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Workshops by Academic Research Funding Strategies

We offer workshops on research development and grant writing for faculty and research professionals based on all published articles. Access to recordings of our recently-presented NSF CAREER webinar is available for purchase.

Back issues of the newsletter, containing over 120 articles on research development and grant writing topics and strategies, can be ordered at a subscriber discount from our website.

View Index of Newsletter Articles

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### About the co-publishers

**Mike Cronan**, PE (Texas 063512, inactive) has 23 years of experience developing and writing successful proposals at Texas A&M University. He was named a Texas A&M University System Regents Fellow (2001–2010) for developing and writing A&M System-wide grants funded at over $100 million by NSF and other funding agencies. He developed and directed two research development and grant writing offices, one for Texas A&M’s VPR and the other for the Texas Engineering Experiment Station (15 research divisions state-wide).

**Lucy Deckard**, BS/MS Materials worked in research development and grant writing at Texas A&M University and across the A&M System for nine years. She directed A&M’s New Faculty Research Initiative (2004–09), helping junior faculty System-wide jumpstart their research careers with federal agency funding. She served as associate director of two research development and grant writing offices. She founded ARFS in 2010.

### About the editor--

**Katherine E. Kelly**, PhD, is a retired English professor from Texas A&M University. She is the author of several books and numerous articles and served as a contributing editor for an academic journal for five years. She provides editorial services to RD&GW News and to ARFS clients on proposals, journal articles, and manuscripts.
A perfect trifecta of a storm has occurred over the past several years with the convergence of reduced or flat budgets at many research funding agencies, reduced state appropriations to public universities, and a dramatic increase in the institutional expectations for faculty to successfully compete for external research funding by developing and writing proposals. This places many faculty in a difficult position, especially faculty in disciplinary areas not well funded or not funded at all by external sources, new faculty inexperienced in grant writing, more senior faculty whose traditional funding sources have diminished to the point where they are pressed to finding funding at unfamiliar agencies, and senior faculty who were hired, tenured, and promoted on criteria that did not include external research funding success, but who now must meet those expectations.

Even at universities able to gain a significant competitive advantage by employing experienced research development and grant writing professionals, either as individuals serving a department or college, or in a research development and grant-writing office serving faculty university wide, institutional research expectations are requiring more, and often more “grants-uninitiated,” faculty to enter into what has become a hyper-competitive grants climate. In this climate, it is not uncommon for department heads, research deans, or VPRs to whom research development and grant-writing professionals report to be forced to institute a triage system to assess the competitiveness of faculty grants to determine the level of institutional support that will be given in developing and writing specific proposals.

Or it may be that such research offices are forced to offer assistance exclusively on center and center-level proposals in hopes of winning the research version of the mega-lotto, but unfortunately at the expense of offering support to new and junior faculty who represent a wise investment in the institution’s future research portfolio. Even with the best of research capacities and circumstances, success in winning some of the more prestigious national center grants is the grant-writing equivalent of a black swan event. Investing research development and grant-writing resources in new and junior faculty, however, is akin to buying, holding, and reinvesting earnings in Apple stock purchased a decade ago when it was selling at around $10 a share. Competitiveness on major research centers requires more than just a thin veneer of institutional capacity in a research topic area. It requires a history of research funding and related research publications representing “building block” research grants that, in aggregate, represent faculty research partnerships forming a de facto center that can be integrated and synergized under the formal umbrella of a large center grant.

Experienced research development professionals can assist faculty in many strategic ways, as well as help craft a more competitive proposal, but grant-writing professionals cannot transform an essentially unfundable grant into a fundable grant, and attempting to do so will adversely distort the time commitment they are able to give to more competitive proposals. Over time, proposals are won at the margins or boundaries of excellence by gaining what
economists might call “marginal advantage.” In grant writing, the probabilistic theory of the law of large numbers has some heuristic value, if nothing more than to encourage persistence, since a few rejected proposals do not add up to meaningful data points. In fact, rejected proposals offer significant value in learning the suite of skills required to write successful research grants, albeit as a seemingly harsh tutor, if the author accepts the reviewers’ comments thoughtfully and in the spirit of self-improvement. Long-term success in grant writing is one of those areas where more can be learned over time from what you have done wrong than what you have done correctly in writing the research narrative, if you are willing to thoughtfully review and positively respond to reviewers’ comments.

Mercifully, a finite number of common mistakes can be made in the development and writing of the research narrative. These can be distilled to some of the more common and correctable mistakes made in the research narrative if the fatal flaw of every declined proposal can be addressed first: **the underlying research idea is not of sufficient interest, importance, and significance for reviewers to recommend funding.**

One increasingly critical area of focus for researchers and research development offices to explore and then develop into a coordinated development plan is what might be called “**trans-agency research strategies.**” This is particularly important for new and junior faculty, but important as well for more senior faculty who may take to heart hockey great Wayne Gretzky’s observation that success amounts not only to knowing where the puck is but **where it will be.** The research landscape has evolved dramatically over the past decade. At NSF, for example, that evolution has progressed from interdisciplinary research to multidisciplinary research to **transdisciplinary research**, all cast in the context at NSF and other federal agencies, from NIH to DARPA, of **transformational research.** At federal research agencies, the bet seems to be that the future home run ideas in scientific research will come from funding larger research teams because the grand-challenge research problems are too complex and difficult to be solved on single-PI grants alone. Concurrently, many research funding agencies are now funding different flavors of what might be considered subset domains of overarching research themes, for instance in such areas as energy, water, and materials (see *The Materials Genome Initiative and Related New Funding* in the April 15 issue of this newsletter). In many cases, federal research agencies form funding partnerships (see examples of such partnerships in a companion article herein entitled “**What You Need to Know About NIFA Funding**”.

Given this evolving new landscape where terms such as “transdisciplinary” and “transformational” are commonly used descriptive adjectives of a funding agency’s research interests, and where more substantive research funding collaborations are becoming the norm among two or more federal agencies, it is reasonable to assume that this direction will continue, broaden, and deepen over time (e.g., **NSF/DOE Partnership on Advanced Combustion Engines 2012-2015**). This trend, therefore, requires **consideration about how best to map research capacities to a new transagency domain.** When the foregoing directions are considered in the context of a very competitive funding environment, research development strategic planning should explore both intra- and inter-institutional research planning that identifies institutional or partnership capacities configured to make them **competitive in a transagency research environment.**
On February 25th of this year, several changes to the AREA program went into effect. This article discusses the AREA program and its changes.

In April, we attended NIH’s Regional Seminar in Indianapolis, in which Erica Brown, Director of the AREA Program, discussed NIH’s thinking behind the program and described recent changes. Her presentation, along with all of the other seminar presentations, are posted for a limited time here. (If you’re relatively new to NIH or would like to find out about recent changes at the agency, this seminar is well worth attending. The next one will be held in Washington, DC in June.) Below, we’ll give an overview of the AREA program and what it’s designed to accomplish, and then we’ll discuss recent changes.

The AREA Program

An AREA (R15) grant funds small-scale research projects in the biomedical and behavioral sciences conducted by faculty and students in educational institutions that have not been major recipients of NIH research grant funds. The grant provides up to a total of $300K in direct costs funding over a period of up to 3 years. The AREA Program is specifically designed for researchers at less research intensive institutions (i.e., institutions that received less than $6 million per year from NIH averaged over the last 7 years). All NIH ICs participate in this grant mechanism except for the Fogarty International Center (FIC), the National Institute on Minority Health and Health Disparities (NIMHD), and the National Center for Advancing Translational Sciences (NCATS).

Goals: The AREA program was motivated by the fact that just 50 institutions receive 70% of all NIH extramural research funds. NIH recognizes that, while researchers from less research-intensive institutions may not have the infrastructure or time to compete successfully for an R01, they are nevertheless capable of performing meritorious research, and they play an important role in training students who will go on to careers in health-related sciences. The goals of the program are not only to support good research but also to strengthen the research environment at those institutions and expose students at the institution to research. For that reason, in addition to the 12-page Research Strategy section, applicants must provide:

- The demographics and number of students currently at the institution as well as former students who have obtained advanced degrees in health-related sciences
- A description of the special characteristics of the institution that make it appropriate for an AREA grant
- A description of resources available at other proposed research sites
- A statement of institutional support for the proposed project
- Evidence of the PI’s experience supervising students in research (included in the PI’s Personal Statement in the biosketch and by highlighting publications involving students)

Preliminary data are not required but are allowed.
**Eligibility:** To determine whether your institution is eligible for an AREA grant, check to make sure that your institution’s name is **not** on NIH’s list of **ineligible** institutions posted [here](#) (it’s much easier for NIH to keep a list of institutions they have funded at over $6M per year than to keep a list of institutions they have not funded). The PI must be from an eligible institution, but can have collaborators or consultants from ineligible institutions. In addition, PI eligibility criteria include:

- A primary faculty appointment at an AREA-eligible institution
- No active NIH grant (but collaboration on an active NIH grant held by another PI is permitted)

No current AREA grant (only one at a time is allowed)

**Function:** Dr. Brown emphasized that an AREA (R15) grant is no longer meant to be a path to an R01. Instead, it’s meant for a different population: researchers at less research intensive institutions who typically don’t have the time (because of higher teaching loads) or available research infrastructure to allow them to compete for an R01. Essentially, the R15 is meant to function as the equivalent of an R01 for that type of researcher. For that reason, R15s are renewable just like R01s are, and NIH envisions that a researcher at a less research intensive institution could support his research throughout his career (admittedly at a much lower level of funding) with R15 grants.

**Recent Changes**

Starting with the February 25, 2012 receipt date, the peer review process was modified and several changes were made to the [AREA Program Announcement](#) (PA).

**Peer Review:** In the past, AREA applications were reviewed along with R01s and other applications. NIH staff noticed that study sections, who might have just reviewed several R01 applications and then turned to an R15 application, were having difficulty calibrating their expectations (in terms of research impact, level of innovation, preliminary data, etc.) to make them consistent with the AREA program. For this reason, R15 applications will now be reviewed in a cluster within study sections and Special Emphasis Panels.

There is also a more concerted effort to educate reviewers about the unique aspects of the AREA program. In addition, NIH has initiated an effort to include researchers from the AREA community in review panels. This is being done through the new [Early Career Reviewer](#) program. One goal of this program is to include scientists from less research-intensive institutions in study sections. (Note, however, that you do not have to be from a less research intensive institution to participate, as long as you have not reviewed for CSR beyond one mail review.) Participating in a study section is an excellent way to learn how to write compelling proposals, and qualifying faculty interested in competing for an R15 should be encouraged to apply to serve as a reviewer.

**Changes to the PA:** The description of review criteria in the [AREA PA](#) has been modified to soften language on the expected overall impact and significance of the proposed research and to consider the application’s alignment with the goals of the AREA program. In addition, reviewers are directed to evaluate all R15 special submission requirements (described above
under “Goals”). Since a key goal of the project is to expose students to research, the language in the PA about including students in the research has also been strengthened (from “encouraged” to “should”).

In addition, language about the budget has been clarified to explain that AREA applications must request the entire budget in Budget Period I and to describe when a modular budget is required (if the direct costs for all years is $250K or less) and when a detailed budget is required (when the direct costs for all years is more than $250K).

**Funding Statistics**

The goal of the program is to make 200 AREA awards each year, and even though there are no set-aside funds specifically for AREA grants, award numbers have stayed roughly around that 200 award goal. The overall success rate for AREA applications was 15% in 2011; however, success rates vary significantly among ICs, so it’s a good idea to check the success rate for the particular IC you’ll be applying to (see the Table below, which was included with other funding statistics in Dr. Brown’s presentation). It’s important to note that the AREA program does not give special consideration (or a different payline) for New or Early Investigators, so you may want to consider that when deciding whether to submit an R15 or whether to apply to other funding mechanisms.

<table>
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<tr>
<th>NIH Institutes/Centers</th>
<th>Applications Reviewed</th>
<th>Applications Awarded</th>
<th>Success Rate</th>
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<tr>
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<td><strong>216</strong></td>
<td><strong>14.9%</strong></td>
</tr>
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</table>
Strategic Recommendations
Dr. Brown made the following recommendations for how AREA-eligible institutions can support and advise their faculty:

- Help your faculty to understand NIH applications procedures, deadlines, review criteria, etc.
- Work to establish a supportive environment for research in your institution (e.g., provide start-up packages to help faculty set up and run their labs and provide credit for mentoring students in research)
- Provide an environment that supports collaborative research (e.g., reward collaborative research in P/T decisions)
- Since PIs can now revise and resubmit an application only once, help investigators to judge when they are ready to submit a competitive proposal, and don’t emphasize quantity over quality
- Help applicants with the special requirements for AREA applications that are required in the Facilities and Other Resources section—provide a profile of the student body, a description of the institution and research environment, and a strong letter of institutional commitment for the research project

Dr. Brown gave the following strategic advice for investigators:

- Do your homework and identify the IC that supports your area of research, and contact the appropriate NIH Program Staff. There is also a list of AREA contacts for each IC [here](#).
- If you don’t have the necessary expertise or resources, recruit a collaborator or consultant for your project (they can be from non-AREA eligible institutions)
- Include a cover letter with your application in which you suggest an appropriate IC and up to three appropriate study sections (more on understanding ICs and study sections appears in our article in the Feb. 2012 newsletter, “A Quick Primer for Researchers New to NIH”)

To those recommendations, we would add—attend an [NIH Regional Seminar](#).
The Mystery Novel Disguise

Many reviewers may in fact enjoy relaxing with a glass of wine and a well-crafted mystery novel, but it is best to leave the crafting of mystery novels to the practitioners of that genre. It is not a good idea to model your proposal after a mystery novel. Asking reviewers and program officers to play the role of “research detective” charged not with determining “who done it?” but with determining “what research is being proposed here?” will likely come to no good end. Reviewers will not be charmed by a proposal forcing them to play the role of, say, Tony Hillerman’s Lieutenant Joe Leaphorn or Walter Mosley’s Easy Rawlins in order to determine what research you are going to do and why it is significant to the funding agency mission and the disciplinary field. So-called “page turners” are a good thing for the success of a mystery novel but not for the success of a proposal. If reviewers must frantically turn pages to figure out what you propose to do, they will become quickly exasperated rather than intrigued at having to guess at what proposed research might be finally revealed at the end. Get right down to the point.

