers and industry. The level and quality of these collaborations have become important criteria for a number of grants, including the NSF Engineering Research Centers (ERC) program. These relationships can't be forged in the few months before an ERC or IGERT proposal is submitted; they need to be developed over time to be convincing and meaningful. Having an I/UCRC will help you to develop the collaborations that you need in order to develop an area of research strength at your university to the level where you can be competitive for prestigious center-level grants.

In addition, as many faculty know, industry collaborators can be an extremely useful source of funding for research as well as educational opportunities for students. When research interests are well-aligned, obtaining funding from industry can be less frustrating and less time-intensive than competing for research grants from federal agencies. While industry funding is usually not suitable as the sole source of research funding, it can be a helpful complementary source. An I/UCRC can provide a platform to develop and deepen those collaborations, helping to bring in more industry funding to support research.

An I/UCRC can also help your faculty and students connect across disciplines and institutions. By including multiple universities and disciplines in your Center, you are providing another opportunity to forge collaborations and relationships across disciplinary and institutional lines.

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Research Grant Writing Web Resources

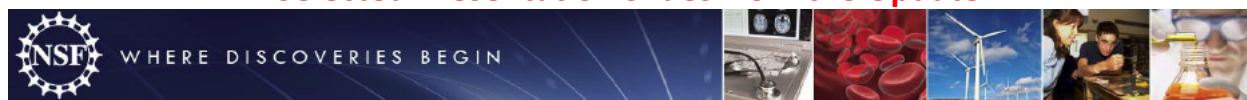
(Back to [Page 1](#))

[NORDP Research Development Resources](#)

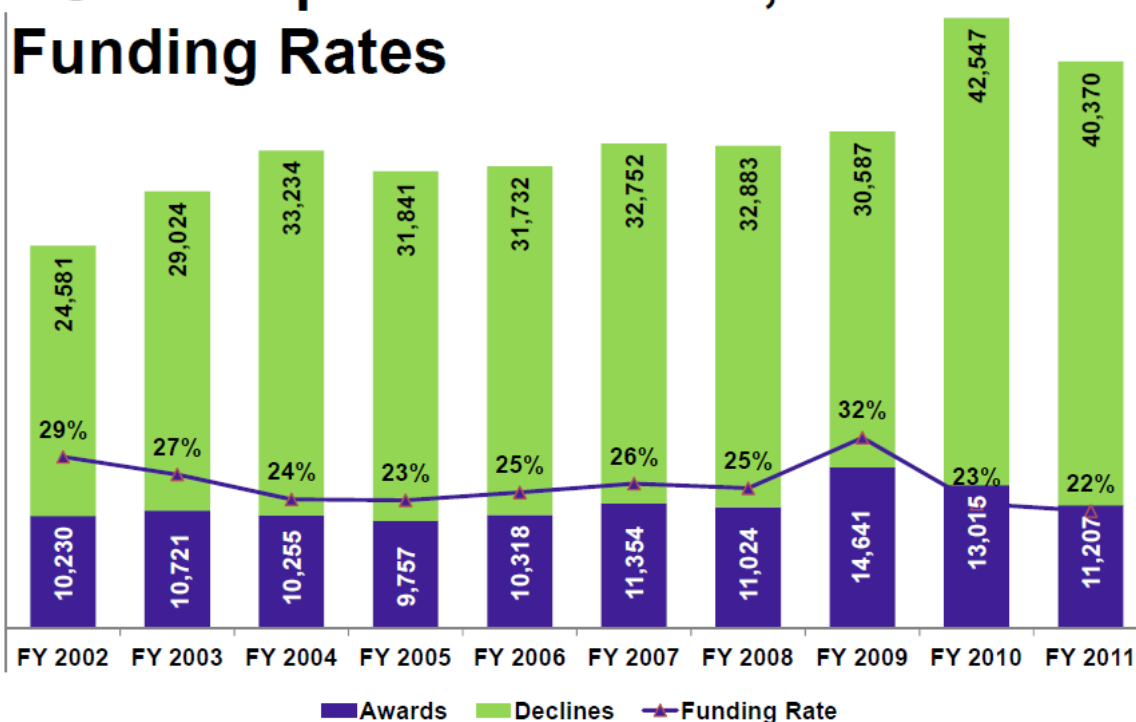
[National Science Foundation Update, Spring 2012](#)

- Personnel Update
- NSF Fiscal Year 2013 Budget Request
- NSF Budget in the Federal Context
- ARRA Acceleration
- Merit Review: Merit Review Criteria
- Merit Review Process
- Research.gov Update
- Award Terms and Conditions Update
- Cost Sharing Update
- Research Performance Progress Report

Selected Presentation Slides from the Update

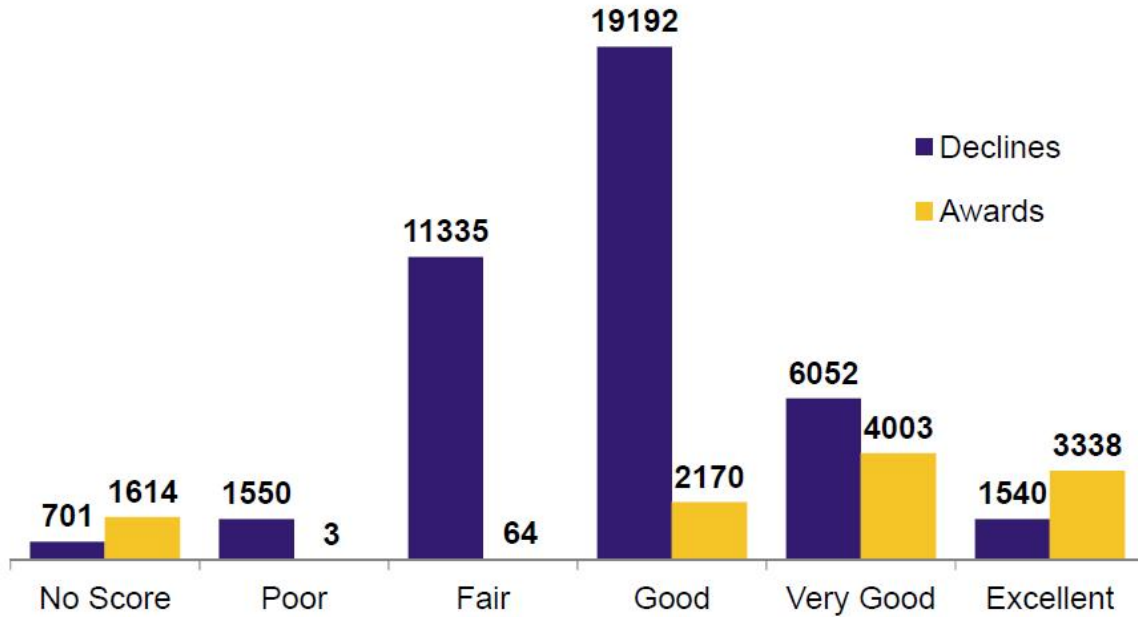


NSF Competitive Awards, Declines & Funding Rates





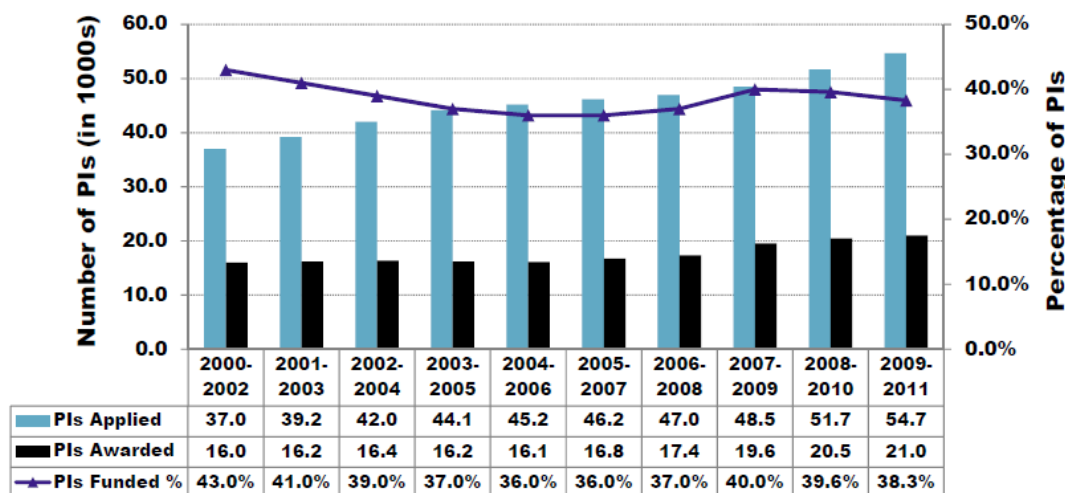
Distribution by Average Reviewer Ratings for Awards and Declines, FY 2011





Main Source of Proposal Pressure

PIs submitting research proposals per 3-year period



Over the decade -

PIs applying: up 48%

PIs awarded: up 31%

PIs not funded: up 60%

[New AAAS Guide Provides Roadmap for Supporting Interdisciplinary Research and Education](#)

Many of the important challenges facing science and society—from fighting disease to harnessing sustainable energy sources—require more than the efforts of researchers from a single discipline. Scientists from different disciplines need to collaborate and engage in interdisciplinary research to solve such complex issues.

