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The NSF informational webinar on developing and writing the preliminary proposal for the Science and Technology Centers—Integrative Partnerships solicitation was held on April 11 from 1 pm to 2:30 pm EST. The first half hour of the webinar was devoted to an STC overview discussion by program officers, and the final hour to answering questions emailed in by those viewing the webinar (link to webinar archive). The below notes are taken from the webinar, but it is important that at least one or two team members view the webinar to best map the NSF presentation and questions answered to your specific STC preliminary proposal.

The contact information for the three NSF program officers presenting the webinar are below. They encouraged contacting them if there are any questions related to the submission of the preliminary proposal. They also encouraged looking at the currently funded STCs (see all active centers page) to address some questions you may have on education programs, knowledge transfer, diversity, and proportion of the budget allocated to various program components.

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The due date is now May 31 for the STC preliminary because the due date in the solicitation of May 30 fell on Memorial Day, a federal holiday. Moreover, if you have not been checking back to the STC program site (here) while developing your preliminary proposal it is important to note that you will be required to submit the below spreadsheet to NSF via email.

Conflicts of Interest Spreadsheet for solicitation NSF 11-522

1. PIs for each preliminary proposal are required to fill in the conflicts of interest spreadsheet found here after receipt of the proposal number from FastLane. The first four rows of the spreadsheet must be filled in and pertain to the proposal that was submitted to FastLane. Row 5 provides descriptions, as needed, of the information that is being requested. Rows 6-21 provide illustrative entries of information for conflicted persons for two fictitious project personnel.

Your entries should begin with row 22. Start with a single project person and enter information about a conflicted person, one per row, using as many rows as is needed
until all know conflicts are entered for that project person. Begin entering information for the next project person beginning on the subsequent row and repeat the process until conflicts for all project personnel have been entered. Use as many rows as needed.

2. **The conflicts of interest spreadsheet should be sent to NSF via email to stc2013@nsf.gov.** The subject heading of the email should note the proposal number. In the body of the email provide the proposal number, the PI name, and the name of the lead institution. **This table must be submitted by one week following the proposal submission deadline. Do not submit the spreadsheet through FastLane.**

The following bulleted items are taken from the webinar comments and questions:

- **Key to success is defining the center vision, the grand challenges the center will address, why the center structure is needed to address the grand challenges, and is the center team appropriate and necessary to achieve grand challenge breakthroughs.**
- One email query asked what NSF considers a grand challenge. NSF replied “you tell us.” Basically, the case for a grand challenge and breakthroughs is made by the PI of the preliminary proposal.
- You must describe a grand challenge need for the center research activities and convince reviewers of the significance of your vision of breakthroughs and outcomes.
- **Management is a key aspect of any successful STC award.** You must convince reviewers that the PI has the necessary management experience and skills to lead a center, as well as the research expertise to address grand challenge breakthroughs.
- **A successful center must have a critical mass at one institution.** A center is not a distributed virtual center.
- Include sufficient examples of proposed research in the preliminary proposal to excite the reviewers.
- NSF expects to receive 250 to 300 preliminary proposals by May 31. The preliminary proposals will be by panel review only. **Write the preliminary proposal to the generally knowledgeable reviewer.** Each panel may have one or two experts in the topic. NSF expects to invite 40 to 50 applicants to submit a full proposal. NSF expects to site visit 10 to 12 sites for a “blue ribbon panel” review. NSF hopes to make five or six awards.
- **Read the AAAS Report: National Science Foundation Centers Support Transformative Research, Provide Compelling S&T Education**
- **Preliminary proposals must not include:**
  - Budgets (budget scope must fit within $5 million per year maximum request)
  - Data management plan
  - Post doctoral mentoring plan
  - Current and pending support
  - Facilities, equipment and other resources
  - Letters of commitment, support or endorsement
  - Other supplemental documents
- Centers must have strong research portfolios.
• Centers are large scale efforts that must have a strong education plan. **Focus on one or two areas most appropriate for the center.** The education plan must fit the goals of the center. **A K-12 component is not required.** Its inclusion must make sense for the center plans and capacity to engage K-12 community.

• In addition to education, centers must have strong knowledge transfer plans (**service to society**) and diversity plans.

• Remember that NSF does not fund clinical or medical research.

• **The key to center success is integration**—describe the **value added and synergy** the center structure brings to the research. Have a five year plan for the preliminary and a 10 year vision for the center addressing grand challenges/breakthroughs.

• Centers need to identify stakeholders who will benefit from the center.

• The center director needs to be a senior research visionary with the capacity to integrate the center vision and personnel to focus on the 10 year vision.

• The center will need to have a managing director who is responsible for operational details. The center managing director does not have to be in the preliminary proposal.

• The advisory board does not have to be constituted for the preliminary proposal.

• NSF will not fund staff at national labs, but an STC can fund a post-doc that then works at a national lab.

• A lot of discussion and questions at the webinar related to the experience of the PI. While academic rank is not necessarily a rigid factor, **it is clear from the NSF subtext that a senior, nationally prominent PI with strong management skills and a capacity for visionary research is the most competitive applicant as leader of the proposed center.**
Introduction

The U. S. Department of Education’s (ED) Graduate Assistance in Areas of National Need (GAANN) graduate fellowship program began annual funding in the 1980s and remains relatively unchanged except for a significant diminution in its total annual funding. Consequently, the size of awards and hence the number of fellowships available to an eligible academic program receiving GAANN funding have also been reduced significantly. In FY 2010, GAANN provided $31 million in total funding to support graduate fellowships in one or more of the following areas of national need: biology, chemistry, computer and information sciences, engineering, mathematics, nursing, physics, and educational assessment, evaluation, and research.

In FY 2010, the specific GAANN appropriation of $31,030,000 funded 64 new and 112 continuing awards averaging $175,020. (The awards ranged between $131,265 - $262,530.) ED structures fellowship awards annually to match the NSF graduate research fellowship award funding level ($30,000). The FY2010 awards, along with a listing of institution, disciplinary area, and the PI email address, are available in tabular form here. If you are considering submitting a GAANN application for the next competition (FY2012), it may be helpful to contact a PI on one of the 2010 funded GAANNs to discuss the process and any competitive observations the PI may have to better inform your effort. Since GAANNs receive three-year funding, you will not be a direct competitor of any 2010 GAANN PI considering submitting a future application. Most PIs are generous in this regard, and it is always helpful for newcomers to the GAANN process to seek advice from a successful applicant, and perhaps even get access to the funded proposal and reviews. (GAANN recipients from 2004 to 2010 can be viewed here.)

ED did not hold a GAANN competition in 2011, but it has announced an FY 2012 GAANN competition. The dates have yet to be determined as of the publishing of this article. The amount of funding available for the FY 2012 GAANN likely awaits a final budget rather than agency funding by continuing resolutions. Regardless, it is not too early to start planning for the development and writing of a FY 2012 GAANN proposal. The FY 2010 Application For Grants Under The Graduate Assistance In Areas Of National Need (GAANN) Program had a December 18, 2009 application due date. The Notice Inviting Applications for New Awards for FY 2010 dated November 17, 2009 appeared in the Federal Register. Notice that in the last GAANN funding cycle, the due date of the full GAANN proposal (40 double-spacedages) appeared only one month before application availability. This is a short fuse turn around, particularly for newcomers to the GAANN program. Fortunately, an early review of the most currently funded GAANN notice and application (URLs above) will give interested applicants a competitive head start on assembling all the information required to submit a successful GAANN for FY 2012 funding, once the notice appears in the Federal Register and Grants.gov.
As mentioned, GAANN program application processes have remained fairly unchanged over two decades; therefore, a review of the FY 2010 GAANN solicitation (above) will most likely predict the FY 2012 GAANN application with the exception of the total funding allocation emerging from current final budget resolutions (April 2011). If you are new to ED funding, see “Writing Proposals to the U.S. Department of Education—an Introduction” in the March 15, 2011 issue of this newsletter and review the ED manual on preparing discretionary grants, such as GAANN, to that agency at Grant Making at ED.

Those accustomed to the NSF graduate research fellowships will want to note that GAANN resembles the NSF IGERT or AGEP, in that the fellowships are not portable awards made directly to the student but are made to an academic unit and awarded by the PI/coPI based on criteria defined in the GAANN application. As a caveat to those more familiar with NSF fellowships than with ED, the GAANN application process demonstrates the importance of distinguishing among funding agencies’ missions and cultures, particularly as these appear in the requirements defined in the solicitation or application. ED, unlike NSF, does not look for educational research models at the “frontiers of new knowledge.” It is a much more structured and prescriptive agency, which is clearly reflected in its application notices and program solicitations like GAANN. In many ways, writing a proposal to ED resembles submitting your annual tax return to the IRS—so follow the application instructions exactly—since the ED application is specific, detailed, at times repetitive, and your responses will be scored by section for a cumulative score. Do not deviate from the tightly scripted ED application. If you think you have addressed an application question in a prior section of the application, answer or clearly reference your answer again, even if you feel it is redundant.

Preliminary Planning for the FY 2012 GAANN

In preparing for the FY 2012 GAANN announcement, you will want to review the below listed requirements for the project narrative listed in the FY 2010 application (starting at page 56). This review will help you begin the process of developing responses to the very specific and multiple questions ED will require you to answer in response to each section (page 63). Review these questions in detail now, since they require a substantive effort on your part if you plan to or are considering submitting a FY 2012 GAANN application. Moreover, many of the questions asked by ED in various sections will require that you gather a substantial amount of institutional, course, curriculum, and degree data and weave it into your responses. The assessment, collection, and organization of these data can present a major task in itself, apart from the time needed to write the overall project narrative, a 40-page (double spaced) document that precisely follows ED formatting requirements outlined in the application. In addition, data plans must be proposed for the tracking of GAANN recipient degree progress. All of these kinds of information will require significant support from institutional offices in the proposal’s completion. In addition, academic units involved in the proposal must commit to a required 25% contribution to the GAANN program. (Cost Sharing or Matching: An institution must provide, from non-Federal funds, an institutional matching contribution equal to at least 25% of the grant amount received).
ED will use the selection criteria outlined below to evaluate the quality of your application. The application process requires each applicant to address the selection criteria, including all sub-criteria, in sequential order. An applicant can earn a maximum score for the selection criteria of 100 points; points assigned per section appear in parentheses below.

1. Meeting the purpose of the program (7)
2. Extent of need for the project (5)
3. Quality of the graduate academic program (25)
4. Quality of the supervised teaching experience (7)
5. Recruitment plan (5)
6. Project administration (7)
7. Institutional commitment (14)
8. Quality of key personnel (5)
9. Budget (5)
10. Evaluation plan (15)
11. Adequacy of resources (5)

It is particularly important for the preliminary development of a FY2012 GAANN Evaluation Plan (15 points) listed above that you review and prepare to present the performance measures defined in the notice of applications in the Federal Register of November 19, 2009 for the 2010 GAANN, since this requirement will likely be repeated in the upcoming FY 2012 GAANN announcement. Under the Government Performance and Results Act of 1993 (GPRA), ED will use the following specific measures to assess the performance of the GAANN Program:
The percentage of GAANN Fellows completing the terminal degree in the designated areas of national need;

The percentage of GAANN Fellows from traditionally underrepresented groups enrolled in a terminal degree program in the designated areas of national need; and

The median time to completion of Master’s and Doctors degrees for GAANN students.

If funded, you will be asked to collect and report data in your project’s annual performance report (EDGAR, 34 CFR 75.590) on these measures and on steps you will take toward improving performance on these outcomes. Consequently, applicants are advised to include these outcomes in conceptualizing the design, implementation, and evaluation of their proposed projects. Their measurement should be a part of the project evaluation plan, along with measures of your progress on the goals and objectives specific to your project. All grantees must submit an annual performance report documenting their success in addressing these performance measures.

Resources for Planning a FY 2012 GAANN Proposal

Presentations from the FY 2011 Project Director’s Meeting

- Program Overview: MS PowerPoint (505K) | PDF (804K) | MS Word (50K)
- Performance Reporting: MS PowerPoint (1.7MB) | PDF (1.9MB) | MS Word (64K)

Presentations from the FY 2010 Technical Assistance Workshop

- Program Overview: PDF (455K) | MS Word (75K)
- Talking Points: PDF (558K) | MS Word (30K)
- E-Application: PDF (4.72M) | MS Word (54K)
- Selection Criteria and Helpful Hints: PDF (231K) | MS Word (43K)
- Selection Criteria and Forms: PDF (498K) | MS Word (44K)
- Dartmouth Physics and Astronomy GAANN Recruitment Plan: PDF (1013K) | MS Word (45K)
- Project Administration: PDF (144K) | MS Word (39K)
- Institutional Commitment: PDF (480K) | MS Word (47K)
- Graduate Fellowship Programs and Determining Financial Need -2009: PDF (84K) | MS Word (50K)
- Institutional Support for GAANN Program Development at Rutgers: PDF (184K) | MS Word (61K)
- Quality of the Supervised Teaching Experience: PDF (117K) | MS Word (32K)
- Quality of the Graduate Academic Program: PDF (359K) | MS Word (36K)
- Creating the Evaluation Plan: PDF (172K) | MS Word (46K)
- Budget Forms:
  - Single Discipline Program -- MS Word (46K) | PDF (76K)
  - Inter-Disciplinary Program -- MS Word (46K) | PDF (72K)
  - Multi-Disciplinary Program -- MS Word (90K) | PDF (133K)
Other Applicant and Grantee Resources

Frequently Asked Questions about GAANN

General Questions
1. What is the purpose of the Graduate Assistance in Areas of National Need (GAANN) program?
2. Who is eligible for a grant?
3. What are the areas of national need?
4. What is included in the grant?
5. What is the amount of a grant?
6. What is the duration of a grant?
7. What is the institutional matching contribution?
8. What are interdisciplinary and multidisciplinary applications?
9. When are reports due?
10. What is a PR number?
11. How many fellows will I receive?
12. When do I ask for a time extension?
13. Will I have to re-apply to get my grant renewed?
14. What are performance measures?

How Does an Institution of Higher Education Apply for a Grant?
15. How does an institution of higher education apply for a grant?
16. Am I required to submit my application electronically?

How are Fellows Selected?
17. How does an academic department select fellows?
18. What conditions must be met by a fellow?
19. How does an individual apply for a fellowship?

How Does the Secretary Distribute Funds?
20. What are the Secretary’s payment procedures?
21. What is the amount of a stipend?
22. What is the amount of the institutional payment?

What are the Administrative Responsibilities of the Institution?
23. When does an academic department make a commitment to a fellow to provide stipend support?
24. How must the academic department supervise the progress and training of fellows?
25. How can the institutional payment be used?
26. How can the institutional matching contribution be used?
27. What are unallowable costs?
28. What records and reports are required from the institution?
29. Are GAANN stipends taxable?
The NSF Social Behavioral and Economic Sciences (SBE)

Doctoral Dissertation Research Improvement Grants (DDRIG)

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The DDRIG can provide funds to support field work, purchase instrument time, data sets or software packages and fund other special requirements for your doctoral research.

Doctoral Dissertation Research Improvement Grants (DDRIGs) comprise the largest category of grants awarded by NSF’s Directorate of Social, Behavioral and Economic Sciences (SBE). These grants provide funds to enhance the research of doctoral students. They are not fellowships and do not provide a stipend for the student; instead, they’re meant to provide additional funding for special expenses that will clearly enhance the quality of a student’s doctoral dissertation, such as funds for travel to conduct field work. Awards aren’t large (typically $6,000 - $15,000 over 2 years), but they are prestigious, and they can provide funds that might not be available from any other source to support special activities crucial to your research.

The Program

Although the DDRIG program has one umbrella solicitation, it’s important to understand that each core program within SBE sets its own due dates and requirements. Links to specific requirements by program are given below (these are also given in the umbrella solicitation). Note that some programs have “deadlines” for submission for DDRIG applications – these are hard dates, and if you miss a deadline you can’t submit your application. Some programs have “target dates,” which are a little more flexible – if you think you’ll miss the target date by a few days, contact the Program Director and clear it with them. Some programs, such as Archeology, accept DDRIG proposals any time. Other instructions (such as page limits) also may vary by program, so be sure to follow the instructions for the program to which you will apply.

Division of Behavioral and Cognitive Sciences (BCS)

Archaeology
Cultural Anthropology
Geography and Spatial Sciences
Linguistics
Physical Anthropology

Division of Social and Economic Sciences (SES)

Decision, Risk & Management Science
Economics
Law & Social Science
Methodology, Measurement, and Statistics
Political Science
Science, Technology, and Society
Sociology
To be eligible, you must be in a PhD program and have completed your course work. You need to be enrolled in a US institution, but you don’t have to be a US citizen. To be competitive, you should be conducting research of interest to one of the core programs listed above. To determine if your research fits a core program, read the program’s synopsis on the program website (go to the SBE webpage, click on the appropriate division from the list on the upper left side of the page, and then click on the program). After reading the program synopsis, click on the link at the bottom of the page labeled “What has been funded (recent awards made through this program)” and read the abstracts for funded projects to see the types of research funded by the program. If you’re still not sure, contact the Program Director to discuss your research. Your faculty advisor can be very helpful in this process.

Preparing the Proposal

Unlike many fellowship applications, your DDRIG proposal must be submitted by your institution through regular university channels. Your dissertation advisor will be the Principle Investigator (PI) and you will be co-Principle Investigator (Co-PI). This is not just a formality; your advisor is expected to be deeply involved in helping you develop your proposal and in mentoring you as you conduct your project. The qualifications, track record and degree of involvement of your faculty advisor will be scrutinized closely by reviewers. For this reason, it’s critical that you work closely with your advisor as you develop your proposal. *(Note: due to some regulatory issues that aren’t worth delving into here, NSF has recently changed the procedures for the budget – you will not be listed on the budget, but you will still be listed on the cover page as a Co-PI, more. This doesn’t really change anything since the DDRIG never provided funding to directly support graduate student stipends or wages.)*

What you can ask for. You can ask for funds to support any legitimate research expense. This might be funds for a computer, travel to archives, housing at a research site, access to a data set or special software, payments to subjects, and many other things, depending on the nature of your research. However, you need to keep in mind that you’ll need to convince reviewers that these funds will significantly enhance the quality and outcomes of your doctoral research project. Don’t just make a wish list of things that would be nice to have. Instead, make sure that the items you list in the budget will clearly enhance your research.

The review criteria. As with writing any grant proposal, it’s important to keep the review criteria in mind as you write. For the DDRIG, you’ll need to address two general issues:

- The intellectual merit and broader impacts of your research project
- How this grant will enhance that research project (i.e., what research will these funds enable that you couldn’t do otherwise, and why is that significant?)

*Intellectual merit*: What new knowledge will you generate? Why is it significant? Why is it novel or innovative (i.e., different from what others are doing)? Convince reviewers that you have a
well-thought-out plan for accomplishing your research objectives. Make sure to address your qualifications and those of your dissertation advisor that will help you be successful in this research project. Be sure that your research goals are not policy-oriented. Instead, they need to be hypothesis-driven and need to lead to scholarly publications.

**Broader Impacts:** What will be the benefits of your research outside your particular field and to society, the environment, the economy, etc.? How will your project promote participation of underrepresented groups? How will you promote teaching and learning? How will the results of research be disseminated?

Answering the first question requires stepping back and explaining why people outside your particular sub-field would benefit from the results of your research. To answer the questions about diversity, teaching and learning, you’ll need to incorporate elements in your project that address these needs. For example, you could include an undergraduate in your research project. You could share your research with K-12 students, focusing particularly on schools with large minority populations (many universities and student organizations already have outreach programs that you might be able to participate in). You could disseminate your results not just by publishing scholarly articles, but also by posting the information on a website, writing an article for the general public, or giving a talk at a local community group that might be interested in what you’re doing. Of course, appropriate activities will depend on the kind of research you’re doing. Think of who potential stakeholders might be outside of academia and how you might reach them.

**Proposal Structure**

**Project Summary:** This one-page summary is the first thing your reviewers will read, so you’ll want to make sure it’s clear and compelling. You must address intellectual merit and broader impacts in separate, labeled paragraphs. (For example, “Intellectual Merit: The proposed project will ....”). Some programs also specify a minimum number of words for the project summary, so be sure to check the requirements for your program.

**Project Description:** Below is an example outline for a DDRIG Project Description. Your outline will likely be different based on your particular research project, but the general categories (Literature Review, Research Objectives, Research Plan, etc.) tend to be similar. Be sure to check the page limits and requirements imposed by your particular program (most limit the Project Description to 10 pages, but some programs allow a maximum of 15 pages).

**Example Project Description Outline**

I. Statement of the Problem

II. Literature Review
   - A. Background Data
   - B. Preliminary Research

III. Research Objectives/Theoretical Framework
   - A. Hypotheses
   - B. Specific Research Goals
IV. Research Plan
   A. Research Site
   B. Research Schedule – required (indicate date funds required)
   C. Data Collection
      i. Sampling (Phase I)
      ii. Measurement (Phase II)
      iii. Surveys/Interviews (Phase III, etc.)
   D. Data Analysis
      i. Data entry and coding
      ii. Statistics

V. Significance of Proposed Research
   A. Intellectual Merit
   B. Broader Impacts
   C. Integration of Research & Education

VI. References Cited (separate section - not included in page limit)

The Budget: Work with the research office at your university to develop your budget (your faculty advisor can direct you to the appropriate office). Your research office will also help you get registered in Fastlane (the web interface NSF uses for proposal submission) and they will actually submit the proposal, so contact them early. We’ve already talked about the kinds of things you can fund with this grant. Be sure that you’ve done your homework to find out what things will really cost. If you need a piece of hardware (for example, a recorder), have you checked the price recently? If you’ll be traveling to a research site or archive, do some research to find out all the expenses that might entail. You can explain these details in your Budget Justification. Not only will this allow you to put together a more accurate request, it will also illustrate to the reviewers that you have thoroughly thought through the logistics of your project.

Other Required Documents:

- 2-page biosketches for the PI (advisor) and student Co-PI (be sure to follow formatting as directed here).

- Current and Pending Support Forms - Include requested information on all pending proposals and current projects funded by any source outside of your institution for the PI and Co-PI. You must include the DDRI proposal you are submitting as one of your pending proposals, so even if you don’t have any other outside funding, you will need to submit a Current and Pending Support form. Detailed instructions are given here.

- Facilities, Equipment and Other Resources – Discuss facilities, equipment and resources pertaining to your project.

- Supplementary Documents (as described in the solicitation)

- A statement from the department chair or the advisor certifying the student’s progress towards the degree (completion of course work, advancement to candidacy, etc.) may be required. Please consult the relevant program.
If the doctoral student will use the award for travel expenses to work with a specialist, then a letter from the specialist agreeing to work with the student should be included. The proposal should provide justification for this choice.

Data Management Plan: Describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. (Get your advisor’s help with this.)

Mistakes to Avoid

Common reasons for DDRIG proposals’ failure to be funded include:

- The research doesn’t appear to be particularly significant or exciting (this is why you need to work hard to explain why your research is important, and why the reviewers should be excited by your research)
- The applicant does not seem to be aware of what has been done in the field or has not adequately explained the context of the proposed research (avoid this mistake by including a well-researched background/lit review section that clearly explains how your research will fill current holes in knowledge or extend new lines of inquiry)
- The applicant has not adequately explained how he or she will accomplish their research objectives (make sure you have a detailed research plan with a schedule; working closely with your advisor and having several faculty read your proposal will help to identify any holes in your research plan)
- It does not appear that the applicant’s dissertation advisor will be very involved in mentoring the student (avoid this by working closely with your dissertation advisor and making sure your advisor’s involvement is clearly spelled out in the proposal)

Other Resources for DDRIG

Note: Some of these resources are relatively old, and some are actually talking about the DDIG grants out of the Biological Sciences Directorate, but much of the advice is still applicable. Always double check the information in these resources (particularly requirements and dates) by checking instructions for your program on the NSF website.

