### Table of Content
- **Topics of Interest URLs**
- **NSF Regional Grants Conference Report**
- **Role of Social Science Funding in National Security**
- **Workforce Training Grants**
- **Tracking Mission Changes at Funding Agencies**
- **Models and Best Practices for Undergraduate Research**
- **Understanding Funding Agency Mission & Culture:** Reprinted from September 11, 2011
- **Research Grant Writing Web Resources**
- **Educational Grant Writing Web Resources**
- **Agency Research News**
- **Agency Reports, Workshops & Roadmaps**
- **New Funding Opportunities**
- **About Academic Research Funding Strategies**

2nd edition New Faculty Guide !! now available on our website !!

Order Here
Replaces the 2012 1st edition.

Contact Us For: Proposal narrative assistance—planning, developing, reviewing, rewriting, etc.

Contact Us For: Grant writing workshops

Contact Us For: Editing and proof reading of journal articles, book manuscripts, proposals, etc. By Katherine E. Kelly, PhD

**Our Large Team Grant eBook!**

*Strategies for Planning, Developing, and Writing Large Team Grants*  
Order Here

---

**Research Development & Grant Writing News ©**

Published monthly since 2010 for faculty and research professionals by Academic Research Funding Strategies, LLC  
Mike Cronan & Lucy Deckard, co-Publishers

Copyright 2017. All rights reserved.  
Subscribe Online (Hotlink)  
Queries: mjcronan@gmail.com  
©Please do not post to open websites ©

About the co-publishers

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

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

About the editor

**Katherine E. Kelly**, Ph.D., is a retired English professor from Texas A&M University. She is the author of several books and numerous articles and served as a contributing editor for an academic journal for five years. She provides editorial services to RD&GW News and to ARFS clients on proposals, journal articles, and manuscripts.
Dear Colleague Letter: CAREER Proposals Submitted to the Directorate for Education and Human Resources (EHR) - Suggestions for Enhancing the Quality of Proposals

NIH scales back plan to curb support for big labs after hearing concerns
Breaking: NIH abandons controversial plan to cap grants to big labs
NIH plan to reduce overhead payments draws fire
House science panel jumps on overhead bandwagon
House Science Committee Delves into Research Overhead Costs

Trump Budget Cuts Defense S&T by 5.8% While Funding Third Offset Priorities
Call to keep secrets on rare species draws reluctant support

2017 National Association for Broader Impacts Summit Presentations
Federal Science Budget Tracker
Federal Science Leadership Tracker
Getting to Know Federal Funders and their Research Interests
How NSF cut 11% from its budget

NSF Director Córdova Pressed on Consequences of Proposed Budget Cuts
NSF offers arm’s-length defense of Trump’s 2018 request
Trump Budget Cuts USGS by 15%, Restructures Climate Research
Trump Budget Cuts NOAA by 16%, Slashes Research Funding Even Deeper

Important Notice No. 139: National Science Foundation Headquarters Moving to Alexandria, Virginia
FY 2018 NSF Budget Summary Brochure
NIST Science Down 13% in Trump Budget

NSF Proposal and Award Policy Newsletter - May/June 2017
Division of Physics: NSF Investigator-Initiated Research Projects (PHY)
FY 2016 NSF Performance and Financial Highlights
NSF CISE Letter to the Community- FY 2018 Budget Request
What’s in Trump’s 2018 budget request for science?

New Tutorials on Preparing and Submitting Your NIH Grant Application
US nuclear regulators greatly underestimate potential for nuclear disaster
NOAA’s Climate Program Office Announces FY18 Federal Funding Opportunities

Trump Budget Cuts DOE Office of Science by 17%, Prioritizes Advanced Computing
Former DOE officials, industry leaders urge Congress to protect agency’s research budget

The Condition of Education 2017
Social and Behavioral Sciences for National Security: Proceedings of a Summit

Seeds of Innovation: May News and Opportunities Fresh from FFAR
Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities
Actions Needed to Strengthen U.S. Skilled Technical Workforce

NIH finds using anonymous proposals to test for bias is harder than it looks
Newly Redesigned IES Funding Opportunities Web Page
IES Announces 2018 Research Grant Competitions
Help shape U.S. agricultural research policy

Secretary Perdue Announces Creation of Undersecretary for Trade and USDA Reorganization
Extraterrestrial soils and space agriculture

Trump’s Proposed Budget Cuts Trouble Bioterrorism Experts
Science Needs a Solution for the Temptation of Positive Results

U.S. Department of Education Accredited Postsecondary Minority Institutions List
The Value of Social, Behavioral, and Economic Sciences to National Priorities: A Report for the National Science Foundation

New Report Calls for NSF to Develop Strategic Plan Specifying Social, Behavioral, and Economic Sciences Research Priorities

NIH Next Generation Researchers Initiative

Review of the Draft Climate Science Special Report

New Website for Adopt-a-Drifter

A Climate Services Database for Western States

NOAA FY2018 Modeling, Analysis, Predictions, and Projections (MAPP) Program

Additional Change to the NIH/AHRQ/NIOSH Policy on Post-Submission Materials

Australian dog serves on the editorial boards of seven medical journals

Federal RePORTER

Dear Colleague Letter: Dear Colleague Letter: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs)

Frequently Asked Questions (FAQs) for Dear Colleague Letter (DCL) NSF 17-094: Changes to the Doctoral Dissertation Improvement Grant (DDIG) Program in the Directorate for Biological Sciences

Ravens remember people who suckered them into an unfair deal

IES Announces FY 2018 Education Research and Development Center Grant Competition

IES Announces 2018 Special Education Research Grant Competition

More Research is Needed on the Effectiveness of the ACT Aspire System

The 2017 Condition of Education Report

Issued Patent Citations Will Be Accepted As Post-Submission Application Materials

Healthy diet? That depends on your genes

Office of Career, Technical, and Adult Education (OCTAE): High School Career and Technical Education Teacher Pathway Initiative CFDA Number 84.051D; Notice Inviting Applications for New Awards for Fiscal Year (FY) 2017
NSF holds a Regional Grants Conference twice each year, in which NSF program officers and administrators discuss NSF priorities, recent changes, and procedures for preparing and submitting proposals and administering awards. With the recent turmoil in the Federal government, it seemed a good time to attend NSF spring conference in Louisville, Kentucky on June 5th and 6th. Below are some of the highlights from the conference. All of the slides from the Spring Regional Grants Conference are posted here.

The NSF Budget

Congress finally passed the FY 2017 budget, finally making it possible just the previous week (late May) for Program Officers to start the process to fund projects that had been recommended for funding. All funds must be committed by July 25th in order to ensure funds are spent by the end of the fiscal year. Complicating this, they’ll lose a week because all NSF personnel will be moving into their new building from June 30th through July 4th (not counting any computer issues resulting from the move).

Engineering (ENG) Directorate Breakout – presented by Mary Toney (PO CMMI)

- ENG has the largest proposal load of all directorates (12,574 proposals). The ENG funding rate (excluding SBIR/STTRs and I-Corps) is 16%.
- Solicitations make up just 20% of the ENG portfolio, but they come and go. The core programs are the PI’s home.
- About 20% proposals come from PIs who are new to NSF and didn’t check with the Program Officer (PO). As a result, they submit to the wrong program. Don’t do that! Check with the PO.
- Even though there will be cuts in the NSF budget, they don’t expect cuts in the core programs. The CAREER program is also expected to be stable.
- GOALI is now a type of funding. Instructions are in the Proposal & Award Policies & Procedures Guide (PAPPG) . You can submit a GOALI to the core program or to a solicitation if an industry partner is an intellectual contributor (co-PI).
- The Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) solicitation is about to be republished.
- The Emerging Frontiers Research and Innovation (EFRI) topics have been published, but the solicitation isn’t out yet.
- All the Civil, Mechanical and Manufacturing Innovation Division (CMMI) CAREERs have exactly $500K budgets; other divisions may fund slightly higher. CMMI holds a 2-day CAREER proposal writing workshop every year. They prioritize PIs who plan to submit to CMMI, but they will accept other PIs if there’s room.
- The most common problem with proposals to ENG is that the science isn’t clear; i.e., the project focuses on delivering an artifact (sensor, material, device, etc.) instead of knowledge. Dr. Toney recommends that the research be hypothesis-driven, if possible. If
a PI can’t find which program fits a particular project (e.g., they are being shuttled from PO to PO), it’s often because the underlying science isn’t clear. Dr. Toney recommended links to resources on writing hypotheses from the most recent CMMI CAREER workshop.

Education and Human Resources (EHR) Breakout – presented by Karen King (PO EHR DRL)

- The Engineering Core Research program is wide open as long as the topic relates to STEM education. However, proposals that would not be any different if the topic were, for example, reading education, aren’t appropriate. They are getting fewer proposals related to gender now.
- Graduate Research Fellowships will be cut back to 1,000 next year because of cuts NSF’s budget. 42 Nobel winners were recipients of GRFP. Be sure to provide the letters of reference. A large number of fellowship applications are disqualified because the three required reference letters weren’t submitted. This happens much more frequently for underrepresented students.
- The STEM + C program will be discontinued next year.
- The old INSPIRE program is now Research Advanced by Interdisciplinary Science and Engineering (RAISE). This is a type of proposal that’s meant to support interdisciplinary projects.
- INCLUDES is an NSF-wide program that is pursuing a new strategy to broaden participation. The thinking is that NSF has funded a lot of boutique programs that don’t scale up. As a result, they haven’t moved the needle in terms of broadening participation in STEM. Now they are looking for scalable models. They funded 30 – 40 pilot programs last year. They will fund a few alliances that will be collections of pilot programs. They’ll also fund a “back bone” program that will provide support and infrastructures.
- Generally, EHR funds proposals with larger teams (and more money) than other directorates. That’s because they are tackling “thorny” problems that require diverse expertise.