“But addressing problems and training the next generation of problem solvers is based on the problems that you have—not based on the tools that you have at hand,” said Edward Derrick, chief program director of the AAAS Center of Science, Policy, and Society Programs. “So it is going to require the ability to bring different sets of tools, techniques, and perspectives to the task.”

To encourage these diverse collaborations, AAAS has produced a new guide: [Facilitating Interdisciplinary Research and Education: A Practical Guide](#). Written in partnership with the University of Colorado Biofrontiers Institute, the guide provides a set of “best practices” for scholars, administrators, and funders who are starting, managing, and supporting interdisciplinary research and education programs. The authors developed these guidelines following a [March 2011 workshop](#) entitled “Science on FIRE—Facilitating Interdisciplinary Research and Education,” which was organized by the Colorado Initiative in Molecular Biotechnology and AAAS. The workshop, led by Nobel laureate and University of Colorado professor Thomas Cech, brought together more than 150 multidisciplinary practitioners—

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educators, program managers, policy experts, and researchers from across the nation—to identify the keys to establishing successful interdisciplinary research programs.

[NSF Grants Conference](#)

The first National Science Foundation Grants Conference of fiscal year 2013 will be held in Arlington, VA, and hosted by George Mason University, **October 22-23, 2012**. Key representatives from the National Science Foundation as well as your colleagues - faculty, researchers and grant administrators - representing colleges and universities from around the US will participate. This two-day conference is a must, especially for new faculty, researchers and administrators who want to gain key insight into a wide range of current issues at NSF including the state of current funding; new and current policies and procedures; and pertinent administrative issues. NSF program officers representing each NSF directorate will be on hand to provide up-to-date information about specific funding opportunities and answer your questions. Highlights include:

- New programs and initiatives;
- Future directions and strategies for national science policy;
- Proposal preparation;
- NSF's merit review process;
- Cross-disciplinary and special interest programs;
- Conflict of interest policies; and
- Breakout sessions by discipline.

Registration is available on the [conference website](#).

For additional information regarding program content, contact the Policy Office, Division of Institution and Award Support at (703) 292-8243, or via e-mail at policy@nsf.gov.

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Educational Grant Writing Web Resources

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Writing educational grants to federal agencies and foundations is helped by developing a knowledge base of proven and successful educational models and STEM standards at the K-12, community college, and university level.

[Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics](#)

A report from the National Research Council of the National Academies, responds to a request from Representative Frank Wolf (VA) for the National Science Foundation (NSF) to identify highly successful K-12 schools and programs in science, technology, engineering, and/or mathematics (STEM). The NSF requested and provided support for the National Research Council (NRC) to convene an expert committee to explore this issue. Charge The Committee on Highly Successful Schools or Programs for K-12 STEM Education was charged with "outlining criteria for identifying effective STEM schools and programs and identifying which of these criteria could be addressed with available data and research, and those where further work is needed to develop appropriate data sources." Workshop on Successful STEM Education in K-12 Schools: To carry out its charge, the committee reviewed existing research on STEM-focused schools and conducted a public workshop on May 10-11, 2011 in order to identify a range of goals for highly successful education in STEM, explore the criteria for identifying success relative to those goals, and classify strategies and educational practices that K-12 schools and districts use to achieve success in STEM, and identify scalable best practices associated with those strategies and practices. Learn more:

[Workshop Webpage](#)

[Workshop Agenda](#) (with links to presentations and papers)

[Participant List](#)

[Commissioned Papers](#)

[Video of Workshop](#)

[Articulation Between School and College: A College Ready White Paper](#)

As stated in the College Ready proposal to NSF, "much of the proposed work is aimed at improving articulation between school and college and building learning communities to enhance teacher preparation and student achievement." This is a discussion of articulation, how the various aspects of articulation are related to *College Ready* work, and why much of that work aims at improved articulation.

[Scientific and Engineering Practices in K-12 Classrooms](#)

This article explores one aspect of the new NRC framework--science and engineering practices--in greater depth. Although the NRC report is a framework and not standards, it is prudent for those in the science and technology education community to begin preparing for the new standards. Because science and engineering practices are basic to science education and the change from inquiry to practices is central, this innovation for the new standards will likely be

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one of the most significant challenges for the successful implementation of science education standards.

Motivating Students to Ask Scientifically Productive Questions

We describe a framework for supporting student inquiry in K-16 science classes in the context of student investigation of ecologically or environmentally related problems and issues. The framework was developed based on research from a case study in a 6th grade classroom on how to motivate and support student-thinking about questions and evidence. We discuss how we have applied this framework in professional development for K-12 science teachers and for K-16 instructional materials for students. We describe how this framework facilitated the collaboration of K-12 teachers with scientists, science educators, and cognitive scientists.

Curriculum Coherence: An Examination Of US Mathematics And Science Content Standards From An International Perspective

In recent years, US curriculum policy has emphasized standards-based conceptions of curricula in mathematics and science. This paper explores the data from the Third International Mathematics and Science Study (TIMSS) to argue that the presence of content standards is not sufficient to guarantee curricula that lead to high-quality instruction and achievement. An examination of the content topics covered in each grade of a group of six of the highest-achieving TIMSS countries in mathematics and science shows a pattern in which new topics are gradually introduced, are a part of instruction for a few grades, and then often leave the curriculum as separate topics. This contrasts sharply with mapping of topics in the various US national standards in mathematics and science. Topics enter and linger, so that each grade typically devotes instructional attention to many more topics than is typical of the six high-achieving countries; in addition, each topic stays in the curriculum for more grades than in the high-achieving countries. An examination of mathematics and science content standards from 21 states and 50 districts in the US shows a pattern more like that of the US national standards than those of the high-achieving TIMSS countries. While content standards have become integral to US curriculum development and reform, they have yet to reflect the coherence that is typical of countries that achieved significantly better than the US in the TIMSS study.

Core Ideas of Engineering and Technology

This article addresses Chapter 8 of the *Framework*, which presents core ideas in technology and engineering at the same level as core ideas in the traditional science fields, such as Newton's laws of motion and the theory of biological evolution. Although prior standards documents included references to engineering and technology, they tended to be separate from the "core content" of science, so they were often overlooked.

Critical Issues in Mathematics Education 2012: Teacher education in view of the Common Core

- "[What are mathematical practices?](#)," (80 minutes) speakers include: Deborah Ball, William McCallum, and Deborah Schifter.

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- "[Examples from classrooms. Implications of the Common Core](#)," (180 minutes) speakers include: Deborah Ball, Elham Kazemi, Judith Jacobs, and Rheta Rubenstein.

Agency Research News

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ACLS Launches New Program in China Studies

The American Council of Learned Societies (ACLS) recently announced the launch of a program in support of China studies, made possible by a grant of \$1.2 million from the Henry Luce Foundation. The new Henry Luce Foundation/ACLS Program in China Studies will aid scholars embarking on careers in research and teaching of Chinese history, literature, culture, and society. Annually, it will award stipends for pre-dissertation research in China, grants for collaborative reading workshops that unite a number of disciplines and scholarly generations, and postdoctoral research fellowships for scholars within eight years of the receipt of the Ph.D.

Next Generation of Advanced Climate Models Needed, Says New Report

The nation's collection of climate models should advance substantially to deliver more detailed, smaller scale climate projections, says a new [report](#) from the National Research Council. To meet this need, the report calls for these assorted climate models to take a more integrated path and use a common software infrastructure while adding regional detail, new simulation capabilities, and new approaches for collaborating with their user community.

From farmers deciding which crops to plant next season, to mayors preparing for possible heat waves, to insurance companies assessing future flood risks, an array of stakeholders from the public and private sectors rely on and use climate information. With changes in climate and weather, however, past weather data are no longer adequate predictors of future extremes. Advanced modeling capabilities could potentially provide useful predictions and projections of extreme environments, said the committee that wrote the report. Over the past several decades, enormous advances have been made in developing reliable climate models, but significant progress is still required to deliver climate information at local scales that users desire.

The U.S. climate modeling community is diverse, including several large global efforts and many smaller regional efforts. This diversity allows multiple research groups to tackle complex modeling problems in parallel, enabling rapid progress, but it also leads to some duplication of efforts. The committee said that to make more efficient and rapid progress in climate modeling, different groups should continue to pursue their own methodologies while evolving to work within a common nationally adopted modeling framework that shares software, data standards and tools, and model components.

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Agency Reports, Workshops & Research Roadmaps

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The competitiveness of proposals can be enhanced by grounding the arguments you make in the proposal narrative, as appropriate, on national reports, agency research roadmaps, and research workshops that demonstrate your understanding of the national research agenda and how your research advances and maps to that agenda.

[Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering](#)

The National Science Foundation funded a synthesis study on the status, contributions, and future direction of discipline-based education research (DBER) in physics, biological sciences, geosciences, and chemistry. DBER combines knowledge of teaching and learning with deep knowledge of discipline-specific science content. It describes the discipline-specific difficulties learners face and the specialized intellectual and instructional resources that can facilitate student understanding. *Discipline-Based Education Research* is based on a 30-month study built on two workshops held in 2008 to explore evidence on promising practices in undergraduate science, technology, engineering, and mathematics (STEM) education. This book asks questions that are essential to advancing DBER and broadening its impact on undergraduate science teaching and learning. The book provides empirical research on undergraduate teaching and learning in the sciences, explores the extent to which this research currently influences undergraduate instruction, and identifies the intellectual and material resources required to further develop DBER. *Discipline-Based Education Research* provides guidance for future DBER research. In addition, the findings and recommendations of this report may invite, if not assist, post-secondary institutions to increase interest and research activity in DBER and improve its quality and usefulness across all natural science disciplines, as well as guide instruction and assessment across natural science courses to improve student learning. The book brings greater focus to issues of student attrition in the natural sciences that are related to the quality of instruction. *Discipline-Based Education Research* will be of interest to educators, policy makers, researchers, scholars, decision makers in universities, government agencies, curriculum developers, research sponsors, and education advocacy groups.

[Higher Education: Gaps in Access and Persistence Study](#)

The Higher Education: Gaps in Access and Persistence Study is a congressionally-mandated statistical report that documents the scope and nature of gaps in access and persistence in higher education by sex and race/ethnicity. The report presents 46 indicators grouped under seven main topic areas: (1) demographic context; (2) characteristics of schools; (3) student behaviors and afterschool activities; (4) academic preparation and achievement; (5) college knowledge; (6) postsecondary education; and (7) postsecondary outcomes and employment. In addition, the report contains descriptive multivariate analyses of variables that are associated with male and female postsecondary attendance and attainment.

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Disaster Resilience: A National Imperative

One way to reduce the impacts of disasters on the nation and its communities is to invest in enhancing resilience--the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events. *Disaster Resilience: A National Imperative* addresses the broad issue of increasing the nation's resilience to disasters. This book defines "national resilience", describes the state of knowledge about resilience to hazards and disasters, and frames the main issues related to increasing resilience in the United States. It also provides goals, baseline conditions, or performance metrics for national resilience and outlines additional information, data, gaps, and/or obstacles that need to be addressed to increase the nation's resilience to disasters. Additionally, the book's authoring committee makes recommendations about the necessary approaches to elevate national resilience to disasters in the United States.

Science for Environmental Protection: The Road Ahead

In anticipation of future environmental science and engineering challenges and technologic advances, EPA asked the National Research Council (NRC) to assess the overall capabilities of the agency to develop, obtain, and use the best available scientific and technologic information and tools to meet persistent, emerging, and future mission challenges and opportunities. Although the committee cannot predict with certainty what new environmental problems EPA will face in the next 10 years or more, it worked to identify some of the common drivers and common characteristics of problems that are likely to occur.

Intelligent Human-Machine Collaboration: Summary of a Workshop

On June 12-14, 2012, the Board on Global Science and Technology held an international, multidisciplinary workshop in Washington, D.C., to explore the challenges and advances in intelligent human-machine collaboration (IH-MC), particularly as it applies to unstructured environments. This workshop convened researchers from a range of science and engineering disciplines, including robotics, human-robot and human-machine interaction, software agents and multi-agent systems, cognitive sciences, and human-machine teamwork. Participants were drawn from research organizations in Australia, China, Germany, Israel, Italy, Japan, the Netherlands, the United Arab Emirates, the United Kingdom, and the United States.

Challenges in Chemistry Graduate Education: A Workshop Summary

Chemistry graduate education is under considerable pressure. Pharmaceutical companies, long a major employer of synthetic organic chemists, are drastically paring back their research divisions to reduce costs. Chemical companies are opening new research and development facilities in Asia rather than in the United States to take advantage of growing markets and trained workforces there. Universities, especially public universities, are under significant fiscal constraints that threaten their ability to hire new faculty members. Future federal funding of chemical research may be limited as the federal budget tightens. All of these trends have major consequences for the education of chemistry graduate students in U.S. universities. To explore and respond to these intensifying pressures, the Board on Chemical Sciences and Technology held a workshop in Washington, DC, on January 23-24 2012, titled "Graduate

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Education in Chemistry in the Context of a Changing Environment." The workshop brought together representatives from across the chemical enterprise, representing leaders and future leaders of academia, industry, and government. The goal of the workshop was not to come to conclusions, but to have an open and frank discussion about critical issues affecting chemistry graduate education, such as the attraction and retainment of the most able students to graduate education, financial stressors on the current support model and their implications for the future model, competencies needed in the changing job market for Ph.D. chemists, and competencies needed to address societal problems such as energy and sustainability.

Challenges in Chemistry Graduate Education: A Workshop Summary is organized into six chapters and summarizes the workshop on "Graduate Education in Chemistry in the Context of a Changing Environment."

From Science to Business: Preparing Female Scientists and Engineers for Successful Transitions into Entrepreneurship: Summary of a Workshop

Scientists, engineers, and medical professionals play a vital role in building the 21st-century science and technology enterprises that will create solutions and jobs critical to solving the large, complex, and interdisciplinary problems faced by society: problems in energy, sustainability, the environment, water, food, disease, and healthcare. As a growing percentage of the scientific and technological workforce, women need to participate fully not just in finding solutions to technical problems, but also in building the organizations responsible for the job creation that will bring these solutions to market and to bear on pressing issues. To accomplish this, it is important that more women in science and engineering become entrepreneurs in order to start new companies; create business units inside established organizations, mature companies, and the government; and/or function as social entrepreneurs focused on societal issues. Entrepreneurship represents a vital source of change in all facets of society, empowering individuals to seek opportunity where others see insurmountable problems.

From Science to Business: Preparing Female Scientists and Engineers for Successful Transitions into Entrepreneurship is the summary of an August 2009 workshop that assesses the current status of women undertaking entrepreneurial activity in technical fields, to better understand the nature of the barriers they encounter, and to identify what it takes for women scientists and engineers to succeed as entrepreneurs. This report focuses on women's career transitions from academic science and engineering to entrepreneurship, with a goal of identifying knowledge gaps in women's skills as well as experiences crucial to future success in business and critical for achieving leadership positions in entrepreneurial organizations.

From Science to Business makes the case that in addition to educating women scientists and engineers in rigorous problem solving, it is equally important to provide exposure and training to impart the skills that will enable more women to move from the role of expert to that of leader in dynamic new business enterprises. This book will be of interest to professionals in both academia and industry, graduate and post-graduate students, and organizations that advocate for a stronger economy.

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Assuring a Future U.S.-Based Nuclear and Radiochemistry Expertise

The growing use of nuclear medicine, the potential expansion of nuclear power generation, and the urgent needs to protect the nation against external nuclear threats, to maintain our nuclear weapons stockpile, and to manage the nuclear wastes generated in past decades, require a substantial, highly trained, and exceptionally talented workforce. *Assuring a Future U.S.-Based Nuclear and Radiochemistry Expertise* examines supply and demand for expertise in nuclear chemistry nuclear science, and radiochemistry in the United States and presents possible approaches for ensuring adequate availability of these skills, including necessary science and technology training platforms. Considering a range of reasonable scenarios looking to the future, none of these areas are likely to experience a decrease in demand for expertise.

However, many in the current workforce are approaching retirement age and the number of students opting for careers in nuclear and radiochemistry has decreased dramatically over the past few decades. In order to avoid a gap in these critical areas, increases in student interest in these careers, in the research and educational capacity of universities and colleges, and sector specific on-the-job training will be needed. Concise recommendations are given for actions to avoid a shortage of nuclear chemistry, nuclear scientists, and radiochemists in the future.

Optics and Photonics: Essential Technologies for Our Nation

Optics and photonics technologies are ubiquitous: they are responsible for the displays on smart phones and computing devices, optical fiber that carries the information in the internet, advanced precision manufacturing, enhanced defense capabilities, and a plethora of medical diagnostics tools. The opportunities arising from optics and photonics offer the potential for even greater societal impact in the next few decades, including solar power generation and new efficient lighting that could transform the nation's energy landscape and new optical capabilities that will be essential to support the continued exponential growth of the Internet.

As described in the National Research Council report *Optics and Photonics: Essential Technologies for our Nation*, it is critical for the United States to take advantage of these emerging optical technologies for creating new industries and generating job growth. The report assesses the current state of optical science and engineering in the United States and abroad--including market trends, workforce needs, and the impact of photonics on the national economy. It identifies the technological opportunities that have arisen from recent advances in, and applications of, optical science and engineering. The report also calls for improved management of U.S. public and private research and development resources, emphasizing the need for public policy that encourages adoption of a portfolio approach to investing in the wide and diverse opportunities now available within photonics.

Optics and Photonics: Essential Technologies for our Nation is a useful overview not only for policymakers, such as decision-makers at relevant Federal agencies on the current state of optics and photonics research and applications but also for individuals seeking a broad understanding of the fields of optics and photonics in many arenas.

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New Funding Opportunities

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New Funding Solicitations Posted Since August 15 Newsletter

[Current Smithsonian Internship Opportunities](#)

Find descriptions of Smithsonian internships, listed in alphabetical order by sponsoring museums, research institutes, and offices. Or internship opportunities by the following subjects: Art, History and Culture, Libraries, Archives and Preservation, Professional Services, and Science and Research.

