

Research Development & Grant Writing News

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By [Katherine E. Kelly](#), PhD

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Topics of Interest URLs

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Explaining Mission Agencies to New Faculty

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By Mike Cronan, co-publisher

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New and junior faculty at the beginning stages of writing proposals to federal research agencies need to understand the distinct roles of federal mission agencies such as USDA/NIFA, DOE, NOAA, EPA, DOD, DoED, DOI, DOJ. This understanding is in many ways equivalent to the other important distinction new and junior faculty must make, i.e., determining whether their research is basic or applied. **Both distinctions will have an impact on where a proposal is submitted and how it is written.** Moreover, in practice, the two distinctions are often intertwined.

As a general rule, research at mission agencies is more applied than at the basic research agencies such as NSF and NIH. However, in practice, basic and applied research do not fit neatly into two entirely separate buckets, but represent more of a sliding scale along a research continuum going from very basic to very applied. Moreover, some basic research is funded by some mission agencies, for example, DOE and DOD. But there is a generalized distinction between basic research at NSF and NIH and that funded by DOE's Office of Science or DOD's DARPA. The mission agencies' basic research furthers each agency's specific mission objectives, whereas basic research at NSF and NIH advances knowledge in the field at a fundamental level. However, it is also the case that the basic research agencies such as NSF and NIH fund applied research that addresses some particular question of importance, e.g., perhaps related to Big Data analytics specific to the Smart Grid or Precision Medicine, respectively.

Understanding these distinctions is an important factor in determining where new and junior faculty seek funding and how they write the proposal once a funding opportunity is found. The key point for new and junior faculty to appreciate when seeking funding from federal mission agencies is that their success will depend entirely on how well they make the case in the research narrative that **the proposed research brings clear value-added benefits to the funding agency's mission.** By comparison, success at a basic research agency is entirely dependent on how well the case is made in the research narrative that the proposed research will **advance the state of knowledge in the field** in some important, possibly transformative, way.

Proposals submitted to mission agencies will have to address the value-added benefits question in a compelling way if they are to be funded. In order to do this, the proposal's author **must understand the mission priorities of the funding agency**, both as defined in the funding solicitation itself and in the larger context of the agency's long-range strategic research plan, something all mission agencies have posted to their websites.

The bottom line here is that understanding the funding agency's mission is an essential first step in making a convincing argument in the research narrative that the proposed research advances the priority mission objectives of the agency as enumerated in the funding solicitation. When writing a proposal to a mission agency, the proposal's author **must demonstrate the mission impact** of the proposed research. This is done by mapping the

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goals, objectives, and anticipated outcomes of the proposed research to the agency mission agenda listed in the funding announcement.

Moreover, most mission agencies, with the exception of USDA/NIFA, also fund unsolicited proposals, where an understanding of the agency's research mission is even more important. The unsolicited proposal route to funding is often much more general than is the process of responding to a specific program announcement posted to Grants.gov. In the latter case, the goals and objectives are addressed in a very specific and detailed way in the solicitation that makes it easier to map the value-added benefits and mission impact of the proposed research to the agency's funding objectives.

By comparison, the unsolicited process, often addressed in agency BAAs (Broad Agency Announcement), may require a stepwise procedure. This might begin by engaging a program officer with an email inquiry in hopes of being asked to submit a brief research abstract or white paper. The paper might lead to an invitation to submit a preliminary or full proposal. Regardless of the specific process at a mission agency, the unsolicited process itself will be much less guided than those appearing in a published funding solicitation. Therefore, it becomes very important that anyone considering the unsolicited proposal route have an informed understanding of the priority research mission objectives of the particular agency. Moreover, mission agencies are not monolithic. Divisions and program areas with an agency can have different priorities, particularly at mission agencies such as DOE and DOD.

Proposals submitted by new and junior faculty to mission agencies often fail to reflect a full understanding of the agency's mission as it appears in the context of a specific funding solicitation or as it is expressed in the larger context of the entire agency. Providing an informed description of how proposed research ***maps to the funding agency's mission objectives and thereby brings value-added benefits to the agency's research mission priorities is the key to a funded proposal at a mission agency.***

The Myth of Insider Grants Information

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By Mike Cronan, co-publisher

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One fairly common myth about seeking research funding from federal agencies is that some privileged applicants benefit from ***possessing insider information not available to others*** that gives them a significant competitive advantage or even a guarantee of funding. This “urban legend” about success in grant writing has several major downsides that lead to outcomes that result in a self-fulfilling prophesy, i.e., a declined proposal. As the sociologist Robert K. Merton noted in coining and defining the term, “*The **self-fulfilling prophecy** is, in the beginning, a **false definition of the situation** evoking a new behavior which makes the original false conception come true. This specious validity of the self-fulfilling prophecy **perpetuates a reign of error.***”

In the world of grant writing, this plays out beginning with the false assertion that information given only to privileged insiders, usually by mysterious informers, holds the key to successful proposals. Of course, when those who hold this belief are declined for funding, it leads to what Merton called “**a reign of error.**” The false assumption as it relates to grant writing is that success depends on this insider information in the same way a privileged few benefit from insider trading, portrayed in the 1987 movie *Wall Street*.

Unfortunately, the idea that others have information you don’t is a major distraction when it comes to assisting faculty in the planning, development, and writing of proposals. It is a distraction because those who believe there is an easy way to get funded based on insider information ignore the real information required for successful funding. ***This real information is available to all who are willing to put the time, effort, and hard work*** into developing a research strategic plan, studying the mission and culture of funding agencies, reading funding solicitations repeatedly, becoming informed about documents referenced in the funding solicitation, reviewing abstracts of projects funded in the past, talking to program officers, serving on agency review panels, talking with colleagues who have funding from the particular agency, and writing a compelling research narrative..

Perhaps the most pernicious result of assuming the “insider information” myth is that it obscures the real reason for the decline of many proposals—***the relative merit of the proposed research***. While it is true that having knowledge that others don’t increases the chances of funding success, that knowledge does not come from some shadowy world of insiders. It comes from the ***persistent analysis of public information that leads to informed decisions*** about how best to write a successful proposal ***grounded on meritorious research of significance, impact, and value-added benefits to the funding agency.***

Bottom line: There is no circumventing the fact that proposals are funded entirely on research merit. While there may be other factors that enter into the funding decision, these factors, e.g., geographical distribution of awards, preventing research duplications, an optimized configuration of awards most beneficial to the agency’s mission, are not secret but revealed fully in funding solicitations or referenced documents. The unfortunate assumption embedded in the myth of insider grants information is ***that proposers can do an end run around the overarching merit criterion.*** But those who follow this fool’s errand down the

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“insider information rabbit hole” will come to no good end, i.e., a declined proposal, because valuable time was squandered and the hard work of producing a merit-based proposal was never addressed.

Looking for Humanities Funding? Ask Google

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By Mike Cronan, co-publisher

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Faculty in the humanities and humanities-related social sciences often experience significant challenges when it comes to seeking funding to support their research. Unlike finding research funding in engineering and the sciences, there is no equivalent in the humanities to the comprehensive concentration of dollars and programs at agencies such as NSF and NIH, or the various mission agencies that fund scientific research. For example, spending for humanities research in 2014 was only 0.6% of the amount spent on science and engineering research. At the federal level, the National Endowment for the Humanities ([NEH](#)) is the primary funder of humanities research, although there is funding for the humanities at other federal agencies as well, including the Department of Education, Department of State, National Park Service, National Endowment for the Arts, and The Smithsonian Institution.

Annual federal funding for humanities activities across all agencies is in the range of \$1.2 billion according to [Humanities Indicators](#), a project of the National Academy of Arts and Sciences (see [Beyond NEH: Other Federal Support for Humanities Activities](#)). Historically, for example, the NEH budget was pared from over \$400 million in 1979 to \$150 million in 1996, and has remained flat lined at around \$150 million for the last 20 years. Given the state of federal funding support for the humanities, faculty in these disciplines have turned to foundations, museums, libraries, collections, associations, and other sources to support their research. These sources include internal support from their own universities, which represents major national support in the humanities.

The challenge to humanities faculty, particularly new and junior faculty, is that grants in the humanities are typically small, but the number of funders is very large. This situation is the opposite of funding in engineering and the sciences, where the grants are large but the number of principal funders is fairly small and well known. Faculty seeking support in the humanities must depend on diligent exploration and a significant amount of internet mining to identify funding sources.

In many ways, **Google is the humanities scholar's best friend**. Well-crafted Google searches can open up a whole new universe of potential funding not otherwise apparent or visible to those not skillfully harnessing the robust search capabilities of Google. Of course, the key to successful Google searches is a function of how well the Google query is crafted. As the geologists note, **"If you don't ask the right question, the rock won't answer."** This applies, as in Bridge, **"in spades"** when it comes to Google searches.

The key to a good Google search is to **frame your question with strong keywords**. Moreover, this is an iterative process of repeated queries and following potential URLs until the right information is found. Typically, each query will yield better keywords to try in a Google search for **"research funding in the humanities."** As in a successful proposal, giving specifics and detail also makes for a more robust Google search. Some initial keywords in the humanities and humanities-related social sciences to use in initiating the query process can be seen in the NEH description of these disciplines below.

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NEH: *“The HUMANITIES includes the study of language, both modern and classical; linguistics; literature; history; jurisprudence; philosophy; archaeology; comparative religion; ethics; the history, criticism and theory of the arts; those aspects of SOCIAL SCIENCES which have humanistic content and employ humanistic methods; and the study and application of the humanities to the human environment with particular attention to reflecting our diverse heritage, traditions, and history and to the relevance of the humanities to the current conditions of national life.”*

Of course these are very general terms to get you the ball park. Subsequent searches need to be very specific. ***Don’t worry that you will break Google by asking a very detailed and specific question.*** You can ask Google questions just like you would ask another person a question. Google may not rise to the level of passing the *Turing Test* for artificial intelligence (Turing was the British mathematician popularized in the 2014 movie *The Imitation Game*), but it is very good at getting the information you want in response to a ***skillful query.***

For example, perhaps you asked Google: ***“research funding support for the study of Tom Stoppard.”*** The **below** is one of many results of the example search. The next step in this example is to then study the initial search results and find keywords and refine them to do additional searching until you find the information you are looking for, or, in some cases, to conclude that the information you want is not there, or at least inaccessible, with your search protocols.

