Research Development & Grant Writing News

Volume 5, Issue 11: July 15, 2015

Table of Contents

Contact Us For:
**Assistance on Large Team Grants
Grant Writing Workshops
Proposal Reviews and Red Teaming
Proposal Editing & Analysis**

Our New Faculty Guide eBook
**New Faculty Guide to Competing for Research Funding Table of Contents
! Ask about our New Faculty Workshop !**

New CAREER e-book coming soon
The NSF CAREER Proposal Workbook: A step-by-step guide to developing a competitive NSF CAREER proposal **by Lucy Deckard**

Our Large Team Grant eBook!
Strategies for Planning, Developing, and Writing Large Team Grants   **Order Here
! Ask about our Team Grant Workshop !**

Topics of Interest URLs

(Back to Page 1)

Clarity in the Research Narrative

By **Mike Cronan**, co-publisher

It is open to debate whether or not Julian Barnes's observation in his 1984 novel *Flaubert's Perrot* was actually meant as guidance in writing the research narrative. But on its face, his noting that "*Mystification is simple; clarity is the hardest thing of all*," is excellent grant-writing advice, regardless of the author's original intent. The wisdom of this observation will be clear to those who review proposals, either for funding agencies or for research colleagues.

Unfortunately, for anyone who has read, reviewed, or critiqued a considerable number of research narratives, either pre- or post-submission, "*mystification*" is a common response, often winning hands down over *clarity*. As William Raub, Former Deputy Director, NIH, noted "*There is no grantsmanship that will turn a bad idea into a good one, but there are many ways to disguise a good one*." While there is a long list of possible ways to disguise a good idea, when it comes to grant writing, a lack of clarity, particularly organizational clarity, will be seen as a capital offense, in this case punishable by a mandatory sentence of "*Do Not Fund*!".

As Barnes noted, "*mystification is simple…clarity is hard*." This explains a lot about the state of many research narratives, not just in initial drafts but often, unfortunately, in the final submitted narrative*. No special skills are needed to write a bad proposal—anyone can do it, and many do*. As NEH chairman Bruce Cole (2001-2009) noted in a 2002 issue of the journal, *Humanities*, "**Writing is thinking. To write well is to think clearly. That's why it's so hard**."

These are important points to keep in mind for anyone assisting faculty in the planning, developing, and writing of a proposal. It is especially important in the current environment where funding agency budgets have often flat lined while the number of research grant applicants has surged. As "state-assisted" institutional budgets have declined, or institutions plan for increasing research expenditures as measured against peer rankings, we can expect this environment to intensify. Moreover, many funding agencies now describe and characterize fundable research using superlatives on steroids—transformational, cutting edge, novel, paradigm shifting, etc., **tempting researchers to cloak their work in the same superlatives**.

In fact, common advice to faculty in grant-writing workshops and similar forums is that "*agencies fund compelling research, not merely good research*," or agencies fund "*exciting science, not just good science*." While that is true, it is also a bit of a red herring. The distraction here is that too often this is interpreted to mean that a magical "witch's potion" can be applied to an otherwise lackluster research narrative in the days prior to submission that will transform it into a winning proposal. NOT!

The best advice is to realize that no grant writing legerdemain or slight of hand or waving of a magic wand can transform an unfundable narrative into a fundable one. Invariably, when an attempt is made to transform (pick your synonym) an uninspired, unimaginative, dull, bland, prosaic, dreary, or tedious research narrative into a compelling or exciting one, the tools of resuscitation tend to be a liberal sprinkling of hyper-adjectives and superlatives, **as if merely claiming research novelty is sufficient to make it so**. NOT!

However the solution to this conundrum is simple: narrative clarity. Ultimately, whether or not the proposed research represents a compelling and exciting project is up to the reviewers to decide. The most important narrative characteristic required for reviewers to make this decision is a clearly written and well organized research narrative. *Value clarity above all else in the research narrative and take your chances*. It may well be that clarity reveals to the reviewers why your research idea is not a fundable one. On the other hand, a poorly written and poorly organized proposal may be disguising a fundable idea. Of course, the worst thing to do is to clutter the research narrative with unsubstantiated claims of research exceptionalism while self anointing the proposed research with laudatory adjectives and superlatives that infest the narrative like a cloud of annoying mosquitoes.

The most important thing about clarity in the research narrative is to *plan for it before you begin to write, not after you have written the first full draft of the proposal*. Attempting to bring clarity to a proposal by a major rewrite is an arduous and painful task, even to the most skilled editor or grant writer. *The first step in planning the research narrative is a plan for organizational clarity*. Organizational clarity is the cornerstone of narrative clarity. If you don't get this right from the get go, all subsequent narrative planning is for naught. In most cases, the funding solicitation itself will serve as the organizational template for writing the research narrative. This will ensure that you answer every question asked by the funder *in the order asked*. It is not unusual for larger solicitations to require the applicant to answer upwards of 50 or more questions relating to the proposed project.

Also, keep in mind that *reviewers do comment on narrative clarity and organization*. Well written and well organized proposals are often acknowledged by reviewers, whereas poorly written and poorly organized proposals are not only noted by reviewers but elaborated upon in other ways that doom them to failure. *The most damning inference reviewers can make is to assume that a poorly written and poorly organized proposal is a tell-tale sign of problems that would likely occur with the research itself were the project to be funded*.

If a proposal is written and organized in a way that makes it difficult to follow, *reviewers will see that as a reflection of the applicant's difficulty in articulating and implementing the research project itself*. Errors in grammar, spelling, and usage, for example, will leave reviewers to wonder whether these sloppy errors will migrate into the proposed research, i.e., *inattention to perfection in the research narrative strongly suggests that the applicant may be inattentive to perfection in performing the proposed research*.

USDA Center of Excellence Justification

By **Mike Cronan**, co-publisher

If you have felt somewhat uncertain about how to write a Center of Excellence Justification section in your research narrative to USDA/NIFA under a FY 2015 solicitation, you are not alone. It is clear that implementing the Center of Excellence (CE) program as required in the 2014 Farm Bill is challenging NIFA as well, as it seeks to determine Congressional intent (see March 12, 2015 Centers of Excellence Webinar, Webinar PowerPoints, and CE Provisions in Farm Bill).

As background, the March 12 webinar followed an earlier CE webinar held by NIFA on July 17, 2014, seeking stakeholder input on implementing section 7214 of the 2014 Farm Bill (Webinar Transcript) known as the Center of Excellence Provision.   In February of this year, NIFA posted the Center of Excellence Fact Sheet, and in May, the Centers of Excellence Frequently Asked Questions. NIFA will hold additional webinars in the coming months to collect stakeholder input about its center of excellence implementation strategy as it evolves for FY 2016. NIFA has already suggested that comments and suggestions relative to centers of excellence should be sent to Policy@nifa.usda.gov by September 30th, 2015.

So the challenge to the grant writer appears in this sequence of events: (1) Congress has mandated that NIFA identify Centers of Excellence for food and agricultural research, extension, and education activities, beginning with FY 2015 solicitations; (2) NIFA is searching for the most effective and sensible way to implement this mandate through solicitations, but that process is evolving; and (3) FY 2015 NIFA solicitations, by and large, make the CE justification option available to applicants, albeit not without significant ambiguity.

The CE Justification option in current NIFA solicitations requires any applicant seeking CE status to respond to the following, explaining how the **specific** project:

"(A) Ensures coordination and cost effectiveness by reducing unnecessarily duplicative efforts regarding research, teaching, and extension;

(B) Leverages available resources by using public private partnerships among agricultural industry groups, institutions of higher education, and the Federal Government;

(C) Implements teaching initiatives to increase awareness and effectively disseminate solutions to target audiences through extension activities;

(D) Increases the economic returns to rural communities by identifying, attracting, and directing funds to high-priority agricultural issues; and

(E) Where practicable, the criteria for recognition as a center of excellence shall include efforts to improve teaching capacity and infrastructure at colleges and universities."

There are various ambiguities in all of this, not the least of which is determining exactly what advantage is gained by being selected as a Center of Excellence. Keep in mind, however, that (1) CE status applies only to competitive grants and not formula grants; (2) CE status can be given at many scales, including at the individual level, although integrated projects are most appropriate; and (3) **CE status is _specific_ to a project**.

The advantage of CE designation is a bit vague in the end, but if there is a tie in the merit review status of two applications, then CE status may be used as a "tie breaker." How this will actually work seems a bit uncertain. For example, what if two equally ranked, i.e., highly meritorious, proposals have both been granted CE status? According to the NIFA Webinar from February, there is no disadvantage in not applying for the CE designation. The same reviewers ranking applications make the decision on CE status. As these things tend to go, NIFA's evaluation of FY 2015 applications in which the CE option is available will yield a better understanding of this program that will then be applied to the FY 2016 solicitations.

But the real challenge to the grant writer either writing or assisting with writing the CE Justification statement that responds fully to the above CE Provisions A-E is this, as was noted by a question put to Ms. Erin Daly, NIFA Senior Policy Specialist, during the February webinar: "***What scope of CE justification is realistically expected in a proposal narrative given that the narrative page space is an extremely precious commodity and so there could be a negative tradeoff from the loss of core content space redirected to the CE justification***."

This question really is spot on, but the NIFA answer is a bit fuzzy, leaving it up to the applicant to answer. For example, in the NIFA Specialty Crop Research Initiative RFA (proposals were due July 2), the CE Justification section was included in the 20-page limit for the core research narrative. This requires a narrative strategy that weighs several factors, including whether or not to apply for CE status, given that the "tie breaker" event is very unlikely and the required response to CE Provisions A-E will be challenging with no guarantee of success. The CE Justification needs sufficient narrative space to be convincing, but not so much as to lose precious space to the core content. Conundrums such as this can introduce uncertainty into decisions about the structure, scale, scope, and proportionality of the research narrative.

In fairness, there is really no way NIFA can answer this question with sufficient certainty to calm an anxious PI who wants to know how to play the CE card in the application. It may help to keep in mind, as you outline your research narrative with space for the CE Justification, that some of the core elements of the CE Provisions are already built into NIFA's standard review criteria. Moreover, a thoughtful structuring (narrative balance, proportion, sequencing) of the entire research narrative, which includes the CE Justification in the page limits, may help address the issue of how much valuable space should be taken from the core narrative and assigned to the CE justification, and how much of the core narrative can be leveraged to complement the CE justification ***to avoid narrative repetition***.

Unfortunately, a better answer to this question will likely have to await the FY 2016 solicitations so that NIFA perhaps can "digest and de-bug" the process, making it better and clearer for FY 2016. In the meantime, note that you will have to give careful thought about how best to structure the research narrative of a NIFA application that offers CE status justification as an option.