The Research Topic 101 Mask

Just as proposals are not mystery novels, neither are they journal articles or textbooks. While a discussion of the research topic’s background may be warranted to set the stage for the reviewers to understand the significance and context of your research, avoid the mask of writing a long and meandering narrative tour of the general research topic better suited to an introductory textbook 101 on the topic than to technical reviewers. The background information on the topic must be carefully adjusted to the level of topic expertise the reviewers bring to the review process. For this reason, it is important to understand the review process used by specific funding agencies, particularly how reviewers are selected and assigned. For example, NSF recommends describing the technical topic at a level that might be used in a Scientific American article, or for what NSF has described as the “scientifically literate” reader. Moreover, keep the background discussion tightly focused on what is relevant to your proposed research and avoid the temptation to go beyond that. While time intervals may be central to your research, you need not provide background information on the ammonia maser built in 1949 by NIST as the first proof of an atomic clock.

At many points in the development and writing of a proposal only a preliminary idea exists of what will be proposed. In those situations, it is comforting to begin writing text in hopes that this will “self-ignite” and coalesce into a compelling narrative. Unfortunately, however, this can lead to developing several pages of an overly general introductory narrative unable succinctly to inform the reviewers how your research advances the field in some significant way. Moreover, once written, some authors have great difficulty deleting large blocks of text that have lost their relevance to the research narrative as it has matured through
multiple drafts. This becomes a particular danger on single-PI proposals without the benefit of a reading by multiple team members. In either case, a thorough “editorial scrub” of the research narrative by an unsentimental editor can help keep the narrative from becoming a “long and winding road,” something fine in a Beatles song but not in a proposal.

**The Black Hole Disguise**

A narrative black hole exists when an author becomes convinced that the page limit and font format guidelines in the solicitation are insufficient to explain the proposed idea. This becomes apparent when an author comes to the dubious conclusion that a proposal narrative improves as the font is reduced to the smallest permissible size and all white space is squeezed out of every page to allow more elaboration. In some cases, narrative authors may even try an end run around the font size requirements by placing what is essentially narrative text in graphs, figures, illustrations and tables where smaller fonts are often permissible. Unfortunately, the text eventually becomes so dense that the narrative collapses upon itself and becomes impenetrable to the reviewer. In effect, a too-dense narrative text becomes a laborious read for the reviewers, who will likely balk at the idea of a forced march through dense text imposed on them by an author either unable or unwilling to write a clear and readable research narrative. As Mark Twain once commented in a letter to a friend, “If I had more time I would have written you a shorter letter.” This makes an excellent point. Increasing the density of text and format to the maximum permissible in hopes of including more information that gives your research narrative a competitive advantage is the iron pyrite or “fool’s gold” of grant writing. The goal of a research narrative is to communicate the significance of your research to reviewers, not merely to perform an informational data dump.

**The Stove-Pipe Disguise**

A proposal narrative disguised as a series of research silos is certain to leave reviewers confused as to the research value lying beneath the stove-pipe costume. Narrative contributions from multiple authors increase the complexity of proposals. Attempts to introduce what are essentially research strangers as research partners with a history of collaboration only after a funding opportunity is identified will be a hard sell to reviewers. Research integration and programmatic synthesis are two key characteristics of competitive proposals. Strategies to ensure the integration of multiple research strands, as well as any other required programmatic components, must begin very early in the proposal process. If a research narrative with multiple strands develops over several draft iterations and still remains more like multiple proposals rather than an integrated whole, then it becomes increasingly difficult to correct the narrative without major revisions. Proposals with multiple research and/or educational strands gain significant advantage by adopting early a proposal integration plan that will demonstrate a clear research synergy. Solipsistic narrative sections are not rewarded in the review process.
Overview

ARPA-E focuses on high-risk, transformational concepts with potentially high rewards (example). The mission of ARPA-E is to overcome the long-term and high-risk technological barriers in the development of energy technologies (see ARPA-E Director Majumdar Resigns). In fiscal year 2013, ARPA-E will have an increased emphasis on transportation, as addressed in more detail below. Also, see the March 14, 2012 ARPA-E “Transportation Behavior and New Technology Workshop” presentation and ARPA-E’s Fiscal Year 2013 Congressional Justification for more detailed information on ARPA-E research allocations in the transportation area. You can also keep current on ARPA-E funding opportunities, upcoming workshops used to identify topics for new funding opportunities, and future directions by subscribing to ARPA-E RSS Feeds.

ARPA-E identifies and funds research to translate science into breakthrough energy technologies that are too risky for the private sector and that, if successfully developed, will create the foundation for entirely new industries. Successful projects must address at least one of ARPA-E’s two Mission Areas:

1. Enhance the economic and energy security of the United States through the development of energy technologies that result in:
   a. reductions of imports of energy from foreign sources;
   b. reductions of energy-related emissions, including greenhouse gases; and
   c. improvement in the energy efficiency of all economic sectors; and

2. Ensure that the United States maintains a technological lead in developing and deploying advanced energy technologies.

ARPA-E posts open solicitations to the Funding Opportunity Exchange (FOE). Applications to ARPA-E are through ARPA-E eXCHANGE. Submissions received through other means are deemed noncompliant and are not reviewed or considered (see ARPA-E eXCHANGE User Guide_02March12).

Once a Funding Opportunity Announcement (FOA) is issued, ARPA-E Programs and other ARPA-E personnel are prohibited from communicating (in writing or otherwise) with applicants regarding the FOA. This “quiet period” remains in effect until ARPA-E’s public announcement of its project selections. During the “quiet period,” applicants may submit questions regarding the FOA to ARPA-E-CO@hq.doe.gov with the FOA name and number in the subject line. Applicants may also submit questions regarding ARPA-E’s online application portal, ARPA-E eXCHANGE, to ExchangeHelp@hq.doe.gov with the FOA name and number in the subject line. ARPA-E will not accept or respond to communications received by other means (e.g., fax, telephone, mail, hand delivery). Emails sent to other email addresses will be disregarded.

Responses are posted to "Frequently Asked Questions" on ARPA-E’s website. Every Friday, ARPA-E will post responses to any questions that were received by Wednesday at 12 PM.
ET. (Questions received after Wednesday at 12 PM ET will be answered the following week.) ARPA-E will cease to accept questions 72 hours in advance of the applicable deadline. Responses to the last questions will be posted at least 24 hours in advance of the applicable deadline.

You may submit an unsolicited proposal to ARPA-E if you are developing a new technology that does not fit into an open FOA. Information on submitting abstracts and unsolicited proposals are described in the "Guide for the Submission of Unsolicited Proposals". Email your abstract or unsolicited proposal to DOEUSP@netl.doe.gov. To receive notice of future funding opportunities, subscribe to the DOE listserv through the "Subscribe for Updates" window on the right of the ARPA-E homepage.

What makes a competitive ARPA-E project?

1. Impact
   - High impact on ARPA-E mission areas
   - Credible path to market
   - Large commercial application

2. Transform
   - Challenges what is possible
   - Disrupts existing learning curves
   - Leaps beyond today’s technologies

3. Bridge
   - Translate science into breakthrough technology
   - Not researched or funded elsewhere
   - Catalyzes new interest and investment

4. Team
   - Best-in-class people
   - Cross-disciplinary skill sets
   - Translation oriented

ARPA-E cannot discuss the following:
   - Whether ARPA-E would consider your idea “transformational”
   - Proposal strategies
   - Suggestions for specific content

ARPA-E Concept Papers Must Describe--
   - The proposed technology, including its basic operating principles and how it is unique and innovative;
   - The proposed technology’s target level of performance (applicants should provide technical data or other support to show how the proposed target could be met);
• The current technology readiness level (TRL) of the proposed technology and the anticipated TRL at project completion (see here for a description of the various technology readiness levels);
• The current state-of-the-art in the relevant field and application, including key shortcomings, limitations, and challenges;
• How the proposed technology will overcome the shortcomings, limitations, and challenges in the relevant field and application;
• The potential impact that the proposed project would have on the relevant field and application;
• The key technical risks/issues associated with the proposed technology development plan; and
• The impact that ARPA-E funding would have on the proposed project.

ARPA-E New and Emerging Directions

ARPA-E is exploring new technology areas that may merit the creation of a full program(s) at some point in the future. Ahead of such investment, ARPA-E will host Emerging Ideas Workshops comprising small groups of experts focused on examining specific technologies.

Workshops are part of the first phase of ARPA-E program development, the “Envision” stage which includes 1) program conception, idea, vision, workshops (addressed below), and program development. Following the “Envision” phase of project development, the “Engage” phase is where ARPA-E seeks program approval and then develops and issues an FOA. Subsequent phases include merit review of proposals submitted in response to the FOA, project awards, on-going technical review of projects, and technology to market transition.

The most recent ARPA-E Emerging Ideas Workshops was held March 26-30, 2012. Any FOAs resulting from the workshops may fund projects that are shorter in duration or smaller in scope than typical ARPA-E projects, designed to determine whether these areas warrant a continued and/or larger effort. The meetings’ output will advise the actions of ARPA-E towards the most promising and appropriate high-impact potential research funding opportunities and management strategies.

Specifically, ARPA-E is interested in exploring opportunities in the following potential program areas:
• High-efficiency, high-concentration photovoltaics through advanced optical system design
• Topping cycles for higher efficiency power generation
• Novel bioreactors for photosynthetic and Electrofuels-based systems
• Rapid active charging environment for batteries in electric vehicles
• No-water and low-water power plant cooling
• Ubiquitous methane leak detection through novel sensors & sensing platforms
• Improved wind & solar forecast accuracy through advanced sensors, algorithms and computational resources
On March 16, 2012 ARPA-E held the **Transportation Behavior and New Technologies Workshop**. This workshop focused on new transportation technologies such as alternative fuels and advanced power train vehicles that have the potential to achieve ARPA-E mission areas of reducing foreign imports and cutting greenhouse gas emissions (more). Acceptance and use of new technologies historically has been difficult to encourage outside of "early adopters." ARPA-E's mission includes directives to improve the performance of new technologies versus incumbents, and previous programs such as **BEEST**, **Electrofuels**, and **PETRO** have been developed to fund advances in the transportation sector.

The workshop explored approaches that combine behavioral economics, consumer marketing, recent technology advances (such as smartphones and social networking), and large-scale data processing and analysis to give consumers more options for their personal transportation decisions. *Specifically, ARPA-E is interested in technology solutions which connect advanced transportation technologies to consumer behavior.* The workshop highlighted existing consumer education and technology marketing efforts by industry. Information gained from the workshop will assist ARPA-E leadership in the development of potential funding programs targeting key technological roadblocks relevant to the ARPA-E mission.

ARPA-E held its **Natural Gas Vehicle Technologies Workshop** on January 16, 2012 (presentations). Specifically, ARPA-E is interested in exploring opportunities to enable cheaper on-vehicle natural gas storage and natural gas refueling infrastructure, such as:

- Novel materials and processes that:
  - Enable lower pressure compressed natural gas (CNG) storage while maintaining high energy density
  - Reduce the cost, weight, and volume of high pressure CNG tanks

- Novel designs and processes that reduce cost and improve the performance of:
  - Natural gas vehicle fuel systems
  - Natural gas compressors
  - Natural gas distribution and vehicle refueling

The forth ARPA-E workshop to date in 2012 was held January 13, 2012 on **Natural Gas Conversion Technologies**. The workshop focused on technologies that could convert natural gas into liquid fuels and chemicals and enable increased use of domestic natural gas and reduced petroleum imports. Special attention was directed towards identifying low-cost strategies to apply potentially transformational approaches to natural gas conversion that could enable the more wide-spread use of domestic natural gas in the transportation sector. Specifically, ARPA-E was interested in exploring opportunities that could enable the small-scale, economic conversion of natural gas to higher value products, such as:

- The combined use of catalysts with gas separation membranes to reduce the cost of converting natural gas into syngas for Fischer-Tropsch synthesis or for enabling direct gas-to-liquid conversion processes;
- Non-oxidative or oxidative catalysis for the direct conversion of methane to liquids;
- Biologically inspired catalysts with high selectivity and activity for methane oxidation; and
The integration of conventional gas-to-liquids processes that reduces the number process steps and combines heat and pressure requirements.

**ARPA-E Existing Programs and Future Directions**

Focused topic-specific sessions presented by ARPA-E Program Directors about existing program directions and emerging technology innovation areas include the following.