Computer and Information Science and Engineering (CISE) Breakout – Jeremy Epstein (Deputy Division Director CNS)

- The CISE budget for FY 17 is about the same.
- CAREERs are funded out of core programs, as well as Cyberphysical Systems and Secure and Trustworthy Computing. A total of 50 – 60 CAREERs are funded out of CISE each year.

Miscellaneous

- The competition for Partnerships for International Research and Education (PIRE), the Office of International Science and Engineering flagship program, is almost complete – they just finished review panels. The next competition will be for FY 2019-20.
- The importance of submitting your annual reports if funded: Dr. Epstein told the following story. A few years ago, right at the end of the fiscal year he was told on a
Friday that someone was underspent, and he could give out $1M if he could spend the money by Monday. He had a proposal that was on the top of his list of proposals that reviewed well but he hadn't had a enough money to spend. He started to do the paperwork to give them the $1M when he realized that they had an overdue annual report. He knew he couldn't get them to submit it and get it approved in time, so he went to the proposal that was second on his list. He said the PI of that first proposal never knew that his delinquent annual report cost him $1M. **So the moral of that story is that we need to make sure all PIs and co-PIs are up to date on their reports to NSF!**
In the ongoing Congressional negotiations related to the research priorities of the 2018 budget across federal agencies, funding for research in the social and behavioral sciences is one area of uncertainty. This uncertainty makes it essential that research offices supporting faculty in these disciplines become aware of which social science research is a priority for funding and which is not across federal agencies. Given the depth of some proposed 2018 cuts in research funding across federal agencies, faculty and the research offices supporting them will need to have in place a plan B or even C to allow for sufficient strategic flexibility to adapt to the changing funding landscape in the social and behavioral sciences.

Specific to this issue, after the article from the May ARFS newsletter, Future Funding Scenarios in the Social and Behavioral Sciences, was published, a new 92-page National Academies report, Social and Behavioral Sciences for National Security: Proceedings of a Summit (2017), was published and can be downloaded as a free pdf here. The report was the result of a 2-year survey by the National Academies of the social and behavioral sciences with the goal of identifying and prioritizing promising social and behavioral sciences (SBS) research opportunities with implications for national security over a 10-year period. (Also see The Value of Social, Behavioral, and Economic Sciences to National Priorities: A Report for the National Science Foundation.)

The National Academy report included an analysis of the SBS research needs of the US intelligence community, which is composed of 17 different executive branch agencies and organizations, including CIA, NSA, DIA. This report represents a goldmine of strategic information for those faculty and research offices putting in place a roadmap for future external funding in the social and behavioral sciences. While it is only one component of a larger picture, it is nonetheless a very robust one in terms of planning insights.

The key distinction motivating the report is that intelligence activities fall into two categories: collection and analysis. While intelligence collection is fairly well understood by the public, the report notes, “the task of analysis tends be more of a mystery. Intelligence analysts work on very difficult problems, and the information and insights they provide to government leaders have tremendous ramifications for the country and national security decisions. In carrying out their jobs, analysts use a variety of data sources, tools, and techniques” that fall into the domain of SBS research.

For those in university research offices helping faculty in the social and behavioral sciences obtain research funding, this report represents a major partnership of the National Academies and seventeen intelligence agencies to put in place a ten-year strategic plan that identifies and prioritizes SBS research considered important for funding by the intelligence community over the coming years. The report addresses four research topic areas to be explored as partnerships between the academic and intelligence communities:

- First Research Session: Brain and Neuroscience
- Second Research Session: Social Interaction
Third Research Session: Behavioral Genetics
Fourth Research Session: Risk and Decision-Making

The 40 pages in the report that focus on these 4 topic areas are very technical, but they do offer faculty conducting research in these areas a discussion by academic colleagues in SBS of how these areas of research can fit the needs of the intelligence community over the coming decade. However, as noted in the report, “the National Academies of Sciences, Engineering, and Medicine will undertake a 2-year survey of the social and behavioral sciences to understand how knowledge from science can be directed and applied to help the intelligence community fulfill its critical responsibilities. A robust discussion between the academic and intelligence communities is needed to accomplish this task.”

The key point here is that this report seeks to identify and define the SBS research needs of the intelligence community. In some ways it might be viewed as pre-solicitation of possible funding opportunities that will be posted over the coming years by these 17 different agencies and offices. The summit held last October that generated this report was “designed to highlight cutting-edge research and identify future directions for research in a few areas of the social and behavioral sciences.” As noted above, it was organized around a series of presentations in 4 different SBS research-themed sessions. “These sessions,” the report explains, “were representative of the research with possible relevance to the work of intelligence analysts.”

Presenters from the academic community “described what is known in their areas of SBS work and what could be known, as well as identified any current limitations with data or methodology.”

For research offices, the take away from this report is that it is not necessary to know in a detailed way the SBS research itself; rather, it is important to be able to steer faculty who do SBS research to this report, particularly the sections where various intelligence agencies discuss their SBS needs. In effect, SBS researchers can view these intelligence agencies as mission agencies. The role of the SBS researcher is to assist these agencies in meeting their mission objectives by mapping their research capacities to the needs of these agencies—something at the core of every funded research project in any discipline.

For example, a representative from the CIA noted that it is “important to make headway against a perennial challenge for intelligence community analysts to stay abreast of the latest findings and advances in the social and behavioral sciences and to draw relevant knowledge into their work.” The CIA representative suggested ideas for the collaboration “between the intelligence community and academics and considered different ways that research can have an impact on intellectual capital building.”

This report is just one more valuable tool for faculty in SBS research whereby they can identify potential funding opportunities from one of these 17 agencies.
Workforce Training Grants

Research grants to federal agencies may include a required section that addresses workforce training of importance to the particular funding agency. Some grants may feature workforce training as the grant’s sole purpose, with a research component providing context for the training. In addition, definitions of workforce training differ by agency and program, scope and scale of the training, and where on the technical training spectrum the workforce training falls. In some cases, workforce training may apply only to a technical domain of knowledge that does not require a bachelor’s degree, whereas in other cases, technical workforce training is inclusive of students in STEM degree programs at both the community college and university levels. Workforce training at NSF, for example, is generalized to the STEM disciplines, whereas at other federal agencies, workforce training often maps very tightly to the agency’s disciplinary mission. They may take on a different flavor at DoED: Office of Career, Technical, and Adult Education (OCTAE): High School Career and Technical Education Teacher Pathway Initiative CFDA Number 84.051D; Notice Inviting Applications for New Awards for Fiscal Year (FY) 2017.

Regardless of its type or scope, a workforce training component to a research grant is one of the areas where research office staff commonly assist faculty in proposal development. For this reason, faculty can benefit greatly from the “corporate memory” of the research office that has participated in numerous proposals, dedicated partly or fully to workforce training, where best models and practices help determine proposal competitiveness.

For instance, a CDC grant on vector-borne diseases may include a training component for entomology at the technician level, BS level, and at the professional development level for the existing workforce. A center of excellence solicitation from DHS may require workforce training ranging from technician level, to graduate level, to professional development level. NOAA workforce development, for example, is often a component of a larger research solicitation. A NIST grant may include workforce development, training, and education components related to cybersecurity. The main point here is that workforce training is a topic frequently addressed in a range of proposals. This report will help provide guidance to that effort.

Also see H.R. 2353, Strengthening Career and Technical Education for the 21st Century Act. H.R. 2353 would amend the Carl D. Perkins Career and Technical Education Act of 2006 and reauthorize secondary and postsecondary career and technical education (CTE) programs through fiscal year 2023. The bill would authorize the appropriation of $5.9 billion over the 2018-2022 period, and an additional $1.2 billion in 2023. Under the General Education Provisions Act, those authorizations would be extended automatically for an additional year through 2024; and H.R. 338, a bill to promote a 21st century energy and manufacturing workforce: H.R. 338 would direct the Department of Energy (DOE) to pursue certain outreach-related activities aimed at increasing the number of skilled workers trained to work in fields related to energy and manufacturing. The bill would require the agency to maintain and update a clearinghouse with information about jobs in the energy and manufacturing sectors, provide
guidance and support to certain educational institutions, and carry out certain administrative requirements.

The thing to keep in mind is that workforce training boundaries are set by the funding agency; however, there will likely be a generic component to workforce training across agencies and disciplines, e.g., best practices, and an agency mission-specific component that maps tightly to the agency or program mission. For instance, a CDC vector-borne disease research grant may also include technical workforce training on mosquito control in dense urban populations, particularly in urban areas along the coastal Gulf of Mexico.

The recently published 238-page National Academies report, *Building America's Skilled Technical Workforce*, available as a free pdf download, “examines the coverage, effectiveness, flexibility, and coordination of the policies and various programs that prepare Americans for skilled technical jobs. This report provides action-oriented recommendations for improving the American system of technical education, training, and certification.” While the report addresses workforce training that does not require a bachelor’s degree for entry, such as NSF’s decades old Advanced Technology Education (ATE) program, it is a valuable and robust resource for anyone assisting faculty writing a workforce training section of a larger research grant.