Explaining the State of the Art: Telling Your Reviewers What They Need to Know

By **Lucy Deckard**, co-publisher

When writing a research proposal, it's extremely important to explain to reviewers how your research builds on, and will advance, the current state of the art. This discussion is often included as a "Background," "Innovation," "Significance," or "State of the Art" section. As you develop this section of your proposal, it's important to have a clear understanding of what this section of the proposal must accomplish:

- It provides needed information to help reviewers who may not be experts in the topic of your research understand what you are proposing and why it is significant.
- It points out opportunities that your research will exploit and gaps in knowledge that your research project will fill.
- It demonstrates to reviewers (who may or may not be experts in the topic) that you are well acquainted with the literature and are building on the most recent work on the topic.

Understanding What Your Reviewer Needs To Know

When you are describing the current state of the art in order to bring your reviewers up to speed, it's critically important that you understand how much your reviewers are already likely to know. This seems an obvious point, but it is one that PIs often forget. During the planning process, do all you can to find out the likely backgrounds of your reviewers. The broader and more interdisciplinary the program or solicitation to which you're applying, the more varied the backgrounds of the reviewers are likely to be. Even if you're applying to a core program at NSF, some programs are much broader than others. If you are able to talk to the Program Officer, ask about the likely composition of the review panel in terms of expertise and backgrounds. If you're applying to a standing study section or panel, look up the roster and investigate the backgrounds of the members.

Clearly, if you are likely to have reviewers with backgrounds far removed from your research topic, you will need to explain your ideas and the current state of the art at a different level than if your reviewers are experts in your field. However, you need to be very careful to avoid the common trap of using this section to provide a several-page tutorial or the equivalent of a first-year graduate seminar on your topic. This approach is seductive because many faculty (who have been teaching classes and seminars related to their research topic) find such a discussion very easy to write, but there are several reasons that using the "tutorial" approach is a mistake. First, it will bore reviewers who are well-informed about the topic of your research. Second, it will bore reviewers who are not well-informed about the topic of your research. Third, the material will seem generic and disconnected from your proposed project. Fourth, it will use critical proposal real estate that you need to make the case for why your research is innovative, significant, and should be funded.

Instead, look at your specific research questions, hypotheses and objectives, and think about what your reviewer needs to know in order to understand:

- What is known now and what are the gaps you will fill?
- How will your research build on what is already known?
- How will your proposed research advance the state of the art, and what will be the impact of those advancements?

If you are addressing reviewers from outside your field, you will need to explain terms, methodologies and challenges in a way that is accessible to them, but avoid lengthy discourses on the basics of your field. If you feel that in order to understand your proposed project, reviewers will need detailed background on a specific methodology or concept, make the description as concise as possible and put it in a separate subsection with a clear heading so that reviewers understand why they are reading the section, and reviewers who already have the required background can skip over it.

Connecting to Your Project

As you discuss the background and relevant work in the literature, be sure to continually connect those discussions to your own project. How is the work you're describing relevant to your project? Does it present interesting results on which you will build? Does it illustrate a gap that you will fill? Does it demonstrate feasibility of a method you will employ? Explaining this relevance is especially important when you have reviewers who are not well-versed in your topic since those connections may not be clear to them unless you discuss them explicitly.

As you discuss relevant literature, be sure that you are focusing specifically on work related to the specific research challenges and objectives of your project, not just on the general scientific area or application. So, for example, if you are proposing to investigate an approach to improve the efficiency of a specific step in synthesizing a biofuel from switchgrass, you should focus specifically on what others have done to address this problem step, other work that employed a similar strategy, etc. Don't use this section to provide a lengthy tutorial on the various types of biofuels and how they are synthesized.

Demonstrating Your Knowledge of the Literature

Remember also that, particularly if you are a relatively early career researcher, you need to reassure the reviewers that you are familiar with the latest developments in your research topic and know the literature well. It is quite common for reviewers to fault a proposal for failing to refer to seminal publications on the topic or work that they feel is relevant. In your discussion of the state of the art, it's a good idea to discuss papers on your specific topic even if their methodology is different, or you feel there are important shortcomings in the work. Briefly and diplomatically mention how your approach will be different or how it will go beyond the reported work. Moreover, if you suspect that colleagues doing similar work are likely to be reviewers, it's wise to respectfully cite their work.

All of these approaches will help to orient your reviewers and demonstrate your knowledge without boring them or using too much critical space in your proposal.

Don't Bury the Lead

By **Mike Cronan**, co-publisher

The most commonly given sage advice in journalism is "***Don't bury the lead***." It is excellent advice for those involved in the planning, development, and writing of grants as well. In journalism, the meaning of this phase is simple: ***put the most important facts first in your story***. The most important fact in a newspaper article is the lead. In an abbreviated form, the lead may serve as the headline for the story as well, making it a more compelling read, much like Vincent A. Musetto's immortalized headline in the *New York Post* of April 15, 1983: "***Headless Body in Topless Bar***," a story about another horrific crime in New York City at a time, unlike today, when crime there was rampant.

In journalism, the lead answers the ***key generic questions of "who, what, where, when, why and how***." It is followed by other details important to the story, and finally concludes with general information or background, sometimes referred to as a "kicker." In journalism, this narrative structure is called the "***inverted pyramid***." The inverted pyramid serves as a journalistic template, much like the solicitation functions as the grant writer's narrative template, designed to prioritize information and provide an organizational structure to the news story, or, in grant writing, to organize the research narrative.

The inverted pyramid structure plays another important role as well, in a way particularly relevant to grant writing, in that the ***reader gets all the important information in the first paragraph***, and all subsequent paragraphs further elaborate upon the lead paragraph with additional detail and specifics. Again, excellent advice to the grant writer. In this case, to "***bury the lead***" means to begin a news story with general background information without a "***compelling hook***" to induce the reader to read further in the story. This the reader is left to skim down through subsequent paragraphs to find the point of the story.

Of course, a few morning newspaper readers, perhaps powered by caffeine, may be willing to indulge the writer and patiently wait to get to the point of the story after a few paragraphs. But ***reviewers of a 15- to 40-page research proposal definitely will not be so indulgent of a buried lead***. Too often, however, authors of a proposal's research narrative invert the journalist's inverted pyramid, orienting it "right side up," forcing the reviewer to first read lengthy general background information that does nothing to make quickly clear to the reviewers what the proposer actually proposes to do and why it is important and deserving of funding.

Journalists write mostly about what ***others have already done <u>in the past</u>***, or perhaps speculate, albeit with little certainty, about what others might possibly do in the future. The authors of a research narrative, however, must write about ***what they will do of importance <u>in the future</u>*** with convincing certainty supported by specificity and detail, often given credibility by what they have done in the past, i.e., preliminary data. Journalists write about the past; grant writers write about the future. Moreover, the lead of every story written by a journalist is unique. For the grant writer, the lead is always the same in every proposal: ***the significance of the goals and objectives of the proposed research***.

Finally, like journalists, grant writers tell a story, too, and it must be a compelling one stated clearly if you are to have any chance of funding. Grant writers also have their own very similar version of the journalist's **key generic questions of "who, what, where, when, why and how" that must be answered in the lead paragraph to "hook the reader," i.e., "what research do you propose to do, why do you propose to do it, why is it significant to the field or agency mission, why are you the person to do it, how will you do it, what is your research rationale, do you have preliminary results or results from prior support that help validate your capacity to perform?"**

So, don't bury the lead, or your proposal may end up buried in the declined for funding pile.

What NSF Expects to See in Your Narrative

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

It is good to remember that the NSF Grant Proposal Guide (GPG) is an important read for anyone planning, developing, and writing a proposal to that agency, and not just meant for those focused on the pre- and post-award process. While the principal focus of the guidelines is on the latter, there are some key, albeit brief, passages in this document that give ***insight into what NSF expects to see in a competitive research narrative***. NSF's expectations for the research narrative **should** directly impact how the research narrative is planned, organized, and written. Unfortunately, whether NSF's expectations **will be** incorporated into the planning, organization, and writing of the research narrative is another question entirely.

How many PIs writing research narratives actually review the GPG is debatable, but likely far fewer than those who actually read the operating manual for their smart TV cover to cover. Of course, this is not unexpected because the GPG is a long, detail-specific document whose contents are typically relayed to the PI by those in sponsored project offices who have a more experienced and nuanced understanding of the GPG from continuous exposure on hundreds of proposals.

But amidst all the process-oriented detail in the GPG, there are a few hidden informational gems that those writing the research narrative for an NSF proposal should be aware of for strategic planning purposes. While failure to follow the process instructions of the GPG may well result in a proposal being returned without review, failure to follow the NSF narrative expectations addressed in the GPG will have a different outcome—a likely refusal to fund. This slide from the NSF grants conference at the University of South Florida (June 1-2, 2015) shows why perfection in the narrative is essential.

Distribution by Average Reviewer Ratings for Awards and Declines, FY 2014
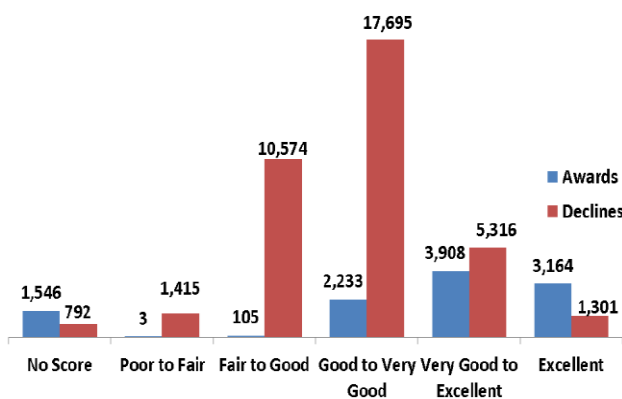
As can be seen above, even near perfection can result in rejection. Over 25 percent of the 4,465 proposals with an average reviewer rating of "***excellent***" were declined for funding,

and funding recommendations go quickly south thereafter, e.g., around 60 percent of the proposals with an average reviewer rating of "***very good to excellent***" were declined for funding. So, in writing proposals to NSF, as in gymnastics, success requires that you "***stick the landing***," the culmination of a flawless performance. ***One way to attain this perfection is to listen to what the agency is telling you it wants to see in your research narrative***. Two brief sections in the GPG (*Chapter II - Proposal Preparation Instructions*) give you this information, as quoted with editorial bolding below:

NSF Core Mission Strategies

"Proposers should also **be aware of core strategies that are essential to the fulfillment of NSF's mission**, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan, 2014-2018*. These strategies are integrated in the program planning and implementation process, ***of which proposal review is one part***. NSF's mission is particularly well-implemented through the ***integration of research and education and broadening participation*** in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at NSF awardee organizations. These organizations must recruit, train, and prepare a **diverse** science, technology, engineering, and mathematics (STEM) **workforce to advance the frontiers of science and participate in the U.S. technology-based economy**. NSF's contribution to the **national innovation ecosystem is to provide cutting-edge research** under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong STEM workforce by **investing in building the knowledge that informs improvements in STEM teaching and learning**.

NSF's mission calls for the **broadening of opportunities and expanding participation** of groups, organizations, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. **NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports**."