- NSF DDIG Grants Key Considerations, Harvard
- Road Map for NSF DDIG, University of Washington
- Tips for Proposal Writing, Univ. San Francisco
- NSF DDIGS and Grant Writing, Indiana University
  - David Skelly’s 2003 Bull. Ecol. Soc. Amer article on writing a successful DDIG (PDF)
  - Spencer and Leonie’s observations of successful and unsuccessful DDIGs (PDF)
  - Link to advice on “Broader Impacts” from NSF (PDF)
  - Deneb Karentz’s 2006 “Tips for proposal writing” (PDF)
- Example DDRIG proposals to the Cultural Anthropology program.
The NSF Faculty Early Career Development (CAREER) Proposal: The References, Letters, and Other Documents

The National Science Foundation’s CAREER program comprises the largest single grant program aimed specifically at junior faculty. In the November issue, we covered the basics of the CAREER program and discussed how to select your research topic; in December we discussed the background and planning work required to develop your education component; in the January issue, we discussed what NSF wants to accomplish with the CAREER program and how to use that information when writing your proposal; in February we discussed various ways to structure the project description; and in March we discussed how to actually write your education plan section. In this sixth article in the series, we’ll discuss other documents that are required in addition to the Project Summary, Project Description, and Budget, including the references cited, departmental letter, letters of collaboration, facilities and resources, biosketch and current and pending form.

References Cited

We’ve already discussed the importance of citing significant publications in both your research and education sections. Here, we’ll talk a little about formatting. NSF is flexible on formatting of references; use the format generally accepted in your field. The only requirement is that the page numbers for articles must include the beginning and ending page numbers (1 of 10, etc.). Proposals have been returned for failing to include the final page number, so be sure to do that. In addition, NSF now requests that you include the url for any reference available online. Be aware, though, that you are not allowed to include urls within the text of the Project Description – this is seen as a potential way to get around page limits. However, if you need to cite a webpage, for example, simply cite it as you would any other reference, and put it in the reference section. There are no page limits on the references cited section.

The Departmental Letter

The letter from the Department Head (or equivalent) is more than a formality; reviewers scrutinize these letters closely, and they are often a significant factor in the review process. According to the solicitation, this letter, which may be up to 2 pages long (up from a 1-page limit in previous years) must contain:

- An indication that the PI's proposed CAREER research and education activities are supported by and integrated into the educational and research goals of the department and the organization, and that the department is committed to the support and professional development of the PI;
A description of (a) the relationship between the CAREER project, the PI’s career goals and job responsibilities, and the goals of his/her department/organization, and (b) the ways in which the department head (or equivalent) will ensure the appropriate mentoring of the PI, in the context of the PI’s career development and his/her efforts to integrate research and education throughout the period of the award and beyond; and

A statement testifying to the PI’s eligibility for the CAREER program.

In order to do these things effectively, your Department Head must have a good idea of what you’re proposing and must support both your research and your education plan. You’re probably already pretty confident that your Department Head supports your research agenda, since that was probably discussed during your hiring process. Your education plan may be another matter. Be sure to think about what kind support you’ll need from the department to carry out your planned education activities and discuss that with your Department Head. If you’re planning to develop a new course, will the department give you teaching credit for teaching that course? If you plan to recruit underrepresented students into the graduate program, will the department’s recruiting program support what you’re doing? Just as importantly, does the Department Head agree that your proposed education activities (on which you’ll be spending a considerable amount of time and effort if you win the CAREER) are worthwhile activities? Reviewers know that the success of the proposed project as well as your success at the university will depend to a significant extent on the support you receive from your institution and the degree to which your goals align with the institution’s goals.

In addition to logistical support, your Department Head should describe the resources the institution is providing you. This could include your lab space, your start-up package, teaching relief, lab equipment, etc. NSF also wants to know how you are being mentored – is there a formal mentoring program? Have you been assigned one or more mentors? Are there other resources made available to junior faculty to help them succeed? All of these factors are indicators of the level of report you’ll receive and therefore the likelihood you’ll succeed. An example departmental letter appears at the end of this article.

Letters of Collaboration

If you’ll have collaborators on your project, be sure to get a letter of collaboration from them. As we discussed earlier, collaborators can help provide expertise that you need. For example, if you’re moving into a new line of research – particularly if it’s interdisciplinary – a collaborator can provide skills that you don’t yet have. Collaborators may also provide logistical support, such as access to an instrument you need. Many CAREER PIs recruit collaborators for their educational activities. For example, a faculty member from your College of Education might assist with designing and conducting your educational assessment. If you’ll be participating in an ongoing program, such as an NSF Research Experiences for Undergraduates (REU) Site, you’ll want a letter from the PI of the REU Site. If, for example, you will be hosting a teacher for the summer and you have identified the teacher, get a letter from her. If you’ll be visiting a school, get a letter from the Principal of the school (or your contact at the school).
No matter the circumstance, these letters of collaboration should state specifically **what the collaborators will be providing to you or how they will be working with you**. Include as many details as possible; for example, the dates they will be visiting your lab, or a description of the equipment to be made available. If the collaborator is providing expertise, they should discuss their qualifications.

It’s fine for the letters to also discuss how the collaboration will benefit them (for example, a teacher can talk about how her participation in research in your lab will benefit her teaching), but the letters should not become mere letters of support or letters of reference. A **letter of support** states that the PI’s project is a great idea, or it describes how the outcome of the project will benefit the letter writer, or it discusses the credentials of the PI, but it does not include a discussion of what the writer will contribute to your project. NSF is adamant that...
letters of support should not appear in CAREER applications; if they do appear, the application will be returned.

An effective tactic for getting good letters of collaboration in a timely way is to write the draft letter yourself, leaving areas where the collaborator can fill in details. Indicate to your collaborator that you have provided the draft as a starting point, and they should feel free to modify it as they like. This makes the task of writing the letter easier for your collaborator and makes it more likely that the letter will contain the information needed. Be sure to ask for letters far in advance of the proposal due date.

Other Supplementary Documents

The other supplementary documents required are the same as those required for any NSF proposal. We have addressed these elsewhere, but a few additional comments are provided here.

Facilities, Equipment and Other Resources – Be sure to describe any facilities and equipment that you need for your project. Don’t expect the reviewers to assume that you have a needed instrument if you don’t list it. This is especially important if yours is a non-research-intensive institution. Remember that your reviewers may be from a different part of the country and may know very little about your institution, and you’ll need to confirm that you have the equipment and resources you need. Furthermore, if you’ll have access to additional resources provided by your institution, you can describe those resources in this section as long as you don’t mention a dollar amount. For example, if your college provides support for recruiting-related travel and you’ll be using those funds to help support your outreach activities, you can mention that here. This is a recent change at NSF; until recently, describing those resources was considered implicit cost share and wasn’t allowed. Now, you are allowed to include that information in this section (but not in the budget or budget justification). More information on this section is provided in NSF’s Grant Proposal Guide.

Data Management Plan – This is a new requirement for all NSF proposals starting in 2011. We’ll devote a separate article to developing a Data Management Plan in next month’s issue.

Biosketch – As with all NSF proposals, be sure to follow the required format religiously. NSF has been known to return proposals without review for relatively minor deviations from the required format. The format is given here.

Current and Pending Support – Include requested information on all pending proposals and current projects funded by any source outside of your institution (not just NSF-funded or federally-funded projects). You must include the CAREER proposal you are submitting as one of your pending proposals, so even if you don’t have any other outside funding, you will need to submit a Current and Pending Support form. Detailed instructions are given here.
As you can see, you must pull together a lot of information in addition to your Project Description, so it’s good idea to get documents that can be completed ahead of time, such as your biosketch and current and pending support forms, completed and out of the way early.

Next month: In the final article in this series on the NSF CAREER, we’ll discuss preparing the budget and budget justification.
Introduction to NASA’s Sponsored Research Programs

The National Aeronautics and Space Administration (NASA) includes four mission directorates: science, exploration systems, aeronautics research, and space operations. Awards for research and education programs through these various areas represent a major source of university funding. Moreover, as with NSF, education serves as one of NASA’s cross-cutting management strategies, but, in this case, a strategy clearly linked to the agency’s mission objectives. A highly educated and well-prepared future NASA workforce is an agency mission goal at all degree levels, K-PhD. NASA’s investments in education link directly to one of three goals:

• Strengthen NASA and the nation’s future workforce;
• Attract and retain students in STEM disciplines (science, technology, engineering, and mathematics); and
• Engage Americans in NASA’s mission

NASA’s Office of Education, in collaboration with the mission directorates, also issues NASA Research Announcements (NRAs--NASA Education Strategic Coordination Framework: A Portfolio Approach) that solicit projects, particularly from universities. These project should:

• Foster formal educational goals (e.g., attract and retain students in STEM disciplines);
• Engage self-directed learners in NASA’s mission; and/or
• Contribute to participation by minority organizations, small businesses, and small disadvantaged businesses across NASA education’s full program portfolio (i.e., e-education, elementary and secondary education, higher education, and informal education).

As is the case with other federal mission agencies, e.g., DOE, EPA, DOD, research sponsored by NASA must be relevant to NASA’s mission programs, have science and technical merit, and be affordable and realistic in cost. Proposals responding to a specific NRA solicitation are submitted as solicited proposals. NASA receives and processes several thousand solicited proposals each year submitted in response to many different research solicitations across the four mission directorates (The 2011 NRA and CAN Proposers’ Guidebook). University researchers may also submit unsolicited proposals to NASA. The following guidebook outlines information on the process (Guidance for the Preparation and Submission of Unsolicited Proposals).

All competitive solicitations that could result in the award of a grant or cooperative agreement must be posted on the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES) (NSPIRES Help) (More).

On occasion, advance notice of future NRAs can be found at the same location with a best estimate of the release date, though such advance postings are not guaranteed.
Notification of NRAs may also appear in various professional publications that serve specific science disciplines, engineering fields, or educational areas and/or in a variety of commercial publications reporting NASA program news. However, those interested in NASA research opportunities are urged to subscribe to the relevant NASA email notification service(s), to check the relevant NASA home page(s), and/or to check the NAIS, FBO, and Grants.Gov websites. All other sources are unofficial and therefore not necessarily complete or timely.

NASA evaluations use the peer review process, which relies on the judgment of those knowledgeable, though not necessarily specialists, in the objective(s) solicited by the NRA. Experience has consistently shown that successful proposals are technically meritorious, logical, complete, convincing, easily read, affordable, and responsive to the advertised NASA program.

The Review Process
Members of the scientific community respond to NASA solicitations for research by submitting proposals through their affiliated organizations. When NASA receives a given set of proposals, it begins evaluating each proposal based on the criteria prescribed in the solicitation. These evaluations seek to provide the NASA Program Officer with information to make selection recommendations to NASA. The NASA Program Officer in charge of the soliciting program initiates the reviews. A review usually evaluates proposals responding to one solicitation. NASA will assign a proposal or a group of linked proposals to a specific solicitation for review.

Guidelines and Tips for Proposal Preparation
NASA’s extensive experience reviewing proposals submitted in response to a wide variety of program solicitations has shown the value of the following guidelines to encourage the submission of a valid, competitive proposal:

- Follow the instructions in the specific NRA of interest with care in order to respond to the opportunity as published, since NASA is legally obligated to review and select proposals in accordance with its published provisions.
- Clearly state the objectives of the proposal and its implementation plan so that both NASA and the peer reviewers can easily understand what is proposed to be done and how it will be accomplished.
- Make sure that the proposal clearly addresses the advertised objectives as stated in the NRA, since NASA is a program-oriented Agency obligated to sponsor only that research that supports its goals and objectives as stated in its strategic plans and research solicitations.
- If proposing innovative work in a new or emerging field, strive to achieve a balance between the provision of tutorial material and the description of the new activities being proposed.
- Provide appropriate recognition of preceding accomplishments; demonstrate knowledge of the literature by citing key recent, significant publications in the field; and
show how the proposed activity will extend and build on what has already been accomplished (whether by the Proposer or by others).

- Proofread the proposal carefully before submission, and, if at all possible, ask a colleague to critically review it for completeness and comprehensibility. **Strive for a quality and clarity of text comparable to that of an article submitted to a peer-reviewed journal.**

- Keep the proposal as short as possible consistent with completeness and understandability; use legible fonts and illustrations and a clear, simple organization. When designing graphics, remember that readers may be color blind; therefore, choose non-color-dependent ways of conveying critical information.

- **Propose fresh, new ideas rather than slight modifications of proposals** that may have been rejected in previous competitions. Simply revising a proposal to meet deficiencies identified in a previous review(s) does not necessarily guarantee a higher rating, since reviewers are rarely the same, NASA objectives evolve, and fields of research mature, all over a period as short as one year.

- Include all requested proposal information in its specified order and in compliance with stated page limits.

- **Strive for realism as well as adequacy of the requested budget**, and provide all the details necessary to justify and facilitate understanding of the proposed costs. A relatively low cost does not necessarily provide a competitive advantage to a proposal unless all other factors are equal; likewise, a proposal judged to be of especially high science/technical merit will not necessarily be rejected because it requests a budget beyond the norm advertised for the program.

**Familiarize yourself with the proposal submission process and website well before the deadline.** Adhere to all proposal deadlines, and, if possible, submit proposals well in advance of the proposal submission deadline to minimize the effect of technical difficulties that may arise (see The 2011 NRA and CAN Proposers' Guidebook).

**Key Proposal Evaluation Factors**

- Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA’s objectives, intrinsic merit, and cost.

- Evaluation of a proposal’s relevance to NASA’s objectives includes considering the potential contribution of the effort to NASA’s mission.

- Evaluation of its intrinsic merit includes considering the following factors to be of equal importance:
  - Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.
  - Applicant’s capabilities, related experience, facilities, techniques, or unique combinations of these as integral factors for achieving the proposal objectives.
The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives.

Overall standing among similar proposals and/or evaluation against the state-of-the-art efforts.

- Evaluation of the cost of a proposed effort may include references to the realism and reasonableness of the proposed cost and available funds.
- Evaluation Techniques:
  - Selection decisions will be made following peer and/or scientific review of the proposals.
  - NASA uses several evaluation techniques regularly. In all cases, proposals are subject to scientific review by discipline specialists in the area of the proposal.
  - Some proposals are reviewed entirely in-house; others are evaluated by a combination of in-house and selected external reviewers; while yet others are subject to the full external peer review process (with due regard for conflict-of-interest and protection of proposal information), such as by individual reviewers or through assembled panels.
  - A NASA Selection Official makes the final decision.

A scientifically and programmatically meritorious proposal not selected for award during its initial review, may be included in subsequent reviews, unless the proposer requests otherwise.

Notification of Release of NASA Research Solicitations

Links to open and recently closed NASA NRAs released by NASA may be accessed through the Web address for the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES). Alternatively, the NASA Acquisition Internet Service (NAIS) provides an inclusive, searchable database for all solicitations of every type released by the Agency by opening “Business Opportunities” from the menu at the NASA Acquisition Internet Service. This listing will also include any NRAs that may be released by any of NASA’s Centers. Researchers may also find research grant opportunities offered by NASA and other Federal agencies on the Grants.Gov web site. Additional information on NASA solicitations may be obtained at Links to NASA’s Business Opportunities and Justifications & Approvals (J&As).

Moreover, the NSPIRES User Guide PDF Guidelines offers a range of online NSPIRES tutorials that cover the complete range of NSPIRES functions, including uploading proposal documents. The Guidebook for Proposers Responding to a NASA Research Announcement (NRA) describes the policies and procedures of the Broad Agency Announcement known as the NASA Research Announcement (NRA) used by the program offices at the Headquarters of the National Aeronautics and Space Administration (NASA) that solicit proposals for basic science and technology research. All applicants who plan to respond to an NRA released by NASA Headquarters should adhere to the guidelines contained in the main Chapters and Appendices of the NASA Guidebook for Proposers, unless otherwise noted in the NRA itself. Be sure to check the specific solicitation to which you are responding to ensure that you follow the
correct version of the *NASA Guidebook for Proposers*. The following [NSPIRES Tutorials](#) provide a key introduction to finding research and education funding at NASA and to submitting the proposals:

- **Lesson 1: General Information**
  Learn about NASA’s overall mission and programs in relation to the solicitation and proposal process.

- **Lesson 2: Introduction to NSPIRES**
  Learn how NSPIRES can help you *create and submit proposals to NASA* through this introduction to the basic modules of this web application.

- **Lesson 3: Organizations**
  Learn about the various roles within an organization, such as EBPOC, OAO, and OPOC, and how they participate in the proposal process. This lesson also defines the term “affiliation”.

- **Lesson 4: Members**
  Learn about the roles of Principal Investigator (PI), team members, and support staff and how they participate in the proposal process. This lesson also defines the term “associations”.

- **Lesson 5: Proposals**
  Learn about the characteristics of a proposal, proposal sources, parts of a proposal, *tips for writing proposals*, and requirements for submitting proposals to NASA.

- **Basic Navigation before Registration**
  Learn how to navigate within NSPIRES before becoming a registered member.

- **User Registration**
  Learn how to register for a personal NSPIRES account.

- **Basic Navigation after Registration**
  Learn how to navigate within NSPIRES after becoming a registered member.

**NASA Guidance for the Preparation and Submission of Unsolicited Proposals**

NASA depends upon the private sector -- industry, educational institutions, and other nonprofit organizations -- for the greater part of its research needs. Therefore, NASA encourages the submission of unique and innovative unsolicited proposals that will further the Agency’s mission. This document provides guidelines for preparing formal unsolicited proposals to those who wish to convey their creative methods or approaches to NASA. These guidelines apply to all unsolicited proposals regardless of the NASA Installation or Agency program for which they are intended, but do not apply to solicited proposals.

At the end of this document, NASA provides information about its specific current and anticipated research goals, and science or engineering topics that may be of interest. It should be noted that projects toward the research end of the spectrum rather than supplies or services are generally most suited to the unsolicited proposal approach.

To be considered a valid unsolicited proposal, a submission must:

- **Be innovative and unique**;
- Be independently originated and developed by the applicant;
Research Development & Grant Writing News

- Be prepared without Government supervision, endorsement, direction, or direct Government involvement;
  - Include sufficient technical and cost detail to permit a determination that government support could be worthwhile and the proposed work could benefit the agency’s research and development or other mission responsibilities; and
- Not be an advance proposal for a known agency requirement that can be acquired by competitive methods.

There are no specific dates for the submission of unsolicited proposals. However, funding availability is greater during the start of the Government's fiscal year cycle beginning October 1 of each year. All proposals should be submitted at least six (6) months in advance of the desired starting date.

Proposals should be submitted to the Unsolicited Proposal Coordinating Office indicated under each organization.

- NASA Headquarters
- AMES Research Center
- Dryden Flight Research Center
- John Glenn Research Center
- Goddard Space Flight Center
- Johnson Space Center
- Kennedy Space Center
- Langley Research Center
- Marshall Space Flight Center
- Stennis Space Center

Unsolicited Proposal Content

If the proposer does not follow these guidelines, NASA may not be able to evaluate the proposal in a meaningful way; consequently, it may be returned or rejected. The Proposer has the option to resubmit the proposal after making modifications. There is no prescribed format for an unsolicited proposal. As long as it includes the items described below and meets the definition of an unsolicited proposal, it will be fully considered. Proposals should be brief and concentrate on substantive material essential for a complete understanding of the project. Experience shows that few proposals exceed 15-20 pages. Any necessary detailed information, such as charts, should be included as an attachment rather than in the main body of the proposal. As proposals are not returned, avoid the use of "one-of-a-kind" attachments; send copies or representations whenever possible, or discuss them in the proposal.

The principal elements considered in evaluating a proposal are its technical and programmatic relevance to NASA's specific mission, its intrinsic scientific or engineering merit, the qualifications of the investigator and the investigator's institution, and the overall cost (exclusive of the amount of cost sharing, if any). NASA regularly uses several evaluation techniques. In all cases, however, discipline specialists in the area of each proposal review that proposal. Some proposals are reviewed entirely in-house; others are evaluated by a
combination of in-house personnel and selected external reviewers; while still others are subject to a full external peer review either by mail or through assembled panels. Due regard for conflict of interest and protection of proposal information is always part of the process. Regardless of the technique, NASA technical personnel decide whether or not to fund or not fund an unsolicited proposal. If additional information is requested during the evaluation of the proposal, that information should be forwarded directly to the requester.

NASA Web Resources

NSPIRES Frequently Asked Questions (FAQs)

Proposal Preparation, Submission, & Award

- Federal Business Opportunities (FedBizOps)
- Grants.gov
- Guidebook for proposers responding to a NASA Research Announcement (NRA)
- Grant and Cooperative Agreement Handbook
- Guidance for The Preparation And Submission Of Unsolicited Proposals
- NASA Grant Office Points of Contact

Guide to Key NASA Documents

- Guidebook for Proposers Responding to a NASA Research Announcement (NRA) or Cooperative Agreement Notice (CAN).
- To track the process of a grant and/or cooperative agreement prepared by the NASA Shared Services Center (NSSC) on behalf of one of the NASA Centers/HQ go here.
- NASA Online Directives Information System (NODIS) Library.
- NASA Federal Acquisition Regulation (FAR) Supplement (NFS):
- The NASA Strategic Plan.
- Links to all NASA Headquarters Mission Directorates.
- Links to all NASA Centers and the Jet Propulsion Laboratory.
- A list of current Business Opportunities with NASA.
- Guidance for the Preparation and Submission of Unsolicited Proposals.
- Grant And Cooperative Agreement Handbook.
- NASA Headquarters Organizations
  - Aeronautics Research Mission Directorate
  - Exploration Systems Mission Directorate
  - Office of Chief Education Officer
  - Science Mission Directorate
  - Space Operations Mission Directorate
- NASA Centers and Field Facilities
  - Ames Research Center, Moffett Field, CA
- **Dryden Flight Research Center**, Edwards, CA
- **Glenn Research Center** at Lewis Field, Cleveland, OH
- **Goddard Institute for Space Studies**, New York, NY
- **Goddard Space Flight Center**, Greenbelt, MD
- **Independent Verification & Validation Facility**, Fairmont, WV
- **Jet Propulsion Laboratory**, Pasadena, CA
- **Johnson Space Center**, Houston, TX
- **Kennedy Space Center**, FL.
- **Langley Research Center**, Hampton, VA
- **Marshall Space Flight Center**, Huntsville, AL
- **Stennis Space Center**, MS
- **Wallops Flight Facility**, Wallops Island, VA
- **White Sands Test Facility**, White Sands, NM
Understanding the Mission and Culture of the Funding Agency

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Writing successful proposals, and increasing your success rate over time, requires the accumulation of marginal advantage achieved by doing everything right, or nearly as perfectly as possible. One place to find marginal advantage is in your studied understanding of the mission and culture of the funding agency and reflecting that in crafting your research narrative.

Many of the core attributes of a successful proposal are fundamentally generic across federal research agencies and foundations, as well as academic disciplines. One such attribute of a competitive proposal is the PI’s clear and nuanced understanding of the mission and culture of the specific agency or foundation to which the proposal was submitted. This holds true both for research and educational proposals common to universities, and it is particularly true when research proposals may be required to include educational components. Writing successful proposals, and increasing your success rate over time, requires the accumulation of marginal advantage achieved by doing everything right, or nearly as perfectly as possible. You can find such a marginal advantage in a studied understanding of the mission and culture of the funding agency. How well your proposal maps to the objectives and review criteria of any research solicitation determines your competitiveness at any federal agency or foundation. However, for that to be possible, and to better ensure your proposal’s success, you must also map your research to the mission and culture of the agency, particularly since agency mission and culture provide the underpinnings that define all solicitations. Your understanding of the mission and culture of the agency or foundation will significantly affect how you write the proposal narrative by which you will be judged for funding.

