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

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Topics of Interest URLs

NSF Just-in-Time Budget Pilot
ERIC Releases a New Thesaurus Update
Perspectives on Peer Review at the NIH
Welcome to the Open Mike Blog at the NIH
Bolstering Trust in Science Through Rigorous Standards
NIH Summary of Upcoming Significant Changes to the NIH Grants Policy Statement
Significant Changes: FY 2016 NIH Grants Policy Statement (NOT-OD-16-017)
NIH All About Grants Podcast
SBIR/STTR at the National Institutes of Health
NSF’S Public Access Plan: Today’s Data, Tomorrow’s Discoveries
Critical Techniques, Technologies and Methodologies for Advancing Foundations and Applications of Big Data Sciences and Engineering (BIGDATA)
Big Data Regional Innovation Hubs: Establishing Spokes to Advance Big Data Applications (BD Spokes)
Frequently Asked Questions (FAQs) for NSF 16-503, NSF Research Traineeship (NRT) Program
Foundation for Food and Agriculture Research
New from NSF Policy Office
Partnerships for Enhanced Engagement in Research (PEER)
Public Access to Federally-Supported Research and Development Data and Publications: Two Planning Meetings
A Look by AAAS at Appropriations for Interagency R&D Initiatives
Budget Deal Explained by AAAS: Two Years of Funding Room
Next Generation Humanities PhD Grants National Endowment for the Humanities
EPA’s Environmental Justice Collaborative Problem-Solving Model (PDF)
Case Studies from the Environmental Justice Collaborative Problem-Solving Program (PDF)
Trust and Authority in Scholarly Communications in the Light of the Digital Transition
A Compendium of Math and Science Research Funded by NCER and NCSER: 2002–2013
New special report highlights NSF-funded cybersecurity research and education
Getting Ahead of the Storm: S&T’s Solutions for Resilient Critical Infrastructure!
Cleaner, Cheaper, Stronger: Industrial Efficiency in the Changing Utility Landscape
Lab Size and Strategic Support of Science: Thoughts on Finding the Right Mix
Evidence-based Health Benefits of Human-Animal Interaction
Rationalizing Rural Area Classifications for the Economic Research Service: A Workshop
NIHBI Announces Small Business Topics of Special Interest (TOSI)
IES Postsecondary Institutions and Price of Attendance in 2014-15; Degrees and Other Awards Conferred: 2013-14; and 12-Month Enrollment: 2013-14: First Look (Provisional Data)
Institutes for Historical Editing FY2016 Grant Announcement
NSF Presentation on Faculty Early Career Development (CAREER) Program (Nov. 2015)
NSF Presentation on Merit Review Process (Nov. 2015)
NSF Presentation on Proposal Preparation (Nov. 2015)
NSF Presentation on Policy Updates in PAPPG (Nov. 2015)
NSF Presentation on Office of Inspector General and Scientific Misconduct in Proposals (Nov. 2015)
International Research & Education Collaboration: Opportunities & Resources at NSF
Win Your Grant on Page 1

Grants are won on page one. This is where you set the stage for the all subsequent narrative text. This is where you win over reviewers to your great idea. This is where you begin explaining not only what you will do but **how you will do it**. By the end of page one, the reviewers will need to know what you will do, why you will do it (rationale), how you will do it, your capacity to do it, and why it is significant and innovative in the context of the state of the field or agency mission. Moreover, as NSF notes, page one is where you start to “**build trust in the reviewers that what you can’t fit in the page limit is within your grasp.**”

That reviewer trust will rest on how well you answer the foregoing questions with clarity and specificity and detail rather than vague generalities. Generalities on page one invariably metastasize into the rest of the narrative. Reviewers are left with only two logical interpretations for generalities rather than specifics, neither good for establishing reviewer confidence in your capacity to perform—either you are sufficiently uncertain yourself about the proposed research objectives or you are woefully unable to explain them to others, in either case, it does not bode well for a funding recommendation.

If reviewers get to page two still searching for convincing answers to the foregoing questions you will be at a serious competitive disadvantage. Page one must offer reviewers clarity and not present them with an ambiguous puzzle to solve going forward in reviewing the research narrative. If fact, if you don’t convincingly respond to the foregoing questions on page one, you will leave reviewers with little interest or enthusiasm for reading the rest of your narrative, and some reviewers, by all accounts, will not.

Of course, answering the foregoing questions in a convincing and compelling way is not an easy task, and, unfortunately, one done inadequately in the majority of proposals submitted, something evident in the very low success rate of grant applications where often 80% of applicants fail. If you read reviews of declined proposals, you will soon see that a common denominator of the reviewers’ decision to recommend against funding is that these questions were not adequately addressed in the proposal. This is the case regardless of disciplinary area or funding agency. In most cases, the foundation of funding failure can be traced back to how well or how poorly these questions were addressed on page one of the proposal. After all, if you can’t get this right on page one, there is no reason to believe you will get it right in the rest of your project narrative.

The main reason these questions are poorly answered is that they are poorly planned for during proposal development discussions among principal investigators. A lot of groundwork has to be in place to begin to answer these questions in a convincing way. A well crafted page one of your proposal requires a lot of planning, going back to the earliest stages of proposal development. Every question that needs to be answered on page one of the proposal should be answered in a preliminary way before the writing begins. Moreover, these questions should guide the research development discussions among the proposal team, including the key initial decision every applicant must make of whether or not a submission is warranted.
based on an assessment of proposal competitiveness determined in large part on how well these core questions can be answered.

Most principal investigators struggle with answering these questions clearly and concisely in the initial stages of proposal development and writing. The successful ones are persistent, going through iteration after iteration, both in team discussions that address these questions and in the narrative drafts that come out of these discussions. This is important because page one needs to be concise and succinct. It cannot be inflated in any way in hopes that if you throw a tangled mass of verbal spaghetti at the reviewers they will hopefully find something in it that they like. To quote Dr. Seuss, “The writer who breeds more words than he needs, is making a chore for the reader who reads.”
NSF’s New Public Access Plan

The National Science Foundation has developed a plan outlining a framework for activities to “increase public access to scientific publications and digital scientific data resulting from research the foundation funds.” The 35-page plan, “Today’s Data, Tomorrow’s Discoveries,” will require “that either the version of record or the final accepted manuscript in peer-reviewed scholarly journals and papers in juried conference proceedings or transactions must:

- Be deposited in a public access compliant repository designated by NSF;
- Be available for download, reading and analysis free of charge no later than 12 months after initial publication;
- Possess a minimum set of machine-readable metadata elements in a metadata record to be made available free of charge upon initial publication;
- Be managed to ensure long-term preservation; and
- Be reported in annual and final reports during the period of the award with a persistent identifier that provides links to the full text of the publication as well as other metadata elements.”

This requirement applies to new awards resulting from proposals submitted or due on or after the effective date of the Proposal & Award Policies & Procedures Guide (PAPPG) that will be issued in January 2016.

For general information on the Public Access Initiative, sign up for email notifications at: NSF Updates and follow the below URLs.

- The Plan
- The Executive Summary
- Press Release
- Frequently Asked Questions (FAQs)
- Search NSF Awards
- NSF Public Access Feedback
- Open Government
- Dissemination and Sharing of Research Results.

NSF’s Public Access Plan: Highlights

- “Requires deposit of journal articles and juried conference papers in the NSF Public Access Repository (NSF-PAR), hosted by DOE/OSTI, within 12 months following initial publication.
- Effective for journal articles and juried conference papers from proposals submitted or due on or after the PAPPG effective date in January 2016.
- Allows for a waiver to the 12-month embargo for publications.
- Retains current Data Management Plan requirements and calls for community engagement to create more consistent management of research data.
Retains current policies permitting costs of publication and the sharing of research results as a direct cost in the proposal budget.

Provides a framework, allowing NSF to: Engage additional partners in a federated system.

Evolves specific policies appropriate to NSF’s broad and highly heterogeneous research communities.”

**NSF will implement its public access requirements in stages.** The first implementation, will include the following products of NSF-funded research

- “[Articles in peer-reviewed journals in which the research is funded wholly or in part by NSF through new awards resulting from proposals submitted, or due, on or after the effective date of the NSF Proposal & Award Policies & Procedures Guide (PAPPG) that will be issued in January 2016 (January 2016 effective date).]

- [Papers accepted as part of juried conference proceedings in which the research is funded wholly or in part by NSF through new awards resulting from proposals submitted, or due, on or after the January 2016 effective date.]

- Articles in peer-reviewed journals and juried papers accepted as part of conference proceedings authored entirely or in part by employees of NSF and by Intergovernmental Personnel Act assignees to NSF on or after the January 2016 effective date.

- Data and associated outcomes that result from NSF-funded research and (that) are subject to the existing Data Management Plan (DMP) requirement, implemented on January 18, 2011, and enumerated in the Grant Proposal Guide II.c.2.j and described in Section 3.2.”

NSF will require that “either the version of record or the final accepted peer-reviewed manuscript in peer-reviewed scholarly journals and papers in juried conference proceedings or transactions described in the scope (Section 2.0) and resulting from new awards (derived) from proposals submitted, or due, on or after the January 2016 effective date must:

- Be deposited in a public access compliant repository designated by NSF;
- Be available for download, reading, and analysis free of charge no later than 12 months after initial publication;
- Possess a minimum set of machine-readable metadata elements in a metadata record to be made available free of charge upon initial publication (Section 7.3.1);
- Be managed to ensure long-term preservation (Section 7.7); and
- Be reported in annual and final reports during the period of the award with a unique persistent identifier that provides links to the full text of the publication as well as other metadata elements.”