Project Description

"The **Project Description** should provide a **clear** statement of the work to be undertaken and must include: **objectives for the period of the proposed work and expected significance; relation to longer-term goals of the PI's project; and relation to the present state of knowledge in the field**, to work in progress by the PI under other support **and to work in progress elsewhere**.

The **Project Description** should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a **clear** description of experimental methods and procedures. **Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful**. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to **both** the technical aspects of the proposal **and the way in which the project may make broader contributions**.

The **Project Description** must contain, as a separate section within the narrative, a section labeled "**Broader Impacts of the Proposed Work**". This section should provide a discussion of the broader impacts of the proposed activities. **Broader impacts may be accomplished through the <u>research itself</u>, through the activities that are directly <u>related</u> to specific research projects, or through activities that are supported by, but are <u>complementary</u> to the project**. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of **<u>societally relevant outcomes</u>**. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education."

       The above is a brief roadmap to funding success at NSF hidden away in the process details of the GPG. As you plan and organize your research narrative, these expectations should be **<u>centermost in your narrative planning and organizational strategy</u>** to ensure you come as close to perfection as possible in addressing these core mission principles laid out by NSF.

Research Grant Writing Web Resources

Science and Technology Priorities for the FY 2017 Budget

This is a brief, preliminary document on anticipated research directions mission and R&D agencies are asked to focus on for FY 2017 funding. Some of the overarching priorities in various research areas include:

STEM Education Guidance

Investments in STEM education should be guided by the priorities outlined in the *Federal STEM Education 5-Year Strategic Plan* developed by the Committee on STEM Education under the National Science and Technology Council, and should continue to pursue the goals of enhancing program effectiveness and reducing program fragmentation. **Priority should be given to programs that use evidence to guide program design and implementation or that build evidence about what works in STEM education, using appropriate metrics and improving the measurement of outcomes.** Agencies should give priority to policies and actions identified by research as having the greatest potential to increase inclusion and diversity in STEM education, research, and careers such as changes in STEM instruction; changing the image of STEM education and careers; and reducing explicit, implicit, and structural biases against girls, women, and members of underrepresented minority groups.

Innovation in life sciences, biology, and neuroscience.

Agencies should give priority to programs that support fundamental biological discovery research that could generate unexpected, high-impact scientific and technological advances in health, **energy, and food security**, particularly in the President's BRAIN Initiative, the *National Strategy for Combating Antibiotic Resistance,* and the *National Strategy for Biosurveillance* (e.g. , **infectious-disease forecasting capabilities**). Priority should also be placed on research that seeks **fundamental principles that cut across habitats and biological system**s, such as those that govern the behaviors of **micro biomes in diverse envi**ronments. Agencies should prioritize research guided by the *National Research Action Plan for Improving Access to Mental Health Services for Veterans, Service Members, and Military Families*-to identify and develop effective diagnostic and treatment methodologies and metrics with the aim of improved mental health and reduction in substance-use disorders. In addition, the Administration has committed to launching the Precision Medicine Initiative, aimed at tailoring medical care to the individual patient. Agencies should support investments on improving interoperability of health records, addressing privacy concerns, and launching research that will enable discoveries derived from Big Data.

Clean energy.

The President has stated a goal for the United States to lead the world in clean energy. His Climate Action Plan outlines several key objectives in this domain that should be given priority in the 2017 Budget, including promoting American leadership in **renewable energy** (including manufacturing for these technologies and a modernized electric grid); **unlocking**

innovation in other key clean energy technologies; building a clean and efficient 21st_ century transportation sector; and cutting energy waste in homes, businesses, and factories. In transportation, there is a particular need to support R&D that can advance multiple transportation modes and fill knowledge and technology gaps. As part of this focus, agencies should also support technology development that has the dual benefit of reducing greenhouse gas (GHG) emissions and bolstering the resilience of our communities. For example, agencies might consider technology development that leverages renewable energy to power water desalination or purification -reducing the GHG footprint of drinking water and bolstering the resilience of communities in drought-prone areas.

How Can I Stay Up to Date on New NIH Funding Opportunities?
All NIH funding opportunities are published in the NIH Guide to Grants and Contracts (as well as on Grants.gov). Here are a few options for staying on top of new announcements in the NIH Guide: Create customized email alerts: In addition to searching the NIH Guide, you can save your search and receive an email notification when a new NIH Guide posting matches your search criteria. After performing your search, from the Results page click "Save Your Search" to sign up for alerts based on that search criteria. The system can email you with new funding opportunity announcements and/or notices related to your search on a daily, weekly or monthly basis. Watch this YouTube video for a demo. Join the NIH Guide Weekly Table of Contents email listserv: Sign up for the listserv, and every Friday you will receive the week's NIH Guide notices and funding opportunities in a table of contents style digest. Follow @NIHFunding on Twitter: All NIH Guide postings go out over the @NIHFunding Twitter feed. Use the NIH Guide RSS feed: NIH funding opportunities are available in an RSS (Really Simple News Syndication) format for use in your news reader or service of choice. (For more about how to use RSS, visit "What is an RSS feed?" at USA.gov.)

USDA AFRI Resources
- **National Research Council Report: "Spurring Innovation in Food and Agriculture: A Review of the USDA Agriculture and Food Research Initiative Program"**
- **AFRI Annual Synopsis**
- **AFRI Interagency Programs**
- **AFRI Stakeholder Feedback**
- **AFRI Frequently Asked Questions (FAQ)**
- **AFRI FASE & EPSCoR Program**
- **NIFA Peer Review Process for Competitive Grant Applications**
- **Integrated Programs Application Information**
- **Appropriate Acknowledgment of Your NIFA Award**
- **Guidance for AFRI Reviewers**

NSF Grants Conference hosted by the State University System of Florida - June 1-2, 2015
- **Introduction and NSF Overview**
- **Proposal Preparation**
- **NSF Merit Review Process**
- **Award Management**

- **NSF Policy Update**
- **Crosscutting and Special Interest Programs**
- **International Programs**
- **Office of the Inspector General**
- **Breakout Sessions:**
    - **Biological Sciences**
    - **Post-Award Monitoring and Compliance**
    - **Computer and Information Science and Engineering**
    - **Education and Human Resources**
    - **Engineering**
    - **Faculty Early Career Development (CAREER) Program**
    - **Geosciences**
    - **Mathematical and Physical Sciences**
    - **NSF Award Cash Management Service (ACM$)**
    - **Science, Engineering & Education for Sustainability (SEES)**
    - **Social, Behavioral and Economic Sciences**
    - **IT Modernization/Research.gov**
    - **Emerging Research Institution Roundtable**

Educational Grant Writing Web Resources
(Back to Page 1)

What is the Role of Engineering in Secondary Education? A Case for Integrating Crosscutting Engineering Skills in K-12

This paper explores the role that engineering educators can play in building engineering skills in K-12 level, as demonstrated in the Hampton Roads Partnership for Algebra (HR-PAL) project in Virginia. The premise of the project is that the engineering skills should be developed in mathematics and science classes. This paper focuses on the development of problem solving and algebraic thinking skills at K-12 level, using a basic engineering approach, namely 'system analysis', in solving word problems. The results of the project presented here indicate that the problem solving skills of in-service teachers of technology and mathematics, specifically algebra, may be enhanced/developed by a structured problem-solving program employing 'system analysis' in professional learning communities (PLC), such as teachers' circles and summer institutes. Thus, it was concluded that the application of 'system analysis' may be used as a model for integrating crosscutting engineering fundamental skill of problem solving and design across different subjects.

Identifying and Supporting Productive STEM Programs in Out-of-School Settings

More and more young people are learning about science, technology, engineering, and mathematics (STEM) in a wide variety of afterschool, summer, and informal programs. At the same time, there has been increasing awareness of the value of such programs in sparking, sustaining, and extending interest in and understanding of STEM. To help policy makers, funders and education leaders in both school and out-of-school settings make informed decisions about how to best leverage the educational and learning resources in their community, this report identifies features of productive STEM programs in out-of-school settings. Identifying and Supporting Productive STEM Programs in Out-of-School Settings draws from a wide range of research traditions to illustrate that interest in STEM and deep STEM learning develop across time and settings. The report provides guidance on how to evaluate and sustain programs. This report is a resource for local, state, and federal policy makers seeking to broaden access to multiple, high-quality STEM learning opportunities in their community.

American Association for the Advancement of Science

Assessment Tools in Informal Science

Centers for Ocean Sciences Education Excellence

Nanoscale Informal Science Education

National Alliance for Broader Impacts

Research Development & Grant Writing News

Portal to the Public

Quest

Below are references recommended by NSF as background for submitting a proposal in response to the Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR) solicitation with multiple due dates beginning in November. However, this list of references has value far beyond IUSE and is relevant to many other NSF programs as well, including research centers.

[1] National Research Council (2010) *Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5*. Washington, DC: National Academies Press, http://www.nap.edu/catalog.php?record_id=12999

[2] National Research Council (2011) *Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads*. Washington, DC: National Academies Press, http://www.nap.edu/catalog.php?record_id=12984

[3] President's Council of Advisors on Science and Technology (2012) *Engage to Excel*: *Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics,* http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf

[4] National Research Council (2012) *Discipline-based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering*. Washington, DC: National Academies Press, http://www.nap.edu/catalog.php?record_id=13362

[5] National Science and Technology Council, Committee on STEM Education (2013) *Federal Science, Technology, Engineering, and Mathematics (STEM) Education 5-Year Strategic Plan*. http://www.whitehouse.gov/sites/default/files/microsites/ostp/stem_stratplan_2013.pdf

[6] Kober, N. (2015) Reaching Students: What Research Says About Effective Instruction in Undergraduate Science and Engineering. Board on Science Education, Division of Behavioral and Social Sciences and Education, Washington, D.C.: The National Academies Press, http://www.nap.edu/catalog.php?record_id=18687

[7] The Coalition for Reform of Undergraduate STEM Education, (2014) Catherine L. Fry (Editor), Achieving Systematic Change: A Source Book for Advancing and Funding Undergraduate STEM Education. Washington, D. C.: The Association of American Colleges and Universities. http://www.aacu.org/pkal/sourcebook

[8] Booth, W.C., G.C. Colomb and J.M. Williams (2008) *The Craft of Research*, 3rd edition, Chicago: University of Chicago Press and American Society for Engineering Education (2009) Creating a Culture for Scholarly and Systematic Innovation in Engineering Education. Washington, DC: ASEE

[9] National Research Council, *The Mathematical Sciences in 2025*, Washington, DC: The National Academies Press, 2013.

[10] For an analysis of effective practices and a research agenda for continuing to build the knowledge base of how to improve undergraduate STEM education, see NRC (2012) *op. cit.*

[11] National Research Council (2010). Preparing Teachers: Building Evidence for Sound Policy. Committee on the Study of Teacher Preparation Programs in the United States, Center for

Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press, http://www.nap.edu/catalog/12882/preparing-teachers-building-evidence-for-sound-policy

Agency Research News

Dear Colleague Letter: Communication About Automated Compliance Checking and Proposal Submission

This Dear Colleague Letter (DCL) is to communicate with the engineering research community about the new features that NSF has implemented in the FastLane system for automated compliance checking and about common reasons for lack of compliance. The goals are to ensure consistency in NSF's proposal submissions, to enhance the ease of submissions, to reduce the number of submitted proposals that will be returned without review, and to enable a greater number of meritorious ideas to advance.