[Faculty Grants 2015-2016 | Middlebury](#)

This **grant** will help **support** (Professor Abbott’s) **2016-17** academic leave.... (It will) enable him to conduct **research on** the Center’s collection of **Tom Stoppard** materials.... “Stephen Abbott (Mathematics) has been awarded a ***one-month research fellowship from the Harry Ransom Center at the University of Texas in support of the book project, titled Mathematics as Art in Contemporary Theater, that he will be pursuing during his academic leave in 2016-17. The fellowship will enable him to conduct research on the Center’s collection of Tom Stoppard materials, as well as other 20th century theater materials.***”

However, this is a general approach to developing more successful and robust funding searches in the humanities and related social sciences. Moreover, there is also excellent information on humanities funding on open university websites. The below are some starting points for Google searchers that can bring you more success in finding funding in the humanities and related social sciences.

- **Federal Agencies:** e.g., [NEH](#), [NEA](#), [DOED](#), Department of State ([Fulbright](#)), [National Park Services](#) (historical interpretations). All posted to Grants.gov.
- **Humanities Organizations and Associations:** e.g., [American Council of Learned Societies](#); [American Historical Association](#); [National Humanities Center](#).
- **Libraries, collections, and museums:** e.g., [The Newberry](#), [Harry Ransom Center](#) at the UT Austin; [Huntington Library](#);
- **Foundations:** e.g., [The Harry Frank Guggenheim Foundation](#); [John Simon Guggenheim Memorial Foundation](#); [Spencer Foundation](#).

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Examples of humanities funding posted to university websites

- [Michigan State University](#)
- [University of Kansas](#)
- [Northwestern University](#)
- [Duke University](#)
- [Arizona State University](#)
- [University of Florida](#)
- [Boston University](#)
- [Vanderbilt University](#)

Other Humanities Organizations and Associations

[American Council of Learned Societies](#)

[ACLS Member Learned Societies](#)

[National Humanities Alliance](#)

[American Historical Association](#)

[American Political Science Association](#)

[Consortium of Humanities Centers and Institutes](#)

[Federation of State Humanities Councils](#)

Resources on Grant Writing in the Humanities

- [How to Get a Grant from NEH](#)
- [Writing Proposals for ACLS Fellowship Competitions](#)
- [How to Write Effective Proposals in Humanities](#), Susan Stanford Friedman, Department of English, University of Wisconsin-Madison
- [Ten Myths About Fulbright](#)
- [Writing Arts and Humanities Proposals](#)
- [Signposting and Front-Loading](#), by James Mulholland, Assistant Professor of English at Wheaton College in Massachusetts.

An Introduction to NOAA for New Faculty

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By Mike Cronan, co-publisher

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NOAA (National Oceanic and Atmospheric Administration) is a federal **mission** agency within the U.S. Department of Commerce. Two key points for new and junior faculty to keep in mind about research funding from [NOAA](#) are that (1) it is a **mission agency** and hence competitiveness at the agency is determined by how well the proposed research **fits the NOAA mission** and (2) all funding opportunities at NOAA will be published at **Grants.gov**.

The key to funding success at a NOAA is to write a proposal that makes a clear case for why the proposed research brings value-added benefits to the agency mission and impacts that mission in significant ways. The **NOAA mission** is to (1) **understand** and **predict** changes in climate, weather, oceans and coasts; (2) share that knowledge and information with others; and (3) conserve and manage **coastal and marine ecosystems and resources**. It is clear from these brief mission objectives that research at NOAA offers funding opportunities across an interdisciplinary spectrum of interest to university faculty from multiple colleges and departments, as well as campus centers and institutes.

For example, NOAA notes that the “Climate Program Office (CPO) supports competitive research through five major Programs: Climate Observations and Monitoring (COM); Atmospheric Chemistry, Carbon Cycle, and Climate (AC4); Climate Variability and Predictability (CVP); Modeling, Analysis, Predictions, and Projections (MAPP); and Climate and Societal Interactions (CSI). Through these programs, CPO is seeking applications for 7 individual competitions in **FY 2017**. Investigators are highly encouraged to learn more about CPO and its programs, as well as specific program priorities for FY 2017, **PRIOR to submitting applications**. This information, along with the names and contact information of relevant Competition Managers, is provided in Program information sheets that can be found at the following website: cpo.noaa.gov/GrantsandProjects/ClimateProgramOfficeFFO.aspx.”

NOAA estimates that \$10 million will be available through this Announcement in **FY 2017 for approximately 100 new awards** pending budget appropriations. It is anticipated that most awards will be at a funding level between \$50,000 and \$300,000 per year, with some exceptions for larger awards. Investigators should visit the CPO website cpo.noaa.gov/GrantsandProjects/ClimateProgramOfficeFFO.aspx for more detailed information and instructions **PRIOR to submitting applications**.

With the above in mind, the goal for new and junior faculty is to explore the entire NOAA funding domain through Grants.gov and the NOAA website, and then zero in on those program areas that are a good fit for their research interests, expertise, and capabilities, such as the Climate Program Office example. One good strategy for new faculty who believe their research interests make NOAA an agency of interest to them is to include NOAA funding opportunities for the coming year or more in their **Research Funding Strategic Plan**. This research funding matrix is simply an Excel spreadsheet or Word table that allows the recording, tracking, and organizing of funding opportunities over a 12- to 18-month time horizon and includes information such as the funding opportunity URL, due dates, and a synopsis of the

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funding opportunity. This allow new and junior faculty to take a more strategic approach to long-term success in research funding.

The primary components of NOAA Research are listed below:

- The [NOAA Research Laboratories](#)
 - [NOAA Cooperative Institutes](#)
- [National Sea Grant College Program](#)
 - [Sea Grant Funding Opportunities](#)
- [NOAA Office of Ocean Exploration and Research](#)
 - [2017 Funding Opportunity for Ocean Exploration](#)
- [NOAA Climate Program Office](#)
 - [NOAA's Climate Program Office Announces FY17 Federal Funding Opportunities](#)
 - [2017 Federal Funding Opportunity Executive Summary](#)
- [Office of Weather and Air Quality](#)
- [NOAA Unmanned Aircraft Systems](#)
- [NOAA Ocean Acidification Program](#)

Some of the key questions faculty new to NOAA will want to answer by exploring the NOAA website include:

- What **types of research** does NOAA fund?
- What **types of research** is funded by which NOAA component?
- What are some of the disciplines funded by NOAA, for example—
 - According to NOAA, “Researchers from many disciplines – *oceanography, chemistry, biology, meteorology and mathematics, physics, computer sciences, engineering, and the social, behavioral and policy sciences* – collaborate to conduct NOAA mission relevant research.”
- How well do your research interests/expertise **map to and impact NOAA’s research mission priorities**?
- How are research offices at NOAA **organized**?
- How does NOAA announces **funding opportunities**?
 - E.g., NOAA/NCCOS Funding Opportunities ([here](#));
 - NOAA/OCM Funding Opportunities ([here](#)).
- What are the NOAA **guidelines** for submitting proposals?
 - Review a sample NOAA application ([here](#)),
 - Information for Applicants ([here](#)).
- How to submit **unsolicited proposals** to NOAA?
- How will your proposal be **reviewed at NOAA**?
 - See Information for Merit Reviewers ([here](#)).
- What is the **role of the program officer** at NOAA?
- Who are the **key staff contacts** in NOAA components?
- What NOAA RSS feeds and email alerts are relevant to my research?
- Review NOAA lists of funded projects (e.g., [Office of Weather and Air Quality](#))
- What BAAs are **currently open** at NOAA?
 - **for example—**
 - FY2016 to FY2017 [NOAA Broad Agency Announcement](#) (BAA)

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- Fiscal Year 2017 [NOAA Gulf of Mexico Bay-Watershed Education and Training](#) (B-WET) Program
- [FY 2017 Climate Program Office](#)
- What NOAA resources are available at the NOAA website to help you write a more competitive proposal, for example--
 - [NOAA Grants Application Manual](#)
 - [NOAA Grants Online Training](#)
 - [Writing Successful NOAA Grant Proposals](#) by the NOAA Office of Education
 - [NOAA Developing And Writing Grant Proposals](#)

Finally, NOAA “[recommends](#) applicants should read the federal funding opportunity (see link below) and are encouraged to visit the [NOAA Ocean Explorer website](#) to familiarize themselves with past and present OER-funded activities.” Quick Links pertinent to this funding opportunity include:

- [OER FY17 Federal Funding Opportunity](#) (FFO): As posted on Grants.gov. The FFO identifies the priority topics, instructions on how to apply, and has other useful information.
- [Online Applicant Information Form](#) (AIF): This section contains the online applicant information form and accompanying instructions. The AIF is submitted in addition to the pre-proposal and full proposal and is required for both. It is submitted separately online.
- [Environmental Compliance Questionnaire for NOAA Federal Financial Assistance Applicants](#): Questionnaire provides federal financial assistance applicants and NOAA staff with a tool to ensure that project and environmental information is obtained as required under the National Environmental Policy Act (NEPA) (*pdf, 136 kb*).
- [Full Proposal Budget Guidance](#): Applicants must use the format provided in this document to create their budget tables.
- [Data Management Plan Template](#): This section contains information on the NOAA data sharing and publication policy. All full proposals must include a data management plan adhering to the template.

Developing Proposals for “Institutional Transformation”

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By Lucy Deckard, co-publisher

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NSF recently released their latest solicitation for the [ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers](#) program, which includes a \$3 million Institutional Transformation track. Similarly, NSF’s latest [Alliances for Graduate Education and the Professoriate \(AGEP\)](#) solicitation funds only a Transformation Alliance track at \$1.75 million - \$2 million, and all of the tracks in the NSF [Improving Undergraduate STEM Education \(IUSE\)](#) solicitation include the words, “...for Engaged Student Learning & Institution and Community transformation.” In addition, many NSF programs that have a strong focus on education and diversity but don’t include an explicit track for institutional transformation (such as [NSF Research Traineeship Program \(NRT\)](#) and [Partnerships for International Research and Education \(PIRE\)](#)) still require that proposed projects change the proposing institution in some way that will persist beyond the funding period.