This report comprehensively addresses many of the core issues that need to be considered in the design and implementation of a workforce training component of a research grant, as well as educational grants whose sole purpose is workforce training. As noted, keep in mind that there are some core generic expectations across federal research agencies for proposals that address education, training, and workforce development. The most notable of these is that the training component be informed by evidence-based models, reflect best practices, and be rigorously evaluated for effectiveness, something often requiring a logic model, a tool used increasingly by federal agencies and often required by USDA/NIFA. The report addresses seven topic chapters as noted below.

**The Skilled Technical Workforce Development Challenge**

One of the core elements of a proposal section on workforce development is a description of the proposed partnership and a justification for the configuration of the proposed partnership. This chapter of the report helps to define the scale, scope, and focus of a workforce training partnership. Specifically, the report describes how one institution is building robust relationships with “K-16 partners, industry, universities, regional government, and other community organizations to ensure a robust workforce development system in the service region. Key features of the strategy described include the following:

- **Collaborating with industry.** In addition to seeking industry input to meet industry demand, QCC partners with the regional offices of the federal Manufacturing Extension Partnership (MEP) program, the state’s Workforce Investment Boards (WIBs), local cluster associations, business incubators, and the National Science Foundation’s (NSF’s) Advanced Technical Education (ATE) programs, among others, to identify workforce development needs.
- **Redesigning education and training delivery.** This includes developing an industry-aligned curriculum and bridging courses with internships, apprenticeships, and job training to meet regional labor market demands.

- **Leveraging technology.** This includes making available customized software applications or “apps” that combine real-time data on the labor market drawn from federal, state, and local sources. Students, local firms, and educational institutions can use this information directly to weigh alternatives and guide career and investment decisions.”

### Labor Market Patterns and Trends

Another core component to a successful workforce training proposal is a justification for the proposed program based on need for the program in the current and future labor market, either in a particular region or nationally. Those who have written NSF Advanced Technology Education proposals will know the importance of being able to describe the context of the proposed training activities in the labor market. This chapter of the report addresses the question of whether the U.S. supply of skilled technical workers adequately meets demand now and in the foreseeable future. Specifically, “the first section looks at evidence of possible gaps and imbalances in **specific skilled technical occupations, industries, and locations**. The second section examines local and sectoral trends in the demand for and supply of technical skills. To understand better the policy issues affecting skilled technical labor markets, the next two sections review the dynamics in two sectors with high numbers of skilled technical occupations—health care and manufacturing. These sectors also serve as examples of how advances in science and technology can affect skilled technical labor markets.”

### The Public Policy Context

This chapter of the report addresses the national context for workforce training, identifies the principal players in workforce initiatives, and addresses the national policy environment that impacts workforce training, all key background issues that would need to be addressed in a competitive proposal related to workforce training. As noted in the report, “In reviewing the public policy context, the first two sections of this chapter take note of the varied **policy agenda and landscape for technical skill development**. The third section summarizes **key federal legislation that shapes federal policy**, including the Workforce Innovation and Opportunity Act (WIOA) and the Post-9/11 Veterans Educational Assistance Act. Next is a review of the Higher Education Act (HEA) and the Carl D. Perkins Career and Technical Education Act (Perkins Act), which are under consideration for reauthorization by the U.S. Congress, followed by an overview of state policies on career and technical education. **Together, these federal and state policies shape the nation’s complex system of workforce education and training.** Broader policy issues related to the development of a skilled technical workforce, including reforms of labor laws and rules governing occupational licensing, improvements in science, technology, engineering, and mathematics (STEM) proficiency, and upgrades to the Workforce Labor Market Information System, are then examined. The final section presents conclusions.

### The Complex U.S. System of Workforce Education and Training


This chapter describes the complexities of workforce development in the United States and the “components of this system that are particularly relevant for preparing skilled technical workers.” This chapter introduces the “quasi-public characteristic of education and training; describes the primary components of workforce development, including career and technical education (CTE) and degree-granting postsecondary education and training programs; examines other postsecondary education and training programs, including apprenticeship, certificate, and certification programs, that do not confer a degree; reviews key funding sources for skilled technical workforce education and training, including federal, state, and employer sources; and presents conclusions.”

Given this, the goal of a research office is not to be a knowledgeable expert in all the information provided in this 238-page report but merely to be sufficiently knowledgeable of the key role this report can play as a reference for faculty writing entire proposals or sections of proposals that require a robust workforce training narrative to be successful.

**Challenges to Developing a Skilled Technical Workforce**

This chapter examines the various impediments and disincentives that pose challenges to fully leveraging the nation’s investments in a skilled technical workforce. It looks at the factors affecting the perceived returns on investment in training and education for students, workers, and employers; explains how some current social and policy frameworks, funding mechanisms, and data gaps impede better outcomes; explores the particular challenges of training the skilled technical workforce in the allied health and manufacturing sectors. *It also takes up the unique challenges faced by about 200,000 service members who transition each year from active military duty to skilled technical occupations in civilian life.* The final section presents conclusions.

**Key Lessons for Programs and Policies**

This chapter looks at how better to link students to skilled technical education and training opportunities and improve success rates, recognizing that students face substantial challenges to navigating, paying for, and completing such programs. “It considers strategies for better linking secondary and postsecondary education and training, including early college schools, career academies, and dual-enrollment programs; examines the links between postsecondary educational organizations and employers; the discussion encompasses strategic centers of excellence at community and technical colleges and sector-specific training programs; looks at employer training programs, including the role of employers in developing apprenticeships, as well as efforts by labor unions to foster joint labor–management programs; considers efforts to improve the collection, analysis, dissemination, and widespread use of data that can be used to improve the linkages discussed in the preceding section; examines other policy initiatives aimed at improving career and technical education (CTE), including those focused on portable credentials and licenses, standardized credentials, licensing reforms, and competency models; and provides conclusions.”

**Findings and Recommendations**

This is an important chapter for research offices assisting faculty with workforce training proposals because it addresses goals and outcomes of any proposed program. This is a lengthy chapter but it nevertheless serves as a valuable reference section. Any successful proposal on
this topic will have to be clear on the goals, objectives, and anticipated outcomes of a workforce training effort. This section will help frame those arguments.

Finally, the tables, graphs, and references in this report will prove invaluable to those writing or assisting with proposals that address the topic of workforce training and development.
As the FY2018 budget moves through the Congressional negotiations and approval process, information is slowly coming out, albeit in drips and draps and from multiple sources, indicating how current mission priorities may or will change or be eliminated at the federal research agencies that collectively represent most of the research and education external funding received by universities in the competitive grants arena. “Arena” is an appropriate characterization here, given that the budget reductions and programmatic shifts across many agencies could result in a competitive funding environment more mindful of an MMA death cage match than the sedate world of research grant funding.

Exaggeration aside, enormous pressures will be placed on university research offices and the faculty they support to sustain current funding levels or to reduce losses in annual external research funding. Additional help will be requested by faculty whose research domain is no longer funded or has been drastically reduced, requiring a shift in research focus or the development of new research partnerships.

For example, less than two years ago, NSF introduced a five-year plan for funding research related to the food, energy, and water nexus, some programs in partnership with USDA/NIFA, with the expectation that this would be a growth research area. However, NSF’s current FY2018 budget proposes a reduction of roughly 70%, or $20 million down from $80 million in Innovations at the Nexus of Food, Energy and Water Systems (INFEWS). Similar outcomes are resulting from the overall 11% cut in the overall NSF budget (FY 2018 NSF Budget Summary Brochure).

INFEWS illustrates the problem facing research offices and faculty. When it was announced nearly two years ago, it was advanced as a major new area of research with a five-year plan for funding that would be the “next generation” research related to prior NSF programs such as water and climate, sustainability, research networks, and the like, some of which had been scheduled for sun setting. It is important to know that smaller programs can face this same fate (see Ecologists protest sudden end of NSF dissertation grants).

In many ways, INFEWS was viewed by faculty and potential collaborative research teams whose research domain mapped to the new program as the new “brass ring” that would allow research to address critical questions at the nexus of food, energy, and water. Like the prior IGERT program and the GRT program that replaced it, the latter with a priority INFEW focus area for 2017, this new research direction at the FEW nexus presents a five-year time horizon whereby faculty and the research offices that support them could lay out strategic planning and collaborative team configurations to position them for INFEWS and related funding over the coming years.

However, with the above noted cuts to INFEWS, as well as uncertainty about how well the INFEWS priority area will fare in future NRT opportunities, research offices should remain ever vigilant as to how changes or possible changes in the mission funding priorities of research agencies will dramatically impact faculty research, collaborative teams, institutional and PI-specific research strategic plans, funding success, and long-term planning.
As Louis Pasteur famously noted “Fortune favors the prepared mind.” While Pasteur did not administer a university research office, his observation is a powerful reminder to those who do that navigating the research funding waters in the coming years will require continuously assessing the shifting mission of research agencies, determining how those changes affect your research faculty, and putting in place a plan to succeed in what will certainly be a much more competitive funding climate as budgets are cut and new research priorities are put forward by traditional go-to agencies.

Of course, the new budget realities are stressful for research funding agencies as well. This is clear from the report in *Science*—NSF offers arm’s-length defense of Trump’s 2018 request that described the very nuanced and delicately choreographed observations by NSF Director France Córdova before a House spending panel related to NSF’s 2018 budget request (FY 2018 NSF Budget Summary Brochure). The following exchange illustrates the position of federal agencies: “That wasn’t your idea, was it?” Representative Matt Cartwright (D–PA) asked Córdova, putting her in an awkward situation. “NSF is an executive branch agency, and this is the president’s budget,” replied Córdova. It will take all the skill of The Flying Wallendas to successfully cross this budget tightrope (see [How NSF cut 11% from its budget](https); [NSF CISE Letter to the Community- FY 2018 Budget Request](https)).