**Zero Carbon Power | Download Presentation**
- Mark Hartney, ARPA-E, Program Director
- Karma Sawyer, ARPA-E, Assistant Program Director

**Electrical Power Management | Download Presentation**
- Rajeev Ram, ARPA-E, Program Director

**Electric Storage | Download Presentation**
- Dane Boysen, ARPA-E, Program Director
- Mark Johnson, ARPA-E, Program Director

**Emerging Ideas | Download Presentation**
- David Danielson, ARPA-E, Program Director

**Bioenergy | Download Presentation**
- Eric Toone, ARPA-E, Deputy Director for Technology
- Jonathan Burbaum, ARPA-E, Program Director

**Thermal Energy Systems | Download Presentation**
- Ravi Prasher, ARPA-E, Program Director
- Ilan Gur, ARPA-E, Senior Advisor for Commercialization
- Karma Sawyer, ARPA-E, Assistant Program Director

**Energy Related Materials | Download Presentation**
- Mark Johnson, ARPA-E, Program Director

**Emerging Ideas | Download Presentation**
- David Danielson, ARPA-E, Program Director

**The ARPA-E Funding Opportunity Announcement (FOA) Process**

The first step in applying to the Open FOA is the submission of a Notice of Intent, which is required to obtain a Control Number. Applicants must submit a Notice of Intent by the deadline stated in the FOA. The Notice of Intent consists of a short abstract and basic information about the proposed project, including project title, lead organization, organization type, percentage of work performed by the lead organization, Principal Investigator and Key Participants, and Technical Subcategory or Subcategories. ARPA-E uses Notices of Intent to facilitate and expedite the merit review process.

Next, applicants must submit a Concept Paper by the deadline stated in the FOA. The Concept Paper consists of four pages: a two-page Technology Description and a two-page Addendum consisting of the Technical Subcategory and Subcategories, a brief description of the project team, and any visual displays of data (e.g., charts, graphs). ARPA-E performs a preliminary review of Concept Papers to determine whether they are compliant and
responsive. ARPA-E will not review or consider noncompliant and/or nonresponsive Concept Papers.

ARPA-E next makes an independent assessment of each Concept Paper based on the criteria and program policy factors of the FOA. ARPA-E will encourage a subset of applicants to submit full applications. Other applicants will be discouraged from submitting a full application in order to save them the time and expense of preparing an application that is unlikely to be selected for award negotiations. By discouraging the submission of a full application, ARPA-E intends to convey its lack of programmatic interest in the proposed project. Such assessments do not necessarily reflect judgments on the merits of the proposed project. ARPA-E will not provide feedback on Concept Papers.

Applicants will have approximately 30 days from receipt of the Encourage/Discourage notification to prepare and submit a Full Application. The Full Application consists of seven components, including the Technical Volume, Forms SF-424 and SF-424A, Summary for Public Release, Summary Slide, Disclosure of Other Sources of Funding form, and Business Assurances Form. The SF-424A must be accompanied by a written budget narrative justifying the proposed costs in each SF-424A category. A Technical Volume template is provided as Appendix 4 to the FOA. A fillable version is available on ARPA-E eXCHANGE (https://arpa-e-foa.energy.gov/).

Notices of Intent, Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted through ARPA-E eXCHANGE (https://arpa-e-foa.energy.gov/), ARPA-E’s online application portal. ARPA-E will not review or consider applications submitted through other means. For detailed guidance on using ARPA-E eXCHANGE, refer to the “ARPA-E eXCHANGE User Guide.”

As a federal agency, ARPA-E does not commercialize technologies, but through the Technology-to-Market Program, ARPA-E supports their development to increase the probability and speed of commercialization by the private sector (see SBIR/STTR Overview and SBIR/STTR FOA). For more information at each stage of the commercialization cycle, view the pages below:

- How the Technology-to-Market Program Works
- ARPA-E Technology-to-Market Planning
- Technology-to-Market Glossary
- Other Resources to Help With Technology-to-Market Planning
- Technology-to-Market Regional Resources
- ARPA-E Technology-To-Market: Regional Resource Map
- ARPA-E Technology-to-Market: Regional Resources
- Contact Us
Research Development & Grant Writing News

What You Need to Know About NIFA Funding

By Mike Cronan, co-publisher
(Back to Page 1)

NIFA is the **USDA’s major extramural research agency**, funding individuals, institutions, and public, private, and nonprofit organizations. NIFA-funded research may be **basic or applied**. By contrast, Agriculture Research Services is USDA’s **intramural**, i.e., in-house, research agency. NIFA’s mission is to advance knowledge for agriculture, the environment, human health and well-being, and communities by supporting **research, education, and extension** programs in the **land-grant university system and other partner organizations**. NIFA also supports **integrated projects** (research, education, and extension) that are expected to generate new knowledge and/or apply existing knowledge quickly through the dissemination of information on specific issues where results may become visible quickly (see **Integrated Research, Education, and Extension Competitive Grants Program - Methyl Bromide Transitions** due June 19.

Understanding the NIFA mission at all scales—agency, office, program, and solicitation is key to success (see **NIFA Reorganization; Memo; USDA Blog**). The more knowledgeable you are about NIFA’s research mission, strategic plans, research culture, investment priorities, and the rationale behind them, the better able you will be to develop highly competitive responses to funding opportunities, e.g., discussions with program officers, concept abstracts, applications, etc. See **Why Science Matters to Agriculture** by Dr. Catherine Woteki, Chief Scientist and Under Secretary Research, Education, and Economics (See **NIFA Organizational Chart**). NIFA uses listservs and its bi-weekly publication, **NIFA Update**, to notify potential applicants that an Request for Applications (RFA) has been published. Also see **NIFA Peer Review Process for Competitive Grant Applications**.

What kinds of research does NIFA fund?

NIFA manages a broad portfolio of programs. Those programs are organized in 13 National Emphasis Areas. Each emphasis area and program has a website section containing a common set of information about the subject in question (more here). NIFA’s priority science areas include the following:

- **Food Security and Hunger**: NIFA supports science to boost domestic agriculture production, improve capacity to meet the growing food demand, and foster innovation in fighting hunger and food insecurity in vulnerable populations.
- **Climate Change**: NIFA-funded projects help producers adapt to changing weather patterns and sustain economic vitality while also reducing greenhouse gas emissions and increasing carbon sequestration in agricultural and forest production systems.
- **Sustainable Energy**: NIFA contributions to the national goal of energy independence with a portfolio of grant programs to develop optimum biomass, forests, and crops for bioenergy production; and produce value-added, bio-based industrial products.
Childhood Obesity: NIFA-supported programs ensure that nutritious foods are affordable and available and families are able to make informed, science-based about their health and well-being.

Food Safety: NIFA food safety programs work to provide a safer food supply and reduce the incidence of food-borne illness by addressing the causes of microbial contamination and anti-microbial resistance, educating consumer and food safety processional, and developing enhanced food processing technologies.

What other research agencies fund NIFA related research?

It many instances it is helpful for new and junior faculty, and often more senior faculty as well, to explore how NIFA supported research, for instance in climate change and sustainable energy, offers trans-agency opportunities for research partnerships. An example of this is the NIFA, DOE and NSF Agreement to Joint Climate Change Prediction Research Programs (more here). New research initiatives via interagency collaborations are an important direction for NIFA, including:

- **With DOE:** Research to advance next generation biofuels and renewable energy technologies (more here).
- **With NSF:** Hydrologic modeling, quality/quantity in agriculture ecosystems; new initiative in ‘phenomics’ in plants. Also see National Robotics Initiative - New Multi-agency Program of NSF, NASA, NIH, and USDA (more here).
- **With NIH and NSF:** Systems approaches in plant and microbial biology, targeting health and well being; genomics and phenomics. Also see The Joint NIH and USDA Workshop on Using Nanotechnology To Improve Nutrition Through Enhanced Bioavailability and Efficacy (more here; and here).
- **With NSF:** STEM education initiative to target middle schools (more here).
- **US Forest Service and NASA** Team up on Climate Change Early Warning System for Forests (more here).
- **USAID and USDA** to Host the International Food Aid and Development Conference (more here).
- **NIH/NICHD and NIFA** Agriculture and Food Research Initiative - Dual Purpose with Dual Benefit: Research in Biomedicine and Agriculture Using Agriculturally Important Domestic Species (more here).

Research funded by NIFA

- NIFA-funded research (more) spans problems and issues encompassed within 13 national emphasis areas:
  - Agricultural Systems
  - Animals
  - Biotechnology & Genomics
  - Economics & Community Development
  - Education
  - Families, Youth & Communities
Research Development & Grant Writing News

- **Food, Nutrition & Health**
- **International**
- **Environment & Natural Resources**
- **Pest Management**
- **Plants**
- **Technology & Engineering**

Mapping your research to USDA

- **NIFA officially reorganized as of October 1, 2010.** The following documents provide details on the reorganization, or [contact](#).
- [Reorganization announcement from NIFA Director Roger Beachy](#); [New NIFA Organization Charts](#)
- The [Current Research Information System](#) (CRIS) provides documentation and reporting for ongoing agricultural, food science, human nutrition, and forestry research, education and extension activities for the [United States Department of Agriculture](#), with a focus on the [National Institute of Food and Agriculture (NIFA)](#) grant programs.
- Projects are conducted or sponsored by USDA research agencies, state agricultural experiment stations, land-grant universities, other cooperating state institutions, and participants in NIFA-administered grant programs, including [Small Business Innovation Research](#) and [Agriculture and Food Research Initiative](#).

Understanding NIFA

- The National Institute of Food and Agriculture offers a list of [over 50 RSS feeds](#) on a range of research topic areas that provide an important insight into the research priorities ([more](#)), funding investments, culture, and mission of USDA, all essential background information to developing a successful proposal. [NIFA News](#)
- NIFA [Lists Open Requests for Grant Applications](#) in [NIFA Update](#), a biweekly newsletter from the Office of the Director for research, education, and extension partners at land-grant universities and other cooperating institutions.
- [NIFA Index](#)

Resource Links to Locate Funding within and Write Grants to USDA

- **September 8, 2010, Planning and Managing Systems Based Trans-disciplinary Projects for USDA/NIFA Program, Pullman, WA, **[PowerPoint and Video Presentations](#)**. NIFA competitive funding programs covered: Sustainable Agriculture Research and Education (SARE), the Specialty Crop Research Initiative (SCRI), the Organic Research and Extension Initiative (OREI), and Organic Transitions (ORG) only. Resources: [More SCRI Information](#)
- **December 10, 2009, Planning and Managing Systems Based Trans-disciplinary Projects for USDA/NIFA Program, Ithaca, NY, **[PowerPoint and Video Presentations](#)**. NIFA competitive funding programs covered: Sustainable Agriculture Research and Education
Research Development & Grant Writing News

(SARE), the Specialty Crop Research Initiative (SCRI), the Organic Research and Extension Initiative (OREI), and Organic Transitions (ORG) only. Resources: More SCRI Information


- September 30, 2008, PowerPoint and Video Presentations

National Institute of Food and Agriculture FAQs - Applying for a Grant

Signed, Sealed, and Delivered - The USDA Grants Process
This site helps grant applicants understand how NIFA administers federal assistance to support the delivery of science and education programs for agriculture. It features NIFA personnel explaining how the agency budgets and plans, solicits, accepts, and reviews proposals, and makes awards available to grantees.

Signed, Sealed, and Delivered (Video transcript)
This video helps grant applicants understand how USDA administers federal assistance to support the delivery of science and education programs for agriculture. It features USDA personnel explaining how the agency budgets and plans, solicits, accepts, and reviews proposals, and makes awards available to grantees.

USDA General Grant-Writing Tips for Success
This tip sheet was developed to aid in the preparation of competitive grant proposals to USDA. For applicants preparing an Integrated Proposal, refer to the “Tips for Developing and Implementing Integrated Projects” audio file or text file by Dr. Diana Jerkins, National Program Leader, from the former Cooperative State Research, Education, and Extension Service.

USDA/NIFA Grant Writing Workshop
A series of workshops sponsored by the USDA National Institute of Food and Agriculture (NIFA) in partnership with land grant institutions. The Sustainable Agriculture Research and Education program (SARE), the Specialty Crop Research Initiative (SCRI) and the Integrated Organic Program (IOP) within the National Institute of Food and Agriculture require that applicants use a systems approach to meet challenges faced by producers and consumers.

2011 NIFA Systems Science Grantsmanship Workshop Sessions August 9, 2011; Past USDA/NIFA Grantsmanship Workshops

USDA Grantsmanship Hints
By James S. Schepers, E. John Sadler, and William R. Raun, USDA-ARS, Agronomy Journal
The authors served as panelists or panel managers on over 400 USDA research grants. The authors’ objective is to provide the research community with a summary of observations made while serving in the grant proposal review process at USDA.
Department of Energy SBIR/STTR Outlook 2012-2013

By Mike Cronan, co-publisher

The DOE Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Funding Opportunity Announcement was announced April 3, 2012, and amended April 18. Topics associated with this FOA are listed here. However, if you did not submit a Pre-Application on May 1 for an invitation to submit a full application July 3, then the next scheduled DOE SBIR/STTR programs are for fiscal year 2013, as follows.

**Phase 1 will have two release dates:** topics will be released on July 16 and October 29, 2012. The FOAs associated with these topics will be released on August 13 and November 26, respectively. Letters of intent will be due September 4 and December 17. Full applications will be due October 15 and February 5, 2013, respectively.

**Phase 2 will have two release dates:** an FOA will be issued October 22 with the application due December 11, 2012. The second FOA will be issued February 27, 2013 with the application due April 17.

Each fiscal year, the 11 participating SBIR and STTR federal agencies set aside a percentage of their extramural R&D budgets over $100 million (more). “Extramural” refers to federal funding that an agency awards universities, national laboratories, and large businesses to address the principal agency mission needs. In 2012 that percentage is 2.95% and will increase annually over the next five years to 3.65% in 2017. (See DOE SBIR/STTR Programs: Introduction Overview Presentation of the U. S. Department of Energy’s SBIR/STTR Programs.)