NSF will undertake a series of near- and long-term activities and pilots to develop an operational system with the following objectives:

- To enable NSF-supported investigators to make their articles (either final accepted manuscript or version of record) available to the public on a voluntary basis by the end of calendar 2015; mandatory deposit in a designated public access repository will
become effective for awards resulting from proposals submitted on or after the January 2016 effective date. Either the version of record or final accepted version will be acceptable.

- Maintain communication with the research communities and concerned stakeholder groups to identify areas where guidance or adaptations may be required.
- Make changes in the system that may result in guidance associated with DMPs to take place incrementally after consultation with the research community and implemented no earlier than FY 2016. Several cycles of changes may be required.
- Ensure the system is flexible and extensible to allow for continued evolution, to expand its scope, and to respond to changing technologies and infrastructure capabilities.
Success in proposal writing is all about answering questions—questions posed in the funding solicitation, during the review process, and questions posed by team members during the planning and writing of the research project narrative. Those in research offices or elsewhere in universities asked by faculty to review a proposal prior to submission find it helpful to have a template or “editor’s checklist” of those key questions that are generic, fundamental, and relevant to any proposal submitted in any discipline to any federal agency or foundation. In effect, a good proposal editor excels at “channeling” the reviewers by knowing the questions reviewers and program officers will want answered in the project narrative.

Of course disciplinary focus and the mission of the specific funding agency will influence how these overarching generic questions are answered at the level of project specific detail. But focus and mission will not alter the fundamental question(s) being asked. For example, regardless of discipline or agency, every proposal must answer, hopefully on the first page, one of the most important questions invariably posed by program officers and reviewers: Why is the proposed research significant?

Failure to answer this fundamental question convincingly is arguably the single most common reason a proposal is declined for funding. The details used in framing the response to this question will differ by disciplinary focus and agency, but regardless of whether the proposal is to NEH or DOD, you will want to configure your response to demonstrate that your proposal advances the mission of the funding agency and/or the disciplinary field in some important way(s). That is the core, overarching question. The details will determine whether or not this question is answered in a way that explains how your proposed research to NEH adds to our knowledge and understanding of the humanities, or how your proposal to DOD advances our understanding of how the quantum entanglement effect can double laser beam data capacity and why that is important.

The first step in reviewing a proposal requires a careful reading of the solicitation and review criteria before reading the actual draft of the research narrative or project description. Reading a proposal draft without first understanding the solicitation and review criteria would be somewhat like a building contractor starting to build your home without looking at the architectural drawings that give the details of what you envision as your dream home. Consider Lewis Carroll’s observation in *Alice in Wonderland*: “If you don’t know where you are going, any road will get you there.”

This goes to one of the more common mistakes made in writing research grants and, hence, one of the more common reasons proposals are declined for funding, i.e., the research narrative does not respond fully to the solicitation. Therefore, make every attempt to filter your observations about a draft proposal through the lens of the solicitation, i.e., what the agency wants, focusing on the agency’s research objectives and the review criteria used to judge how well the proposal meets those research objectives.
Your point of view, or perspective, in critiquing a draft proposal includes both the expertise you bring to the process and the **important requirement that you also represent the agency’s point of view as you understand it from a close reading of the solicitation.** Think of yourself as representing the interests of the funding agency in your critique of a draft proposal, effectively serving as a surrogate reviewer for the agency, and thereby best serving the interests of the person who asked you to critique a draft proposal. **After all, it is the agency’s research priorities, not the proposing researcher’s, that are paramount in the decision to fund or not fund the proposal.**

If you are part of a research office, academic department, college, center, or other academic unit and asked by faculty to review and comment on proposals, it is important to **develop your own checklist of questions** that need to be answered in the research narrative. Some common generic review questions applicable to any proposal to any agency are listed below:

1. **Does the proposal respond fully and convincingly to the goals and objectives of the funding solicitation?**
   1.1. Is every question asked in the solicitation answered in the proposal?
   1.1.1. Does the proposal follow the order of the questions asked in the solicitation?
   1.1.2. Is it easy to compare the solicitation requirements with the requirements addressed in the project narrative?
   1.1.3. Do responses to questions provide sufficient detail, specificity, and clarity so the reader is not left confused or uncertain by vagueness, generality, or poorly supported replies?

2. **Does the proposal address all the review criteria listed in the solicitation?**
   2.1. Is it easy to compare the review criteria listed in the solicitation to ensure that they are addressed in the project narrative?

3. **After reading page one of the proposal, is it clear to you:**
   3.1. What research is being proposed
   3.2. Why the research is being proposed
   3.3. How the research will be accomplished
   3.4. Why the research is significant
   3.4.1. Why it is significant to the mission of the funding agency
   3.4.2. Why it is significant to the disciplinary field
   3.4.3. The value-added benefits the research brings to the agency
   3.4.4. The value-added benefits the research brings to the field
   3.4.5. Whether the research opens up new lines of inquiry, answers important questions that advance the field, enables other research to be conducted, etc.
   3.4.6. Is it clear where the research stands in relation to the current state of the field and how it will impact the field, i.e., in the context of the disciplinary field, is the research innovative, transformative, cutting edge, etc.?
   3.4.6.1. Are claims of research innovation convincingly supported with specifics, details, and appropriate references rather than just being asserted without support? Do the author(s) follow the **“explain don’t merely claim”** axiom of grant writing?
3.4.7. What will research success look like—what will be different as a result of this research?

3.4.7.1. Do the proposal author(s) clearly describe the project’s “unit of change”—what will become better and how after the proposed research is completed—in terms of its impact on the agency’s mission, or the field, or both? Or does it provide broader societal benefits?

3.5. Why the proposer(s) is the right person(s) to conduct the research

3.6. What are the anticipated research outcomes?

3.7. Do the preliminary data or results from prior support convincingly demonstrate the author(s)’ capacity to perform the proposed research?

3.8. Are barriers and challenges to achieving results identified and a plan for overcoming them proposed?

3.9. Is the proposed research cost effective? Is the “bang for the buck” apparent?

4. Is the proposal well written?

4.1. Is the narrative free of errors in grammar, spelling, usage, punctuation, typos, etc.

4.2. Is the narrative written in an organized way, for example:

4.2.1. Starts with an important research idea stated clearly and simply so reviewers can quickly grasp the research questions or hypotheses

4.2.2. Explains why the research is unique and supports this with sufficient specificity and detail to make a convincing case

4.2.3. Explains the importance, significance, or value-added benefits of the research to advancing the field, or advancing the research mission of the funding agency

4.2.4. Provides reviewers with a clear statement of the significance of the project from a precisely written project description that is supported by specificity and detail

4.2.4.1. Uses specifics to ground the research vision and goals in the key performance details unique to the research objectives, and thereby illuminate the importance of the research for reviewers

4.2.4.2. Uses specifics to both test and prove the value of research ideas

4.2.4.3. States a goal and offers compelling specifics that make clear the process used to transition from a goal to reality

4.2.5. [Note: Conversely, generalities often escape many authors’ notice, yet appear as glaring flaws to readers and reviewers alike, especially those searching for the specificity needed to make an informed critical judgment on the project’s merit]

4.2.6. Avoids ambiguity, which introduces significant uncertainty into the research narrative. **This is because ambiguity in the project description imposes unwanted riddles on program officers and reviewers alike.** It forces them to guess at the meaning

4.3. For collaborative and team proposals, is it clear in the project narrative

4.3.1. Why a team approach is important

4.3.2. Whether there is a history of collaboration among team members

4.3.2.1. Research partnership preliminary data

4.3.2.2. Funded projects/results from prior support

4.3.2.3. Publications

4.3.2.4. Patents
4.3.2.5. Prior participation in research affinity groups
4.3.3. What synergies and benefits result from the team configuration not otherwise possible
4.3.4. What are the key team research interactions and interdependencies that will enable success
4.3.5. Does each team member understand how his or her research will be impacted and enabled by the research of other team members?
4.3.6. Is the value in the interdisciplinary team structure made clear and justified?
4.3.7. What important research interactions and synergies among the interdisciplinary team partners will occur not otherwise possible outside the team structure?
4.3.8. Is there narrative synergy not silos?
4.3.9. Is there a strong research management plan that convinces program managers and reviewers that the project will be well managed and successful?
Partnerships for Enhanced Engagement in Research (PEER) is a competitive grants program administered by the National Academy of Sciences (NAS). PEER invites scientists in developing countries, partnered with US-supported collaborators, to apply for funds to support research and capacity-building activities on topics with strong potential development impacts. NASA, NIH, NOAA, NSF, USDA Agricultural Research Service, USDA Forest Service, USDA National Institute of Food and Agriculture, USGS, and the Smithsonian Institution have entered into an agreement with USAID and are participating in the PEER program.

PEER grants are typically funded in the range of $40,000-$100,000 per year. If you are a collaborator on a PEER application submitted by a scientist in a PEER-eligible developing country (see map), your partnership information must be included in the PEER pre-proposal, including the your funded grant title, number, US funding agency, program officer, and contact information. Moreover, you must provide a description of how your expertise as the US-supported collaborator will complement the proposed project.