[Innovative Technology Experiences for Students and Teachers \(ITEST\)](#)

ITEST supports the research and development of innovative models for engaging K-12 students in authentic experiences that build their capacity to participate in the science, technology, engineering, and mathematics (STEM) and information and communications technology (ICT) workforce of the future. ITEST projects must include students and may include teachers. **LOI September 20; full November 13.**

Air Force Research Laboratory, Directed Energy Directorate

[University Small Grants Broad Agency Announcement](#)

This is a five-year, open-ended Broad Agency Announcement (BAA) to solicit research proposals for the United States Air Force Research Laboratory (AFRL) Directed Energy (RD) Directorate. This BAA is a university grant vehicle that can provide small grants of \$100k or less to students/professors in a timely manner for the purpose of engaging U.S./U.S. territories' colleges and universities in directed energy-related basic, applied, and advanced research projects that are of interest to the Department of Defense. Multiple awards of grants up to \$100k are anticipated with a period of performance ranging from one to two years. Subject to the availability of funding, AFRL/RD plans to award a minimum of one grant per fiscal year. However, AFRL/RD does reserve the right to make multiple awards or no awards pursuant to this solicitation. **Open to April 1, 2017.**

[DARPA Microsystems Technology Office-Wide](#)

The Microsystems Technology Office (MTO) supports DARPA's mission of maintaining technological superiority and preventing technological surprise by investing in areas such as microelectromechanical systems (MEMS), electronics, system architecture, photonics, and biotechnology. In recent years, the proliferation of commercial components and manufacturing processes has allowed our adversaries to achieve capabilities that were previously not possible. In response, DARPA/MTO is dedicated to pursuing avenues that leverage, counter, and

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transcend these commercial-off-the-shelf approaches (COTS). MTO aims to leverage and multiply the power of COTS by aggregating, adapting, and integrating components into networks and systems for the benefit of the warfighter. We create methods for countering threats that emerge from sustained advancements in cheap and readily available technologies that our adversaries may employ. Lastly, MTO develops high-risk, high-reward technologies outside and beyond the scope of the commercial industry to secure the DoD's technological superiority. By continuing to drive revolutionary capabilities, we seek to "un-level" the playing field. **Open to September 1, 2014.**

[Wenner-Gren Foundation for Anthropological Research](#)

The Wenner-Gren Foundation for Anthropological Research, Inc. is a private operating foundation dedicated to the advancement of anthropology throughout the world. Located in New York City, it is one of the major funding sources for international anthropological research and is actively engaged with the anthropological community through its varied grant, fellowship, networking, conference and symposia programs. It founded and continues to publish the international journal *Current Anthropology*, and disseminates the results of its symposia through open-access supplementary issues of this journal. The Foundation works to support all branches of anthropology and closely related disciplines concerned with human biological and cultural origins, development, and variation. The Wenner-Gren Foundation has three major goals – to support significant and innovative anthropological research into humanity's biological and cultural origins, development and variation, to foster the creation of an international community of research scholars in anthropology, and to provide leadership at the forefronts of the discipline. **Various upcoming deadlines.**

[Innovation Corps Teams Program \(I-Corps Teams\)](#)

The National Science Foundation seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output of scientific discoveries closer to the development of technologies, products and processes that benefit society. In order to jumpstart a national innovation ecosystem, NSF has established the NSF Innovation Corps Teams Program (NSF I-Corps Teams). The NSF I-Corps Teams purpose is to identify NSF-funded researchers who will receive additional support - in the form of mentoring and funding - to accelerate innovation that can attract subsequent third-party funding. **Window October 1 to Dec. 17.**

[National Academy of Education/Spencer Dissertation Fellowship Program](#)

The Dissertation Fellowship Program seeks to encourage a new generation of scholars from a wide range of disciplines and professional fields to undertake research relevant to the improvement of education. These \$25,000 fellowships support individuals whose dissertations show potential for bringing fresh and constructive perspectives to the history, theory, or practice of formal or informal education anywhere in the world. This highly competitive program aims to identify the most talented researchers conducting dissertation research related to education. The Dissertation Fellowship program receives many more applications than it can fund. This year, up to 600 applications are anticipated and about 25 fellowships will be awarded. The online application may be accessed by clicking [here](#). **Due October 5.**

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[Fiscal Year \(FY\) 2013 Department of Defense Multidisciplinary Research Program of the University Research Initiative](#)

The [MURI program](#) supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interact to provide rapid advances in scientific areas of interest to the DoD. As defined by the DoD, "basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress." (http://comptroller.defense.gov/fmr/02b/02b_05.pdf). The DoD's basic research program invests broadly in many specific fields to ensure that it has early cognizance of new scientific knowledge. NOTICE: Significant changes in funding and researcher team sizes have been made in this BAA. **White papers due October 9; full December 10.**

[National Humanities Center Fellowships 2013-2014](#)

The National Humanities Center offers 40 residential fellowships for advanced study in the humanities during the academic year, September 2013 through May 2014. Applicants must have doctorate or equivalent scholarly credentials. Young scholars as well as senior scholars are encouraged to apply, but they must have a record of publication, and new Ph.D.s should be aware that the Center does not normally support the revision of a doctoral dissertation. In addition to scholars from all fields of the humanities, the Center accepts individuals from the natural and social sciences, the arts, the professions, and public life who are engaged in humanistic projects. **Due October 15.**

[Bridges to the Doctorate Program \(R25\)](#)

This Funding Opportunity Announcement (FOA) issued by the National Institute of General Medical Sciences (NIGMS), National Institutes of Health (NIH), encourages Research Education Grant (R25) applications from institutions that propose to increase the pool of master's degree students from underrepresented backgrounds who go on to research careers in the biomedical and behavioral sciences, and who are trained and available to participate in NIH-funded research. This initiative promotes partnerships/consortia between colleges or universities granting a terminal master's degree with institutions that offer the doctorate degree. The program expects that the joint efforts of doctorate degree-granting and master's degree-granting institutions will foster the development of a well-integrated institutional program that will provide students with the necessary academic preparation and skills to enable their transition and successful completion of the Ph.D. degree in biomedical and behavioral sciences. **Due October 26.**

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[Bridges to the Baccalaureate Program \(R25\)](#)

This Funding Opportunity Announcement (FOA) issued by the National Institute of General Medical Sciences (NIGMS), National Institutes of Health (NIH), encourages Research Education Grant (R25) applications from institutions that propose research education programs to increase the pool of community college students from underrepresented backgrounds who go on to research careers in the biomedical and behavioral sciences and will be available to participate in NIH-funded research. This initiative promotes partnerships/consortia between community colleges or other two-year post-secondary educational institutions granting the associate degree with colleges or universities that offer the baccalaureate degree. The program expects that the joint efforts of baccalaureate degree-granting and associate degree-granting institutions will foster the development of a well-integrated institutional program that will provide students with the necessary academic preparation and skills to enable their transition and successful completion of the baccalaureate and subsequently more advanced degrees in biomedical and behavioral sciences. **Due October 26.**

[Japanese Studies Fellowship Program](#)

This program provides support to outstanding scholars in the field by offering the opportunity to conduct research in Japan. **Due Nov. 1.**

[Rome Prize](#)

Each year, the Rome Prize is awarded to thirty emerging artists and scholars in the early or middle stages of their careers who represent the highest standard of excellence in the arts and humanities. **Due November 1.** Fellows are chosen from the following disciplines:

Architecture

Design

Historic Preservation and Conservation

Landscape Architecture

Literature (awarded only by nomination through the American Academy of Arts and Letters)

Musical Composition

Visual Arts

Ancient Studies

Medieval Studies

Renaissance and Early Modern Studies

Modern Italian Studies

[Small Business Innovation Research Program Phase I Solicitation FY-2013 \(SBIR\)](#)

[\(Release-2\)](#)

The Small Business Innovation Research (SBIR) Program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The four broad topics are:

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- [Biological and Chemical Technologies \(BC\)](#)
- [Education Applications \(EA\)](#)
- [Electronics, Information and Communication Technologies \(EI\)](#)
- [Nanotechnology, Advanced Materials, and Manufacturing \(NM\)](#)

Window Nov. 3 to Dec. 3.