The Instructions for Completing a DOE SBIR/STTR Phase I Grant Application guide contains instructions and other information for preparing the required forms for a grant from the DOE SBIR and STTR programs. A one-page checklist for submitting SBIR/STTR grants can be found here. If you are applying for an SBIR/STTR Phase I grant, you may be required to first submit a Pre-Application. An example template of a Pre-Application can be found here.

The SBIR/STTR program at the Department of Energy is mission focused, hence the importance of being knowledgeable about the DOE-specific mission areas, DOE strategic plan, and DOE topic-relevant reports, workshops, and presentations. **The chances of winning an SBIR and STTR award at DOE are about 10-to-1 for Phase I and 2-to-1 for Phase II.** Each year DOE issues FOAs inviting small businesses to apply for SBIR/STTR grants, as described in the above link. These FOAs contain topics in such research areas as:

- **Clean Energy**
  - fossil, nuclear, and renewable energy (energy production and use in buildings, vehicles, and industry) and electricity delivery and reliability
- **Basic Science and Engineering**
  - fundamental energy sciences, including materials, life, environmental, and computational sciences, and fusion energy, high energy, and nuclear physics
- **Nuclear Security**
  - environmental management and nuclear nonproliferation
The SBIR and STTR programs at DOE have three distinct phases. Grant applications submitted by small businesses must be responsive to specific topic and subtopic as included in the open FOA found under the SBIR/STTR web page "Funding Opportunities."

- Phase I explores the feasibility of innovative concepts with awards up to $150,000 over 9 months.  
  o Only DOE Phase I award winners may compete for DOE Phase II funding.
- Phase II is the principal R&D effort, with awards up to $1,000,000 over two years.
- Phase III offers opportunities to small businesses to continue their Phase I and II R&D work to pursue commercial applications of their R&D with non-SBIR/STTR funding.  
  o Under Phase III, Federal agencies may award noncompetitive, follow-on grants or contracts for products or processes that meet the mission needs of those agencies, or for further R&D.

DOE SBIR/STTR Programs Introduction--an Overview Presentation

Merit Review Process for SBIR/STTR

DOE makes selections for Phase I awards from those grant applications judged to have the highest overall merit within their technical program area, with approximately equal consideration given to each of the following criteria:

- Strength of the scientific/technical approach as evidenced by (1) the innovativeness of the idea and the approach, (2) the significance of the scientific or technical challenge, and (3) the thoroughness of the presentation.
- Ability to carry out the project in a cost effective manner as evidenced by (1) the qualifications of the PI, other key staff, subcontractors, and consultants, if any, and the level of adequacy of equipment and facilities; (2) the soundness and level of adequacy of the work plan to show progress toward proving the feasibility of the concept; and (3) the degree to which the DOE investment in the project would be justified by the level of proposed research effort.
- Impact as evidenced by (1) the significance of the technical and/or economic benefits of the proposed work, if successful, (2) the likelihood that the proposed work could lead to a marketable product or process, and (3) the likelihood that the project could attract further development funding after the SBIR or STTR project ends. (Refer to the FOA for guidance on what to include in your Commercialization Plan and Commercialization History.)
I stumbled into research development from journalism – more than a quarter century of gathering information, covering events of the day, writing, editing, and some of it teaching these skills to college students. It’s a third career for me, born more of necessity than desire, but I’m glad it happened this way. I came to it late in life – I’m 65 – but also fairly well equipped.

What I don’t know about research development would fill an ocean. I probably have more to learn than I can manage these few years before retirement, and certainly more than most subscribers to this newsletter. The curve will not be as steep as it might have been, though, had I not spent decades in the business of newsgathering and the written communication of news and information. As a journalist, I came to research development knowing a lot by instinct that might have taken me years to learn by experience.

Journalists are often accused of cynicism but, really, we’re just more skeptical than most. Cynicism is a kind of wasting disease of the mind, because it tends to dismiss without investigation and leads to a hardened soul. Skepticism, however, investigates from the standpoint of expectant doubt and optimistic openness to persuasion by argument and evidence. Skepticism works for journalists to the extent that it keeps their sources – and themselves – honest. The same might be said for research-development officers who investigate and evaluate ideas in search of competitive grant proposals and institutional strategies for developing significant research initiatives. Time is too short and resources too scarce simply to say yes to every idea. Optimistic skepticism is the research-development officer’s friend.

I spent the first two years of my newspaper career at the Houston Chronicle, then an afternoon daily with a newsroom full of typewriters, copy paper, glue pots, wire machines, cigarette butts and spilled coffee. It was a hard-nosed place with six deadlines a day between 8 a.m. and 5 p.m. No one had to be nice. One day, an assistant city editor called the big, black telephone on my desk to let me know what he thought of the assignment I’d just turned in: “I just read your Sunday story for meaning,” he said, “and found none.” Click.

It wasn’t the first time and wouldn’t be the last that I felt flogged by an editor. There might have been a better way to say it, but the bottom line was unyielding: There are holes in this story through which one might drive cattle: missing information, misplaced leads, misspellings, bad grammar and busted style, all of which erode the quality and credibility of a news-writer’s performance and competence. News stories, moreover, ought to flow; there must be some logic to the presentation of information; it must make sense.

Experienced journalists learn to plug the holes before they get to the editor’s desk, which doesn’t ensure there won’t be something to fix, but everyone’s job is easier if the first draft of a story is coherent and free of errors of grammar, spelling, punctuation and style. You don’t have to be a journalist to know it takes more than one person and more than one draft to
refine written material for publication. Journalists, though, do it all day, every day; and, despite what you hear about newspapers, most journalists are good at it, better than most.

Research-development officers must either possess such skills or have access to those who do. Review panelists are quick to dispense with sloppy proposals. Brilliant research will be dismissed out of hand if it is poorly packaged. My old editor’s critique was a brusque invitation to rewrite the feature. Review panelists simply quit reading and can it.

I hadn’t been at the Corpus Christi Caller-Times very long before I was assigned to the story every junior staffer has to write eventually—a feature about spring break on Mustang Island. Get a photographer. Interview some revelers. Talk to the police. It’s been published hundreds of times. How do you make it interesting? Well, one way is to write a snarky lead: “Yesterday, even the Gulf of Mexico had beer on its breath.”

OK, it isn’t great writing or great journalism, but it just might snare a reader’s attention beyond the usual 12 seconds most newspaper stories receive. My point is that journalists know how to put the story in a nutshell, a skill research-development officers and proposal writers must cultivate if they expect to arouse more than a yawn among reviewers. David Morrison, co-author of The Grant Application Writer’s Handbook, will tell you nothing is more important in the writing of a grant proposal than the lively selling of your idea in the project summary. He told me—much to my professional satisfaction, by the way—that nothing I could do as a research-development officer would help investigators more than tuning up their summaries.

At the time, about a year ago, I was feeling a little lost at sea in a new profession, but Morrison persuaded me that I’d brought 25 years of expertise just where it needed to be.
Upcoming Fellowship Funding Opportunities

**National Council for the Social Studies - Social Studies Inquiry Grant Request for Proposals**
The Fund for the Advancement of Social Studies Education (FASSE) and the College and University Faculty Assembly (CUFA) of the National Council for the Social Studies (NCSS) have established a grant to support inquiry in citizenship education. Grant proposals should affirm social, cultural, and racial diversity and address issues of equality, equity, and social justice. Proposals that address aims for citizen action are preferred. Proposals should be relevant to school, university or community-based educational settings. FASSE and CUFA will award a $10,000 grant to the successful applicant who presents a proposal for a research project that demonstrates potential to inform the educational field about justice oriented, citizenship education. **Due June 1.**

**Southern Region Sustainable Agriculture Research and Education (SARE) Program - Graduate Student Grants**
The Southern Region USDA Program on Sustainable Agriculture Research and Education (SARE) is requesting proposals for Graduate Student research projects that address issues of sustainable agriculture of current and potential importance to the Southern region and the nation. The Southern SARE Graduate Student Grants in Sustainable Agriculture grants a one-time project maximum of $11,000. Projects may last up to three years. A candidate may receive only one Southern SARE Graduate Student Grant during his or her graduate student career. The Southern SARE program will only consider proposals submitted, and to be conducted, by graduate students (Master’s and PhD) enrolled at an accredited college or university in the Southern region. The graduate student must be considered full-time (according to his or her institution’s requirements) at the time of proposal submission. The SARE Southern Region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, **North Carolina**, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Puerto Rico, and the U.S. Virgin Islands. **Due June 4.**

**HR-2013 Thomas R. Pickering Foreign Service Fellowship Program**
The Thomas R. Pickering Foreign Affairs Fellowship program encourages the application of members of groups historically under-represented in the Foreign Service of the U.S.
Department of State and those with financial need. The fellowship provides financial support towards the completion of a Master's degree and professional development training. Upon completion of the degree, recipients have a service commitment to work as a U.S. Department of State Foreign Service officer. Due June 22.

**Fulbright Post-Doctoral Fellowships**
The United States-Israel Educational Foundation (USIEF) plans to award 8 grants to American post-doctoral scholars who are about to begin a program of research at Israeli institutions of higher education which will commence during the 2013/2014 academic year. The total length of the proposed program of work in Israel must be at least two academic years (20 months net in Israel). The Fulbright award totals $40,000, $20,000 per academic year. Fulbright funding supplements basic post-doctoral stipends provided by Israeli host institutions. This program is open to post-doctoral researchers in all academic disciplines. Due August 1.

**DOD FY12 Peer Reviewed Cancer Visionary Postdoctoral Fellowship Award**
The FY12 Peer Reviewed Cancer Research Program (PRCRP) fosters the next generation of cancer research by providing new and early career investigators opportunities to excel in groundbreaking cutting-edge research for the prevention, detection, and treatment of cancer. To support the development of future generations of cancer researchers, this award offers an opportunity for a candidate postdoctoral fellow to collaborate with an early-career independent, not yet tenured investigator serving as mentor in at least one of the FY12 PRCRP Topic Areas (see full program announcement) toward investigations that are relevant to military beneficiaries. The Visionary Postdoctoral Fellowship Award is intended to support exceptionally talented, recent medical or other doctoral graduates in their pursuit of cancer research during a postdoctoral fellowship with a focus on cutting-edge, innovative, high-risk/high-impact basic science or translational research that will have either short-term or long-term clinical impact. Due September 12.

**International Association for Mathematical Geosciences**
To provide financial support to students in graduate school or post-doctoral position for research in the fields of mathematical geology, geomathematics, and geoinformatics. Due October 15.

**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.

**American Psychological Association, Scholarships, Grants and Awards**
APA and its affiliate organizations provide a wide range of grants, scholarships, awards with the aim of advancing the science and practice of psychology.

**APA Scholarships, Fellowships and Dissertation Awards**
Psychology cannot thrive without nourishing our most intelligent and inquiring minds to pursue the discipline. To this end, the Foundation supports a number of programs aimed at helping graduate students further their education in psychology.

**University of California, Berkeley Links**
- Postdoc Funding in the Biosciences
- Postdoc Funding in the Social Sciences
- Postdoc Funding in the Humanities

**Writing Advice**

**Writing Fellowship and Grant Proposals**
UCLA Writing Center

**Guide to Proposal Development in the Humanities For Graduate Students**
Hall Center, Humanities Grant Development Office, The University of Kansas

**Writing Proposals for ACLS Fellowship Competitions**
Christina M. Gillis, American Council of Learned Societies

**Fellowship Personal Statements and Essays**
Worcester Polytechnic Institute
**Grant-Writing Tips for Graduate Students**, The Chronicle Of Higher Education
By Lisa Patrick Bentley, a National Science Foundation postdoctoral fellow in bioinformatics at the University of Arizona's department of ecology and evolutionary biology.

**Developing Graduate Fellowship Proposals, A Guide for Students**
By Colgate University (More)

**Writing and Presenting Your Thesis or Dissertation**
S. Joseph Levine, Ph.D., Michigan State University

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

- **NIH Fellowships**
  - Applying for a Fellowship
  - Writing a Fellowship Application
  - Promote Your Research Plan
  - Advice for Predoctoral Fellowship Candidates
  - Submitting Your Fellowship Forms, Contacting NIAID

**Funding Your Research: How to Apply for an NRSA**
Co-Sponsored by Career Services and the Office of Postdoctoral Programs
This presentation was given by Laura Stark Malisheski, Ph.D., Postdoctoral Fellow in Neuroscience at the University of Pennsylvania.

**UNC-Chapel Hill’s Writing Center**
A handout provided by to help graduate students write and revise grant proposals for research funding in all academic disciplines.

**Proposal Writer's Guide**
by Don Thackrey, University of Michigan
NIH Early-Stage Postdoctoral Grants Fit Different Interests

If you recently earned a doctoral degree and are beginning your career as a junior researcher or faculty member, you qualify for several types of research support. Choose the award type that matches your area of interest.

- To obtain training, apply for an NRSA Postdoctoral Fellowship (F32).
- If you have independent funding, such as an R01 grant, apply for an Independent Scientist Award (K02).
- If your background is in quantitative science and engineering and you want to integrate this expertise with biomedicine, apply for a Mentored Quantitative Research Development Award (K25). To qualify, you’ll need experience at the junior-faculty level, such as early- to mid-level assistant professor or research assistant professor.
- To work in a clinical field, apply for a Mentored Clinical Scientist Development Award (K08). However, if you have a significant publication history, reviewers may consider you overqualified for a K08.
- To pursue an assistant professorship, apply for a Research Scholar Development Award (K22) or NIH Pathway to Independence Award (K99/R00). You should have no more than five years of postdoctoral experience.
- To conduct patient-oriented research, apply for a Mentored Patient-Oriented Research Career Development Award (K23). You’ll need a Ph.D. or clinical degree and have just completed specialty or subspecialty training.

