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The Role of Specificity in the Successful Proposal

As one of the most critical components of a successful research narrative, specificity must be evident throughout project descriptions. **Specificity grounds the research vision and goals in the key performance details unique to your research objectives, and thereby illuminates the importance of your research for reviewers.** Judiciously selected specifics display the uniqueness of your research narrative and define the particularity of your research plan. When key research specifics are embedded in, or follow, overarching statements defining the research vision and project goals, they significantly enhance the clarity and persuasiveness of the research narrative. Well-chosen specifics serve as the glue that binds together the more general narrative statements introducing your research topic to the reviewers. In effect, specifics help transition the narrative from a “black and white” portrait to a “full color” portrait of your proposed research (see Writing a Compelling Project Narrative in the February 15, 2012 issue).

**However, providing specificity should not be confused with inflating a research narrative with technical minutiae impenetrable to the typical reviewer.** Specifics should be clear, precise, logically ordered and, like Goldilocks, supplied in just the right amount. They should be chosen to illuminate rather than disguise the importance of your research. Specificity should sharpen rather than blur the focus of the research narrative, **encouraging reviewers to recall the key factors that make your research feasible, unique, significant, and hence fundable.** As in all effective narrative techniques, balance and proportion are important; therefore, you might think in terms of “Goldilocks Specifics,” somewhat like the “Goldilocks Planets” that are not so near a sun, nor so far away, that liquid water does not exist on the surface. In this case, the successful narrative gives neither too few nor too many specifics but just the right amount. Make your point, but don’t belabor it, **and remember that superlatives are not specifics.** Any attempt to substitute superlatives for specifics will be quickly noted by reviewers, and likely in an unfavorable way. **Specifics function in the narrative text as mirrors that reflect your capacity to perform.**

For example, vision statements and project goals, such as the following from a Department of Energy funded proposal, define the proposed research landscape in broad brush strokes: “The goals of the Greater Philadelphia Innovation Cluster (GPIC) for Energy Efficient Buildings are to improve energy efficiency and operability and reduce carbon emissions of new and existing buildings, and to stimulate private investment and quality job creation in the Greater Philadelphia region, the larger Mid Atlantic region, and beyond. GPIC will focus on full spectrum retrofit of existing average size commercial and multi-family residential buildings.”

Think of the vision and goals statements, such as above, as descriptions of some promised “units of change” (e.g., improved energy efficiency, improved energy operability, reduced carbon emissions, investments stimulated, and jobs created) that will occur over some “unit of time” that will result in some “unit of benefit.” Essentially, vision and goals statements
are promises of better things to come based on the proposed research. Without specifics, they are empty promises, or, as some might say, “all hat and no cattle.”

The basic role of specifics in the research narrative is to make your research vision and goals believable, convincing, and memorable to reviewers. Specifics will convince reviewers of your capacity to perform, of the reasonableness of your research plan and objectives, and of the promise that your research will advance the field or the strategic mission of a funding agency in some important way. By contrast, entire proposals or sections of proposals defining a major project goal, e.g., energy efficiency, but lacking a detailed description of the research to be done, the justification for doing it, the manner of doing it, the people who will do it, and the benefits of doing it lack specificity. Generous reviewers of such uninspiring text might first question their own short-term memory and hold themselves at fault, but one important rule of grant writing is to always blame the writer and hold the reviewer blameless should the narrative fail to make a convincing case for funding. If reviewers must repeatedly look back in your narrative text to find and recall the essential specifics of your proposed research, then the fault lies in the writing and not the reviewers’ memories, regardless of Lewis Carroll’s observation that “It’s a poor sort of memory that only works backwards.”

Why might narrative text lack specificity? It is easier and less time consuming to make general claims and promises than it is to select a logically connected series of specific details that illuminate your research objectives and answer the core questions listed above. Specifics serve to both test and prove the value of your ideas, and when they are lacking, it tells a reviewer that your ideas may also be lacking, or have yet to become fully developed. A proposal is judged in a kind of courtroom; the specifics of your proposal must answer reviewers’ questions and overcome their skepticism to pave the way for a positive verdict.

In other cases, narrative text might lack specificity because one or more authors have mistakenly repeated various versions of the same goals and confused this repetition with an offering of specifics. Repeating goals in various ways does not address the core questions reviewers need answered. In this regard, keep in mind Richard Feynman’s observation: “You can know the name of a bird in all the languages of the world, but when you’re finished, you’ll know absolutely nothing whatever about the bird. So look at the bird and see what it’s doing. I learned very early the difference between knowing the name of something and knowing something.” In the example used above, think of a goal as the name of something, in this case, “energy efficient buildings.” Think of the specifics in your narrative as proof or validation that you know something about achieving your research goal. In this case, it might be offering specifics about how building envelopes, smart buildings, sensors, materials, design practices, energy systems, construction practices, and the like, contribute to achieving your research goal. Stating a goal without then offering compelling specifics that make clear the process you will use to transition a goal to reality, i.e., a research outcome, is the domain of politicians and bumper sticker slogans and not that of the successful research proposal.

Moreover, continuing with the energy efficiency example, specifics need to be judiciously selected and characterized by the following:

- **Relevance to the research goal**, e.g., if your energy efficient materials research focuses on only one of several areas, such as photovoltaics, thermoelectrics, solid-state lighting,
among many others, your task is to offer specifics relevant only to your proposed research and not offer specifics relevant to the entire universe of energy efficient materials;

- **Appropriateness of scale**, e.g., if the crystal structure of a material is not key to understanding the research then don’t belabor the Miller Index, or if only the time duration of an event is key to your research then there is no need to belabor the cesium oscillator or explain the history of NIST;

- **Priority for accomplishing research goal**, e.g., offer the key specifics first that make your case most clearly and briefly and in a way most memorable to reviewers, but don’t offer an exhaustive list of specifics that overwhelm reviewers, thereby leaving it to reviewers to determine the most important details needed to convince them of your capacity to achieve your research goals.
Planning Your FY 2013 NSF Funding Strategies

By Mike Cronan, co-publisher
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The NSF budget request announced February 13, 2012 for FY 2013 is $7.373 billion, an increase of $340.0 million (4.8 percent) over the FY 2012 budget. Of the total proposed budget, research and related activities will be funded at $5.98 billion, education and human resources at $875 million, both increases of over 5%, and research equipment and facilities at $196 million, essentially unchanged from FY 2012. As stated in a companion article on DOE in this issue of the newsletter, as with hockey player great, Wayne Gretzky, researchers need to know not just where the “budget puck” is (FY2012) but where it will [likely] be (FY2013) and to use that information to plan a successful research development strategy for your campus related to obtaining research and education funding from NSF and thereby develop a more robust NSF portfolio that will make you more competitive for future funding.

While the politics of budgets in Congress most often focus on the total amount, the more useful information to developing a long range research development strategy for positioning yourself or your institution for greater funding success lies at the intersection of understanding the three key ingredients of research funding success at NSF and their relationship to each other: (1) NSF budget allocations within programmatic areas, e.g., increases, decreases, new programs, and program eliminations, as detailed in the following text specific to the FY 2013 budget; (2) agency strategic research plans specific to program areas, e.g., Science, Engineering, and Education for Sustainability (SEES, $202.50 million) and Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE, $63.0 million); and (3) your own or your institutional self-assessment of the campus capacities and expertise that can be configured, or configured by research partnerships, to implement a long range plan to increase your research funding success at NSF.

NSF FY 2013 research priority areas proposed for funding include:
- Fostering the development of a clean energy economy.
- Supporting future job creation through advanced manufacturing and emerging technologies.
- Protecting critical infrastructure.
- Promoting multidisciplinary research in new materials, wireless communications, cyberinfrastructure, and robotics.
- Developing the next generation of scientific leaders through support for graduate fellowships and early career faculty.
- Advancing evidence-based reforms in science and mathematics education.

*A major emphasis in FY 2013 is the OneNSF Framework, a comprehensive suite of programs funded in total at $807 million*, which aims to enable seamless operations across organizational and disciplinary boundaries. OneNSF allows NSF to respond to new challenges in a changing global environment, leverage resources and opportunities for maximum impact, and
provide leadership to establish innovative practices, programs, and paradigms that advance scientific knowledge and science, technology, engineering, and mathematics (STEM) education. This below list of NSF’s FY 2013 priority research and education programs represents a critical research landscape to understand in terms of your developing a strategic research development plan at all scales for increasing your success at NSF (see NSF Director Subra Suresh, NSF FY 2013 Budget Request Presentation). These major priorities in the request include:

- **Cyber-enabled Materials, Manufacturing, and Smart Systems (CEMMSS)** ($257.42 million) will transform static systems, processes, and edifices into adaptive, pervasive “smart” systems with embedded computational intelligence that can sense, adapt, and react. The smart systems of tomorrow, created through CEMMSS, will vastly exceed those of today in terms of adaptability, autonomy, functionality, efficiency, reliability, safety, and usability. CEMMSS plays a key role in NSF’s growing portfolio of advanced manufacturing investments.

- **Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21)** ($106.08 million) aims in FY 2013 to more deeply address a highly science-driven integration of cyberinfrastructure (CI), supporting development of new statistical, mathematical, and computational methods, algorithms, and tools, as well as the cultivation of the next generation of computational and data-enabled researchers who prototype, develop, and use CI in all disciplines.

- **Expeditions in Education (E2)** ($49.0 million) establishes a partnership between the Directorate for Education and Human Resources (EHR) and other research directorates and offices. E2 will integrate, leverage, and expand STEM education research and development to improve learning in science and engineering disciplines and capitalize on the scientific assets across NSF to enhance EHR investments in learning and education.

- **NSF Innovation Corps (I-Corps)** ($18.85 million), launched in FY 2011, will continue to establish opportunities to assess the readiness of emerging technology concepts for transitioning into valuable new products through public-private partnerships. I-Corps will bring together technological, entrepreneurial, and business know-how to move discoveries toward commercialization.

- **Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)** ($63.0 million) integrates NSF’s existing interdisciplinary efforts with a suite of new Foundation wide activities. INSPIRE encourages research that involves multiple disciplines, connects disciplines, or creates new disciplines. It aims to widen the pool of prospective discoveries that may be overlooked by traditional mechanisms.

- **Secure and Trustworthy Cyberspace (SaTC)** ($110.25 million) investment aligns NSF’s cybersecurity investments with the four thrusts outlined in the December 2011 national cybersecurity strategy, Trustworthy Cyberspace: Strategic Plan for the Federal Cybersecurity Research and Development Program. SaTC directly addresses the critical Administration priority of cybersecurity issues by supporting research that seeks to protect the Nation’s critical information technology infrastructure, including the
Internet, from a wide range of threats that challenge its security, reliability, availability, and overall trustworthiness.