This 2016 funding cycle PEER proposal submission has two phases: (1) A brief pre-proposal is required for all applicants. The deadline for submission of pre-proposals is January 15, 2016. Details for pre-proposal submission are provided below; and (2) If invited to submit a full proposal, applicants will be notified by the National Academies around February 29, 2016. The deadline for submission of full proposals is April 15, 2016. See Partnerships for Enhanced Engagement in Research (PEER) 2015/2016 Solicitation. Also see USAID Country Strategies (CDCS).

As background, the United States Agency for International Development (USAID) has joined with several U.S. Government (USG) supported agencies in support of PEER. To this end, the U.S. Global Development Lab (The Lab) at USAID brings together a diverse set of partners to address critical challenges in international development. Since 2011, PEER has supported 205 projects in more than 45 countries with an investment of approximately $45 million. The support of scientific and technological research through the PEER program is a key element of this strategy. Through PEER, the Lab leverages investments by other U.S. government agencies and private sector companies in scientific research and training in order to enhance the development priorities of USAID.

Keep this in mind when participating as a collaborator in a PEER pre-proposal. Applicants, i.e., scientists in developing countries, should consider how their proposed research- and/or capacity-building activities will contribute to USAID’s strategic development priorities. PEER also encourages collaborative projects involving multiple developing countries that explore regional development issues. More information on USAID’s strategic priorities can be found on the USAID website. Applicants who submit pre-proposals to PEER must be based at an academic institution, non-profit organization, or government-managed research laboratory, center, or institute in a PEER-eligible country.
When drafting a pre-proposal, applicants should convey the development impact of their proposed research for the focus area to which they are applying. Successful pre-proposals will include a clear statement of the project goals and explanations of how these goals will be achieved. Successful pre-proposals will also highlight the collaborative nature of the U.S. Government-funded partner and how the partnership will contribute to successful completion of the project.

PEER applicants are required to partner with a U.S. Government-supported researcher from one of the following agencies: Agricultural Research Service (ARS), National Aeronautics and Space Administration (NASA), National Institute of Food and Agriculture (NIFA), National Institutes of Health (NIH), National Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF), Smithsonian Institution, United States Forest Service (USFS), or United States Geological Survey (USGS). If you are a potential collaborator of a PEER applicant, it will be helpful to review the prior PEER awards to get a better sense of the program priorities and the logistics of partnering on a PEER application (Comprehensive Project List by Region, awarded 2012 – 2015; also see PEER Video Corner). For more information on PEER, contact the program staff at peer@nas.edu. Identify prior US collaborators on funded PEER grants from the above project list and video. Discuss potential PEER plans with them. Note, for example, that proposals focused on basic science topics without clear relevance to USAID development objectives will not be eligible for PEER funding.

USG-supported partners may either be intramural researchers or serve as a principal investigator or co-principal investigator of an active USG-funded research award. Active awards may include grants, cooperative agreements, or contracts. In order to be eligible, the USG-supported partner’s award must remain active for at least 12 months after the expected start date of the PEER project (which may start no earlier than August 1, 2016) to ensure that both sides have resources available to support their collaboration.

PEER can be used to support a wide range of research methodologies, as long as pre-proposals respond to the priorities outlined in the focus areas. Examples of PEER projects may include: the development of new technologies or instruments, proof-of-concept proposals, formative studies, surveys, operational and implementation research, social science and behavior change research, systems research, and policy studies, among others. PEER also supports research awards from a wide range of academic disciplines, including the natural, physical, social, economic, and behavioral sciences, as well as engineering.

There are many potential benefits to partnering on a PEER application, not the least of which is the validation of an applicant’s international credential that PEER gives, a competitive factor in other grants, particularly at those federal agencies such as NSF that promote research, education, and training in an international domain.
Proposals for Basic Research: Why You Need a Theoretical Framework

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By Lucy Deckard co-publisher

When proposals for basic research are declined, a common reviewer comment is that the proposed project “lacks a theoretical framework.” PIs are often puzzled by what, exactly, this means. The PI has proposed to conduct research on fundamental phenomena and address important questions in the field – what more is required? As it turns out, the ability to place your proposed research within the context of a theoretical framework is key to writing a competitive proposal to many programs within NSF, NIH and DOE that focus on basic research. This doesn’t just apply to the physical sciences; many of the social and behavioral science programs at NSF are particularly focused on ensuring that programs have a theoretical framework.

(First, a caveat: this discussion is meant to address theoretical frameworks in a relatively loose sense in the context of research proposals. For more rigorous discussions of theoretical frameworks in the context of research study design in your discipline, you’ll want to see literature in your field.)

What is a Theoretical Framework?
In a project with a theoretical framework, the answers to the project’s research questions or hypotheses will inform a broader, and often mechanistic, understanding of how things work and why – this is your theoretical framework. Your framework should inspire your hypotheses and research questions and, in turn, be informed by the results of your research. It’s perhaps easiest to explain how a theoretical framework functions by describing what happens in its absence. Here are several examples of types of projects that lack a theoretical framework.

The descriptive project: In this kind of project, the researcher typically proposes to measure or observe something without a clear hypothesis for what results they expect and why. Research questions are generally along the lines of, “What happens if we expose a cell to an acoustic field?” or “How many sharks are there along the Gulf Coast?” or “Are students from rural areas less likely to pursue careers in STEM?” or “What are the electrical properties of a gold nanoparticle with a titanium outer coating?” All of these may be legitimate questions that can lead to important research, but without a theoretical framework, the broader implications of the answers aren’t clear. Generally, these kinds of projects are considered to be exploratory and aren’t mature enough to be funded by basic research programs at the federal agencies. However, the answers to these questions can be part of your preliminary data and inspire hypotheses or research questions that fit into a theoretical framework.

The make-it/test-it project: In this type of project, the PI proposes to make or develop something (e.g., a machine, a sensor, an algorithm) and then test it to see how well it works or how it behaves. She may then propose to iterate on these results, returning to the make-it phase armed with the testing results. If there is no larger framework informing this process, this is often considered development by reviewers rather than basic research. (In fact, this kind of
process is sometimes termed “spiral development” in software development circles.) Note that this kind of project, while it may result in a good product (machine, sensor, algorithm), doesn’t help to generate knowledge that can be generalized beyond that product because the PI followed what was basically a trial-and-error process and therefore didn’t necessarily learn any larger lessons from the research.

Developing a model: Often, PIs will propose to model a phenomenon or process. If you do this, it’s important to keep in mind that models are tools, not ends in themselves. For example, a PI might propose to develop a model of how populations perceive and respond to the risk of hurricanes. How will the model help to answer important questions about the phenomena or processes you’re modeling? If you plan to validate the model (for example, by comparing model predictions with experimental or survey results), how will you handle discrepancies? What will you learn from them? And, of course, how will this model contribute to your theoretical framework? Simply developing a model should be just the first step – it needs to be informed by, and/or inform, a theoretical framework related to some basic understanding of the process or phenomenon you’re modeling.

How do you develop and use a theoretical framework?

There may be established theoretical frameworks related to your research topic in the literature or it may be up to you to develop a new theoretical framework. Generally, these frameworks help to connect observations with an underlying theory of causal mechanisms and forces at work. They then can provide the basis for new hypotheses. Note that it’s not required that these frameworks are already broadly accepted; your research can help to inform, disprove or support the framework, and in that way you are helping to move your discipline forward. However, you will probably need some evidence to convince your reviewers that your framework and hypotheses may be correct. This could be in the form of preliminary data if there is no existing evidence in the literature.

So, to revisit one of the example descriptive projects discussed above, a theoretical framework related to how cells respond to an acoustic field could be that the cell behavior is determined by the elastic properties of the cell, that the cell has a resonant frequency determined by the cell’s radius, density, and stiffness, and that the cell will rupture at that resonant frequency if the cell deforms to the point that internal stresses cause the membrane to break, which is determined by the cell’s stiffness and dimensions. Based on this theoretical framework, you might hypothesize that you can rupture your test cells using acoustic waves in a certain frequency range by choosing cells with specific properties. Your results will either support your framework or they will point to ways that you may need to modify the framework (for example, you might find that the rupture frequency depends on the cell shape in addition to its dimensions). Whether or not your hypothesis is supported, your results will contribute to the body of knowledge. Comparing this project to the descriptive project described in the previous section (where you proposed to simply see what happens if you expose a cell to an acoustic field), you can see that this project will have a much higher impact on the body of knowledge on this topic because it has a clear theoretical framework even though your experiments might be essentially the same.
Turning to the **make-it/test-it project**, this kind of project would be enhanced by a theoretical framework that suggests hypotheses for certain characteristics or processes that might yield a better product (sensor, machine, algorithm, etc.), with reasons for why that arise from hypotheses or knowledge about underlying mechanisms. These hypotheses can then be tested as the product is made and evaluated. As a result, even if the product does not meet the desired goals, the PI has learned important things about the underlying mechanisms and processes that will inform future attempts. If the product does meet the goals, the lessons learned will help to inform the development of other products that use similar processes or mechanisms. In either case, the state of knowledge has been advanced.

So, for example, the PI might identify stability of the sensor’s nano-engineered sensing element as a key challenge to performance. She might then refer to a theoretical framework that relates stability of the sensing element to the oxidation behavior of nanoparticles in the element. She might then hypothesize that if she can process the material so that oxidation of nanoparticles is minimized, which she will do by processing at a lower temperature, the sensor will be more stable. Thus, she can try processing at a lower temperature, then checking the oxidation of the nanoparticles, evaluating the stability of the sensing element and, finally, evaluating the stability of the sensor. The results will yield important new knowledge whether or not the resulting sensor works better. (Note that in a “make-it/test-it” project, the PI might have proposed to just try processing the sensing element at various temperatures and see which works best, but without the underlying framework that posits that element stability depends on the degree of oxidation of the nanoparticles in the sensing material, her results will still only apply narrowly to this specific sensor and will not help to advance knowledge in a broader context.)