Society for Social Work and Research, Doctoral Student Center

- Writing for Academic Journals presents tips on structure and common mistakes authors make. This 20-page document isn’t a quick read; however, it provides advice to advanced students. By Daryl J. Bem at Cornell University.
- Research Proposals presents guidelines, sections to include, and common mistakes in proposals. By The University of Hawaii.
- Dissertation Writing presents study skills and guided activities to aid in writing a dissertation. Ideal for students just beginning their work, and well as for students who are overwhelmed by the complexity of the dissertation process.
- Grant Proposals presents 10 common mistakes in grant writing. By Pearson.
- Publishing Advice for Graduate Students presents the hidden secrets behind publishing. By Thom Brooks.
Research Grant Writing Web Resources

NORDP Research Development Resources

NIH Regional Workshop, April 16-18, Presentations Materials
*** Notes a PPT not yet available but to be posted.

A Walk Through the SF 424 (R&R) for Beginners

Advanced Administrative Topics

After the Award is Made...Then What?

All About Costs Primer

Bonjour! Hola! International Collaborations

Budget Basics for Administrators

Budget Building Blocks for Investigators

Career Development Opportunities

Career Development Timeline (part of “Mapping Your Career with NIH”)

ClinicalTrials.gov & FDAAA for NIH Grantees***

Common Compliance Pitfalls and Strategies for Success

Current Issues at NIH

Day One: Ask Away Q&A!***

Day Two: Face-to-Face with NIH: Final Q&A***

Financial Conflict of Interest (FCOI): What You Need to Know

Finding a Funding Opportunity

For Your Review: Inside a NIH Study Section Meeting***

From the Inbox: PreAward & PostAward Issues***

Grant Writing for Success

How Well Do You Know the eRA Commons? - April 2012

Integrity in the Name of Research

Interacting Electronically with NIH - April 2012

Inventions, Data Sharing, & Other Intellectual Property
### Considerations

#### Managing Compliance with the NIH Public Access Policy

**New & Early Stage Investigators (ESI) (part of “Mapping Your Career with NIH”)**
- **Part 1: Overview with Dr. Sally Rockey**
- **Part 2: Program Perspective**

#### NIH AREA (R15) Program Update

**NIH from 10,000 Feet with Dr. Sally Rockey (Keynote)**

**NIH Loan Repayment Programs: You Do the Research, We’ll Repay Your Student Loans (part of “Mapping Your Career with NIH”)**

#### The NIH Peer Review Process

**The NIH Top Ten (NIH Fundamentals & Understanding Your Resources**
- **Live Version**
- **Print Version**

#### Primetime with NIH Program: Understanding RPGs

**Post Award Electronic Processes***


**Research Involving Animals – OLAW**
- **Live Version**
- **Print Version**

**Research Involving Human Subjects, Part 1 & 2 : HHS & NIH**

**Research Training Awards**

**Rock Talk: A Conversation with Dr. Sally Rockey**

**Takin’ Care of Business: SBIR/STTRs**

**Using RePORT to Your Advantage**

**Working with NIH Program Officials: PreAward & PostAward**

**Writing a Successful Career (K) Application**

**Writing a Successful T32 Application**
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.

The State of State Science Standards 2012
This report examines K-12 science standards for fifty states and the District of Columbia, as well as the science assessment framework of the National Assessment of Educational Progress (NAEP). Our aim is to evaluate them for their intrinsic clarity, completeness, and scientific correctness. We have not investigated whether they are being properly assessed with state tests or effectively implemented in the schools, or whether they are driving improvements in student achievement.

Creating Shared Instructional Products for Integrating Engineering Education in the Science Learning through Engineering Design (SLED) Partnership
The goal of this paper is to examine the Science Learning through Engineering Design (SLED) Partnership, a unique math-science targeted partnership designed to support improved student learning and instructional practice for integrating engineering design in the elementary science classroom. We identify three critical features that support this partnership for creating shared quality instructional products. These features include: 1) shared problems across the system; 2) small tests of small changes; and 3) multiple sources of innovation. Information presented in this paper presentation includes: 1) an overview of the SLED Partnership (management structure, strategic vision, and implementation plan); 2) discrete examples of shared instructional products generated by all SLED partners (i.e. teachers, STEM faculty, and researchers); and 3) results from pilot testing of shared products.

Community Colleges in the Evolving STEM Education Landscape: Summary of a Summit
The National Research Council (NRC) has released a new report, Community Colleges in the Evolving STEM Education Landscape: Summary of a Summit. Based on a national summit that was supported by the National Science Foundation and organized by the National Research Council and the National Academy of Engineering, the report highlights the importance of community colleges, especially in emerging areas of STEM and preparation of the STEM workforce. Community colleges also are essential in accommodating growing numbers of students and in retraining displaced workers in skills needed in the new economy. The report looks at the changing and evolving relationships between community colleges and four-year institutions, with a focus on partnerships and articulation processes that can facilitate student success in STEM; expanding participation of students from historically underrepresented populations in undergraduate STEM education; and how subjects, such as mathematics, can serve as gateways or barriers to college completion.
STEM Education, Science Literacy and the Innovation Workforce in America: Analysis and Insights from the Bayer Facts of Science Education Surveys 1995-2011

The report is a compilation of 15 years of *Bayer Facts of Science Education* public opinion research surveys, which have taken the pulse of American attitudes about timely issues related to science and technology, science education and more recently STEM diversity and underrepresentation. The surveys have polled various audiences, including the nation's Ph.D. scientists and science teachers; STEM department chairs at the country's leading research universities; Fortune 1000 STEM company CEOs, corporate human resource directors and other business leaders; and deans of colleges and universities, as well as parents, students and the general public, among others.

**Siemens STEM Academy**

The Siemens Foundation, in partnership with Discovery Education, introduces the first-of-its-kind national STEM education program for teachers. Designed to support educators in their efforts to foster student achievement in STEM, the program will include the first online shared repository of STEM best teaching practices, a National Teacher Academy bringing together science educators from across the country, and an ongoing webinar series featuring leading scientists and experts in their fields. [Top Free Resources for STEM - NSTA 2012](#)

**Mathlanding**

A new website for elementary math specialists, coaches, mentors, and teachers soft-launched last week. Mathlanding.org supports the professional development needs of elementary educators in building mathematical knowledge and instructional practice. Browse or search over a thousand online resources, every single one of which was touched with an expert hand and underwent a rigorous process of review and evaluation, including alignment to both the Common Core State Standards (CCSS) for Mathematics and the National Council of Teachers of Mathematics (NCTM) Standards.

**ED Mathematics and Science Partnerships Program Highlights**

This policy brief was commissioned by the U.S. Department of Education as part of Abt Associates' contract to support their Mathematics and Science Partnerships (MSP) Program. The intent of this report is to highlight the work and reform innovations from the U.S. Department's MSP Program for federal and state-level staff as well as practitioners and educators in the STEM community.
NIH Allocation of $700 Million to SBIR/STTR Programs
The National Institutes of Health (NIH) has over $700 Million for small businesses to perform innovative research and R&D in the biomedical/behavioral sciences through its SBIR and STTR Programs. Innovators in life and health sciences are invited to meet the NIH mission of improving human health and to develop new technologies with commercial application. Join us May 30 through June 1, 2012 to learn about NIH SBIR/STTR funding opportunities. This year’s conference "The Changing Face of SBIR/STTR", will offer presentations from NIH program staff and other experts, a poster session providing examples of NIH-funded SBIR and STTR projects, exhibits, and opportunities for one-on-one meetings with staff representing several NIH institutes and centers on May 30 and 31, 2012. In addition, a special session and a la carte workshops will be available on June 1.

Opportunities for Humanities Funding Announced
The application period is open for several federal humanities grant opportunities from the National Endowment for the Humanities (NEH). A partial list is provided below of recently opened grant guidelines. Applicants should refer directly to the agency website to verify all information, including deadlines and available grants. (Click link above for full text)

Frequently Asked Questions: Alliances for Graduate Education and the Professoriate Program
1. What types of organizations and institutions can submit proposals to the AGEP program?

Scope
2. Does my AGEP-Transformation project need to include all of the science, technology, engineering and mathematics (STEM) disciplines that are supported by NSF?
3. How many partners need to be in an AGEP-Transformation alliance project?

Alliances
4. What types of organizations and institutions can be partners in AGEP-Transformation projects?
5. Are there restrictions on what type of organization can serve as the lead?
6. Must all AGEP-Transformation proposals be submitted as simultaneously submitted collaborative proposals?
7. Can the AGEP-Transformation proposal include a subaward?
8. What are alliance-based activities?

NEH Accepting Nominations for 2013 Jefferson Lecturer
The National Endowment for the Humanities (NEH) is currently inviting nominations for the 2013 Jefferson Lecture in the Humanities. NEH’s annual Jefferson Lecture in the Humanities award recognizes a scholar who has made significant contributions to the humanities and who has the ability to communicate the knowledge and wisdom of the humanities in a broadly
appealing way. The lecturer is expected to present an original and substantive address that is of interest to both scholars and a general audience. (Click link above for full text)

**NEH Launches New Website**
The National Endowment for the Humanities launched a new website. After a complete overhaul, the new neh.gov provides a more user-friendly platform for people seeking grants and for the public interested in humanities research, scholarship, and public programs. A new “EXPLORE” section allows users to access information about more than 200 documentaries, radio programs, and apps produced by broadcasters and others with NEH grants. A prominent new rotator will showcase news of NEH and books, seminars, and other projects growing out of Endowment funding. Each NEH division and program will have its own series of pages to feature projects, news about grants and opportunities to meet program officers in the field.

**DOE SBIR Phase I Release 3 Changes Announced**
The Department of Energy SBIR/STTR Programs Office issued its FY 2012 Phase I (Release 3) Funding Opportunity Announcement (DE-FOA-0000715) on April 3, 2012 and its amendment on April 18. The FOA and the Topics document that are currently available on the DOE SBIR/STTR Funding Opportunities Page have been modified since they were originally posted due to changes to several of the topics. Changes and the date each change was made are outlined below:

- Topic 4b: Description clarified (3.15.12)
- Topic 5b. Replaced program manager email contact (3.15.12)
- Topic 7a: First sentence clarified (3.15.12)
- Topic 6d: Subtopic title should be "Differential Compression and Expansion Technologies" and not "Combustion." (3.23.12)
- Topic 5, 5a, 5b, and 5c: Titles and/or descriptions changed for clarification (4.02.12)
- Topic 8b: Removal of reference to webinar (4.16.12)

**Dear Colleague Letter: Engineering Research Experiences for Veterans (EREV)**
The National Science Foundation recognizes that Veterans represent a potential underutilized workforce for America's research and industrial communities. The Industrial Innovation and Partnerships Division (IIP) of the Engineering Directorate (ENG) at the National Science Foundation (NSF) is now accepting supplemental requests to conduct Engineering Research Experiences for Veterans (EREV). The proposed EREVs will afford Veterans an opportunity to conduct research with various NSF Engineering Directorate active grantees. Recommendations from NSF's Engineering Education and Centers Division Workshop entitled "Veterans' Education for Engineering and Science" in April 2009 stated "NSF and other federal science and engineering agencies should create an education/career development program focused on getting veterans into science and technology careers. NSF and the other federal agencies have long experience sponsoring education research and activities. The cost to expand and enrich such programs is a small fraction of the cost of the post-9/11 Veterans educational benefit. Yet
by expanding it, the community could engage a significant number of veterans with the potential to pursue careers in fields of engineering, science and technology."

**Dear Colleague Letter: Research Experiences for Veterans/Teachers (REV/T)**
The National Science Foundation recognizes that Veterans represent a potential underutilized workforce for America's research and industrial communities. Many veterans are transitioning from military service to the classroom as teachers. The Industrial Innovation and Partnerships (IIP) and Engineering Education and Centers (EEC) Divisions of the Directorate for Engineering (ENG) at the National Science Foundation (NSF) are now accepting supplemental requests to conduct Research Experiences for Veterans/Teachers (REV/T). The proposed REV/Ts will afford veterans and/or teachers an opportunity to intern either at an active Industry/University Cooperative Research Center (I/UCRC) or Engineering Research Center university site, or conduct center related research at an active I/UCRC or ERC member company. The REV/T supplement requests will be submitted as one of two options: 1) a veteran who is a full time teacher with no less than three years teaching experience, or a 2) a veteran/teacher team consisting of a full time veteran student at an active I/UCRC university site and a full time teacher with no less than three years experience.

**Dear Colleague Letter: Research Experience for Teachers (RET): Funding Opportunity in the Biological Sciences**
This letter is to call your attention to a long-standing opportunity that enables K-12 science educators to participate in projects funded by the Directorate for Biological Sciences (BIO) at the National Science Foundation (NSF). The goal of the Research Experiences for Teachers (RET) activity is to enhance the professional development of K-12 science educators through research experience at the emerging frontiers of science in order to bring new knowledge into the classroom. BIO strongly encourages all its grantees to make special efforts to identify talented teachers who can participate in this RET activity to integrate research and education. This special opportunity is the same as mentioned in the Research Experience for Undergraduates (REU) solicitation (more).

**Dear Colleague Letter: Research Assistantships for High School Students (RAHSS): Funding to Broaden Participation in the Biological Sciences**
Strategies to successfully broaden participation during pre-college years will help ensure a diverse pool of future students, faculty and researchers. As a part of a new or renewal NSF proposal or as a supplemental funding request to an existing NSF Award, the Directorate for Biological Sciences (BIO) will consider requests that:

- Foster interest in the pursuit of studies in the Biological Sciences; and
- Broaden participation of high school students, particularly those who are underrepresented minorities, persons with disabilities, and women in sub-disciplines where they are underrepresented.