Many people applying for these kinds of grants are perplexed by this term. They struggle to understand what “institutional transformation” really means, and why it’s a requirement. They also find it difficult to determine the best strategy to successfully achieve this kind of transformation. Below is some background that you may find helpful if you find yourself in this position.

Why Institutional Transformation?

In the introduction to his new book, [“The End of Average,”](#) Todd Rose tells the story of a problem that the US Air Force was having during World War II. As the air war ramped up and the Air Force expanded pilot recruitment, they saw a much higher rate of noncombat incidents such as bad landings and unintended dives. Were the pilots they were recruiting unable to learn good piloting skills? Was their training at fault? Were newer faster planes just more difficult to fly?

It was eventually discovered that the problem was with the design of the cockpit. It had been designed for the “average” pilot; the seats and controls were not adjustable because designers assumed that pilots would be of average height, arm span, hand size, leg length, etc. Until World War II, that approach seemed to work because not that many pilots were needed, so it was possible to select pilots whose bodies generally fit the average dimensions. As more pilots were needed, pilots with a broader range of body types were recruited, and they were forced to fly a plane with controls that were either too close or nearly out of reach.

The Air Force eventually realized that a poorly fitting cockpit was the problem, but the assumption of an “average” sized pilot was retained, and efforts focused on determining a more accurate “average” for the new cohort of pilots. Lieutenant Gilbert Daniels was tasked with measuring pilots and coming up with new, more accurate average ranges for specific body dimensions. As he performed this work, he began to suspect that very few pilots actually fell into the average body dimension ranges, so he decided to examine his data to determine how many of the over 4,000 pilots he had measured fell into those average body dimension ranges. He found that only 3.5% of pilots fell into the average range for 3 out of the 10 dimensions he

had measured, and ***no pilots*** fell into the average range for all 10 dimensions. Cockpit designers had been designing their cockpits for a pilot who didn't exist! While some pilots were close enough to average that they could perform acceptably, even those pilots would perform better if they were able to adjust the seat and controls. Those pilots who fell farther from average had a harder time reaching the controls, which led to more incidents due to loss of control of the planes. The Air Force had been focused on the deficits of the pilots, but in actuality, the deficit was with the system.

It's easy to draw parallels between this story and the challenges experienced in STEM education. Educational institutions, particularly universities, are generally more than 100 years old and were designed to teach students who were substantially different from today's student body. The subject matter being taught in STEM is also very different than it was 100 years ago. Similarly, conventions regarding the role of faculty, tenure, and promotion originally evolved in the middle ages when faculty were all male and mostly clerics. While there have been substantial changes in universities since then, the consensus is that if universities are to successfully achieve their mission of helping diverse students develop the knowledge and complex skills they need to succeed in STEM careers, and promoting success of STEM faculty who are as diverse as the population they serve, much more needs to be changed.

Despite that somewhat obvious realization, when PIs propose NSF projects to improve STEM education and promote the success of underrepresented students or faculty in STEM, it's easy to fall into the trap of focusing only on the deficits of the students or faculty and ignore institutional practices, processes and culture that may pose barriers to success. As a result, these projects often focus on efforts to remediate students or faculty, with no focus on implementing lasting changes to the institution or how topics are taught. Addressing this second piece of the puzzle is, at its core, what NSF is looking for when they say they want "institutional transformation."

What is Institutional Transformation and How Can We Do It?

Institutional transformation, or "organizational change," entails changing the culture, processes, or attitudes within an organization in a lasting way. The concept of institutional transformation is more widespread in the world of business than in academia, probably because the ability of a company to adapt to a fast changing world directly impacts the bottom line, providing strong motivation to make big changes when profits dip. As a result, much of the literature on institutional transformation focuses on companies, but many of the lessons learned are easily transferable to universities. In this context, your "institution" may be your department, your college, or your university, depending on the issues you plan to address.

If you and your project team are working on an NSF proposal that requires a plan for institutional transformation, there are several things you should keep in mind:

- **Know the literature.** There is an existing body of research on institutional transformation and organizational change, and you should take advantage of that. NSF expects that any strategies you propose are based on evidence, and that evidence is often found in the research literature as well as reports from previously funded NSF projects. For example, most previously funded ADVANCE-IT programs have their own websites, which may include reports, and there is an [ADVANCE portal](#) that brings together reports and other resources detailing strategies, results, and lessons learned. The same holds true for [AGEP](#) and [IUSE](#).

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Often, NSF will include citations of relevant reports or papers in the solicitation. Be sure to read them.

- **Include experts on your team.** You may want to recruit a researcher with expertise in organizational change to be part of your team; this kind of research often takes place in the psychology department or in the business school. Alternatively, or in addition, you may want to recruit a researcher who specializes in specific organizational issues related to the challenge you want to address. The main thing is to remember that NSF expects any strategies you propose to be grounded in evidence and theory; your proposal is likely to be much stronger if include in your team someone with the relevant expertise.
- **Include administrators in your project leadership with the power to make changes.** Proposals to make big changes in your institution will only be credible if you have someone with the authority to spearhead those changes on your project team. The level of that administrator will depend on whether you're proposing to change your department, your college, or the entire university. Some programs have in the past explicitly required that the PI be a senior administrator such as the university Provost. Of course, it is not expected that a Provost or President will be involved in the day-to-day running of the project, but if they are the official PI and are invested in the project, it's more likely that they will help to address organizational barriers when they arise. Other approaches include having an internal advisory board with senior administrators who are ready to help when needed. In any event, **a strong letter of institutional commitment** is indispensable to show that you have the backing you need to make the proposed changes.
- **Get buy-in across the board.** While strong support from institutional leadership is important, it's also critical to get buy-in from those who will be affected by the proposed changes (and often have the power to resist those changes). Involve those people in the planning of your project and get their feedback. Depending on the numbers of people involved, you can do this by involving them in some of the planning meetings, or you can hold special information sessions, workshops, or lunch talks. Identify who the influence holders and potential change agents are, and think about ways you can involve them in project activities. An added benefit of this approach is that you may learn some important things that can improve your strategies. And most importantly for the success of your proposal, NSF reviewers will be looking for evidence of that buy-in because they know it's crucial to the success of the project.
- **Consider sustainability.** It's not institutional transformation if the changes only last for duration of the funding period. Include a plan for how the proposed changes will be sustained long-term. Often, this strategy will depend on the two items above: garnering strong support (and a commitment of resources to sustain some activities after the funding period) as well as buy-in from those who will help to sustain the changes.
- **Include a plan to assess your success.** Some types of institutional change, such as a change in culture, can be difficult to measure, but their impacts should be measurable. Work with your Project Evaluator to develop strategies for formative (during the life of the project) and summative (at the end of the project) evaluation of your project's success in making the proposed changes.

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- **Plan how you will disseminate your successful strategies.** If, for example, you're changing how graduate students are trained by knocking down departmental barriers to interdisciplinary research and developing an infrastructure to facilitate international experiences, if your strategies are successful, NSF will want to know how these changes can be spread to your entire college, university and then to other universities. Be sure to explain how you inform others about your successes and encourage them to build on what you've done.

Clearly, these kinds of projects can be very challenging and require a lot of time and planning. But if you believe in the changes you propose to make, they can be extremely rewarding since they provide a unique opportunity to make a lasting impact by changing your department, college, or university for the better.

Research Grant Writing Web Resources

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Dr. S. Joesph Levine has posted a "[Guide for Writing a Funding Proposal](#)." This guide breaks writing a grant proposal into sections, and for each section he provides writing hints and examples that make this an easy quick reference.

"[A Guide to Proposal Planning and Writing](#)" (PDF) by Jeremy T. Miner and Lynn E. Miner explains what motivates grant makers, where to find out about public and private grants, and how to get started.

The Minnesota Council on Foundations provides a guide for "[Writing a Successful Grant Proposal](#)." Although specifically geared for Minnesota, this guide helps grant seekers understand what information funders want and provides some guidance on how to answer these questions.

Purdue University has developed a set of [Proposal Enhancement Tools](#). These tools were designed to help writers develop a strong grant proposal by clearly identifying the audience and the potential impacts to that audience. This set contains seven worksheets and can be downloaded in PDF format.

The Catalog of Federal Domestic Assistance has a guide for "[Developing and Writing Grant Proposals](#)." This guide provides another perspective on grant seeking.

NSF Grants Conference hosted by Portland State University - February 29 - March 1, 2016

- [Introduction and NSF Overview](#)
- [Proposal Preparation](#)
- [NSF Merit Review Process](#)
- [Overview of NSF Funding Mechanisms](#)
- [Award Management](#)
- [Faculty Early Career Development \(CAREER\) Program](#)
- [Office of the Inspector General](#)
- [NSF Policy Update](#)
- **Breakout Sessions:**
 - [Biological Sciences](#)
 - [Post-Award Monitoring and Compliance](#)
 - [Computer and Information Science and Engineering](#)
 - [Education and Human Resources](#)
 - [Engineering](#)
 - [Major Research Instrumentation](#)
 - [Geosciences](#)
 - [Mathematical and Physical Sciences](#)

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- [International Research and Education Collaboration](#)
- [NSF Grantee Cash Management Section Update](#)
- [Social, Behavioral and Economic Sciences](#)
- [IT Modernization/Research.gov](#)
- [Emerging Research Institution Roundtable](#)

[Archived Webcast of Fall 2015 NSF Grants Conference](#)

[NSF Update](#) - August 2016

[How to Prepare an NSF Proposal: The Good, the Bad and the Ugly](#) - August 2016

Educational Grant Writing Web Resources

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[What Works Clearinghouse \(WWC\) website](#)

The Institute of Education Sciences is pleased to launch the new [What Works Clearinghouse \(WWC\) website](#) today (Sept. 13), making it easier for users to find educational interventions that make a difference. The new WWC website includes:

- **An enhanced Find What Works (FWW) feature** that allows educators and policymakers to find interventions that *scientific evidence shows* have had a positive impact on student outcomes. The new FWW feature allows users to learn whether research was conducted with students like theirs and to compare interventions to find the right fit for their classrooms;
- **Improved website navigation** that allows visitors to *quickly find* what they are looking for, whether it's practice guides that feature evidence-based recommendations for the classroom; intervention reports that summarize the evidence on specific programs or policies; or information about the thousands of studies that the WWC has reviewed; and
- **A Review of Individual Studies feature** that lets users get in-depth information on *thousands of studies* that have been reviewed by the WWC and see if the research met our rigorous study standards.