The below URL examples are agency specific but represent other current observations on how the level of support and the mission priorities for federal research funding agencies is shaping up:

- [Trump Budget Cuts DOE Office of Science by 17%, Prioritizes Advanced Computing](https)
- [Former DOE officials, industry leaders urge Congress to protect agency’s research budget](https)
- [NIH scales back plan to curb support for big labs after hearing concerns](https)
- [NIH plan to reduce overhead payments draws fire](https)
- [House science panel jumps on overhead bandwagon](https)
- [NIST Science Down 13% in Trump Budget](https)
- [What’s in Trump’s 2018 budget request for science?](https)
- [Trump’s Proposed Budget Cuts Trouble Bioterrorism Experts](https)
- [Trump Budget Cuts Defense S&T by 5.8% While Funding Third Offset Priorities](https)
Models and Best Practices for Undergraduate Research

By Mike Cronan, co-publisher

The 279-page National Academies report, Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities (2017), released earlier this month, is a gold mine of information, best practices, evidence-based models, effective mentorship principles, and a host of other proven programmatic configurations that ensure the success of undergraduate research experiences. This is really valuable information to university research offices because undergraduate research activities are perhaps the most commonly included broader impacts components to research and educational grants to federal agencies, particularly NSF and other STEM-focused agencies and foundations.

This is important to research offices because they play a role in assisting and informing faculty who are planning, developing, and writing the educational components to larger research grants. These grants can focus on undergraduate research range from center-level research grants to CAREER grants to future workforce development grants across multiple mission agencies from USDA/NIFA to NOAA. Sometimes, the undergraduate research experience is the entire focus of the grant (e.g., NSF Research Experiences for Undergraduates); in other cases, it may be a part of a program to recruit undergraduates to graduate programs. But most often it gets included as a broader impacts component of a research grant across all scales, including small-scale programs of a few students funded as part of a supplement to a currently active research grant.

Whether your role in a research office is to direct faculty to key information that can enhance the competitiveness of their proposals, or to take a direct role in helping to both plan and write undergraduate research components of larger grants, or even to give a presentation to faculty on the most effective strategies for addressing undergraduate research requirements in their proposals, this report is a central reference document that will contribute in an essential way to the quality of the undergraduate research component of any proposal, and hence play an important role in proposal success.

As noted in the report, “there are many ongoing efforts to improve undergraduate science, technology, engineering, and mathematics (STEM) education that focus on increasing the active engagement of students and decreasing traditional lecture-based teaching, and UREs (Undergraduate Research Experiences) have been proposed as a solution to these efforts and may be a key strategy for broadening participation in STEM. In light of the proposals, questions have been asked about what is known about student participation in UREs, best practices in UREs design, and evidence of beneficial outcomes from UREs.”

This report “provides a comprehensive overview of and insights about the current and rapidly evolving types of UREs, in an effort to improve understanding of the complexity of UREs in terms of their content, their surrounding context, the diversity of the student participants, and the opportunities for learning provided by a research experience. It analyzes UREs by considering them as part of a learning system that is shaped by forces related to national policy, institutional leadership, and departmental culture, as well as by the interactions among faculty, other mentors, and students. The report provides a set of questions to be considered by those
implementing UREs as well as an agenda for future research that can help answer questions about how UREs work and which aspects of the experiences are most powerful.”

To this end, the report examines by chapter a comprehensive look at UREs, including the history of URE programs; characterizes undergraduate research experiences in the larger system of higher education; provides a conceptual framework for URE design; addresses research documenting student participation in UREs; addresses the role of mentoring; notes faculty impact and needs; addresses the need for research about UREs; offers considerations for design and implementation of undergraduate research experiences; and offers conclusions and recommendations.

Of course, URE programs have been around for decades and there is an enormous body of existing literature on all the best practices and evidence-based models related to these programs. But research offices will want to focus on the important role information such as this can play in helping faculty address this topic in their proposals in a way that contributes to the competitiveness and success of the proposal— the fundamental goal of all grant writing.

This is particularly important in times of tight budgets and programmatic scale backs that dramatically increase the competitive demands on faculty to get as close to proposal perfection as possible. To do that requires a partnership with research offices where knowledgeable assistance and advice can be found. A quick read of this report will provide some valuable insights research offices can use the next time faculty ask them to assist with an URE section of a research proposal.
Funding agencies do not passively fund research projects that are disconnected from a long-term, well-thought-out research agenda and research investment strategy. Basic research agencies (e.g., NSF, NIH) often see themselves as leaders in a national dialogue on research topics and directions, and as key players in defining and driving that national agenda for fundamental research. The federal mission agencies (e.g., DOE, DoD, DARPA, EPA, NASA, NOAA, etc.) fund research, either basic or applied, that falls within the scope of their mission objectives and brings value-added benefits to that mission. This can be a source of surprise, and even frustration, to applicants new to the research funding enterprise, who may believe that a good idea alone will merit funding, regardless of how connected it is to a particular agency’s mission and investment priorities. However, agencies fund only very good ideas that clearly advance their mission, vision, and strategic research plan.

Therefore, the more knowledgeable you are about a funding agency’s mission, strategic plans, research culture, investment priorities, and the rationale behind them, the better able you will be to write a more compelling and competitive proposal narrative. This agency-specific knowledge allows you to more convincingly describe how your proposed research is relevant to the research objectives spelled out in the solicitation, as well as place your research in the broader context of the agency’s strategic research plan. How well you convince reviewers that your research will play a key role in advancing the agency’s mission-critical objectives as listed in the solicitation, or in the guidelines for unsolicited submissions, will be the determining factor in the decision whether or not to fund your proposal.

Many research programs funded by federal agencies, and some private foundations, grow out of an evolving consensus among the national research community on the most promising future directions in specific research topic areas. These directions and priorities, in turn, are translated into funding opportunities at the agencies, or are incorporated into an agency’s strategic plans and given an investment priority level within the agency. These reports may be published at the National Academies, for example, or be posted to agency websites. (All National Academy reports are downloadable in pdf format for free.) In many cases, these reports and studies will be cited with a URL link in the solicitation or program guidelines. It is always wise to review these reports, particularly the executive summary, to become more knowledgeable and better informed on possible persuasive augments you might advance in your research narrative. These reports can help you enhance the perceived significance of your research by clarifying for program officers and reviewers the value of your research to the agency mission.

Often, educational programs targeted at universities, e.g., curriculum reform or undergraduate research, are developed through the same process. It is not uncommon, for example, for reports of the National Academies, the American Association for the Advancement of Science, or similar associations to significantly influence funding directions at one or more agencies, and for those reports to form the underpinnings of subsequent solicitations.
Understanding the origins, underpinnings, and rationale behind funding solicitations will help you better frame your claims of research merit and thereby better position you to write a competitive proposal narrative.

Some agencies, such as the National Science Foundation and National Institutes of Health, are composed of directorates and divisions, or institutes and centers, and these, too, have defined missions, strategic plans, investment priorities, and cultures, at times almost acting as autonomous funding agencies in themselves. It may, therefore, also be necessary to understand the mission, culture, and priorities of the particular organizational unit to which you will be submitting your proposal. Other agencies, e.g., DOE, NOAA, DoD, NASA, etc., may often have very dispersed mission areas with multiple research offices acting autonomously. In these cases, it is important to familiarize yourself sufficiently with the agency and program websites in order to become very knowledgeable about the mission, culture, and research investment priorities of that part of the agency that most fits your research expertise and interests.

A successful proposal allows the funding agency to form a partnership with the submitting institution and principal investigator that will help carry out the agency’s vision, mission, and strategic research goals. As the applicant, you must understand the nature of this partnership and the expectations of the funding agency, both during proposal development and throughout a funded project. Analysis of the funding agency helps you better understand several key elements common to every competitive proposal narrative:

- Who is the audience (e.g., agency program officers and reviewers) and how are they best characterized in terms of the expertise they bring to the review process?
- What is the best way to address them?
- What is a fundable idea and how does it support the agency’s research investment priorities?
- How are claims of research uniqueness and innovation best supported in the proposal text and connected to the agency’s research objectives?
- How do you best communicate your passion, excitement, commitment, and capacity to perform the proposed research to review panels and program officers?
Dear Colleague Letter: CAREER Proposals Submitted to the Directorate for Education and Human Resources (EHR) - Suggestions for Enhancing the Quality of Proposals

June 5, 2017

Dear Colleagues:
The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation’s most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education, and to lead advances in the mission of their departments or organizations. The intent of the program is to provide stable support at a sufficient level and duration to enable awardees to develop careers not only as outstanding researchers, but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge. The CAREER program solicitation (NSF 17-537) can be accessed at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf17537.

The Directorate for Education and Human Resources (EHR) supports excellence in U.S. STEM education at all levels and settings for the development of a diverse and well-prepared workforce of scientists, technicians, engineers, mathematicians, and educators, as well as a well-informed citizenry. A significant portion of the EHR investment is strategically aimed at research to understand science, technology, engineering, and mathematics (STEM) learning and education.