Many avenues lead to gaining a more substantive and nuanced understanding of the mission and culture of the funding agency, including:

- Visiting the agency website and reviewing the mission, strategic plans, and research and educational roadmaps of both the agency and the programmatic areas within the agency;
- Reviewing online postings of agency reports, presentations, and research and/or educational workshops given by agency program officers;
- Talking to colleagues that have been funded by the agency;
- Identifying researchers on your campus that have served as agency program officers (e.g., NSF rotators) and talking to them;
- Identifying researchers on your campus that have served as reviewers for specific agencies and programs and talking to them;
- Reading agency online abstracts of currently funded projects and asking (by email or phone) whether the PI is willing to talk to you about the agency;
- Reading current agency solicitations in your disciplinary area and identifying any reports, presentations, or technical workshops identified in the solicitation as motivating the agency’s funding of particular research areas;
• Subscribing to agency RSS feeds and email alerts that keep you current on new solicitations, reports, presentations, technical workshops and general agency news related to mission and research priorities;
• Subscribing to RSS feeds and email alerts from national associations, particularly those specific to your disciplinary area (e.g., American Institute of Physics, AAAS, Humanities Resource Center Online)

Funding agencies do not fund research projects disconnected from a long-term, well-thought-out research agenda. Instead, research agencies see themselves as leaders in a national dialogue on research topics and directions, and as key players in defining and driving that national research and educational agenda. Moreover, funding agencies fund those projects that fall within the scope of their mission. This can be a source of frustration to some applicants, who may believe that a good idea alone will merit funding, regardless of how connected it may be to a particular agency’s investment priorities. However, agencies fund only very good ideas that are clearly developed and tightly linked to their mission, vision, and strategic plan. If your proposal does not advance the mission priorities of the agency, it will not be funded.

Therefore, the more knowledgeable you are about a funding agency’s mission, strategic plans, research culture, investment priorities, and the rationale behind them, the better able you will be to weave a compelling and competitive proposal narrative. This agency-specific knowledge allows you to more convincingly describe how your proposed research connects to the research objectives spelled out in the solicitation, which, in turn, will advance the agency’s larger strategic plan and/or mission priorities. How well you convince program officers and reviewers that your research can play a key role in advancing the agency’s objectives, thus contributing to the success of its larger strategic plan, will be a determining factor in the decision whether to fund your proposal.

Many research programs funded by federal agencies, and some private foundations, grow out of an evolving consensus among the national research community on the most promising future directions in specific research topic areas. These directions and priorities, in turn, are translated into funding opportunities at the agencies, or are incorporated into an agency’s strategic plans and given an investment priority, or mission-critical focus.

Educational programs targeted at universities, e.g., curriculum reform, diversity, or undergraduate research, are often developed through the same process. It is not uncommon, for example, for reports of the National Academies, the American Association for the Advancement of Science, or similar associations to significantly influence funding directions at one or more agencies, and for those reports to form the underpinnings of subsequent solicitations. Understanding the origins, underpinnings, and rationale behind funding solicitations will help you better frame your claims of research merit and thereby better position you to write a competitive proposal narrative.

Large agencies, such as the National Science Foundation and National Institutes of Health, are composed of directorates and divisions, or institutes and centers, and these, too, have defined missions, strategic plans, investment priorities, and cultures. At times, these
almost act as autonomous funding agencies in themselves. It may, therefore, also be necessary to understand the mission, culture, and priorities of the particular organizational unit to which you will be submitting your proposal.

A strong proposal allows the funding agency to form a partnership with the submitting institution and principal investigator that will help carry out the agency’s vision, mission, and strategic goals. The applicant must understand the nature of this partnership and the expectations of the funding agency, both during proposal development and throughout a funded project. **Analyzing the funding agency will help you better understand several key elements common to every competitive proposal narrative:**

- Who is the audience (e.g., agency program officers and reviewers) and how are they best characterized in terms of the expertise they bring to the review process?
- What is the best way to address them?
- What is a fundable idea, and how does it support the agency’s research investment priorities, or mission-critical objectives?
- How are claims of research uniqueness and innovation best supported in the proposal text and how well do they agree with the agency’s research objectives, or mission focus?
- How do you best communicate your passion, excitement, commitment, and capacity to perform the proposed research to review panels and program officers using the language of the funding agency?

Much of this information can be derived by analyzing background information gathered on the funding agency related to a range of topics, including the following available on the agency’s website: **mission statement, strategic plan, investment priorities, agency language/technical dialect, management structure, organizational chart, program officers, reports, publications, leadership speeches, public testimony, review process, project abstracts, funded projects, and current solicitations.**

It is important to understand how the various funding agencies differ based on characteristics such as mission, strategic plan, investment priorities, and culture. Researchers in the physical, computational, biological, and social and behavioral sciences may have funding opportunities at two or more agencies, e.g., NIH, NSF, DOD, DOE, NASA, and EPA, but these agencies differ in many ways, including the following:

- Research focus within disciplines
- Mission focus
- Research classified as basic, applied, or application driven
- Research scope and performance time horizon
- Exploratory, open-ended research, or research targeted to technology development and deployment
- Multidisciplinary or interdisciplinary
- Independent research, or dependent linkages to the agency mission, e.g., health care, education, economic development, defense, mission agency workforce objectives
It is also important to differentiate between basic research agencies (e.g., NSF, NIH) and mission-focused agencies (e.g., DOD, NASA, USDA, DOE, NOAA, EPA), as well as to differentiate between hypothesis-driven research and needs- or applications-driven research at the agencies. (For example, an education proposal to DoED would address the need, but one to NSF would not argue need; alternatively, a clinical biochemist doing research on diabetes would write a very different proposal to NSF/MCB (i.e., basic research at the supramolecular and cellular scales, with diabetes as a possible broader impact but not the focus) than a disease-specific proposal to NIH/NIDDK.) One of the most important differences between these types of agencies is the degree of autonomy they can exercise in setting their investment priorities. Basic research agencies, such as NSF and NIH, generally set long-term goals and are less influenced by the President or U.S. Congress than mission agencies. Mission-oriented agencies, such as the Department of Defense or NASA, are highly influenced by the priorities of the President and Congress, and DARPA can shift focus quickly enough to impact currently funded grants. Therefore, focus and priorities at mission agencies can change rapidly with changes in political leadership, climate, or national issues. This means that researchers who apply to these mission agencies for funding are well advised to constantly monitor the priorities of these agencies for changes in direction.

In most cases, this information can be obtained on the internet by visiting the agency web site. Perusing the web site gives the applicant a sense of how the funding agency views itself and the role it sees itself playing in the national research enterprise. This information can be found in the agency mission statement or strategic plan, for example. In other cases, particularly with regard to private foundations, the applicant will find the annual report a source of useful information on an agency’s mission and agenda. An annual report gives the applicant a profile of funded projects, award amounts, and results.

The proposal author(s) needs this information for several reasons, but principally because it will allow the writer to shape the proposal from its inception to conform to the agency’s research and/or educational mission.
Funding for energy and energy-related research is available from many of the federal research agencies, both basic and mission, most of which use two main funding mechanisms: (1) published solicitations; and (2) unsolicited proposals. Energy research funding will reflect the differing strategic research roadmaps and investment priorities of the various agencies. The following are examples of various federal agencies funding energy research. This article updates the open funding opportunities for energy research since first published in the September 15 of this newsletter (download pdf). The final ten pages of this article are a listing of upcoming funding opportunities related to energy research, primarily from the Department of Energy and the National Science Foundation, along with opportunities from other agencies.

• The DoD has an interest in biofuels and, in 2007, published the DoD Energy Strategy. AFOSR Bioenergy: This program (AFOSR-BAA-2010-1) aims to understand and improve the facility of photosynthetic microbes to produce biofuels (specifically, molecular hydrogen and algal lipids) for use in fuel cells and air breathing engines, and also to enhance the power density of enzymatic and microbial biofuel cells and the range of complex, impure, or mixed natural substrates that the biofuel cells can oxidize and convert to electricity.

• Significant biofuels research funding is available at USDA. Learn about USDA’s Energy programs by visiting the "The Matrix", a navigational tool that guides individuals through the various technology types, agencies, and research program areas. Keep your information current by using USDA RSS Feeds.

• NIH funds basic research relevant to bioenergy research, for example.

• EPA funds a range of programs related to sustainable energy systems. For example: Energy, Biofuels & Climate Change--Research, Tools & Technologies.

• NSF supports targeted energy research as well as basic research that is relevant to energy. Examples with upcoming due dates follow: Biomaterials, including biomaterials for energy harvesting, conversion and storage; Solid State and Materials Chemistry, encourages fundamental studies of novel material and material systems for efficient energy harvesting, conversion and storage; Emerging Frontiers In Research And Innovation; Building Engineered Complex Systems; Biomolecular Systems Cluster; Energy for Sustainability; Thermal Transport Processes; Biotechnology, Biochemical, and Biomass Engineering.

• Unsolicited proposals related to energy can be submitted through the NSF EArly-concept Grants for Exploratory Research (EAGER).

• NIST research areas related to energy use and conservation include standards for the Smart Grid, energy efficient lighting, photovoltaics, net-zero-energy buildings, and software for "smart" building, among others.

• NASA Advanced Energy Research Areas
The Bureau of Land Management has renewable energy programs in solar, wind, geothermal, and biomass.

- MMS Oil Spill Response Research
- DOE’s E-Center
- DOE Golden Field Office
- EERE Solicitations for Business, Industry, and Universities
- Agriculture and Food Research Initiative Competitive Grants Program

Department of Energy—Upcoming Research Funding

Applications of Nuclear Science and Technology Industry
Response Due: April 25, 2011, 11:50PM ET
The Office of Nuclear Physics (NP), Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving applications for initiatives in Applications of Nuclear Science and Technology, aimed at nuclear science research and development being conducted to achieve Nuclear Physics mission goals and that are also relevant to applications important to the Nation. The knowledge, data, techniques, and methods of nuclear science are utilized in a broad portfolio of applications, including energy, nuclear medicine, commerce, medical physics, space exploration, finance, geology, environmental sciences, and national security.

Research and Development for Hydrogen Storage
Closing Date: April 29, 2011
The Department of Energy’s (DOE) Fuel Cell Technologies (FCT) Program within the Office of Energy Efficiency and Renewable Energy (EERE) is requesting applications to support applied research and development (R&D) activities to enable the widespread commercialization of hydrogen and fuel cell technologies. The core of the FCT Program consists of activities in applied research as well as technology development and demonstration. These activities will: maintain the rapid pace of progress in fuel cells, expand the markets in which they can compete; enable the use of lower-cost hydrogen from diverse and environmentally beneficial sources; enable highly efficient, centralized production of hydrogen; reduce the cost of delivery; expand the markets for hydrogen-powered fuel cells in several applications; and improve hydrogen storage technologies.

Scientific Discovery through Advanced Computing Institutes (SciDAC)
Application Due Date: May 2, 2011, 11:59PM ET
The mission of the SciDAC Institutes is to provide intellectual resources in applied mathematics and computer science, expertise in algorithms and methods, and scientific software tools to advance scientific discovery through modeling and simulation in areas of strategic importance to the Office of Science and the National Nuclear Security Administration (NNSA). Funding opportunities for SciDAC science domains will be announced through several forthcoming Funding Opportunity Announcements (FOAs) and Program Announcements. These Announcements, issued by ASCRs SciDAC partners, could include opportunities for linking
applied mathematics and/or computer science research to science-domain specific challenges through science application partnerships. The development of SciDAC tools and resources by the Institutes, funded under this FOA, is intended for computational systems such as those existing and planned for at the Oak Ridge and Argonne Leadership Computing Facilities, the National Energy Research Scientific Computing Center, and similar world-class computing facilities over the next 5 years. Specific goals and objectives for the SciDAC Institutes are: o Tools and resources for lowering the barriers to effectively use state-of-the-art computational systems; o Mechanisms for taking on computational grand challenges across different science application areas; o Mechanisms for incorporating and demonstrating the value of basic research results from Applied Mathematics and Computer Science; and o Plans for building up and engaging our nations computational science research communities.

Advanced Hydropower Development
LOI Due Date: May 5; Application Due June 6.
DOE’s Water Power Program has a mission to research, develop, test, evaluate, and demonstrate innovative water power technologies capable of generating renewable, environmentally responsible, and cost-effective electricity from water resources. Included in these activities are technologies and processes to upgrade unit and plant capacity, improve efficiency, and improve the environmental performance of Conventional Hydropower generation. Through this Funding Opportunity Announcement, the Wind and Water Power Program of the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is seeking applications for the development, testing, validation, modeling, and interconnection of advanced conventional hydropower systems. This FOA seeks applications in the following Topic Areas: Topic Area 1: Sustainable Small Hydropower; Topic Area 2: Sustainable Pumped Storage Hydropower (PSH); Topic Area 3: Environmental Mitigation Technologies for Conventional Hydropower; and Topic Area 4: Advanced Conventional Hydropower System Testing at a Bureau of Reclamation Facility. Topic Area 4 is jointly funded by the Bureau of Reclamation and Department of Energy.

Catalytic Upgrading of Thermochemical Intermediates to Hydrocarbons
Application Due Date: May 6, 2011, 11:59PM Eastern Time
DOE is seeking applications to develop technology or processes for converting thermochemically-derived biomass intermediates (such as, but not limited to, syngas, ethanol, mixed alcohols, mixed oxygenates [C$_2$ and higher molecules], olefins, pyrolysis oils, and ethers) to liquid hydrocarbon molecules that could be a direct feed into current petroleum refineries or that are direct replacements (blend stocks) of gasoline, diesel, or jet fuels, or chemical products that enable the production of thermochemically-derived biomass fuels by bringing higher value on an energy content basis. Applicants will accumulate enough hours on the proposed technology/process such that a performance guarantee could be made to a commercial customer. The purpose of this Funding Opportunity Announcement (FOA) is to address three primary goals of EERE: 1) increase the viability and deployment of renewable energy
technologies, thereby 2) spurring the creation of a domestic bio-industry, resulting in 3) a dramatic reduction in dependence on imported oil.

**Solar Energy Grid Integration Systems - Advanced Concepts**

**Preliminary Applications Due: May 9, 2011 Invitations for Full Applications Sent: May 23, 2011 Full Applications Due: June 23, 2011**

The objective of this Funding Opportunity Announcement (FOA) is to fund projects that develop technologies in power electronics that reduce the overall photovoltaic (PV) system costs, allow high penetrations of solar technologies onto the grid (e.g. reactive power, energy storage, advanced functionalities), and enhance the performance, reliability, and safety of the PV system ([MORE at EERE](https://eere.energy.gov)). In addition, projects funded under this FOA will demonstrate the feasibility of these technologies in the field and will directly support the objectives of the SunShot Initiative, which has a goal to reduce the total costs (including installer margin) of solar energy systems by about 75 percent before the end of the decade and to make solar competitive with conventional fossil-fuel sourced generation. The DOE has identified several major areas where significant cost reductions in power electronics can be made including: 1) economies of scale; 2) advanced components; 3) reliability; 4) smart grid integration; and 5) understanding of system implications. The DOE also is considering how changes in power electronics impact the cost of the PV system as a whole. DOE anticipates that the U.S. Solar Industry can reach the aggressive SunShot targets by focusing on both power electronics research and in technologies more specific to grid-connected, photovoltaic systems. There will be two topics to which an application may be submitted under this FOA: Topic 1: Smart-Grid Functionality Topic 2: Using Power Electronics to Address Balance of System Costs The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at [https://eere-exchange.energy.gov](https://eere-exchange.energy.gov).

**DE-FOA-0000493: Extreme Balance of System Hardware Cost Reductions (BOS-X)**

- **Letter of Intent Submission Deadline: 5/9/2011 11:59 PM EST**
- **Full Application Submission Deadline: 6/9/2011 11:59 PM EST**

The objective of this Funding Opportunity Announcement (FOA) is to significantly reduce the balance of system hardware cost component of Photovoltaic (PV) systems. This FOA directly supports the goals of the Department of Energy’s (DOE) Office of Energy Efficiency and Renewable Energy (EERE), Solar Energy Technologies Program (SETP) and the SunShot Initiative, which has a goal to reduce the total cost (including installer margin) of solar energy systems by about 75 percent before the end of the decade. Under this FOA, DOE is requesting applications for research, development, and demonstration of new components and system designs or the development of new building code language to overcome scientific, technological, and engineering barriers to achieving safe, very low cost, and high reliability balance of system hardware. While this FOA is meant to mainly address hardware and labor costs and not “soft” costs, advancements in hardware that may result in lower soft costs (permitting, site preparation, etc.) are encouraged. 

*There are four topics to which an application may be submitted under this FOA:*
• Topic 1: Transformational Building Integrated Photovoltaic (BIPV) Modules
• Topic 2: Roof and Ground Mount Innovations
• Topic 3: Transformational Photovoltaic System Designs
• Topic 4: Development of New Wind Load Codes for PV Systems

DE-FOA-0000387: Transformational PV Science & Technology: Next Generation Photovoltaics
The U.S. Department of Energy seeks to fund revolutionary, exploratory research to create highly disruptive solar photovoltaic (PV) technologies that will meet $1 per watt and lower installed system cost targets beyond the end of this decade. The Transformational PV Science and Technology: Next Generation Photovoltaics II Funding Opportunity Announcement (FOA) intends to support research into technologies that have the potential for much higher efficiency, lower cost, and/or more reliable performance than existing commercial and near-commercial photovoltaics and their expected incremental progress in future years. As part of the SunShot Initiative, this early-stage applied research program is intended to demonstrate and prove new concepts in materials, processes, and device designs to feed into component development at the laboratory scale, with subsequent component integration, engineering scale-up, and eventual commercial production. Selected projects will have as a goal the proof-of-concept of novel materials, processes, or architectures as applied to a photovoltaic device. This FOA is designed to look beyond incremental near-term innovation and explore transformative concepts with the potential to break through performance barriers as we know them today.

DE-FOA-0000492: Foundational Program to Advance Cell Efficiency (F-PACE)
• Concept Paper Submission Deadline: 5/9/2011 11:59 PM EST
• Full Application Submission Deadline: 6/23/2011 11:59 PM EST
The U.S. Department of Energy (DOE) seeks to fund applied scientific research that provides the technical foundation for significant increases in solar photovoltaic (PV) cell efficiency, to enable commercial and near-commercial PV technologies to achieve $1 per watt installed system cost targets by the end of the decade. Combined with the technical and funding resources from the National Science Foundation (NSF), this joint Funding Opportunity Announcement (FOA) for the “Foundational Program to Advance Cell Efficiency” (F-PACE) will identify and fund solar device physics and photovoltaic technology research and development that will improve PV cell performance and reduce module cost for grid-scale commercial applications. Projects funded under this FOA are intended to address identified cost and efficiency barriers through advances in the PV science knowledge base, improved materials and processes for PV cell components, and innovative approaches for closing the gap between production cell efficiency and laboratory cell efficiency, and between laboratory cell efficiency and the theoretical maximum. These goals jointly support the missions of the DOE Office of Energy Efficiency and Renewable Energy’s (EERE) Solar Energy Technologies Program (SETP) and the NSF Electrical, Communications and Cyber Systems (ECCS) Division. Through this FOA, ECCS and SETP intend
to jointly pursue foundational research into PV cell and sub-cell technology to support the Sunshot initiative, which has a goal to reduce the cost of solar electricity from solar by 75% over the next decade to make it competitive with conventional fossil-fuel sourced generation. There will be three topics to which an application may be submitted under this FOA:

- Topic 1: Foundational Research on PV Sub-cell Materials and Processes
- Topic 2: Foundational PV Cell Research
- Topic 3: Barrier Focus Teams


Due May 16.

The goal of the Advanced Research - Coal Utilization Science Program is to conduct research that supports the development of technologies for clean, efficient electric power generation. This supports the DOE Strategic Plan by providing core competencies related to advanced power system technologies. The scope of this activity will include soliciting both novel and applied research projects from the three areas of research described below. Objective: The objective of this activity is to competitively solicit projects in the Sensors and Controls area of the National Energy Technology Laboratory's (NETL) Advanced Research (AR) Program. The AR Program sponsors innovative and transformational research and development (R&D) that bridges the gap between basic sciences and applied engineering. These R&D efforts are oriented and prioritized towards the full-scale implementation and operation of the next generation of fossil energy power systems and improvements to existing fossil energy power systems. These advancements are driven by the need for highly efficient, near-zero emission power systems that utilize domestic resources.

**Advanced Gasification: Improvements & Optimization**

Response Due: May 20, 2011, 8:00 PM ET

Applications to this funding opportunity announcement are sought for Research and Development (R&D) projects that will address key challenges to IGCC commercialization with CCS related to: 1) the utilization of the carbon dioxide (CO₂) stream to reduce IGCC with CCS plant costs, 2) reduction of the cost of IGCC using low rank coals, and 3) the improvement of availability and costs for gasification plants. All three topic areas aim to produce results that reduce the COE, while maintaining or improving plant efficiency. Applicants shall clearly identify the topic area under which the application is being submitted.

**Theoretical Research in Magnetic Fusion Energy Science**

Closing Date: May 26, 2011

Theoretical Research in Magnetic Fusion Energy Science SUMMARY: The Fusion Energy Sciences (FES) program of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving grant applications for theoretical research relevant to the U.S. program in magnetic fusion energy sciences. All individuals or groups planning to submit applications for new or renewal funding in Fiscal Year 2012 should submit in response to this
Funding Opportunity Announcement (FOA). The specific areas of interest are: 1. Magnetohydrodynamics 2. Confinement and Transport 3. Boundary Physics 4. Plasma Heating, Non-inductive Current Drive, and Energetic Particles 5. Atomic and Molecular Processes in Plasmas More specific information on each area of interest is outlined in the general and program specific supplementary information in the full funding opportunity announcement (DE-FOA-0000480). Due to the limited availability of funds, Principal Investigators with continuing grants may not submit a new application in the same area(s) of interest as their previous application(s), which received funding. A Principal Investigator may submit only one application under each area of interest as listed above. IMPORTANT SUBMISSION INFORMATION: The full text of the Funding Opportunity Announcement (FOA) is located on FedConnect.

**U.S. Offshore Wind: Removing Market Barriers**
**Proposal Due June 10, 2011**
The Department of Energy’s (DOE) Energy Efficiency and Renewable Energy Program has issued U.S. Offshore Wind: Removing Market Barriers. This FOA will fund research activities to address market barriers limiting the deployment of offshore wind energy projects in the United States. These activities will fall within the following Topic Areas: Topic Area 1: Offshore Wind Market and Economic Analysis Topic Area 2: Environmental Risk Reduction Topic Area 3: Manufacturing and Supply Chain Development Topic Area 4: Transmission Planning and Interconnection Studies Topic Area 5: Optimized Infrastructure and Operations Topic Area 6: Resource Characterization and Design Conditions Topic Area 7: Impact on Electronic Equipment in the Marine Environment Within the defined topic areas, DOE will fund specific social, environmental and technical analysis, as well as engineering and planning activities required to complete the proposed scope of work.

**US Offshore Wind: Technology Development**
**Application Due Date: June 17, 2011**
The DOE Office of Energy Efficiency and Renewable Energy has issued Funding Opportunity Announcement number DE-FOA-0000415, U.S. Offshore Wind: Technology Development. DOE will support the development of critical technologies lowering Cost of Energy (COE) and enabling the safe and responsible deployment of offshore wind energy through competitive cost-sharing initiatives. Under this Funding Opportunity Announcement (FOA), DOE is seeking proposals which address Technology Development through Modeling & Analyses Tools to Assess Offshore Wind Technologies and Innovative Hardware System Concepts.

**Foundational Program to Advance Cell Efficiency (F-PACE)**
**Due June 23**
The U.S. Department of Energy (DOE) seeks to fund applied scientific research that provides the technical foundation for significant increases in solar photovoltaic (PV) cell efficiency, to enable commercial and near-commercial PV technologies to achieve one dollar per watt installed system cost targets by the end of the decade. Combined with the technical and funding
resources from the National Science Foundation (NSF), this joint Funding Opportunity Announcement (FOA) for the Foundational Program to Advance Cell Efficiency (F-PACE) will identify and fund solar device physics and photovoltaic technology research and development that will improve PV cell performance and reduce module cost for grid-scale commercial applications. There will be three topics to which an application may be submitted under this FOA:

- Topic 1: Foundational Research on PV Sub-cell Materials and Processes
- Topic 2: Foundational PV Cell Research
- Topic 3: Barrier Focus Teams

For more information, see the full solicitation.

**Solar Energy Grid Integration Systems - Advanced Concepts**

**Due June 23**

The objective of this Funding Opportunity Announcement (FOA) is to fund projects that develop technologies in power electronics that reduce the overall photovoltaic (PV) system costs, allow high penetrations of solar technologies onto the grid (e.g. reactive power, energy storage, advanced functionalities), and enhance the performance, reliability, and safety of the PV system. The DOE has identified several major areas where significant cost reductions in power electronics can be made including:

1. economies of scale;
2. advanced components;
3. reliability;
4. smart grid integration; and
5. understanding of system implications.