NSF has implemented new features for automated compliance checking in the FastLane system. I strongly encourage FastLane users to check proposals for compliance during the proposal preparation and submission process. The current complete NSF Proposal Preparation Checklist can be found at:

http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_2.jsp#IIex1 .

Below please see the most common reasons for return without review for proposals previously submitted to the Engineering Directorate. Please take these requirements into consideration when preparing and submitting proposals.

PROJECT SUMMARY

- Should ONLY be uploaded as a PDF if the use of special character is required.
- Must include separate sections labeled "Overview," "Intellectual Merit," and "Broader Impacts" if uploaded as a PDF.

PROJECT DESCRIPTION

- Must include "Results from Prior NSF Support" over the past five years for each PI and Co-PI.
- Must include a section — with a heading — for "Broader Impacts" of the proposed work.

Dear Colleague Letter: U.S. - China Joint Research Projects in Environmental Sustainability

The NSF Engineering Directorate (ENG) and the National Natural Science Foundation of China (NSFC) Department of Engineering and Material Sciences (DEMS) are partnering to encourage joint research by U.S. - China teams collaborating on fundamental research that addresses critical environmental sustainability challenges. The U.S. and China have the two largest economies on Earth and also have important engineering, technology, business and trade relationships with each other. Both nations face significant environmental sustainability challenges, for example in water and energy, urban sustainability, and manufacturing. Fundamental research is needed to provide the foundational knowledge for addressing these challenges. This call is for research proposals from joint U.S. - China teams in two environmental sustainability topic areas: Topic 1. Combustion Related to Sustainable Energy; Topic 2. Urban Water Sustainability. Every proposal must include the participation of researchers from at least one U.S. institution and at least one institution in China. Proposals that do not comply with this requirement will be returned without review. The proposal

submitted to NSF must conform to NSF proposal requirements as specified in NSF's posted Grant Proposal Guide, and the matching proposal submitted to NSFC must conform to requirements posted by NSFC. NSF will fund the U.S. researchers of winning teams (up to a total of $500K for 4 years for each winning proposal), while NSFC will fund the China researchers of winning teams (up to a total of 3 million yuan for 4 years for each winning proposal).

NSF DCL: Unsolicited Proposals for Quantitative Approaches to Biomedical Big Data

One of the critical application areas at the interface of the biomedical and data sciences is precision (or personalized) medicine. The goal of precision medicine is to develop a targeted treatment (or prevention) regimen that takes into account unique characteristics of an individual such as genetic makeup, environmental factors, and lifestyle. Achieving the goal of precision medicine will require combining data across multiple formats and developing novel, sophisticated mathematical, statistical, and computational methods that facilitate high-confidence predictions for individuals.

These challenges will require inter- and cross-disciplinary teams that include mathematicians, statisticians, and biomedical researchers and engineers to develop models, methods, and approaches that can lead to new insights and lay the groundwork for future advances in precision medicine.

Through this Dear Colleague Letter (DCL), NSF's Division of Mathematical Sciences (DMS), Directorate for Mathematical and Physical Sciences, aims to foster inter- and multi-disciplinary, exploratory collaborations by encouraging the submission of unsolicited proposals for small one-year planning grants (typically less than $100,000 in total costs per grant). We encourage collaborative proposals from new teams of researchers, representing the quantitative / computational sciences and the biomedical sciences, pursuing novel approaches to data challenges in precision medicine. These collaborations, cutting across multiple disciplines, have the potential to lead to new research directions and contribute to the enhancement of the mathematical sciences infrastructure.

Proposals should address how this new collaboration will address a biomedical challenge and describe the use of large-scale publicly available biomedical datasets to illustrate the proposed models and methodology. Data science topics of interest in this context include, but are not limited to, network analysis, causal analysis, and machine learning.

NSF Dear Colleague Letter: NSF STEM Teacher Leader Initiative

The National Science Foundation (NSF) has long recognized the importance of teacher leadership and has sought to support it in a number of ways through programs such as the Presidential Awards for Excellence in Mathematics and Science Teaching, the Master Teacher Fellowship of the Robert Noyce Teacher Scholarship Program, and the Math and Science Partnership program. In addition to these programs, teachers recognized through the Albert Einstein Distinguished Educator Fellowship Program and teachers who have participated in NSF-supported research experiences for teachers (RET) programs are also considered to be teacher leaders for the purpose of this DCL. The Foundation wishes to expand opportunities for identified teacher leaders in the aforementioned groups, enabling them to boost their already considerable professional activities.

NSF will begin by requesting proposals for new ideas and approaches that can be piloted for up to two years with the goal of discovering successful models for long-term, more established programs to support teacher leaders. Proposed activities should provide more opportunities for the nation to take advantage of these teachers and for them to serve as a resource for improving K-12 science, technology, engineering, and mathematics (STEM) education. In addition to new ideas and techniques, proposals might also build on existing activities that demonstrate promise for adaption and adoption at larger scales. Competitive proposals should describe enhanced professional development intended specifically for already identified teacher leaders that would increase their leadership capacity in STEM education and research.

Any number or combination of components could be addressed in a pilot effort, including but not limited to identifying stable sources of support; novel STEM research opportunities in U.S. public and private research organizations; avenues for teacher involvement in advisory and mentoring capacities; and international travel for participation in symposia, research, and education. Proposals should include an evaluation plan appropriate to the type of activity envisioned and suitable for all components of the project.

NSF Dear Colleague Letter: Enabling the Future of Making to Catalyze New Approaches in STEM Learning and Innovation

Building on NSF's early investments in *Making*, the purpose of this Dear Colleague Letter (DCL) is to encourage EAGER proposals to conduct exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches that advance the frontier of knowledge with respect to STEM learning and design thinking. Specifically, NSF challenges and encourages the community to submit innovative proposals for fundamental research or the integration of research and education that:

- Elucidate the processes and potential benefits of learning, e.g. design thinking, in the *Maker* context;
- Leverage *Making* to develop and test its role in improving the effectiveness of formal and informal learning pathways for increasing retention and broadening participation in STEM for students and faculty;
- Explore new ideas and models of formal and informal STEM learning by leveraging existing knowledge in Making;
- Investigate and test effectiveness of new approaches to design and innovation enabled by *Maker* spaces and practices;
- Enable new tools and knowledge for design and prototyping across all disciplines that can significantly increase *Making* capabilities; and
- Further the understanding of innovation processes from prototypes through their transition to products that have greater societal and economic impact through enhanced marketability and large-scale market adoption.

Agency Reports, Workshops & Research Roadmaps
(Back to Page 1)

Diplomacy for the 21st Century: Embedding a Culture of Science and Technology Throughout the Department of State
Diplomacy for the 21st Century recommends steps that the Department of State should embrace to take full advantage of the leading science and technology (S&T) capabilities of the United States. These capabilities provide the department with many opportunities to promote a variety of the interests of the United States and its allies in a rapidly changing world wherein S&T are important drivers of economic development at home and abroad and help ensure international security. This report assesses and makes recommendations concerning the changing environment for the conduct of diplomacy in the years ahead, with a focus on the role of S&T in the development and implementation of U.S. policies and programs. According to this report, prompt steps by the department's leadership are essential to ensure adequate comprehension of the importance of S&T-related developments throughout the world and to incorporate this understanding within the nation's foreign policy for the 21st century. This report also urges the adoption by the department of a broader whole-of-society approach in carrying out its responsibilities at home and abroad - extending beyond traditional interagency coordination and the narrow band of current external partners to include foundations, universities, research centers, and other groups who are extending their international reach.

Overcoming Barriers to Deployment of Plug-in Electric Vehicles
Overcoming Barriers to Deployment of Plug-in Electric Vehicles identifies barriers to the introduction of electric vehicles and recommends ways to mitigate these barriers. This report examines the characteristics and capabilities of electric vehicle technologies, such as cost, performance, range, safety, and durability, and assesses how these factors might create barriers to widespread deployment. Overcoming Barriers to Deployment of Plug-in Electric Vehicles provides an overview of the current status of PEVs and makes recommendations to spur the industry and increase the attractiveness of this promising technology for consumers. Through consideration of consumer behaviors, tax incentives, business models, incentive programs, and infrastructure needs, this book studies the state of the industry and makes recommendations to further its development and acceptance.

Collective Behavior: From Cells to Societies: Interdisciplinary Research Team Summaries
Collective Behavior is the summary of the 2014 National Academies Keck Futures Initiative Conference on Collective Behavior. Participants were divided into fourteen interdisciplinary research teams. The teams spent nine hours over two days exploring diverse challenges at the interface of science, engineering, and medicine. The composition of the teams was intentionally diverse, to encourage the generation of new approaches by combining a range of different types of contributions. The teams included researchers from science, engineering, and medicine, as well as representatives from private and public funding agencies, universities, businesses, journals, and the science media. Researchers represented a wide range of experience - from postdoc to those well established in their careers - from a variety of

disciplines that included science and engineering, medicine, physics, biology, economics, and behavioral science. The teams needed to address the challenge of communicating and working together from a diversity of expertise and perspectives as they attempted to solve a complicated, interdisciplinary problem in a relatively short time. This report highlights the presentations of the event and includes the team reports and pre-meeting materials.

Interim Report on 21st Century Cyber-Physical Systems Education
Cyber-physical systems (CPS) are increasingly relied on to provide the functionality and value to products, systems, and infrastructure in sectors including transportation, health care, manufacturing, and electrical power generation and distribution. CPS are smart, networked systems with embedded sensors, computer processors, and actuators that sense and interact with the physical world; support real-time, guaranteed performance; and are often found in critical applications. Cyber-physical systems have the potential to provide much richer functionality, including efficiency, flexibility, autonomy, and reliability, than systems that are loosely coupled, discrete, or manually operated, but also can create vulnerability related to security and reliability. Advances in CPS could yield systems that can communicate and respond faster than humans; enable better control and coordination of large-scale systems, such as the electrical grid or traffic controls; improve the efficiency of systems; and enable advances in many areas of science. As CPS become more pervasive, so too will demand for a workforce with the capacity and capability to design, develop, and maintain them. Building on its research program in CPS, the National Science Foundation (NSF) has begun to explore requirements for education and training. As part of that exploration, NSF asked the National Research Council of the National Academies to study the topic. Two workshops were convened in 2014, on April 30 and October 2-3 in Washington, D.C., to explore the knowledge and skills required for CPS work, education, and training requirements and possible approaches to retooling engineering and computer science programs and curricula to meet these needs. *Interim Report on 21st Century Cyber-Physical Systems Education* highlights emerging themes and summarizes related discussions from the workshops.