**Frequently Asked Questions: Regarding Solicitation NSF 12-512, Smart Health and Wellbeing**
1. **Is my proposal a good fit for the Smart Health and Wellbeing solicitation?**
2. **How do I prepare and submit a proposal to this program?**
3. **Would my project be likely to get funding?**
4. **What is the difference between an Exploratory project proposal and an Integrative project proposal?**
5. **Are postdoctoral fellowships awarded under the Smart Health and Wellbeing program?**
6. **Are the budget limits listed on the website per year or over the course of the grant?**
7. **How often is the Smart Health and Wellbeing solicitation issued?**

**Dear Colleague Letter: Career-Life Balance (CLB) Initiative**

NSF’s Career-Life Balance (CLB) Initiative—an ambitious, ten-year initiative—will build on the best of family-friendly practices among individual NSF programs to expand them to activities NSF-wide. This agency-level approach will help attract, retain, and advance graduate students, postdoctoral students, and early-career researchers in STEM fields. This effort will help reduce the rate at which women depart from the STEM workforce. By the end of this ten-year initiative (2021), it is expected that women will represent 41 percent of newly tenured doctoral S&E faculty—the same percentage as the available pool of women S&E doctorate recipients in 2009; and that women of color will comprise 17 percent of newly tenured faculty, the same percentage of their PhD production rate in 2009. The initiative’s initial focus will be on CLB opportunities such as dependent-care issues (child birth/adoption and elder care). These issues initially will be addressed through NSF’s Faculty Early Career Development (CAREER) and postdoctoral programs, where career-life balance opportunities can help retain a significant fraction of early career STEM talent. The agency will further integrate CLB opportunities over time through other programs such as the Graduate Research Fellowship program and expand opportunities such as dual career-hiring through the Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) program.

**DoD SBIR/STTR Solicitation Schedules**

DoD issues three SBIR and two STTR solicitations for proposals annually. Each solicitation has a: pre-release, open and close. During the pre-release period the government is not accepting proposals, but small businesses can discuss technical questions directly with the topic authors (contact information available in each topic). Once the solicitation is open, direct questions with the topic authors are no longer allowed, but technical questions may be submitted anonymously through the SBIR Interactive Topic Information System (SITIS).

**DoD 2012.2 SBIR Solicitation, Pre-Release**

This solicitation will **open May 24 through June 27 (modifications)**. During this Pre-Release period, you may talk directly with topic authors to ask technical questions about the topics. Their names, phone numbers, and e-mail addresses are listed within each solicitation topic. Seven DoD Components will participate in the 2012.2 Solicitation: The Department of the Army,
The Department of the Navy, Chemical and Biological Defense Program (CBD), Defense Advanced Research Projects Agency (DARPA), Defense Health Program (DHP), Defense Logistics Agency (DLA), Defense Microelectronics Activity (DMEA), Defense Threat Reduction Agency (DTRA), and Missile Defense Agency (MDA) are participating. The solicitation lists all of the R&D topics under which DoD is seeking proposals, and also contains detailed information on the parameters of the SBIR program and how to submit a proposal (more).
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.

Ecosystem Services: Charting a Path to Sustainability

Ecosystem Services: Charting a Path to Sustainability documents the National Academies' Keck Futures Initiative Conference on Ecosystem Services. At this conference, participants were divided into 14 interdisciplinary research teams to explore diverse challenges at the interface of science, engineering, and medicine. The teams needed to address the challenge of communicating and working together from a diversity of expertise and perspectives as they attempted to solve a complicated, interdisciplinary problem in a relatively short time. Ecosystem Services: Charting a Path to Sustainability describes how ecosystem services scientists work to document the direct and indirect links between humanity's well-being and the many benefits provided by the natural systems we occupy. [Free download.]

The Dynamics Of Sustainability: A Primer for Rural Health Organizations

By U.S. Department of Health and Human Services, Health Resources and Services Administration, February 2012.

The goal of this primer is to provide a head start on planning for sustainability for organizations and collaborations that are starting a new program. The primer contains information and opportunities for reflection and discussion appropriate for consideration at the initial stage of program implementation. It is not a complete, comprehensive to-do manual for sustainability planning; rather this is a “starter guide” to use on your own or with your partners as part of your initial project planning activities.

NASA Space Technology Roadmaps and Priorities: Restoring NASA's Technological Edge and Paving the Way for a New Era in Space

NASA's Office of the Chief Technologist (OCT) has begun to rebuild the advanced space technology program in the agency with plans laid out in 14 draft technology roadmaps. It has been years since NASA has had a vigorous, broad-based program in advanced space technology development and its technology base has been largely depleted. However, success in executing future NASA space missions will depend on advanced technology developments that should already be underway. Reaching out to involve the external technical community, the National Research Council (NRC) considered the 14 draft technology roadmaps prepared by OCT and ranked the top technical challenges and highest priority technologies that NASA should emphasize in the next 5 years. This report provides specific guidance and recommendations on how the effectiveness of the technology development program managed by OCT can be enhanced in the face of scarce resources.
Research in the Life Sciences with Dual Use Potential: An International Faculty Development Project on Education About the Responsible Conduct of Science

In many countries, colleges and universities are where the majority of innovative research is done; in all cases, they are where future scientists receive both their initial training and their initial introduction to the norms of scientific conduct regardless of their eventual career paths. Thus, institutions of higher education are particularly relevant to the tasks of education on research with dual use potential, whether for faculty, postdoctoral researchers, graduate and undergraduate students, or technical staff. Research in the Life Sciences with Dual Use Potential describes the outcomes of the planning meeting for a two-year project to develop a network of faculty who will be able to teach the challenges of research in the life sciences with dual use potential. Faculty will be able to incorporate such concepts into their teaching and research through exposure to the tenets of responsible conduct of research in active learning teaching methods. This report is intended to provide guidelines for that effort and to be applicable to any country wishing to adopt this educational model that combines principles of active learning and training with attention to norms of responsible science. The potential audiences include a broad array of current and future scientists and the policymakers who develop laws and regulations around issues of dual use.

Thinking Evolutionarily: Evolution Education Across the Life Sciences: Summary of a Convocation

Evolution is the central unifying theme of biology. Yet today, more than a century and a half after Charles Darwin proposed the idea of evolution through natural selection, the topic is often relegated to a handful of chapters in textbooks and a few class sessions in introductory biology courses, if covered at all. In recent years, a movement has been gaining momentum that is aimed at radically changing this situation. On October 25-26, 2011, the Board on Life Sciences of the National Research Council and the National Academy of Sciences held a national convocation in Washington, DC, to explore the many issues associated with teaching evolution across the curriculum. Thinking Evolutionarily: Evolution Education Across the Life Sciences: Summary of a Convocation summarizes the goals, presentations, and discussions of the convocation. The goals were to articulate issues, showcase resources that are currently available or under development, and begin to develop a strategic plan for engaging all of the sectors represented at the convocation in future work to make evolution a central focus of all courses in the life sciences, and especially into introductory biology courses at the college and high school levels, though participants also discussed learning in earlier grades and life-long learning. Thinking Evolutionarily: Evolution Education Across the Life Sciences: Summary of a Convocation covers the broader issues associated with learning about the nature, processes, and limits of science, since understanding evolutionary science requires a more general appreciation of how science works. This report explains the major themes that recurred throughout the convocation, including the structure and content of curricula, the processes of teaching and learning about evolution, the tensions that can arise in the classroom, and the target audiences for evolution education.
Through the National Criminal Justice Reference Service, NIJ has made available the following final technical report: Detecting Buried Remains Using Ground-Penetrating Radar (pdf, 235 pages). Geophysical techniques, such as ground-penetrating radar, have been successfully used by law enforcement agencies to locate graves and forensic evidence. However, more controlled research is needed to better understand the applicability of this technology when searching for clandestine graves in various environments and soil types. The purpose of this study was to determine the applicability of GPR for detecting controlled graves.
New Funding Opportunities

New Funding Solicitations Posted Since March 15 Newsletter

APLU Seeks Applications for $3.8 Million Borlaug Agricultural R&D Program
APLU announced a competition seeking one U.S. higher education institution or a consortium of institutions to manage the Borlaug Higher Education Agricultural Research and Development Program. USAID/BFS will provide initial core funding of approximately $3.8 million and, coupled with projected Mission funds, an approximate $7.35 million will likely be available to start the program. Additional Mission and USAID/BFS funding support in the future is anticipated. Contact: bheardrfa@aplu.org. Due May 31.

Advanced Simulations and Computing Predictive Science Academic Alliance Program
The Advanced Simulation and Computing Program in the Office of Stockpile Stewardship, under Defense Programs within the Department of Energy’s National Nuclear Security Administration (NNSA), created the Predictive Science Academic Alliance Program (PSAAP) to support fundamental science at U.S. universities in the emerging field of predictive science. Predictive Science is the development and application of verified and validated computational simulations, in a high-performance computing (HPC) environment, to predict the properties and dynamics of complex systems, with quantified uncertainty. Due June 4.

Integrative Graduate Education and Research Traineeship Program-CIF21 Track (IGERT-CIF21)
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. LOI June 4; full August 6.

Global Connections and Exchange Program: U.S.-Australia Virtual Environmental Partnership
The Youth Programs Division, Office of Citizen Exchanges, of the Bureau of Educational and Cultural Affairs announces an open competition for the new U.S.-Australia Virtual Environmental Partnership under the Global Connections and Exchange Program. Due June 4.

**Small Scale Coal-Biomass to Liquids (CBTL) Production and Feasibility Study of a Commercial Scale CBTL Facility**

Domestically abundant coal has the potential to be a significant primary energy source for the production of liquid fuels, particularly when energy security is a driver. Furthermore, coal mixed with optimum levels of biomass can reduce the carbon footprint of coal-biomass-to-liquid (CBTL) fuels processes. A recent National Energy Technology Laboratory (NETL) study has indicated that addition of moderate amounts of biomass to coal for the production of liquids can substantially reduce Life Cycle Analysis (LCA) CO2 emissions relative to a petroleum diesel baseline. As an example, 20% less CO2 is produced with 8% biomass addition, with Carbon Capture and Storage (CCS) with CO2 utilization. Therefore, projects selected under this proposed action will directly support the mission of the Coal Program to ensure the availability of near-zero atmospheric emission, abundant and affordable, domestic energy to fuel economic prosperity, strengthen energy security, and enhance environmental quality. Due June 7.

**Office of Postsecondary Education (OPE): Ronald E. McNair Postbaccalaureate Achievement Program CFDA Number**

The Ronald E. McNair Postbaccalaureate Achievement Program (McNair Program) is one of the seven programs known as the Federal TRIO Programs, which provide postsecondary educational support for qualified individuals from disadvantaged backgrounds. The McNair Program is a discretionary grant program that awards grants to institutions of higher education for projects designed to provide disadvantaged college students with effective preparation for doctoral study. Due June 8.

**A Pilot Institute for the National Network for Manufacturing Innovation (NNMI)**

The objective of this solicitation is to identify a recipient to establish a pilot Institute for Additive Manufacturing to accelerate research, development, and demonstration in additive manufacturing and transition technology to manufacturing enterprises within the United States. Due June 14.

**Special Program Announcement for 2012 Office of Naval Research**

The proposed topic will explore and exploit the physical coupling between the ionosphere and the earth, ocean, and atmosphere below. The program will pursue multidisciplinary approaches for improved physical understanding of ionospheric drivers from below and advanced modeling and parameterization techniques to characterize the coupled system and phenomena. Applicants shall NOT apply under this Special Notice. Applicants shall apply using the Application Instructions and Package under ONRBAA12-001. Due June 15.

**DOE Accident Tolerant Fuel Program**
The U.S. Department of Energy (DOE) Office of Nuclear Energy, through this Funding Opportunity Announcement (FOA), seeks to facilitate the development and initial testing of light water reactor (LWR) fuel concepts with accident tolerant features. Program funding will be provided at a minimum of 20% industry cost-share, 80% Federal cost-share, to the awardee(s) for the purposes of completing early phase analysis and empirical data collection to assess the impacts of novel ATF. The total Government funding available for awards under this FOA is anticipated at $10M over two (2) years, subject to availability of funds. This FOA is available at Fedconnect www.fedconnect.net under reference number DE-FOA-0000712. DOE intends to allow approximately 45 days for applicant response to this FOA. The DOE will issue a Frequently Asked Questions (FAQs) document on this web site location addressing questions regarding this FOA. Due June 15.

USDA SBIR Phase I Commercialization Assistance Program
The USDA SBIR CAP program will provide support to successful applicants to provide commercialization assistance to SBIR Phase I winners from FYs 2012, 2013 and 2014. The goals of the commercialization training program are: 1) Enhance the commercialization skills of SBIR Phase I grant recipients through introductory commercialization training that can be obtained by the grant recipients at a time and place that is convenient to them; 2) Help enhance the ability of SBIR Phase I grant recipients to write competitive commercialization plans; and 3) Monitor the impacts of commercialization training on Phase I grant recipients. Due June 15.

Plug and Play Photovoltaics
Through the Plug and Play Photovoltaics Funding Opportunity Announcement (FOA), the Department of Energy will invest up to $25 million over five years to advance the development of a commercial plug-and-play photovoltaic system, which is envisioned as an off-the-shelf product that is fully inclusive with little need for individual customization. Due June 18.

NSF/DOE Partnership on Advanced Combustion Engines 2012-2015
The Directorate for Engineering at the National Science Foundation (NSF) has established a partnership with the Vehicle Technologies Program (VTP) of the U.S. Department of Energy (DOE) in order to address critical fundamental and applied research challenges associated with advanced combustion engine technologies. The goal of the partnership is to leverage the complementary missions of deployment and commercialization (DOE) and fundamental research and education (NSF) to address issues of national importance that impact the efficiency of the internal combustion engine (ICE). The Directorate for Engineering seeks proposals with transformative ideas that meet the detailed requirements delineated in this solicitation. LOI required June 18; full August 8.