To develop the new design and enhanced features, the WWC team conducted an analysis of website statistics and inquiries to the WWC Help Desk. The team also surveyed website users and held virtual and in-person focus groups with school and district leaders, researchers and academics, state administrators, parents, and educators across the country.

[Watch a video tour of the new site.](#)

COMING SOON: Webinars on using Find What Works

[Tell us what you think.](#) We'd love to hear from you!

[Learn more about the What Works Clearinghouse](#) and get the latest news and information from WWC by following us on [Facebook](#) and [Twitter](#).

The What Works Clearinghouse is an initiative of the Institute of Education Sciences, the independent, non-partisan research, evaluation, and statistics arm of the U.S. Department of Education. Learn more about the work of IES on its [website](#) and follow IES on [Facebook](#) and [Twitter](#).

[Guide Helps Colleges Develop or Improve Processes for Student Placement](#)

This guide describes core ideas for colleges to consider when developing a screening tool for estimating college readiness. A key focal point within the guide is a discussion of ways to improve how well a screening tool can identify individuals needing remedial or developmental education along with key considerations that a user or developer of such a tool must address. Specifically, the following steps are discussed:

1. Creating an operational definition of success and college readiness
2. Selecting potential predictors of college readiness
3. Prioritizing types of classification error
4. Collecting and organizing the necessary data

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5. Developing predictive models
6. Evaluating the screening results and selecting the final model

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Agency Research News

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[Measuring Impact of NIH-supported Publications with a New Metric: the Relative Citation Ratio](#)

[Energy Department and DOI Announce New National Offshore Wind Strategy](#)

The Energy Department and U.S. Department of the Interior (DOI) on September 9 announced the publication of a collaborative strategic plan, the National Offshore Wind Strategy: Facilitating the Development of the Offshore Wind Industry in the United States. The strategy could help enable 86 gigawatts of offshore wind in the United States by 2050 and details the current state of offshore wind in the United States, presents the actions and innovations needed to reduce deployment costs and timelines, and provides a roadmap to support the growth and success of the industry.

[Federal prize competition seeks innovative ideas to combat antimicrobial resistance](#)

Contestants will vie for **\$20 million in prizes** to develop new innovative laboratory diagnostic tools that detect and distinguish antibiotic resistant bacteria. A federal prize competition launched today is calling for innovative ideas for rapid, point-of-care laboratory diagnostic tests to combat the development and spread of drug resistant bacteria, a rising public health threat. Antibiotic resistant bacteria cause at least 2 million infections and 23,000 deaths each year in the United States, according to the Centers for Disease Control and Prevention.

The [Antimicrobial Resistance Diagnostic Challenge](#) will award **\$20 million in prizes** over all phases of the competition for new, innovative and novel laboratory diagnostic tests. The diagnostic tests being sought are those that identify and characterize antibiotic resistant bacteria and those that distinguish between viral and bacterial infections to reduce unnecessary uses of antibiotics, a major cause of drug resistance. The prize is sponsored by two U.S. Department of Health and Human Services components, the National Institutes of Health and the HHS Office of the Assistant Secretary for Preparedness and Response (ASPR) in support of the [National Action Plan for Combating Antibiotic Resistant Bacteria \(link is external\)](#).

[National Offshore Wind Strategy: Facilitating the Development of the Offshore Wind Industry in the United States](#)

U.S. Secretary of Energy Ernest Moniz and U.S. Secretary of the Interior Sally Jewell today announced the publication of a collaborative strategic plan to continue accelerating the development of offshore wind energy in the United States, the [National Offshore Wind Strategy: Facilitating the Development of the Offshore Wind Industry in the United States](#), which could help enable 86 gigawatts of offshore wind in the United States by 2050. The strategy details the current state of offshore wind in the United States, presents the actions and innovations needed to reduce deployment costs and timelines, and provides a roadmap to support the growth and success of the industry.

[NSF Reminds PIs They Must Acknowledge Support in Publications, WebPages, etc.](#)

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E. Publication/Distribution of Grant Materials

1. NSF Policy

NSF advocates and encourages open scientific and engineering communication. NSF expects significant findings from research it supports to be promptly submitted for publication, with authorship that accurately reflects the contributions of those involved. Copyrighted material published in peer-reviewed scholarly journals and papers included in juried conference proceedings must comply with NSF's Public Access Policy as implemented in the grant terms and conditions.

2. Costs

Cost of documenting, preparing, publishing, disseminating and sharing research findings and supporting material are allowable charges against the grant. (See [AAG Chapter V.A.2.c.](#))

3. Responsibilities

Unless otherwise provided in the grant, preparation, content, editing, identification of authorship and submission for publication of significant research findings are the responsibility of the investigators, consistent with such policies and procedures as the grantee may prescribe.

4. Grantee Obligations

a. Acknowledgement of Support. **Unless otherwise provided in the grant, the grantee is responsible for assuring that an acknowledgment of NSF support is made:**

(i) in any publication (including Web pages) of any material based on or developed under this project, in the following terms:

"This material is based upon work supported by the National Science Foundation under Grant No. (NSF grant number)."

(ii) NSF support also must be orally acknowledged during all news media interviews, including popular media such as radio, television and news magazines.

b. Disclaimer. The awardee is responsible for assuring that every publication of material (including World Wide Web pages) based on or developed under this award, except scientific articles or papers appearing in scientific, technical or professional journals, contains the following disclaimer:

"Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation."

c. **Copies for NSF. The grantee is responsible for assuring that the [cognizant NSF Program Officer](#) is provided access to, either electronically or in paper form, a copy of every publication of material based on or developed under this award, clearly labeled with the award number and other appropriate identifying information, promptly after publication.**

d. Compliance with NSF Public Access Policy. The grantee is responsible for ensuring that copyrighted material published in peer-reviewed scholarly journals and papers in juried conference proceedings are accessible to the public in accordance with the grant terms and conditions.

e. Grantees also should note their obligations in regard to copyrights (see [AAG Chapter VI.D.2](#)) and their responsibilities as members of the scientific and engineering community to disseminate and share research results (see [AAG Chapter VI.D.4](#)).

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DE-FOA-0001609: Request for Information (RFI) on Novel Power Electronic Systems Enabled by Wide-Bandgap Semiconductors

ARPA-E seeks input from the power electronics, electrical engineering, and circuit design communities regarding the development of next-generation advanced circuit topologies for use in power electronics systems that facilitate higher efficiency, more reliable, reduced size and weight, and lower cost devices and/or system architectures. Consistent with the agency's mission, ARPA-E is seeking clearly disruptive, novel technologies, early in the R&D cycle, and not integration strategies for existing technologies. With advanced circuit topologies, it is possible to envision realizing efficiency gains both directly, by inherently more efficient designs, and indirectly, by facilitating higher levels of adoption for fundamentally higher performing materials. ARPA-E desires input from a broad range of disciplines and fields, including, but not limited to: power electronics, electrical engineering, circuit design, wide-bandgap materials, semiconductor devices, packaging and module design, and others. This includes input from the developers and end-users of such technologies, such as power supplies, LED drivers, data centers, automotive (Electric and Hybrid Electric Vehicles), high-performance computing centers, solar inverters/power conditioners, electric motor driven systems, wind-electric systems, high/medium voltage transmission/distribution, rail/ship propulsion, and emerging new applications not yet categorized. ARPA-E is particularly interested in how next-generation advanced circuit topologies will help to realize the promise of higher efficiency systems.

Please carefully review the REQUEST FOR INFORMATION GUIDELINES below, and note in particular: the information you provide will be used by ARPA-E solely for program planning, without attribution. THIS IS A REQUEST FOR INFORMATION ONLY. **THIS NOTICE DOES NOT CONSTITUTE A FUNDING OPPORTUNITY ANNOUNCEMENT (FOA).** NO FOA EXISTS AT THIS TIME. Respondents shall not include any information in their response to this RFI that might be considered proprietary or confidential.

DE-FOA-0001607: Request for Information (RFI) on Lower Grade Waste Heat Recovery

ARPA-E seeks input from the waste heat recovery, materials development, and novel solid-state materials technology communities (emerging compositions, materials synthesis/processing, combinatorial screening/optimization, robust module designs, etc.) regarding the development of next-generation waste heat recovery systems. This request includes input from the researchers, developers and end-users of waste heat recovery technologies, such as power plants, factories, utilities, manufacturers, data centers, and the like. Consistent with the agency's mission, ARPA-E is seeking clearly disruptive, novel technologies, early in their R&D cycle, and not integration strategies for existing technologies.

Please carefully review the REQUEST FOR INFORMATION GUIDELINES below, and note, in particular, the information you provide will be used by ARPA-E solely for program planning, without attribution. THIS IS A REQUEST FOR INFORMATION ONLY. **THIS NOTICE DOES NOT CONSTITUTE A FUNDING OPPORTUNITY ANNOUNCEMENT (FOA).** NO FOA EXISTS AT THIS TIME. Respondents shall not include any information in their response to this RFI that might be considered proprietary or confidential.

Dear Colleague Letter: Special Guidelines for Submitting Collaborative Proposals under the US NSF/GEO - UK Lead Agency Opportunity

Research Development & Grant Writing News

The Directorate for Geosciences (GEO) of the National Science Foundation (NSF) and the Natural Environment Research Council (NERC) of the Research Councils UK (RCUK) are pleased to announce an NSF/GEO-NERC lead agency opportunity. The goal of this opportunity is to reduce some of the current barriers to working internationally. Through a lead agency model, GEO and NERC will address these issues by allowing US and UK researchers to submit a single collaborative proposal that will undergo a single review process. The US NSF and the RCUK signed a Memorandum of Understanding (MOU) on Research Cooperation in June of 2013. The MOU provides an overarching framework to encourage collaboration between US and UK research communities and sets out the principles by which jointly supported activities might be developed. The MOU provides for a lead agency arrangement whereby proposals may be submitted to either NSF or NERC.