The DOE also is considering how changes in power electronics impact the cost of the PV system as a whole. DOE anticipates that the U.S. Solar Industry can reach the aggressive SunShot targets by focusing on both power electronics research and in technologies more specific to grid-connected, photovoltaic systems. There will be two topics to which an application may be submitted under this FOA:

- Topic 1: Smart-Grid Functionality
- Topic 2: Using Power Electronics to Address Balance of System Costs

For more information, see the full solicitation.

**BIRD Energy: for US-Israel Joint Renewable Energy Developments**

**Due Dates for Executive Summary: May 5, 2011; Due Date for Full Proposal: June 30, 2011**

"BIRD Energy" is a program for U.S. - Israel joint renewable energy developments funded by the U.S. Department of Energy (DOE), the Israel Ministry of National Infrastructures and the BIRD Foundation. "BIRD Energy" follows the same rules and procedures as BIRD.

To be considered, a project proposal should include:

- R&D cooperation between two companies or cooperation between a company and a university/research institution (one from the U.S. and one from Israel)
Innovation in areas such as: Solar Power, Alternative Fuels, Advanced Vehicle Technologies, Smart Grid, Wind Energy or any other Renewable Energy/Energy Efficiency technology. Significant commercial potential; the project outcome should lead to commercialization. **The maximum Conditional Grant is $1M per project.** Ms. Michal Miasnik, michalm@birdf.com

### National Science Foundation—Upcoming Research Funding

**Rapid Response Research (RAPID)**

RAPID grants specific to the Deepwater oil spill: [Click Here](#). Complete guidance on submitting a RAPID proposal is located on NSF’s web site: [Click Here](#).

**Catalysis and Biocatalysis**

**Proposal Window: August 15-September 15, 2011**

Due to the ubiquitous presence of catalysis in the many aspects of goods and services impacting our lives, the Catalysis and Biocatalysis program has many potential directions for funding support. Programs in this area encompass a blend of fundamental and innovative applied research drivers. All programs are hypothesis-driven, and the experimental programs aimed at resolving the issues frequently combine a variety of approaches. Chemical engineering and chemistry are intertwined. Proposals which receive funding in this Program may include any number of the following broad scopes:

- Catalyst Synthesis, Characterization, Behavior and Performance
- Kinetics and Mechanisms of Key Catalytic Reactions
- Catalysis at Surfaces or in Reactor Process Streams
- Synthesis and Fabrication of Component Materials and Catalyst Composites
- Modeling and Fundamental Studies of a Catalyst or Catalytic Process
- Catalysts and Studies for **Alternative Energy Systems**, such as Electro- and Photocatalysis

**Examples of Research** related to areas of emphasis within Catalysis and Biocatalysis are listed elsewhere. [What Has Been Funded (Recent Awards Made Through This Program, with Abstracts)](#).

**Process and Reaction Engineering**

**Full Proposal Window: August 15-September 15, 2011**

The **Process and Reaction Engineering** program supports fundamental and applied research on:

- Rates and mechanisms of important classes of catalyzed and uncatalyzed chemical reactions as they relate to the design, production, and application of catalysts, chemical processes, biochemical processes, and specialized materials
- Chemical and biochemical phenomena occurring at or near solid surfaces and interfaces
- Electrochemical and photochemical processes of engineering significance or with commercial potential
- Design and optimization of complex chemical and biochemical processes
- Dynamic modeling and control of process systems and individual process units
Research Development & Grant Writing News

- Reactive processing of polymers, ceramics, and thin films
- Interactions between chemical reactions and transport processes in reactive systems, and the use of this information in the design of complex chemical and biochemical reactors

What Has Been Funded (Recent Awards Made Through This Program, with Abstracts)

Particulate and Multiphase Processes
Full Proposal Window: August 15-September 15, 2011
The Particulate and Multiphase Processes program supports fundamental and applied research on mechanisms and phenomena governing particulate and multiphase processes, including granular and granular-fluid flows, particle/bubble/droplet interactions, aerosol science and technology, suspensions, micro- and nano-structured fluids, self- and directed-assembly of nanostructures involving particulates, and related instrumentation and diagnostics. Innovative research is sought that contributes to improving the basic understanding, design, predictability, efficiency, and control of particulate and multiphase processes with particular emphasis on: new frontiers in nanotechnology, novel manufacturing techniques, nano-metrology, multiphase transport in biological systems, environmental sustainability, critical infrastructure systems, and complex engineering systems. Collaborative and interdisciplinary proposals are encouraged; proposals that include a combination of experimental and theoretical approaches are more likely to receive funding than solely theoretically or experimentally oriented work. Highly reviewed projects generally demonstrate a strong scientific basis together with clear practical applications. Unsolicited proposals in the above and related areas are encouraged. Investigators are also encouraged to find industrial partnerships and make GOALI submissions. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

Biotechnology, Biochemical, and Biomass Engineering (BBBE)
Full Proposal Window: August 15-September 15, 2011
The Biotechnology, Biochemical, and Biomass Engineering (BBBE) program supports fundamental engineering research that advances the understanding of cellular and biomolecular processes (in vivo, in vitro, and/or ex vivo) and eventually leads to the development of enabling technology and/or applications in support of the biopharmaceutical, biotechnology, and bioenergy industries, or with applications in health or the environment. Quantitative assessments of bioprocesses are considered vital to successful research projects in the BBBE program. Fundamental to many research projects in this area is the understanding of how biomolecules and cells interact in their environment, and how those molecular level interactions lead to changes in structure, function, phenotype, and/or behavior. The program encourages proposals that address emerging research areas and technologies that effectively integrate knowledge and practices from different disciplines, and effectively incorporate ongoing research into educational activities. Research projects of particular interest in BBBE include, but are not limited to:

- Metabolic engineering and synthetic biology
- Quantitative systems biotechnology
Research Development & Grant Writing News

- Tissue engineering and stem cell culture technologies
- Protein engineering/protein design
- Development of novel "omics" tools for biotechnology applications

What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

Energy for Sustainability
Full Proposal Window: August 15-September 15, 2011
The Energy for Sustainability program supports fundamental research and education that will enable innovative processes for the sustainable production of electricity and transportation fuels. Processes for sustainable energy production must be environmentally benign, reduce greenhouse gas production, and utilize renewable or bio-based resources that are abundant in the United States. The most abundant and sustainable source of renewable energy is the sun. The Energy for Sustainability program emphasizes two themes which harness solar energy to make fuels and electrical power: biofuels, & bioenergy, and photovoltaic solar energy. In addition, this program also supports research in wind and wave energy, sustainable energy technology assessment, and fuel cells. Current interest areas in these sustainable energy technologies are: 1) Biomass Conversion, Biofuels & Bioenergy; 2) Photovoltaic Solar Energy; 3) Wind and Wave Energy; 4) Energy Technology Assessment; and 5) Fuel Cells. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

Engineering Design and Innovation
Full Proposal Window September 1-October 1, 2011
The EDI program supports research leading to design theory and to tools and methods that enable implementation of the principles of design theory in the practice of design across the full spectrum of engineered products. The program focuses on gaining an understanding of the basic processes and phenomena underlying a holistic, life-cycle view of design where the total system life-cycle context recognizes the need for advanced understanding of the identification and definition of preferences, analysis of alternatives, effective accommodation of uncertainty in decision-making, and the relationship between data and knowledge in a digitally-supported process. The program funds advances in basic design theory, tools, and software to implement design theory and new design methods that span multiple domains, such as design for the environment and for manufacturability. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

Energy, Power, and Adaptive Systems
Full Proposal Window: September 7-October 7, 2011
EPAS places emphasis on electric power networks and grids, including generation, transmission and integration of renewable, sustainable and distributed energy systems; high power electronics and drives; and understanding of associated regulatory and economic structures. Topics of interest include alternate energy sources, the Smart Grid, and interdependencies of critical infrastructure in power and communications. The program also places emphasis on energy scavenging and alternative energy technologies, including solar cells, ocean waves,
wind, and low-head hydro. In addition, the program supports innovative test beds, and laboratory and curriculum development to integrate research and education. EPAS invests in adaptive dynamic programming, brain-like networked architectures performing real-time learning, neuromorphic engineering, telerobotics, and systems theory. The program supports distributed control of multi-agent systems with embedded computation for sensor and adaptive networks. EPAS provides additional emphasis on emerging areas, such as quantum systems engineering, quantum and molecular modeling and simulation of devices and systems. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

**Catalyzing New International Collaborations**

**Full Proposal Due Dates: September 1, 2011**

This solicitation can support U.S. participation in a variety of different types of activities intended to catalyze new international collaborations. These include, but are not limited to: planning visits, small workshops, initial data gathering activities, and the development of research coordination networks. The community is invited to propose innovative mechanisms and strategies for catalyzing new international collaborations to the stage that competitive research and education proposals can be submitted to relevant NSF programs for on-going support of the project. Any well-justified activity that fulfills the goals of the program will be considered. Creative use of technology in promoting international collaboration is encouraged. Funding levels for catalytic activities can typically range from as little as $10,000 to as much as $100,000, depending on the activities proposed.

**Electronics, Photonics, and Magnetic Devices (EPMD)**

**Full Proposal Window: September 7 – October 7, 2011**

The Electronics, Photonics, and Magnetic Devices (EPMD) program seeks to improve the fundamental understanding of devices and components based on the principles of micro- and nanoelectronics, photonics, magnetics, optoelectronics, electromechanics, electromagnetics, and related physical phenomena. The program enables discovery and innovation advancing the frontiers of nanoelectronics, spin electronics, molecular and organic electronics, bioelectronics, non-silicon electronics, flexible electronics, microwave photonics, micro/nano-electromechanical systems (MEMS/NEMS), sensors and actuators, power electronics, and mixed signal devices. EPMD supports related topics in quantum engineering and novel electromagnetic materials-based high frequency device solutions, radio frequency (RF) integrated circuits, and reconfigurable antennas needed for communications, telemedicine, and other wireless applications. The program supports cooperative efforts with the semiconductor industry on new nanoelectronics concepts beyond the scaling limits of silicon technology. EPMD additionally emphasizes emerging areas of diagnostic, wearable and implantable devices, and supports manipulation and measurement with nanoscale precision through new approaches to extreme ultraviolet metrology. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts).

**Thermal Transport Processes**
The Thermal Transport Processes program supports engineering research aimed at gaining a basic understanding of the microscopic and macroscopic levels of thermal transport phenomena (heat and mass transfer) in energy conversion and conservation, the synthesis and processing of materials, cooling and heating of infrastructure and equipment, the interaction of industrial processes with the environment, the propulsion of air and land-based vehicles, and thermal phenomena in biological and environmental systems. The program supports fundamental research and engineering education in transport processes that are driven by thermal gradients, and manipulation of these processes to achieve engineering goals. Currently, basic research in conduction and convection heat and mass transfer with and without phase change, heat and mass transfer at nano- and molecular scales, radiative transport, and the fundamental characterization of material properties important to these processes are especially relevant to this program. Priority is given to insightful investigations of fundamental problems with broad engineering and societal impact, and to novel use of heat and mass transfer principles to meet the engineering needs of the nation. What Has Been Funded (Recent Awards Made Through This Program, with Abstracts)

Grant Opportunities for Academic Liaison with Industry (GOALI)
Contact the appropriate disciplinary program office to obtain information about current deadline dates.
Grant Opportunities for Academic Liaison with Industry (GOALI) promotes university-industry partnerships by making project funds or fellowships/traineeships available to support an eclectic mix of industry-university linkages. Special interest is focused on affording the opportunity for:
- Faculty, postdoctoral fellows, and students to conduct research and gain experience in an industrial setting;
- Industrial scientists and engineers to bring industry's perspective and integrative skills to academe; and
- Interdisciplinary university-industry teams to conduct research projects.
This solicitation targets high-risk/high-gain research with a focus on fundamental research, new approaches to solving generic problems, development of innovative collaborative industry-university educational programs, and direct transfer of new knowledge between academe and industry. GOALI seeks to fund transformative research that lies beyond that which industry would normally fund.

Paleo Perspectives on Climate Change (P2C2)
Proposal due October 18, 2011
The goal of research funded under the interdisciplinary P2C2 solicitation is to utilize key geological, chemical, and biological records of climate system variability to provide insights into the mechanisms and rate of change that characterized Earth's past climate variability, the sensitivity of Earth's climate system to changes in forcing, and the response of key components of the Earth system to these changes. Important scientific objectives of P2C2 are to: 1) provide
comprehensive paleoclimate data sets that can serve as model test data sets analogous to instrumental observations; and 2) enable transformative syntheses of paleoclimate data and modeling outcomes to understand the response of the longer-term and higher magnitude variability of the climate system that is observed in the geological record.

Other Energy Research Funding—Upcoming Research Funding

**i6 Green Challenge: Proof of Concept Centers**

**Letter of Intent Due Date:** May 2, 2011  
**Application Due Date:** May 26, 2011, 11:59PM ET

This FFO announces i6 Green, which focuses on the nexus between economic development and environmental quality, spotlighting the best ideas that contribute to a vibrant, innovative clean economy. EDA solicits competitive applications to encourage and reward innovative, ground-breaking ideas that accelerate technology commercialization and new venture formation across the United States. i6 Green will reward communities that utilize Proof of Concept Centers to accelerate technology-led economic development in pursuit of a clean economy. Applicants must address a persistent problem or an unaddressed opportunity with a sense of urgency and demonstrate how an i6 Green Proof of Concept Center will remove existing road blocks and spark sustainable economic opportunities in the applicant’s region. Applicants will be expected to incorporate a credible plan to access additional resources and demonstrate how the proposed effort will be sustained by a well-qualified team and partners. Please see section I.A. of this FFO for more information on the program requirements and expectations of i6 Green. Additional information and frequently asked questions can be found on the i6 Green website at www.eda.gov/i6. In addition, please see section VIII. of this FFO for regional contacts.

**U.S. Nuclear Regulatory Commission, Office of Nuclear Regulatory Research Announcement of Opportunity, Fiscal Years 2011-2012**

**Proposal due by October 14, 2011**

The U.S. Nuclear Regulatory Commission (NRC) was created as an independent agency by Congress in 1974 to enable the nation to safely use radioactive materials for beneficial civilian purposes while ensuring that people and the environment are protected. The NRC regulates the nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. The NRC’s Office of Nuclear Regulatory Research (RES) furthers the agency’s regulatory mission by providing technical advice, technical tools and information for identifying and resolving safety issues, making regulatory decisions, and promulgating regulations and guidance. RES is comprised of three technical divisions and one administrative division, each with their own responsibilities and program goals. Functional descriptions of each division can be found at [http://www.nrc.gov/about-nrc/organization/resfuncdesc.html](http://www.nrc.gov/about-nrc/organization/resfuncdesc.html). RES awards support a discrete, specified, circumscribed project to be performed by named Project Directors/Principal Investigators (PDs/PIs) in areas representing the investigators’ specific interests and competencies, based on the mission of the NRC. Proposals to conduct
independent experiments and analyses, develop technical bases for supporting realistic safety
decisions by the agency, and evaluating safety issues involving current and new designs and

technologies will be accepted. (Solicitation)

**EPA Environmental Impact And Mitigation Of Oil Spills**

**Closing Date: June 22, 2011**

As part of the federal government’s response to the Deepwater Horizon oil spill, the U.S.
Environmental Protection Agency (EPA) received a $2 million Congressional appropriation for a
grant or grants for “a study on the potential human and environmental risks and impacts of the
release of crude oil and the application of dispersants, surface washing agents, bioremediation
agents, and other mitigation measures listed in the National Contingency Plan Product List (40
C.F.R. Part 300 Subpart J).” To implement this appropriation through its Science to Achieve
Results (STAR) grant program, EPA is seeking applications proposing to develop a research
program, including an effective community outreach program component, to mitigate the
impact of oil spills. The research program must address one or more of the following topics: (1)
development of cost-effective innovative technologies to mitigate the impact of oil spills; (2)
development of effective oil dispersants, surface washing agents, bioremediation agents, and
other mitigation measures (“dispersants/agents/measures”) with low environmental impact;
and (3) investigation of the effects of oil spills and application of dispersants/agents/measures
on the environment. Applicants must also submit a community outreach program plan, the
objective of which is to help impacted Gulf Coast communities effectively participate in the
study and use its results. To achieve this objective, the applicant should work collaboratively
with affected communities to identify significant risks posed by oil spills to human health and
the environment, obtain their input in the design of a study to help the communities address
these challenges, and provide technical assistance to them so that they can use the results of
the study.

**Energy Conservation for the US Navy**

**Acceptance Date:** This BAA will be open for two years and white papers may be submitted any
time throughout the two year period beginning **1 November 2010 and ending 31 October
2012.** BROAD AGENCY ANNOUNCEMENT The Naval Surface Warfare Center, Carderock Division
(NSWCCD) is soliciting abstracts (White Papers) for Energy Conservation Applications for the
U.S. Navy. This BAA solicits innovative concepts from industry and academia that can introduce
applications for Navy shipboard energy conservation and carbon footprint reduction with the
potential for rapid transition to Fleet operation. The target segment of the Fleet is the ships
operated by Military Sealift Command: Combat Logistics Force, Auxiliaries and Sealift. The Navy
will consider approaches that modify systems and/or operations to affect quantifiable energy
conservation and carbon footprint reduction in the Fleet. Technology maturity should, at a
minimum, have basic technological components integrated with reasonably realistic supporting
elements and be capable of demonstrating prototype operation in a relevant environment by
the conclusion of Phase II. Emphasis is placed on technologies with an identified transition path
capable of making near-term, measurable improvements to Navy energy conservation and
carbon footprint reduction. Solutions of all levels of development will be considered, ranging from near-term strategies applicable to existing ship classes to those suitable for new construction and future design. Technology maturity, however, will be a criteria of evaluation considered with preference shown for solutions with more immediate impact. The white paper submitted under the concept phase shall be limited to 5 (five) pages. Responses to this BAA shall include (1) a brief description of the basic approach the offerer intends to pursue, a concept of operations for the proposed systems or technologies, and any prior work that will contribute to the success of the effort, (2) a description of the technology maturity of the approach with focus on the development and projected implementation times; (3) the benefits anticipated should the concept be implemented (e.g., cost savings, environmental impacts, operational or capability improvements); (4) a cost estimate for Phase 1: Conceptual Design and Phase 2: Detailed Design, Prototype Development and Demonstration; (5) corporate/personnel experience and ability to successfully perform this effort; (6) past performance information on similar projects; (7) the offerers awareness of the state of the art and technical understanding of the scope of the requirement, including any problem areas; (8) facilities available for fabrication and fabrication approach.
March 31, 2011 – The National Humanities Alliance noted that the application period is open for several humanities grant opportunities from federal agencies. A partial list is provided below of grant guidelines opened in February and March. Applicants should refer directly to the agency websites to verify all information, including deadlines and available grants.

National Endowment for the Humanities

- **Preservation & Access**
  - Preservation and Access Education and Training Grants – (due 6/30/11)
  - Preservation and Access Research and Development Grants – (due 5/19/11)
- **Digital Humanities**
  - Digging into Data Challenge – (due 6/16/11)
- **Public Programs**
  - Bridging Cultures Through Film – (due 6/29/11)
  - Small Grants to Libraries: King James Bible – (due 4/5/11)
- **Research**
  - Fellowships – (due 5/3/11)
  - Fellowships for Advanced Social Science Research on Japan – (due 5/3/11)
  - Awards to Faculty at Historically Black Colleges & Universities, Institutions with High Hispanic Enrollment, and Tribal Colleges & Universities – (due 4/14/11)
- **Challenge Grants**
  - Challenge Grants – (due 5/4/11)

Institute of Museum & Library Services

- Native Hawaiian Library Services – (due 5/16/11)
- Native American Library Services Enhancement Grants – (due 5/2/11)

National Archives & Records Administration (National Historical Publications & Records Commission)

- Publishing Historical Records – (due 7/7/11 and 10/6/11)

Department of Defense

- Research and Studies for the Office of Net Assessment – (due 6/17/2013)

U.S. Department of Education

- Office of Innovation and Improvement (OII)
  - Teaching American History Grant Program - (due 4/4/11)
  - Presidential Academies for Teaching of American History and Civics - (due 4/25/11)

Office of Postsecondary Education (OPE)
American Overseas Research Centers (AORC) Program - (due 4/5/11)

Fund for the Improvement of Postsecondary Education (FIPSE)
- Comprehensive Program - (due 5/23/11)
- Special Focus Competition: United States (U.S.)-Brazil Higher Education Consortia Program - (due 5/13/11)
- Special Focus Competition: Program for North American Mobility in Higher Education - (due 5/17/11)

Office of Elementary and Secondary Education (OESE)
Striving Readers Comprehensive Literacy Grant Program - (due 5/9/11)

National Science Foundation
Science, Technology, and Society - (due 8/1/11)
We attended NSF's Regional Grants Conference in Nashville last month, and there were several interesting new developments that were discussed:

**Program Changes**

**New upcoming programs (2012):**
- **INSPIRE** – its purpose is to catalyze interdisciplinary research (individuals and small groups)
- **Teacher Learning for the Future (TLF)** – to improve training of pre-service, in-service and future teachers
- **Transforming Broadening Participation through STEM** (pilot) - innovative solutions for broadening participation in STEM at the undergrad level, with special emphasis on Hispanic-serving institutions
- **Widening Implementation and Demonstration of Evidence-Based Reforms** (WIDER) - for scale-up of successful programs
- **Entrepreneurship - Wireless Innovation Fund (WIN)** - coordinated with DARPA and NIST and funded by federal spectrum sales
- **Next Generation of Robotics** - part of the National Robotics Initiative
- **Sustainable Innovation Pathways** - a doctorate program to support the Science, Engineering and Education for Sustainability (SEES) area

More information on these new initiatives are contained in NSF’s 2012 requested budget. The entire budget is a bit of a slog to read, but NSF speakers recommended the **Overview** as worth reading.

**Discontinued programs (2012):**
- **GK-12** – this program has been funded for a long time and has run its course
- **Research Initiation Grants in Biology** - this was discontinued because it was not successful in increasing proposals from diverse PIs

**Reduced:**
- **Science of Learning Centers** - they felt that this was a successful program with lots of great science coming out of funded centers, but it has run its course. Therefore, current centers will continue to be funded until their funding period runs out, but no new centers will be funded and the program will eventually be discontinued.
New Policy on Institutional Support (uncommitted cost share)

All of us who have been submitting to NSF for a while are familiar with the various changes in policies regarding cost share over the years. Most recently, cost share has not been allowed except for a few limited programs such as the MRI. However, institutional resources are often committed to NSF-funded projects; for example a graduate student supported by the university might work on an NSF project, or an administrative assistant not included in the budget might devote a considerable amount of time on a project such as an REU. Until recently, there was no way to indicate that kind of uncommitted cost share, but NSF has now changed its policy, and this kind of voluntary uncommitted cost share can now be discussed (without dollar amounts) in the Facilities, Equipment and Other Resources section in Supplementary Docs. This kind of cost share will not be an auditable commitment but will be a programmatic commitment. Jean Feldman, NSF’s Head of Policy Office, emphasized that this is a sea change at NSF - a "very big deal." NSF has worked with OMB to change applicable policies and circulars to allow this to happen.

Other Information

Data Management Plan – not unexpectedly, there were a lot of questions about the new Data Management Plan requirement. NSF speakers emphasized that this is a work in progress, and more information is being posted on the NSF website as it’s being developed. In particular, since expectations are very different depending on the discipline, the various directorates and divisions are developing additional guidance and posting that information on their webpages. PIs could keep an eye out for new material on their division’s webpage. (We’ll include more on this in a separate article on Data Management Plans next month.)

Virtual Review Panels – In a discussion on the various procedures for reviewing proposals, an NSF presenter mentioned that some programs will be experimenting with virtual review panels using electronic communication. It’ll be interesting to see how this works out.

Reason Behind Elimination of Preliminary Proposals – An NSF representative said that because certain programs, such as IGERT, were getting so many applications, preliminary proposals were eliminated and the institutional limit was reduced to one. This was a deliberate effort to enlist universities in the vetting process and bring down the number of proposals submitted to these programs.