- **Science, Engineering, and Education for Sustainability (SEES)** ($202.50 million) focuses on targeted programs that promote innovative interdisciplinary research to address pressing societal issues of clean energy and sustainability. In FY 2013, SEES includes five programs that are consistent with the SEES long-term vision: Coastal SEES; Arctic SEES; Sustainable Chemistry, Engineering, and Materials (SusChEM); Creating a More Disaster-Resilient America (CaMRA); and a program on the Role of Information Sciences and Engineering in SEES (RISES). In addition to the OneNSF Framework investments, NSF’s multifaceted portfolio will continue to advance all fields of science and engineering and educate the workforce of tomorrow. A few key highlights:
  - **Clean Energy** ($355.38 million): NSF’s clean energy investments include research related to sustainability science and engineering, such as the conversion, storage, and distribution of diverse power sources (including smart grids), and the science and engineering of energy materials, energy use, and energy efficiency.
  - **Advanced Manufacturing** ($148.90 million): Advanced manufacturing research invests in emerging technologies that promise to create high quality manufacturing jobs and enhance our global competitiveness. As noted above in the discussion on CEMMSS, these investments are directly linked to research in areas of national importance such as cyber-physical systems and advanced robotics research; materials processing and manufacturing; and advanced semiconductor and optical device design. Investments in advanced manufacturing are found throughout NSF’s portfolio, in activities such as Nanoscale Science and Engineering Centers (NSECs), the National Nanotechnology Initiative (NNI), and the Small Business Innovation Research/Small Business Technology Transfer programs (SBIR/STTR).

- **The Faculty Early Career Development program (CAREER)** ($216.49 million) develops the future scientific and technical workforce through support of young faculty who are dedicated to integrating the research with teaching and learning. In FY 2013, NSF will support approximately 40 more CAREER awards than in FY 2012, for a total of 440 new awards. The CAREER portfolio includes projects that range across all fields of science and engineering supported by the Foundation, including high priority fields such as clean energy, climate change, STEM education, and cybersecurity.

- **The Graduate Research Fellowship program (GRF)** ($242.98 million) supports the development of students and early-career researchers in order to cultivate the next generation of STEM professionals. In FY 2013, 2,000 new fellowships will be awarded, maintaining the doubling of new fellowship awards achieved in FY 2010. To address inflationary pressures on the long-stagnant GRF stipend level, the FY 2013 Request increases the stipend to $32,000.

- **Science and Technology Centers (STCs)** ($74.39 million total for all cohorts) in FY 2013, a new cohort of STCs is initiated ($25.0 million) that will continue the tradition of
conducting world-class research through partnerships among academic institutions, national laboratories, industrial organizations, and/or other public/private entities, and via international collaborations. STCs provide an innovative way for researchers to conduct investigations at the interfaces of disciplines and to invest in high-risk, potentially transformative science.

- **Research at the Interface of the Biological, Mathematical, and Physical Sciences (BioMaPS)** ($30.17 million), is a collaboration among the Directorates for Biological Sciences, Engineering, and Mathematical and Physical Sciences that aims to accelerate the understanding of biological systems, and then apply that knowledge into fundamental understanding and new technologies, particularly clean energy.

- **Experimental Program to Stimulate Competitive Research (EPSCoR)** ($158.19 million) assists NSF in its mandate to promote scientific progress nationwide. EPSCoR effects lasting improvements in the research capacity of institutions in participating jurisdictions to promote broader engagement at the frontiers of discovery and innovation in science and engineering.

- **Enhancing Access to the Radio Spectrum (EARS)** ($50.50 million), begun in FY 2012, continues to partner the Directorates for Engineering, Computer and Information Science and Engineering, Mathematical and Physical Sciences, and Social, Behavioral, and Economic Sciences in supporting the basic research that funds research and development of spectrum-sharing technologies.

- **US Ignite** ($10.0 million) leverages NSF’s mid-scale research infrastructure investment in the Global Environment for Network Innovations (GENI). US Ignite provides a unique, at-scale, network testbed for foundational research in networking, distributed systems, cloud computing, and security and for public sector gigabit application development, (i.e., in areas such as advanced manufacturing, health, education, energy, transportation, public safety and emergency preparedness), especially those applications not possible to deploy on today’s Internet.

- **Science, Technology, Engineering, and Mathematics (STEM) Education: K-16 Math Education:** As part of the nation’s strategic plan in STEM education, NSF is partnering with the Department of Education (ED) to launch an evidence-based initiative to improve K-16 mathematics education and knowledge building. This new endeavor will support researchers and educators who have the greatest potential to transform mathematics learning. In FY 2013, NSF’s Directorate for Education and Human Resources (EHR) and ED will each contribute $30.0 million. EHR’s contributions will be through support for the Discovery Research K-12 (DR K-12), and Transforming Undergraduate Education in STEM (TUES) programs.

- **Widening Implementation and Demonstration of Evidence-based Reforms (WIDER) program** ($20.0 million) will fund research and demonstration projects exploring how to achieve widespread sustainable implementation of evidence-based undergraduate instructional practices to improve student outcomes.

- **Transforming Undergraduate Education in STEM (TUES)** ($61.46 million) aims to improve the quality of STEM education for all undergraduate students by supporting
efforts to create, adapt, and disseminate new learning materials and teaching strategies to reflect advances both in STEM disciplines and in what is known about teaching and learning.

- **Federal Cyber Service: Scholarship for Service (SFS)** ($25.0 million) seeks to increase the number of qualified students entering the fields of information assurance and computer security and to increase the capacity of the United States higher education enterprise to continue to produce professionals in these fields to meet the needs of our increasingly technological society. SFS directly addresses the Nation’s increasing need for innovative solutions to potential cybersecurity concerns (more).

Moreover, for FY 2012 – FY 2013, NSF has established the following three agency specific priority goals:

- **Priority Goal: Access to Digital Products of NSF-Funded Research**
  NSF has set a goal to establish policies for public access to high-value data and software in at least two data-intensive scientific domains. Digital data are increasingly one of the primary products of scientific research, and should be accessible and linked to one another so that scientists can verify and reproduce major findings in the literature and repurpose the data to enable new discoveries. Simultaneously, access to digital products of research enhances openness and transparency in the scientific enterprise and enables new types of multi-disciplinary research and education. The priority goal supports this vision of increasingly collaborative and multi-disciplinary science by assuring that knowledge and data can flow easily across traditional disciplinary boundaries.

- **Priority Goal: Undergraduate Programs**
  As part of NSF’s long-term core commitment to develop a diverse and highly qualified science and technology workforce, NSF will measure the percent of institutions funded through NSF undergraduate programs that document the extent to which they use proven instructional practices. The FY 2013 goal is to reach 80 percent. Research shows that evidence-based instructional practices lead to improved student learning, and thus are a useful metric for assessing impact on a well-prepared workforce. One way that NSF can advance its efforts to invest in the preparation of a strong science and engineering workforce is by encouraging and facilitating the use of empirically-based instructional practices in undergraduate science, technology, engineering, and mathematics (STEM) education.

- **Priority Goal: NSF Innovation Corps**
  NSF has set a priority goal to increase the number of entrepreneurs emerging from university laboratories. Through the NSF Innovation Corps (I-Corps) program, NSF seeks to accelerate the development of new technologies, products, and processes that arise from fundamental research. With I-Corps, NSF supports NSF-funded researchers whose efforts will be augmented – in the form of mentoring and funding – to accelerate the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third party funding. NSF investments will
strategically strengthen the innovation ecosystem by addressing the challenges inherent in the early stages of the innovation process. NSF will track achievement of this goal by measuring the percent of I-Corps teams that have tested the commercial viability of the product or service. The FY 2013 goal is to achieve 80 percent. Please refer to Performance.gov for information on Federal Priority Goals and NSF’s contributions to those goals.

This budget request also includes eleven recommended cuts and consolidations, totaling $67.0 million. These are described here, including: elimination of three Computer and Information Science and Engineering Research Programs; termination of the Cyber-enabled Discovery and Innovation (CDI) program; elimination of four Mathematics and Physical Sciences Research Programs; reduced funding for Nanoscale Science & Engineering Centers (NSECs); and elimination of two public outreach programs.

- **Computer and Information Science and Engineering Research Programs** (-$17.0 million total): Three programs within the Directorate for Computer and Information Science and Engineering (CISE) are eliminated since they have reached their planned endpoints and have achieved their original goals. These programs are: Network Science and Engineering (NetSE) (-$3.0 million); Social-Computational Systems (-$7.0 million); and the Interface between Computer Science and Economic & Social Sciences (ICES) (-$7.0 million). Support for these research areas will be absorbed into CISE core programs.

- **Cyber-enabled Discovery and Innovation (CDI)** (-$29.0 million total): NSF eliminates funding for the agency-wide CDI program, as the program has reached its planned conclusion and has achieved many of its original goals. Funding will be redirected to support new efforts in two NSF cross-agency initiatives (CEMMSS and CIF21) in FY 2013 that will build on the accomplishments made in the CDI program.

- **Mathematical and Physical Sciences Research Programs** (-$10.0 million total): Four programs within the Directorate for Mathematical and Physical Sciences (MPS) are eliminated because they overlap with larger core disciplinary programs or they have achieved their original goals. Two programs are eliminated as they are no longer needed as stand-alone programs: Mathematical Physics (-$2.0 million) and Grid Computing (-$2.0 million). Research conducted under the third program, Cultural Heritage Science (-$4.0 million), will be funded through regular MPS disciplinary programs. Lastly, the CHEDMR-DMS Solar Energy Initiative (SOLAR) (-2.0 million) will be subsumed within the broader framework of NSF’s SEES investment through the Sustainable Energy Pathways solicitation.

- **Nanoscale Science & Engineering Centers (NSECs)** (-$5.0 million total): NSF reduces support for the NSEC program because the state of the research in this area has matured significantly and the research should advance more rapidly in a different, more use-inspired research center program. Several NSEC grants may transition to the Nanosystems Engineering Research Centers (NERCs) as the nano-devices and processes created at graduating NSECs move to the systems level and potential commercialization. NSF will continue to support eleven continuing NSECs in FY 2013.
Research Development & Grant Writing News

- **Public Outreach terminations** (-$6.0 million total): NSF eliminates two small stand-alone public outreach programs because they lack rigorous evaluation and are duplicative of the larger, well established peer-reviewed Advanced Informal STEM Learning (formerly, Informal Science Education) program. The eliminated programs are: Communicating Science Broadly (-$2.0 million) and Connecting Researchers with Public Audiences (-$4.0 million).
Faculty and staff in university research offices often receive requests to critique and comment on a proposal. Depending on your experience and success in writing proposals, or your skills as an editor, or your disciplinary expertise, or perhaps just your insights as an intelligent and logical reader, you can choose from a range of responses to enhance the competitiveness of a research narrative. Completing this task carefully can make the difference between success and failure by ensuring that a substantive critique of a proposal occurs before the funding agency reviewers conduct their review and make the funding recommendation.