The purpose of this letter is twofold: (a) to highlight, clarify, and draw attention to important information included in Program Solicitation NSF 17-537 as it relates to CAREER proposals submitted to divisions and programs within EHR; and (b) to provide suggestions for enhancing the quality of these proposals.

Important Items of the New Program Solicitation
Program Solicitation NSF 17-537 highlights significant items related to the investigators' eligibility criteria, including: (a) be engaged in research and education in a field supported by the NSF; and (b) be employed in a tenure-track (or tenure-track-equivalent) position as an assistant professor (or equivalent title) as of October 1 after the proposal submission.

It is important to reiterate that for a position to be considered tenure-track-equivalent, it must meet all of the following requirements: (1) the employee has a continuing appointment that is expected to last the five years of a CAREER grant; (2) the appointment has substantial research and educational responsibilities; and (3) the proposed project relates to the employee's career goals and job responsibilities, as well as to the mission of the department or organization.

The following information aims at assisting investigators in the planning, conceptualization, and submission of CAREER proposals to EHR.

FEATURES OF CAREER PROPOSALS
CAREER investigators are encouraged to ensure their proposals address the following key features:

**Research Design and Methodology**

CAREER investigators are expected to formulate research questions that are likely to yield significant knowledge relevant to core problems of STEM education. To support this goal, the proposed research methods should be detailed and carefully justified.

- Investigators should pose research problems of compelling importance deeply rooted in one or more STEM fields. Proposed research methods must closely align with clear, specific research questions.
- Investigators must demonstrate how the proposed research plan builds upon existing theory and evidence from relevant fields. Proposals must draw broadly on the current education-relevant literatures and also on the specific literature in any STEM domain of central focus.
- Investigators must explicitly describe the research design, including underlying methodological assumptions, targeted population and sampling, measures and instruments, and data gathering and analysis plan. Data collection procedures should be well specified, particularly with information on the reliability, validity, and appropriateness of proposed measures and instruments or specific plans for establishing them if not initially known.
- Proposals involving quantitative research should include: descriptions of the statistical methods to be used; details on how potential threats to internal and external validity will be addressed; results of power analyses demonstrating the adequacy of proposed sample sizes; and estimates of effect sizes, as appropriate.
- Proposals involving qualitative research should explain the procedures that would be used to collect, code, reduce, and analyze data, and describe the specific conceptual frameworks that will guide analyses.

Reporting pilot results and providing examples of anticipated findings that might result from the proposed studies will strengthen the competitiveness of proposals.


**Integration of Research and Education**

Proposals are expected to clearly describe substantially integrated research and education plans with the goal of making advances in both domains. While EHR recognizes that there is no single approach to conceptualizing and implementing an integrated research and education plan, investigators are encouraged to consider and clarify how key features of their research (e.g., creativity or innovation in the topics addressed and approaches employed) will impact their education goals and, conversely, how key elements of their education activities will inform their research. Please note that simply conducting research on education issues is not sufficient to integrate research and education efforts.

**Evaluation**
One of the elements to be considered in the review of both the intellectual merit and broader impacts of proposals is the mechanism to evaluate success. Meaningful assessment and evaluation of NSF-funded projects should be based on appropriate metrics. Thus, individual CAREER projects submitted to EHR should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

**Advisory Boards**

CAREER proposals submitted to EHR may include advisory boards, including experts from the fields represented in the proposals to ensure appropriate advice, oversight, direction of the proposed scopes of work, and evaluation of the impact of the research and education activities. Advisory boards may assess the impact and success of a proposal’s scope of work; however it is the investigator’s responsibility to ensure the required assessment and evaluation plans are sound and employ appropriate metrics, including the presence of the evaluation expertise.

**EHR Divisions and Programs**

Divisions and Programs within EHR emphasize different categories of research and development activities. When submitting a CAREER proposal to EHR, investigators need to indicate the program to which the scope of work of their proposals most closely aligns. Following is a listing of EHR Divisions and Programs that accept CAREER proposals. Investigators are encouraged to read the program solicitations identified below and determine the best fit to their work. Divisions and Programs within EHR that accept CAREER proposals are:

**Division of Graduate Education**
- EHR Core Research (ECR)

**Division of Research on Learning in Formal and Informal Settings**
- Advancing Informal STEM Learning (AISL)
- Discovery Research K-12 (DRK-12)
- EHR Core Research (ECR)
- Innovative Technology Experiences for Students and Teachers (ITEST)
- STEM + Computing Partnerships (STEM +C)

**Division of Undergraduate Education**
- EHR Core Research (ECR)
- Improving Undergraduate STEM Education (IUSE)
  Note: The IUSE solicitation is currently being revised
- Robert Noyce Teacher Scholarship Program (Track 4)

**Division of Human Resources Development**
- EHR Core Research (ECR)  
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504924
- Historically Black Colleges and Universities Undergraduate Program  
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5481
- Louis Stokes Alliances for Minority Participation  
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646
- Tribal Colleges and Universities Program  
  https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5483

To gather additional information about relevant aspects related to the submission of CAREER proposals, please see the Frequently Asked Questions about the CAREER program (NSF 17-050) at https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf17050. Likewise, to request further clarifications, please access the CAREER EHR Directorate and Division Contacts at https://www.nsf.gov/crssprgm/career/contacts.jsp.

Sincerely,

William J. (Jim) Lewis  
Acting Assistant Director
IES Announces Grant Competitions in Special Education Research and Training
The National Center for Special Education Research (NCSER) in the Institute of Education Sciences (IES) released funding announcements for Fiscal Year 2018 (FY 2018) grant competitions. NCSER supports research and research training programs aimed at promoting rigorous research on special education and early intervention for infants, toddlers, children, and youth with or at risk for disabilities.

For FY 2018, NCSER has released four Requests for Applications (RFAs): (1) Special Education Research Grants, (2) Research Training Programs in Special Education, (3) Low-Cost, Short-Duration Evaluation of Special Education Interventions, and (4) Research Networks Focused on Critical Problems of Policy and Practice in Special Education (Networks). Networks is a new research program aimed at creating a network of research teams focused on an issue of critical importance in special education; for the FY 2018 competition, the network teams must focus their research on integrated Multi-Tiered Systems of Support in elementary schools.

NCSER Competitions for FY 2018
Special Education Research Grants (84.324A): This program seeks to expand the knowledge base and understanding of infants, toddlers, children, and youth with or at risk for disabilities. Grants support exploratory research, development and pilot testing of new interventions, efficacy and effectiveness studies to evaluate interventions, and the development and validation of measures. There are 11 topic areas covered by this research program: Autism Spectrum Disorders; Cognition and Student Learning in Special Education; Early Intervention and Early Learning in Special Education; Families of Children with Disabilities; Mathematics and Science Education; Professional Development for Teachers and School-based Service Providers; Reading, Writing, and Language Development; Social and Behavioral Outcomes to Support Learning; Special Education Policy, Finance, and Systems; Technology for Special Education; and Transition Outcomes for Secondary Students with Disabilities. APPLICATIONS AVAILABLE: June 22, 2017, APPLICATION DEADLINE: August 17, 2017.

Research Training Programs in Special Education (84.324B): These training programs seek to prepare individuals to conduct rigorous and relevant special education and early intervention research that advances knowledge within the field and addresses issues important to education policymakers and practitioners. For FY 2018, there are three training programs: Postdoctoral Research Training Program in Special Education and Early Intervention; Early Career Development and Mentoring; and Methods Training Using Sequential, Multiple Assignment, Randomized Trial (SMART) Designs for Adaptive Interventions in Education. APPLICATIONS AVAILABLE: June 22, 2017, APPLICATION DEADLINE: August 17, 2017.

Low-Cost, Short-Duration Evaluation of Special Education Interventions (84.324L): This competition is designed to support rigorous evaluations of special education interventions that...
state or local education agencies expect to produce meaningful improvements in student outcomes in a short period of time, such as a single semester or academic year. The interventions must focus on infants, toddlers, children, and/or youth with or at risk for disabilities. The 2-year projects must be carried out by research institutions and state or local education agencies working together as partners. APPLICATIONS AVAILABLE: June 22, 2017, APPLICATION DEADLINE: August 3, 2017. (NOTE: A second grant competition will be held in early 2018, with applications available on January 11, 2018 and due on March 1, 2018).

Research Networks Focused on Critical Problems of Policy and Practice in Special Education (84.324N): This competition aims to create a network of research teams to work together and share ideas on a specific issue of critical importance to special education. For FY 2018, the Network’s research must focus on integrated Multi-Tiered Systems of Support (MTSS) in elementary schools. Integrated MTSS are frameworks that provide multiple levels of support through coordinated, research-based practices, strategies, and structures to meet the academic and behavioral needs of all learners. The Institute intends to fund up to four Research Teams. If at least two Research Teams receive awards, the Institute intends to fund one Network Lead. Applicants may submit proposals to one or both network roles. APPLICATIONS AVAILABLE: July 13, 2017, APPLICATION DEADLINE: September 21, 2017.

More information about the NCSER research programs, goals, application process, and deadlines are available on the IES Funding Opportunities web page. Pre-recorded webinars that describe the grant programs, application procedures, and grant writing procedures will be available in the coming weeks.

The Institute of Education Sciences is the independent research, evaluation, and statistics arm of the U.S. Department of Education. Visit the IES website, sign up for the IES news flash or follow IES on Twitter and FaceBook to learn more.