Conflict of Interest Information – Jean Feldman mentioned that there has been some discussion at NSF about pulling out conflict-of-interest information currently in the biosketches (advisors, co-editors and co-authors in the last 4 years, etc.) and making it a separate section. This is already done for very large proposals. She said there are currently no concrete plans to do this, though.

Social, Behavioral and Economic Sciences (SBE) Breakout – Fahmida Chowdhury

Dr. Chowdhury mentioned several interesting points about SBE:

- You don’t have to be a minority to apply for the Minority Postdoctoral Research Fellowships; the name of this program is historical - you now just need to discuss how you will work toward enhancing minority participation.
• There will be no new Science of Learning Centers competition (as mentioned above).
• SBE has opened up their REU Sites to non-summer models in which students can participate in research throughout the year via virtual working groups.
• The Science of Science and Innovation Policy (SciSIP) cross-disciplinary program supports research designed to advance the scientific basis of science and innovation policy, but is not very well-known. NSF is currently working with NIH and OMB on this, and there may be co-funding in the future. This program promotes connections among social scientists and economists as well as computer scientists.
• She also pointed out that the Science, Technology, and Society program is highly multidisciplinary but is often overlooked. They fund Ethics and Values in Science, Engineering and Technology; History and Philosophy of Science, Engineering and Technology; Social Studies of Science, Engineering and Technology; and Studies of Policy, Science, Engineering and Technology

Miscellaneous Highlights from Other Sessions
• The new Partnerships for International Research and Education (PIRE) solicitation is being written and is expected out in the next couple of months, and it may include a one proposal per institution limit (similar to the IGERT). The FY2011 – 2012 PIRE competition will focus exclusively on Science, Engineering, and Education for Sustainability (SEES).
• CISE is introducing a new focus in its cross-cutting programs, entitled “Smart Health and Well-Being” focusing on improvements in health care and wellness through innovations in computer and information science and engineering. Broad areas will include personalized medicine and feedback, virtual worlds, mobile health, robotics, interoperable medical devices, and more. See the CISE breakout presentation for more details.
• The recently-released Research Coordination Networks solicitation includes a focus on Science, Engineering, and Education for Sustainability (SEES), and the NSF speaker mentioned that it is expected that teams formed through this activity will be competing for future SEES Centers.
• The new Water, Sustainability, and Climate solicitation is expected out in April 2011 with a due date Sept – Oct 2011.

Slides from the presentations are posted here. Note that the next regional grants conference will be in October in Austin, Texas. This is an excellent way to help faculty who are new to NSF get up to speed; it also provides an avenue to ask about recent changes and new directions at NSF.
Why Grammar is Important in Proposal Writing

- Proposals are not graded on grammar. But if the grammar is not perfect, the result is ambiguities left to the reviewer to resolve.
- Ambiguities make the proposal difficult to read and often impossible to understand, and often result in low ratings.
- Be sure your grammar is perfect.
  - George A. Hazelrigg, National Science Foundation

Albert Einstein on Grant Writing

- If you can't explain something simply, you don't understand it well.
- Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in language comprehensible to everyone.

Charles Mingus on Grant Writing

- Making the simple complicated is commonplace; making the complicated simple, awesomely simple, that's creativity.

Be Fluent in Agency Language and Terminology

Learning to echo the language and terminology of the funding agency is another factor that will enhance the overall competitiveness of a proposal. Funding agencies, like most institutions, often develop a unique phraseology to define and describe common, recurrent components of their mission and research agenda, e.g., “broader impacts” or “research and education integration” at NSF, or “bench to bedside” at NIH. Learning the language of the funding agency is important in writing the narrative section of a proposal; it helps to frame arguments more clearly and communicate more effectively with program managers and reviewers.

Once the funding agency’s language is learned, it allows the appropriate translation to occur between the language of the funding agency and that of the applicant. It often helps the clarity of the narrative text to translate the applicant’s institutional language into that used by the agency’s program officers and reviewers. This is not an onerous or difficult task, but involves being alert to any preferred or repeated terms, usages, and meanings favored by the funding agency. Learned fluency in the use of funding agency language and terminology is yet another factor that can enhance competitiveness.

The Proposal is the Only Reality

- A proposal is not unlike a novel or a movie. It creates its own, self-contained reality. The proposal contains all the funding agency and review panel will know about your
capabilities and your capacity to perform. With few exceptions, an agency bases its decision to fund or not fund entirely on the proposal and the persuasive reality it creates.

- **Good writing lies at the core of the competitive proposal.** It is the framework for crafting and structuring the arguments, ideas, concepts, goals, performance commitments, and the logical, internal connectedness and balance of the proposal.

- **Agencies will not fund an idea not embedded in a convincing pattern of narrative detail and performance specificity tightly mapped to the funding agency’s research objectives.**

- “**There is no amount of grantsmanship that will turn a bad idea into a good one, but there are many ways to disguise a good one.**” William Raub, former Deputy Director, NIH

- “Contrary to what some people seem to believe, simple writing is not the product of simple minds. A simple, unpretentious style has both grace and power. By not calling attention to itself, it allows the reader to focus on the message.”--Richard Lederer and Richards Dowis, Sleeping Dogs Don’t Lay, 1999.

### Intramural versus Extramural Research Agencies

Some agencies fund only research by outside scientists (extramural research), while many also hire researchers who conduct research from within the agency (intramural research). NSF and DARPA are examples of agencies that fund only extramural research, while NIH, NASA, the National Labs, DOE, NIST, and many other agencies fund both extramural and intramural research. Furthermore, the proportion of intramural versus extramural research funding varies significantly by agency. The National Labs and NIST primarily fund intramural research, while NIH mostly funds extramural research.

For mission-oriented agencies that fund both intramural and extramural research, it is extremely important for external researchers hoping to be funded by the agency to be familiar with relevant intramural research being conducted at the agency and to network with those intramural researchers. Those researchers are likely to be reviewers on external proposals in their research areas, and it is often expected that external researchers collaborate with agency researchers. The degree of expected collaboration varies by agency and is one aspect of the agency culture that proposers must understand in order to be competitive.

### Beware of “boiler plate”

- Boiler plate refers only to the application forms required by the agency, not the narrative.

- **Thinking of the proposal narrative as “boiler plate” will result in a mediocre proposal.**

- Begin each proposal as a new effort, not a copy & paste from prior efforts.

- Be cautious integrating text inserts.

- Strong proposals clearly reflect a coherent, sustained, and integrated argument grounded on good ideas.
Ideas matter (Slogans are not Ideas!)

- Shaping ideas by language is hard work.
- Do not confuse slogans, effusive exuberance, and clichés with substantive ideas.
- Show the reviewers something new by developing ideas that are clear, concise, coherent, contextually logical, and insightful.
- Capitalize on every opportunity you have to define, link, relate, expand, synthesize, connect, or illuminate ideas as you write the narrative.
- Connect, connect, connect! (E.M. Forrester).

Writing the Proposal Introduction

Always take the time to craft a well-written proposal introduction. It will serve as a focal point not only for the proposal itself but also for project development and writing the proposal narrative. The proposal introduction is a means of translating into language the ideas and arguments that may as yet be unrefined and unconnected in the early stages of development, or not fully developed and structured on a logical narrative framework.

Writing and rewriting the introduction continuously refines how you think about the proposal, the arguments developed, the ideas, the goals and objectives, and the logical connectedness of it all. Start the introduction early in the grant writing process and keep coming back to it as ideas are put forth, or revised, or abandoned.

Continuously revise the introduction as a place where abstractions, concepts, and ideas are fused and sequenced with performance objectives and operational detail. The introduction needs to be a point of synthesis and clarity, that is concisely crafted during project development and grant writing. Over a period of weeks, or months on larger efforts, the introduction will start to take on a life of its own, representing a pattern of connectedness that maps to the following project description, the major part of the narrative. Return to the introduction when you have new information and revise it; return to it when you are stymied and the logic and direction of your efforts momentarily seems illusive, return to it to sharpen your vision. The introduction gives the reviewers a "conceptual snapshot" that they will carry with them through the remaining text. A well-written proposal introduction--

- Serves as a “mini-proposal” that concisely captures your core arguments for funding
- Serves as a roadmap to the more detailed project description
- Introduces and connects the vision, ideas, goals, research objectives, and outcomes
- Makes a compelling case for research significance and uniqueness
- Organizes the conceptual framework of the narrative
- Tells who you are; what you are going to do; why it is significant; how you are going to do it; who is going to do it; why you are going to do it; and demonstrates your capacity to perform
- Inspires reviewers to read closely and with interest the more detailed narrative
- Wins the reviewers’ support with a tightly crafted and compelling proposal introduction.
Use the RFP as a Narrative Template

The RFP plays a key role in proposal organization by establishing the order, required level of detail, and focus of the proposal narrative. A simple copy and paste of the RFP’s key sections, research objectives, and review criteria into a beginning draft narrative allows the RFP to serve as an organizational template for the full proposal and a reference point to ensure that subsequent draft iterations of the narrative are continuously calibrated to the guidelines.

This copy and paste process of transforming the RFP into a narrative template helps ensure that several elements key to a successful proposal are addressed at the beginning and adhered to throughout the writing process, even though ideas and approaches may change as they mature during the proposal development process. Using this approach, you will ensure that the proposal narrative:

- is fully responsive to all requested information
- is written in the order requested
- provides the required detail
- integrates review criteria into the narrative
- does not drift off topic or sequence

The RFP can also serve as a guide as you develop the ideas that will be at the core of your proposal, and then help you flesh out the narrative with details on what you propose to do and why. It is important that you fully understand the sponsor’s research objectives to avoid wasting valuable development time on discussions and directions that do not clearly reflect the funding agency’s research objectives. This is particularly important on larger research proposals that often involve multiple investigators, each bringing a specialized research expertise to the overall effort.

Also, although funding agencies vary on the required detail and organization of the narrative text, in many cases reviewers will expect to see the text organized in the same general order as the RFP and the review criteria. In fact, many agencies require reviewers to fill out evaluation forms that list review criteria in the order given by the RFP. Therefore, using the RFP as a guide for your proposal outline will make it easier for reviewers to compare your proposal to the program guidelines and review criteria without having to search around in a long narrative to find out if each required topic has been addressed.
National Fellowship Databases

**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. 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.

**Writing Advice on Fellowships**

- [Tips for Graduate Students Writing Applications](#).pdf, Glasscock Center for Humanities Research, Texas A&M University
- [Writing Fellowship Proposals, Notre Dame](#)
- [Graduate Student Proposal Basics, Notre Dame](#)
- [Advice on Writing a Successful Proposal, Notre Dame](#)
- [Fellowship Advice from Northwestern University](#)
- [How to Write a Graduate Fellowship, TCHE](#)
- [NSF Graduate Fellowships, University of Missouri](#)

Tips on Writing Fellowships from Awardees (NSF specific but great advice for all)

- Start early, taking significant time to compose essays, and rewrite
- Demonstrate your personal motivation and excitement for research
• Spend time to thoroughly research your topic
• Integrate essays to create singular theme, link the content together
• Keep essays clear and simple to read
• Give essays to many people for review
• Get input from professors or university administration
• Get input from previous applicants or winners
• Thoroughly address both Intellectual Merit and Broader Impacts
• Be sure you adequately address the Broader Impacts criterion
• Be sure to include all volunteer, leadership and extracurricular activities
• Highlight the significance of your research and how it will impact society
• Pay close attention to language in the Program Solicitation
• Focus on getting strong recommendation letters
• Mention what sets you apart from a typical applicant - be unique!

Tips on Writing Fellowships from Reviewers (NSF specific but great advice for all)
• Gain research experience, especially at the undergrad level (for example, see NSF’s REU program)
• Become involved in leadership roles and community service
• Write clear and scientifically-sound essays
• Strive for scientific publications and presentations
• Have a strong academic record
• Be sure to demonstrate the Broader Impacts criteria well
• Select strong recommenders
• Link your teaching and research experiences
• Ensure you display a history of accomplishments
• Thoroughly address both Intellectual Merit and Broader Impacts
• Highlight any international experience you may have
• Display your passion and motivation in the essays
• Be knowledgeable of your research topic
• Demonstrate the significance of your proposed work
• Make sure the proposed research is realistic

National Academy Fellowships
The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council offer several fellowships in science, engineering, and medicine. Information on eligibility guidelines and application deadlines is available on specific programs' Web sites. Early career opportunities include:
• Christine Mirzayan Science & Technology Policy Graduate Fellowship Program
  A program designed to engage graduate science, engineering, medical, veterinary, business, and law students in the analysis and creation of science and technology policy and to familiarize them with the interactions of science, technology, and government.
Research Development & Grant Writing News

- **National Academies Research Associateship Programs**
  Postdoctoral and senior research awards are sponsored by 30 federal laboratories at over 100 locations in the United States and overseas. Awards are given for the purpose of conducting research chosen by the doctoral level scientists and engineers to apply their special knowledge and research talents to research areas that are of interest to them and to the host laboratories and centers.

- **The Ford Foundation Fellowship Program**
  Fellowship grants for predoctoral, dissertation, and postdoctoral study open to U.S. citizens or nationals in research-based fields.

- **Center for the Advancement of Scholarship on Engineering Education Postdoctoral Fellowships**
  For postdoctoral scientists and engineers who wish to receive specialized training in engineering education under the mentorship of a senior fellow or campus-based engineering educator.

- **Norman F. Gant/American Board of Obstetrics and Gynecology (ABOG) Fellowship**
  The fellowship is designed to provide an exceptional learning and career development opportunity to obstetricians and gynecologists early in their careers.

AGEP Links to Minority Graduate Education Resources

- **IBParticipation.org**
  A portal website supporting pathways to the STEM fields: science, technology, engineering, and mathematics. Particular emphasis is placed on connecting traditionally underrepresented groups with STEM programs and resources, including funding and mentoring opportunities.

- **The Council of Graduate Schools**
  A project that addresses the issues surrounding Ph.D. completion and attrition. This site includes methods and promising practices.

- **Center for the Advancement of Scholarship on Engineering Education**
  Provides support to AGEP postdoctoral engineering education researchers

- **Institute on Teaching and Mentoring**
  Focuses on mentoring and teaching preparation, community insights and scholar networking

- **Integrative Graduate Education and Research Traineeship (IGERT) National Recruitment Program**
  The mission of the IGERT National Recruitment Program is to help students find the IGERT program that is right for them, and help IGERT faculty and PIs find the students that are right for their programs.

- **Alfred P. Sloan Foundation Graduate Scholarship Programs**
  Programs focus on increasing the number of underrepresented American minorities in mathematics, the natural sciences, and engineering graduate programs
Looking Ahead to Upcoming Annual Fellowships

- **National Science Foundation**, ~ 1000 awarded annually, due Nov. 1st – 9th, depending on discipline [https://www.fastlane.nsf.gov/grfp/](https://www.fastlane.nsf.gov/grfp/)
- **Krell Institute/DOE Computational Science Graduate Fellowship**, [http://www2.krellinst.org/csgf/eligibility.shtml](http://www2.krellinst.org/csgf/eligibility.shtml) ~ 18 awarded annually
- **EPA STAR Fellowships**

Upcoming (2011-2012) Fellowship Funding Opportunities

**Current Graduate Student Research Opportunities at ORAU/EPA**
If you are a graduate student looking for the ideal setting to conduct your thesis research, or if you’re a master’s student preparing to pursue your doctorate, Oak Ridge Associated Universities’ (ORAU) science education programs provide well-rounded laboratory experiences that expand your expertise beyond the traditional university setting.

**Los Alamos National Laboratory Graduate Research Assistant (GRA) Program**
The Graduate Research Assistant (GRA) Program is a year-round educational program that provides students with relevant research experience while they are pursuing a graduate degree. In some cases, students can arrange to conduct master’s or doctoral thesis research at the Laboratory. The majority of the appointments are in the technical and scientific disciplines. Appointments are available for 90 days up to one year, with option for renewal based upon program requirements. Students are selected on the basis of field of study, grade point average, and research interests.

**Los Alamos National Laboratory, Postdoctoral Research Appointments**
The Postdoctoral (Postdoc) Program offers the opportunity for appointees to perform research in a scientifically rich R & D environment; present and publish research; contribute to the overall research efforts at the Laboratory; advance knowledge in the areas of basic and applied research; strengthen our national scientific and technical capabilities.

**Argonne National Laboratory Graduate Research**
Laboratory-Graduate Research (Lab-Grad) appointments are available for qualified U.S. university graduate students who wish to carry out their thesis research at Argonne National Laboratory under co-sponsorship of an Argonne staff member and a faculty member. The university sets the academic standards and awards the degree. In practice, participation by the faculty member varies from full partnership in the research to general supervision of the student's thesis work. The Argonne staff sponsor undertakes to keep the faculty sponsor informed about the student’s progress, and he/she attends the thesis defense. Research may be conducted in the basic Physical and Life Sciences, Mathematics, Computer Science, and Engineering as well as in a variety of applied research programs relating to Energy, Conservation, Environmental Impact and Technology, Nanomaterials, and Advanced Nuclear Energy Systems.

Small Business Postdoctoral Research Diversity Fellowship
The Small Business Postdoctoral Research Diversity Fellowship program aims to encourage creative and highly-trained recipients of doctoral degrees in NSF-supported science, technology, engineering and mathematical disciplines to engage in hands-on research projects in their areas of expertise at the kind of small innovative businesses that historically have fueled the nation’s economic regime. This fellowship program offers active Phase II Small Business Innovation Research (SBIR) participating companies the opportunity to attract top scientific and technological talent at a fraction of the usual cost. At the same time, the program recruits postdoctoral fellows from underrepresented groups to work for at least a year outside an academic setting, contributing to cutting-edge research aimed at promoting scientific excellence and strengthening our nation’s technological prowess. Each research fellow will receive a stipend of at least $75,000 plus health insurance benefits. The host company, however, will provide only $10,000 toward the stipend as well as a $2,500 administrative fee. With generous support from the National Science Foundation (NSF), the program will support 50 positions for a one-year appointment. The program is administered by the American Society for Engineering Education (ASEE). Open Submissions.

NINDS Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellows in MD-PhD programs (F31)
The purpose of this individual predoctoral research training fellowship is to provide support for promising doctoral candidates who are enrolled in combined MD-PhD programs, who will be performing dissertation research and training in scientific health-related fields relevant to the mission of the National Institute of Neurological Disorders and Stroke. Posted Feb. 18; Open.

National Research Council Research Associateships for Postdoctoral and Senior Research Scientists and Engineers - multiple deadlines May 1, Aug 1, Nov 1, Feb 1
The mission of the NRC Research Associateship Programs (RAP) is to promote excellence in scientific and technological research conducted by the U. S. government through the administration of programs offering graduate, postdoctoral, and senior level research opportunities at sponsoring federal laboratories and affiliated institutions. In these programs,
prospective applicants select a research project or projects from among the large group of opportunities listed on this website. Prior to completing an application, prospective applicants should contact the proposed Research Adviser to assure that funding will be available if their application is recommended by NRC panels. Guidelines for NRC Research Advisers.

Office of Postsecondary Education (OPE)--Erma Byrd Scholarship Program
The Erma Byrd Scholarship Program provides scholarships to individuals pursuing a course of study that will lead to a career in industrial health and safety occupations, including mine safety. This program is designed to increase the skilled workforce in these fields at both the fundamental skills level and the advanced skills level. Due April 25.

Wenner-Gren Foundation For Anthropological Research, Individual Research Grants
Grants for Doctoral Students: A variety of the Foundation’s grants support students enrolled in doctoral programs leading to a Ph.D. (or equivalent), including grants for dissertation research. There are also fellowship programs for doctoral students from countries where anthropology is underrepresented and where there are limited resources for educational training. Grants for Post-Ph.D. Scholars: Grants are available to scholars with a doctorate include individual research grants, a limited number of writing fellowships, training for scholars from countries where academic training in anthropology is limited and awards to encourage collaborative research between international scholars. Due May 1 and Nov. 1.

US Air Force/ National Research Council, Resident Research Associateship Program
Finding Research Opportunities - The first step in the application process is identifying the laboratory or laboratories to which you will apply. This may be accomplished by using the search functions on this website to identify the Research Opportunity(s) of interest to you. Shown with each Research Opportunity are the names of one or more Research Advisers who conduct or direct the work described in the opportunity. An Adviser is a scientist or engineer at the sponsoring laboratory with whom an Associate works most closely. Once you have identified a Research Adviser, it is recommended that you contact him or her to discuss your interest in applying for an NRC Research Associateship Award. Note that you may apply for up to three Research Opportunities during an application cycle. However, you may submit only one application per sponsoring federal laboratory. Completing an Application – You must complete the WebRAP electronic application that can be accessed through this site. This system requires uploads of your proposal and other information. After completing the WebRAP application, you must submit supporting documents by email to rap@nas.edu or by mail to the Associateship Programs office at 500 Fifth Street, NW (Keck 568), Washington, DC 20001. Please refer to the How to Apply and the Supporting Documents page for complete details. (More) (USAF Lab). Submission Date: November 1, February 1, May 1, and August 1.

Early Care and Education Research Scholars: Head Start Graduate Student Research Grants
The Office of Planning, Research and Evaluation (OPRE) of the Administration for Children and Families (ACF) plans to provide funds for Graduate Student Research Grants to support dissertation research by advanced graduate students who are working in partnership with Head Start programs and with faculty mentors. Competitive applicants will 1) demonstrate a collaborative partnership with their program partners and 2) pursue research questions that directly inform local, state or federal policy relevant to multiple early care and education contexts. Applicants should consider pursuing data collection across contexts, including child care, pre-k, home-visiting programs, Head Starts and/or others. Funding for this announcement is based on availability. **LOI Due May 2; proposal June 1.**

**Early Care and Education Research Scholars: Child Care Research Scholars, HHS**
The Administration for Children and Families is considering funding Child Care Research Scholars grants to support dissertation research on child care policy issues. These grants are meant to build capacity in the field to focus research on questions that inform child care subsidy policy decision-making and to foster mentoring relationships between faculty members and high quality doctoral students. Funding is dependent on availability and government interest. For further information about previous Child Care Research Scholars, see [http://www.acf.hhs.gov/programs/opre/cc/ccr_scholars/index.html](http://www.acf.hhs.gov/programs/opre/cc/ccr_scholars/index.html). For further information about the Office of Planning, Research and Evaluation, see [http://www.acf.hhs.gov/programs/opre/](http://www.acf.hhs.gov/programs/opre/). **LOI due May 9; application June 14.**

**Food And Agricultural Sciences National Needs Graduate Fellowship Grants**
The fellowships supported through the Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship Grants Program (NNF) are intended to encourage outstanding and committed students to pursue and complete graduate degrees in critical areas of national need, through graduate programs at eligible institutions. The support provided through this NNF program, is a student stipend for the Fellow and a cost-of-education allowance to the institution. The typical period of performance for an award is five years, although a few programs may specify shorter (maximum of five years) periods. For the FY 2011 award cycle, NIFA intends to support graduate Fellowship training grants for both Master’s and doctoral levels of study. Also, Special International Study or Thesis/Dissertation Research Travel Allowances (IRTA) awards will provide support for eligible USDA Fellows to conduct thesis/dissertation research or to undertake studies at sites outside of the United States. **Due June 1.**

**Fellowships at The Wilson Center 2011-2012**
The Center awards approximately 20-25 residential fellowships annually to individuals with outstanding project proposals in a broad range of the social sciences and humanities on national and/or international issues. Topics and scholarship should relate to key public policy challenges or provide the historical and/or cultural framework to illuminate policy issues of contemporary importance. **Due Oct. 1.**

This Guidebook describes the policies and procedures of the Broad Agency Announcement known as the National Aeronautics and Space Administration (NASA) Research Announcement (NRA) used by the program offices of NASA that solicit proposals for basic and applied science and technology research and for science, technology, engineering, and mathematics (STEM) education. All Proposers who plan to respond to an NRA released by NASA should adhere to the guidelines contained in Chapters 1, 2, and 3, and the Appendices, unless otherwise noted in the NRA itself. In general, Chapters 1, 2, and 3 of this Guidebook supplement the material given in its Appendix B, entitled "Instructions For Responding To NASA Research Announcements," which reproduces NASA Federal Acquisition Regulation (FAR) Supplement (NFS) 1852.235-72 (ref. Appendix A for access information). Appendices C and D describe how NRA proposals are reviewed, selected, and administered, and are included for completeness of information for Proposers. Appendix E contains a variety of certifications and forms that relate to proposals and their evaluations. Appendix F contains frequently asked questions and answers concerning NRA proposal and administrative processes. Appendix G contains security requirements for grant and cooperative agreement awards and contract awards. Appendix H contains information on the Ombudsman review process and the protest process. The most recent edition of this Guidebook can always be accessed on the World Wide Web (WWW) at http://www.hq.nasa.gov/office/procurement/nraguidebook/. Each NRA will indicate the applicable edition. (Download as Word File)

List of Data Repositories in Humanities and Social Sciences

A list of digital libraries, data archives, and data repositories that are inviting Digging into Data researchers to use their collections. For each repository, you'll find a description of their contents, contact information, and other details. This list is being frequently updated, so check back often! If you are a digital repository and would like to be included on this list, please get in touch with us.