If you are asked to review a proposal, be forthright, both in terms of your willingness to do so and in your willingness to give a candid critique. Your critique needs to be unflinchingly objective and offered in the spirit of Tom Hank’s comment to right-fielder Bitty Schram in the movie, A League of Their Own: “Are you crying? Are you crying?! There’s no crying in baseball!” The same admonition needs to be heeded by authors requesting a critique of their proposal. Authors must prepare themselves to hear critical responses to their narrative.

When asked to critique a proposal, be forthright about whether you do or do not have the time to offer a thorough review. If you do not have the time, decline the request. This is much better than raising expectations, but then keeping the proposal for several days, or longer, doing a harried and guilty skim of the narrative, and responding to the author with a “looks good to me” observation.

If you do have the time to critique the proposal, perhaps the two most important favors you can do the author are to conduct a thorough review in the shortest possible time to avoid slowing progress on the narrative. Depending on your expertise, you can select from many levels of review to benefit the authors.

However detailed your response, your first step in reviewing a proposal must involve a careful reading of the solicitation and review criteria before reading the actual draft of the research narrative or project description. Reading a proposal draft without first understanding the solicitation and review criteria blinkers your response. Consider Lewis Carroll’s observation in Alice in Wonderland: “If you don’t know where you are going, any road will get you there.” This gets to one of the more common mistakes made in writing research grants, i.e., the research narrative does not respond fully to the solicitation, one of the more common reasons for denying proposals. Therefore, make every attempt to filter your observations about a draft proposal through the lens of the solicitation, focusing on the agency’s research objectives and the review criteria used to judge how well your proposal meets those research objectives. In effect, the solicitation acts as the sacred text that must be understood before competing successfully for funding, or, in more literary terms, the solicitation is the map in Robert Louis Stevenson’s Treasure Island—read and follow the map to locate the treasure.

Your point of view, or perspective, in critiquing a draft proposal includes both the expertise you bring to the process and the important requirement that you also represent the
**agency’s point of view as you understand it from reading the solicitation.** Think of yourself as representing the interests of the funding agency in your critique of a draft proposal, effectively serving as a surrogate reviewer for the agency, and thereby best serving the interests of the person who asked you to critique a draft proposal. *After all, it is the agency’s research priorities, not the author’s, that are paramount in the decision to fund or not fund the proposal.*

By critiquing a draft proposal from the perspective **of the funding agency as expressed in the solicitation**, you will maximize your contribution to the narrative’s competitiveness by ensuring that the draft maps tightly to the agency’s domain as defined by the solicitation, the review criteria, and any other agency-specific requirements of which you may be aware.

Having read the solicitation carefully, you are able to make suggestions to the author ensuring that the research narrative:

- responds fully to all agency requests for information/questions asked
- offers information in the order requested
- provides the required detail and specificity
- demonstrates the importance of the research to the agency objectives
- integrates all review criteria into the narrative to ensure all criteria are met, and
- complies with agency formatting requirements.

By ensuring that the draft research narrative responds fully to the solicitation guidelines, **including all key documents referenced in the solicitation**, you have come a long way in helping the author of the proposal increase the likelihood of success. The above might be thought of as the macro-review of the draft proposal. This is then followed by a micro-review, which entails a much more finely-grained critique that addresses factors not explicitly defined in the solicitation but critical to the success of the proposal nonetheless.

These include, for example, how well the proposal is written, how well the proposal is argued, how well the proposal is formatted, how well visuals enhance and complement the narrative text (see *Graphics as a Narrative Integrator* in the November 15, 2011 issue), along with the more intangible requirements about how compelling a case is made for funding (see *Writing a Compelling Project Narrative* in the February 15, 2012 issue).

**Critiquing how well a proposal is written** involves multiple steps, each of which plays a role in the proposal’s success. You might begin with a simple edit for grammar and syntax, e.g., active and passive voice, sentence structure, spelling, careless errors in the mechanics, and related issues addressed in numerous on-line editing and writing guides, such as the Purdue Owl or William Strunk, Jr. and E. B. White’s classic *The Elements of Style*, available free online from many sources, or the *Chicago Manual of Style*. Of course everyone has an opinion about what constitutes good writing, and many have very strongly held opinions, e.g., “**50 Years of Stupid Grammar Advice**” in The Chronicle (2009) about *The Elements of Style*, a critique written by the co-author of *The Cambridge Grammar of the English Language* (2002).

To critique a proposal, you needn’t enter into a heated discussion about E. B. White as a competent or incompetent grammarian. Agency reviewers thankfully will not be waging these arguments, either. Competent, error-free writing will suffice for proposal authors. Strive for
clarity and simplicity, keeping in mind Professor Albert Einstein’s observation about good writing: “If you can’t explain it simply, you don’t understand it well enough. Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in a language comprehensible to everyone.”

With this in mind, critique a draft narrative to ensure it has been written competently and argued logically. **Judge it for clarity: does the narrative make easily apparent to you the kind of research to be done, how it will be done, why it will be done, who will do it, and why it is important to the funding agency mission?**

By extension, if clarity functions as the ultimate goal of the well-written research narrative, then **ambiguity acts as its evil twin, a harbinger of narrative chaos**, the equivalent of Lex Luthor injecting Kryptonite into the narrative text. This becomes particularly important when reading proposals written by authors for whom English is a second language. In these cases, unfamiliar word patterns and usage may distract reviewers who are not expected to resolve ambiguities in the research narrative, or labor over poorly written text in an attempt to discern the author’s intentions. Use your critique to help the author of a draft narrative understand that the key to success in research grant writing lies in **writing for the reviewers**, i.e., make the research narrative easily accessible to the reviewers; don’t fall into the Humpty Dumpty trap of writing for yourself alone: “When I use a word,” Humpty Dumpty said in rather a scornful tone, “it means just what I choose it to mean - neither more nor less.” **Funding agencies do not reward solipsistic viewpoints.**
USDA Research Budget Directions, FY2013
By Mike Cronan, co-publisher

The proposed FY 2013 USDA budget provides $23 billion in discretionary funding, a decrease of nearly 3 percent or almost $700 million, below the 2012 enacted level. Targeted investments are made in renewable energy, housing, utilities, infrastructure, rural development, and key innovation research areas of particular interest to university researchers. For example, the budget invests $6.1 billion in renewable and clean energy and environmental improvements to spur the creation of high-value jobs to make the nation more energy independent. It increases the 2012 funding level for the Agriculture and Food Research Initiative to $325 million and targets areas that are key to American scientific leadership: human nutrition and obesity reduction; food safety; sustainable bioenergy; global food security; and climate change. This $325 million—a $60 million increase above the 2012 enacted level—would provide funds for competitive research grants made through the Agriculture and Food Research Initiative. The budget also increases USDA in-house research in select areas such as crop protection, sustainable agriculture, and food safety by $75 million, and fully funds the Census of Agriculture (see Agriculture Secretary Tom Vilsack FY 2013 budget statement).

The 2013 Budget (USDA FY 2013 Budget Summary and Annual Performance Plan, page 96) requests approximately $1.244 billion in discretionary funding for NIFA, an increase of $37 million over 2012. The continues a move toward the use of competitive grants to generate the solutions to the nation’s most critical problems.

The two key USDA companion documents to review as part of your research development strategies specific to USDA include the USDA Strategic Plan for 2010-2015 and the recently released Strategic Plan Update (2012). When these documents are then mapped to the domain of your institutional capacities you will be able to better plan your USDA research agenda for FY 2013. While there is no certainty in the Congressional budget process for this proposed FY2013 USDA budget, these documents do give you the information your need to better calibrate your research capacities to the priorities of USDA.

With this in mind, the high-priority research initiatives important to university researchers include the following identified in the 131-page USDA FY 2013 Budget Summary and Annual Performance Plan and complemented in the USDA Strategic Plan and 2012 Update:

- **Agriculture and Food Research Initiative (AFRI).** AFRI is the Nation’s premier competitive, peer-reviewed research program for fundamental and applied sciences in agriculture. It is broad in scope with programs ranging from fundamental science to farm management and community issues. The 2013 Budget proposes funding of $325 million for AFRI, an increase of $60.5 million. Major initiatives include an increase of $30 million for the Department’s alternative and renewable energy research initiative to develop high-quality, cost-effective feedstocks for biofuel production, conduct targeted research on enhanced value co-products and land-use changes resulting from feedstock
production and conversion, and identify the socioeconomic impacts of biofuels in rural communities in order to enhance rural economies; $3.7 million for research to address the adaptation of production systems to climate variables; $7.2 million for international food security to expand research, education and extension efforts on sustainable plant and animal production systems as well as plant and animal diseases that threaten public health and agricultural production; $2.2 million for an integrated food safety research program which will minimize antibiotic resistance transmission through the food chain and minimize microbial food safety hazards of fresh and fresh-cut fruits and vegetables; $7.2 million in nutrition and obesity prevention research; and $5.2 million for the NIFA Fellows program which directly supports graduate education in priority research programs through AFRI. Finally, the Budget includes an increase of $3.2 million for AFRI’s Foundational Research programs. These programs address priority areas needed to continue building a foundation of knowledge in fundamental and applied food and agricultural sciences critical for solving current and future societal challenges.

- **Higher Education Programs.** The 2013 Budget proposes an increase of $1.8 million to strengthen training programs in the food and agricultural sciences. Through the Graduate Fellowships Grants Program, Institution Challenge Grants Program, and the Multicultural Scholar Program, NIFA will support the recruitment of highly promising individuals to research and teaching careers, strengthen institutional capacities, and increase the ethnic and cultural diversity of the workforce in the food and agricultural sciences.

- **Hispanic-Serving Institutions (HSI):** The 2008 Farm Bill authorized the establishment of an endowment fund for Hispanic Serving Agricultural Colleges and Universities. The 2013 Budget proposes an increase of $10 million to establish the fund that will lead to significant and measurable advancement of Hispanic students in the food and agricultural sciences. Funding will come from the annual interest generated by the Endowment.

- **Sustainable Agriculture Research and Education (SARE) Program.** SARE advances agricultural innovations that improve profitability, environmental stewardship and quality of life. The 2013 Budget proposes an increase of $3.5 million for the creation of a new Federal-State Matching Grant SARE Program to assist in the establishment and enhancement of State sustainable agriculture research, education and extension programs. The matching requirement will leverage State or private funds and build the capabilities of American agriculture in becoming more productive and sustainable. NIFA estimates that nearly 14,000 farmers and ranchers will gain a benefit from a change in practice learned by participating in a SARE project.