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Agency Reports, Workshops & Research Roadmaps

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The Power of Change: Innovation for Development and Deployment of Increasingly Clean Electric Power Technologies

Electricity, supplied reliably and affordably, is foundational to the U.S. economy and is utterly indispensable to modern society. However, emissions resulting from many forms of electricity generation create environmental risks that could have significant negative economic, security, and human health consequences. Large-scale installation of cleaner power generation has been generally hampered because greener technologies are more expensive than the technologies that currently produce most of our power. Rather than trade affordability and reliability for low emissions, is there a way to balance all three?

The Power of Change: Innovation for Development and Deployment of Increasingly Clean Energy Technologies considers how to speed up innovations that would dramatically improve the performance and lower the cost of currently available technologies while also developing new advanced cleaner energy technologies. According to this report, there is an opportunity for the United States to continue to lead in the pursuit of increasingly clean, more efficient electricity through innovation in advanced technologies. *The Power of Change: Innovation for Development and Deployment of Increasingly Clean Energy Technologies* makes the case that America's advantages—world-class universities and national laboratories, a vibrant private sector, and innovative states, cities, and regions that are free to experiment with a variety of public policy approaches—position the United States to create and lead a new clean energy revolution. This study focuses on five paths to accelerate the market adoption of increasing clean energy and efficiency technologies: (1) expanding the portfolio of cleaner energy technology options; (2) leveraging the advantages of energy efficiency; (3) facilitating the development of increasing clean technologies, including renewables, nuclear, and cleaner fossil; (4) improving the existing technologies, systems, and infrastructure; and (5) leveling the playing field for cleaner energy technologies.

The Power of Change: Innovation for Development and Deployment of Increasingly Clean Energy Technologies is a call for leadership to transform the United States energy sector in order to both mitigate the risks of greenhouse gas and other pollutants and to spur future economic growth. This study's focus on science, technology, and economic policy makes it a valuable resource to guide support that produces innovation to meet energy challenges now and for the future.

Triennial Review of the National Nanotechnology Initiative

Nanoscale science, engineering, and technology, often referred to simply as “nanotechnology,” is the understanding, characterization, and control of matter at the scale of nanometers, the dimension of atoms and molecules. Advances in nanotechnology promise new materials and structures that are the basis of solutions, for example, for improving human health, optimizing available energy and water resources, supporting a vibrant economy, raising the standard of living, and increasing national security. Established in 2001, the National Nanotechnology Initiative (NNI) is a coordinated, multiagency effort with the mission to expedite the discovery,

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development, and deployment of nanoscale science and technology to serve the public good. This report is the latest triennial review of the NNI called for by the 21st Century Nanotechnology Research and Development Act of 2003. It examines and comments on the mechanisms in use by the NNI to advance focused areas of nanotechnology towards advanced development and commercialization and on the physical and human infrastructure needs for successful realization in the United States of the benefits of nanotechnology development.

A National Trauma Care System: Integrating Military and Civilian Trauma Systems to Achieve Zero Preventable Deaths After Injury

Advances in trauma care have accelerated over the past decade, spurred by the significant burden of injury from the wars in Afghanistan and Iraq. Between 2005 and 2013, the case fatality rate for United States service members injured in Afghanistan decreased by nearly 50 percent, despite an increase in the severity of injury among U.S. troops during the same period of time. But as the war in Afghanistan ends, knowledge and advances in trauma care developed by the Department of Defense (DoD) over the past decade from experiences in Afghanistan and Iraq may be lost. This would have implications for the quality of trauma care both within the DoD and in the civilian setting, where adoption of military advances in trauma care has become increasingly common and necessary to improve the response to multiple civilian casualty events. Intentional steps to codify and harvest the lessons learned within the military's trauma system are needed to ensure a ready military medical force for future combat and to prevent death from survivable injuries in both military and civilian systems. This will require partnership across military and civilian sectors and a sustained commitment from trauma system leaders at all levels to assure that the necessary knowledge and tools are not lost. A National Trauma Care System defines the components of a learning health system necessary to enable continued improvement in trauma care in both the civilian and the military sectors. This report provides recommendations to ensure that lessons learned over the past decade from the military's experiences in Afghanistan and Iraq are sustained and built upon for future combat operations and translated into the U.S. civilian system.

Support Needed for Innovation in Increasingly Clean Electric Power Technologies

Sept. 8, 2016: U.S. Should Act to Support Innovation in Increasingly Clean Electric Power Technologies and Remove Barriers to Their Adoption

WASHINGTON – A new [report](#) from the National Academies of Sciences, Engineering, and Medicine urges Congress, federal and state agencies, and regulatory institutions to significantly increase their support for innovation for what the report's study committee calls "increasingly clean" electric power technologies – nuclear power, carbon capture and storage, and renewables such as solar and wind. Some of these technologies have seen recent cost and price declines and are cost-competitive in certain locations. But significantly greater market penetration of these technologies will be required to help address the worst impacts of climate change, as well as harms to human health such as asthma and premature death caused by pollution.

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Currently, most increasingly clean power technologies cost too much and do not perform well enough to achieve high global levels of adoption, the report says. Reducing the cost and improving the performance of increasingly clean power technologies in ways that support wide adoption will, in many cases, require improvements to current technology that are more than incremental. Changes in the way the electricity grid is engineered and operated will be needed as well. The report recommends a range of specific steps the U.S. federal and state governments and regulatory agencies should take to support innovation that improves the performance and cost-competitiveness of increasingly clean electricity generation and grid technologies.

“We called our report *The Power of Change* because changing where we get our electricity from will require changing how we think, so that we see this not just as one of the greatest challenges of our time but also as one of our country’s greatest opportunities,” said Charles O. Holliday, Jr., chair of the committee that wrote the report, and chair of Royal Dutch Shell, PLC. “We are only in the second inning of energy innovation, but we could take the lead globally by working together as a nation, and tapping the ingenuity we have always been known best for, to achieve breakthrough innovation.”

Innovation is hampered by market failures and nonmarket barriers at all stages of the innovation process, and the report identifies measures that can help overcome them:

§ Proof-of-concept and pilot projects should have clear missions and goals. The U.S. Department of Energy should help advance innovation by using sector-specific road-mapping and challenge funding.

§ The intermediate stages of innovation are among the most critical and often overlooked. Once a concept has been proven, it faces a range of scale-up, manufacturing, regulatory, and market challenges to commercialization. The Small Business Investment Company program can help overcome these barriers; for example, allocating 20 percent of SBIC funding to create new venture capital funds focused on early-stage increasingly clean power technologies.

§ Simulation and testing of new technologies are key capabilities. DOE should take the lead in assessing public and private simulation and testing capabilities, identifying gaps, and supporting or incentivizing creation of capabilities to fill those gaps.

The report identifies additional steps that federal and state governments should take to speed innovation in and adoption of increasingly clean energy technologies.

Pricing pollution. Congress should consider an appropriate price on pollution from electricity production, including greenhouse gases and pollutants such as nitrogen oxides and particulate matter, to reflect fossil fuels’ “hidden costs” to human health and the environment, the report says. Requiring electricity producers to take those harms into account would help make increasingly clean energy sources cost competitive.

Innovating to improve current generating technologies. In 2015, two-thirds of U.S. electricity was produced from fossil fuels, evenly divided between coal and natural gas. Despite significant federal and state efforts in recent years to spur deployment, wind produced less than 5

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percent, solar produced less than 1 percent, and other renewables combined (mostly hydroelectric) produced about 8 percent of all U.S. electricity in 2015. The largest low- or no-carbon production of electricity came from nuclear power plants, many of which may be shuttered in the coming decades as their operating licenses expire. (See [Figure 2-2](#) from report below.)

The large leaps in performance and cost declines necessary for increasingly clean power technologies to compete in the market will require substantial improvements in currently available technologies and/or significant technological breakthroughs. The scale of innovation needed, and companies' fear that they may not realize an adequate return on their investments, make it unlikely that companies alone will pursue the needed amount of innovation. Moreover, large-scale deployment alone is unlikely to produce cost breakthroughs or technological improvements.

The report identifies steps policymakers can take to encourage innovation in and greater deployment of current increasingly clean power technologies and resources. For example, to speed development and use of carbon capture and storage technologies, Congress should direct the U.S. Environmental Protection Agency to develop a set of long-term performance standards for the transport and storage of captured CO₂. In the nuclear sector, the U.S. Nuclear Regulatory Commission should prepare for a rulemaking that would change the licensing of advanced nuclear reactors to establish a risk-informed regulatory pathway for considering advanced non-light water reactor technologies, as well as a staged licensing process. As the costs of renewables like wind and solar approach becoming competitive with cheaper natural gas generation, states should expand competitive solicitation processes for the most cost-effective renewable projects and consider the long-term power purchase agreements (PPAs) necessary to enable low-cost capital for project financing.

Improving electric power infrastructure, including the transmission and delivery system. Equally important to improving the current generation technologies are changes to the electricity transmission and distribution system so that it is capable of integrating variable and distributed generating technologies at greater levels. Utility regulators will need to provide incentives to utilities to become fully engaged in innovation and demonstration of new technologies. State regulators and policymakers should implement policies designed to support innovation. For example, they could evaluate approaches in which utility or energy customer funds are set aside to support state and regional innovation programs.

Increasing energy efficiency. The committee also examined opportunities for reducing electricity use by increasing efficiency. It recommends that DOE, on an ongoing basis, set new standards for home appliances and commercial equipment at the maximum levels that are technologically feasible and economically justified. The agency should also increase its investments in innovative energy efficiency technologies, and in behavioral strategies to improve consumers' use of current energy efficient technologies.

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Focusing subsidies on initial development of energy technologies. History suggests that such supports as direct subsidies and tax exemptions tend to continue well after technologies have matured and are market-competitive. While subsidies can serve important public policy functions in helping to establish industries, they should be structured to be performance- or outcome-oriented without regard to specific technologies, and to include sunset provisions so they expire either after a specified length of time or a certain performance level has been achieved -- as is the case with the recently renewed production tax credits for power from wind and solar. In contrast, the many subsidies for oil and natural gas have no sunset provisions despite the maturity of those industries.