Grant Space Knowledge Base—Writing Proposals

- How do I write a grant proposal? Where can I find samples?
- What should be included in a letter of inquiry? Where can I find samples?
- Where can I find Common Grant Application forms?
- How do I write a proposal cover letter? Where can I find samples?
- What is the percentage of grant proposals that foundations actually fund?
- Where can I find demographic information about my community?
- What is a case statement? Where can I learn more about it?
- What is an RFP?
- Where can I find technical assistance or a consultant for my nonprofit?
Stay on Top of Your NIH Application Even After You Apply

This is the eighteenth article in the NIH New Investigator Series.

In the last few articles, NIH delved into writing your application and applying. Here NIH draws your attention to what you can do after you apply to improve your chances of getting funded.

Summary

- Check that Center for Scientific Review assigns your application to the right institute and a study section with the expertise noted in your application's cover letter.
- Know what to do if you're not happy with CSR's assignment.
- Stay on top of the science even after you apply.
- You may be able to send late information, for example, for an unforeseen event or an article accepted for publication.
- Consider withdrawing if you notice a major substantive error in the application or a late-breaking discovery that has a significant impact on your research.
- Keep in touch with your program officer.

Looking to Develop a Candidate Product for Biodefense? Partner Up

Join the effort to develop medical countermeasures for NIAID priority pathogens -- apply for a biodefense partnership grant. You can get up to $750,000 per year, plus an extra $300,000 for biohazard containment equipment in the first year of award.

The basics:

- Design a project focused on preclinical development of lead candidate vaccines, vaccine technologies, adjuvants, therapeutics, immunotherapeutics, or medical diagnostics that address one or more NIAID Category A, B, or C priority pathogens and toxins.
- Have a pharmaceutical, biotechnology, bioengineering, or chemical company make a significant commitment, for example, product development support, materials and reagents, or data management resources.
- Read details and instructions, including a more thorough list of acceptable types of industry contributions, in the Partnerships for Biodefense (R01) funding opportunity announcement. See RFA-AI-11-024, Improved Diagnostic Capabilities for Select Biodefense and Emerging Pathogens (R21/R33) and PAR-11-155, Countermeasures Against Chemical Threats (CounterACT) Cooperative Research Projects (U01).
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.

2011 Competitive Program for Science and Museums and Planetariums Plus Opportunities for NASA Visitor Centers and Other Informal Education Institutions (CP4SMP+)
This NRA or solicitation seeks projects featuring NASA-themed content in space exploration, aeronautics, space science, Earth science, or microgravity, or a combination of these topics to support NASA education outcomes. The Mission Directorates (Science, Exploration Systems, Space Operations, and Aeronautics Research) cooperating with this NRA have identified content priorities as described in aligned with the NASA Strategic Plan. **Due June 29.**

Field Readers Wanted
The U.S. Department of Education (ED) seeks qualified individuals interested in reviewing applications for grant programs of the Office of Postsecondary Education (OPE). These reviewers (also called field readers or peer reviewers) will independently read and evaluate grant applications submitted to OPE. This system allows qualified individuals interested in reviewing applications for OPE grant programs to apply online. Your application to become a field reader will be reviewed by OPE staff to determine whether you have the subject area expertise needed for upcoming competitions. In addition to having subject area expertise, you must be willing to commit the specified amount of time to the application review process and you must meet the field reader requirements explained on the [FRS Registration Page](#).

Science NetLinks
Providing a wealth of resources for K-12 science educators, Science NetLinks is your guide to meaningful standards-based Internet experiences for students.

The Mis-Education of Mathematics Teachers
"A natural question is why the mathematics research community should be bothered with a problem in education. The answer is that the freshmen in our calculus classes year after year, and ultimately our math graduate students, are products of this educational philosophy. The purpose of this article is to alert the mathematics community to the urgent need of active participation in the education enterprise. It is a call for action."  ([Download report in pdf](#))

Projections of Education Statistics to 2019
This publication provides projections for key education statistics. It includes statistics on enrollment, graduates, teachers, and expenditures in elementary and secondary schools, and enrollment and earned degrees conferred expenditures of degree-granting institutions. For the Nation, the tables, figures, and text contain data on enrollment, teachers, graduates, and
expenditures for the past 14 years and projections to the year 2019. For the 50 States and the District of Columbia, the tables, figures, and text contain data on projections of public elementary and secondary enrollment and public high school graduates to the year 2019. In addition, the report includes a methodology section describing models and assumptions used to develop national and state-level projections.

**Strengthening the Mathematical Content Knowledge of Middle and Secondary Mathematics Teachers**
A fundamental tenet of our courses and material development is that mathematics teachers should not only learn important mathematics, but they should also explicitly see the fundamental connections between what they are learning and what they teach (or will teach) in their own classrooms. Moreover, while learning this mathematics, they should directly experience exemplary classroom practice, creative applications to a wide variety of state-of-the-art technology, and multiple forms of authentic assessment.

**PlantingScience.org**
Fuels made from plants, such as algae or wood pulp, may be among important solutions to energy and climate change challenges as we proceed further into the 21st century. However, despite that fact and other potential benefits offered by plants, our photosynthetic friends often get overlooked in school in favor of animals, according to studies of science classrooms. To help remedy this plant discrimination—as well as a similar human tendency known as “plant blindness,” which ignores plants’ presence in the environment—a botanical Web site is teaming students with online plant scientists to do real scientific inquiry. “PlantingScience.org is radically different in that it’s introducing scientists to students,” says Claire Hemingway, one of three co-principal investigators on the Web site. “And the entire science experience—of taking an investigation to completion, including presenting data—is there.” Because of the Web site’s effectiveness at bringing the actual scientific process to students via an online collaboration with plant biologists, the journal *Science* has chosen PlantingScience.org to receive a *Science* Prize for Online Resources in Education, or SPORE, award. ([More at Science News](#))

**Digital Library for Earth System Education (DLESE)**
The Digital Library for Earth System Education (DLESE) is a distributed community effort involving educators, students, and scientists working together to improve the quality, quantity, and efficiency of teaching and learning about the Earth system at all levels. DLESE supports Earth system science education by providing:

- Access to high-quality **collections of educational resources**
- Access to **Earth data sets and imagery**, including the tools and interfaces that enable their effective use in educational settings
- **Support services** to help educators and learners effectively create, use, and share educational resources
- **Communication networks** to facilitate interactions and collaborations across all dimensions of Earth system education
DLESE resources include electronic materials for both teachers and learners, such as lesson plans, maps, images, data sets, visualizations, assessment activities, curriculum, online courses, and much more. The National Science Foundation provided funding for the development of DLESE which is now operated by the National Center for Atmospheric Research (NCAR) Computational and Information Systems Laboratory and the NCAR Library on behalf of the education community.

Improving Undergraduate Learning: Findings and Policy Recommendations from the SSRC-CLA Longitudinal Project
This report extends findings reported in the newly released book Academically Adrift: Limited Learning on College Campuses, from the University of Chicago Press, to document the rate of growth on the Collegiate Learning Assessment (CLA) for the full four years of college, academic practices associated with improved student performance, as well as differences across individuals and institutions in the level of learning. Moreover, this report presents recommendations for policymakers, institutions, and practitioners to consider for improving undergraduate learning at U.S. colleges and universities.

About NSF GK-12
The Graduate STEM Fellows in K-12 Education (GK-12) Program, managed by NSF’s Division of Graduate Education (DGE), provides funding to graduate students in science, technology, engineering and mathematics (STEM) disciplines to acquire additional skills that will broadly prepare them for professional and scientific careers in the 21st century.

This Resources section is designed to be a wide-ranging, comprehensive, and timely source of information for GK-12 participants and others who support the advancement of student learning in science, technology, engineering, and mathematics. We invite you to submit material for any of the categories to help us keep the site up-to-date and make it beneficial for members of the GK-12 community. Send information to Betty Calinger, bcalinge@aaas.org.

- STEM Activities and Resources for K-12 Teachers and Students
  Activities and resources for all grades; for elementary, middle, and high school students. Resources provided by NSF GK-12 projects and professional organizations. View resources.

- Project Implementation Resources
  Resources for improving presentation skills, organizing conferences, improving GK-12 interactions, etc. View resources.

- International Resources
  Opportunities for international collaboration. Includes specific resources from the National Science Foundation, as well as other resources for universities and K-12 STEM educators. View resources.

- Publications
  Books; journals; reports, monographs, and proceedings; and articles related to K-12 STEM education. View resources.

- Presentations
Presentations related to STEM education in the K-12 environment. View resources.

- **Opportunities for Teachers**
  Information on professional development; grants; seminars; and workshops for K-12 STEM educators. View resources.

- **Opportunities for Graduate Students**
  Information on professional development; research and grant opportunities; seminars; and workshops. View resources.

- **Organizational Resources**
  Information about organizations for STEM professionals. View resources.

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**Student-Centered Teaching, Teacher Leadership Development and Student Success: The Mathematics Teacher Transformation Institute**

The "Mathematics Teacher Transformation Institutes" (MTTI) project is a research-based investigation of how leadership emerges and is expressed through mathematics knowledge, student-focused instructional practices, and influences on schools' mathematics outcomes. In particular, this research is broadening the knowledge base on teaching and learning in mathematics through new understanding of how the study of conceptually-challenging mathematics, particularly in algebra and geometry, benefits second-stage teachers (4-10 years' experience); of how classroom-based action research contributes to critical and analytical understanding of the relationships between teaching practices and student learning; and of how multi-levels of support prepare second-stage teachers for leadership roles.

Our webpage: [http://comet.lehman.cuny.edu/mtti](http://comet.lehman.cuny.edu/mtti)

**A Mathematician–Mathematics Educator Partnership to Teach Teachers**

The preparation of beginning teachers by many colleges and universities... does not meet the needs of the modern classroom.... Professional development for continuing teachers...may do little to enhance teachers’ content knowledge or the techniques and skills they need to teach science and mathematics effectively.

**Writing Proposals to Foundations Webinar**

In this webinar you will learn the basics of writing a proposal for your nonprofit organization. If you are new to proposal writing, you may be wondering:

- What are the key components of a proposal to a foundation?
- Who should sign a grant request?
- How should the proposal be packaged?
- Should you contact a funder if your proposal is turned down?
**NSF Dear Colleague Letter: Guidance on Submission of RAPID Proposals to ENG, CISE, and OISE on the 2011 Earthquakes in Japan and New Zealand**

The Directorate for Computer and Information Science and Engineering (CISE), the Directorate for Engineering (ENG), and the Office of International Science and Engineering (OISE) issued this letter to provide context and clarification for the types of proposals for investigatory research being entertained, together with guidance on the process to submit proposals to these specific directorates. Researchers interested in submitting proposals to other directorates or offices should contact cognizant NSF program officers directly. The number of awards made by CISE, ENG, and OISE will depend on the quality of the proposals received and the availability of funds. For timely consideration, proposals should be submitted electronically via the NSF FastLane system by **Friday, April 29, 2011**. It is anticipated that the majority of awards will not exceed $50,000.

**NSF and DOE Announce Joint Funding Opportunity for Solar Energy Research**

The National Science Foundation (NSF) and the U.S. Department of Energy (DOE) will jointly provide up to $39 million for research to improve photovoltaic (PV) cell performance and reduce module cost for grid-scale commercial applications. The agencies released a joint Funding Opportunity Announcement (FOA) for the "Foundational Program to Advance Cell Efficiency" on April 8, 2011, to identify and fund solar device physics and PV technology research and development. This collaborative effort is one of four programs in the SunShot Initiative recently announced by Energy Secretary Steven Chu. The SunShot Initiative aims to make solar energy technologies cost-competitive with other forms of energy by reducing the cost of solar energy systems by about 75 percent before 2020. Reducing the total installed cost for utility-scale solar electricity to roughly $1 per watt will result in rapid, large-scale adoption of solar electricity across the country. Reaching this goal will re-establish American technological leadership, improve the nation’s energy security, and strengthen U.S. economic competitiveness in the global clean energy race.

SunShot's Foundational Program to Advance Cell Efficiency addresses the technical foundations of PV by taking advantage of the complementary roles of NSF and DOE. NSF's mission to support basic research and educate the next generation of engineers and scientists "feeds the pipeline" to DOE's applied research and later-stage development that matures technologies toward U.S. economic impact. "NSF aims to create breakthroughs for sustainable energy through its investment in basic research," said Robert Trew, director of the NSF Division of Electronic, Communications, and Cyber Systems (ECCS). "We hope this collaboration with DOE will bring America significantly closer to a sustainable energy future."

**American Academy of Arts and Sciences**

The American Academy of Arts & Sciences has announced the creation of the Commission on the Humanities and Social Sciences. In the coming months, the Commission will begin to
examine the role of the humanities and social sciences in America, including their impact on the nation’s economic growth and geopolitical competitiveness.

**NSF Data Management Plan Resources, University of Nebraska, Lincoln**

**National Earthquake Hazards Reduction Program**

**Request for Information (RFI) Fuel Cell Technologies Program Technology Validation Activities**

This is a DOE/GFO Request for Information (RFI) only. The full RFI document can be found at www.fedconnect.net by clicking on the Search Public Opportunities link, then selecting Reference Number under Search Criteria and entering the full RFI number in the search field. All questions and responses must be submitted to FCTtechvalRFI@go.doe.gov. Below is a synopsis of the RFI. See the full RFI for complete information. The Department of Energy (DOE) seeks feedback from stakeholders for Technology Validation activities aimed at demonstrating and validating fuel cell and hydrogen technologies, consistent with DOE’s on-going efforts. **Areas of interest include:** 1) Innovative concepts for: a) stationary fuel cell systems for residential and commercial applications, including combined heat and power (CHP) and combined cycle operation and b) combined heat, hydrogen, and power (CHHP) co-production fuel cell systems; and 2) Technology Validation projects for other markets.

**Research Commercialization Introductory Online Course, Free Webinars**

The Research Commercialization Introductory Course (Research Commercialization and SBIR Center) is designed to help researchers better understand what research commercialization really is and how it works. This is a very popular online course with generally over 1000 researchers taking it each time it is offered. Research can be commercialized in a number of ways. Your research will likely result in various artifacts, such as articles, documentation, know-how, patents, and copyrights, and it is these artifacts that are commercialized in one form or another. The Research Commercialization Course is recommended for all science, engineering and medical researchers in public or private research institutions (e.g., grad students, post-docs, and faculty). This is an indispensable course for S&E grad students looking for jobs in the next 6-18 months. **Areas covered in the course include intellectual property, patents, copyrights, trade secrets, trademarks, licensing agreements, employment agreements, consulting agreements, tech transfer, creating and funding companies, and federally funded Small Business Innovation Research (SBIR) programs.** Each lecture is a live 90-minute online class with Q&A.

**Get a Jump Start on Your NIH Reference Letters**

You may want to remind your referees that new NIH policy eliminates the five business day grace period for the receipt of reference letters after the application receipt due date. The new policy requires referees to submit all reference letters by the application due date. Applications without all of the required references in the appropriate format will be considered incomplete and will not be reviewed. Referees are welcome to submit their letters in eRA Commons prior
to the submission of the grant application itself, so encourage referees to submit early. Early
letters will be held by NIH and linked to the appropriate application in eRA Commons once it
has been received. For more information, please eSubmission Letters of Reference FAQs. In
addition, Commons users can find new reference letter help files on the Submit Reference
Letter and List of Reference Letters screens in eRA Commons. Users can access these help files
by clicking the question mark (?) icon next to the screen name. Reference letters for individual
career development award (K) applications will also be due by the application deadline for
June 12, 2011 and subsequent due dates.

**NIH Announces New Strategic Plan to Combat Diabetes**
A new strategic plan to guide diabetes-related research over the next decade was announced
March 18 by the National Institutes of Health. The plan, developed by a federal work group led
by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), identifies
research opportunities with the greatest potential to benefit the millions of Americans who
are living with or at risk for diabetes and its complications. "By setting priorities and identifying
the most compelling research opportunities, the strategic plan will guide NIH, other federal
agencies and the investigative community in efforts to improve diabetes treatments and
identify ways to keep more people healthy," said NIDDK Director Griffin P. Rodgers, M.D.
The plan, Advances and Emerging Opportunities in Diabetes Research: A Strategic Planning
Report of the Diabetes Mellitus Interagency Coordinating Committee, focuses on 10 areas of
diabetes research with the most promise. The goal is to accelerate discovery on several fronts,
including:

- the relationship between obesity and type 2 diabetes, and how both conditions may be
  affected by genetics and environment
- the autoimmune mechanisms at work in type 1 diabetes
- the biology of beta cells, which release insulin in the pancreas
- development of artificial pancreas technologies to improve management of blood sugar
  levels
- prevention of complications of diabetes that affect the heart, eyes, kidneys, nervous
  system and other organs
- reduction of the impact of diabetes on groups disproportionately affected by the
disease, including the elderly and racial and ethnic minorities.

**GuLF Study : Gulf Long-term Follow-up Study**
The NIEHS is leading the GuLF STUDY – a health study for oil spill workers and volunteers
following the recent Deepwater Horizon Oil Spill. If you are interested in joining the study
want more information call toll free at 1-855-NIH-GULF (1-855-644-4853) or visit
http://nihgulfstudy.org/

**NSF Dear Colleague Letter for New Zealand and Japan**
The February 21, 2011, earthquake in New Zealand and the March 11, 2011, earthquake in
Japan and subsequent tsunami and nuclear power plant crises have shown us Nature's
enormous destructive capacity, once again. **This letter is to remind you that NSF has mechanisms in place to respond to immediate research and education needs that arise from such unexpected events.** For example, such mechanisms were used to support activities compelled by the earthquakes in Haiti and Chile in 2010, the Chinese Wenchun earthquake in 2008, and Hurricane Katrina in New Orleans in 2005. The **Rapid Response Research (RAPID)** mechanism is used to support activities having a severe urgency with regard to availability of, or access to, data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. **Another mechanism is for a Principal Investigator (PI) to request supplemental funds** to add an international dimension to an existing NSF grant. Supported activities are not limited to on-site research, and could include research conducted remotely via the use of information and communication technologies, temporarily hosting databases on behalf of affected institutions, and providing temporary laboratory space for researchers and students from affected institutions.

**AAAS Report: NSF Centers Support Transformative Research, Offer Compelling S&T Education**
The AAAS report, which analyzed the work of 17 centers funded in three grant competitions held between 1998 and 2005-06, is the first review of the NSF program since 1995. In fiscal year 2010, NSF spent $57.77 million on the 17 centers, accounting for approximately 9% of NSF’s total research expenditures. [Full Report](#).

**DOE, Department of Interior Announce Offshore Wind Initiatives**
DOE and the U.S. Department of the Interior (DOI) unveiled on February 7 a coordinated strategic plan to accelerate the development of offshore wind energy, including new funding opportunities for up to $50.5 million. The joint **National Offshore Wind Strategy: Creating an Offshore Wind Industry in the United States** is the first-ever interagency plan on offshore wind energy. For the funding opportunities (FOA) on Grants.gov, see the [technology development and design FOA](#) due on June 17, the [removing market barriers FOA](#) due June 10, and the [turbine drivetrain FOA](#) due on April 1. See the [DOE press release](#), the [complete National Offshore Wind Strategy](#), a [fact sheet](#) on the national offshore wind strategy, and the [BOEMRE website](#).

**USGS Science Strategy Input Requested**
Ecosystems worldwide are undergoing unprecedented change because of climate variability, changing land uses, and increasing demands for water, food, energy, infrastructure, and commodities. To better understand these trends, forecast future conditions, and inform management decisions, a team of USGS scientists is developing a 10-year science strategy for the new USGS Ecosystems Mission Area. This is part of an effort to create strategies for all of the new USGS Mission Areas. **This process will culminate in a final report to be delivered to USGS Director Marcia McNutt by October 31, 2011.** The Ecosystem Team has begun to gather input from colleagues, partners, and collaborators at listening sessions and meetings, and now we would like your help in taking the next step. We invite you to visit the [USGS Science Strategy site](#) to answer several questions we have posed to stimulate thought and inform the
creation of the Ecosystems strategy. The site also includes background material on this plan and the strategic science planning process for all of the USGS Mission Areas. Please help us create a compelling, comprehensive, and relevant strategy by visiting the site to offer your input.

Currently Open for Comment:

- Ecosystems
- Energy and Minerals
- Environmental Health
- Global Change
- Natural Hazards
- Water
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.

NSF Graduate Research Fellowship Program Administrative Guide for Fellows and Coordinating Officials, March 2011

NIH 2010 Office of Extramural Research (OER) Report
Learn How the NIH Office of Extramural Research Makes Grants Happen.

NIH Correlation Between Overall Impact Scores and Criterion Scores
Among the changes NIH implemented under its Enhancing Peer Review initiative was the assignment of scores to each of five individual criteria for research grant applications: significance, investigator(s), innovation, approach, and environment. The purpose of these criterion scores is to provide additional information to the applicant.

NIH Regional Seminars on Program Funding and Grants Administration

Archive of NIH Regional Seminars on Program Funding and Grants Administration

NSF Dimensions of Biodiversity FY2010 Projects Report
Dimensions of Biodiversity seeks to characterize biodiversity on Earth by using integrative, innovative approaches to fill rapidly the most substantial gaps in our understanding. It will take a broad view of biodiversity, and in its initial phase will focus on the integration of genetic, taxonomic, and functional dimensions of biodiversity. Projects integrate these three dimensions to understand interactions and feedbacks among them. While this focus complements several core NSF programs, it differs by requiring that multiple dimensions of biodiversity be addressed simultaneously, in innovative or novel ways, to understand the roles of biodiversity in critical ecological and evolutionary processes. Dimensions of Biodiversity Frequently Asked Questions.

AAAS Report: National Science Foundation Centers Support Transformative Research, Provide Compelling S&T Education
The National Science Foundation’s program to create large-scale, transformative research collaborations in the United States has contributed to significant advances in science and technology, according to a new review of the program conducted by AAAS. The NSF Science & Technology Centers Integrative Partnerships program supports universities, national laboratories, industrial organizations, and others that join together to create new multidisciplinary research centers. From nanobiotechnology to microbial oceanography, the
AAAS report concludes, the centers successfully pursue innovative basic science while promoting its applications to larger societal issues. Read the “AAAS Review of the NSF Science & Technology Centers Integrative Partnerships (STC) Program, 2000-2009.” Read the report of the blue ribbon panel, “The NSF Science & Technology Centers Integrative Partnerships Program, 2000-2009.”

**Transformative Research at Predominately Undergraduate Institutions, NSF Report**

Predominantly undergraduate colleges and universities have a rich history of contributing to our nation’s research excellence Meeting attendees recognized that many of their colleagues and undergraduates were already engaged in transformative research projects on their campuses, ranging from contributing to large-scale efforts like the search for gravitational waves to individual research projects associated with emerging fields like systems biology The conference was characterized by animated conversations regarding how to enhance this kind of research and ensure that it is valued and recognized as integral to the mission of these institutions. This volume represents a compilation of the many excellent ideas that were presented during the course of the meeting As government, academic, scientific and business leaders think about transformative research and how to advance it, PUIs have much to share in terms of experience with, and models for, promoting it.
From GrantsNet

- **Funding News RSS**
  The Funding News, now published weekly, provides the latest index of science research funding, scholarships, fellowships, and internships.

- **Deadline Watch**
  The Deadline Watch, now part of the Funding News, provides upcoming due dates for science research funding, scholarships, fellowships, and internships in GrantsNet.