- **Children, Youth, and Families at Risk (CYFAR) Program.** The 2013 Budget proposes an increase of $0.8 million for CYFAR funding to assist Land-Grant universities and
Cooperative Extension systems in developing educational community-based programs for at-risk children and their families. Since its inception, CYFAR has supported programs in more than 600 communities in all States and territories and provided access to educational resources, and essential technological skills for youth and adults in at-risk environments.

- **Grants Management Systems.** With increased funding for AFRI, a significant rise in the number of applications is anticipated requiring increased efficiency of the grant-making processes and systems. Additionally, the breadth and types of grants made will increase requiring the development of new grant management tools. The 2013 Budget proposes an increase of $3.2 million improve and consolidate its grants management systems, which will substantially lower the transaction costs of applying for an AFRI or other NIFA competitive grant, while increasing proposal receipt and acceptance speeds and accuracy.

Finally, NIFA has the primary responsibility for providing linkages between the Federal and State components of a broad-based, national agricultural research, extension, and higher education system. NIFA provides funding for projects conducted in partnership with the State Agricultural Experiment Stations, the State Cooperative Extension System, land grant universities, colleges, and other research and education institutions, as well as individual researchers. Federal funds are distributed to universities and institutions by statutory formula funding, competitive awards, and grants. NIFA is responsible for administering USDA's primary competitive research grants program, the Agriculture and Food Research Initiative, which supports investigator-initiated research with strong potential to contribute to major breakthroughs in agricultural science.

Again, in-depth FY 2013 proposed budget information can be found in the 131 page report [here](#) and used to tailor a strategic research development plan specific to your institution in a way that increases your overall success at USDA and particularly NIFA.
The FY 2013 budget published February 13 and highlighted by AAAS gives some important insights into the research and education priorities of federal research agencies of particular interest to university researchers. While predicting budget outcomes has become increasingly difficult, the focus and emphasis areas within the budgets of specific research agencies gives some insight into the research priorities for the coming years, particularly when the budget is understood in the context of an agency’s strategic plan and other performance metrics. In the case of DOE, the proposed budget of $27.2 billion increases funding for the Office of Science (up 2.4% to $5 billion) and ARPA-E (up 27.5% to $325 million). The February 13 budget presentation slides used by Secretary Chu are available online here. The slides contain detailed budget numbers for FY 2013 across the DOE office and programs. This budget information also appears in Budget Highlights. It is important to note that the focus and research funding categories of the proposed budget grew out the DOE 2011 Strategic Plan and the DOE Addendum to that plan published in February, 2012. By comparison, at other key research agencies, NSF and USDA’s Agriculture and Food Research Initiative (AFRI) can be expected to see funding increases, whereas basic research funding at DOD and NIH would remain relatively unchanged from the current budget. NASA’s research portfolio would be reduced by approximately 3%. Like hockey player great, Wayne Gretzky, researchers need to know not just where the “budget puck” is (FY2012) but where it will [likely] be (FY2013) and to use that information to plan a successful campus research strategy for for obtaining DOE research and education funding. Moreover, faculty and research administrators who plan for DOE research and/or educational partnerships on their own campuses and with collaborators at other universities will gain a significant competitive advantage from developing partnerships and coordinated research networks at various scales as the potential research opportunities evolve in those FY 2013 areas likely to see increases in DOE funding (see Writing the DOE HUB for Energy Storage in the February 15, 2012 issue of this newsletter). Of course, given the dynamics of budget negotiations in Congress, it is prudent to keep in mind Niels Bohr’s observations that “predictions are difficult, especially about the future,” a situation likely exacerbated by Congress’s failure to heed the admonition of House Speaker Sam Rayburn noting that there’s “no education in the second kick of the mule.” But one can always hope. Nonetheless, these budget tables provide clear and sufficient detail to give a sense of how the DOE will identify its future research priorities and consequently proportionally allocate its research dollars. This information, in turn, can be used to align your individual or campus capacities across the research domains funded by DOE. This allows a more orderly, timely, and farsighted DOE strategic funding plan to be put in place and hence positions you better to develop successful DOE proposals during the current and next fiscal year. As can be seen in reviewing the DOE budget tables, some research areas will get significant increases, e.g., energy
and environment and ARPA-E, while other areas will experience significant cuts, e.g., nuclear energy. Those research efforts due to see projected significant increases in funding obviously appear best positioned to increase their overall institutional DOE portfolios.

While the FY 2013 budget request of $27.2 billion is up 3.2% over the FY 2012 enacted budget, the specific insights into DOE’s future direction come from illuminating the intersection of the DOE Strategic Plan and the changes within DOE offices and programs that show an increase, decrease, or no change from the FY 2012 enacted budget to the proposed FY 2013 budget.

For example, DOE released its 2011 strategic plan last May and updated the strategic plan on February 13, 2012 concurrent with the publication of the FY 2013 budget on the same day. The plan serves as a comprehensive blueprint to guide the agency’s core mission of ensuring America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. The update to the strategic plan identified two new priority research goals reflected in the proposed budget.

- Reduce the cost of batteries for electric drive vehicles to help increase the market for Plug-In Hybrids and All Electric Vehicles and thereby reduce petroleum use and greenhouse gas emissions. By October 2013, demonstrate a prototype Plug-In Hybrid battery technology that is capable of achieving a cost of $400/kWhr (useable energy) during high volume manufacturing (100,000 packs per year) compared to a 2008 baseline of $1000/kWhr. (new goal: replaces the former battery manufacturing High Priority Performance Goal)

- Make solar energy as cheap as traditional sources of electricity. By the end of the decade, drive the cost of solar electricity down to: $1/W at utility scale; $1.25/W at commercial scale; and $1.50/W at residential scale. By Dec. 2013, demonstrate a prototype thin film or film silicon module with an efficiency of greater than 21% and a balance-of-system with a 50% reduction of the permitting and installation costs to $1.50/W. (new goal: replaces the former High Priority Performance Goal to double renewable energy generation).

Important insights and hence competitive advantages can be gained by exploring the intersection of the FY 2013 DOE budget, the DOE Strategic Plan and Addendum, and your research capacities. At the institutional level, insights gained by exploring the intersection of these three factors can significantly enhance the portion of your research portfolio funded by DOE.
Upcoming Fellowship Funding Opportunities

Ruth Lilly Poetry Fellowships
Five Ruth Lilly Poetry Fellowships in the amount of $15,000 will be awarded to young poets through a national competition sponsored by the Poetry Foundation, publisher of Poetry. Established in 1989 by the Indianapolis philanthropist Ruth Lilly, the fellowships are intended to encourage the further study and writing of poetry. Due March 31.

The Rachel Tanur Prize for Visual Sociology
The Social Science Research Council announces a twenty-year program of biannual grants from the Mark Family Fund for the Rachel Tanur Memorial Prize for Visual Sociology. The prize recognizes students in the social sciences who incorporate visual analysis in their work. It is named for Rachel Dorothy Tanur (1958-2002), an urban planner and lawyer who cared deeply about people and their lives and was an acute observer of living conditions and human relationships. The 2012 competition for the Rachel Tanur Memorial Prize for Visual Sociology will open in January 2012 and applications will be judged by members of the Visual Sociology group of the International Sociological Association (ISA). Up to three prizes will be awarded at the Second ISA Forum of Sociology: Social Justice and Democratization, to be held in Buenos Aires, Argentina in August 2012. First prize is $2,500, second prize is $1,500, and third prize is $500. Due April 20.

Christine Mirzayan Fellowships
The Christine Mirzayan Science & Technology Policy Graduate Fellowship Program within the Policy and Global Affairs Division of the National Academies is designed to engage its Fellows in the analytical process that informs U.S. science and technology policy. Fellows develop basic skills essential to working or participating in science policy at the federal, state, or local levels. Due by May 1.

The Horton (Hydrology) Research Grant
In 1982, the Hydrology Section of AGU was granted access to a portion of the income of the Robert E. Horton Fund for Hydrologic Research. This permitted the initiation of the Horton Research Grant for Ph.D. students, with a purpose to promote excellence through
encouragement of the next generation of professionals in the hydrological sciences. The first Horton Research Grant was awarded in 1983. Each year the grant has been awarded to one or more students during their candidacy for a Ph.D. degree in hydrology, water resources, or a closely related field. **Due May 1.**

**AHRQ Grants for Health Services Research Dissertation Program (R36)**
The overall goal of the AHRQ grants for Health Services Research Dissertation Program is to help ensure that a diverse pool of highly trained health services researchers is available in adequate numbers and appropriate research areas to address the research mission and priorities of AHRQ, noted below. This announcement represents the continuation of an AHRQ program that provides support to individuals who are conducting research undertaken as part of an academic program to qualify for a research doctorate degree. **Due May 1.**

**NEH Fellowships**
Fellowships support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources in the humanities. Projects may be at any stage of development. NEH encourages submission of Fellowships applications from faculty at Hispanic-Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities. **Due up to May 1. Sample successful applications:**

- American studies
- British Literature
- European History I
- European History II
- Latin American Studies
- Philosophy

**Wenner-Gren Foundation for Anthropological Research - Dissertation Fieldwork Grants**
Dissertation Fieldwork Grants are awarded to aid doctoral or thesis research. The program contributes to the Foundation's overall mission to support basic research in anthropology and to ensure that the discipline continues to be a source of vibrant and significant work that furthers our understanding of humanity's cultural and biological origins, development, and variation. The Foundation supports research that demonstrates a clear link to anthropological theory and debates, and promises to make a solid contribution to advancing these ideas. There is no preference for any methodology, research location, or subfield. The Foundation particularly welcomes proposals that employ a comparative perspective, can generate innovative approaches or ideas, and/or integrate two or more subfields. Deadlines: **May 1; Nov. 1.**

**W.E.B. Du Bois Fellowship for Research in Race, Gender, Culture and Crime FY 2012**
NIJ seeks proposals for funding under the W.E.B. Du Bois Fellowship for Research in Race, Gender, Culture, and Crime FY 2012. The Du Bois Fellowship Program seeks to advance knowledge regarding the confluence of crime, justice, and culture in various societal contexts. The Fellowship places particular emphasis on crime, violence, and the administration of justice in diverse cultural contexts within the United States. **Due May 2.**

**NIJ Ph.D. Graduate Research Fellowship Program**
NIJ seeks proposals for funding under the Ph.D. Graduate Research Fellowship (GRF) program, which provides awards for research on crime, violence, and other criminal justice-related topics to accredited academic universities that offer research-based doctoral degrees in disciplines relevant to NIJ’s mission. The GRF program is intended to support universities that sponsor students who are in the final stages of graduate study. Awards are granted to successful applicants in the form of a grant to cover a doctoral student fellowship. Currently, the GRF fellowship is $25,000. **Due May 2.**

**International Research Foundation (TIRF) for English Language Education - Doctoral Dissertation Grants**
Since 2002, TIRF has supported students completing their doctoral research on topics related to the foundation’s priorities. Each year applicants who have been advanced to candidacy in legitimate PhD or EdD programs are invited to submit proposals for Doctoral Dissertation Grants (DDGs). (By “advanced to candidacy” we mean [a] having completed all required course work, if any, and [b] having had a research plan approved by the candidate’s university committee.) Proposals are reviewed by a TIRF committee of established international researchers. DDGs are provided in the amount of up to US $5000 per awardee. **Due May 14.**

**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.**

**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

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.
NORDP Research Development Resources

Guidelines on the Administration and Management of NIJ Grant Programs
Proposals received under a solicitation are reviewed by independent peer panels comprised of reviewers from academia, industry, and government organizations, along with practitioners from federal, state, and local agencies. Once reviewers have completed evaluations, NIJ Program Managers recommend individual proposals to the NIJ Director, who makes final award decisions. Learn more about NIJ's current peer review process in sections "III. Conflict of Interest — Peer Review" and "IV. Peer Reviewers Final Scores and Consensus Review" of Guidelines on the Administration and Management of NIJ Grant Programs (pdf, 23 pages).