The principle is similar for **modeling projects**. For example, if the PI is developing a model for how populations perceive and respond to the risk of hurricanes, he needs to discuss what framework will inform the development of that model (such as current theories related to risk perception and the influence of media) or how the model will allow him to improve risk perception models (for example, if the PI’s model is based on statistical data on evacuation, he might then use the model to test the hypothesis that types of media consumed is an important factor in evacuation likelihood). Simply developing a model isn’t enough — the model needs to inform a broader understanding of the topic.

Lastly, be sure you understand the expectations for the particular program or funding opportunity to which you’re applying. Not all projects require theoretical frameworks. For example, proposals to develop new tools or methods need to focus more on the need and the new science that will be enabled. And, of course, proposals to programs or agencies that favor more applied research may not require a theoretical framework. However, if you’re proposing a basic research project, you should talk to your Program Director and your colleagues to ensure that you understand expectations regarding the theoretical foundations you need for your project.
**Research Grant Writing Web Resources**

*Back to Page 1*

**NIH All About Grants Podcast**
The Office of Extramural Research (OER) talks to NIH staff members about the ins and outs of NIH funding. Designed for investigators, fellows, students, research administrators, and others just curious about the application and award process, we provide insights on grant topics from those who live and breathe the information. Episodes are available as mp3s for download here, or via RSS feed. [Information on RSS and Podcasts.](#)

**NSF Fall 2015 NSF Grants Conference**
Presentations and other documents for the [NSF Fall 2015 NSF Grants Conference](#) will be posted as they become available. Please click on the following links to view and/or download individual presentations/documents. Flash drives containing the presentations and other materials will be distributed upon arrival at the conference location. Please note that hard copies of the presentations will not be available on site. Presentations from past NSF Grants Conferences are available on the [NSF Policy Office](#) website. **NSF is pleased to announce that the conference will be webcast live to the research community. Conference plenary sessions will also be recorded for on-demand viewing once the conference has concluded. Registration is required and webcast participants can register at:** [http://www.tvworldwide.com/events/nsf/151102/](http://www.tvworldwide.com/events/nsf/151102/).

**URL Links to below topics are posted here:**

**Program Information:**
- Conference Agenda
- Breakout Session Descriptions
- Acronym List
- NSF Representatives

**Plenary Session Presentations:**
- Award Management
- Faculty Early Career Development (CAREER) Program
- Funding Mechanism Overview
- Introduction & NSF Overview
- Merit Review Process
- NSF Policy Update
- Office of the Inspector General (OIG)
- Proposal Preparation

**Breakout Session Presentations:**
Rationalizing Rural Area Classifications for the Economic Research Service: A Workshop

The U.S. Department of Agriculture Economic Research Service (USDA/ERS) maintains four highly related but distinct geographic classification systems to designate areas by the degree to which they are rural. The original urban-rural code scheme was developed by the ERS in the 1970s. Rural America today is very different from the rural America of 1970 described in the first rural classification report.

At that time migration to cities and poverty among the people left behind was a central concern. The more rural a residence, the more likely a person was to live in poverty, and this relationship held true regardless of age or race. Since the 1970s the interstate highway system was completed and broadband was developed. Services have become more consolidated into larger centers. Some of the traditional rural industries, farming and mining, have prospered, and there has been rural amenity-based in-migration. Many major structural and economic changes have occurred during this period. These factors have resulted in a quite different rural economy and society since 1970.

In April 2015, the Committee on National Statistics convened a workshop to explore the data, estimation, and policy issues for rationalizing the multiple classifications of rural areas currently in use by the Economic Research Service (ERS). Participants aimed to help ERS make decisions regarding the generation of a county rural-urban scale for public use, taking into consideration the changed social and economic environment. This report summarizes the presentations and discussions from the workshop.
ERIC Releases a New Thesaurus Update

Mobile Technology in 2020: Predictions and Implications for K-12 Education
While 'mobile learning' has gained recognition in K-12 as a category in educational technology, the authors argue that, between 2010 and 2015, at least, its impact hasn't matched the hype. But between 2015 and 2020, hardware, software, and network technologies will mature sufficiently such that educational technology’s Holy Grail for K-12--a computing device--a mobile device--for every child, 24/7--will be realized. The authors, though, argue that K-12's dominant pedagogy--direct instruction--must give way to an inquiry, learn-by-doing pedagogy in order for learners to truly benefit from universal access to mobile computing. Unfortunately, their article is less sanguine on the probability of K-12 educators making that transition.

A Compendium of Math and Science Research Funded by NCER and NCSER: 2002–2013
Between 2002 and 2013, the Institute of Education Sciences (Institute) funded over 300 projects focused on math and science through the National Center for Education Research (NCER) and the National Center for Special Education Research (NCSER). Together, researchers funded by NCER and NCSER have developed or tested more than 215 instructional interventions (e.g., packaged curricula, intervention frameworks, and instructional approaches), 75 professional development programs, 165 educational technologies, and 65 assessments in math and science. NCER commissioned the development of this compendium with the intent to present information in a structured, accessible, and usable manner. This compendium organizes information on the NCER and NCSER projects into two main sections: Mathematics and Science. Within each section, projects are sorted into chapters based on content area, grade level, and intended outcome. The compendium also includes multiple appendices and an index to help readers locate specific types of information (e.g., projects that focus on English language learners, specific interventions).

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.

**Updated Everyday Mathematics Report Now Available**

The Everyday Mathematics curriculum provides opportunities to learn math concepts and practice skills to students in prekindergarten through grade 6. This updated WWC review of Everyday Mathematics includes 30 studies that were not included in the 2010 report. None of these new studies meet WWC design standards and therefore, the rating remains unchanged: the program was found to have potentially positive effects on math achievement for elementary students.
Perspectives on Peer Review at the NIH

In today’s New England Journal of Medicine (Nov. 12, 2015), Richard Nakamura, the director of NIH’s Center for Scientific Review (CSR), and Michael Lauer, NIH's Deputy Director for Extramural Research, published an essay titled “Reviewing Peer Review at the NIH.” As the competition for NIH research grants has become increasingly stiff, review scores often are pointed to as the reason for failure to obtain funding. Indeed, over the past few years, peer review has come under increasing scrutiny. Critics have argued that peer review fails in its primary mission – to help funding agencies make the best decisions about which projects and which investigators to support (MORE).

NSF Just-in-Time Budget Pilot

November 6, 2015. In FY16, the DMS Infrastructure Program is participating in a pilot program that employs a streamlined initial budget process for proposals. The intent of this pilot is to allow NSF program staff and reviewers to focus on the science and to reduce the investigators’ administrative workload by requiring only a basic justification of the resources necessary to complete the project. If a proposal is recommended for award, NSF staff will request full budgets and budget justifications and will proceed as normally with the recommendation process. The budget itself should list zero dollars in FastLane and be blank. Since FastLane prepopulates fields for senior personnel, a work-around needs to be implemented to erase those fields. The budget justification should be a narrative statement that provides detail about the resources required. The detail should be sufficient for program officers and reviewers to determine that resources are essential, adequate, and appropriate to support the project being proposed. Except for large equipment purchases, dollar amounts need not be included (more).

Significant Changes and Clarifications to the NSF 2016 PAPPG, for example:

- Chapter I.F, When to Submit Proposals, has been updated to remove the ability to use other than 5 p.m. submitter’s local time in solicitations. Failure to submit by 5 p.m. submitter’s local time will result in the proposal not being accepted.
- Chapter II.C.1.e, Collaborators & Other Affiliations Information, is a new single-copy document that requires each senior project personnel to provide information regarding collaborators and other affiliations. This information used to be provided as part of the Biographical Sketch. The new format no longer requires proposers to identify the total number of collaborators and other affiliations when providing this information.
- Chapter II.C.2.f, Biographical Sketch(es), has been supplemented to inform proposers that they may use third-party solutions to develop their biographical sketch, however, the information they submit must be compliant with NSF proposal preparation requirements. In addition, it is no longer allowable for the biographical sketches of all senior personnel to be grouped together in a single PDF file. Biographical sketches must now be uploaded separately for each individual identified on the proposal as senior...
personnel. Biographical sketches for Other Personnel and for Equipment proposals
(Chapter II.C.2.f(ii) and (iii) respectively), however, should be uploaded as a single PDF
file in the Other Supplementary Documents section of the proposal.

- Chapter II.C.2.h, **Current and Pending Support**, has been revised to reflect that all
current project support should be listed in this section of the proposal, including internal
funds allocated toward specific projects. It is no longer allowable for the current and
pending support of all senior personnel to be grouped together in a single PDF file.
Current and pending support must now be uploaded separately for each individual
identified on the proposal as senior personnel.

- Chapter II.B.2, **Format of the Proposal**, has been revised to show that *solicitations no
longer may specify different type size, margin, or spacing requirements*. All NSF
funding opportunities will follow the formatting instructions contained in this section of
the GPG.

- Chapter VI.B.5, **Life Sciences Dual Use Research of Concern** (DURC), is an entirely new
section and serves, in conjunction with coverage in the GPG, as NSF’s implementation of
the US Government Policy for Institutional Oversight of Life Sciences Dual Use Research
of Concern.