- **International Grants and Fellowship Index**
  The International Grants and Fellowships Index offers the latest listing of funding opportunities from Europe, Asia, and the Americas.

- **Sign up for GrantsNet Express**
  GrantsNet Express offers a new e-mail alert each week of science funding opportunities from government agencies, private foundations, and not-for-profit organizations.

### Links to New & Open Funding Solicitations

- [DOE/EERE Funding Opportunity Exchange](#)
- [HHS/Administration for Children and Families Funding Opportunities](#)
- [New Posting of Funds Available at HUD (more)](#)
- [New Funding Opportunities at NIEHS (NIH)](#)
- [National Human Genome Research Institute Funding Opportunities](#)
- [Army Research Laboratory Open Broad Agency Announcements (BAA)](#)
- [Institute of Education Sciences FY 2012 Opened Funding Opportunities](#)
- [SBIR Gateway to Funding](#)
- [Water Research Funding](#), Institute for Water and Watersheds, Oregon State Univ.
- [Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences](#)
  Deadlines: February 2011-June 2011
- [Humanities Funding Sources A-to-Z](#)
- [DARPA Current Solicitations](#)
- [Office of Naval Research Currently Active BAAs](#)
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- [HRSA Health Professions Open Opportunities](#) (see [Creating Good HRSA Grant Applications Focusing on Underserved Populations](#))
- [NIH Funding Opportunities Relevant to NIAID](#)
- [Active Funding Opportunity Announcements (FOAs) for All NICHD](#)
- [National Institute of Justice Current Funding Opportunities](#)
- [NIST Fiscal Year FY2011 Measurement Science and Engineering Research Grants](#)
New Funding Solicitations Posted Since March 15 Newsletter

Erma Byrd Scholarship Program
The Erma Byrd Scholarship Program provides scholarships to individuals pursuing a course of study that will lead to a career in industrial health and safety occupations, including mine safety. This program is designed to increase the skilled workforce in these fields at both the fundamental skills level and the advanced skills level. The program has a service obligation component, which requires recipients of the scholarship to begin employment in a career position related to industrial health and safety no later than six months after completion of the degree program, and to continue to work in a career position related to industrial health and safety, including mine safety, for a period of one year. Due April 25.

Hispanic-Serving Institutions STEM
The Hispanic-Serving Institutions STEM and Articulation programs authorized under section 371 of the Higher Education Act of 1965, as amended (HEA) provide grants to assist Hispanic-Serving institutions (HSIs) to develop and carry out activities to improve and expand their capacity to serve Hispanic and other low-income students. Applications for grants under the Hispanic-Serving Institutions STEM and Articulation Programs, CFDA number 84.031C, must be submitted electronically using the Government wide Grants.gov Apply site at http://www.Grants.gov. Through this site, you will be able to download a copy of the application package, complete it offline, and then upload and submit your application. You may not e-mail an electronic copy of a grant application to us. You may access the electronic grant

NIH Reissued Funding Opportunities (K-Awards, April 8, 2011)
• PA-11-190, Mentored Research Scientist Development Award (Parent K01)
• PA-11-191, Independent Scientist Award (Parent K02)
• PA-11-193, Mentored Clinical Scientist Research Career Development Award (Parent K08)
• PA-11-194, Mentored Patient-Oriented Research Career Development Award (Parent K23)
• PA-11-195, Midcareer Investigator Award in Patient-Oriented Research (Parent K24)
• PA-11-196, Mentored Quantitative Research Development Award (Parent K25)
• PA-11-197, NIH Pathway to Independence Award (Parent K99/R00)
application for the Hispanic-Serving Institutions STEM and Articulation Programs at http://www.Grants.gov. You must search for the downloadable application package for this competition by the CFDA number. Do not include the CFDA number’s alpha suffix in your search (e.g., search for 84.031 not 4.031C). The telephone number for the Grants.gov Helpdesk is 1-800-518-4726 or e-mail: support@grants.gov. Due April 29.

**A Grand Challenge for Development**
USAID, Government of Norway, the Bill & Melinda Gates Foundation, Grand Challenges Canada, and The World Bank have joined together to launch Saving Lives at Birth: A Grand Challenge for Development. Together, we are calling for groundbreaking prevention and treatment approaches for pregnant women and newborns in poor, rural communities around the time of childbirth. Due April 29.

**2011 Healthy Communities Grant Program**
The Healthy Communities Grant Program is EPA New England’s main competitive grant program to work directly with communities to reduce environmental risks, protect and improve human health and improve the quality of life. Due May 2.

**ROSES 2011: Opportunities in Education and Public Outreach for Earth and Space Science**
Due May 6.

**Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (Parent T32)**
The National Institutes of Health (NIH) will award Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (T32) to eligible institutions as the primary means of supporting predoctoral and postdoctoral research training to help ensure that a diverse and highly trained workforce is available to assume leadership roles related to the Nation’s biomedical, behavioral and clinical research agenda. The objective of the T32 program is to prepare qualified individuals for careers that have a significant impact on the health-related research needs of the Nation. This program supports predoctoral and postdoctoral research training programs (including those with short term research training) at domestic institutions of higher education with the T32 funding mechanism. Note that programs solely for short-term research training should not apply to this announcement, but rather the separate (T35) NRSA Short-Term Institutional program exclusively reserved for predoctoral and/or postdoctoral level short-term research training programs (see PA-11-185). Due May 7.

**Ruth L. Kirschstein National Research Service Award Short-Term Institutional Research Training Grants (Parent T35)**
The National Institutes of Health (NIH) will award Ruth L. Kirschstein National Research Service Award (NRSA) Short-Term Institutional Research Training Grants (T35) to eligible institutions to develop or enhance research training opportunities for predoctoral and postdoctoral level individuals interested in careers in biomedical, behavioral and clinical research. Many of the
NIH Institutes and Centers (ICs) use this grant mechanism exclusively to support intensive, short-term research training experiences for students in health professional schools during the summer. In addition, the Short-Term Institutional Research Training Grant may be used to support other types of predoctoral and postdoctoral training in focused, often emerging scientific areas relevant to the mission of the funding IC. The proposed training must be in basic, behavioral or clinical research aspects of the health-related sciences. This program is intended to encourage graduate and/or health professional students to pursue research careers by exposure to and short-term involvement in the health-related sciences. The training should be of sufficient depth to enable the trainees, upon completion of the program, to have a thorough exposure to the principles underlying the conduct of research. Due May 7.

**FY2011 Request for Proposals for the Pollution Prevention Information Network Grants**
The Pollution Prevention Information Network (PPIN) grant program funds regional centers that serve both unique regional pollution prevention (P2) information needs and national audience needs for quality information on source reduction and related P2 practices. The grantees provide assistance to businesses whose lack of information may be an impediment to implementing source reduction, preventing pollution or adopting sustainable practices. Proposals should describe activities that serve regional and national P2 needs, strategic P2 priorities, and promote national network communication. Due May 9.

**Assembling, Visualizing, and Analyzing the Tree of Life (AVAToL)**
The Assembling, Visualizing and Analyzing the Tree of Life (AVAToL) activity supports novel and transformative approaches to the development of an integrated and robust tree of life, as well as visualization and analysis on a dynamic tree of life. This will take place through the Ideas Lab project development and review process. The goal of this activity is to identify opportunities for investment to significantly advance the state-of-the-art in tree construction, visualization, and analysis across the tree of life. Participants selected through an open application process will engage in an intensive five-day residential workshop to generate project ideas through an innovative, real-time review process. New multidisciplinary teams will form during this workshop to engage in creative problem solving directed at outstanding problems concerning the tree of life. Required preliminary proposal due May 10; full Nov. 4.

**FIPSE--Special Focus Competition: United States (U.S.)-Brazil Higher Education Consortia**
The purpose of this program is to provide grants or enter into cooperative agreements to improve postsecondary education opportunities by focusing on problem areas in postsecondary education or approaches to improve postsecondary education. Due May 13.

Project Description: The goal of the Advanced Research - Coal Utilization Science Program is to conduct research that supports the development of technologies for clean, efficient electric power generation. This supports the DOE Strategic Plan by providing core competencies related
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to advanced power system technologies. The scope of this activity will include soliciting both novel and applied research projects from the three areas of research described below.
Objective: The objective of this activity is to competitively solicit projects in the Sensors and Controls area of the National Energy Technology Laboratory's (NETL) Advanced Research (AR) Program. The AR Program sponsors innovative and transformational research and development (R&D) that bridges the gap between basic sciences and applied engineering. These R&D efforts are oriented and prioritized towards the full-scale implementation and operation of the next generation of fossil energy power systems and improvements to existing fossil energy power systems. These advancements are driven by the need for highly efficient, near-zero emission power systems that utilize domestic resources. **Due May 16.**

2012 Earthquake Hazards Reduction Program
The purpose of NEHRP is to provide products for earthquake loss reduction to the public and private sectors and by carrying out research on earthquake occurrence and effects. **Due May 18.**

Fund for the Improvement of Postsecondary Education (FIPSE)--Comprehensive Program
The Comprehensive Program supports innovative grants and cooperative agreements to improve postsecondary education. It supports reforms, innovations, and significant improvements of postsecondary education that respond to problems of national significance and serve as national models. Catalog of Federal Domestic Assistance Number: 84.116B. Applications for grants under the Comprehensive Program, CFDA number 84.116B, must be submitted electronically using the Government wide Grants.gov Apply site at http://www.Grants.gov. Through this site, you will be able to download a copy of the application package, complete it offline, and then upload and submit your application. You may not e-mail an electronic copy of a grant application to us. You may access the electronic grant application for the Comprehensive Program at http://www.Grants.gov. **Due May 23.**

Research Coordination Networks (RCN)
The goal of the RCN program is to advance a field or create new directions in research or education. Groups of investigators will be supported to communicate and coordinate their research, training and educational activities across disciplinary, organizational, geographic and international boundaries. RCN provides opportunities to foster new collaborations, including international partnerships, and address interdisciplinary topics. Innovative ideas for implementing novel networking strategies, collaborative technologies, and development of community standards for data and meta-data are especially encouraged. This revision of the RCN solicitation announces:
- A new targeted opportunity for RCN activities in Science, Engineering and Education for Sustainability (RCN-SEES).
- That the targeted RCN-PLS track will no longer be offered. RCN proposals on topics at the intersection of MPS and BIO programs are encouraged and will be considered for co-review between relevant programs in BIO and MPS. See the Dear Colleague Letter
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issued jointly by these two directorates:

- The addition of the Directorate for Engineering and the Directorate for Computer and Information Science and Engineering as participating organizations.
- New deadlines for submission of proposals to the RCN-UBE targeted track.
- Clarification of proposal preparation guidelines, especially concerning the definition of steering committee members as senior personnel, and submission instructions for general RCN proposals.

Due May 24 and June 15.

European Union-United States Atlantis Program CFDA 84.116J
The purpose of this program is to provide grants or enter into cooperative agreements to improve postsecondary education opportunities by focusing on problem areas in postsecondary education or approaches to improve postsecondary education. Due May 24.

Department of Defense Research and Educational Program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI)
DoD announces the availability of the FY 2011 BAA for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI). This BAA is a set-aside for Historically Black Colleges and Universities and Minority-Serving Institutions. However, there will be an opportunity for Sub-grantees to partner with accredited institutions. These accredited institutions are not limited to HBCUs or MIs. The BAA aims to (a) enhance research programs and capabilities in scientific and engineering disciplines critical to the national security functions of the DoD, (b) encourage greater participation in DoD programs and activities, (c) increase the number of graduates, including underrepresented minorities, in the fields of science, technology, mathematics, and/or engineering (STEM), and (d) encourage research and educational collaboration with other institutions of higher education. The BAA will contain additional information along with instructions for proposal preparation and submission. Proposals must be received through grants.gov no later than 4:00 p.m. Eastern Time on Wednesday, 25 May 2011. The BAA will be available for viewing on or about 28 March 2011 at the following address: http://www.arl.army.mil/www/default.cfm?page=8 The BAA is also posted in grants.gov. Go to the grants.gov site at the following URL http://www07.grants.gov/applicants/find_grant_opportunities.jsp then search by Funding Opportunity Number (FON) W911NF-11-R-0007. POC: Ms. Peggy Lacewell, 919-549-4339, peggy.lacewell@us.army.mil Due May 25.

Theoretical Research in Magnetic Fusion Energy Science
The Fusion Energy Sciences (FES) program of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving grant applications for theoretical research relevant to the U.S. program in magnetic fusion energy sciences. All individuals or groups planning to submit applications for new or renewal funding in Fiscal Year 2012 should submit in response to this Funding Opportunity Announcement (FOA). The specific areas of
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interest are: 1. Magnetohydrodynamics 2. Confinement and Transport 3. Boundary Physics 4. Plasma Heating, Non-inductive Current Drive, and Energetic Particles 5. Atomic and Molecular Processes in Plasmas More specific information on each area of interest is outlined in the general and program specific supplementary information in the full funding opportunity announcement (DE-FOA-0000480). **Due May 26.**

**Transition to Teaching Grant Program**
The Transition to Teaching program encourages (1) the development and expansion of alternative routes to full State teacher certification, as well as (2) the recruitment and retention of highly qualified mid-career professionals, recent college graduates, and highly qualified paraprofessionals as teachers in high-need schools operated by high-need local educational agencies (LEAs), including charter schools that operate as high-need LEAs. **Due May 31.**

**Department of Health and Human Services, National Institutes of Health**

**The Effect of Racial and Ethnic Discrimination/Bias on Health Care Delivery (R01)**
This funding opportunity announcement encourages the submission of research project grant applications from institutions or organizations that propose to: (1) improve the measurement of racial or ethnic discrimination in health care delivery systems through improved instrumentation, data collection, and statistical or analytical techniques; (2) enhance understanding of the influence of racial or ethnic discrimination in health care delivery and its association with disparities in disease incidence, treatment, and outcomes among disadvantaged racial or ethnic minority groups; and (3) reduce the prevalence of racial or ethnic health disparities through the development of interventions to reduce the influence of racial or ethnic discrimination on health care delivery systems in the United States. Scope of the proposed project should determine the project period. The maximum period is 5 years. **Due June 5.**

**Nanoscience and Nanotechnology in Biology and Medicine (R01)**
This initiative, issued by the National Institutes of Health, encourages applications from institutions or organizations that apply nanoscience and nanotechnology approaches to address problems in biology and medicine. The purpose of this funding opportunity announcement (FOA) is to provide support for cutting-edge nanoscience and nanotechnology research that can lead to biomedical breakthroughs and new investigations into the diagnosis, treatment, and management of an array of diseases and traumatic injuries. Nanoscience and nanotechnology have the capacity to drive a new wave of medical innovation through the engineering of bioactive nanoscale structures, processes, and systems based on the advancement of our understanding of biology at the nanoscale. Therefore, this FOA will also support research projects that develop new or improved nanotechnology and nanoscience-based tools, methods, concepts, and devices that lead to a better understanding of basic biology in addition to conducting translational biomedical studies. The total project period for an application submitted in response to this funding opportunity may not exceed 5 years. **Due June 5.**

**Advanced Hydropower Development**
DOE's Water Power Program has a mission to research, develop, test, evaluate, and demonstrate innovative water power technologies capable of generating renewable, environmentally responsible, and cost-effective electricity from water resources. Included in these activities are technologies and processes to upgrade unit and plant capacity, improve efficiency, and improve the environmental performance of Conventional Hydropower generation. Through this Funding Opportunity Announcement, the Wind and Water Power Program of the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is seeking applications for the development, testing, validation, modeling, and interconnection of advanced conventional hydropower systems. **This FOA seeks applications in the following Topic Areas:** Topic Area 1: Sustainable Small Hydropower; Topic Area 2: Sustainable Pumped Storage Hydropower (PSH); Topic Area 3: Environmental Mitigation Technologies for Conventional Hydropower; and Topic Area 4: Advanced Conventional Hydropower System Testing at a Bureau of Reclamation Facility. Topic Area 4 is jointly funded by the Bureau of Reclamation and Department of Energy. **LOI Due Date: May 5; Application Due June 6.**

**Center of Excellence (CoE) in Laser-Based Remote Sensing and Communications**
AFRL Sensors Directorate (AFRL/RY), Directed Energy Directorate (AFRL/RD) and AFOSR seek an applicant to provide a Center of Excellence in the development of laser-based remote sensing and communications for Air Force applications. It is anticipated that the successful bidder will propose tasks in both the basic and applied research domains associated with the broad category of remote sensing and free-space communication beyond the diffraction-limited range of a real optical aperture. Wavelength regimes of interest are those consistent with remote sensing and communications for Air Force applications. It is also anticipated that the successful bidder will have significant experience in education of students in technical areas of interest. The successful bidder will also demonstrate a willingness to make results of research available to the technical community at large through activities such as frequent workshops, publications and presentations at conferences. **Due June 7.**

**Digging into Data Challenge**
The advent of what has been called “data-driven inquiry” or “cyberscholarship” has changed the nature of inquiry across many disciplines, revealing new opportunities for interdisciplinary collaboration on problems of common interest. The creation of vast quantities of Internet-accessible digital data and the development of techniques for large-scale data analysis have led to remarkable new discoveries in genetics, astronomy, and other fields, and—importantly—connections between different academic disciplines. The Digging into Data Challenge seeks to discover how these new research techniques might also be applied to questions in the humanities and social sciences. New techniques of large-scale data analysis allow researchers to discover relationships, detect discrepancies, and perform computations on so-called “big data” sets that are so large that they can be processed only by using computing resources and computational methods that were developed and made economically affordable within the past few years. **Due June 16.**
**Foundational Program to Advance Cell Efficiency (F-PACE)**
The U.S. Department of Energy (DOE) seeks to fund applied scientific research that provides the technical foundation for significant increases in solar photovoltaic (PV) cell efficiency, to enable commercial and near-commercial PV technologies to achieve one dollar per watt installed system cost targets by the end of the decade. Combined with the technical and funding resources from the National Science Foundation (NSF), this joint Funding Opportunity Announcement (FOA) for the Foundational Program to Advance Cell Efficiency (F-PACE) will identify and fund solar device physics and photovoltaic technology research and development that will improve PV cell performance and reduce module cost for grid-scale commercial applications. There will be three topics to which an application may be submitted under this FOA:

- Topic 1: Foundational Research on PV Sub-cell Materials and Processes
- Topic 2: Foundational PV Cell Research
- Topic 3: Barrier Focus Teams

For more information, see the full solicitation. Due June 23.

**Solar Energy Grid Integration Systems - Advanced Concepts**
The objective of this Funding Opportunity Announcement (FOA) is to fund projects that develop technologies in power electronics that reduce the overall photovoltaic (PV) system costs, allow high penetrations of solar technologies onto the grid (e.g. reactive power, energy storage, advanced functionalities), and enhance the performance, reliability, and safety of the PV system. The DOE has identified several major areas where significant cost reductions in power electronics can be made including:

6. economies of scale;
7. advanced components;
8. reliability;
9. smart grid integration; and
10. understanding of system implications.

The DOE also is considering how changes in power electronics impact the cost of the PV system as a whole. DOE anticipates that the U.S. Solar Industry can reach the aggressive SunShot targets by focusing on both power electronics research and in technologies more specific to grid-connected, photovoltaic systems. There will be two topics to which an application may be submitted under this FOA:

- Topic 1: Smart-Grid Functionality
- Topic 2: Using Power Electronics to Address Balance of System Costs

For more information, see the full solicitation. Due June 23.

**Computational Methods for Decision Making – Resource Optimization, Image Understanding, Information Integration, and Cyber Security**
The ONR topics 1) Identification and understanding of key issues; 2) Development and maturation of algorithms and methods; 3) Determination and demonstration of performance of
algorithms, methods, techniques, and strategies for automated computational methods and information systems that support decision making. The algorithms, methods, techniques, and strategies must support autonomous information processing systems that can successfully and securely execute a variety of missions in complex environments while exploiting multiple sources of sensor and open domain data. The program will pursue a wide variety of approaches that enable automated systems to, within the context of a mission, automatically analyze multiple sources of data supporting interpretation of the data; combine data and interpretations from multiple data sources to provide understanding of the battle space; provide management of sensor and other resources to maintain and improve the battle space picture; and enable and build high performance software systems that are defect free and trustworthy to implement these algorithms, methods, techniques, and strategies. Due June 28.

**2011 Competitive Program for Science and Museums and Planetariums Plus Opportunities for NASA Visitor Centers and Other Informal Education Institutions (CP4SMP+)**

This NRA or solicitation seeks projects featuring NASA-themed content in space exploration, aeronautics, space science, Earth science, or microgravity, or a combination of these topics to support NASA education outcomes. The Mission Directorates (Science, Exploration Systems, Space Operations, and Aeronautics Research) cooperating with this NRA have identified content priorities as described in aligned with the NASA Strategic Plan. Due June 29.

**FY 2011 University Center Economic Development Program Competition**

This FFO announces the availability of funding for EDA’s FY 2011 University Center Economic Development Program Competition. EDA solicits competitive applications from accredited institutions of higher education and from consortia of accredited institutions of higher education in, and programs targeting, only the following geographic areas served by EDA’s Chicago and Philadelphia Regional Offices. Due June 30.

**NSF EarthScope**

EarthScope is an Earth science program to explore the 4-dimensional structure of the North American continent. The EarthScope Program provides a framework for broad, integrated studies across the Earth sciences, including research on fault properties and the earthquake process, strain transfer, magmatic and hydrous fluids in the crust and mantle, plate boundary processes, large-scale continental deformation, continental structure and evolution, and composition and structure of the deep Earth. In addition, EarthScope offers a centralized forum for Earth science education at all levels and an excellent opportunity to develop cyberinfrastructure to integrate, distribute, and analyze diverse data sets. Due July 16.

**NEH Humanities Collections and Reference Resources**

The Humanities Collections and Reference Resources program supports projects that provide an essential foundation for scholarship, education, and public programming in the humanities. Thousands of libraries, archives, museums, and historical organizations across the country maintain important collections of books and manuscripts, photographs, sound recordings and
moving images, archaeological and ethnographic artifacts, art and material culture, and digital objects. Funding from this program strengthens efforts to extend the life of such materials and make their intellectual content widely accessible, often through the use of digital technology. Due July 20.

**SBIR E-learning for HAZMAT and Emergency Response (SBIR [R43/R44])**

This funding opportunity announcement (FOA) encourages Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) that propose to further the development of Advanced Technology Training (ATT) Products for the health and safety training of hazardous materials (HAZMAT) workers, emergency responders, and skilled support personnel. These products would complement the goals and objectives of the Worker Education and Training Program (WETP). The major objective of the NIEHS/WETP is to prevent work related harm by assisting in the training of workers in how best to protect themselves and their communities from exposure to hazardous materials. There is a need to ensure that learning and training technologies are further developed, field tested and applied to real world situations. It is the intent of this FOA to support the development of emerging technologies to improve worker preparedness through training and education enhancements and methodologies, and to support e-collaboration, e-teaching, and e-learning in safety and health training for workers engaged in hazardous materials response. The financial support for this initiative comes directly from NIEHS Worker Education and Training Branch SBIR funds. Due July 28.

**United States-Israel Educational Foundation, Fulbright Israel Post-Doctoral Fellowships**

The United States-Israel Educational Foundation, the Fulbright commission for Israel, offers eight fellowships to American postdoctoral researchers in support of work to be carried out at Israeli universities during the course of the 2012-13 and the 2013-14 academic years. The U.S. Postdoctoral Fellowship Program is open to candidates in all academic disciplines. Program grants total $40,000 and $20,000 per academic year. Program fellows must be accepted as postdoctoral researchers by Israeli host institutions, which agree to provide them with a standard postdoctoral grant, which they will receive in addition to their Fulbright Fellowship. Thus, the total financial support received by program fellows is likely to be in the range of at least $35,000 to $40,000 per year. Applications for 2012-13 and 2013-14 Fulbright Postdoctoral Fellowships must be submitted to the Council for International Exchange of Scholars by 1 August. Further details on the program and on application procedures may be found at: [http://www.fulbright.org.il/index.php?id=1317](http://www.fulbright.org.il/index.php?id=1317). Potential candidates should contact Ms. Judy Stavsky, deputy director, USIEF ([jstavsky@fulbright.org.il](mailto:jstavsky@fulbright.org.il); +972-3-517-2392) for guidance and assistance. Due August 1.