NIJ Unsolicited Proposals
Although you may submit unsolicited proposals, you are discouraged from doing so unless you have discussed the concept with NIJ staff and been asked to submit a proposal that does not fit into a specific solicitation. Unsolicited proposals may receive either an external peer review or an internal review. If the proposal fits into an already established solicitation category, it will be returned with a recommendation to resubmit it under that solicitation.
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.

**A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas**

Science, engineering, and technology permeate nearly every facet of modern life and hold the key to solving many of humanity's most pressing current and future challenges. The United States' position in the global economy is declining, in part because U.S. workers lack fundamental knowledge in these fields. To address the critical issues of U.S. competitiveness and to better prepare the workforce, *A Framework for K-12 Science Education* proposes a new approach to K-12 science education that will capture students' interest and provide them with the necessary foundational knowledge in the field. *A Framework for K-12 Science Education* outlines a broad set of expectations for students in science and engineering in grades K-12. These expectations will inform the development of new standards for K-12 science education and, subsequently, revisions to curriculum, instruction, assessment, and professional development for educators. This book identifies three dimensions that convey the core ideas and practices around which science and engineering education in these grades should be built. These three dimensions are: crosscutting concepts that unify the study of science through their common application across science and engineering; scientific and engineering practices; and disciplinary core ideas in the physical sciences, life sciences, and earth and space sciences and for engineering, technology, and the applications of science. The overarching goal is for all high school graduates to have sufficient knowledge of science and engineering to engage in public discussions on science-related issues, be careful consumers of scientific and technical information, and enter the careers of their choice. *A Framework for K-12 Science Education* is the first step in a process that can inform state-level decisions and achieve a research-grounded basis for improving science instruction and learning across the country. The book will guide standards developers, teachers, curriculum designers, assessment developers, state and district science administrators, and educators who teach science in informal environments.


*Report of a Workshop on Science, Technology, Engineering, and Mathematics (STEM) Workforce Needs for the U.S. Department of Defense and the U.S. Defense Industrial Base* is the summary of a workshop held August 11, 2011, as part of an 18-month study of the issue. This book assesses the STEM capabilities that the Department of Defense (DOD) needs in order to meet its goals, objectives, and priorities; to assess whether the current DOD workforce and strategy will meet those needs; and to identify and evaluate options and recommend strategies that the department could use to help meet its future STEM needs. [Free pdf download.](#)
Fostering Knowledge Use in STEM Education - A Brief on R&D Partnerships with Districts and Schools

Produced by NSF-supported researchers and developers, this practice brief makes a case for substantive partnerships between STEM education researchers or developers and the districts and schools where the R&D takes place. The authors have found that partnerships can enhance the quality, relevance, and usability of project outcomes, with implications for the sustained and scaled use of project knowledge. Written for an audience of fellow researchers and developers, the brief summarizes what the authors have learned about creating and maintaining partnerships, as well as potential pitfalls and challenges. Along with practical strategies, the authors provide examples from project experience.

Education R&D Partnership Tool

The Community Advancing Discovery Research in Education (CADRE) has recently released a tool to help improve researcher-practitioner partnerships in education R&D. It accompanies and grows out of a brief intended for education researchers and developers. Often districts and schools are asked to participate in education research and development projects, and yet, there is little guidance in the field regarding strategies to make project partnerships effective and mutually beneficial. Based on the hard-won lessons of education practitioners, researchers, and developers who have partnered on R&D projects, this tool is intended to help others assess and improve their own R&D partnerships. Organized around six themes for establishing and nurturing successful partnerships, the Education R&D Partnership Tool includes a Work Sheet that prompts reflection and discussion. It includes tips for starting and sustaining a partnership dialogue and an appendix that elaborates on the six themes.

Characteristics of Associate’s Degree Attainers and Time to Associate’s Degree

These Web Tables provide estimates on completion times for undergraduate students who entered postsecondary education for the first time in 2003–04 and whose first degree attained by spring 2009 was an associate’s degree using data from the 2004/09 Beginning Postsecondary Students Longitudinal Study. Results are shown by enrollment, demographic, and employment characteristics and are presented separately for students who attended exclusively full time and students who ever attended part time.

2011-12 Beginning Teacher Longitudinal Brochure

The Beginning Teacher Longitudinal Study (BTLS) is a study of a group of public school teachers who began teaching in 2007 or 2008. The study has followed this cohort for four 4 years. The 2011–12 year is the fifth and final year. The information gathered will permit a better understanding of how beginning teachers respond to different transitions. These transitions might include life transitions (i.e., changes in marital status, moving, having children) or career transitions (i.e., moving to a different school, teaching a different grade or subject, becoming a mentor, exiting teaching to pursue a nonteaching career). BTLS is the only study that follows beginning teachers from all around the United States. The unique value of this study comes from having information about the same people collected over time, those who provided data
about their first year of teaching in Schools and Staffing Survey in 2007-08. The sample for this study was selected to be representative of the entire population of public school teachers who began teaching in 2007 or 2008.
Dear Colleague Letter - EFRI Research Experience and Mentoring (REM)

NSF seeks to encourage EFRI-supported researchers to create carefully mentored research opportunities for people who might not otherwise become engaged in a research project, and to utilize contributions and talents of these participants to make further progress toward research goals. Ideally the experience will be mutually beneficial. Fresh eyes often bring fresh ideas. Research experiences are correlated with STEM success, while effective mentorship is impactful for all learners. An extensive 2011 study by The Committee on Science, Engineering, and Public Policy at the National Academies (Expanding Underrepresented Minority Participation) describes how mentorship is of even greater value for underrepresented populations in STEM. The National Science Board has also highlighted the value of strong, expert mentoring in the development of engineers in its 2007 report, Moving Forward to Improve Engineering Education. The REM pilot program seeks to pursue this idea by offering the PI flexibility to design the specifics of implementation of the research experience and mentoring plan in ways that most productively leverage local expertise and infrastructure already supported by NSF.

Energy Department Announces $180 Million for Ambitious New Initiative to Deploy U.S. Offshore Wind Projects

March 01, 2012. Energy Secretary Steven Chu today announced the start of an ambitious initiative to capture the potential of wind energy off American coasts. As part of a planned six-year $180 million initiative, an initial $20 million will be available this year as the first step in supporting up to four innovative offshore wind energy installations across the United States. These offshore wind projects will accelerate the deployment of breakthrough wind power technologies that will help diversify our nation’s energy portfolio, promote economic development, and launch a new industry here in America. To support these new demonstration projects, the Energy Department will make available up to $180 million over six years, subject to congressional appropriations, including an initial commitment of $20 million in fiscal year 2012. The Department will focus this latest research and demonstration initiative on highly innovative technologies that will achieve large cost reductions over existing offshore wind technologies. The demonstrations will help address key challenges associated with installing utility-scale offshore wind turbines, connecting offshore turbines to the power grid, and navigating new permitting and approval processes. For more information and application requirements for this funding opportunity, see the Funding Opportunity Exchange website. The Energy Department’s Office of Energy Efficiency and Renewable Energy accelerates development and facilitates deployment of energy efficiency and renewable energy technologies and market-based solutions that strengthen U.S. energy security, environmental quality, and economic vitality. Learn more about DOE’s efforts to research, develop, deploy and test innovative wind energy technologies.
ARPA-E Issues Open Call for Transformational Energy Technologies

Today (March 3, 2012), the Advanced Research Projects Agency – Energy (ARPA-E) issued a $150 million funding opportunity open to all transformational energy technologies to support the Obama Administration’s all-of-the-above approach to solving our nation’s most pressing energy challenges. This Open Funding Opportunity Announcement is a call to our country’s brightest scientists, engineers and entrepreneurs to propose early-stage research projects that would not otherwise be able to attract private investment, but could lead to breakthrough energy technologies. This is the second open funding opportunity released under ARPA-E. The first was in 2009. This Open Funding Opportunity Announcement (FOA) joins ARPA-E’s other recently issued FOA - Methane Opportunities for Vehicular Energy (MOVE) - which will make $30 million available to find ways to harness our abundant supplies of domestic natural gas for vehicles and was announced by President Obama last week at the University of Miami. More details on all of ARPA-E’s Funding Opportunities and Requests For Information are available HERE. Individual awards under the Open FOA will range between $250,000 and $10 million.

Department of Energy Announces up to $6 Million to Collect Performance Data on Fuel Cell Electric Vehicles

As part of President Obama’s all-of-the-above energy strategy to reduce America's reliance on foreign oil, the Energy Department on March 1 announced up to $6 million available this year to collect and analyze valuable performance and durability data for light-duty fuel cell electric vehicles (FCEVs). The projects selected for funding will collect data from next-generation FCEVs as they are operated in real-world conditions to identify ways to lower costs and improve fuel cell durability and overall vehicle performance. This funding is part of the Department’s commitment to U.S. leadership in advanced fuel cell research that aims to help industry bring more FCEVs into the mainstream market and provide American families with new choices for vehicles that do not rely on gasoline. The Department seeks applicants to design and implement projects to monitor the performance and durability of advanced FCEVs for up to five years. The 50% cost-shared projects will supply information on fuel cell system operation and other real-world vehicle data to the Hydrogen Secure Data Center at the Department's National Renewable Energy Laboratory (NREL) for analysis and comparison. Data will be collected from various makes and models of FCEVs so that engineers and scientists can measure the performance and technical progress of a range of fuel cell systems. The conclusions drawn from the data by NREL will help identify and focus future research and development efforts and gauge progress toward fuel cell performance and cost targets. The data and resulting analyses from this initiative will also help FCEV manufacturers improve their vehicle designs to optimize fuel efficiency and vehicle performance. For more information, including application requirements and instructions, please visit the Funding Opportunity Exchange website.