[Program in Ultrafast Laser Science and Engineering \(PULSE\)](#)

The Program in Ultrafast Laser Science and Engineering (PULSE) seeks to enable efficient and agile use of the entire electromagnetic spectrum by linking it to the output of an ultrafast laser. The expected outcome of the program is to develop novel sources of radiation that improve upon existing state-of-the-art performance, size, weight, and power. In particular, PULSE aims to develop devices and techniques that will result in low phase-noise microwave oscillators, practical optical time/frequency transfer techniques, tabletop sources of high-quality secondary radiation and high flux isolated attosecond pulses, and other DOD-relevant applications. **Due November 6.**

[East Asia and Pacific Summer Institutes for U.S. Graduate Students \(EAPSI\)](#)

NSF and selected foreign counterpart science and technology agencies sponsor international research institutes for US graduate students in seven East Asia and Pacific locations at times set by the counterpart agencies between June and August each year. These Summer Institutes (EAPSI) operate similarly and the research visits to a particular location take place at the same time. Although applicants apply individually to participate in a Summer Institute, awardees become part of the cohort for each location. Applicants must propose a location, host scientist, and a research project that is appropriate for the host site and duration of the international visit. **Due November 8.**

[Doctoral Dissertation Improvement Grants in the Directorate for Biological Sciences \(DDIG\)](#)

The National Science Foundation awards Doctoral Dissertation Improvement Grants in selected areas of the biological sciences. These grants provide partial support of doctoral dissertation research to improve the overall quality of research. Allowed are costs for doctoral candidates to participate in scientific meetings, to conduct research in specialized facilities or field settings, and to expand an existing body of dissertation research. **Due November 9.**

[DOE/OS Terrestrial Ecosystem Science](#)

The Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE) hereby announces its interest in receiving research applications for terrestrial ecosystem science. The goal of the Terrestrial Ecosystem Science (TES) program is to improve the representation of terrestrial ecosystem processes in Earth system models thereby improving the quality of climate model projections and providing the scientific foundation needed to inform DOE's energy decisions. The TES program will consider applications on measurements, experiments, modeling and synthesis that provide improved quantitative and predictive understanding of the terrestrial ecosystem that, in turn, can affect atmospheric greenhouse gas concentration changes and thereby affect the greenhouse gas

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forcing of climate. In addition, the Earth System Modeling (ESM) Program, which funds development of the Community Earth System Model (CESM) will consider applications focused on development and coupling of the CESM land model component. The emphasis of this Funding Opportunity Announcement (FOA) is to understand non-managed terrestrial ecosystems in the context of a changing climate. Applicants should pose their research applications in the context of representing terrestrial ecosystem processes in Earth system models. **Due November 12.**

[Materials World Network: Cooperative Activity in Materials Research between US Investigators and their Counterparts Abroad \(MWN\)](#)

The National Science Foundation (NSF) is working jointly with counterpart national, regional and multinational funding organizations worldwide to enhance opportunities for collaborative activities in materials research and education between US investigators and their colleagues abroad. This solicitation promotes joint activities between the NSF Division of Materials Research (DMR) and funding organizations in Africa, Asia, the Americas and Europe. **Due November 14.**

[AAUW American Fellowships](#)

American Fellowships support women doctoral candidates completing dissertations or scholars seeking funds for postdoctoral research leave from accredited institutions. Candidates must be U.S. citizens or permanent residents. Candidates are evaluated on the basis of scholarly excellence; the quality and originality of project design; and active commitment to helping women and girls through service in their communities, professions, or fields of research. **Due November 15.**

[DOE/OS Early Career Research Program](#)

The Office of Science of the Department of Energy hereby invites grant applications for support under the Early Career Research Program in the following program areas: Advanced Scientific Computing Research (ASCR); Biological and Environmental Research (BER); Basic Energy Sciences (BES), Fusion Energy Sciences (FES); High Energy Physics (HEP), and Nuclear Physics (NP). The purpose of this program is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by the DOE Office of Science. **Due November 26.**

[NSF Science, Engineering and Education for Sustainability Fellows](#)

Through the SEES Fellows Program, NSF seeks to advance science, engineering, and education to inform the societal actions needed for environmental and economic sustainability and human well-being while creating the necessary workforce to address these challenges. The Program's emphasis is to facilitate investigations that cross traditional disciplinary boundaries and address issues of sustainability through a systems approach, building bridges between academic inquiry, economic growth, and societal needs. The Fellow's proposed investigation must be interdisciplinary and allow him/her to obtain research experiences beyond his/her current core disciplinary expertise. Fellows are required to develop a research partnership(s)

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that will advance and broaden the impact/scope of the proposed research, and present a plan for their own professional development in the area of sustainability science and engineering.

Due November 26.

[Ford Foundation Fellowship Program](#)

Through its Fellowship Programs, the [Ford Foundation](#) seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education of all students.

Eligibility to apply for a Ford fellowship is limited to:

- All citizens or nationals of the United States regardless of race, national origin, religion, gender, age, disability, or sexual orientation,
- Individuals with evidence of superior academic achievement (such as grade point average, class rank, honors or other designations),
- Individuals committed to a career in teaching and research at the college or university level.

For information regarding level-specific eligibility requirements, stipends, and other program information for each of the three levels of the Fellowship program, please access the fact sheet for the program level of your interest, [predoctoral](#), [dissertation](#) or [postdoctoral](#). **Due November 14 and 19 by fellowship type.**

[Fellowships at The Huntington 2013-2014](#)

The Huntington is an independent research center with holdings in British and American history, literature, art history, and the history of science and medicine. The Library collections range chronologically from the eleventh century to the present and include seven million manuscripts, 413,000 rare books, 275,000 reference works, and 1.3 million photographs, prints, and ephemera. The Burndy Library consists of some 67,000 rare books and reference volumes in the history of science and technology, as well as an important collection of scientific instruments. Within the general fields listed above there are many areas of special strength, including: Middle Ages, Renaissance, 19th- and 20th-century literature, British drama, Colonial America, American Civil War, Western America, and California. The Art Collections contain notable British and American paintings, fine prints, photographs, and an art reference library. In the library of the Botanical Gardens is a broad collection of reference works in botany, horticulture, and gardening. **Due November 30.**

[10th Annual P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet](#)

The U.S. Environmental Protection Agency (EPA), as part of the P3–People, Prosperity and the Planet Award Program, is seeking applications proposing to research, develop, and design solutions to real world challenges involving the overall sustainability of human society. The P3 competition highlights the use of scientific principles in creating innovative projects focused on sustainability. The P3 Award program was developed to foster progress toward sustainability by achieving the mutual goals of economic prosperity, protection of the planet, and improved quality of life for its people-- people,

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prosperity, and the planet – the three pillars of sustainability. The EPA offers the P3 competition in order to respond to the technical needs of the world while moving towards the goal of sustainability. Please see the [P3 website](#) for more details about this program. **Due December 11.**

National Robotics Initiative (NRI)

The goal of the National Robotics Initiative is to accelerate the development and use of robots in the United States that work beside, or cooperatively with, people. Innovative robotics research and applications emphasizing the realization of such co-robots acting in direct support of and in a symbiotic relationship with human partners is supported by multiple agencies of the federal government including the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the National Institutes of Health (NIH), and the U.S. Department of Agriculture (USDA). The purpose of this program is the development of this next generation of robotics, to advance the capability and usability of such systems and artifacts, and to encourage existing and new communities to focus on innovative application areas. It will address the entire life cycle from fundamental research and development to manufacturing and deployment. Methods for the establishment and infusion of robotics in educational curricula and research to gain a better understanding of the long term social, behavioral and economic implications of co-robots across all areas of human activity are important parts of this initiative. Collaboration between academic, industry, non-profit and other organizations is strongly encouraged to establish better linkages between fundamental science and technology development, deployment and use. **December 11 and January 23.**

National Defense Science and Engineering Graduate (NDSEG) Fellowship

The NDSEG Fellowship is a highly competitive, portable fellowship that is awarded to U.S. citizens and nationals who intend to pursue a doctoral degree in one of fifteen [supported disciplines](#). NDSEG confers high honors upon its recipients, and allows them to attend whichever U.S. institution they choose. NDSEG Fellowships last for three years and pay for full tuition and all mandatory fees, a monthly stipend, and up to \$1,000 a year in medical insurance. The Department of Defense (DoD) is committed to increasing the number and quality of our nation's scientists and engineers, and towards this end, has awarded approximately 3,200 NDSEG fellowships since the program's inception 22 years ago. The NDSEG Fellowship is sponsored by the [Air Force Office of Scientific Research](#) (AFOSR), the [Army Research Office](#) (ARO), the [High Performance Computing Modernization Program](#) (HPCM), and the [Office of Naval Research](#) (ONR), under the direction of the [Director of Defense Research and Engineering](#) (DDR&E). **Due December 14.**

Expeditions in Training, Research, and Education for Mathematics and Statistics through Quantitative Explorations of Data (EXTREEMS-QED)

The long-range goal of EXTREEMS-QED is to support efforts to educate the next generation of mathematics and statistics undergraduate students to confront new challenges in computational and data-enabled science and engineering (CDS&E). EXTREEMS-QED projects must enhance the knowledge and skills of most, if not all, the institution's mathematics and

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statistics majors through training that incorporates computational tools for analysis of large data sets and for modeling and simulation of complex systems.