The study was sponsored by U.S. Department of Energy, with additional support from the National Academy of Sciences Thomas Lincoln Casey Fund and the Academies' Presidents' Circle Fund. The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions that provide independent, objective analysis and advice to the nation to solve complex problems and inform public policy decisions related to science, technology, and medicine. They operate under an 1863 congressional charter to the National Academy of Sciences, signed by President Lincoln. For more information, visit <http://national-academies.org>. A committee roster follows.

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Pre-publication copies of *The Power of Change: Innovation for Development and Deployment of Increasingly Clean Electric Power Technologies* are available from the National Academies Press on the Internet at <http://www.nap.edu> or by calling 202-334-3313 or 1-800-624-6242. Reporters may obtain a copy from the Office of News and Public Information (contacts listed above).

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New Funding Opportunities

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Content Order

New Funding Posted Since August 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 work as well.]

New Funding Solicitations Posted Since August 15 Newsletter

[DE-FOA-0001428: INNOVATIVE DEVELOPMENT IN ENERGY-RELATED APPLIED SCIENCE \(IDEAS\)](#)

This Funding Opportunity Announcement (FOA) ([IDEAS - Concept Paper FOA - MOD 02 - 09.06.2016](#)) provides a continuing opportunity for the rapid support of early-stage applied research to explore innovative new concepts with the potential for transformational and disruptive changes in energy technology. IDEAS awards are intended to be flexible and may take the form of analyses or exploratory research that provides the agency with information useful for the subsequent development of focused technology programs. IDEAS awards may also support proof-of-concept research to develop a unique technology concept, either in an area not currently supported by the agency or as a potential enhancement to an ongoing focused technology program. Applications must propose concepts that are not covered by open ARPA-E focused FOAs and that also do not represent incremental improvements over existing technology. IDEAS awards are defined as single-phase efforts of durations 12 months or less with a total project cost of \$500,000 or less and will be issued through Grants. This FOA is a continuation of the IDEAS Program initially announced in September 2013 and continued for a second year in September 2014. ARPA-E continues to view the IDEAS program as a success and therefore plans to extend this FOA on an annual basis, based on the availability of funds.

Concept Paper Due September 30; full TBD.

[NEH Dialogues on the Experience of War](#)

As a part of its current initiative, [Standing Together: The Humanities and the Experience of War](#), the National Endowment for the Humanities offers the Dialogues on the Experience of War program. The program supports the study and discussion of important humanities sources about war, in the belief that these sources can help U.S. military veterans and others to think more deeply about the issues raised by war and military service. The humanities sources can be drawn from history, philosophy, literature, and film—and they may and should be supplemented by testimonials from those who have served. The discussions are intended to

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promote serious exploration of important questions about the nature of duty, heroism, suffering, loyalty, and patriotism.

The program awards grants of up to \$100,000 that will support

1. the recruitment and training of discussion leaders; and
2. following the training program, the convening of at least two discussion programs.

The discussion programs can take place on college and university campuses, in veterans' centers, at public libraries and museums, and at other community venues. Most of the participants in the discussion programs should be military veterans; others, such as men and women in active service, military families, and interested members of the public, may participate as well. **Due November 2.**

2017 Ford Foundation Fellowship Programs

Competition is *NOW OPEN* and accepting applications

2017 Predoctoral application deadline:

November 17, 2016

(5:00 PM EST)

2017 Dissertation and Postdoctoral application deadlines:

November 10, 2016

(5:00 PM EST)

Supplementary Materials receipt deadline (all levels):

January 10, 2017

(5:00 PM EST)

Through its Fellowship Programs, the Ford Foundation seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education of all students.

Predoctoral, Dissertation, and Postdoctoral fellowships will be awarded in a national competition administered by the National Academies of Sciences, Engineering, and Medicine on behalf of the Ford Foundation. Eligibility to apply for a Ford fellowship is limited to:

- All citizens, nationals, and permanent residents (holders of a Permanent Resident Card) of the United States, as well as individuals granted deferred action status under the Deferred Action for Childhood Arrivals Program, regardless of race, national origin, religion, gender, age, disability, or sexual orientation,
- Individuals with evidence of superior academic achievement (such as grade point average, class rank, honors or other designations), and
- Individuals committed to a career in teaching and research at the college or university level.

Receipt of the fellowship award is conditioned upon each awardee providing satisfactory documentation that he or she meets the eligibility requirements. Awards will be made for study in research-based Ph.D. or Sc.D. programs; practice oriented degree programs are not eligible for support (see eligible fields). Prospective applicants should read carefully the eligibility requirements, the terms of the fellowship awards, application instructions and other information pertaining to the individual fellowship ([Predoctoral](#), [Dissertation](#), or [Postdoctoral](#)) for which they are applying. In addition to the fellowship award, Ford Fellows are eligible to

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attend the [Conference of Ford Fellows](#), a unique national conference of a select group of high-achieving scholars committed to diversifying the professoriate and using diversity as a resource for enriching the education of all students.

Simons Early Career Investigator in Marine Microbial Ecology and Evolution - LOI

The Simons Foundation is now accepting applications for its Simons Early Career Investigator in Marine Microbial Ecology and Evolution Awards. The deadline for receipt of letters of intent (LOI) is November 7, 2016, 5:00 PM Eastern Standard Time. Overview: Microbes inhabit and sustain all habitats on Earth. In the oceans, microbes capture solar energy, catalyze biogeochemical transformations of important elements, produce and consume greenhouse gases, and provide the base of the food web. The purpose of these awards is to help launch the careers of outstanding investigators who use quantitative approaches to advance our understanding of marine microbial ecology and evolution. Investigators with backgrounds in different fields or with an interest in modeling or theory are encouraged to apply. Applicants must hold a Ph.D. or equivalent degree. She/he must have carried out research in an independent position (tenure-track or equivalent) for at least one year and no more than eight years (start date between November 2008 and November 2015) and must currently hold a tenure-track or tenured position, or equivalent, in a U.S. or Canadian institution. She/he must be the principal investigator (PI) or co-PI currently or within the past year on a grant from a federal agency or major foundation.

About the Awards. Grants will be for **\$180,000 USD per year**, including indirect costs (limited to 20 percent of modified total direct costs), for a period of three years, subject to annual reviews and continuation of research in areas relevant to the purpose of this program. Appropriate expenses include salary support for the investigator and postdoctoral and graduate research assistants, travel, equipment, supplies and other research expenses. Awards will begin April 1, 2017. Awards will be governed by the Simons Foundation Life Sciences policies, which can be found at <http://www.simonsfoundation.org/funding/policies-and-forms/>.

Submission of Letter of Intent. Prospective applicants must submit a letter of intent (LOI) by November 7, 2016, 5:00 PM Eastern Standard Time. LOIs must be completed electronically and submitted using forms provided at <https://proposalcentral.altum.com/>. Please log in as an applicant, go to the grant opportunities tab, scroll to simons foundation and click apply now for the “Simons Early Career Investigator in Marine Microbial Ecology and Evolution Awards” program. For assistance, please call 800-875-2562 or email pcsupport@altum.com.

LOI Due November 11.

The Educational Component of the National Cooperative Geologic Mapping Program

The primary objective of the EDMAP component of the NCGMP is to train the next generation of geologic mappers. To do this NCGMP provides funds for graduate and selected undergraduate students in academic research projects that involve geologic mapping as a major component. Through these cooperative agreements NCGMP hopes to expand the research and educational capacity of academic programs that teach earth science students the techniques of geologic mapping and field data analysis. Another important goal is to increase the level of communication between the Nations geologic surveys (both State Geological Surveys and the

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USGS) and geologic mappers in the academic community. We hope that this improved communication will have two results: 1) that the academic mapping community will learn more about the societal needs that drive geologic mapping projects at the USGS and State Geologic Surveys, and 2) more geologic maps produced in academia will eventually be made available to the public. **Due November 9.**

Graduate Research Fellowship Program in the Social and Behavioral Sciences

The Graduate Research Fellowship in the Social and Behavioral Sciences track is open to doctoral students in all social and behavioral science disciplines. The fellowship awards provide support for 12 to 18 months to accredited universities for research on crime, violence and other criminal justice-related topics. Awards made under the Social and Behavioral Sciences Fellowship Program are up to \$32,000 for the period of performance. NIJ encourages doctoral students in the final stages of graduate study who are conducting research that has direct implications for criminal justice policy and practice in the U.S. to apply to this exciting program. **Webinar on October 4, 2016**, at 1pm ET, to learn more about the fellowship program and ask questions. [Register!](#)

Get ready for next year. While the fiscal year 2015 GRF solicitation has closed, we encourage you to:

- [Sign up to receive an email when NIJ releases any new solicitation.](#)
- Review the FAQs below to be ready to submit next time.
- [Review a list of past and present fellows and learn about their research.](#)

Frequently Asked Questions

These questions and answers will help you prepare your application for grant funds:

- [Before Applying](#)
- [Application Submission](#)
- [About the Program Narrative](#)
- [About the Budget](#)
- [Required Documents](#)
- [Review and Awarding](#)

Due November 21.

IMLS National Leadership Grants for Museums: Learning Experiences; Community Anchors; Collections Stewardship

National Leadership Grants for Museums support projects that address critical needs of the museum field and that have the potential to advance practice in the profession so that museums can improve services for the American public. National Leadership Grants for Museums has three project categories:

Learning Experiences. IMLS supports the unique ability of museums to open the door to meaningful knowledge and enhanced inquiry skills for people of all ages and backgrounds through multi-sensory learning, discovery, critical thinking, and problem solving. IMLS welcomes applications for projects that position museums as teaching and inquiry-focused institutions within today's formal and informal learning ecosystem. Successful projects will help the museum field provide high-quality, inclusive educational opportunities that address particular audience needs. We encourage projects that are based upon current research in

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cognitive and behavioral science as well as best practices developed in museums and other informal learning environments.