New Funding Opportunities
(Back to Page 1)

Content Order
New Funding Posted Since June 15 Newsletter
URL Links to New & Open Funding Solicitations
Solicitations Remaining Open from Prior Issues of the Newsletter
Open Solicitations and BAAs

[User Note: URL links are active on date of publication, but if a URL link breaks or changes a Google search on the key words will typically take you to a working link. Also, entering a grant title and/or solicitation number in the Grants.gov search box will typically work as well.]

New Funding Solicitations Posted Since June 15 Newsletter

USDA-NIFA-HEP-005276 Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship Grants Program
This grant program supports: (1) training students for Master's and doctoral degrees in food, agricultural and natural resource sciences, and; (2) Special International Study or Thesis/Dissertation Research Travel Allowances (IRTA) for eligible USDA NNF beneficiaries. Awards are specifically intended to support traineeship programs that engage outstanding students to pursue and complete their degrees in USDA mission areas. Applicants provide clarity about the philosophy of their graduate training, and relevance to USDA mission sciences, NIFA priorities and national science education policies and statistics. Applications are being solicited from institutions that confer a graduate degree in at least one of the following Targeted Expertise Shortage Areas: 1) animal and plant production; 2) forest resources; 3) agricultural educators and communicators; 4) agricultural management and economics; 5) food science and human nutrition; 6) sciences for agricultural biosecurity; and 7) training in integrative biosciences for sustainable food and agricultural systems. **Due August 19.**

EP-IDS-15-002 The Biomedical Advanced Research and Development Authority Special Projects Department of HHS Asst Secretary for Preparedness and Response
The Biomedical Advanced Research and Development Authority (BARDA), within the Office of the Assistant Secretary for Preparedness and Response (ASPR) in the U.S. Department of Health and Human Services (HHS), supports advanced development and availability of medical countermeasures (MCMs) for chemical, biological, radiological and nuclear (CBRN) threats, pandemic influenza, and emerging infectious diseases through advanced product development, stockpile acquisition, building manufacturing infrastructure, and product innovation. BARDA establishes and maintains business collaborations by means of grants, cooperative agreements, contracts, and other transactions with the public and private sectors, domestically and internationally. BARDA has grown significantly since inception, acquiring new capabilities and

employing new business approaches leading to unprecedented success in the development and acquisition of MCMs. **Due September 4.**

20150916-HD NEH Digital Humanities Start-Up Grants

The Digital Humanities Start-Up Grants program awards relatively small grants to support the planning stages of digital projects that promise to benefit the humanities. The program supports both new projects in early stages of development and efforts to reinvigorate existing or dormant projects in innovative ways.

Proposals should be for the planning or initial stages of digital initiatives in any area of the humanities. Digital Humanities Start-Up Grants may involve
• creating or enhancing experimental, computationally-based methods or techniques for humanities research, teaching, preservation, or public programming;
• pursuing scholarship that examines the history, criticism, and philosophy of digital culture and its impact on society, or explores the philosophical or practical implications and impact of digital humanities in specific fields or disciplines; or
• revitalizing and/or recovering existing digital projects that promise to contribute substantively to scholarship, teaching, or public knowledge of the humanities.

Experimentation, reuse, and extensibility are hallmarks of this grant category, which incorporates the "high risk/high reward" paradigm often used by funding agencies in the sciences. NEH is requesting proposals for projects that take some risks in the pursuit of innovation and excellence.

Digital Humanities Start-Up Grants should result in plans, prototypes, or proofs of concept for long-term digital humanities projects prior to implementation. They can also be used to revitalize or recover projects in innovative ways that will allow greater access, reuse, and extensibility. **Due September 16.**

Advances in Biological Informatics (ABI)

The Advances in Biological Informatics (ABI) program seeks to encourage new approaches to the analysis and dissemination of biological knowledge for the benefit of both the scientific community and the broader public. The ABI program is especially interested in the development of informatics tools and resources that have the potential to advance- or transform- research in biology supported by the Directorate for Biological Sciences at the National Science Foundation. The ABI program accepts three major types of proposals: Innovation awards that seek to pioneer new approaches to the application of informatics to biological problems, Development awards that seek to provide robust cyberinfrastructure that will enable transformative biological research, and Sustaining awards that seek to support ongoing operations and maintenance of existing cyberinfrastructure that is critical for continued advancement of priority biological research. **Due September 22.**

PA-AFRL-AFOSR-2015-0001 Defense University Research Instrumentation Program (DURIP)

This announcement seeks proposals to purchase instrumentation in support of research in areas of interest to the DoD, including areas of research supported by the Army Research Office (ARO), the Office of Naval Research (ONR), and the Air Force Office of Scientific Research (AFOSR). For detailed information regarding technical goals, potential proposers are advised to

refer to the full announcement. They also are encouraged to contact DoD program managers before submitting proposals, in order to explore research areas that are of mutual interest to the proposers and DoD administering agencies. A proposal may be submitted to more than one administering agency; however, only one administering agency will fund the proposal, if selected, under the 2016 DURIP. **Due September 25**.

Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)
The Improving Undergraduate STEM Education (IUSE: EHR) program invites proposals that address immediate challenges and opportunities that are facing undergraduate STEM education, as well as those that anticipate new structures (e.g. organizational changes, new methods for certification or credentialing, course re-conception, cyberlearning, etc.) and new functions of the undergraduate learning and teaching enterprise. The IUSE: EHR program recognizes and respects the variety of discipline-specific challenges and opportunities facing STEM faculty as they strive to incorporate results from educational research into classroom practice and work with education research colleagues and social science learning scholars to advance our understanding of effective teaching and learning. Toward these ends the program features two tracks: (1) Engaged Student Learning and (2) Institutional and Community Transformation. Two tiers of projects exist within each track: (i) Exploration and Design and (ii) Development and Implementation. **Multiple due dates beginning November 3.**

Interdisciplinary Behavioral and Social Science Research
The Interdisciplinary Behavioral and Social Science Research (IBSS) competition promotes the conduct of interdisciplinary research by teams of investigators in the social and behavioral sciences. Emphasis is placed on support for research that involves researchers from multiple SBE disciplinary fields and that integrates scientific theoretical approaches and methodologies from multiple SBE disciplinary fields. Emphasis also is placed on the significance of expected intellectual contributions that are likely to yield generalizable insights and information that will enhance theoretical perspectives and advance basic knowledge and capabilities across multiple SBE disciplinary fields. Although the IBSS competition will consider any proposal that addresses a topic for which the proposal makes a compelling case that the research will enhance broader theoretical understanding across multiple social and behavioral science fields, social and behavioral science researchers are especially encouraged to submit proposals for research on one of the following three broadly defined topics: Population Change; Sources and Consequences of Disparities; and Technology, New Media, and Social Networks. **Due Dec. 1.**

APS-OAA-15-000048 U.S. Agency for International Development (Higher Education Partnerships for Innovation and Impact (HEPII) Annual Program Statement (APS)
The United States Agency for International Development (USAID) is seeking concept papers from qualified U.S. and non-U.S. higher education institutions (HEIs) to work with USAID to advance strategic priorities and objectives and achieve sustainable development outcomes, results, and impact. This Annual Program Statement (APS) has the flexibility to award Cooperative Agreements, Grants, Fixed Amount Awards, and leader with Associate Awards. This APS is not supported by specific funding, and any funding for any USAID-HEI partnership proposed under this APS would have to be requested from the specific USAID Mission, Bureau,

or Independent Office with which the prospective applicant seeks to collaborate and to which the Concept Paper will be submitted. USAID seeks to optimize its relationship with HEIs by identifying and promoting successful partnerships and collaboration models, and increasing USAID's access to higher education technical resources. The purpose of this APS is to promote opportunities for leveraging HEI capabilities across USAID's portfolio and its program cycle, and strengthen developing country HEI capabilities to respond to and solve critical development challenges. **Original Closing Date for Applications: Jun 29, 2016**

[**DARPA-BAA-15-39 DSO Office-wide BAA Department of Defense**](#)
The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and pursue high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and to transform these initiatives into important, radically new, game-changing technologies for U.S. national security. In support of this mission, this DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts in one or more of the following technical areas: Physical Systems; Mathematics, Modeling and Design; and Human-Machine Systems. Each of these areas is described below and includes a list of example research topics. For each technical area addressed, proposed research should investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice. **Open to July 2, 2016.**

URL Links to New & Open Funding Solicitations
Links verified: Saturday, October 04, 2014

- [**HHS Grants Forecast**](#)
- [**American Cancer Society Index of Grants**](#)
- [**SAMHSA FY 2014 Grant Announcements and Awards**](#)
- [**DARPA Microsystems Technology Office Solicitations**](#)
- [**Open Solicitations from IARPA (Intelligence Advanced Research Projects Activity)**](#)
- [**Bureau of Educational and Cultural Affairs, Open Solicitations, DOS**](#)
- [**ARPA-E Funding Opportunity Exchange**](#)
- [**DOE Funding Opportunity Exchange**](#)
- [**NIAID Funding Opportunities List**](#)
- [**NPS Broad Agency Announcements (BAAs)**](#)
- [**NIJ Current Funding Opportunities**](#)
- [**NIJ Forthcoming Funding Opportunities**](#)
- [**Engineering Information Foundation Grant Program**](#)
- [**Comprehensive List of Collaborative Funding Mechanisms**](#), NORDP
- [**ARL Funding Opportunities — Open Broad Agency Announcements (BAA)**](#)
- [**HHS Grants Forecast**](#)
- [**American Psychological Association, Scholarships, Grants and Awards**](#)

- **EPA 2014 Science To Achieve Results (STAR) Research Grants**
- **NASA Open Solicitations**
- **Defense Sciences Office Solicitations**
- **The Mathematics Education Trust**
- **EPA Open Funding Opportunities**
- **CDMRP FY 2014 Funding Announcements**
- **Office of Minority Health**
- **Department of Justice Open Solicitations**
- **DOE/EERE Funding Opportunity Exchange**
- **New Funding Opportunities at NIEHS (NIH)**
- **National Human Genome Research Institute Funding Opportunities**
- **Army Research Laboratory Open Broad Agency Announcements (BAA)**
- **SBIR Gateway to Funding**
- **Water Research Funding**
- **Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences**
- **DARPA Current Solicitations**
- **Office of Naval Research Currently Active BAAs**
- **HRSA Health Professions Open Opportunities**
- **NIH Funding Opportunities Relevant to NIAID**
- **National Institute of Justice Current Funding Opportunities**
- **Funding Opportunities by the Department of Education Discretionary Grant Programs**
- **EPA's Office of Air and Radiation (OAR) Open Solicitations**
- **NETL Open Solicitations**
- **DoED List of Currently Open Grant Competitions**
- **Foundation Center RFP Weekly Funding Bulletin**