- Chapter II.B.2.e and 3, **Changes in Project Direction or Management**, has been updated
to reflect that, when a grant is being transferred, if funding is requested to support a
postdoctoral researcher, a mentoring plan must be provided and the PI must report on
the mentoring activities in their NSF project reports. The same procedures must be
followed if a request to subaward, transfer or contract out part of an NSF award
includes funding to support a postdoctoral researcher and the original proposal did not
include a mentoring plan.

**Food-Energy-Water White Papers**

**Tell NSF Your Research Funding Needs**

The National Science Foundation (NSF) is proposing a new program called Innovations at the
Nexus of Food, Energy, and Water Systems (INFEWS) to fund fundamental research about these
connections. This is a unique opportunity for the American Society of Agronomy (ASA) to
engage with NSF to recommend research-funding priorities that could advance our research
needs and Science Frontiers. ASA, in conjunction with Crop Science Society of America (CSSA)
and Soil Science Society of American (SSSA), is calling for white papers to help inform the NSF as
they develop the research priorities for INFEWS. The Science Policy Committees will review the
white papers and compile a final document that represents the consensus to submit formally to
NSF. The white papers will also be available on a public online forum where they can be
downloaded and viewed freely. **Final Deadline: November 27, 2015.**
If the United States is to sustain its economic prosperity, quality of life, and global competitiveness, it must continue to have an abundance of secure, reliable, and affordable energy resources. There have been many improvements in the technology and capability of the electric grid over the past several decades. Many of these advances to the grid depend on complex mathematical algorithms and techniques, and as the complexity of the grid has increased, the analytical demands have also increased.

The workshop summarized in this report was developed as part of an ongoing study of the Committee on Analytical Research Foundations for the Next-Generation Electric Grid. Mathematical Sciences Research Challenges for the Next-Generation Electric Grid summarizes the presentations and discussions from this workshop. This report identifies critical areas of mathematical and computational research that must be addressed for the next-generation electric transmission and distribution system and to identify future needs and ways that current research efforts in these areas could be adjusted or augmented.

Design Competitions Needed to Maintain Capable Workforce and Nation's Nuclear Deterrent
Preserving the nation's nuclear weapon design skills is essential for sustaining a credible nuclear deterrent, understanding the status and direction of foreign nuclear weapons programs, and determining the best solutions to problems that arise during stockpile surveillance and maintenance. In the absence of nuclear explosion testing, the National Nuclear Security Administration should develop a series of design competitions that integrate the full end-to-end design process from novel design conception through production and non-nuclear testing of an engineered prototype, says a new congressionally mandated report from the National Academies of Sciences, Engineering, and Medicine. The report emphasizes that these competitions should be done with the clear understanding that the prototypes would not enter the nation's nuclear weapon stockpile.

Cleaner, Cheaper, Stronger: Industrial Efficiency in the Changing Utility Landscape
Electricity is illuminating, but its generation, transmission, and distribution have long been opaque. Cleaner, Cheaper, Stronger: Industrial Efficiency in the Changing Utility Landscape reports on how the once static utility industry is becoming a dynamic and transformative opportunity for the nation’s economic, environmental, and energy future.

An array of technological, competitive, and market forces are changing how the U.S. generates power and the ways that Americans interact with the electric grid. A century-old centralized system is yielding to advanced, distributed-energy generation capabilities—in which power is produced at or near the place where it is consumed—that allow the industry to respond to new market opportunities and evolving consumer desires.

The report concludes with an evaluation of the impact of key regulatory and legislative policies on the deployment of industrial energy efficiency technologies in order to help federal
policymakers effectively encourage adoption of these systems. The Pew Charitable Trusts commissioned ICF International Inc. to model these policies and found that implementation of the U.S. Environmental Protection Agency’s Clean Power Plan and an improved federal investment tax credit could result in a 27 percent increase in adoption by 2030. Download the report.

Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice

Reliable and valid forensic science analytic techniques are critical to a credible, fair, and evidence-based criminal justice system. There is widespread agreement that the scientific foundation of some currently available forensic science methods needs strengthening and that additional, more efficient techniques are urgently needed. These needs can only be met through sustained research programs explicitly designed to ensure and improve the reliability and validity of current methods and to foster the development and use of new and better techniques. This task is challenging due to the broad nature of the field.

Concerns have been raised repeatedly about the ability of the criminal justice system to collect and analyze evidence efficiently and to be fair in its verdicts. Although significant progress has been made in some forensic science disciplines, the forensic science community still faces many challenges. Federal leadership, particularly in regard to research and the scientific validation of forensic science methods, is needed to help meet the pressing issues facing state and local jurisdictions.

This report reviews the progress made by the National Institute of Justice (NIJ) to advance forensic science research since the 2009 report, Strengthening Forensic Science in the United States: A Path Forward and the 2010 report, Strengthening the National Institute of Justice. Support for Forensic Science Research examines the ways in which NIJ develops its forensic science research priorities and communicates those priorities as well as its findings to the scientific and forensic practitioner communities in order to determine the impact of NIJ forensic science research programs and how that impact can be enhanced.

Rationalizing Rural Area Classifications for the Economic Research Service: A Workshop

The U.S. Department of Agriculture Economic Research Service (USDA/ERS) maintains four highly related but distinct geographic classification systems to designate areas by the degree to which they are rural. The original urban-rural code scheme was developed by the ERS in the 1970s. Rural America today is very different from the rural America of 1970 described in the first rural classification report.

At that time migration to cities and poverty among the people left behind was a central concern. The more rural a residence, the more likely a person was to live in poverty, and this relationship held true regardless of age or race. Since the 1970s the interstate highway system was completed and broadband was developed. Services have become more consolidated into larger centers. Some of the traditional rural industries, farming and mining, have prospered, and there has been rural amenity-based in-migration. Many major structural and economic changes have occurred during this period. These factors have resulted in a quite different rural economy and society since 1970.
In April 2015, the Committee on National Statistics convened a workshop to explore the
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decisions regarding the generation of a county rural-urban scale for public use, taking into
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New Funding Opportunities

Content Order
New Funding Posted Since October 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 October 15 Newsletter

BAA-16-100-SOL-00002 Broad Agency Announcement (BAA) for the Advanced Development of Medical Countermeasures for Pandemic Influenza - BARDA
BARDA (full announcement) encourages the advanced research, development and acquisition of medical countermeasures such as vaccines, therapeutics, and diagnostics, as well as innovative approaches to meet the threat of Pandemic Influenza in support of the preparedness mission and priorities of the HHS Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) articulated in the 2014 PHEMCE Implementation Plan. The Implementation Plan is located on the ASRP website:
http://www.phe.gov/Preparedness/mcm/phemce/Documents/2014-phemce-sip.pdf The Pandemic and All Hazard Preparedness Act Pub. L. No. 109-417, 42 U.S.C. § 241 et seq. (PAHHA; http://www.gpo.gov/fdsys/pkg/PLAW-109publ417/pdf/PLAW-109publ417.pdf ) and The Pandemic and All Hazard Preparedness Reauthorization Act Pub. L. No. 113-5, (PAHPRA: http://www.gpo.gov/fdsys/pkg/PLAW-113publ5/pdf/PLAW-113publ5.pdf ) authorizes BARDA to (i) conduct ongoing searches for, and support calls for, potential qualified countermeasures and qualified pandemic or epidemic products; (ii) direct and coordinate the countermeasure and product advanced research and development activities of the Department of Health and Human Services; (iii) establish strategic initiatives to accelerate countermeasure and product advanced research and development (which may include advanced research and development for purposes of fulfilling requirements under the Federal Food, Drug, and Cosmetic Act or section 351 of this Act) and innovation in such areas as the Secretary may identify as priority unmet need areas; and (iv) award contracts, grants, cooperative agreements, and enter into other transactions, for countermeasure and product advanced research and development. Development Area of Interest: The purpose of this BAA is to solicit proposals that focus on one or more of the following area of interest as listed below: Development Area of Interest; Personal Protective Equipment (Mask and Respirators) for Influenza Infection for All-Hazards; Full-Featured Continuous Ventilators for Influenza and All-Hazards; Influenza Test Systems and
BARDA anticipates that research and development activities awarded from this Broad Agency Announcement (BAA) will serve to advance the knowledge and scientific understanding of candidates' to protect the civilian population of the United States against pandemic influenza and serve to advance candidate medical countermeasures towards licensure or approval by the Food and Drug Administration (FDA). **Open to Oct. 24, 2017.**

**USDA-NIFA-SCRI-005437, Specialty Crop Research Initiative Request for Pre-Applications**

The purpose of the [SCRI program](#) is to address the critical needs of the specialty crop industry by awarding grants to support research and extension that address key challenges of national, regional, and multi-state importance in sustaining all components of food and agriculture, including conventional and organic food production systems. Projects must address at least one of five focus areas: Research in plant breeding, genetics, genomics, and other methods to improve crop characteristics; Efforts to identify and address threats from pests and diseases, including threats to specialty crop pollinators; Efforts to improve production efficiency, handling and processing, productivity, and profitability over the long term (including specialty crop policy and marketing); new innovations and technology, including improved mechanization and technologies that delay or inhibit ripening; and methods to prevent, detect, monitor, control, and respond to potential food safety hazards in the production efficiency, handling and processing of specialty crops. Visit the NIFA website to access a factsheet on the Center of Excellence (COE) designation process, including COE criteria, and a list of programs offering COE opportunities in fiscal year 2016. You can also review a recording of COE outreach webinars held in February and March of 2015 from the site. The COE webpages will be updated throughout FY 2016 with additional information, such as a summary of comments received from stakeholders. **Due December 3.**