Getting Started in Teaching and Researching Computer Science in the Elementary Classroom
The recent growth of interest in computer science has created a movement to more readily introduce computer science in K-12 classrooms. However, little research exists on how to successfully bring computer science to lower grade levels. In this paper, we present advice for researchers and curriculum developers who are getting started working with computer science in elementary schools. Specifically, we focus on practical tips for studies of this nature, developed from our experiences piloting a computational thinking curriculum with 4th-6th grade students. We address issues arising in elementary school classrooms such as recruiting and interfacing with teachers and schools, classroom management strategies, student computer literacy and developmental stages, and curriculum life cycle.

Computer Programming in Elementary and Middle School: Connections Across Content
Computing has impacted almost all aspects of life, making it increasingly important for the next generation to understand how to develop and use software. Yet, a lack of research on how children learn computer science and an already impacted elementary school schedule has meant that very few children have the opportunity to learn computer science prior to high school. This chapter introduces literature on teaching computer programming to elementary and middle school, highlights three studies that span elementary and middle school, and discusses how programming can be integrated into other content areas and address national
Important Notice No. 139: National Science Foundation Headquarters Moving to Alexandria, Virginia

The National Science Foundation (NSF) is moving its headquarters to Alexandria, Virginia. NSF will have a new mailing address effective Monday, October 2, 2017, as follows:

National Science Foundation
2415 Eisenhower Avenue
Alexandria, VA 22314

Email addresses and phone numbers for NSF employees and NSF offices will not change. NSF plans to minimize the move’s impact on the research community as much as possible. There are a few important impacts listed below:

- **Due to the move of NSF’s Data Center**, NSF.gov, FastLane and Research.gov will be unavailable from Friday, June 30 at 8:00 PM until Tuesday, July 4 at 6:00 PM EDT. This move has been scheduled around a holiday weekend to minimize downtime and reduce the impact on the research community and NSF staff. During this outage period, proposals cannot be submitted in FastLane, and project reports and cash requests cannot be submitted in Research.gov. However, previously saved information and uploaded documents in FastLane and Research.gov, including in-process proposals and reports, will be accessible after the Data Center moves.

- The physical move to NSF’s new headquarters will be phased over a six-week period, beginning Thursday, August 24 through Sunday, October 1. During this time, you may experience delayed response times when trying to communicate with NSF employees who will be in the midst of this move.

I encourage you to share this information with your colleagues. For IT system-related questions, please contact the NSF Help Desk at 1 (800) 381-1532, or via email at rgov@nsf.gov. Policy-related questions should be directed to policy@nsf.gov.

**Dear Colleague Letter: Removal of Deadlines for the Biological and Environmental Interactions of Nanoscale Materials Program in the Division of Chemical, Biological, Environmental, and Transport Systems in the Directorate for Engineering**

The Biological and Environmental Interactions of Nanoscale Materials Program in the Division of Chemical, Biological, Environmental, and Transport Systems (CBET) has, as of April 2017, eliminated target dates and will accept proposals for consideration at any time. To allow time to adapt to the "open submission – no deadline" guidelines, new proposals will be considered for review after July 20, 2017.

The Biological and Environmental Interactions of Nanoscale Materials Program will continue to maintain a high-quality merit review system using ad hoc mail reviews and panels, as appropriate. For those unfamiliar with the no-submission deadline process, FAQs and other relevant information will be provided on the CBET webpage.
By accepting proposals at any time, investigators will have greater opportunities to prepare proposals, build strong collaborations, and think more creatively resulting in more complex, interdisciplinary projects that have the potential to dramatically advance science. We anticipate that the elimination of deadlines will increase proposal success rate and reduce the burden on institutions and the community by expanding the submission period over the course of the year, as opposed to the previous 20-day window in October.

With this change, the Biological and Environmental Interactions of Nanoscale Materials Program will implement new guidelines, in which a declined proposal (or reasonable facsimile of that proposal/topic by the same investigator) is ineligible for resubmission until a minimum of one year has passed from the date of its initial submission. This moratorium will allow investigators the time required to digest the results of the merit review and revise/restructure the declined proposal accordingly. Any proposal the Program considers too similar to a previous proposal that is under the moratorium period will be returned without review. Similarly, any proposals submitted to CBET or similar programs in the foundation, that the Program decides have not been substantially revised will be returned without review, as outlined in the NSF Proposal and Award Policies and Procedures Guide (PAPPG).

Only proposals submitted to the Biological and Environmental Interactions of Nanoscale Materials Program in the Division of Chemical, Biological, Environmental, and Transport Systems (CBET) are affected by this change. All other submissions to other programs or other funding opportunities within the division will continue to follow the deadlines outlined in their respective solicitations and webpages. This includes proposals submitted to this program under the CAREER solicitation, which will adhere to the CAREER deadlines as noted in the solicitation.

Dear Colleague Letter: Supporting Fundamental Research to Enable Innovation in Advanced Manufacturing at Manufacturing USA Institutes
The National Science Foundation (NSF) is interested in receiving research proposals addressing critical fundamental research needs in advanced manufacturing, and particularly in projects that may enable innovations in the technical focus areas of one or more of the Manufacturing USA Institutes. Such proposals should leverage the facilities, infrastructure, expertise and member companies of one or more Institutes.

Since 2001, close to five million manufacturing jobs have been lost in the United States, compelling the development of a robust innovation policy as outlined in A National Strategic Plan for Advanced Manufacturing. One fundamental and far-reaching development is Manufacturing USA (formerly the National Network for Manufacturing Innovation), intended to secure the future of manufacturing in the U.S. A key component of Manufacturing USA is the creation of public-private partnerships to accelerate investment in and deployment of advanced manufacturing technologies. The Manufacturing USA Institutes have been established in topic areas that exemplify the challenging and high-tech world of advanced manufacturing, from the use of 3D printing to the production of flexible hybrid electronics. The National Science Foundation is part of the multi-agency team that has guided the formation of Manufacturing USA and continues its support through this Dear Colleague Letter (DCL).

Basic research in advanced manufacturing feeds the upstream pipeline of breakthrough technologies and innovations that the Institutes transform into scalable production processes and systems for use by industry. Research proposals that detail explicit collaborations with
Institutes to facilitate this transition are particularly encouraged. A summary of the Institute focus areas can be found at https://www.manufacturing.gov/nnmi-institutes/.

**Dear Colleague Letter: Removal of deadlines for the Marine Geology and Geophysics Program in the Division of Ocean Sciences in the Directorate for Geosciences**

The Marine Geology and Geophysics Program (MGG) in the Division of Ocean Sciences will, as of May 1, 2017, eliminate target dates and accept proposals for consideration at any time, as is presently done in several other programs in NSF’s Directorate for Geosciences. This action is being taken to enable greater flexibility for the community and reduce the burden on investigators, reviewers, and submitting institutions. New proposals will be accepted any time after July 1, 2017. Proposals requesting ship time should allow for at least 18 months of lead time for those projects requiring Academic Research Fleet Global- or Ocean-Class vessels and at least 12 months for all other ship requests.

The Marine Geology and Geophysics Program will continue to maintain a high-quality merit review system using ad hoc mail reviews and panels, as appropriate. For those unfamiliar with how no-submission deadline processes work, FAQs and other relevant information can be found on the NSF Division of Ocean Sciences webpage.

By accepting proposals at any time, investigators will have more time to prepare proposals and build strong collaborations; think more creatively without the pressure of a deadline; and propose more complex, interdisciplinary projects that have the potential to dramatically advance science. As has been shown in other NSF Programs and Divisions where a no deadline submission process has been instituted, eliminating deadlines can reduce the burden on institutions and the community by spreading out the request period over the course of the year, as opposed to having submissions limited to two short time windows.

With this change, MGG will continue its present practice in which a proposal (or reasonable facsimile of that proposal/topic by the same investigator) is ineligible for resubmission until a minimum of one year has passed since its initial submission. This moratorium allows investigators the time required to digest the results of the merit review and revise/restructure/etc. their proposal accordingly. We remind our community that proposals that have been declined need to be substantially revised to be considered again by the programs. Submissions that have not been changed significantly will be returned without review as outlined in the NSF Proposal and Award Policies and Procedures Guide (PAPPG).

Only proposals submitted to the Marine Geology and Geophysics Core Program in the Division of Ocean Sciences are affected by this change. All other submissions to other Programs and funding opportunities in the Division of Ocean Sciences (including GeoPRISMS and Paleo Perspectives on Climate Change) will continue to follow the deadlines outlined in their respective solicitations and webpages. We plan to assess the impact of this merit review pilot over the next few cycles to evaluate its contribution to the goals outlined above.

**Dear Colleague Letter: Updated Focus of Programs within the Engineering Biology and Health Cluster, Division of Chemical, Bioengineering, Environmental, and Transport (CBET) Systems**

The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) has realigned and refocused several of the programs within its Engineering Biology and Health
cluster. This effort was undertaken to clarify the scope of each of the programs and to minimize programmatic overlap. Effective immediately, the programs in the cluster are as follows:

**Biophotonics**
This program's scope remains unchanged.
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505337

**Cellular and Biochemical Engineering (CBE)**
The name change for this program, formerly Biotechnology and Biochemical Engineering (BBE), indicates the addition of the characterization and engineering of therapeutic live cells to the program. Another significant revision is that all proposals are required to include a section on the impact of proposed research on the associated biomanufacturing process.