Clean Cities - Implementation Initiatives to Advance Alternative Fuel Markets
The Department of Energy’s (DOE), Office of Energy Efficiency and Renewable Energy (EERE) is seeking applications that address and assist in reducing multiple barriers to alternative fuel vehicle adoption and use. Overall, this Funding Opportunity Announcement (FOA), issued on
behalfe of EERE by the National Energy Technology Laboratory (NETL), aims to decrease the nation’s dependence on petroleum and reduce greenhouse gas emissions by accelerating the deployment of alternative fuels. Efforts should focus only on the alternative fuels defined by the Energy Policy Act of 1992, as amended by the Energy Policy Act of 2005 and further augmented by the Energy Independence and Security Act of 2007. The expanded use of alternative fuel vehicles and domestically produced alternative transportation fuels can create and retain jobs, stimulate and support domestic economies, and help protect the environment. The Clean Cities program has identified the following four critical areas that provide significant obstacles to alternative fuel vehicle use: 1) Policies, 2) Barrier Reduction, 3) Safety and Training, and 4) Market Development/Outreach. Due June 18.

**Integrated Research, Education, and Extension Competitive Grants Program - Methyl Bromide Transitions**

This RFA solicits applications for the Integrated Research, Education, and Extension Competitive Grants Program, Methyl Bromide Transitions (MBT). Methyl Bromide has been a pest and disease control tactic critical to agricultural, industrial, natural resource or urban pest management systems for decades. The MBT program seeks to solve critical agricultural issues, priorities, or problems through the integration of research, education, and extension activities. It is designed to address immediate needs, and the costs of transition that have resulted from the loss of availability of methyl bromide. Due June 19.

**Collaborative Research in Fusion Energy Sciences on Foreign Research Facilities**


**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. This FOA is for SBIR applications only.  LOI June 27; full July 27.

**NSF Solicitation: Research and Evaluation on Education in Science and Engineering (REESE)**
The Research and Evaluation on Education in Science and Engineering (REESE) program seeks to advance research at the frontiers of STEM learning and education, and to provide the foundational knowledge necessary to improve STEM learning and education in current and emerging learning contexts, both formal and informal, from childhood through adulthood, for all groups, and from before school through to graduate school and beyond into the workforce. The goals of the REESE program are: (1) to catalyze discovery and innovation at the frontiers of STEM learning and education; (2) to stimulate the field to produce high quality and robust research results through the progress of theory, method, and human resources; and (3) to coordinate and transform advances in education and learning research [See an introduction to DRL and its programs by Dr. Joan Ferrini-Mundy; See an introduction to REESE by Dr. Janice Earle]. Due July 17.

**Failure-Resistant Systems (FRS)**
The National Science Foundation and the Semiconductor Research Corporation (SRC) have agreed to embark on a new collaborative research program to address compelling research challenges in failure resistant systems that are of paramount importance to industry, academia, and society at large. New approaches in the design of electronic circuits and systems are needed for products and services that continue to operate correctly in the presence of transient, permanent, or systematic failures. From large information processing systems supporting communications and computation, to small embedded systems targeting medical and automotive applications, whole industries are facing the challenge of improving the reliability of systems. Due July 26.

**DARPA Local Control of Materials Synthesis (LoCo)**
The goal of the Local Control of Materials Synthesis (LoCo) program is to develop a low-temperature process for the deposition of thin films whose current minimum processing temperature exceeds the maximum temperature substrates of interest to the Department of Defense (DoD) can withstand (e.g., chemical vapor deposited diamond on polymers). To achieve this goal, DARPA is soliciting innovative research proposals that independently develop novel chemical and physical processes to meet the energetic/chemical requirements of thin
film deposition (e.g., reactant flux, surface mobility, reaction energy, etc.), without reliance on broadband temperature input used in state-of-the-art chemical vapor deposition. Complementary, successful methods will then be integrated by DARPA to deposit a DoD-relevant thin film (e.g., optically clear diamond) on a DoD substrate of interest (e.g., zinc sulfide). Non-traditional performers outside of the materials research/thin film deposition communities in areas such as surface acoustic wave spectroscopy, plasma physics, photochemistry, etc. are highly encouraged to submit proposals to the LoCo program. To facilitate technology transfer, DARPA is also seeking input on DoD systems and parts that could benefit from success in the LoCo program. **Due July 26.**

**Data Infrastructure Building Blocks (DIBBs)**
Science and engineering research and education are increasingly digital and increasingly data-intensive. Digital data are not only the output of research but their analysis provide input to new hypotheses, enabling new scientific insights, driving innovation and informing education. Therein lies one of the major challenges of this scientific generation: how to develop, implement and support the new methods, management structures and technologies to store and manage the diversity, size, and complexity of current and future data sets and data streams. NSF’s vision for a Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) considers an integrated, scalable, and sustainable cyberinfrastructure as crucial for innovation in science and engineering (see [www.nsf.gov/cif21](http://www.nsf.gov/cif21)). Data Infrastructure Building Blocks is an integral part of the CIF21 portfolio. **Due July 26 and August 30.**

**NEH Summer Stipends**
Summer Stipends 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.
- Summer Stipends support full-time work on a humanities project for a period of two months.
- Summer Stipends support projects at any stage of development.
- Summer Stipends are awarded to individual scholars. Organizations are not eligible to apply.
- Program Statistics: In the last five competitions the Summer Stipends program received an average of 953 applications per year. The program made an average of 74 awards per year, for a funding ratio of 8 percent. **Due September 27 for Projects Beginning May, 2013.**

**Alliances for Graduate Education and the Professoriate**
The Alliances for Graduate Education and the Professoriate (AGEP) program will support three types of projects described in this solicitation: 1) AGEP-Transformation; 2) AGEP-Knowledge Adoption and Translation; and 3) AGEP-Broadening Participation Research in STEM Education.
This solicitation represents an expansion of the program to include strategic investments in the development and study of new models for STEM graduate education, postdoctoral training, and academic STEM career preparation that eliminate or mitigate negative factors and promote positive practices for underrepresented racial and ethnic minorities. AGEP is interested in proposals that include any or all science, technology, engineering, and mathematics (STEM) fields supported by the NSF, including the social, behavioral and economic sciences, and multi-, cross-, or inter-disciplinary fields. A pilot project with the Directorate for Mathematical and Physical Sciences (MPS) is included in this solicitation, but AGEP is not limited to or focused only on the mathematical and physical sciences. Due September 28 and October 30.

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

Links to New & Open Funding Solicitations

- Bureau of Educational and Cultural Affairs, Open Solicitations, DOS
- ARPA-E Funding Opportunity Exchange
- DOE Funding Opportunity Exchange
- NIAID Funding Opportunities List
- NPS Broad Agency Announcements (BAAs)
- NIJ Current Funding Opportunities
- NIJ Forthcoming Funding Opportunities
- Engineering Information Foundation Grant Program
- Comprehensive List of Collaborative Funding Mechanisms, NORDP
- ARL Funding Opportunities — Open Broad Agency Announcements (BAA)
- HHS Grants Forecast
- American Psychological Association, Scholarships, Grants and Awards
- NIAID Funding Blog
- EPA 2012 Science To Achieve Results (STAR) Research Grants
- NASA Open Solicitations
- Defense Sciences Office Solicitations
- The Mathematics Education Trust
- Opportunities for Humanities Funding Announced
• EPA Open Funding Opportunities
• DOE Funding Opportunity Exchange
• CDMRP FY 2012 Funding Announcements
• Office of Minority Health
• Department of Justice Open Solicitations
• DOE/EERE Funding Opportunity Exchange
• HHS/Administration for Children and Families Funding Opportunities
• New 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
• Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences
• Humanities Funding Sources A-to-Z
• DARPA Current Solicitations
• Office of Naval Research Currently Active BAAs
• Department of Commerce, Notice of Grants for FY 2011
• HRSA Health Professions Open Opportunities
• NIH Funding Opportunities Relevant to NIAID
• Active Funding Opportunity Announcements (FOAs) for All NICHD
• National Institute of Justice Current Funding Opportunities
• NIST Fiscal Year FY2011 Measurement Science and Engineering Research Grants
• FundingOpportunities by the Department of Education Discretionary Grant Programs
• Science and Technology Funding Sources A-to-Z
• EPA’s Office of Air and Radiation (OAR) Open Solicitations
• NETL Open Solicitations
• Duke University Funding Alerts
• DoEd List of Currently Open Grant Competitions
• Foundation Center RFP Weekly Funding Bulletin
• NIST Funding Opportunities
• Funding News RSS; Deadline Watch; International Grants and Fellowship Index
• Sign up for GrantsNet Express

Solicitations Remaining Open from Prior Issues of the Newsletter

Building and Enhancing Criminal Justice Researcher-Practitioner Partnerships
NIJ seeks proposals for the funding of multiple criminal justice research projects involving
Researcher-practitioner partnerships as well as capturing, in detail, relevant accounts of these collaborations. This solicitation specifically aims to support criminal justice research and evaluation activities that include a researcher-practitioner partnership component. Within the context of the proposed research or evaluation project, these partnerships can be new or ongoing. Results from these projects should lead to better criminal justice policy, practice, and research, especially for the participating practitioner partners. Due May 30.

Theoretical Research in Magnetic Fusion Energy Science
The Office of Fusion Energy Sciences (FES) of the Office of Science (SC), DOE, announces its interest in receiving grant applications for theoretical and computational research relevant to the U.S. magnetic fusion energy sciences program. All individuals or research groups planning to submit applications for new or renewal funding in Fiscal Year 2013 should submit in response to this FOA. The specific areas of interest are: 1. Macroscopic Stability 2. Confinement and Transport 3. Boundary Physics 4. Plasma Heating & Non-inductive Current Drive, and 5. Energetic Particles Due to the limited availability of funds, Principal Investigators with continuing theory grants may not submit a new application in the same topical area(s) as their existing grant(s). An applicant may submit only one application in response to this FOA, but applications can target multiple topical areas. Instructions for completing the Grant Application Package are contained in the full text of the FOA which can be obtained here: Due May 31.

DE-FOA-0000667: Wireless Charging for Electric Vehicles
The objective of this Funding Opportunity Announcement is to research and develop a production feasible wireless charging system, integrate the system into a production intent vehicle, and to demonstrate the readiness of the technology to deliver the benefits of static (and possibly quasi-dynamic) wireless charging to drivers of light duty (10,000 lb Gross Vehicle Weight Rating or less) Grid Connected Electric Drive Vehicles (GCEDV). While the primary focus of this project is the advancement of static and possibly quasi-dynamic charging, the Department of Energy recognizes that the research and demonstration results of this Funding Opportunity Announcement may contribute to the future development of dynamic charging capability. This project shall demonstrate wireless charging technology while being cost competitive and compliant with safety standards. The full Funding Opportunity Announcement is posted on the EERE eXCHANGE website. Applications must be submitted through the EERE eXCHANGE website to be considered for award. The applicant must first register and create an account on the EERE eXCHANGE website. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of applications is found in the full FOA posted on the EERE eXchange website. Due May 31.

FY 2012 Methane Hydrate Program
Select and award projects in FY12 that focus on (1) field programs for deepwater hydrate characterization, (2) response of methane hydrate systems to changing climates, and (3) advances in the understanding of gas hydrate bearing sediments. Due June 1.
United Engineering Foundation Grants - 2013
The United Engineering Foundation advances the engineering arts and sciences for the welfare of humanity. It supports engineering and education by, among other means, making grants. **Concept paper due June 1.**

2012 Mathematical Multifaceted Integrated Capability Centers (MMICCs)
The Office of Advanced Scientific Computing Research (ASCR) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby invites applications for basic research that addresses grand challenges of increasing complexity within DOE’s mission areas of energy, environment and security, from a mathematical perspective that require new integrated, iterative processes across multiple mathematical disciplines. This Funding Opportunity Announcement (FOA) will holistically address mathematics for increasingly complex DOE-relevant systems for scientific discovery, design, optimization and risk assessment. This will be achieved through Mathematical Multifaceted Integrated Capability Centers (MMICCs). The full text of the FOA is located on FedConnect. Instructions for completing the Grant Application Package are contained in the full text of the FOA which can be obtained at: https://www.fedconnect.net/FedConnect/?doc=DE-FOA-0000698&agency=DOE A companion Program Announcement to DOE National Laboratories, LAB 12-698, will be posted on the SC Grants and Contracts web site at: http://www.science.doe.gov/grants Due June 1.