**N00014-16-R-FO03 Funding Opportunity Announcement for the Navy and Marine Corps Science, Technology, Engineering**

The ONR seeks proposals for developing existing or innovative solutions that directly support the development and maintenance of a robust STEM workforce. The goal of any proposed effort should be to provide solutions that will establish and maintain a diverse pipeline of U.S. citizens who are interested in uniformed or civilian DoN (or Navy and Marine Corps) STEM related workforce opportunities. While this announcement is relevant for any stage of the STEM pipeline, funding efforts will be targeted primarily towards the future DoN (naval) STEM workforce in High Schools, all categories of Post-Secondary institutions, the STEM research enterprise, and efforts that enhance the current naval STEM workforce and its mission readiness. Efforts may encompass a spectrum of project sizes from exploratory pilots to large-scale regional or national initiatives. The technical content of any idea must establish naval relevance within the broad scope of key engineering and scientific areas as outlined in the Naval S&T Strategic Plan, or such as our National Naval Responsibilities (see ONR website), or any identified gaps in workforce needs. Specific audience priority areas may include, but not be limited to, military dependent children, education systems integral to the naval science and technology enterprise, and veteran initiatives that improve education outcomes and connections to naval STEM careers. While not a formal requirement or program focus of this...
FOA, applicants are strongly encouraged to consider under-represented populations including women and minorities in project plans. **Due December 31.**

**Plant Feedstock Genomics for Bioenergy: A Joint Research Funding Opportunity**

**Announcement USDA, DOE**

The U.S. Department of Energy's Office of Science, Office of Biological and Environmental Research (OBER), and the U.S. Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA), hereby announce their interest in receiving applications for genomics-based research that will lead to the improved use of biomass and plant feedstocks for the production of fuels such as ethanol or renewable chemical feedstocks. Applications are sought for research on candidate bioenergy plants with improved resistance/tolerance to disease and disease complexes. Research to overcome these biological barriers to the low-cost, high-quality, scalable and sustainable production of bioenergy feedstocks using the tools of genetics and genomics are encouraged. The USDA-NIFA and DOE Office of Science encourages you to register in all systems as soon as possible. You are also encouraged to submit letters of intent, pre-applications, and applications well before the deadline. **Required preapplication Dec. 22; Due Feb. 2.**

**EPA-OW-OWOW-15-04**, FY 2015 Support for Water Quality Framework Training Workshop, Nonpoint Source Agriculture Training and Technical Assistance, and Hypoxia and **Agricultural Nutrient Outreach** and Technical Assistance Request for Proposals Environmental Protection Agency, **Mississippi River/Gulf of Mexico** Hypoxia Task Force. The U.S. Environmental Protection Agency (EPA) is soliciting proposals from eligible applicants to provide support for training and technical assistance activities to build the capacity of state and tribal officials and nongovernmental stakeholders in the Clean Water Act (CWA) Sections 303(d), 305(b), and TMDL Programs. The National Priority Activities identified in this announcement are: 1) to plan, prepare and conduct three State and Tribal Data Management and Data Sharing Training Workshops in support of CWA Section 303(d), CWA Section 305(b), TMDLs, and water quality monitoring and assessment; 2) to provide and advance Nonpoint Source Agriculture Training and Technical Assistance; and 3) to provide training and technical assistance on Gulf of Mexico Hypoxia and Agricultural-Related Nutrient Issues. Funds awarded under this announcement for training and technical assistance support activities may be used to promote participation and to support travel expenses of non-federal personnel to attend workshops. **Due December 14**

**CDC-RFA-DP16-1603 Nutrition Strategies to Address Micronutrient Deficiencies**

To reduce the worldwide burden of micronutrient deficiencies by helping vulnerable populations receive and consume adequate amounts of necessary vitamins and minerals. This FOA aims to work collaboratively with key stakeholders and implementers to: 1) develop recommendations and inform country-specific nutrition strategies; 2) design nutrition monitoring and evaluation systems to ascertain, track and improve micronutrient status and/or intervention progress; and 3) build in-country capacity to implement and/or sustain standardized national nutrition programs and micronutrient interventions. **Due Dec. 29**

**HRSA-16-017 Rural Health Network Development Planning Program**
This announcement solicits applications for the Rural Health Network Development Planning Grant Program (“Network Planning”). The purpose of the Network Planning program is to assist in the development of an integrated healthcare network, if the network participants do not have a history of formal collaborative efforts. Health care networks can be an effective strategy to help smaller rural health care providers and health care service organizations align resources and strategies, achieve economies of scale and efficiency, and address challenges more effectively as a group than as single providers. The Network Planning program promotes the planning and development of healthcare networks in order to: (i) achieve efficiencies; (ii) expand access to, coordinate, and improve the quality of essential health care services; and (iii) strengthen the rural health care system as a whole. The health care system is undergoing a significant amount of change and this can be particularly challenging for small rural providers. The goals of the Network Planning program are to help rural providers better serve their communities given changes taking place in health care, as providers move from focusing on the volume of services to focusing on the value of services. This program will bring together key parts of a rural health care delivery system, particularly those entities that may not have collaborated in the past under a formal relationship, to establish and improve local capacity and coordination of care. The program will support one year of planning with the primary goal of helping networks create a foundation for their infrastructure and focusing member efforts to address important regional or local community health needs. To appropriately address emerging community health needs and challenges, systemic efforts are key. This program will assist communities in establishing a rural health network of health care providers committed to forming relationships with each other and stakeholders. It is expected that the rural health networks will maintain the highest level of access to care, increase the use of health information technology, explore alternative health care delivery models and continue to achieve a high level of quality health care across the continuum of care from prevention and wellness to acute and long term care. Due January 8.

**RFA-CK-16-001 Emerging Infections Sentinel Networks (EISN) Research Department of Health and Human Services Centers for Disease Control and Prevention**

The Emerging Infections Sentinel Network (EISN) program assists awardees in operating provider-based sentinel networks. These networks will contribute to surveillance for emerging infectious diseases, including drug-resistant, foodborne and waterborne, and vaccine-preventable or potentially vaccine-preventable diseases, and will enhance information exchange. Research objectives for the provider-based sentinel networks include investigations of various emerging infections and implementation of studies to examine risk factors, determine practice guidelines, and evaluate outcomes. This FOA specifically aims to support the collection of infectious disease (ID) data from academically affiliated emergency departments. Due January 8.

**USDA-NIFA-BFR-005436, Beginning Farmer and Rancher Development Program Department of Agriculture, National Institute of Food and Agriculture**

Beginning farmer education for adult and young audiences in the United States can be generally traced back to the advent of the 1862 and the 1890 Morrill Land Grant Acts. But for the first time, the Food, Conservation, and Energy Act of 2008 (Pub. L. No. 110-234, Section 7410),
appropriated $75 million for FY 2009 to FY 2012 to develop and offer education, training, outreach and mentoring programs to enhance the sustainability of the next generation of farmers. The *Agriculture Act of 2014* provided an additional $20 million per year for 2014 through 2018. The reasons for the renewed interest in beginning farmer and rancher programs are: the rising average age of U.S. farmers, the 8% projected decrease in the number of farmers and ranchers between 2008 and 2018, and the growing recognition that new programs are needed to address the needs of the next generation of beginning farmers and ranchers. Due January 21.

**NOAA-NOS-NCCOS-2016-2004640 National Competitive Hypoxia Programs: the Northern Gulf of Mexico Ecosystems and Hypoxia Assessment Program (NGOMEX) and Coastal Hypoxia Research Program (CHRP)**

The purpose of this document is to advise the public that NOAA/NOS/National Centers for Coastal Ocean Science (NCCOS)/Center for Sponsored Coastal Ocean Research (CSCOR) is soliciting proposals for the Northern Gulf of Mexico Ecosystems and Hypoxia Assessment Program (NGOMEX) and Coastal Hypoxia Research Program (CHRP). Funding is contingent upon the availability of Fiscal Year 2016 Federal appropriations. It is anticipated that projects funded under this announcement will have a September 1, 2016 start date. Total funding for this research: For NGOMEX, approximately 2 to 6 projects, for approximately 2-4 years in duration, are expected to be funded at a level not to exceed $300,000 per year per proposal. For CHRP, approximately 3 to 7 projects, for approximately 2-5 years in duration, are expected to be funded at a level not to exceed $400,000 per year per proposal. It is anticipated that up to $1,850,000 may be available in Fiscal Year 2016 for the first year of all hypoxia projects combined. In addition to these annual funding limits, NOAA does not anticipate funding any proposals submitted with total budgets (across all years) that are greater than $1,200,000 for NGOMEX and $2,000,000 for CHRP. Electronic Access: Background information about NOAA’s NGOMEX and CHRP Programs can be found at [http://coastalscience.noaa.gov/research/pollution/hypoxia/ngomex](http://coastalscience.noaa.gov/research/pollution/hypoxia/ngomex) and [http://coastalscience.noaa.gov/research/pollution/hypoxia/chrp](http://coastalscience.noaa.gov/research/pollution/hypoxia/chrp), respectively. Any Frequently Asked Questions that arise will be posted at these sites. Proposals should be submitted through Grants.gov, [http://www.grants.gov](http://www.grants.gov). Sign up to receive any potential amendments to this Announcement via [www.grants.gov](http://www.grants.gov). The key objective of NCCOS/CSCOR research is the production of user-driven predictive tools that will enable managers to assess alternative management strategies to restore degraded ecosystems and protect healthy ones. Research supported is outcome-oriented towards predictions, as well as increased scientific understanding that will provide managers and the public with sound scientific information for making decisions in support of societal objectives. Meritorious proposals articulate outcome-based management goals (see Section IV.B.) and recipients will be expected to report progress toward achieving outcome-based goals annually. Due January 22.