Solicitations Remaining Open from Prior Issues of the Newsletter

Regional Coastal Resilience Grant Program
The Regional Coastal Resilience Grant program will support regional approaches to undertake activities that build resilience of coastal regions, communities, and economic sectors to the negative impacts from extreme weather events, climate hazards, and changing ocean conditions. It will support planning or implementing actions that mitigate the impacts of environmental drivers on overall resilience, including economic and environmental resilience. Funded projects will result in improved information for decision makers and actions that reduce risk, accelerate recovery, and promote adaptation to changing social, economic, and environmental conditions. **Due July 24.**

NIST: Economic Analysis of the National Need for Technology Infrastructure to Support the Materials Genome Initiative
NIST is soliciting applications from eligible applicants to assess the economic impacts of meeting the Nation's need for technology infrastructure to support the Materials Genome

Initiative (MGI). Advanced materials are essential to economic security and human well-being, with applications in industries aimed at addressing challenges in clean energy, national security, and human welfare, yet it can take 20 or more years to move a material after initial discovery to the market. This prospective (strategic planning) study involves, at a minimum, expertise in the following disciplines: technology assessment, high-tech industry behavioral and structural analyses, microeconomic modeling of complex technology development and commercialization patterns, high-tech industry survey and data collection techniques, and quantitative and qualitative analyses of technology infrastructure gaps that are inhibiting the advancement of technologies. The goal of the analysis is to identify gaps in the Nation's technology infrastructure needed to support the MGI and estimate the economic value of eliminating these gaps. **Due July 28.**

Research on Innovative Approaches to Fusion Energy
The Office of Fusion Energy Sciences (FES) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving proposals for research on innovative approaches to fusion energy on the spherical tokamak, advanced tokamak, and stellarator concepts. Such research on small to medium scale facilities can explore specific aspects of these concepts, thereby enhancing the understanding of magnetically confined plasmas. By broadening the scientific approach, this research can also help to grow and validate fusion science over a wider range of plasma conditions and enhance the opportunity for scientific discovery in toroidal confinement. Support of research that can help to deepen the scientific understanding and improve the tokamak or stellarator concept is an important focus area of this DOE National Laboratory Announcement (Announcement). Pre-proposal June 29; invited full proposal **August 3.**

2015-NIST-PREP-MML-01 Professional Research Experience Program (PREP-MML)
NIST is soliciting applications from eligible applicants to provide undergraduate students, graduate students, and post-doctoral fellows with fellowship opportunities and financial assistance to obtain laboratory experiences within the NIST Material Measurement Laboratory (MML) in Gaithersburg, Maryland and Charleston, South Carolina. The recipients will work with NIST to foster collaborative research relationships among NIST staff, undergraduate/graduate students, post-doctoral fellows, and the students' academic institutions. **Due August 7.**

CMS-1I0-15-001 Grants to Support the Historically Black Colleges and Universities Health Services Research Grant Program
The Centers for Medicare & Medicaid Services (CMS) is announcing the availability of funds under this grant program to assist Historically Black Colleges and Universities (HBCUs) in conducting health services and health disparities research for 2015. The purpose of the grant program is to support researchers in implementing health services research activities to meet the needs of diverse CMS beneficiary populations. The goals of the grant program are to: 1) encourage HBCU health services researchers to pursue research issues which impact the Medicare, Medicaid, and Children Health Insurance Programs (CHIP); 2) assist CMS in implementing its mission focusing on health care quality and improvement for its beneficiaries; 3) assist HBCU researchers by supporting extramural research in health care capacity

development activities for the African American communities; 4) increase the pool of HBCU researchers capable of implementing the research, demonstration, and evaluation activities of CMS; 5) promote research that will be aimed at developing a better understanding of health care services pertaining to African Americans; and 6) assist in fostering inter-university communication and collaboration regarding African American health disparity issues. **Due August 10.**

CMS-1H0-15-001 Grants to Support the Hispanic Health Services Research Grant Program
The Centers for Medicare & Medicaid Services (CMS) is announcing the availability of funds under this grant program to assist researchers in conducting health services research for 2015. The purpose of the Hispanic grant program is to implement Hispanic health services research activities to meet the needs of diverse CMS beneficiary populations. The grant program is designed to: 1) encourage health services and health disparities researchers to pursue research issues which impact Hispanic Medicare, Medicaid, and Children Health Insurance Program (CHIP) health services issues, 2) conduct outreach activities to apprise Hispanic researchers of funding availability to conduct research-related issues affecting Hispanic communities to expand the pool of applicants applying for such grants, 3) assist CMS in implementing its mission focusing on health care quality and improvement for its beneficiaries, 4) support extramural research in health care capacity development activities for the Hispanic communities, 5) promote research that will be aimed at developing a better understanding of health care services issues pertaining to Hispanics, and 6) foster a network for communication and collaboration regarding Hispanic health care issues. **Due August 11.**

DOE Nuclear Science, Engineering Nonproliferation Research Consortium Due August 12.

Fellowship Programs at Independent Research Institutions
Grants for Fellowship Programs at Independent Research Institutions (FPIRI) support fellowships at institutions devoted to advanced study and research in the humanities. Recognizing that at times scholars need to work away from their homes and institutions, the FPIRI program sponsors fellowships that provide scholars with research time, a stimulating intellectual environment, and access to resources that might otherwise not be available to them. Fellowship programs may be administered by independent centers for advanced study, libraries, and museums in the United States; American overseas research centers; and American organizations that have expertise in promoting research in foreign countries. Individual scholars apply directly to the institutions for fellowships. In evaluating applications consideration is given to the library holdings, archives, special collections, and other resources—either on site or nearby—that institutions make available to fellows. FPIRI grants provide funding for humanities fellowships of four to twelve months. The fellowships are held at the U.S. grantee institutions or—in the case of overseas research centers and organizations—abroad. **Due August 13.**

NEH Museums, Libraries, and Cultural Organizations
This grant program supports projects for general audiences that encourage active engagement with humanities ideas in creative and appealing ways. Many different formats are supported,

including permanent and traveling exhibitions, book or film discussion programs, historic site or district interpretations, living history presentations, and other face-to-face programs in public venues. All projects must be grounded in humanities scholarship in disciplines such as history, art history, film studies, literature, religious studies, philosophy, or anthropology. Projects must also demonstrate an approach that is thoughtful, balanced, and analytical (rather than celebratory). The approach to the subject matter must go beyond the mere presentation of factual information to explore its larger significance and stimulate critical thinking. NEH is a national funding agency, so the projects we support must demonstrate the potential to attract a broad, general audience. We welcome humanities projects tailored to particular groups, such as families, youth (including K-12 students), teachers, seniors, at-risk communities, and veterans, but they should also strive to cultivate a more inclusive public audience. Museums, Libraries, and Cultural Organizations grants provide support for museums, libraries, historic places, and other organizations that produce public programs in the humanities. NEH encourages projects that explore humanities ideas through multiple formats. Proposed projects might include complementary components that deepen an audience's understanding of a subject: for example, a museum exhibition might be accompanied by a website, mobile app, or discussion programs. Planning grants are used to refine the content, format, and interpretive approach of a humanities project; develop the project's preliminary design; test project components; and conduct audience evaluation. Implementation grants are for projects in the final stages of preparation to "go live" before the public. Grants support final scholarly research and consultation, design development, production, and installation of a project for presentation to the public. **Due August 12.**

ED-GRANTS-041515-003 Institute of Education Sciences (IES): Education Research and Development Center Program CFDA Number 84.305C

The Acting Director of the Institute of Education Sciences (Institute) announces the Institute's FY 2016 competitions for grants to support education research and special education research. The Acting Director takes this action under the Education Sciences Reform Act of 2002. The Institute's purpose in awarding these grants is to provide national leadership in expanding fundamental knowledge and understanding of (1) developmental and school readiness outcomes for infants and toddlers with or at risk for disability, and (2) education outcomes for all students from early childhood education through postsecondary and adult education. Purpose of Program: The central purpose of the Institute's research grant programs is to provide interested individuals and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. These interested individuals include parents, educators, students, researchers, and policymakers. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. Competitions in This Notice: **The Institute will conduct eight research competitions in FY 2016 through two of its centers**: The Institute's National Center for Education Research (NCER) will hold six competitions: one competition for education research, one competition for education research training, one competition for education research and development centers, one competition for statistical and research methodology in education, one competition for

partnerships and collaborations focused on problems of practice or policy, and one competition for research networks. **Due August 20.**

[20150824-AE Humanities Initiatives at Community Colleges](#)
NEH Humanities Initiatives at Community Colleges are intended to strengthen the teaching and study of the humanities in subjects such as history, philosophy, and literature. These grants may be used to enhance existing humanities programs, resources, or courses, or to develop new ones. NEH Humanities Initiatives may create opportunities for faculty members to study together, in order to improve their capacity to teach the humanities; support new humanities programs (which may include but are not limited to new humanities minors, first-year seminars, and capstone courses), and enhance existing ones; support humanities contributions to professional training (in such fields as business, law, economics, technology, and nursing and medicine); develop bridge programs for at-risk and nontraditional students; help institutions take advantage of humanities resources, especially in the digital humanities; and support collaborative projects in the humanities between the applicant institution and another institution, such as a college or university, a school or school system, a museum or library, or a historical or cultural society. Each project must be organized around a core topic or set of themes. **Due August 24.**

[NSF Political Science Doctoral Dissertation Research Improvement Grants DDRIG](#) Due Aug. 28.

[NOAA-NOS-IOOS-2016-2004378 FY 2016 Implementation of the U.S. Integrated Ocean Observing System (IOOS®)](#)
The U.S. Integrated Ocean Observing System (IOOS®) is a national and regional partnership working to provide observations, data, and new tools and forecasts to improve safety, enhance the economy, and protect our environment. NOAA is requesting proposals for coordinated regional efforts that further the IOOS in two topic areas, 1) sustaining and enhancing comprehensive regional observing systems and 2) verification and validation of observing technologies for studying and monitoring coastal and ocean environments. NOAA invites applicants to submit proposals for one or both of these topic areas, described in detail below, and requests applicants submit separate applications for each topic area. For single topic proposals, clearly identify the topic area and present all required information such that merit reviewers can associate proposal elements (project description, partners, budgets) with the specific topic area. NOAA anticipates making multiple awards, subject to the availability of funds, in amounts ranging from $1,000,000 to $4,000,000 per year, for up to five years. **Due August 31.**

[NSF Building Community and Capacity in Data Intensive Research in Education](#)
As part of NSF's Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) activity, the Directorate for Education and Human Resources (EHR) seeks 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 EHR areas of research. 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 necessarily limited to--EHR areas of research. **Due September 1.**

NEH Enduring Questions
The NEH Enduring Questions grant program supports faculty members in the preparation of a new course on a fundamental concern of human life as addressed by the humanities. This question-driven course would encourage undergraduates and teachers to join together in a deep and sustained program of reading in order to encounter influential ideas, works, and thinkers over the centuries. **Due September 10.**

American Psychological Assn Early Graduate Student Researcher Awards **Due September 15.**