**Broad Operational Language Translation (BOLT)**

DARPA seeks strong, responsive proposals from well-qualified sources for a new Human Language Technology (HLT) research and development program called Broad Operational Language Translation (BOLT). The goal of the BOLT program is to create technology capable of
translating multiple foreign languages in all genres, retrieve information from the translated material, and enable bilingual communication via speech or text. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice (MORE). Due August 2.

Engineering Research Centers
The National Nanotechnology Initiative (NNI), a federal interagency research and development venture, was launched in FY 2001. Over the last decade, there has been considerable investment in fundamental research - from nanostructured materials to devices and manufacturing processes - that has revealed new phenomena and resulted in a plethora of important advances. At NSF the funding vehicles included individual grants (unsolicited and Nanoscale Exploratory Research - NERs), small teams (Nanoscale Interdisciplinary Research Teams - NIRTs), user networks such as National Nanotechnology Infrastructure Network (NNIN) and the Network for Computational Nanotechnology (NCN), and centers (Nanoscale Science and Engineering Centers - NSECs). In addition, there were other NSF programs that supported research and education activities in nanotechnology. More information can be found at http://www.nsf.gov/nano/. At this time, some discoveries are at the phase to explore their integration into nanosystems, thus leading to adoption in applications critical for their commercial use. To enable this integration, the Engineering Research Centers (ERC) program is launching this new competition targeting the Transformational Nanotechnology of Engineered Systems Centers or NanoSystems ERCs (NERCs). These new centers will adopt and follow all the features of Generation-3 (Gen-3) ERCs. The goal of the Generation Three (Gen-3) Engineering Research Centers (ERC) Program is to create a culture in engineering research and education that links discovery to technological innovation through transformational fundamental and engineered systems research in order to advance technology and produce engineering graduates who will be creative U.S. innovators in a globally competitive economy (MORE). LOI July 15; full September 16.

NSF Education and Interdisciplinary Research (EIR)
Supports activities in conjunction with NSF-wide programs such as Faculty Early Career Development (CAREER), Research Experiences for Undergraduates (REU), and programs aimed at women, minorities, and persons with disabilities. Further information about all of these programs and activities is available in the Crosscutting Investment Strategies section of the NSF Guide to Programs. The program also supports activities that seek to improve the education and training of physics students (both undergraduate and graduate), such as curriculum development or physics education research directed towards upper-level or graduate physics courses, and activities that are not included in specific programs elsewhere within NSF. The program supports research at the interface between physics and other disciplines and extending to emerging areas. Broadening activities related to research at the interface with other fields, possibly not normally associated with physics, also may be considered. Due September 28.
CISE Computing Research Infrastructure
The CISE Computing Research Infrastructure (CRI) program drives discovery and learning in the computing disciplines by supporting the creation, enhancement and operation of world-class computing research infrastructure. Further, through the CRI program CISE seeks to ensure that individuals from a diverse range of academic institutions, including minority-serving and predominantly undergraduate institutions, have access to such infrastructure. The CRI program supports two classes of awards:

- **Institutional Infrastructure (II)** awards support the creation of new computing research infrastructure or the enhancement of existing computing research infrastructure to enable world-class research and education opportunities at the awardee and collaborating institutions.
- **Community Infrastructure (CI)** awards support the planning for computing research infrastructure, the creation of new computing infrastructure, or the enhancement of existing computing research infrastructure to enable world-class research and education opportunities for broadly-based communities of researchers and educators that extend well beyond the awardee institutions.

Due October 25.

Solicitations Remaining Open from Prior Issues of the Newsletter

FY2011 – 2016 Basic Research for Combating Weapons of Mass Destruction (C-WMD) Broad Agency Announcement (BAA)
This BAA, which is in effect from **March 2011 through September 2016**, establishes the multi-year process and serves as the announcement for the first round of submissions (referred to as “periods”). Over this timeframe there will be multiple opportunities/periods to electronically submit research ideas. **Each period will have a two-phased submission process. Phase I** is the pre-application white paper submission, and open to all qualified entities; **Phase II** is an invitation-only full proposal submission resulting from Phase I pre-application white paper review as decided by the DTRA Selection Authority. **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, and high-yield explosives) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.

DARPA-BAA-10-83 Strategic Technologies
Posted 8 September 2010—**Open to Sept. 8, 2011**
The Defense Advanced Research Projects Agency’s (DARPA) Strategic Technology Office (STO) is **soliciting innovative proposals** under this BAA for the performance of research, development, design, and testing that directly supports Strategic Technology Office (STO). This includes Communications, Networks and Electronic Warfare; Cyber; Energy and Self-Sufficient
Operations; Finding Difficult Targets; Recapturing Surprise; and Core Strategic Technologies.

**$800 million for all DOE Office of Science new, renewal, and supplemental grants FY2011**
This FOA will remain **open until September 30, 2011** or until replaced by a successor FOA. Applications may be submitted any time during this period. Grants support of work in the following program areas: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, Nuclear Physics, and Workforce Development for Teachers and Scientists. This FOA, DE-FOA-0000411, is for new applications; a companion FOA, DE-FOA-0000412, exists for renewal and supplemental applications.

**NIMHD Science Education Initiative (R25)**
This funding opportunity encourages applications from organizations to support educational, mentoring, and/or career development programs for individuals from underrepresented or health disparity populations to facilitate the development of a nationwide cohort of scientists and a multi-disciplinary national pool of health disparities investigators with necessary skills to conduct health disparities research in a diverse range of settings. This FOA also supports public education and outreach on health-related research projects to a variety of audiences are appropriate science education activities. **Due April 21.**

**NIH Research Centers in Minority Institutions Program (G12)**
The purpose of the Research Centers in Minority Institutions (RCMI) Program is to expand the national capability for research in the health sciences by providing grant support to minority institutions that offer doctorate degrees in the health professions or in a health-related science. The primary goals of the RCMI G12 Centers are to (1) develop research infrastructure to enhance institutional biomedical research capacity; (2) enable investigators to become more successful in obtaining competitive extramural support for the conduct of biomedical and/or behavioral research, particularly on diseases that disproportionately impact minority populations; and (3) foster environments conducive to professional development in the biomedical sciences. **Due April 25.**

**Office of Postsecondary Education: Predominantly Black Institutions Competitive Grants**
The purpose of the Predominantly Black Institutions Program is to strengthen PBIs to carry out programs in the following areas: science, technology, engineering, or mathematics (STEM); health education; internationalization or globalization; teacher preparation; or improving educational outcomes of African-American males. **Due April 25.**

**USDA Distance Learning and Telemedicine Program**
The Distance Learning and Telemedicine Program (DLT) is designed specifically to meet the educational and health care needs of rural America (pdf file). Through loans, grants and loan/grant combinations, advanced telecommunications technologies provide enhanced learning and health care opportunities for rural residents. **Due April 25.**
**Applications of Nuclear Science and Technology Initiative**
The Office of Nuclear Physics (NP), Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving applications for initiatives in Applications of Nuclear Science and Technology, aimed at nuclear science research and development being conducted to achieve Nuclear Physics mission goals and that are also relevant to applications important to the Nation (see FedConnect “Public Opportunities”. The knowledge, data, techniques, and methods of nuclear science are utilized in a broad portfolio of applications, including energy, nuclear medicine, commerce, medical physics, space exploration, finance, geology, environmental sciences, and national security. A companion Program Announcement to DOE Laboratories (LAB 11-450) will be posted on the Office of Science Grants and Contracts web site at: [http://www.science.doe.gov/grants/](http://www.science.doe.gov/grants/) Due April 26.

**Dynamic Air Quality Management**
EPA’s Science to Achieve Results (STAR) program is seeking applications proposing research to lay the scientific foundation for improving the air quality management system. Applications may address increasing the rate at which new information is incorporated into regional and local air quality management or improving management of short-term air pollution episodes. Due April 28.

**Early Career Projects: Dynamic Air Quality Management**
EPA’s Science to Achieve Results (STAR) program is seeking applications proposing research to lay the scientific foundation for improving the air quality management system. Applications may address increasing the rate at which new information is incorporated into regional and local air quality management or improving management of short-term air pollution episodes. In addition to regular awards, this solicitation includes the opportunity for early career projects. The purpose of the early career award is to fund research projects smaller in scope and budget by early career PIs. Please see Section III of this Request for Applications (RFA) for details on the early career eligibility criteria. Due April 28.

**Fostering Interdisciplinary Research on Education (FIRE)**
FIRE is a strand of the Research and Evaluation on Education in Science and Engineering (REESE) program (NSF 10-586) and it is anticipated that FIRE will eventually be incorporated into the REESE solicitation. The FIRE program seeks to facilitate the process by which scholars can cross disciplinary boundaries to acquire the skills and knowledge that would improve their abilities to conduct rigorous research on STEM learning and education. The primary goal of the strand is to facilitate the development of innovative theoretical, methodological, and analytic approaches to understanding complex STEM education issues of national importance and, by so doing, make progress toward solving them. A secondary goal of the strand is to broaden and deepen the pool of investigators engaged in STEM educational research. In order to address this goal, investigators must pair with a mentoring scholar in a to-be-learned field of interest. Proposals
therefore have both a research and a professional development component. Investigators may receive a FIRE award at any point in their post-graduate careers. **Due April 29.**

**Environmental Education Regional Grants -- Solicitation Notice for 2011**
The purpose of the Environmental Education Regional Grant Program is to increase public awareness and knowledge about environmental issues and provide the skills that participants in its funded projects need to make informed environmental decisions and take responsible actions toward the environment. The total estimated funding for this competitive opportunity is approximately $1,943,000 nationwide (approximately $194,300 per Region). EPA expects to award a minimum of 2 grants per Region for an expected minimum of 20 grants nationwide; the minimum award amount is $15,000 and the maximum is $100,000, subject to the availability of funds, the quality and quantity of applications received, and other applicable considerations. **Applications must be postmarked or submitted electronically via [www.grants.gov](http://www.grants.gov) by May 2, 2011, 11:59 pm in order to be considered for funding.**

**Fellowship Program for Advanced Social Science Research**
A joint activity of the Japan-U.S. Friendship Commission and the National Endowment for the Humanities. Awards support research on modern Japanese society and political economy, Japan’s international relations, and U.S.-Japan relations. The program encourages innovative research that puts these subjects in wider regional and global contexts and is comparative and contemporary in nature. Research should contribute to scholarly knowledge or to the general public’s understanding of issues of concern to Japan and the United States. Appropriate disciplines for the research include anthropology, economics, geography, history, international relations, linguistics, political science, psychology, public administration, and sociology. **Open to May 3.**

**NEH Fellowships**
Fellowships support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources in the humanities. Projects may be at any stage of development. Fellowships support continuous full-time work for a period of six to twelve months. **Open to May 3.**

**NEH Challenge Grants**
NEH challenge grants are capacity-building grants, intended to help institutions and organizations secure long-term improvements in and support for their humanities programs and resources. **Due May 4.**

**DOI Regional Climate Science Centers**
The purpose of this Program Announcement is to identify organizations that are willing to host a Department of the Interior Climate Science Center with appropriate space for up to twelve USGS and DOI co-located employees, and to determine if their science and partnership capabilities are sufficient to serve as a Host organization. This announcement seeks proposals
for establishment of Climate Science Centers in the Northeast, South Central and Pacific Islands regions. Due May 6.

Chemistry and Materials Research in Cultural Heritage Science (CHS)
NSF seeks to enhance opportunities for collaborative activities between conservation scientists, chemists and materials scientists to address grand challenges in the field of science of cultural heritage. A 2009 workshop, co-sponsored by NSF and the Andrew W. Mellon Foundation, concluded that the field of cultural heritage science could greatly benefit from collaboration between conservation scientists, primarily located in US museums, and chemists and materials scientists in academic institutions. Largely in line with the workshop report, which can be found at http://mac.mellon.org/NSF-MellonWorkshop the program solicits collaborative proposals between researchers in US museums and academic institutions. Due May 11.

Metabolomics for a Low Carbon Society (METABOLOMICS), A Joint NSF-JST Program
The goal of this NSF-JST program is to advance novel biological knowledge in metabolomics in the areas of energy and the environment, and to foster greater collaborative interactions between Japanese and U.S. scientists in these priority areas. The focus of METABOLOMICS will be on plants, microbes, and algae and eligible research areas will include but will not be limited to: Capture of all major metabolites; Development of standards and annotation of unknown metabolites; Identification of specialized metabolites of potential value. Due May 13.

Agriculture and Food Research Initiative: Childhood Obesity Prevention
This AFRI Challenge Area addresses the priority of childhood obesity prevention. Obesity is the number one nutritional problem in America. The U.S. food supply contains an abundant amount of foods that are high in energy with appealing taste, but which are low in nutrient content. Food is an integral part of the process that leads to obesity and USDA has a unique responsibility for the food system in the United States. The long-term outcome for this program is to reduce the prevalence of overweight and obesity among children and adolescents ages 2 to 19 years. In order to achieve this outcome, this program will support 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 Childhood Obesity Prevention RFA for details). Due May 18.

Joint Domestic Nuclear Detection Office-NSF: Academic Research Initiative
The ARI is a joint Domestic Nuclear Detection Office (DNDO) and National Science Foundation (NSF) program seeking novel cross-cutting research that will enable the nation's ability to prevent and respond to nuclear or radiological threats. This continuing program intends to expand its scope this year to include research in response and recovery from nuclear or radiological attack, with emphasis on multidisciplinary approaches. This year's solicitation topics will encompass two broad areas. First are investigations in new technologies, concepts or approaches to enhance the Global Nuclear Detection Architecture (GNDA) that in turn will lead to improved capabilities for the detection and interdiction of nuclear or radiological threat
materials or devices. Second are investigations to aid in the effective response and recovery from nuclear or radiological events at the local, state and Federal level, to include investigations in nuclear forensics. Primary objectives of ARI include advancing fundamental knowledge in the above areas and developing intellectual capacity in fields relevant to long-term advances in these areas. Research proposals on detection of biological, chemical, and conventional weapons are specifically excluded from the scope of this solicitation. Due May 23

**NSF Research Coordination Networks**

The goal of the RCN program is to advance a field or create new directions in research or education. Groups of investigators will be supported to communicate and coordinate their research, training and educational activities across disciplinary, organizational, geographic and international boundaries. RCN provides opportunities to foster new collaborations, including international partnerships, and address interdisciplinary topics. Innovative ideas for implementing novel networking strategies, collaborative technologies, and development of community standards for data and meta-data are especially encouraged. Proposed networking activities directed to the RCN program should focus on a theme to give coherence to the collaboration, such as a broad research question or particular technologies or approaches. **RCN-SEES: The Science, Engineering and Education for Sustainability track** focuses on interdisciplinary topics that will advance sustainability science, engineering and education as an integrative approach to the challenges of adapting to environmental, social and cultural changes associated with growth and development of human populations, and attaining a sustainable energy future. Due dates May 24 and June 15.

**For the i6 Green Challenge: Proof of Concept Centers**

i6 Green is a multi-agency competition that focuses on the nexus between economic development and environmental quality, spotlighting the best ideas that contribute to a vibrant, innovative clean economy. EDA solicits competitive applications to encourage and reward innovative, ground-breaking ideas that accelerate technology commercialization and new venture formation across the United States. i6 Green will reward communities that utilize Proof of Concept Centers to accelerate technology-led economic development in pursuit of a clean economy. Applicants must address a persistent problem or an unaddressed opportunity with a sense of urgency and demonstrate how an i6 Green Proof of Concept Center will remove existing road blocks and spark sustainable economic opportunities in the applicant’s region. Applicants will be expected to incorporate a credible plan to access additional resources and demonstrate how the proposed effort will be sustained by a well-qualified team and partners. **Letter of Intent:** To be eligible to be considered for an i6 Green award, applicants must email a letter of intent to i6@eda.doc.gov no later than 11:59 p.m. Eastern Time on May 2, 2011. Due May 26.

**ENGAGE: Learning to Solve Problems, Solving Problems to Learn, DARPA**

DARPA is soliciting proposals for innovative research in educational systems that will ENGAGE young students (Pre-K – Grade 3) in Science, Technology, Engineering, and Mathematics (STEM)
studies while conducting research into the best methods and practices for teaching these topics. Specifically, an educational game-based approach is being sought that will analyze game-play across thousands of players to determine the best approaches for teaching specific STEM topics while taking into account individual learning styles, demographics and other factors identified by the game to impact learning. These educational games must meet the highest industry standards for quality and engagement while incorporating the best pedagogical practices and clearly focusing on the ability to measure and identify metrics critical to teaching STEM topics, as well as to see if the lessons learned within the game generalize to the classroom. Due May 27.

Science and Technology Centers: Integrative Partnerships
The Science and Technology Centers (STC): Integrative Partnerships program supports innovative, potentially transformative, complex research and education projects that require large-scale, long-term awards. STCs conduct world-class research through partnerships among academic institutions, national laboratories, industrial organizations, and/or other public/private entities, and via international collaborations, as appropriate. They provide a means to undertake significant investigations at the interfaces of disciplines and/or fresh approaches within disciplines. STCs may involve any areas of science and engineering that NSF supports. STC investments support the NSF vision of advancing discovery, innovation and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering. LOI May 30; full Feb. 3, 2012.

U.S. Offshore Wind: Removing Market Barriers
The Department of Energy's (DOE) Energy Efficiency and Renewable Energy Program has issued U.S. Offshore Wind: Removing Market Barriers. This FOA will fund research activities to address market barriers limiting the deployment of offshore wind energy projects in the United States. These activities will fall within the following Topic Areas: Topic Area 1: Offshore Wind Market and Economic Analysis Topic Area 2: Environmental Risk Reduction Topic Area 3: Manufacturing and Supply Chain Development Topic Area 4: Transmission Planning and Interconnection Studies Topic Area 5: Optimized Infrastructure and Operations Topic Area 6: Resource Characterization and Design Conditions Topic Area 7: Impact on Electronic Equipment in the Marine Environment Within the defined topic areas, DOE will fund specific social, environmental and technical analysis, as well as engineering and planning activities required to complete the proposed scope of work. Due June 10.

Environmental Impact And Mitigation Of Oil Spills
Applicants must also submit a community outreach program plan, the objective of which is to help impacted Gulf Coast communities effectively participate in the study and use its results. To achieve this objective, the applicant should work collaboratively with affected communities to identify significant risks posed by oil spills to human health and the environment, obtain
their input in the design of a study to help the communities address these challenges, and provide technical assistance to them so that they can use the results of the study. Due June 22

Institute of Education Sciences: Education Research Program
FY 2012 competitions for grants support education research and special education research. Due June 23.

Integrative Graduate Education and Research Traineeship Program (IGERT)
The Integrative Graduate Education and Research Traineeship (IGERT) program has been developed to meet the challenges of educating U.S. Ph.D. scientists and engineers with interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills. The program is intended to establish new models for graduate education and training in a fertile environment for collaborative research that transcends traditional disciplinary boundaries. It is also intended to facilitate diversity in student participation and preparation, and to contribute to a world-class, broadly inclusive, and globally engaged science and engineering workforce. Building upon the IGERT platform, the purpose of this IGERT solicitation is to support new models in graduate education in which students are engaged in an environment that supports innovation to learn through hands-on experience how their own research may contribute in new ways to benefit society and to learn the processes for the successful implementation of such contributions. Due July 1.

IGERT Revision Summary
1. There will be no preliminary proposals in this competition.
2. Submissions will be limited to 1 proposal per lead institution.
3. In this competition it is required that the training program explicitly propose new models in graduate education in which students are engaged in an environment that supports innovation; learn through hands-on experience how their own research may contribute in new ways to benefit society; and to learn the processes for the successful implementation of such contributions.
4. The IGERT budget now includes a Competitive Incentive Fund for trainees in the amount of up to $200,000, for integrated interdisciplinary research and innovation activities.
5. The IGERT budget now allows for 6 faculty months of salary to be used for IGERT curricular development.
6. While IGERT projects must have the capability to communicate with each other and the NSF through videoconferencing, no specific system is required. Costs for developing a collaboration conference audio and video capability are no longer allowed.
7. A data management plan is required. Please see the full text of this solicitation for further information.
8. It is now made explicit that at the time of award, PIs will be required to obtain IRB approval for this award.
9. The solicitation has been revised to allow for full reimbursement of indirect costs, based on the awardee’s current Federally negotiated indirect cost rate agreement.
10. Budgetary information has changed, including the amount allowed in year 1 for new and renewal proposals, see section F. Budget and Allowable Costs for more information.

**U.S. Offshore Wind: Technology Development**
The DOE Office of Energy Efficiency and Renewable Energy has issued Funding Opportunity Announcement number DE-FOA-0000415, U.S. Offshore Wind: Technology Development. DOE will support the development of critical technologies lowering Cost of Energy (COE) and enabling the safe and responsible deployment of offshore wind energy through competitive cost-sharing initiatives. Under this Funding Opportunity Announcement, DOE is seeking proposals which address Technology Development through Modeling & Analyses Tools to Assess Offshore Wind Technologies and Innovative Hardware System Concepts. [Pre-Application Due June 17.](#)

**Faculty Early Career Development (CAREER) Program**
Integration of Research and Education - *All CAREER proposals must have an integrated research and education plan at their core.* NSF recognizes that there is no single approach to an integrated research and education plan, but encourages all applicants to think creatively about how their research will impact their education goals and, conversely, how their education activities will feed back into their research. These plans should reflect both the proposer’s own disciplinary and educational interests and goals, as well as the needs and context of his or her organization. Because there may be different expectations within different disciplinary fields and/or different organizations, a wide range of research and education activities may be appropriate for the CAREER program. Proposers are encouraged to communicate with the CAREER contact or cognizant Program Officer in the Division closest to their area of research to discuss the expectations and approaches that are most appropriate for that area (see [http://www.nsf.gov/crssprgm/career/contacts.jsp](http://www.nsf.gov/crssprgm/career/contacts.jsp) for a list of CAREER contacts by division). [Due dates July 22-27.](#)

**NIH Summer Research Experience Programs (R25)**
The purpose of the National Institutes of Health (NIH) Summer Research Experience Program (referred to as the Summer Research Program) is to provide a high-quality research experience for high school and college students and for science teachers during the summer academic break. [Due August 1.](#)

**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 Oct. 20.**

Changes in the ATE program solicitation for FY 2012, FY 2013, and FY 2014 include:

- **Preliminary proposals have been eliminated.**
- Indirect cost limitations on center planning grants and small grants for institutions new to ATE are no longer applicable.
- The Project Description must begin with the subsection on Results of Prior Support.
- Specific activities targeting student recruitment, retention, and completion are encouraged both for projects and centers.
- The ATE program encourages the recruitment and retention of Veterans in STEM advanced technological programs as a means to diversify and increase the STEM workforce. Proposals that recruit a cohort of Veterans and suggest strategies to retain them are encouraged.
What We Do--

We provide consulting for colleges and universities on a wide range of topics related to research development and grant writing:

- Strategic Planning - Assistance in formulating research development strategies and building institutional infrastructure for research development (including special strategies for Predominantly Undergraduate Institutions and Minority Serving Institutions)

- Training for Faculty - Workshops, seminars and webinars on how to find and compete for research funding from NSF, NIH, DoE and other government agencies as well as foundations

- Large proposals - Assistance in planning and developing institutional and center-level proposals (e.g., NSF ERC, STC, IGERT, STEP, Dept of Ed GAANN, DoD MURI, etc.)

- Assistance for new and junior faculty - help in identifying funding opportunities and developing competitive research proposals, particularly to NSF CAREER, DoD Young Investigator and other junior investigator programs

- Facilities and Instrumentation - Assistance in identifying and competing for grants to fund facilities and instrumentation

- Training for Staff - Professional Development for research office and sponsored projects staff

Note to Potential Contributors

If you have an idea for an article related to academic research development and grant writing you would like to write for Research Development & Grant Writing News email co-publisher Lucy Deckard with a query proposal of up to ~75 words. Our goal is to publish two articles each issue from faculty, researchers, STEM educators, and research development professionals, among others, to gain a diversity of perspectives related to all areas of academic grant writing.

$100 honorarium paid for published articles

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