Community Anchors. IMLS promotes the role of museums as essential partners in addressing the needs of their communities by leveraging their expertise, knowledge, physical space, technology, and other resources to identify and implement solutions. By strengthening museums' capacities for civic engagement, these projects contribute to the creation of livable, sustainable communities. Museums have a role to play providing civic and cultural engagement, facilitating lifelong learning, promoting digital inclusion, and supporting economic vitality through programming and services. We envision museums to be highly collaborative, adopt co-creating strategies, and engage with a wide variety of cross-sector stakeholders to accomplish a sustained collective impact goal.

Collections Stewardship. IMLS supports the exemplary management, care, and conservation of, as well as broad access to and use of, museum collections. Investments designed to contribute to the long-term preservation of materials and specimens are complemented by skill-building and capacity-expanding programs for museum staff, volunteers, and interns. IMLS welcomes applications for projects that help the museum field address state-of-the-art collections care and collections-information management, curation, preventive conservation, conservation treatments, database creation and enhancement, digitization, and the use of digital tools to facilitate discovery and deepen engagement with museum collections. We welcome projects that demonstrate cross-sector and cross-disciplinary collaboration with libraries, archives, and other collecting institutions. Due **December 1**.

Science of Learning

The Science of Learning program supports potentially transformative basic research to advance the science of learning. The goals of the SL Program are to develop basic theoretical insights and fundamental knowledge about learning principles, processes and constraints. Projects that are integrative and/or interdisciplinary may be especially valuable in moving basic understanding of learning forward but research with a single discipline or methodology is also appropriate if it addresses basic scientific questions in learning. The possibility of developing connections between proposed research and specific scientific, technological, educational, and workforce challenges will be considered as valuable broader impacts, but are not necessarily central to the intellectual merit of proposed research. The program will support research addressing learning in a wide range of domains at one or more levels of analysis including: molecular/cellular mechanisms; brain systems; cognitive affective, and behavioral processes; and social/cultural influences. The program supports a variety of methods including: experiments, field studies, surveys, secondary-data analyses, and modeling. Due **January 18**.

DOD University Small Grants BAA for Energy-related Basic, Applied, Advanced Research Projects of interest to Dept. of Defense Due by **April 1, 2017**

DARPA Information Innovation Office BAA

I2O sponsors basic and applied research in three thrust areas:

Cyber. As human activity has moved into cyberspace, cyber threats against our information systems have grown in sophistication and number, and protecting and assuring

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information is a matter of national security. Progress in the cyber security of best-of-breed systems has been significant over the last few years, giving us hope that we are no longer facing an impossible task. Looking to the future, I2O challenges itself with the goal: Win at Cyber. The I2O defensive cyber research and development (R&D) portfolio is focused on high-end cyber threats, including advanced persistent threats (cyber espionage and cyber sabotage) and other sophisticated threats to embedded computing systems, cyber-physical systems, enterprise information systems, and national critical infrastructure. I2O develops technologies that create software that is provably secure, applications that enhance cyberspace situational awareness, and systems for planning military operations in the cyber domain. Exploration of offensive methods is undertaken to inform the defensive cyber R&D and to establish viability of developed techniques with transition partners.

Analytics. Exponential increases in computation, storage, and connectivity have combined over the past five years to fundamentally alter science, engineering, commerce, and national security. Going under names such as “big data,” “machine learning,” and “analytics,” empirical modeling and data-driven approaches are providing powerful insight and competitive advantage for astute practitioners from biology to sports to finance. Through new analytics, algorithms, and software ecosystems, the modern data-centric paradigm exploits the increasingly dense, detailed measurements produced by networked sensors to optimize products, services, operations, and strategy. I2O is working to keep the Department of Defense (DoD) at the forefront of data-driven design and decision-making with the goal: Understand the World. I2O explores fundamental mathematical and computational issues such as complexity and scalability and develops applications in high-impact areas such as intelligence, software engineering, and command and control. I2O coordinates its R&D with the national security community to ensure timely transition of tools and techniques.

Symbiosis. The world is moving faster than humans can assimilate, understand, and act. At present we design machines to handle well-defined, high-volume or high-speed tasks, freeing humans to focus on complexity. I2O envisions a future in which machines are more than just tools that execute pre-programmed instructions. Rather, machines will function more as colleagues. Towards this end, I2O sets a goal: Partner with Machines. The symbiosis portfolio develops technologies to enable machines to understand speech and extract information contained in diverse media, to learn, to reason and apply knowledge gained through experience, and to respond intelligently to new and unforeseen events. Application areas in which machines will prove invaluable as partners include: cyberspace operations, where highly-scripted, distributed cyber attacks have a speed, complexity, and scale that overwhelms human cyber defenders; intelligence analysis, to which machines can bring super-human objectivity; and command and control, where workloads, timelines and stress can exhaust human operators. **Due August 25.**

URL Links to New & Open Funding Solicitations

- [HHS Grants Forecast](#)
- [American Cancer Society Index of Grants](#)
- [SAMHSA FY 2014 Grant Announcements and Awards](#)

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- [DARPA Microsystems Technology Office Solicitations](#)
- [Open Solicitations from IARPA \(Intelligence Advanced Research Projects Activity\)](#)
- [Bureau of Educational and Cultural Affairs, Open Solicitations, DOS](#)
- [ARPA-E Funding Opportunity Exchange](#)
- [DOE Funding Opportunity Exchange](#)
- [NIAID Funding Opportunities List](#)
- [NPS Broad Agency Announcements \(BAAs\)](#)
- [NIJ Current Funding Opportunities](#)
- [NIJ Forthcoming Funding Opportunities](#)
- [Engineering Information Foundation Grant Program](#)
- [Comprehensive List of Collaborative Funding Mechanisms, NORDP](#)
- [ARL Funding Opportunities — Open Broad Agency Announcements \(BAA\)](#)
- [HHS Grants Forecast](#)
- [American Psychological Association, Scholarships, Grants and Awards](#)
- [EPA 2014 Science To Achieve Results \(STAR\) Research Grants](#)
- [NASA Open Solicitations](#)
- [Defense Sciences Office Solicitations](#)
- [The Mathematics Education Trust](#)
- [EPA Open Funding Opportunities](#)
- [CDMRP FY 2014 Funding Announcements](#)
- [Office of Minority Health](#)
- [Department of Justice Open Solicitations](#)
- [DOE/EERE Funding Opportunity Exchange](#)
- [New Funding Opportunities at NIEHS \(NIH\)](#)
- [National Human Genome Research Institute Funding Opportunities](#)
- [Army Research Laboratory Open Broad Agency Announcements \(BAA\)](#)
- [SBIR Gateway to Funding](#)
- [Water Research Funding](#)
- [Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences](#)
- [DARPA Current Solicitations](#)
- [Office of Naval Research Currently Active BAAs](#)
- [HRSA Health Professions Open Opportunities](#)
- [NIH Funding Opportunities Relevant to NIAID](#)
- [National Institute of Justice Current Funding Opportunities](#)
- [Funding Opportunities by the Department of Education Discretionary Grant Programs](#)
- [EPA's Office of Air and Radiation \(OAR\) Open Solicitations](#)
- [NETL Open Solicitations](#)
- [DoED List of Currently Open Grant Competitions](#)
- [Foundation Center RFP Weekly Funding Bulletin](#)

Solicitations Remaining Open from Prior Issues of the Newsletter

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Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship (NNF) Grants Program

This grant program supports: (1) training students for Master's and doctoral degrees in food, agricultural and natural resource sciences, and; (2) Special International Study or Thesis/Dissertation Research Travel Allowances (IRTA) for eligible USDA NNF beneficiaries. Awards are specifically intended to support traineeship programs that engage outstanding students to pursue and complete their degrees in USDA mission areas. Applicants provide clarity about the philosophy of their graduate training, and relevance to USDA mission sciences, NIFA priorities and national science education policies and statistics. Applications are being solicited from institutions that confer a graduate degree in at least one of the following Targeted Expertise Shortage Areas: 1) animal and plant production; 2) forest resources; 3) agricultural educators and communicators; 4) agricultural management and economics; 5) food science and human nutrition; 6) sciences for agricultural biosecurity; and 7) training in integrative biosciences for sustainable food and agricultural systems. **Due October 11.**

NRC-HQ-60-17-FOA-0001 U.S. Nuclear Regulatory Commission Funding Opportunity Announcement (FOA), Scholarship and Fellowship Education Grant, Faculty Development Grant, and Trade School and Community College Scholarship Grant, Fiscal Year (FY) 2017. Nuclear Regulatory Commission

The primary objective is to support scholarships for nuclear science, engineering, technology and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. The nuclear-related discipline supported by this funding is intended to benefit nuclear safety and security sector broadly. • **Fellowship** - The primary objective is to support fellowships for nuclear science, engineering, technology and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. The nuclear related discipline supported by this funding is intended to benefit the nuclear sector broadly. • **Faculty Development** - The primary objective is to support faculty development for nuclear science, engineering, technology and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. Proposed faculty can be supported for up to one 3 year period. The objectives are to attract and retain highly-qualified individuals in academic teaching careers. The grants specifically target probationary, tenure-track faculty during the first 6 years of their career and new faculty hires in the following academic areas: Nuclear, Mechanical, Civil, Environmental, Electrical, Fire Protection, and Materials Sciences Engineering as well as Health Physics. The NRC has interest in topics including but not limited to Fuels, Neutronics, Thermal-hydraulics, Accident-Progression (e.g., performance of safety relief valves), Consequence, Emergency Preparedness, and Radiation Protection Analysis; Radiochemistry, Probabilistic Risk Assessment, Seismology, Fire Risk Analysis, advanced reactor (non-light water reactor), safety systems and other related disciplines. Grants may include support for developing applications for new research or continuing research projects in their areas of expertise. The program provides support to enable newer faculty to enhance their careers as professors and researchers in the university department where employed. The research supported by this announcement is intended to

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benefit the nuclear sector broadly. • **Trade School and Community College Scholarships** - The primary objective is to support scholarships for nuclear science, engineering, technology, and related disciplines to develop a workforce capable of supporting the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials. The nuclear-related discipline supported by this funding is intended to benefit the nuclear sector broadly. **Due October 14.**