NIJ's Scientific Review Panels: New "Standing" Panels for Grant Application Peer Review Beginning in 2012
NIJ's Scientific Review Panels (SRPs) will replace the smaller "ad hoc" review panels that have been NIJ's primary review mechanism in the past. This effort signals several important changes to strengthen NIJ's peer review of grant applications. For example, the new SRPs will be larger than the panels NIJ currently uses — 12 scientific reviewers and six practitioner reviewers will serve on each SRP, providing greater quality and breadth to the review process. Since the members of the SRP will be appointed for overlapping 3-year terms, a greater level of consistency will be maintained from year to year. Finally, a new scoring procedure will bring greater transparency to the peer review process. NIJ anticipates that pilot SRPs will support grant application peer review in five specific research areas within crime control and prevention, violence and victimization, justice systems research, physical science and technology, and forensic research. The specific research topics within these research areas are still being finalized. The balance of NIJ's research programs will review grant applications using customary review panels. For additional information about how the SRPs will operate, see the presentation from the 2011 NIJ Conference. Beyond the five program areas served by the SRPs, NIJ will continue to rely on its customary peer review process. Learn more about NIJ's current peer review panels and how to serve on them. NIJ is no longer accepting nominations for FY 2012 Scientific Review Panels. Final selection of SRP members is nearing completion, and all those who have already applied will be notified shortly. If you wish to be considered for future NIJ standing peer review panels or for other peer review panels, please register on NIJ's Consultant Information System Exit Notice [opens in pop-up window]. Thank you for your interest in NIJ's research programs.

**ARPA-E Request for Information for Electrofuels Phase II**
The purpose of this Request for Information (RFI) is solely to solicit input for ARPA-E consideration to inform the possible development of future chemo/electro-autotrophic fuel production programs. Information obtained may be used by ARPA-E on a non-attribution basis. This RFI provides biofuel and bioproducts stakeholders with an opportunity to contribute views and opinions regarding the requirements to transition bench-scale (e.g. microgram–milligram L-1h-1 production rates) chemo/electro-autotrophic fuel production technologies to efficient and cost competitive integrated chemo/electro-autotrophic fuel production platforms (e.g. multi-gram L-1h-1 production rates at scale). Views are sought regarding various microbial systems, energy assimilation strategies, bioreactor development, scaling parameters, fuel/fuel precursor products, and cost of fuel/fuel precursor products, overall cost of program development and path to market adoption. To submit comments to the Request for Information (RFI):
Please submit any comments in PDF format to the email address, ARPA-E-RFI-FUELS@hq.doe.gov, by 8:00 PM Eastern Time on April 30, 2012.

**Announcement and Request for Information on Draft Open Funding Opportunity Announcement (Open FOA)**
On or about March 2, 2012, the Advanced Research Projects Agency – Energy (“ARPA-E”) intends to issue an OpenFunding Opportunity Announcement (“Open FOA” or “FOA”). The objective of the Open FOA is to identify high-risk, high-reward concepts for energy-related
technologies that may enhance our nation’s energy and economic security. This FOA will be open to any energy-related technology that, if successful, will have a transformational and disruptive effect on the energy sector. Once the final FOA is issued in March 2012, Applicants will have a limited amount of time to submit a mandatory Notice of Intent in ARPA-E eXCHANGE, ARPA-E’s online application portal (https://arpa-e-foa.energy.gov). Applicants must submit a separate Notice of Intent for each Concept Paper through ARPA-E eXCHANGE by the deadline stated in the FOA. Failure to comply with this requirement will render the Applicant’s Concept Paper ineligible for consideration (see Section III.C.1 of the draft FOA). Please note that the draft Open FOA is designated as DE-FOA-0000663. When issued in March 2012, the final Open FOA will have a different designation, namely DE-FOA-0000670.
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.

Approaches for Ecosystem Services Valuation for the Gulf of Mexico After the Deepwater Horizon Oil Spill: Interim Report

On April 20, 2010, the Deepwater Horizon platform drilling the Macondo well in Mississippi Canyon Block 252 (DWH) exploded, killing 11 workers and injuring another 17. The DWH oil spill resulted in nearly 5 million barrels (approximately 200 million gallons) of crude oil spilling into the Gulf of Mexico (GoM). The full impacts of the spill on the GoM and the people who live and work there are unknown but expected to be considerable, and will be expressed over years to decades. In the short term, up to 80,000 square miles of the U.S. Exclusive Economic Zone (EEZ) were closed to fishing, resulting in loss of food, jobs and recreation. The DWH oil spill immediately triggered a process under the U.S. Oil Pollution Act of 1990 (OPA) to determine the extent and severity of the "injury" (defined as an observable or measurable adverse change in a natural resource or impairment of a natural resource service) to the public trust, known as the Natural Resources Damage Assessment (NRDA). The assessment, undertaken by the trustees (designated technical experts who act on behalf of the public and who are tasked with assessing the nature and extent of site-related contamination and impacts), requires: (1) quantifying the extent of damage; (2) developing, implementing, and monitoring restoration plans; and (3) seeking compensation for the costs of assessment and restoration from those deemed responsible for the injury. This interim report provides options for expanding the current effort to include the analysis of ecosystem services to help address the unprecedented scale of this spill in U.S. waters and the challenges it presents to those charged with undertaking the damage assessment. Free pdf download.

Challenges in Characterizing Small Particles: Exploring Particles from the Nano- to Microscales

Small particles-ranging in size from about one nanometer to tens of microns-are ubiquitous in the natural and engineered worlds. They are in the air, soil, and water on Earth and at the farthest reaches of the universe. But their properties and chemical composition are little understood, restricting scientists' and engineers' ability to predict and control their applications and impacts in both natural and engineered systems. On October 25-26, 2010, the National Academies' Chemical Sciences Roundtable convened a group of chemists and chemical engineers, with others from disciplines such as civil engineering, environmental medicine, geosciences, and material science and engineering to explore opportunities, challenges, and approaches to characterizing small particles and understanding their impacts. Speakers highlighted the critical importance of small particles in environmental science, materials and chemical sciences, biological science, and engineering. Further presentations examined new
advances in characterizing small particles, including static, dynamic, experimental, computational, and theoretical approaches. Free pdf download.

**March 2012 Newsletter**

*Up to Wind Speed* is a quarterly newsletter from the U.S. Department of Energy's National Wind Technology Center (NTWC) at the National Renewable Energy Laboratory (NREL). For more than three decades, research conducted by NREL’s Wind Program has helped industry advance wind energy technology, increasing reliability and lowering the cost of energy. Each quarter, the newsletter keeps you up to speed on what’s happening in wind energy research and development and provides you with links to the NWTC’s recent publications.

**Articles in this issue:**

- Siemens/NREL Analyze Wind Turbine Data
  - Researchers Simulate Atmospheric Turbulence and the Aerodynamics of Wind Plants
  - Lessons of Wind Energy Accelerate Water Power
  - Energy Imbalance Market Offers Benefits to Western Interconnection

- Large-scale Wind Turbine Blade Testing Facility Operational
  - Wind Powering America Publishes Summary Report of Wind for Schools Project, Hosts Fifth Annual Wind for Schools Summit
  - Wind Powering America’s 2011 Webinar Series
  - Tribology Seminar Focuses on Improved Turbine Reliability
  - Recent NWTC Publications

- **Macondo Well-Deepwater Horizon Blowout: Lessons for Offshore Drilling Safety**

  The blowout of the Macondo well on April 20, 2010, led to enormous consequences for the individuals involved in the drilling operations, and for their families. Eleven workers on the Deepwater Horizon drilling rig lost their lives and 16 others were seriously injured. There were also enormous consequences for the companies involved in the drilling operations, to the Gulf of Mexico environment, and to the economy of the region and beyond. The flow continued for nearly 3 months before the well could be completely killed, during which time, nearly 5 million barrels of oil spilled into the gulf. *Macondo Well-Deepwater Horizon Blowout* examines the causes of the blowout and provides a series of recommendations, for both the oil and gas industry and government regulators, intended to reduce the likelihood and impact of any future losses of well control during offshore drilling. According to this report, companies involved in offshore drilling should take a "system safety" approach to anticipating and managing possible dangers at every level of operation -- from ensuring the integrity of wells to designing blowout preventers that function under all foreseeable conditions-- in order to reduce the risk of another accident as catastrophic as the Deepwater Horizon explosion and oil spill. In addition, an enhanced regulatory approach should combine strong industry safety goals with mandatory oversight at critical points during drilling operations. *Macondo Well-Deepwater Horizon Blowout* discusses ultimate responsibility and accountability for well integrity and safety of offshore equipment, formal system safety education and training of personnel.
engaged in offshore drilling, and guidelines that should be established so that well designs incorporate protection against the various credible risks associated with the drilling and abandonment process. This book will be of interest to professionals in the oil and gas industry, government decision makers, environmental advocacy groups, and others who seek an understanding of the processes involved in order to ensure safety in undertakings of this nature. **Free pdf download.**

**Review of Disability and Rehabilitation Research: NIDRR Grantmaking Processes and Products**

The National Institute on Disability and Rehabilitation Research (NIDRR) is the principal federal agency supporting applied research, training, and development to improve the lives of individuals with disabilities. NIDRR's mission is to generate new knowledge and promote its effective use in improving the ability of persons with disabilities to perform activities of their choice in the community, as well as to expand society's capacity to provide full opportunities and accommodations for its citizens with disabilities. NIDRR prides itself on being proactive in establishing program performance measures and developing accountability data systems to track the progress of its grantees. An electronic annual reporting system is used to collect data from grantees on many aspects of grant operation and outputs. Various formative and summative evaluation approaches have been used to assess the quality of the performance and results of the agency's research portfolio and its grantees. Prompted by the need to provide more data on its program results, in 2009 NIDRR requested that the National Research Council (NRC) conduct an external evaluation of some of the agency's key processes and assess the quality of outputs produced by NIDRR grantees (National Institute on Disability and Rehabilitation Research, 2009a).
New Funding Solicitations Posted Since February 15 Newsletter

**Methane Opportunities For Vehicular Energy (MOVE)**
This program seeks to fund the development of transformational technologies that reduce the barriers to mass adoption of natural gas use in vehicles. Of particular interest are technologies that enable at-home refueling and low-cost, high energy density on-board storage for natural gas vehicles. **Concept Paper due March 26.**