**Long-Term Ecological Research (LTER), New Site Competition**

NSF currently supports 25 LTER research sites and, through this solicitation, invites proposals to establish three (3) new LTER sites. Research proposals should address questions in one of two broad ecosystems: Arid/semi-arid ecosystems: The Division of Environmental Biology (DEB)
anticipates support and management of one (1) new site with a focus on arid or semi-arid ecosystems. The location of the research site for proposals submitted to develop a new arid/semi-arid ecosystem LTER must be within the United States, including its territories and protectorates. Ocean/coastal ocean ecosystems: The Division of Ocean Sciences (OCE) anticipates support and management of two (2) new sites that focus on ocean or coastal ocean ecosystems; defined as ecological systems from the shoreline outward on continental shelves and including the Laurentian Great Lakes, Congressionally defined as interior oceans. Preference will be given to proposals developing a new ocean/coastal ocean ecosystem LTER site located within the United States, including its territories and protectorates, but other locations are not precluded. To address ecological questions that cannot be resolved with short-term observations or experiments, NSF established the Long Term Ecological Research Program (LTER) in 1980. Two components differentiate LTER research from projects supported by other NSF programs: 1) the research is located at specific sites chosen to represent major ecosystem types or natural biomes; and 2) it emphasizes the study of ecological phenomena over long periods of time based on data collected in five core areas. The five core areas of long-term data collection are: 1) patterns and controls of primary production, 2) spatial and temporal population dynamics and food web interactions, 3) patterns and controls of organic matter accumulation and decomposition, 4) patterns of inorganic inputs and movements of nutrients, and 5) patterns and frequency of disturbances. The LTER program provides a unique opportunity for researchers to obtain an integrated, holistic understanding of ecosystems that is not possible through individual, short-term awards. Research at LTER sites must test important, current ecological theories and significantly advance understanding of the long-term dynamics of populations, communities and ecosystems. It often integrates multiple disciplines and, through cross-site interactions, examines patterns or processes over broad spatial scales. Recognizing that the value of long-term data extends beyond use at any individual site, NSF requires that data collected by all LTER sites be made broadly accessible. Prelim Feb. 1; full August 2

**EJ Collaborative Problem-Solving Cooperative Agreements Program**
The Environmental Justice Collaborative Problem-Solving (CPS) Cooperative Agreement Program provides funding for eligible applicants for projects that address local environmental and public health issues within an affected community. The CPS Program is designed to help communities understand and address exposure to multiple environmental harms and risks. Due February 12.

**USDA-NIFA-BRAP-005435, Biotechnology Risk Assessment Grants Program**
The purpose of the BRAG program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants, microorganisms (including fungi, bacteria, and viruses), arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing Federal regulatory agencies with scientific information relevant to regulatory issues. See RFA for details. LOI Feb. 12; full April 15
Next Generation Humanities PhD Grants National Endowment for the Humanities

In recent years, research published by Humanities Indicators, among others, has revealed that humanities PhDs pursue careers in many different professions—both inside and outside academia. Yet most humanities PhD programs in the United States still prepare students primarily for tenure-track professor positions at colleges and universities. The increasing shortage of such positions has changed students’ expected career outcomes. NEH therefore hopes to assist universities in devising a new model of doctoral education, which can both transform the understanding of what it means to be a humanities scholar and promote the integration of the humanities in the public sphere. Next Generation Humanities PhD Planning Grants support universities in preparing to institute wide-ranging changes in humanities doctoral programs. Humanities knowledge and methods can make an even more substantial impact on society if students are able to translate what they learn in doctoral programs into a multitude of careers. Next Generation PhD Planning Grants are designed to bring together various important constituencies to discuss and strategize, and then to produce plans that will transform scholarly preparation in the humanities at the doctoral level. Students will be prepared to undertake various kinds of careers, and humanities PhD programs will increase their relevance for the twenty-first century. Next Generation Humanities PhD Implementation Grants support universities in instituting wide-ranging changes in humanities doctoral programs. Humanities knowledge and methods can make an even more substantial impact on society if students are able to translate what they learn in doctoral programs into a multitude of careers. Next Generation PhD Implementation Grants are designed to produce plans that will transform scholarly preparation in the humanities at the doctoral level. Students will be prepared to undertake various kinds of careers, and humanities PhD programs will increase their relevance for the twenty-first century. NEH will support activities specific to each institution’s needs: these may include (but are not limited to) multi-departmental collaboration, transformations in curricula, modifications in stipend structures, altered formats for dissertations, commitment to collection of alumni career information and outcomes, partnerships with non-university entities, as well as a pledge to encourage doctoral students to explore and prepare for multiple career trajectories. NEH intends the Implementation Grants program to promote best practices on the part of its awardee institutions, and thereby to establish a new model for graduate education in the humanities. Grantee institutions must provide funds (either their own funds or funds raised from nonfederal third parties) equal to the grant funds released by NEH. **Due February 17.**

**FY 2017 SERDP Solicitations**

The Department of Defense’s Strategic Environmental Research and Development Program (SERDP) is seeking environmental research and development proposals for funding beginning in Fiscal Year (FY) 2017. Projects will be selected through a competitive process. Details are available on the website under **Funding Opportunities**. The **Core Solicitation** provides funding opportunities for **basic and applied** research and advanced technology development. Core projects vary in cost and duration consistent with the scope of the work proposed. The Statements of Need (SON) referenced by this solicitation request proposals related to the SERDP program areas of **Environmental Restoration** (ER), Munitions Response (MR), **Resource Conservation and Climate Change** (RC), and Weapons Systems and Platforms.
(WP). All Core pre-proposals are due January 7, 2016, by 2:00 p.m. ET. The SERDP Exploratory Development (SEED) Solicitation provides funding opportunities for work that will investigate innovative environmental approaches that entail high technical risk or require supporting data to provide proof of concept. Funding is limited to not more than $200,000 and projects are approximately one year in duration. This year, SERDP is requesting SEED proposals for the RC and WP program areas. SEED proposals are due March 8, 2016, by 2:00 p.m. ET.

**URL Links to New & Open Funding Solicitations**

- 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
Solicitations Remaining Open from Prior Issues of the Newsletter

**Fiscal Year 2016 Office of Naval Research Young Investigator Program (YIP)**
The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR's Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or tenure-track-equivalent academic appointment, have begun their first appointment on or after 01 Nov 2010, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education (hereafter also called "universities") to the Department of the Navy's research program, to support their research, and to encourage their teaching and research careers. **Due Dec. 1.**

**Fiscal Year 2016 NOAA Gulf of Mexico Bay-Watershed Education and Training (B-WET) Program**
The National Marine Fisheries Service Southeast Region (Fisheries Southeast Regional Office) is seeking proposals under the Gulf of Mexico B-WET Program. The Gulf of Mexico B-WET program is a competitive, environmental education, grants program that promotes locally relevant, experiential learning in the K-12 environment. Funded projects provide Meaningful Watershed Educational Experiences (MWEEs) for students, related professional development for teachers, and help to support regional education and environmental priorities in the Gulf of Mexico. This program addresses NOAA's Long-Term Goal of "Healthy Oceans: Marine fisheries, habitats, and biodiversity are sustained within healthy and productive ecosystems" and "NOAA's Engagement Enterprise Objective for An engaged and educated public with an improved capacity to make scientifically informed environmental decisions". **Due December 11.**

**NIJ FY 16 Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics**
The Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics (GRF-STEM) provides awards to accredited academic institutions to support graduate research leading to doctoral degrees in areas that are relevant to ensuring public safety, preventing and
controlling crime, and ensuring the fair and impartial administration of criminal justice in the United States. **Due December 15.**

**NIJ Graduate Research Fellowship Program in the Social and Behavioral Sciences**
The Graduate Research Fellowship Program in Social and Behavioral Sciences provides awards to accredited academic institutions to support graduate research leading to doctoral degrees in areas that are relevant to ensuring public safety, preventing and controlling crime, and ensuring the fair and impartial administration of criminal justice in the United States. NIJ is investing in doctoral education by supporting universities that sponsor students who demonstrate the potential to successfully complete doctoral degree programs in disciplines relevant to the mission of NIJ and who are in the final stages of graduate study. **Due December 15.**

**N00014-15-R-SN16 Stand-Off and Remote Improvised Explosive Device Detection and Neutralization**
Office of Naval Research along with many government agencies have invested in research and development of various concepts of detecting explosive threats (mines, IEDs, and Home-Made Explosives) and their related components (metallic and non-metallic) at stand-off distances. While improvement in sensitivity and selectivity of explosive detection sensors have increased, challenges still remain to acquire relevant information rapidly enough to maintain an operational tempo while maintaining a safe stand-off distance in expeditionary operation (vehicle or other small platform operation). Most of the current optical and Radio Frequency (RF) solutions suffer poor collection efficiency due to severe scattering from the targets, hence, not capable of providing sufficient coverage. Ideal solutions should include determination of all types of explosives, provide sufficient coverage rate enabling detection, classification, and identification all the explosive threats from a moving platform. In order to address these challenges, this announcement is seeking innovative research topics that can address the following research areas. **Due December 17.**