Funded activities are expected to provide opportunities for undergraduate research and hands-on experiences centered on CDS&E; result in significant changes to the undergraduate mathematics and statistics curriculum; have broad institutional support and department-wide commitment that encourage collaborations within and across disciplines; and include professional development activities for faculty or for K-12 teachers. **Due December 14.**

[Innovation Corps Sites Program \(I-Corps Sites\)](#)

The National Science Foundation seeks to develop and nurture a national innovation ecosystem that builds upon research to guide the output of scientific discoveries closer to the development of technologies, products and processes that benefit society. In order to contribute to a national innovation ecosystem, NSF is establishing the NSF Innovation Corps Sites Program (NSF I-Corps Sites). **Due January 7.**

[United States-Israel Collaboration in Computer Science \(USICCS\)](#)

The United States-Israel Collaboration in Computer Science (USICCS) program is a joint program of NSF and the United States - Israel Binational Science Foundation (BSF). The program supports research projects that develop new knowledge in the areas of theory of computing; algorithm design and analysis; design, verification, and evaluation of software systems; and revolutionary computing models based on emerging scientific ideas. **Window January 18-February 1.**

[SPIE Education Outreach Grants Program Supporting Optics And Photonics Related Education And Outreach Projects](#)

As part of its education outreach mission, SPIE provides support for optics and photonics related education outreach projects. The award process is competitive; applications are judged on their potential to impact students and increase optics awareness. The key criterion in evaluation and ranking applications is the potential to impact students and to increase optics and photonics awareness. Qualifying not-for-profit organizations such as universities, optics centers, science centers, primary and secondary schools, youth clubs, industry associations and international optical societies are eligible for project support. **Due January 13, 2013.**

[Coastal SEES \(Coastal SEES\) Science, Engineering and Education for Sustainability](#)

Coastal SEES is focused on the sustainability of coastal systems. For this solicitation we define coastal systems as the swath of land closely connected to the sea, including barrier islands, wetlands, mudflats, beaches, estuaries, cities, towns, recreational areas, and maritime facilities; the continental seas and shelves; and the overlying atmosphere. These systems are subject to complex and dynamic interactions among natural and human-driven processes. Coastal systems are crucial to regional and national economies, hosting valued human-built infrastructure and providing ecosystem services that sustain human well-being. More than half of the world's human population lived in coastal areas in 2000, and this proportion is predicted to increase to 75 percent by 2025. **Due January 13.**

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[Camille Dreyfus Teacher-Scholar Awards Program](#)

The Camille Dreyfus Teacher-Scholar Awards Program supports the research and teaching careers of talented young faculty in the chemical sciences. Based on institutional nominations, the program provides discretionary funding to faculty at an early stage in their careers. Criteria for selection include an independent body of scholarship attained within the first five years of their appointment as independent researchers, and a demonstrated commitment to education, signaling the promise of continuing outstanding contributions to both research and teaching. The Camille Dreyfus Teacher-Scholar Awards Program provides an unrestricted research grant of \$75,000. **Due February 10.**

[Endangered Language Fund](#)

The Endangered Language Fund provides grants for language maintenance and linguistic field work. The work most likely to be funded is that which serves both the native community and the field of linguistics. Work which has immediate applicability to one group and more distant application to the other will also be considered. Publishing subventions are a low priority, although they will be considered. Proposals can originate in any country. The language involved must be in danger of disappearing within a generation or two. Endangerment is a continuum, and the location on the continuum is one factor in our funding decisions. **Due April 22.**

Links to New & Open Funding Solicitations

- [DARPA Microsystems Technology Office Solicitations](#)
- [Open Solicitations from IARPA \(Intelligence Advanced Research Projects Activity\)](#)
- [Bureau of Educational and Cultural Affairs, Open Solicitations, DOS](#)
- [ARPA-E Funding Opportunity Exchange](#)
- [DOE Funding Opportunity Exchange](#)
- [NIAID Funding Opportunities List](#)
- [NPS Broad Agency Announcements \(BAAs\)](#)
- [NIJ Current Funding Opportunities](#)
- [NIJ Forthcoming Funding Opportunities](#)
- [Engineering Information Foundation Grant Program](#)
- [Comprehensive List of Collaborative Funding Mechanisms, NORDP](#)
- [ARL Funding Opportunities — Open Broad Agency Announcements \(BAA\)](#)
- [HHS Grants Forecast](#)
- [American Psychological Association, Scholarships, Grants and Awards](#)
- [NIAID Funding Blog](#)
- [EPA 2012 Science To Achieve Results \(STAR\) Research Grants](#)
- [NASA Open Solicitations](#)
- [Defense Sciences Office Solicitations](#)
- [The Mathematics Education Trust](#)
- [Opportunities for Humanities Funding Announced](#)
- [EPA Open Funding Opportunities](#)

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- [DOE Funding Opportunity Exchange](#)
- [CDMRP FY 2012 Funding Announcements](#)
- [Office of Minority Health](#)
- [Department of Justice Open Solicitations](#)
- [DOE/EERE Funding Opportunity Exchange](#)
- [HHS/Administration for Children and Families Funding Opportunities](#)
- [New Funding Opportunities at NIEHS \(NIH\)](#)
- [National Human Genome Research Institute Funding Opportunities](#)
- [Army Research Laboratory Open Broad Agency Announcements \(BAA\)](#)
- [SBIR Gateway to Funding](#)
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- [Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences](#)
- [Humanities Funding Sources A-to-Z](#)
- [DARPA Current Solicitations](#)
- [Office of Naval Research Currently Active BAAs](#)
- [HRSA Health Professions Open Opportunities](#)
- [NIH Funding Opportunities Relevant to NIAID](#)
- [Active Funding Opportunity Announcements \(FOAs\) for All NICHD](#)
- [National Institute of Justice Current Funding Opportunities](#)
- [Funding Opportunities by the Department of Education Discretionary Grant Programs](#)
- [Science and Technology Funding Sources A-to-Z](#)
- [EPA's Office of Air and Radiation \(OAR\) Open Solicitations](#)
- [NETL Open Solicitations](#)
- [Duke University Funding Alerts](#)
- [DoED List of Currently Open Grant Competitions](#)
- [Foundation Center RFP Weekly Funding Bulletin](#)
- [Funding News RSS](#) ; [Deadline Watch](#) ; [International Grants and Fellowship Index](#)

Solicitations Remaining Open from Prior Issues of the Newsletter

Digital Humanities Start-up Grants

The National Endowment for the Humanities (NEH) invites applications to the Digital Humanities Start-Up Grants program. This program is designed to encourage innovations in the digital humanities. By awarding relatively small grants to support the planning stages, NEH aims to encourage the development of innovative projects that promise to benefit the humanities. Proposals should be for the planning or initial stages of digital initiatives in any area of the humanities. **Due September 25.**

NEH Summer Stipends

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Summer Stipends support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. **Due September 27 for Projects Beginning May, 2013.**

[DOD FY 2013 Defense University Research Instrumentation Program \(DURIP\)](#)

The Department of Defense (DoD) announces the Fiscal Year 2013 Defense University Research Instrumentation Program (DURIP), a part of the University Research Initiative (URI). DURIP is designed to improve the capabilities of U.S. institutions of higher education (hereafter referred to as “universities”) to conduct research and to educate scientists and engineers in areas important to national defense by providing funds for the acquisition of research equipment. This announcement seeks proposals to purchase instrumentation in support of research in areas of interest to the DoD, including areas of research supported by the administering agencies. The research areas of interest for the administering agencies are available on-line herein. **Due September 28.**

[Alliances for Graduate Education and the Professoriate](#)

The Alliances for Graduate Education and the Professoriate (AGEP) program will support three types of projects described in this solicitation: 1) AGEP-Transformation; 2) AGEP-Knowledge Adoption and Translation; and 3) AGEP-Broadening Participation Research in STEM Education. This solicitation represents an expansion of the program to include strategic investments in the development and study of new models for STEM graduate education, postdoctoral training, and academic STEM career preparation that eliminate or mitigate negative factors and promote positive practices for underrepresented racial and ethnic minorities. **Due September 28 and October 30.**

[Fiscal Year 2012 Funding Opportunity Announcement \(FOA\) for Navy and Marine Corps Science, Technology, Engineering and Mathematics \(STEM\) Programs 12-002](#)

The purpose of this announcement is to receive proposals in support of the Naval Strategic Plan and the Office of Naval Research's scientific outreach and education mission to develop its next generation of scientists and engineers. Strengthen the resources and training offered to STEM teachers. For more information on these priorities, please review the Naval STEM Strategic Plan at www.onr.navy.mil . ([MORE](#)). **Open to September 30, 2012**

[Partnerships for Innovation: Building Innovation Capacity](#)

This program solicitation, Partnerships for Innovation: Building Innovation Capacity (PFI: BIC) starts with an existing sound scientific and/or engineering-based research discovery that can be translated to market-valued solutions through a partnership between academe and small technology-based businesses. The funds will provide support to an academic institution to partner with at least two small technology-based businesses that are not in direct competition with each other to carry out early translational-research activities. The primary aims of the activities of this partnership are three-fold: (1) to build the innovation capacity of the individual participants from academe and from business; (2) to increase the viability of the small business concerns; and (3) to develop the next-generation workforce by providing opportunities for students at different levels to effectively learn from, participate in, and be profoundly changed

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by exposure to the process of building innovation capacity that occurs in BIC projects. The active collaboration between academe and business could result in solutions with potential for an impact on more than one market. **WEBINAR: A webinar will be held within 6 weeks of the release date of this solicitation to answer any questions about the solicitation.** Details will be posted on the Industrial Innovation and Partnerships (IIP) [website](#) as they become available. **LOI due Sept. 26; Full Dec. 12.**