USDA-NIFA-AFRI-004915 Agriculture and Food Research Initiative - Foundational Program
The AFRI Foundational Program is offered to support research grants in the six AFRI priority areas to continue building a foundation of knowledge critical for solving current and future societal challenges. The six priority areas are: Plant Health and Production and Plant Products; Animal Health and Production and Animal Products; Food Safety, Nutrition, and Health; Renewable Energy, Natural Resources, and Environment; Agriculture Systems and Technology; and Agriculture Economics and Rural Communities. Single-function Research Projects, multi-function Integrated Projects and Food and Agricultural Science Enhancement (FASE) Grants are expected to address one of the Program Area Priorities (see Foundational Program RFA for details). **See application for various LOI dates. Proposals due September 30**

NSF Environmental Sustainability (Core Program)
The goal of the **Environmental Sustainability** program is to promote sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. Research efforts supported by the program typically consider long time horizons and may incorporate contributions from the social sciences and ethics. The program supports engineering research that seeks to balance society's need to provide ecological protection and maintain stable economic conditions.
There are four principal general research areas that are supported:
- **Industrial Ecology**: Topics of interest in Industrial Ecology include advancements in modeling such as life cycle assessment, materials flow analysis, input/output economic models, and novel metrics for measuring sustainable systems. Innovations in industrial ecology are encouraged.
- **Green Engineering**: Research is encouraged to advance the sustainability of manufacturing processes, green buildings, and infrastructure. Many programs in the Engineering Directorate support research in environmentally benign manufacturing or chemical processes. The Environmental Sustainability program supports research that would affect more than one chemical or manufacturing process or that takes a systems or holistic approach to green engineering for infrastructure or green buildings. Improvements in distribution and collection systems that will advance smart

growth strategies and ameliorate effects of growth are research areas that are supported by Environmental Sustainability. Innovations in management of storm water, recycling and reuse of drinking water, and other green engineering techniques to support sustainability may also be fruitful areas for research. **NOTE**: Water treatment proposals are to be submitted to the CBET Environmental Engineering program (1440), NOT the Environmental Sustainability program (7643).

- **Ecological Engineering**: Topics should focus on the engineering aspects of restoring ecological function to natural systems. Engineering research in enhancement of natural capital to foster sustainable development is encouraged.
- **Earth Systems Engineering**: Earth Systems Engineering considers aspects of large scale engineering research that involve mitigation of greenhouse gas emissions, adaptation to climate change, and other global scale concerns**. Full Proposal Window: October 1, 2015 - October 20, 2015**

[GCC-GRANT-SEP-15-001 Spill Impact Component Planning Grants Gulf Coast Ecosystem Restoration Council](#)
This announcement provides guidance to the Gulf Coast States – defined as any of the States of Alabama, Florida, Louisiana, Mississippi, and Texas – or the Gulf Coast States' administrative agents and the Gulf Consortium of Florida counties to apply for grants to fund planning activities to develop individual State Expenditure Plans (SEP) under the Spill Impact Component of the Resources and Ecosystem Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act). The eligible entities may apply to the Council for a grant to use the minimum allocation available under the Spill Impact Component of the RESTORE Act for planning purposes. The submission process for this announcement is organized into two phases: (1) the submission of a planning SEP by a Gulf Coast State; and (2) the administrative application process, which includes the submission of all administrative grant application materials by the eligible entities. All planning activities proposed under this announcement are limited to the development of a comprehensive SEP, including conceptual design and feasibility studies related to specific projects. This announcement does not include engineering and environmental studies related to specific projects. It also does not include any pre-award costs incurred prior to August 22, 2014. **December 31, 2015**

Open Solicitations and BAAs

[Research Interests of the Air Force Office of Scientific Research](#)
AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in three

scientific directorates: Aerospace, Chemical and Material Sciences, Physics and Electronics, and Mathematics, Information and Life Sciences. **Open until superseded.**

DARPA-BAA-14-54 Biological Technologies EZ

The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals of interest to the Biological Technologies Office (BTO). Of particular interest are those proposals from entities (both small and large business) that have never received Government funding, or who do not normally propose to Government solicitations. Proposed research should investigate leading edge approaches that enable revolutionary advances in science, technologies, or systems at the intersection of biology with engineering and the physical and computer sciences. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of the art. BTO seeks unconventional approaches that are outside the mainstream, challenge assumptions, and have the potential to radically change established practice, lead to extraordinary outcomes, and create entirely new fields. **Open to July 23, 2015.**

Broad Agency Announcement for Research Initiatives at Naval Postgraduate School

The Naval Postgraduate School (NPS) is interested in receiving proposals for research initiatives that offer potential for advancement and improvement in the NPS core mission of graduate education and research. Readers should note that this is an announcement to declare NPS's solicitation in competitive funding of meritorious research initiatives across a spectrum of science and engineering, business, politics and public/foreign policy, operational and information sciences, and interdisciplinary disciplines that are in line with the NPS' graduate education and research mission. Additional information on the Naval Postgraduate School's graduate education and research mission is available at: General Information: http://www.nps.edu/About/index.html ; NPS Strategic Plan: http://www.nps.edu/About/NPSStratPlan.html ; Academic Programs: http://www.nps.edu/Academics/index.html ; Research Programs: http://www.nps.edu/Research/index.html ; Prior to preparing proposals, potential Offerors are strongly encouraged to contact an NPS point of contact (POC) whose program and research efforts best match the Offeror's field of interest. The academic and research programs links above can be used to locate an appropriate POC by exploring the information provided about the faculty members in NPS' schools, research institutes, and interdisciplinary centers and research groups. **Open to July 31, 2015**.

Small University Grants Open 5-Year Broad Agency Announcement
Open to August 26, 2015

DARPA-BAA-14-48 Strategic Technologies

DARPA is seeking innovative ideas and disruptive technologies that offer the potential for significant capability improvement across the Strategic Technology Office focus areas. This includes technology development related to Battle Management, Command and Control (BMC2), Communications and Networks, Electronic Warfare, Intelligence, Surveillance, and Reconnaissance (ISR), Position, Navigation, and Timing (PNT), Maritime, and Foundational

Strategic Technologies and Systems. **BAA Closing Date: September 17, 2015**

ONRBAA15-001 Long Range BAA for Navy and Marine Corps Science and Technology
The Office of Naval Research (ONR) is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare ONR's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines. A brief description of the ONR Program Codes and the science and technology thrusts that ONR is pursuing is provided below. Additional information can be found at the ONR website at http://www.onr.navy.mil/Science-Technology/Departments.aspx . Potential Offerors are urged to check the program areas that they are interested in throughout the year for updates to thrust areas and research priorities on the ONR website at http://www.onr.navy.mil. Prior to preparing proposals, potential offerors are strongly encouraged to contact the ONR point of contact (POC). To identify the POC, follow the link for the appropriate code or division listed below and then click on the link to the thrust or topic area. Each thrust or topic area will provide a POC or e-mail address. **BAA Closing Date: September 30, 2015**

DHS-2014-OHA-BIOWATCH BioWatch Program: 2014-2015
The BioWatch Program is a cornerstone of the Department of Homeland Security's (DHS) comprehensive strategy for countering biological terrorism. The BioWatch Program is an early warning system that is designed to detect the intentional release of select aerosolized biological agents. The BioWatch Program's mission is to provide and maintain a continuous bio-terrorism air monitoring system in metropolitan areas and coordinate with state and local public health communities to prepare for and respond to a bioterrorist event. This mission is accomplished by serving as an early warning system which enhances the security of jurisdictions by providing the needed time to execute their comprehensive concept of operations plans to counter biological terrorism. The Biowatch Program is a critical part of an ongoing national effort to build and sustain preparedness which helps the United States to maintain momentum through targeted jurisdictional planning that highlights preventative actions necessary to allow for a proper and timely response and begin the process to recovery from a biological agent release. The BioWatch Evaluation Program (BWEP) will be conducted under the BioWatch Quality Assurance Program effective April 1, 2013. This program will consist of independent external audits (Quality Assurance) by Signature Science and internal audits (Quality Control) by BioWatch Systems Program Office field personnel. This approach will initially be conducted with a focus on adherence to the BioWatch Field Operations Standard Operating Procedure (SOP), Version 1.3 and will eventually evolve to encompass the Field Operations Quality Assurance Program Plan (QAPP). In order to ensure a robust QA / QC program the jurisdictions may be subject to a QA external audit and a QC internal audit during the same cooperative agreement cycle (year). **Closes September 30, 2015.**

DE-FOA-0001204 FY 2015 Continuation of Solicitation for the Office of Science
The Office of Science of the Department of Energy hereby announces its continuing interest in receiving grant applications for support of work in the following program areas: Advanced

Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics. On September 3, 1992, DOE published in the Federal Register the Office of Energy Research Financial Assistance Program (now called the Office of Science Financial Assistance Program), 10 CFR 605, as a Final Rule, which contained a solicitation for this program. Information about submission of applications, eligibility, limitations, evaluation and selection processes and other policies and procedures are specified in 10 CFR 605. This Funding Opportunity Announcement (FOA), DE-FOA-0001204, is our annual, broad, open solicitation that covers all of the research areas in the Office of Science and is open throughout the Fiscal Year. This FOA will remain open until September 30, 2015, 11:59 PM Eastern Time, or until it is succeeded by another issuance, whichever occurs first. This annual FOA DE-FOA-0001204 succeeds FOA DE-FOA-0000995, which was published October 1, 2013. **Open to September 30, 2015.**

Nuclear Energy University Programs - Fellowship and Scholarship
This program supports education and training for future nuclear scientists, engineers and policy-makers who are attending U.S. universities and colleges in nuclear-related graduate, undergraduate and two-year study programs. These are zero-dollar awards that will be funded as students apply through the Department of Energy, Office of Nuclear Energy. **Open until November 30, 2015.**

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.

DARPA-BAA-15-27 Innovative Systems for Military Missions
The Tactical Technology Office of the Defense Advanced Research Projects Agency is soliciting executive summaries, white papers and proposals for advanced research and development of innovative systems for military missions. This solicitation seeks system and subsystem level technologies that enable revolutionary improvements to the efficiency and effectiveness of the military. Novel concepts are sought in the following focus areas: Ground Systems, Maritime Systems, Air Systems, and Space Systems. Refer to the URL stated below for complete details of the BAA. **Open to April 29, 2016.**

Open Solicitations from IARPA (Intelligence Advanced Research Projects Activity)
Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research
This Broad Agency Announcement (BAA), which sets forth research areas of interest to the **Army Research Laboratory** (ARL) Directorates and Army Research Office (ARO), is issued under the paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of basic research proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full

compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. **Open June 1, 2012 to March 31, 2017**.