**Nuclear Energy Enabling Technologies (NEET) Advanced Methods for Manufacturing**
The U.S. Department of Energy (DOE) intends to release a new funding opportunity announcement (FOA), DE-FOA-0000427, seeking applications from industry, national laboratories, colleges and universities to conduct R&D in support of the Nuclear Energy Enabling Technologies (NEET) Crosscutting Advanced Methods for Manufacturing Program. The NEET Advanced Methods for Manufacturing program seeks to conduct research and technology development to improve the methods by which nuclear equipment, components, and plants are manufactured, fabricated, and assembled. Applications are requested that support these ideas. **Due March 29.**

**Reduction of Tropical Cloud and Precipitation Biases in Global High Resolution Models**
The Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving applications for research grants on the topic of Reduction of Tropical Cloud and Precipitation Biases in Global High Resolution Models under the Regional and Global Climate Modeling (RGCM) and Atmospheric System Research (ASR) programs. Simulation of climate in the tropics has improved considerably over the past decade; nevertheless global and regional climate models have biases in tropical precipitation and clouds. This Funding Opportunity Announcement (FOA) invites applications to examine, and improve our understanding of tropical clouds and precipitation in uniform high or variable resolution global models, global cloud resolving models, and/or regional models, by improving the process representations in the context of tropical Atmospheric Radiation Measurement (ARM) campaigns (http://www.arm.gov/campaigns/table ) and/or data from the ARM Tropical Western Pacific (TWP) http://www.arm.gov/sites/twp fixed sites. The intent of this FOA is to reduce tropical biases of precipitation and clouds in global climate models by fostering interactions between atmospheric process and global modelers (FedConnect). **Due March 30.**
Research and Development for Next Generation Nuclear Physics Accelerator Facilities
The Office of Nuclear Physics (NP), Office of Science (SC), U.S. Department of Energy (DOE), hereby announce their interest in receiving applications for Research and Development (R&D) efforts directed at challenges for next generation NP accelerator facilities.  Due March 30.

DE-FOA-0000670: Open Funding Opportunity Announcement (OPEN FOA)
To address the challenges imposed by the rapidly evolving global energy market, ARPA-E seeks to support transformational research in all areas of energy R&D, including resource identification, extraction, transportation and use, and energy generation, storage, transmission and use in both the transportation and stationary power sectors. Areas of research responsive to this FOA include (but are not limited to) electricity generation by both renewable and non-renewable means, electricity transmission, storage, and distribution; energy efficiency for buildings, manufacturing and commerce, and personal use; and all aspects of transportation, including the production and distribution of both renewable and non-renewable fuels, electrification, and energy efficiency in transportation. The result of a successful ARPA-E project will be such that at the end of the project the transformational technology will be sufficiently advanced and well defined in terms of performance and risk to promote next-stage development or transfer of the project to next-stage developers. Projects under this FOA must be aimed at more than progress toward identified project goals; the project must be aimed at actual delivery of these project goals. The R&D effort on later-stage technology development projects must carry the risk reduction process for the technology to the point at which entrepreneurial decisions can be made with confidence.  LOI March 30; concept paper April 12; full application TBD.

NOAA Regional Ocean Partnership Funding Program - FY2012 Funding Competition
The purpose of this document is to advise eligible regional ocean partnerships, tribal governments and state, local, and territory governments, institutions of higher learning, and non-profit and for-profit organizations (requirements described in full announcement) that NOAA is soliciting proposals for competitive funding for Regional Ocean Partnerships that include National Ocean Policy (NOP) priorities including regional Coastal and Marine Spatial Planning (CMSP) efforts. The Regional Ocean Partnership Funding Program (ROPFP) will support two categories of activities: 1) Activities that contribute to achieving the priorities identified by Regional Ocean Partnerships (ROPs) while also advancing NOP priorities including the national CMSP Framework; and 2) ROP Development and Governance Support for operations and administration of existing ROPs, and for start-up costs of those regions beginning ROPs. Eligible entities must submit to NOAA full proposals on or before April 2, 2012 in order to participate in this Fiscal Year (FY) 2012 funding opportunity.  Due April 2.

ARPA-E Open Funding Opportunity Announcement (Open FOA)
To address the challenges imposed by the rapidly evolving global energy market, ARPA-E seeks to support transformational research in all areas of energy R&D, including resource identification, extraction, transportation and use, and energy generation, storage, transmission
Research Development & Grant Writing News

and use in both the transportation and stationary power sectors. Areas of research responsive to this FOA include (but are not limited to) electricity generation by both renewable and non-renewable means, electricity transmission, storage, and distribution; energy efficiency for buildings, manufacturing and commerce, and personal use; and all aspects of transportation, including the production and distribution of both renewable and non-renewable fuels, electrification, and energy efficiency in transportation. To obtain a copy of the Funding Opportunity Announcement (FOA) please go to the ARPA-E website at 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, please refer to the ARPA-E eXCHANGE User Guide? (https://arpa-e-foa.energy.gov/Manuals.aspx). Templates for the Concept Paper, the Technical Volume of the Full Application, and the Reply to Reviewer Comments are provided as appendices to the FOA. Applicants must submit a separate Notice of Intent for each Concept Paper through ARPA-E eXCHANGE by the deadline stated in the FOA. Due April 12.

Advancements in Sustainable Algal Production (ASAP)
The U.S. Department of Energy is requesting applications to support outdoor phototrophic algae research and development in two areas: 1) nutrient and water use in algal production systems and 2) the development of algal technology testbed facilities. This research will support the Biomass Program’s goals to model pathways for significant (>1 billion gallons per year) volumes of cost-competitive algal biofuels by 2022. The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at https://eere-exchange.energy.gov. 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. A User Guide for the EERE eXCHANGE can be found on the EERE website http://eere.energy.gov/financing/exchangeExchange/Manuals.aspx after logging in to the system. 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 April 18.

Applications for New Awards; Fulbright-Hays Group Projects Abroad Program—Short-Term Projects and Advanced Overseas Intensive Language Training Projects
A group project funded under this priority must focus on one or more of the following geographic regions of the world: Africa, East Asia, South Asia, Southeast Asia and the Pacific, the Western Hemisphere (Central and South America, Mexico, and the Caribbean), East Central Europe and Eurasia, and the Near East. Due April 23.

NEH Fellowships
Fellowships support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books,
digital materials, archaeological site reports, translations, editions, or other scholarly resources in the humanities. Projects may be at any stage of development. NEH encourages submission of Fellowships applications from faculty at Hispanic-Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities. Due up to May 1.

**Fellowship Program for Advanced Social Science Research on Japan**
The Fellowship Program for Advanced Social Science Research on Japan is a joint activity of the Japan-U.S. Friendship Commission (JUSFC) and the National Endowment for the Humanities. Awards support research on modern Japanese society and political economy, Japan’s international relations, and U.S.-Japan relations. The program encourages innovative research that puts these subjects in wider regional and global contexts and is comparative and contemporary in nature. Research should contribute to scholarly knowledge or to the general public’s understanding of issues of concern to Japan and the United States. Appropriate disciplines for the research include anthropology, economics, geography, history, international relations, linguistics, political science, psychology, public administration, and sociology. Due May 1.

**AHRQ Mentored Career Enhancement Award in Patient Centered Outcomes Research (PCOR) for Mid-Career and Senior Investigators (K18)**
This Funding Opportunity Announcement (FOA) issued by AHRQ, invites applications for Mentored Career Enhancement grant awards (K18) in Patient Centered Outcomes Research (PCOR). The program targets established mid-career and senior investigators who are interested in developing new skills in comparative effectiveness research methodology and applying these methods to patient-centered outcome research (PCOR). Due May 2.

**Development of Quantum Computing Algorithms**
This BAA seeks research that develops new quantum computing algorithms for hard computational problems, develops insight into the power of quantum computation, and considers issues of quantum complexity and computability. Due May 8.

**NIJ Current Funding Opportunities**
NIJ is accepting applications for the following solicitations. Solicitations are presented in order of application deadline with the solicitation with the nearest deadline first. Due dates April 20 to May 23.

**NIJ Forthcoming Funding Opportunities**
This preliminary list of solicitations will change over the coming days and weeks. When the solicitation is released, it will contain the name and contact information of the person managing the solicitation. To be fair and open in the competition, we do not discuss solicitations until they are published. Total funding for these solicitations will depend on the availability of funds.
Special Program Announcement for 2012 Office of Naval Research Basic Research Challenge: Decentralized Online Optimization

The Navy is moving towards deploying large, complex systems that are beyond centralized control. A canonical example of such a system is a fleet of unmanned vehicles with limited communications operating in a dynamic environment. Important characteristics of these systems are that 1) they are decentralized (i.e., system components can take independent actions), and 2) the environment in which the system operates is not necessarily known a priori, and is revealed over time; that is, the data defining the system and its environment is online (in the sense of online algorithms). Objective and Areas of Interest: The objective of this topic is to develop scientific principles and algorithms for solving decentralized, online optimization problems. To achieve this, first, solid mathematical frameworks need to be proposed and put into place so that various algorithmic strategies can be developed, analyzed, and compared. Second, canonical models need to be defined. These models should capture the fundamental difficulties associated with decentralized, online optimization. The aim in defining a few, simple canonical models is not to include all possible real-world complexities, but rather create a set of models whose rigorous treatment will drive design and analysis principles. Third, promising algorithmic strategies need to be identified and developed (Link to ONR BAA's). Due May 15.

Bridging Research Interactions through Collaborative Development Grants in Energy (BRIDGE)

Bridging Research Interactions through Collaborative Development Grants in Energy (BRIDGE) is a new program that intends to support the SunShot Initiative by increasing the depth and breadth of expertise being applied to PV and CSP technology challenges. The BRIDGE program will employ a two-part linking approach to effectively develop U.S. capability in PV and CSP device and system design. First, BRIDGE will support the development of new Collaborative Research Teams (CRTs) of researchers who share coherent scientific goals and diverse but complementary theoretical, computational and/or experimental approaches. In addition, BRIDGE will encourage CRTs to explore opportunities to leverage existing DOE assets and expertise housed within the DOE Basic Energy Sciences (BES) Scientific User Facilities, the DOE Biological and Environmental Sciences (BER) Environmental Molecular Sciences Laboratory (EMSL) and Advanced Scientific Computing Research facilities (ASCR). For more information, see the full solicitation. Due May 21.