**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. Due December 31

2016 Ecological Effects of Sea Level Rise Program - Advancing Predictive Capabilities to Evaluate Natural and Nature-based Features

The purpose of this document is to advise the public that NOAA/NOS/National Centers for Coastal Ocean Science (NCCOS)/Center for Sponsored Coastal Ocean Research (CSCOR) is soliciting proposals under the Ecological Effects of Sea Level Rise (EESLR) Program to evaluate and quantify the ability of coastal natural and nature-based features to mitigate the effects of sea level rise (SLR) and inundation (storm surge, nuisance flooding, and/or wave run-up) effects on coastal ecosystems and communities through integrated field research and advancement of dynamic modeling tools. The overall goal of EESLR is to facilitate informed adaptation planning and coastal management decisions through a multidisciplinary research program that results in integrated models and tools of dynamic physical and biological processes capable of evaluating vulnerability and resilience under multiple SLR, inundation, and coastal management scenarios. The geographic scope of this particular EESLR funding announcement is limited to coastal regions of (1) southern California, defined as San Louis Obispo County south to the US/Mexico border, and (2) the Gulf of Mexico. Funding is contingent upon the availability of Fiscal Year 2016 Federal appropriations. It is anticipated that up to $800,000 may be available in Fiscal Year 2016 for the first year of research. Approximately 2 to 4 proposals, for approximately 3-4 years in duration, are expected to be funded at a level not to exceed $300,000 per year per proposal. In addition to this annual funding limit, any proposals submitted with total budgets (across all years) that are greater than $1,200,000 will not be considered for funding. Electronic Access: Background information about NOAA’s Ecological Effects of Sea Level Rise Program can be found at http://coastalscience.noaa.gov/research/climate/sea_level_rise. Due January 8.

Ocean Exploration 2016 Funding Opportunity

NOAA’s Office of Ocean Exploration & Research (OER) is soliciting pre-proposals followed by full proposals for bold, innovative, multi-partner, interdisciplinary ocean exploration projects in the following areas of interest: 1) physical, chemical and biological characterizations of unknown or poorly known regions of the deep ocean, especially areas deeper than 500 m. 2) baseline characterization of marine archaeological resources at any depth; and 3) technology that advances ocean exploration and has application to NOAA related missions. Through this announcement, NOAA OER anticipates the availability of approximately $3 million. The actual funding amount is contingent upon FY 2016 Congressional appropriations. OER estimates making 3-10 awards that will range from about $50,000 to $1.5 million. Funding for ship or submersible assets, if required, must be included in the proposal. Leveraging with ship time supported outside of this funding opportunity is strongly encouraged. Due January 8.

F15AS00466 Wildlife Without Borders - Africa Program Department of the Interior

Central Africa is a globally important region for forest and biodiversity conservation. The U.S. Fish and Wildlife Service (USFWS) works closely with national governments, U.S. agencies, and a range of other partners to ensure a strategic, results-based approach to wildlife conservation in the region. In collaboration with U.S. Agency for International Development’s (USAID) Central
Africa Regional Program for the Environment (CARPE), USFWS is providing this funding opportunity to reduce threats to key wildlife populations, and to develop the requisite individual and institutional conservation capacity to undertake long-term conservation programs. Please see A Results-Based Vision for Conservation in Central Africa on the USFWS website for greater detail on our approach to wildlife conservation in Central Africa. Funding will only be considered for projects that impact wildlife populations in the following countries: Burundi, Cameroon, Chad, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda, and Sao Tome and Principe. Please review each USFWS funding priority below for specific details, including what USFWS wants to achieve through its funding support (i.e., Desired Results). Each funding priority also identifies factors that, in USFWS experience, are basic requirements (also known as prerequisites or enabling conditions) for projects to effectively implement proposed activities. Applicants should address these factors in the Statement of Need. USFWS supports wildlife conservation projects in Central Africa through multiple mechanisms: the Wildlife Without Borders Africa (WWB-Africa) Program, and the funds created by Congressional acts for the conservation of African elephants, great apes and marine turtles. In general, applicants are encouraged to submit a proposal to WWB-Africa if their project falls under one of the six funding priorities listed below. In order to maximize funding opportunities, USFWS staff may move proposals between the WWB-Africa Program and the Species Funds. Due January 16.

DE-FOA-0001437 Environmental System Science Department of Energy - Office of Science
The Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE) hereby announces its interest in receiving applications for research in Environmental Systems Science (ESS), including Terrestrial Ecosystem Science (TES) and Subsurface Biogeochemical Research (SBR). The mission of the Climate and Environmental Sciences Division (CESD) within BER is to advance a robust predictive understanding of Earth’s climate and environmental systems and to inform the development of sustainable solutions to the Nation’s energy and environmental challenges. The goal of the Environmental System Science (ESS) activity in the Office of Biological and Environmental Research (BER) is to advance a robust predictive understanding of terrestrial environments, extending from bedrock to the top of the vegetated canopy and from molecular to global scales in support of DOE’s energy and environmental missions. Using an iterative approach to model-driven experimentation and observation, interdisciplinary teams of scientists work to unravel the coupled physical, chemical and biological processes that control the structure and functioning of terrestrial ecosystems across vast spatial and temporal scales. State-of-science understanding is captured in conceptual theories and models which can be translated into a hierarchy of computational components and used to predict the system response to perturbations caused, for example, by changes in climate, land use/cover or contaminant loading. Basic understanding of the system structure and function is advanced through this iterative cycle of experimentation and observation by targeting key system components and processes that are suspected to most limit the predictive skill of the models. Due January 22.

Division of Environmental Biology (core programs) (DEB)
The Division of Environmental Biology (DEB) supports fundamental research on populations, species, communities, and ecosystems. Scientific emphases range across many evolutionary and ecological patterns and processes at all spatial and temporal scales. Areas of research include biodiversity, phylogenetic systematics, molecular evolution, life history evolution, natural selection, ecology, biogeography, ecosystem structure, function and services, conservation biology, global change, and biogeochemical cycles. Research on organismal origins, functions, relationships, interactions, and evolutionary history may incorporate field, laboratory, or collection-based approaches; observational or manipulative experiments; synthesis activities; as well as theoretical approaches involving analytical, statistical, or computational modeling. Preliminary due January 25; full due August 2.

NIJ FY 16 Research and Development in Forensic Science for Criminal Justice Purposes
NIJ is seeking proposals for basic or applied research and development projects that will: (1) increase the body of knowledge to guide and inform forensic science policy and practice, or (2) result in the production of useful materials, devices, systems, or methods that have the potential for forensic application. The intent of this program is to direct the findings of basic scientific research, research and development in broader scientific fields applicable to forensic science, and ongoing forensic science research toward the development of highly discriminating, accurate, reliable, cost-effective, and rapid methods for the identification, analysis, and interpretation of physical evidence for criminal justice purposes. Due January 31.

Open Solicitations and BAAs

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.

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. DARPA 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.

**FY 2016 Continuation of Solicitation for the Office of Science Financial Assistance Program**
The Office of Science (SC) 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-0001414, 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, 2016, 11:59 PM Eastern Time, or until it is succeeded by another issuance, whichever occurs first.**

**DoD USAMRMC FY16 Broad Agency Announcement for Extramural Medical Research**
The U.S. Army Medical Research and Materiel Command’s (USAMRMC) mission is to provide solutions to medical problems of importance to the American Service member at home and abroad, as well as to the general public at large. The scope of this effort and the priorities attached to specific projects are influenced by changes in military and civilian medical science and technology, operational requirements, military threat assessments, and national defense strategies. The extramural research and development programs play a vital role in the fulfillment of the objectives established by the USAMRMC. General information on USAMRMC can be obtained at [https://mrmc.detrick.army.mil/](https://mrmc.detrick.army.mil/). This Fiscal Year 2016 (FY16) Broad Agency Announcement (BAA) is intended to solicit extramural research and development ideas and is issued under the provisions of the Competition in Contracting Act of 1984 (Public Law 98-369), as implemented in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016. In accordance with FAR 35.016, projects funded under this BAA must be for basic and applied research and that part of development not related to the development of a specific system or hardware procurement. Projects must be for scientific study and experimentation directed toward advancing the state-of-the-art or increasing knowledge or understanding rather than focusing on a specific system or hardware solution. Research and development funded through this BAA is intended and expected to benefit and inform both military and civilian medical practice and knowledge. This BAA provides a general description of USAMRMC’s research and development programs, including research areas of interest, evaluation and selection criteria, pre-proposal/pre-application and full proposal/application preparation instructions, and general administrative information. Specific submission information and additional administrative requirements can be found in the document titled “General Submission Instructions” available in Grants.gov along with this BAA. This FY16 BAA is continuously open for a 12-month period, from October 1, 2015 through September 30, 2016, at 11:59 p.m. Eastern Time. Submission of a pre-proposal/pre-application is required and must be submitted through the electronic Biomedical Research Application Portal (eBRAP) ([https://eBRAP.org/](https://eBRAP.org/)). Pre-proposals/pre-applications may be submitted at any time throughout the 12-month period. If the USAMRMC is interested in receiving a full proposal/application, the PI will be sent an invitation to submit via eBRAP. A full proposal/application must be submitted through Grants.gov ([http://www.grants.gov/](http://www.grants.gov/)). **Invited full proposals/applications can be submitted under the FY16 BAA through September 30, 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](http://www.grants.gov/) (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**

**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) Soldier/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
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.

**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.**
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

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