NOAA Cooperative Institute to expand Understanding of the Earth as it Relates to Atmospheric Processes and Trends, Climate Variability and Change, Stratospheric Ozone, Weather Prediction, Air Quality, Geodynamics, Space Weather and the Water Cycle
The NOAA Office of Oceanic and Atmospheric Research (OAR) invites applications for the establishment of a Cooperative Institute (CI) to help meet NOAA’s strategic goals in the areas of Climate Adaptation and Mitigation and Weather Ready Nation, as well as the underpinning Science & Technology and NOAA Engagement enterprise objectives. The proposed CI will collaborate with NOAA scientists to improve understanding of climate variability and change, stratospheric ozone, weather, and space weather processes and impacts; improve air quality and weather forecasts and climate prediction; develop advanced observation and modeling techniques to aid in research, forecasts and predictions; advance understanding and usefulness of current and cutting-edge information technology systems; develop and implement a paleoclimate research and modeling capability; and enhance environmental literacy to improve the public’s capability for making scientifically-informed environmental decisions. The CI will be established at a research institution not only having outstanding graduate degree programs in NOAA-related sciences, but also located within a daily commuting distance to the NOAA’s Earth System Research Laboratory (ESRL) facilities in Boulder, Colorado. The CI will provide significant coordination of resources among all non-governmental partners and will promote the involvement of students and post-doctoral scientists in NOAA-funded research. If the CI is comprised of multiple supporting academic institutions, only the lead institution applying for the award and where the CI will be established must satisfy the daily commuting distance requirement. **Due June 1.**
Agriculture and Food Research Initiative - Childhood Obesity Prevention
This **Challenge Area Focuses** on the societal challenge to end obesity among children, the number one nutrition-related problem in the US. 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. This program is designed to achieve the long-term outcome of reducing the prevalence of overweight and obesity among children and adolescents 2-19 years. The Childhood Obesity Program supports Multi-function Integrated Research, Education, and/or Extension Projects and Food and Agricultural Science Enhancement (FASE) Grants. **Due June 5.**

Biologically-derived Medicines on Demand (Bio-MOD)
The Bio-MOD program seeks to develop devices and techniques to produce multiple protein biologics in response to specific battlefield threats and medical needs. This will be achieved by investing in (1) novel, flexible methodologies for genetic engineering/modification of microbial strains, eukaryotic strains, and/or cell-free systems to synthesize multiple protein-based therapeutics; and (2) flexible and portable device platforms for manufacturing multiple biologics with high purity, efficacy and potency at the point-of-care, in short timeframes, when the specific need arises. Consequently, Bio-MOD will provide a battlefield medical supply for military medics at the front lines of support that is responsive to far-forward emergency settings and emergent in-theater needs. **Due June 12.**

Core Techniques and Technologies for Advancing Big Data Science & Engineering (BIGDATA)
The Core Techniques and Technologies for Advancing Big Data Science & Engineering (BIGDATA) solicitation aims to advance the core scientific and technological means of managing, analyzing, visualizing, and extracting useful information from large, diverse, distributed and heterogeneous data sets so as to: accelerate the progress of scientific discovery and innovation; lead to new fields of inquiry that would not otherwise be possible; encourage the development of new data analytic tools and algorithms; facilitate scalable, accessible, and sustainable data infrastructure; increase understanding of human and social processes and interactions; and promote economic growth and improved health and quality of life. The new knowledge, tools, practices, and infrastructures produced will enable breakthrough discoveries and innovation in science, engineering, medicine, commerce, education, and national security -- laying the foundations for US competitiveness for many decades to come. **Due June 13; July 11.**

Hydropower Advancement Project- Standard Assessments to Increase Generation and Value
The Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE), Wind and Water Power Program, is seeking applications from hydropower professionals to participate in the Hydropower Advancement Project (HAP) standard assessments activity. The HAP standard assessments will identify opportunities to increase generation and value at existing hydropower facilities. Through this FOA, DOE will select teams to perform these standard assessments. The selected teams will perform HAP standardized assessments as described herein and per the HAP documents associated with the standard assessments. The

The selected teams will receive financial assistance in the form of a cooperative agreement and will complete HAP standardized assessments at five (5) or more hydropower facilities. Assessment teams that are selected will be required to attend the HAP standard assessment training planned for October, 2012, and then to perform multiple HAP standard assessments as described herein and per the HAP documents. The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at [https://eere-exchange.energy.gov](https://eere-exchange.energy.gov)

Applications must be submitted through the EERE eXCHANGE website to be considered for award. **Due June 14.**

**Institute of Education Sciences (IES): Research on Statistical and Research Methodology in Education**

CFDA Number 84.305D

The official version of this document is the document published in the Federal Register ([HERE](https://www.federalregister.gov)). Free Internet access to the official edition of the Federal Register and the Code of Federal Regulations is available on GPO Access at: [http://www.access.gpo.gov/nara/index.html](http://www.access.gpo.gov/nara/index.html). Please review the official application notice for pre-application and application requirements, application submission information, performance measures, priorities and program contact information.

**Purpose of Program:**

The central purpose of the Institute's research grant programs is to provide parents, educators, students, researchers, policymakers, and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. Catalog of Federal Domestic Assistance (CFDA) Number: 84.305D. **Due June 21.**

**Humanities Initiatives at Historically Black Colleges and Universities**

NEH Humanities Initiatives are intended to strengthen and enrich humanities education and scholarship at Historically Black Colleges and Universities. These grants may be used to enhance the humanities content of existing programs, develop new programs, or lay the foundation for more extensive endeavors in the future. Each project must be organized around a core topic or set of themes. **Due June 27.**

**Humanities Initiatives at Hispanic-Serving Institutions**

NEH Humanities Initiatives are intended to strengthen and enrich humanities education and scholarship at Hispanic-Serving Institutions. These grants may be used to enhance the humanities content of existing programs, develop new programs, or lay the foundation for more extensive endeavors in the future. Each project must be organized around a core topic or set of themes. **Due June 27.**
Bridging Cultures through Film: International Topics
The Bridging Cultures through Film: International Topics program supports documentary films that examine international and transnational themes in the humanities. These projects are meant to spark Americans’ engagement with the broader world by exploring one or more countries and cultures outside of the United States. Proposed documentaries must be analytical and deeply grounded in humanities scholarship. The Division of Public Programs encourages the exploration of innovative nonfiction storytelling that presents multiple points of view in creative formats. The proposed film should range in length from a standard broadcast length of thirty minutes to a feature-length documentary. Due June 27.

Preservation and Access Education and Training
Preservation and Access Education and Training grants support national or regional (multistate) education and training programs. Grants aim to help the staff of cultural institutions, large and small, obtain the knowledge and skills needed to serve as effective stewards of humanities collections. Grants also support educational programs that prepare the next generation of conservators and preservation professionals, as well as projects that introduce the staff of cultural institutions to new information and advances in preservation and access practices. Due June 28.

NSF GeoPrisms Program
GeoPRISMS (Geodynamic Processes at Rifting and Subducting Margins) is the successor to the MARGINS Program. GeoPRISMS will investigate the coupled geodynamics, earth surface processes, and climate interactions that build and modify continental margins over a wide range of timescales. These interactions cross the shoreline and have applications to margin evolution and dynamics, construction of stratigraphic architecture, accumulation of economic resources, and associated geologic hazards and environmental management. The GeoPRISMS Program includes two broadly integrated science initiatives (Subduction Cycles and Deformation and Rift Initiation and Evolution), linked by five overarching scientific topics and themes, where transformative advances are likely to occur in the next decade, and where a focused scientific program could be most effective. Due July 2.

Humanities Collections and Reference Resources
This program supports projects that provide an essential underpinning 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. Awards are also made to create various reference resources that facilitate use of cultural materials, from works that provide basic information quickly to tools that synthesize and codify knowledge of a subject for in-depth investigation. Due July 19.
Opportunities for Promoting Understanding through Synthesis (OPUS)
All four clusters within the Division of Environmental Biology (Population and Community Ecology, Ecosystem Science, Evolutionary Processes and Systematic Biology and Biodiversity Inventories) encourage the submission of proposals aimed at synthesizing a body of related research projects conducted by a single individual or a group of investigators over an extended period. Due August 1.

DARPA-BAA-11-65: Defense Sciences Research and Technology, Response Date 8/09/2012
The mission of the Defense Advanced Research Projects Agency’s (DARPA) Defense Sciences Office (DSO) is to pursue and exploit fundamental science and innovation for National Defense. Therefore, DSO is soliciting proposal abstracts and full proposals for advanced research and development in a variety of enabling technical areas (more). Due August 9.

International Research Experiences for Students (IRES)
The International Research Experiences for Students (IRES) program supports development of globally-engaged U.S. science and engineering students capable of performing in an international research environment at the forefront of science and engineering. The IRES program supports active research participation by students enrolled as undergraduates or graduate students in any of the areas of research funded by the National Science Foundation. IRES projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the IRES program. Due August 21.

Fiscal Year 2012 Funding Opportunity Announcement (FOA) for Navy and Marine Corps Science, Technology, Engineering and Mathematics (STEM) Programs 12-002
The purpose of this announcement is to receive proposals in support of the Naval Strategic Plan and the Office of Naval Research's scientific outreach and education mission to develop its next generation of scientists and engineers. The objective of these activities will be to: 1. Establish successful, sustainable, and affordable long-term, national Navy-sponsored programs targeted at elementary and secondary schools as well as institutions of higher learning. 2. Increase the awareness of and exposure to Naval relevant STEM content, research experience and career options through education and outreach programs. 3. Establish and maintain a pipeline of students, particularly women and under-represented minorities, who will apply for and participate in Naval education and outreach programs. 4. Increase the number of domestic students (particularly students from under-represented groups) completing STEM degrees through enhancing student interest and attitudes toward science, technology, engineering, and mathematics. 5. Strengthen peer, family, and school support for STEM programs. 6. Ensure long-term inclusiveness of women and minorities in Naval science and technology programs. 7. Increase the number of students taking college-prep science and mathematics courses. 8. Strengthen the resources and training offered to STEM teachers. For more information on these priorities, please review the Naval STEM Strategic Plan at www.onr.navy.mil. (MORE). Open to September 30, 2012
**Fiscal Year 2012 Basic Research Initiative (BRI)**
The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). As a part of the Air Force Research Laboratory (AFRL), AFOSR’s technical experts foster and fund research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support USAF needs. AFOSR announces a competition for the Fiscal Year 2012 Basic Research Initiative (BRI) program, for the topics listed below. Detailed descriptions of the topics may be found in Section I of this announcement. It is expected that multiple awards will be made. The Air Force Defense Research Sciences Program is open to November 23, 2012.

**FY 12 Funding Opportunity For The National Consortium For Measurement And Signature Intelligence (MASINT) Research Program**
FY12 Program: Offerors are invited to present related work, on-going research activities and proposed future activities associated with the following areas: (A) Remote assessment of missile performance characteristics such as location, thrust, throw weight, warhead accuracy, defensive capabilities, etc. (B) Remote assessment and detection of weapons of mass destruction such as nuclear, biological, chemical and radiological weapons. This thrust area does not include improvised explosive devices utilizing standard explosives such as dynamite, TNT, C4, ANFO, etc. (C) Remote assessment and detection of directed energy weapons. This would include all lasers that are primarily designed as weapons as well as high-powered microwave (HPM) and electromagnetic pulse (EMP) weapons. Open to Dec. 31, 2012.

**DARPA Strategic Technologies**
The Defense Advanced Research Projects Agency's (DARPA) Strategic Technology Office (STO) is soliciting innovative proposals under this Broad Agency Announcement (BAA) for the performance of research, development, design, and testing that directly supports Strategic Technology Office (STO). This includes Finding Difficult Targets; Communications, Networks and Electronic Warfare; Shaping the Environment; and Foundational Technologies that support multiple STO focus areas. DARPA-BAA-12-09, entitled Strategic Technologies, is provided as an attachment to this presolicitation notice and includes information on the specific areas of interest, the submission process, proposal formats, as well as all other pertinent administrative information. DARPA-BAA-12-09 at FedBizOpps. Open through January 16, 2013.
interest, the submission process, proposal formats, as well as all other pertinent administrative information. Open to January 12, 2013.

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

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

**APS for Food Security, Nutrition, Biodiversity and Conservation**
The U.S. Agency for International Development (USAID) continues its commitment to foster more strategic alliances with the private sector’s “solution holders” who are often well positioned to address specific development challenges. The purpose of this APS is to announce USAID/Uganda’s plans to fund a limited number of Public Private Alliances to enhance food security and address issues of biodiversity and conservation. Competition under this APS will consist of a two-step process where applicants first submit a Concept Paper for an initial competitive review. All Concept Papers received will be evaluated for responsiveness to the application criteria specified in this APS. USAID will then request applicants successful in the first stage (i.e. selected Concept Papers) to submit a Full Application. This APS seeks PPAs in two key priority areas: (1) food security and nutrition; and (2) biodiversity and conservation. In regards to food security and nutrition, USAID/Uganda is seeking priority partnerships that include promising methods for substantially advancing coffee, maize, beans, agro-inputs, nutritional food products, financial services, and information and communication technologies (ICT) solutions. Biodiversity priorities include innovative methods for promoting ecotourism as well as averting ecological and trans-boundary threats. Open to September 15, 2013.

**National Oceanic and Atmospheric Administration (NOAA)**
The purpose of this notice is to request applications for special projects and programs associated with NOAA’s strategic plan and mission goals, as well as to provide the general public with information and guidelines on how NOAA will select proposals and administer discretionary Federal assistance under this Broad Agency Announcement (BAA). This BAA is a
mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through our competitive discretionary programs. It is not a mechanism for awarding congressionally directed funds or existing funded awards. Funding for potential projects in this notice is contingent upon the availability of Fiscal Year 2012, Fiscal Year 2013 and Fiscal Year 2014 appropriations. Applicants are hereby given notice that funds have not yet been appropriated for any potential activities in this notice. Publication of this announcement does not obligate NOAA to review an application, or to award any specific project, or to obligate any available funds. **Open until September 30, 2013.**

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

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

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

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

This BAA is focused on soliciting basic research projects that support the DTRA mission to safeguard America and its allies from WMD (e.g., chemical, biological, radiological, nuclear, and high-yield explosives) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.

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

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

**Small University Grants Open 5-Year Broad Agency Announcement**

Open to August 26, 2015
What We Do--

- 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. Proposal development retreats for new faculty.

- 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

**Workshops by Academic Research Funding Strategies**

We offer workshops on research development and grant writing for faculty and research professionals based on all published articles.

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