U.S. Offshore Wind: Advanced Technology Demonstration Projects

The U.S. Department of Energy seeks to provide support for regionally-diverse Advanced Technology Demonstration Projects through collaborative partnerships. By providing funding, technical assistance, and government coordination to accelerate deployment of these demonstration projects, DOE can help eliminate uncertainties, mitigate risks, and help create a robust U.S. Offshore Wind Energy Industry. The primary goals of the Advanced Technology Demonstration Projects are to: 1. Install innovative offshore wind systems in U.S. waters in the most rapid and responsible manner possible, and 2. Expedite the development and deployment of innovative offshore wind energy systems with a credible potential for lowering the levelized cost of energy (LCOE) below 10 cents / kWh or the local hurdle price at which offshore wind can compete with other regional generation sources without subsidies. With over 4,000 GW of
gross potential that is relatively close to key load centers, offshore wind energy can help the nation reduce its greenhouse gas emissions, diversify its energy supply, provide cost-competitive electricity to key coastal regions, and stimulate economic revitalization of key sectors of the economy. However, if the nation is to realize these benefits, key challenges to the development and deployment of offshore wind technology must be overcome, including the relatively high current cost of energy, technical challenges surrounding installation and grid interconnection, and the untested permitting or approval processes. DOE seeks technology demonstration projects that combine innovation with pathways for substantial cost reduction opportunities. The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at https://eere-exchange.energy.gov. 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. A User Guide for the EERE eXCHANGE can be found on the EERE website http://eere.energy.gov/financing/exchangeExchange/Manuals.aspx after logging in to the system. Due May 31.

**Building Community and Capacity for Data-Intensive Research in the Social, Behavioral, and Economic Sciences and in Education and Human Resources**
As part of NSF’s Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) activity, the Directorate for Social, Behavioral, and Economic Sciences (SBE), the Directorate for Education and Human Resources (EHR), and the Office of Cyberinfrastructure seek to enable research communities to develop visions, teams, and capabilities dedicated to creating new, large-scale, next-generation data resources and relevant analytic techniques to advance fundamental research for the SBE and EHR sciences. Successful proposals will outline activities that will have significant impacts across multiple fields by enabling new types of data-intensive research. Investigators should think broadly and create a vision that extends intellectually across multiple disciplines and that includes—but is not limited to—the SBE or EHR sciences. Due May 22.

**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.
Links to New & Open Funding Solicitations

- 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
Solicitations Remaining Open from Prior Issues of the Newsletter

2012 DHS Scientific Leadership Awards for Minority Serving Institutions Granting BS Degrees
The DHS Scientific Leadership Awards (SLA) program is one of several administered by the Office of University Programs intended to help achieve the goals of S&T. The SLA program will help develop enduring educational and research capabilities within the MSI communities. Due March 29.

Higher Education Challenge (HEC) Grants Program
Projects supported by the Higher Education Challenge Grants Program will: (1) address a State, regional, national, or international educational need; (2) involve a creative or non-traditional approach toward addressing that need that can serve as a model to others; (3) encourage and facilitate better working relationships in the university science and education community, as well as between universities and the private sector, to enhance program quality and supplement available resources; and (4) result in benefits that will likely transcend the project duration and USDA support. Due March 30.

FY 2012 University Center Economic Development Program Competition
The purpose of EDA’s University Center Economic Development Program (also referred to in this announcement as the University Center program) is to assist institutions of higher education and consortia of institutions of higher education in establishing and operating University Centers specifically focused on leveraging university assets to build regional economic ecosystems that support high-growth entrepreneurship. University Centers collaborate with other EDA partners by providing resources to develop, implement and support regional strategies that promote job creation, the development of high-skilled regional talent pools, and business expansion in a region’s innovation clusters. Due March 30.

Genomic Science: Biosystems Design to Enable Next-Generation Biofuels
The U.S. Department of Energy's Office of Science, Office of Biological and Environmental Research (BER) hereby announces interest in receiving applications for research that supports the Genomics Science Program and addresses DOE's missions in energy and the environment in the following research areas: a) Microbial systems design for biofuels, from computer modeling to experimental validation: To develop modeling algorithms and innovative biosystems design technologies to define, build, and apply functional biological modules for the generation of novel biological systems that advance toward the production of biofuels; and b) Plant systems design for bioenergy: To develop novel technologies to re-design bioenergy crops that can grow in marginal environments while producing high yield of biomass that can be easily converted to biofuels. Applications should also address potential societal implications of engineered organisms. Due April 2.

**Professional Research Experience Program – Material Measurement Laboratory (PREP-MML)**

NIST announces that the PREP-MML is soliciting applications for financial assistance from accredited institutions of higher education in the United States and its territories to enable those institutions to provide laboratory experiences and financial assistance to undergraduate and graduate students and post-doctoral associates in the MML at the NIST Laboratories in Gaithersburg, Maryland and Charleston, South Carolina. Due April 13.

**Multidisciplinary University Research Initiative: High Operating Temperature Fluids**

DOE is supporting the development of innovative heat transfer fluids for use in concentrating solar power (CSP) energy systems. The Multidisciplinary University Research Initiative (MURI): High Operating Temperature Fluids ("HOT Fluids") funding opportunity seeks applicants to develop innovative heat transfer fluids that are more stable than current technologies at temperatures greater than 800 degrees Celsius. Improving advanced heat transfer fluids could significantly increase the efficiency of CSP technology and help drive down the cost of reliable, renewable solar power in line with SunShot Initiative goals. The HOT Fluids funding will be awarded as part of the Multidisciplinary University Research Initiative-a program designed to advance research, accelerate technology transfer into the marketplace, and educate scientists and engineers in interdisciplinary areas. MURI's university-based approach not only supports early-stage research aimed at innovative fluid development, but also helps provide a new generation of scientists and engineers with the skills and knowledge they need to become leaders in the solar power industry. Due April 19.

**Applied Research and Development in Forensic Science for Criminal Justice Purposes**

With this solicitation, NIJ seeks proposals for applied research and development projects that will: (1) increase knowledge or understanding necessary to guide forensic science policy and practice or (2) result in the production of useful materials, devices, systems, or methods that have the potential for forensic application. The intent of the Applied Research and Development in Forensic Science for Criminal Justice Purposes Program is to direct the findings of basic scientific research, research and development in broader scientific fields applicable to forensic science, and ongoing forensic science research toward the development of highly
discriminating, accurate, reliable, cost-effective, and rapid methods for the identification, analysis, and interpretation of physical evidence for criminal justice purposes. Due April 20.

Research on the Impact of Technology on Policing Strategies in the 21st Century
NIJ seeks proposals to conduct research to evaluate how technology affects policing strategies at the State, local, and tribal levels and the impact that technology has on policing outcomes. In other words, policing organizations may implement new technologies within their departments for the purpose of promoting public safety, enforcing the law, and/or preventing and detecting crime. If successful, the new technology may lead to changes in policing strategies designed to enhance positive policing outcomes (e.g., improving police response time or reducing targeted crimes). This research aims to fill these gaps in policing research. Due April 20.

Centers of Research Excellence in Science and Technology
The Centers of Research Excellence in Science and Technology (CREST) program makes resources available to enhance the research capabilities of minority-serving institutions through the establishment of centers that effectively integrate education and research. CREST promotes the development of new knowledge, enhancements of the research productivity of individual faculty, and an expanded presence of students historically underrepresented in science, technology, engineering, and mathematics (STEM) disciplines. HBCU-RISE awards specifically target HBCUs to support the expansion of institutional research capacity as well as an increase in the production of doctoral students, especially those from groups underrepresented in STEM, at those institutions. Due April 23.

Pan-American Advanced Studies Institutes Program (PASI)
The Pan-American Advanced Studies Institutes (PASI) Program is a jointly supported initiative between the Department of Energy (DOE) and the National Science Foundation (NSF). Pan-American Advanced Studies Institutes are short courses ranging in length from ten to twenty-one days, involving lectures, demonstrations, research seminars, and discussions at the advanced graduate, post-doctoral, and junior faculty level. PASIs aim to disseminate advanced scientific and engineering knowledge and stimulate training and cooperation among researchers of the Americas in the mathematical, physical, and biological sciences, the geosciences, the computer and information sciences, and the engineering fields. Proposals in other areas funded by NSF may be considered on an ad hoc basis as long as they are multidisciplinary; in this case, lead investigators must consult with the PASI Program before proposal submission. Due April 24.

Centers for Sustainable Molecular Design
The U.S. Environmental Protection Agency, as part of its Science to Achieve Results (STAR) program, is seeking applications for an interdisciplinary center focusing on the sustainable molecular design of chemicals. The aim of the center will be to develop a set of parameters and strategies that will establish design criteria regarding the properties of chemicals that will lead to the development of intrinsically less hazardous substances when compared to those currently used in society. These newly acquired criteria and design principles will direct
researchers towards the generation of novel chemicals that will minimize, and preferably eliminate, associated potential environmental and human health impacts that may occur during the life cycle of that chemical. The advent of these novel chemicals and their respective discovery of correlations between a chemical’s inherent properties and their adverse impacts require the development of improved methods for the design of next generation chemicals. Due April 25.

**Air Force Defense Research and Development Rapid Innovation Fund (RIF) Program**
The National Defense Appropriation Act (NDAA) for FY2011 provided the Department of Defense (DoD) with the authorities and funds to facilitate the rapid insertion of innovative technologies into military systems or programs meeting critical national security needs. It is primarily for the transition of technologies developed by small businesses, including those resulting from the Small Business Innovation Research (SBIR) Program and DoD-reimbursed Independent Research and Development (IR&D). Due May 5.

**Small Research Grant Program, American Astronomical Society**
The Small Research Grant (SmRG) Program is administered by the AAS Executive Office. The program is funded by a grant from NASA and is thus intended mainly to support investigators in the U.S. working on NASA-relevant projects. A small amount of additional funding may be provided by income from the AAS operating-reserve fund to support particularly meritorious proposals from outside the U.S. and/or not strictly relevant to current or future NASA missions. The amount of money available during any proposal cycle depends on the sources of support available to the Society at that time. There are two opportunities to apply each year, one in May and the other in November. Due May 7; November 26, 2012.

**Science, Technology, Engineering & Mathematics (STEM)**
The U.S. Army Engineer Research and Development Center (ERDC) seeks proposals under authority of the National Defense Education Act (1959) and under the Pre-Engineering Program (PEP) to stimulate young pupils in the sciences, technology, engineering and mathematics (STEM). Due May 15.

**Climate Change and Health: Assessing and Modeling Population Vulnerability to Climate Change (R21)**
This FOA encourages research applications to examine the differential risk factors of populations that lead to or are associated with increased vulnerability to exposures, diseases and other adverse health outcomes related to climate change. Applications may involve either applied research studies that address specific hypotheses about risk factors or population characteristics associated with increased vulnerability, or research projects to develop general models or methods for identifying and characterizing population vulnerability to climate change. The ultimate goal of this research program is to help inform climate change adaptation and public health interventions to reduce current and future vulnerability of various populations to the health effects of climate change. Applications are anticipated to involve a multidisciplinary research team, including experts in health sciences and climatology as well as
geography, modeling, statistics, demography, and social and behavioral sciences as appropriate. In addition, partnerships with community-based or advocacy organizations, public health officials, urban planners and others are encouraged. Due May 24.

**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.

**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.

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.

**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 oblige 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 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--

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

- 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

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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.

(View Index of Articles)

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