NEH/DFG Bilateral Digital Humanities Program

The National Endowment for the Humanities (NEH) in the United States and the German Research Foundation (Deutsche Forschungsgemeinschaft e.V., DFG) are working together to offer support for projects that contribute to developing and implementing digital infrastructures and services for humanities research. **Due September 27.**

Hal Rothman Dissertation Fellowship

The Hal Rothman Research Fellowship was created to recognize graduate student achievements in environmental history research in honor of Hal Rothman, recipient of ASEH's Distinguished Service award in 2006 and editor of *Environmental History* for many years. The fellowship provides a single payment of \$1,000 for Ph.D. graduate student research and travel in the field of environmental history, without geographical restriction. **Open to September 30.**

International Affairs Fellowship Program

Launched in 1967, the International Affairs Fellowship (IAF) is a distinguished program offered by the Council on Foreign Relations (CFR) to assist mid-career scholars and professionals in advancing their analytic capabilities and broadening their foreign policy experience. The program aims to strengthen career development by helping outstanding individuals acquire and apply foreign policy skills beyond the scope of their professional and scholarly achievements. The distinctive character of the IAF Program lies in the contrasting professional experiences fellows obtain through their twelve-month appointment. Selected fellows from academia and the private sector spend fellowship tenures in public service and policy-oriented settings, while government officials spend their tenures in a scholarly atmosphere free from operational pressure. **Open to October 1.**

The 2013 K. Patricia Cross Future Leaders Award

The K. Patricia Cross Future Leaders Award recognizes graduate students who show exemplary promise as future leaders of higher education; who demonstrate a commitment to developing academic and civic responsibility in themselves and others; and whose work reflects a strong emphasis on teaching and learning. **Due October 1.**

Development of Therapeutics Medical Countermeasures for Biodefense and Emerging Infectious Diseases

Research supported and conducted by the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), Department of Health and Human Services (DHHS), strive to understand, treat and ultimately prevent the myriad infectious, immunologic, and

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allergic diseases that threaten millions of human lives. The NIAID Division of Microbiology and Infectious Diseases (DMID) supports extramural research to control and prevent diseases caused by virtually all infectious agents, with the exception of the human immunodeficiency virus (HIV). This includes basic and applied research to develop and evaluate therapeutics, vaccines, and diagnostics, which are funded through a variety of research grants and contracts. The NIAID also has a mission to advance the development of new medical countermeasures (MCM) against the biological agents that are most likely to be used in a terror attack on civilian populations. **Due October 1.**

[U.S. Nuclear Regulatory Commission Funding Opportunity Announcement, Nuclear Education Curricula Development Grant, Fiscal Year 2013](#)

The NRC Nuclear Education Grant Program's primary purpose is supporting and developing the educational infrastructure necessary to allow the Nation to safely advance its nuclear energy initiatives. **Due October 3.**

[EPSCoR Research Infrastructure Improvement Program Track-1: \(RII Track-1\)](#)

Research Infrastructure Improvement Program Track-1: (RII Track-1) awards provide up to \$4 million per year for up to 5 years to support physical, human, and cyber infrastructure improvements in research areas selected by the jurisdiction's EPSCoR steering committee as having the best potential to improve future R&D competitiveness of the jurisdiction. **Due October 3.**

[Documenting Democracy: Access to Historical Records](#)

The National Historical Publications and Records Commission seeks proposals that promote the preservation and use of the nation's most valuable archival resources. Projects should expand our understanding of the American past by facilitating and enhancing access to primary source materials. **Due October 4.**

[Innovation in Archives and Documentary Editing](#)

The National Historical Publications and Records Commission seeks projects that are exploring innovative methods to improve the preservation, public discovery, or use of historical records. **Due October 4.**

[Publishing Historical Records](#)

The National Historical Publications and Records Commission seeks proposals to publish historical records of national significance. New Republic through the Modern Era. **Due Oct. 4.**

[U.S. Nuclear Regulatory Commission Funding Opportunity Announcement, Scholarship and Fellowship Education Grant, Fiscal Year 2013](#)

This program provides funding to support nuclear science, engineering, and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. This announcement is for scholarships and fellowships. As a condition for scholarships or fellowships, recipients must

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demonstrate satisfactory academic progress in their fields of study, as determined by criteria contained in this announcement and as established by the NRC. Consequently, NRC requires scholarship and fellowship recipients to serve six (6) months in nuclear-related employment for each full or partial year of academic support. **Due October 5.**

[U.S. Nuclear Regulatory Commission Funding Opportunity Announcement \(FOA\), Faculty Development Grant, Fiscal Year 2013](#)

This program provides funding to support nuclear science, engineering, and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. This announcement is for faculty development grants. The objectives of the Faculty Development Program are to attract and retain highly-qualified individuals in academic teaching careers. The grants specifically target probationary, tenure-track faculty during the first 6 years of their career and new faculty hires in the following academic areas: Nuclear Engineering, Health Physics, Radiochemistry, Probability Risk Assessment (Levels 2 & 3) and related disciplines. Grants may include support for developing applications for research and amounts for initiating or continuing research projects in their areas of expertise. **Due October 5.**

[U.S. Nuclear Regulatory Commission Funding Opportunity Announcement, Trade School and Community College Scholarship Grant, Fiscal Year 2013](#)

The program provides funding to support for nuclear science, engineering, technology, and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. As a condition for receiving trade school or community college scholarships, recipients must demonstrate satisfactory academic progress in their fields of study, as determined by criteria contained in this announcement and as established by the NRC. The nuclear technology related discipline supported by this funding is intended to benefit the nuclear sector broadly. Consequently, NRC requires trade school and community college scholarship recipients to serve 6 months in nuclear-related employment for each full or partial year of academic support. **Due October 5.**

[CyberCorps: Scholarship for Service](#)

The CyberCorps: Scholarship for Service (SFS) program seeks proposals that address cybersecurity education and workforce development. The *Scholarship Track* provides funding to award scholarships to students in cybersecurity. In return for their scholarships, recipients will work after graduation for a Federal, State, Local, or Tribal Government organization in a position related to cybersecurity for a period equal to the length of the scholarship. The *Capacity Track* seeks innovative proposals leading to an increase in the ability of the United States higher education enterprise to produce cybersecurity professionals. **Due October 12.**

[Amy Lowell Poetry Travelling Scholarship](#)

The award for the 2013-2014 Scholarship year should be in the area of \$52,000. The recipient must agree to spend the year abroad, as the will requires. **Due October 15.**

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Schallek Fellowship

The Schallek Fellowship is funded by a gift to the Richard III Society-American Branch, from William B. and Maryloo Spooner Schallek. The fellowship supports an advanced graduate student who is writing a Ph.D. dissertation in any relevant discipline dealing with late-medieval Britain (ca. 1350-1500). The \$30,000 fellowship helps defray research and living expenses for the equivalent of an academic year of study. The fellowship recipient must devote full time to the dissertation project and may not hold any job or teaching position or work on another project during the term of the fellowship. **Due October 15.**

Fiscal Year 2013 University NanoSatellite Program

AFOSR, in conjunction with the AFRL Space Vehicles Directorate (AFRL/RV) announces a program to promote and sustain university research and education focused on small satellites (nanosats) and related technologies. The primary outcome of individual projects funded under this program is the design, fabrication and functional testing of a nanosat. Secondary objectives are to foster research in enabling technologies for nanosats and the design of experiments that can be performed by nanosats in orbit. Selected proposers will compete in a competition to recognize a small number of nanosats that have displayed the ability for space launch and operation. **Due October 16.**

Advanced Technological Education (ATE)

With an emphasis on two-year colleges, the Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions and employers to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways to two-year colleges from secondary schools and from two-year colleges to four-year institutions; and other activities. Another goal is articulation between two-year and four-year programs for K-12 prospective teachers that focus on technological education. The program also invites proposals focusing on research to advance the knowledge base related to technician education. **Due October 18.**

Advancing Digitization of Biodiversity Collections (ADBC)

This program seeks to enhance and expand the national resource of digital data documenting existing vouchered biological and paleontological collections and to advance scientific knowledge by improving access to digitized information (including images) residing in vouchered scientific collections across the United States. **Due October 19.**

Mellon/ACLS Dissertation Completion Fellowships

ACLS invites applications for the seventh annual competition for the Mellon/ACLS Dissertation Completion Fellowships, which support a year of research and writing to help advanced graduate students in the humanities and related social sciences in the last year of Ph.D.