**Disability and Rehabilitation Engineering (DARE)**
This program has been refocused from the previous General and Age Related Disabilities Engineering (GARDE) program. The new scope retains the primary emphasis on engineering advancements that will positively impact the lives of individuals with disabilities while expanding the focus to include fundamental research in two areas: human movement and injury mechanisms. Fundamental research in these focus areas is linked directly to both minimizing disabilities and improving outcomes for individuals with disabilities.
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505335

**Engineering of Biomedical Systems (EBMS)**
This program has been refocused from the previous Biomedical Engineering (BME) program. The primary shift in focus is to emphasize the engineering nature of research to be funded by EBMS, as compared to an application of existing technology. The targeted themes were removed to instead focus on the engineering process of studying biomedical systems, including the validation of hybrid system designs and models of physiological and pathophysiological systems.
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501023

**Nano-Biosensing**
This program was revised to emphasize the importance of incorporating reproducibility of measurements and sensor performance, while decreasing error rate in the developed nano-biosensing systems.
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505340

**Dear Colleague Letter: Non-Academic Research Internships for Graduate Students (INTERN)**
**Supplemental Funding**
NSF has identified improvement of graduate student preparedness for the Science, Technology, Engineering and Mathematics (STEM) workforce as one of its priorities. As part of this effort, a supplemental funding opportunity is available in fiscal year (FY) 2018 and FY 2019 to provide support for non-academic research internships for graduate students to support career
opportunities in any sector of the U.S. economy. NSF currently invests in a number of graduate student preparedness activities and has historically encouraged principal investigators (PIs) to include such activities in research proposals to NSF. This Dear Colleague Letter (DCL) describes new commitments and funding opportunities at NSF to ensure graduate students are prepared for the 21st-century STEM workforce.

BACKGROUND
With rapidly accelerating changes in technology driven global and national economies, today’s graduate students have a wide choice of career paths to pursue over their professional lives. Graduate students have the potential to make important contributions in careers outside academia: in organizations ranging from startups to large corporations; government agencies, and non-profit organizations. The 2016 Science and Engineering Indicators report shows that 55% of doctoral STEM graduates and 79% of master’s-level graduates are in non-academic employment. It is therefore important that graduate students supported by NSF grants be provided opportunities to develop skills that prepare them to be successful for a broad range of academic and non-academic career paths. In addition to deep and broad preparation in their technical areas of expertise, skills and knowledge regarding communication, innovation and entrepreneurship, leadership and management, policy and outreach are becoming increasingly valuable to enter any sector of the workforce.

SUPPLEMENTAL FUNDING OPPORTUNITY
NSF will provide support for supplements to current NSF grants awarded by the Directorate for Education and Human Resources (EHR), Directorate for Engineering (ENG), and Office of Advanced Cyberinfrastructure (OAC) within the Directorate for Computer and Information Science and Engineering (CISE), to enhance professional development opportunities for graduate students as described below. Supplements to existing NSF awards will enable the PIs of grants to request up to six months of additional support for graduate students to pursue new activities aimed at acquiring professional development experience that will enhance their preparation for multiple career pathways after graduation. These supplements could provide graduate students with the opportunity to augment their research assistantships with additional non-academic research internship activities and training opportunities that will complement their academic research training. PIs are encouraged to involve graduate students from groups that have traditionally been underrepresented and underserved in the STEM enterprise: women, persons with disabilities, African Americans/Blacks, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, Native Pacific Islanders, and persons from economically disadvantaged backgrounds. Grantees are also encouraged to include NSF Graduate Research Fellows and Honorable Mentions in their proposals.

Dear Colleague Letter: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs)
With this Dear Colleague Letter (DCL), the National Science Foundation (NSF) is calling for submission of conference proposals to inform the design of NSF’s new Hispanic-Serving Institution (HSI) program, to be established in fiscal year 2018. Proposed conferences are expected to result in the identification of the most critical challenges and opportunities
regarding undergraduate STEM education at two-year and four-year Hispanic-Serving institutions of higher education, and potential actionable solutions that fall within NSF's mission, policies, and practices. NSF has a long-term commitment to broadening the participation of underrepresented groups in science, technology, engineering, and mathematics (STEM) education and careers. A key component of that commitment is increasing the participation, retention, and graduation rates of underrepresented minorities seeking associate or baccalaureate degrees in STEM fields. Coincident with these aims, NSF is pleased to inform our colleagues that we intend to establish a program for Hispanic-Serving Institutions (HSIs)1 in FY 2018, per the President’s FY 2018 Budget Request to Congress. This program will focus on undergraduate STEM education at HSIs. NSF also will continue to accept proposals from HSIs to any program in the Foundation for which they are eligible; in FY 2016, NSF funded awards to 91 HSIs. Requests may be up to $100,000. NSF intends that the proposed conferences, as submitted to this DCL, will be held early in FY 2018.
The Value of Social, Behavioral, and Economic Sciences to National Priorities: A Report for the National Science Foundation

Nearly every major challenge the United States faces—from alleviating unemployment to protecting itself from terrorism—requires understanding the causes and consequences of people’s behavior. Even societal challenges that at first glance appear to be issues only of medicine or engineering or computer science have social and behavioral components. Having a fundamental understanding of how people and societies behave, why they respond the way they do, what they find important, what they believe or value, and what and how they think about others is critical for the country’s well-being in today’s shrinking global world. The diverse disciplines of the social, behavioral, and economic (SBE) sciences—anthropology, archaeology, demography, economics, geography, linguistics, neuroscience, political science, psychology, sociology, and statistics—all produce fundamental knowledge, methods, and tools that provide a greater understanding of people and how they live.

The Value of Social, Behavioral, and Economic Sciences to National Priorities evaluates whether the federal government should fund SBE research at the National Science Foundation (NSF), and, specifically, whether SBE research furthers the mission of the NSF to advance national priorities in the areas of health, prosperity and welfare, national defense, and progress in science; advances the missions of other federal agencies; and advances business and industry, and to provide examples of such research. This report identifies priorities for NSF investment in the SBE sciences and important considerations for the NSF for strategic planning.

Building America’s Skilled Technical Workforce

Skilled technical occupations—defined as occupations that require a high level of knowledge in a technical domain but do not require a bachelor’s degree for entry—are a key component of the U.S. economy. In response to globalization and advances in science and technology, American firms are demanding workers with greater proficiency in literacy and numeracy, as well as strong interpersonal, technical, and problem-solving skills. However, employer surveys and industry and government reports have raised concerns that the nation may not have an adequate supply of skilled technical workers to achieve its competitiveness and economic growth objectives. In response to the broader need for policy information and advice, Building America’s Skilled Technical Workforce examines the coverage, effectiveness, flexibility, and coordination of the policies and various programs that prepare Americans for skilled technical jobs. This report provides action-oriented recommendations for improving the American system of technical education, training, and certification.

Foundational Cybersecurity Research: Improving Science, Engineering, and Institutions

Attaining meaningful cybersecurity presents a broad societal challenge. Its complexity and the range of systems and sectors in which it is needed mean that successful approaches are necessarily multifaceted. Moreover, cybersecurity is a dynamic process involving human attackers who continue to adapt. Despite considerable investments of resources and intellect,
cybersecurity continues to poses serious challenges to national security, business performance, and public well-being. Modern developments in computation, storage and connectivity to the Internet have brought into even sharper focus the need for a better understanding of the overall security of the systems we depend on. Foundational Cybersecurity Research focuses on foundational research strategies for organizing people, technologies, and governance. These strategies seek to ensure the sustained support needed to create an agile, effective research community, with collaborative links across disciplines and between research and practice. This report is aimed primarily at the cybersecurity research community, but takes a broad view that efforts to improve foundational cybersecurity research will need to include many disciplines working together to achieve common goals.

**Social and Behavioral Sciences for National Security: Proceedings of a Summit**

In the coming years, complex domestic and international environments and challenges to national security will continue. Intelligence analysts and the intelligence community will need access to the appropriate tools and developing knowledge about threats to national security in order to provide the best information to policy makers. Research and knowledge from the social and behavioral sciences (SBS) can help inform the work of intelligence analysis; however, in the past, bringing important findings from research to bear on the day-to-day work of intelligence analysis has been difficult. In order to understand how knowledge from science can be directed and applied to help the intelligence community fulfill its critical responsibilities, the National Academies of Sciences, Engineering, and Medicine will undertake a 2-year survey of the social and behavioral sciences. To launch this discussion, a summit designed to highlight cutting-edge research and identify future directions for research in a few areas of the social and behavioral sciences was held in October 2016. This publication summarizes the presentations and discussions from the summit.
**New Funding Opportunities**

(Back to Page 1)

**Content Order**
New Funding Posted Since May 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 May 15 Newsletter**

**DE-FOA-0001730 University Turbine Systems Research**
The objective of this FOA is to solicit and competitively award university-based R&D projects that address and resolve scientific challenges and applied engineering technology issues associated with advancing the performance and efficiency of combustion turbines in combined cycle applications (e.g., IGCC/NGCC) in fossil fuel power generation. The FOA will seek to solicit and competitively award laboratory/bench-scale R&D in the following six technical topic areas:
1) Low-NOx Combustion Technology Development for ‘Air-Breathing’ Advanced Turbines
2) Advanced Cooling Technology Development for ‘Air-Breathing’ Advanced Turbines
3) Advanced Materials Technology Development for ‘Air-Breathing’ Advanced Turbines
4) Big Data Analytics
5) Advanced Instrumentation
6) Pressure Gain Combustion  
**Due July 20.**