Promoting Sustainable Agriculture

The North Central Region Sustainable Agriculture Research and Education Program (NCR-SARE) is seeking grant funding pre-proposals which must address issues of sustainable agriculture of current and potential importance to the North Central Region. NCR-SARE is interested in projects that lead to resilient agricultural systems. Successful projects should contribute to the following NCR-SARE broad-based outcomes: Improving the profitability of farmers/ranchers and associated agricultural businesses; Sustaining and improving the environmental quality and natural resource base on which agriculture depends; and Enhancing the quality of life for farmers/ranchers, communities, and society as a whole. **Due October 20.**

Environmental Sustainability

The goal of the NSF Environmental Sustainability program is to promote sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. Research efforts supported by the program typically consider long time horizons and may incorporate contributions from the social sciences and ethics. The program supports engineering research that seeks to balance society's need to provide ecological protection and maintain stable economic conditions. There are four principal general research areas that are supported: 1) Industrial Ecology; 2) Green Engineering; 3) Ecological Engineering; and 4) Earth Systems Engineering. **Due October 20.**

NOAA-NMFS-SE-2017-2005000 Fiscal Year 2017 NOAA Gulf of Mexico Bay-Watershed Education and Training (B-WET) Program

The National Marine Fisheries Service Southeast Regional Office (Fisheries Southeast Regional Office) is seeking proposals under the Gulf of Mexico B-WET Program (http://sero.nmfs.noaa.gov/outreach_education/gulf_b_wet/). 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 Oct. 28.**

DOE/OS Early Career Research Program

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The Office of Science of the Department of Energy hereby invites grant applications for support under the Early Career Research Program in the following program areas: Advanced Scientific Computing Research (ASCR); Biological and Environmental Research (BER); Basic Energy Sciences (BES), Fusion Energy Sciences (FES); High Energy Physics (HEP), and Nuclear Physics (NP). The purpose of this program is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by the DOE Office of Science. **Due November 14.**

N00014-16-R-FO05 Multidisciplinary Research Program of the University Research Initiative Department of Defense Office of Naval Research

The MURI program supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interacts to provide rapid advances in scientific areas of interest to the DoD. As defined in the DoD Financial Management Regulation: Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 050201.B). DoD's basic research program invests broadly in many specific fields to ensure that it has early cognizance of new scientific knowledge. The FY 2017 MURI competition is for the topics listed below. Detailed descriptions of the topics and the Topic Chief for each can be found in Section VIII, entitled, "Specific MURI Topics," of this FOA. The detailed descriptions are intended to provide the offeror a frame of reference and are not meant to be restrictive to the possible approaches to achieving the goals of the topic and the program. **Due November 15.**

USDA-NIFA-AFRI-005942 Agriculture and Food Research Initiative - Agriculture and Natural Resources Science for Climate Variability and Change Challenge Area

This AFRI Challenge Area focuses on the priority to mitigate and adapt to climate variability and change. It supports activities that reduce greenhouse gas emissions, increase carbon sequestration in agricultural and forest production systems, and prepare the nation's agriculture and forests to adapt to variable climates. The long-term outcome for this program is to reduce the use of energy, nitrogen fertilizer, and water by ten percent and increase carbon sequestration by fifteen percent through resilient agriculture and forest production systems. In order to achieve this outcome, this program will support multi-function Integrated Research, Education, and/or Extension Projects and Food and Agricultural Science Enhancement (FASE) Grants. **Due November 17.**

Research Interests of the Air Force Office of Scientific Research BAA-AFRL-AFOSR-2016-0007

The Air Force Office of Scientific Research "we, us, our, or AFOSR" manages the basic research investment for the U.S. Air Force. As a part of the Air Force Research Laboratory (AFRL), our

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technical experts discover, shape, and champion research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support U.S. Air Force needs. Using a carefully balanced research portfolio, our research managers seek to foster revolutionary scientific breakthroughs enabling the Air Force and U.S. industry to produce world-class, militarily significant, and commercially valuable products. Our focus is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in two scientific Branches: Engineering and Information Sciences (RTA) Physical and Biological Sciences (RTB). **Open until superseded.**

Open Solicitations and BAAs

[BAA's remain open for one or more years. During the open period, agency research priorities may change or other **modifications are made to a published BAA**. If you are submitting a proposal in response to an open solicitation, as below, check for modifications to the BAA at [Grants.gov](https://www.grants.gov) or by utilizing [Modified Opportunities by Agency](#) to receive a [Grants.gov](https://www.grants.gov) notification of recently modified opportunities by agency name.]

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/>. 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),

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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/>). 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/>). **Invited full proposals/applications can be submitted under the FY16 BAA through September 30, 2016.**

W912HZ-16-BAA-01 2016 Broad Agency Announcement Department of Defense Engineer Research and Development Center

The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Environmental Lab (EL), and the Information Technology Lab (ITL) in Vicksburg, Mississippi; the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire; the Construction Engineering Research Lab (CERL) in Champaign, Illinois; and the Topographic Engineering Center (TEC) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/chemical properties of snow and other frozen precipitation, infrastructure and environmental issues, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. The BAA is available at <http://erdc.usace.army.mil> and is open until superseded. Proposals may be accepted at any time. For questions regarding proposals to CHL, EL, GSL, TEC & ITL, contact Mike Lee at 601-634-3903 or via email at Michael.G.Lee@usace.army.mil. For questions regarding proposals to CERL, contact Wanda Huber at 217-373-6730 or via email at Wanda.L.Huber@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at

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Andrea.J.Krouse@usace.army.mil . For questions regarding proposals at CRREL, contact Ashley Jenkins at 217-373-7297 or via email at Ashley.M.Jenkins@usace.army.mil . Contact the technical personnel listed at the end of each topic area for questions concerning the topic areas themselves. **Open until January 31, 2017.**

US Special Operations Command Broad Agency Announcement

This 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 6.102(d) (2) and 35.016. This announcement provides a general description of USSOCOM's research areas of interest, general information, evaluation and selection criteria, and proposal/application preparation instructions. In accordance with FAR 6.102, projects funded under this announcement 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. Projects that are for the development of a specific system or hardware procurement will not be considered. The selection process is highly competitive and the quantity of meaningful proposal/applications (both pre-proposal/pre-applications and full proposal/full applications) typically received exceed the number of awards that available funding can support. This BAA provides a general description of USSOCOM'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. **Open to May 14, 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**

Open Solicitations from IARPA (Intelligence Advanced Research Projects Activity) Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research

This Broad Agency Announcement (BAA), which sets forth research areas of interest to the [Army Research Laboratory](#) (ARL) Directorates and Army Research Office (ARO), is issued under the paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of basic research proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. **Open June 1, 2012 to March 31, 2017.**

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[DARPA-BAA-16-46 Defense Sciences Office Office-wide](#)

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 game-changing technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts in one or more of the following technical areas: Mathematics, Modeling and Design; Physical Systems; Human-Machine Systems; and Social Systems. Each of these areas is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice. **Open until June 22, 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

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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.**

[NOAA-NFA-NFAPO-2016-2004791 FY2016 to FY2017 NOAA Broad Agency Announcement](#)

This notice is not a mechanism to fund existing NOAA awards. The purpose of this notice is to request applications for special projects and programs ***associated with NOAA's strategic plan and mission goals***, as well as to provide the general public with information and guidelines on how NOAA will select proposals and administer discretionary Federal assistance under this Broad Agency Announcement (BAA). **This BAA is a mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through our competitive discretionary programs.** Funding for activities described in this notice is contingent upon the availability of Fiscal Year 2016 and Fiscal Year 2017 appropriations. Applicants are hereby given notice that funds have not yet been appropriated for any activities described in this notice. Publication of this announcement does not oblige NOAA to review an application beyond an initial administrative review, or to award any specific project, or to obligate any available funds. **Open to September 30, 2017.**

[NOAA-OAR-SG-2016-2004772 National Sea Grant College Program 2016-17 Special Projects](#)

The purpose of this notice is to request proposals for special projects associated with the National Sea Grant College Program's (Sea Grant) strategic focus areas, and to provide the general public with information and guidelines on how Sea Grant will select proposals and administer Federal assistance under this announcement. This announcement is a mechanism to encourage research or other projects that are not normally funded through Sea Grant national competitions. This opportunity is open only to Sea Grant Programs. Section III of this announcement describes eligibility requirements in more detail. Funding has not yet been made available to support applications submitted to this Federal Funding Opportunity (FFO), but such funding may become available during the year. Section II.A. below describes individual competition announcements that will be used to announce when funding is available; any restrictions or requirements on such funding, such as matching funds; and other funding details. Awards will be made under this FFO only if funds have been announced as provided in this FFO. **Open to September 30, 2017.**

[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

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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 ASPR 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. (PAHPA; <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 Diagnostic Tools; Influenza Therapeutics; Influenza Vaccines 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.**

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

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

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

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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.**

PAR-16-242 Bioengineering Research Grants (BRG) (R01) Department of Health and Human Services National Institutes of Health

The purpose of this funding opportunity announcement is to encourage collaborations between the life and physical sciences that: 1) apply a multidisciplinary bioengineering approach to the solution of a biomedical problem; and 2) integrate, optimize, validate, translate or otherwise accelerate the adoption of promising tools, methods and techniques for a specific research or clinical problem in basic, translational, or clinical science and practice. An application may propose design-directed, developmental, discovery-driven, or hypothesis-driven research and is appropriate for small teams applying an integrative approach to increase our understanding of and solve problems in biological, clinical or translational science. **Open to May 9, 2019.**

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

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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.**

BAA-AFRL-RQKMA-2016-0007 Air Force Research Laboratory, Materials & Manufacturing Directorate, Functional Materials and Applications (AFRL/RXA) Two-Step Open BAA

Air Force Research Laboratory, Materials & Manufacturing Directorate is soliciting White Papers and potentially technical and cost proposals under this two-step Broad Agency Announcement (BAA) that is open for a period of five (5) years. Functional Materials technologies that are of interest to the Air Force range from materials and scientific discovery through technology development and transition, and support the needs of the Functional Materials and Applications mission. Descriptors of Materials and Manufacturing Directorate technology interests are presented in the context of functional materials core technical competencies and applications. Applicable NAICS codes are 541711 and 541712. **Open to April 20, 2021.**

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