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dissertation writing. The program encourages timely completion of the Ph.D. Applicants must be prepared to complete their dissertations within the period of their fellowship tenure and no later than August 31, 2014. A grant from The Andrew W. Mellon Foundation supports this program. ACLS will award 65 Fellowships in this competition for a one-year term beginning between June and September 2013 for the 2013-2014 academic year. The Fellowship tenure may be carried out in residence at the Fellow's home institution, abroad, or at another appropriate site for the research. These Fellowships may not be held concurrently with any other fellowship or grant (see [Writing Proposals for ACLS Fellowship Competitions](#)). **Due October 24.**

SBE Postdoctoral Research Fellowships (SPRF)

The Directorate for Social, Behavioral and Economic Sciences (SBE) offers Postdoctoral Research Fellowships in two tracks: (i) Broadening Participation (SPRF-BP), and (ii) Interdisciplinary Research in Behavioral and Social Sciences (SPRF-IBSS). **Due October 29.**

American College of Surgeons Faculty Research Fellowships

The American College of Surgeons is offering two-year faculty research fellowships, through the generosity of Fellows, Chapters, and friends of the College, to surgeons entering academic careers in surgery or a surgical specialty. The fellowship is to assist a surgeon in the establishment of a new and independent research program. Applicants should have demonstrated their potential to work as independent investigators. The fellowship award is \$40,000 per year for each of two years, to support the research. **Due November 1.**

Agriculture and Food Research Initiative: Food Safety

This AFRI Challenge Area promotes and enhances the scientific discipline of food safety, with an overall aim of protecting consumers from microbial and chemical contaminants that may occur during all stages of the food chain, from production to consumption. This requires an understanding of the interdependencies of human, animal, and ecosystem health as it pertains to foodborne pathogens. The long-term outcome for this program is to reduce foodborne illnesses and deaths by improving the safety of the food supply, which will result in reduced impacts on public health and on our economy. In order to achieve this outcome, this program will support single-function Research Projects and multi-function Integrated Research, Education, and/or Extension Projects, and Food and Agricultural Science Enhancement (FASE) Grants that address one of the Program Area Priorities (see Food Safety RFA for details). **Due November 14.**

Fiscal Year 2012 Basic Research Initiative (BRI)

The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). As a part of the Air Force Research Laboratory (AFRL), AFOSR's technical experts foster and fund research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support USAF needs. AFOSR announces a competition for the Fiscal Year 2012 Basic Research Initiative (BRI) program, for the topics listed below. Detailed descriptions of the topics may be found in

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Section I of this announcement. It is expected that multiple awards will be made. **The Air Force Defense Research Sciences Program is open to November 23, 2012.**

[World Bank Internships](#)

The Bank Internship offers highly motivated and successful individuals an opportunity to improve their skills while working in a diverse environment. Interns generally find the experience to be rewarding and interesting. To be eligible for the Internship, candidates must possess an undergraduate degree and already be enrolled in a full-time graduate study program (pursuing a Master's degree or PhD with plans to return to school in a full-time capacity. Generally, successful candidates have completed their first year of graduate studies or are already into their PhD programs. This *Internship typically seeks candidates in the following fields*: economics, finance, human development (public health, education, nutrition, population), social science (anthropology, sociology), agriculture, environment, private sector development, as well as other related fields. Fluency in English is required. Prior relevant work experience, computing skills, as well as knowledge of languages such as French, Spanish, Russian, Arabic, Portuguese, and Chinese are advantageous. **Due December 1 to January 31.**

[FY 12 Funding Opportunity For The National Consortium For Measurement And Signature Intelligence \(MASINT\) Research Program](#)

FY12 Program: Offerors are invited to present related work, on-going research activities and proposed future activities associated with the following areas: (A) Remote assessment of missile performance characteristics such as location, thrust, throw weight, warhead accuracy, defensive capabilities, etc. (B) Remote assessment and detection of weapons of mass destruction such as nuclear, biological, chemical and radiological weapons. This thrust area does not include improvised explosive devices utilizing standard explosives such as dynamite, TNT, C4, ANFO, etc. (C) Remote assessment and detection of directed energy weapons. This would include all lasers that are primarily designed as weapons as well as high-powered microwave (HPM) and electromagnetic pulse (EMP) weapons. **Open to Dec. 31, 2012.**

[DARPA Strategic Technologies](#)

The Defense Advanced Research Projects Agency's (DARPA) Strategic Technology Office (STO) is soliciting innovative proposals under this Broad Agency Announcement (BAA) for the performance of research, development, design, and testing that directly supports Strategic Technology Office (STO). This includes Finding Difficult Targets; Communications, Networks and Electronic Warfare; Shaping the Environment; and Foundational Technologies that support multiple STO focus areas. DARPA-BAA-12-09, entitled Strategic Technologies, is provided as an attachment to this presolicitation notice and includes information on the specific areas of interest, the submission process, proposal formats, as well as all other pertinent administrative information. **Open to January 12, 2013.**

[DARPA Strategic Technologies](#)

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Mexican Partnership Program

The United States Agency for International Development (USAID) Mission in Mexico is seeking concept papers and, later, applications from Mexican for-profit and non-for-profit organizations to implement activities to support the Mexican Partnership Program related to global climate change, economic competitiveness, youth, human rights and rule of law. Eligible organizations include, but are not limited to, non-government organizations (NGOs), associations, cooperatives, universities, civil society organizations, foundations, and private companies. **Open to January 29, 2013.**

GDA APS 2012 - Addendum Mexico

Through this Addendum to the FY 2012 Global Development Alliance (GDA) Annual Program Statement (APS) No. APS-OAA-12-000003 (the GDA APS), USAID/Mexico is making a special call for the submission of concept papers related to the USG development pillars of private sector competitiveness, environment and education for work in Mexico. The objectives supported under this addendum are to: 1) help mitigate the effects of global climate change, with a focus on the energy and forestry sectors; 2) improve the availability, relevance and quality of youth leadership and workforce development programs in communities most affected by crime and violence; and 3) support Mexico's implementation of a new criminal justice system. **Open to January 31, 2013.**

Initiative for Conservation in the Andean Amazon Phase II

The United States Agency for International Development (USAID) is seeking concept papers and later, applications, from Non-Governmental Organizations (NGOs), education institutions, partnerships and consortia to implement activities to support the Initiative for Conservation in the Andean Amazon (ICAA) with Landscape-based programs. Please note, at this time we are not accepting full applications or proposals. Only concept papers will be reviewed. Instructions on how to prepare a concept paper are provided within this APS. **Open to May 2, 2013.**

APS for Food Security, Nutrition, Biodiversity and Conservation

The U.S. Agency for International Development (USAID) continues its commitment to foster more strategic alliances with the private sector's "solution holders" who are often well positioned to address specific development challenges. The purpose of this APS is to announce USAID/Uganda's plans to fund a limited number of Public Private Alliances to enhance food security and address issues of biodiversity and conservation. Competition under this APS will consist of a two-step process where applicants first submit a Concept Paper for an initial

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competitive review. ***All Concept Papers received will be evaluated for responsiveness to the application criteria specified in this APS. Open to September 15, 2013.***

National Oceanic and Atmospheric Administration (NOAA)

The purpose of this notice is to request applications for special projects and programs associated with NOAA's strategic plan and mission goals, as well as to provide the general public with information and guidelines on how NOAA will select proposals and administer discretionary Federal assistance under this Broad Agency Announcement (BAA). This BAA is a mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through our competitive discretionary programs. It is not a mechanism for awarding congressionally directed funds or existing funded awards.

Open until September 30, 2013.

National Geospatial-Intelligence Agency Academic Research Program

The National Geospatial-Intelligence Agency (NGA) is releasing this solicitation for its ***sponsored academic research program***. This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Department of Defense (DoD) Grant and Agreement Regulations (DoDGARs) 22.315(a). Awards will take the form of grants. However, other instruments may be considered as appropriate based on the proposals. **Open to September 30, 2013.**

Research Interests of the Air Force Office of Scientific Research

AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in three scientific directorates: Aerospace, Chemical and Material Sciences, Physics and Electronics, and Mathematics, Information and Life Sciences. **Open until superseded.**

Research Interests of the Air Force Office of Scientific Research

AFOSR solicits proposals for basic research through this general Broad Agency Announcement (BAA). This BAA outlines the Air Force Defense Research Sciences Program. AFOSR invites proposals for research in many broad areas. These areas are described in detail in Section I, Funding Opportunity Description. AFOSR is seeking unclassified, white papers and proposals that do not contain proprietary information. We expect our research to be fundamental. **Open until superseded.**

FY2011 – 2016 Basic Research for Combating Weapons of Mass Destruction (C-WMD) Broad Agency Announcement (BAA)

This BAA is focused on soliciting basic research projects that support the DTRA mission to safeguard America and its allies from WMD (e.g., ***chemical, biological, radiological, nuclear,***

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and high-yield explosives) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.

[NINDS SBIR Technology Transfer \(SBIR-TT \[R43/R44\]\)](#)

This Funding Opportunity Announcement (FOA) encourages Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) for projects to transfer technology out of the NIH intramural research labs into the private sector. If selected for SBIR funding, the SBC will be granted a royalty-free, non-exclusive internal research-use license for the term of and within the field of use of the SBIR award to technologies held by NIH with the intent that the SBC will develop the invention into a commercial product to benefit the public. **Open November 5, 2011, to September 8, 2014.**

[Small University Grants Open 5-Year Broad Agency Announcement](#)

Open to August 26, 2015

[Open Solicitations from IARPA \(Intelligence Advanced Research Projects Activity\) Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research](#)

This Broad Agency Announcement (BAA), which sets forth research areas of interest to the [Army Research Laboratory](#) (ARL) Directorates and Army Research Office (ARO), is issued under the paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of basic research proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. **Open June 1, 2012 to March 31, 2017.**

[ARL Core Broad Agency Announcement for Basic and Applied Scientific Research for Fiscal Years 2012 through 2017](#)

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