W911NF-12-R-0012 Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research
The purpose of this Broad Agency Announcement (BAA) is to solicit research proposals in the engineering, physical, life, and information sciences for submission to the Army Research Office (ARO) for consideration for possible funding. For ease of reference, this BAA is an extraction of the ARO sections of the Army Research Laboratory BAA. (www.arl.army.mil/www/default.cfm?page=8). **Open to May 31, 2017**

ARL Core Broad Agency Announcement for Basic and Applied Scientific Research for Fiscal Years 2012 through 2017

Air Force Research Laboratory, Directed Energy Directorate
University Small Grants Broad Agency Announcement
This is a five-year, open-ended Broad Agency Announcement (BAA) to solicit research proposals for the United States Air Force Research Laboratory (AFRL) Directed Energy (RD) Directorate. This BAA is a university grant vehicle that can provide small grants of $100k or less to students/professors in a timely manner for the purpose of engaging U.S./U.S. territories' colleges and universities in directed energy-related basic, applied, and advanced research projects that are of interest to the Department of Defense. **Open to April 1, 2017.**

HM0210-14-BAA-0001 National Geospatial-Intelligence Agency Academic Research Program
NGA welcomes all innovative ideas for path-breaking research that may advance the GEOINT mission. The NGA mission is to provide timely, relevant, and accurate geospatial intelligence (GEOINT) in support of national security objectives. GEOINT is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. GEOINT consists of imagery, imagery intelligence, and geospatial information. NGA offers a variety of critical GEOINT products in support of U.S. national security objectives and Federal disaster relief, including aeronautical, geodesy, hydrographic, imagery, geospatial and topographical information. The NGA Academic Research Program (NARP) is focused on innovative, far-reaching basic and applied research in science, technology, engineering and mathematics having the potential to advance the GEOINT mission. The objective of the NARP is to support innovative, high-payoff research that provides the basis for revolutionary progress in areas of science and technology affecting the needs and mission of NGA. This research also supports the National System for Geospatial Intelligence (NSG), which is the combination of technology, systems and organizations that gather, produce, distribute and consume geospatial data and information. This research is aimed at advancing GEOINT capabilities by improving analytical methods, enhancing and expanding systems capabilities, and leveraging resources for common NSG goals. The NARP also seeks to improve education in scientific, mathematics, and engineering skills necessary to advance GEOINT capabilities. It is NGA's intent to solicit fundamental research under this BAA. Fundamental research means basic and applied research in science and engineering, the results of which

ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from Industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reason. (National Security Decision Directive (NSDD) 189, National Policy on the Transfer of Scientific, Technical, and Engineering Information). NGA seeks proposals from eligible U.S. institutions for path-breaking GEOINT research in areas of potential interest to NGA, the DoD, and the Intelligence Community (IC). **Open to September 30, 2017.**

AFRL Research Collaboration Program
The objective of the AFRL Research Collaboration program is to enable collaborative research partnerships between AFRL and Academia and Industry in areas including but not limited to Materials and Manufacturing and Aerospace Sensors that engage a diverse pool of domestic businesses that employ scientists and engineers in technical areas required to develop critical war-fighting technologies for the nation's air, space and cyberspace forces through specific AFRL Core Technical Competencies (CTCs). **Open until December 20, 2017.**

United States Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic, Applied, and Advanced Scientific Research (FY13-18)
Announcement for Basic, Applied, and Advanced Scientific Research. This Broad Agency Announcement (BAA), which sets forth research areas of interest to the United States Army Research Institute for the Behavioral and Social Sciences, is issued under the provisions of paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98-369 (The Competition in Contracting Act of 1984)and subsequent amendments. The US Army Research Institute for the Behavioral and Social Sciences is the Army's lead agency for the conduct of research, development, and analyses for the improvement of Army readiness and performance via research advances and applications of the behavioral and social sciences that address personnel, organization, training, and leader development issues. Programs funded under this BAA include basic research, applied research, and advanced technology development that can improve human performance and Army readiness. The funding opportunity is divided into two sections- (1) Basic Research and (2) Applied Research and Advanced Technology Development. The four major topic areas of research interest include the following: (1) Training; (2) Leader Development; (3) Team and Inter-Organizational Performance in Complex Environments; and (4) Solider/Personnel Issues. Funding of research and development (R&D) within ARI areas of interest will be determined by funding constraints and priorities set during each budget cycle. **Open to February 5, 2018.**

BAA-HPW-RHX-2014-0001 Human-Centered Intelligence, Surveillance Air Force Research Lab
This effort is an open-ended BAA soliciting innovative research concepts for the overall mission of the Human-Centered Intelligence, Surveillance, & Reconnaissance (ISR) Division (711 HPW/RHX). It is intended to generate research concepts not already defined and planned by RHX as part of its core S&T portfolio. The core RHX mission is to develop human-centered S&T that (1) enables the Air Force to better identify, locate and track humans within the ISR

environment and (2) enhance the performance of ISR analysts. To accomplish this mission, the RHX core S&T portfolio is structured into three major research areas: (1) Human Signatures - develop technologies to sense and exploit human bio-signatures at the molecular and macro (anthropometric) level, (2) Human Trust and Interaction – develop technologies to improve human-to-human interactions as well as human-to-machine interactions, and (3) Human Analyst Augmentation – develop technologies to enhance ISR analyst performance and to test the efficacy of newly developed ISR technologies within a simulated operational environment. The RHX mission also includes research carried over from the Airman Biosciences and Performance Program. While not directly linked to the core S&T strategic plan, there exists a unique capability resident within RHX to address critical Air Force operational and sustainment needs resulting from chemical and biological hazards. Research areas include contamination detection, hazard assessment and management, individual and collective protection, and restoration and reconstitution of operational capability. **Open to Feb. 12, 2018.**

Research Interests of the Air Force Office of Scientific Research
The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). To accomplish this task, 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 of the BAA, Funding Opportunity Description. AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in five scientific directorates: Dynamical Systems and Control (RTA), Quantum & Non-Equilibrium Processes (RTB), Information, Decision, and Complex Networks (RTC), Complex materials and Devices (RTD), and Energy, Power, and Propulsion (RTE). The research activities managed within each directorate are summarized in Section I of the BAA. **Open until superseded.**

Air Force BAA - Innovative Techniques and Tools for the Automated Processing and Exploitation (APEX) Center
The AFRL/RIEA branch performs Research and Development (R&D) across a broad area of Air Force Command, Control, Communications, Computers/Cyber, and Intelligence (C4I). All applicable "INTs" are investigated with emphasis on Ground Moving Target Indication (GMTI), Electronic Intelligence (ELINT), Signals Intelligence (SIGINT), Image Intelligence (IMINT), Non Traditional Intelligence, Surveillance and Reconnaissance (NTISR), and Measurement and Signature Intelligence (MASINT). The APEX Center is used to perform analysis for seedling efforts, provide baseline tool development for major programs, and to provide realistic operational systems/networks/databases for integration efforts. The APEX Center resources will be used by the Government to perform the necessary research, development, experimentation, demonstration, and conduct objective evaluations in support of emerging capabilities within the Processing and Exploitation (PEX) area. Software tools, data sets, metrics

(Measures of Performance/Measures of Effectiveness), and analysis are needed for the Government to perform the vetting, maturing, and analysis of efforts related to PEX, e.g. Automatic Tracking, Activity Based Intelligence, Entity, Event & Relationship (EER) Extraction, Association & Resolution (A&R), Analysis & Visualization (A&V), Social Network Analysis, Network Analytics, Pattern Discovery, Scalable Algorithms, and Novelty Detection. The AFRL APEX Center is the AFRL/RI gateway into the cross-directorate PCPAD-X (Planning & Direction, Collection, Processing & Exploitation, Analysis & Production, and Dissemination eXperimentation) initiative. **Open to FY 2018**.

[**BAA-RQKD-2014-0001 Open Innovation and Collaboration Department of Defense Air Force -- Research Lab**](#)
Open innovation is a methodology to capitalize on diverse, often non-traditional talents and insights, wherever they reside, to solve problems. Commercial industry has proven open innovation to be an effective and efficient mechanism to overcome seemingly impossible technology and/or new product barriers. AFRL has actively and successfully participated in collaborative open innovation efforts. While these experiences have demonstrated the power of open innovation in the research world, existing mechanisms do not allow AFRL to rapidly enter into contractual relationships to further refine or develop solutions that were identified. This BAA will capitalize on commercial industry experience in open innovation and the benefits already achieved by AFRL using this approach. This BAA will provide AFRL an acquisition tool with the flexibility to rapidly solicit proposals through Calls for Proposals and make awards to deliver innovative technical solutions to meet present and future compelling Air Force needs as ever-changing operational issues become known. The requirements, terms and specific deliverables of each Call for Proposals will vary depending on the nature of the challenge being addressed. It is anticipated that Call(s) for Proposals will address challenges in (or the intersection between) such as the following technology areas: Materials: - Exploiting material properties to meet unique needs - Material analysis, concept / prototype development, and scale up Manufacturing Processes that enable affordable design, production and sustainment operations Aerospace systems: - Vehicle design, control, and coordinated autonomous and/or manned operations - Power and propulsion to enable next generation systems Human Effectiveness: - Methods and techniques to enhance human performance and resiliency in challenging environments - Man – Machine teaming and coordinated activities Sensors and Sensing Systems: - Sensor and sensing system concept development, design, integration and prototyping - Data integration and exploitation. **Open to July 12, 2019.**

[**HDTRA1-14-24-FRCWMD-BAA Fundamental Research to Counter Weapons of Mass Destruction**](#)
** Fundamental Research BAA posted on 20 March 2015.** Potential applicants are strongly encouraged to review the BAA in its entirety. **Please note that ALL general correspondence for this BAA must be sent to HDTRA1-FRCWMD-A@dtra.mil. Thrust Area-specific correspondence must be sent to the applicable Thrust Area e-mail address listed in Section 7: Agency Contacts.** **Open to Sept. 30, 2019.**

BAA-RQKH-2015-0001 Methods and Technologies for Personalized Learning, Modeling and Assessment Air Force -- Research Lab

The Air Force Research Laboratories and 711th Human Performance Wing are soliciting white papers (and later technical and cost proposals) on the following research effort. This is an open ended BAA. The closing date for submission of White Papers is 17 Nov 2019. This program deals with science and technology development, experimentation, and demonstration in the areas of improving and personalizing individual, team, and larger group instructional training methods for airmen. The approaches relate to competency definition and requirements analysis, training and rehearsal strategies, and models and environments that support learning and proficiency achievement and sustainment during non-practice of under novel contexts. This effort focuses on measuring, diagnosing, and modeling airman expertise and performance, rapid development of models of airman cognition and specifying and validating, both empirically and practically, new classes of synthetic, computer-generated agents and teammates. An Industry Day was held in November 2014. Presentation materials from the Industry Day and Q&A's are attached. If you would like a list of Industry Day attendees, send an email request to helen.williams@us.af.mil **Open until November 17, 2019.**

Research Development & Grant Writing News

Academic Research Funding Strategies, LLC (Page 1)

http://academicresearchgrants.com/home

ph: 979-693-0825

LDeckard@academicresearchgrants.com

mjcronan@gmail.com

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, NRT, ADVANCE, IUSE, Dept of Ed GAANN, DoD MURI, etc.)

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

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

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

Workshops by Academic Research Funding Strategies

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

(View Index of Articles)