**DE-FOA-0001686 Innovative Technology Development to Enhance Fossil Power System Efficiency**
The U.S. Department of Energy Fossil Energy Crosscutting Research Program serves as a bridge between basic and applied research by targeting concepts that offer the potential for transformational breakthroughs and step-change benefits in the way energy systems are designed, constructed, and operated. DOE is seeking financial assistance applications that propose concepts and technologies that will make significant and cost-effective progress toward achieving these step-change benefits for electric generating units and industrial plants that use fossil fuel. **Due July 24.**

**Notice of Funding Opportunity (NOFO) National Initiative for Cybersecurity Education (NICE) Stakeholder Engagement Program**
NIST is soliciting applications from eligible applicants to partner with the NICE program in its outreach efforts to the cybersecurity education, training, and workforce development
community; this program will include planning and managing the NICE Annual Conference in the continental United States for up to the next five years. **Due August 1.**

**DE-FOA-0001734 Partnership for Offshore Carbon Storage Resources and Technology Development in the Gulf of Mexico**

This FOA seeks applications to facilitate offshore geologic storage of CO2 in the Gulf of Mexico (GOM) by creating government-industry partnership(s) that are focused on assembling the knowledge base required for secure, long-term, large-scale CO2 storage, with or without enhanced hydrocarbon recovery. Successful partnership(s) will identify and address knowledge gaps, regulatory issues, infrastructure requirements, and technical challenges associated with offshore CO2 storage. It is anticipated that project(s) awarded under this FOA will incorporate the information obtained by several ongoing projects awarded under DE-FOA-0001246, “Offshore Storage Resource Assessment,” and will build upon the practical knowledge and experience gained by the existing RCSPs and previous projects (mostly international collaborations) that are already storing CO2 in offshore geologic reservoirs. **Due August 14.**

**HR001117S0039 Lagrange Department of Defense DARPA**

The Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals to develop novel mathematical methods, on both the theoretical and algorithmic fronts, which will solve high-dimensional dynamic data-driven optimization and decision-making problems. Proposed research should fully address challenges that arise from the nonlinear, nonconvex, hybrid (continuous, discrete) nature of underlying modeling and optimization of realistic complex application problems. Specifically excluded is research that offers existing solutions and optimization methods for application areas. **Due August 30.**

**W911NF-17-S-0010 DEPARTMENT OF DEFENSE Research and Education Program for Historically Black Colleges and Universities/Minority-Serving Institutions (HBCU/MI)**

Under the authority of 10 U.S.C. § 2362 and pending the availability of funds for Fiscal Year (FY) 2018, the Department of Defense (DoD) announces the research and education program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI). The program is executed under policy and guidance of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) and is administered by ARO, ONR, and AFOSR, hereafter called “the Agencies.” This Funding Opportunity Announcement (FOA) aims to (a) enhance research programs and capabilities in scientific and engineering disciplines critical to the national security functions of DoD; (b) enhance the capacity of HBCU/MI to participate in DoD research programs and activities; and (c) increase the number of graduates, including underrepresented minorities, in fields of science, technology, engineering, and mathematics (STEM) important to the defense mission. **Due September 9.**

**N00014-17-S-F014 FY2018 Office of Naval Research (ONR) Young Investigator Program (YIP)**

The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR’s Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track
or tenure-track-equivalent academic appointment, have begun their first appointment on or after 31 December 2012, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education (hereafter also called "universities") to the Department of the Navy's Science and Technology (S&T) research program, to support their research, and to encourage their teaching and research careers. Proposals addressing research areas (as described in the ONR Science and Technology Department section of ONR’s website at www.onr.navy.mil) which are of interest to ONR program officers will be considered. Contact information for each division (a subgroup of an S&T Department) is also listed within the S&T section of the website. Applicants are STRONGLY ENCOURAGED to contact the appropriate Program Officer who is the point of contact for a specific technical area to discuss their research ideas. A list of most Program Officers and their contact information can be found at: http://www.onr.navy.mil/en/Science-Technology/Contacts.aspx. Brief informal pre-proposals may be submitted to facilitate these discussions but are not required. Such discussions can clarify the content and breadth of the priority research areas and enhance the match between a subsequent proposal and Department of the Navy research needs. Please allow adequate time for such discussions with the ONR Program Officer. An individual wishing to apply for a Young Investigator award must submit a research proposal and at least one letter of support through the appropriate university officials. Refer to Section V “Evaluation Criteria” regarding the importance of the letter(s) of support in the overall evaluation criteria and Section IV “Application and Submission Information” regarding its content. Applications received without at least one letter of support will be considered incomplete and will not be considered for award. The research proposal should follow the format described in FOA Section IV entitled, “Application and Submission Information.” Applicants may request up to $170,000 per year for three (3) years. These funds may be budgeted against any reasonable costs related to conducting the proposed research, for example, salary for the Young Investigator, graduate student support, supplies, and applicable indirect cost. Additional funds (beyond the basic $170,000 yearly amount) for capital equipment which enhances the Young Investigator’s proposed research may be requested for the first budget period based on the needs of the research. Requesting funds for capital equipment will not decrease the probability of receiving an award. Additional support for equipment will be decided separately from award selections and will depend upon availability of funds. Applicants awarded grants under the ONR Young Investigator Program have the opportunity to supplement the basic $170,000 per year award through a "matching funds" enhancement available only to those receiving an ONR award. Due September 15.

DE-FOA-0001637: Fiscal Year 2017 BIOMASS RESEARCH AND DEVELOPMENT INITIATIVE (BRDI)
The U.S. Department of Agriculture (USDA), in collaboration with the U.S. Department of Energy (DOE), announce that up to $9 million in funding will be made available through the Biomass Research and Development Initiative (BRDI) to increase the nation’s energy independence by supporting the development of bioenergy feedstocks, biofuels, and biobased products. The projects funded through BRDI—a joint USDA and DOE program—will help develop economically and environmentally sustainable sources of renewable biomass, increase the availability of renewable fuels and biobased products, and diversify our energy portfolio. Both DOE and USDA
have been given statutory authorities to support the development of a biomass-based industry in the United States, under the Food, Conservation, and Energy Act of 2008 (FCEA) and the Energy Policy Act of 2005. USDA and DOE will make up to $9 million available through BRDI in Fiscal Year (FY) 2017. Applicants will be permitted to address any or all of the following three legislatively mandated technical areas: (A) feedstocks development, (B) biofuels and biobased products development, and (C) biofuels development analysis. In support of these goals, USDA and DOE are soliciting applications from all interested parties, including for-profit entities, universities, nonprofits, and national laboratories. For FY 2017, DOE anticipates funding 1 to 6 awards, and USDA anticipates funding 3 to 14 awards. Awards are anticipated to range from $500,000 to $2 million per award. All DOE funding is subject to the availability of annual congressional appropriations. The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at https://eere-exchange.energy.gov. Applications must be submitted through the EERE eXCHANGE website to be considered for award. The applicant must first register and create an account on the EERE eXCHANGE website. A User Guide for the EERE eXCHANGE can be found on the EERE website https://eere-exchange.energy.gov/Manuals.aspx after logging in to the system. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of applications is found in the full FOA posted on the EERE eXCHANGE website. **Due September 22.**

**DE-FOA-0001725 Technology Development to Ensure Environmentally Sustainable CO2 Injection Operations**

This FOA seeks applications on research to develop techniques, tools, and methodologies that improve detection and assessment of CO2 stored in the target reservoir. Research products developed under this FOA are expected to include monitoring tools and techniques, as well as validation of models and modeling techniques. Successful technologies developed under this FOA will decrease the operator’s financial burden associated with long-term monitoring by providing them the capability to assess the position of the CO2 plume in the target reservoir with greater certainty throughout the life cycle of the project (i.e., active- and post-injection). **Due November 14.**

**HR001117S0040 Defense Sciences Office (DSO) Office-wide DARPA**

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 disruptive 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 that explore Physical and Natural Systems, Human-Machine and Social Systems, and/or Math and Computational Systems through the lens of one or more of the following technical domains: Complexity Engineering, Science of Design, Noosphere, Fundamental Limits, and New Foundations. 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 to July 2018.**
URL Links to New & Open Funding Solicitations
Links verified Tuesday, May 23, 2017

- SAMHSA FY 2017 Grant Announcements and Awards
- 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
- 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 2017 Science To Achieve Results (STAR) Research Grants
- NASA Open Solicitations
- CDMRP FY 2017 Funding Announcements
- Office of Minority Health
- 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)
- Office of Naval Research Currently Active BAAAs
- HRSA Health Professions Open Opportunities
- National Institute of Justice Current Funding Opportunities
- Foundation Center RFP Weekly Funding Bulletin

Solicitations Remaining Open from Prior Issues of the Newsletter

USDA-NIFA-AFRI-006353 Agriculture and Food Research Initiative - Resilient Agroecosystems in a Changing Climate Challenge Area
The AFRI Resilient Agroecosystems in a Changing Climate Challenge Area supports activities that enable the nation's agriculture and forest lands to adapt to current and future climate conditions (including increased droughts and other extreme events), maintain or increase production, efficiently use soil and water resources, and improve soil, water and air conditions. Land managers are experiencing more variable weather patterns, especially with regard to water issues such as more intense patterns of droughts and floods, and the lengthening of the growing season over the last three decades. Research results from this challenge area will lead to improved management systems and crop varieties that consider the risks associated with a
more variable environment. Another long-term outcome of this challenge area is reducing the environmental impact while maintaining a productive food, feed, fiber, and fuel system. Due July 13.

**DARPA Biological Technologies Office Open BAA, Department of Defense**

The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals of interest to the Biological Technologies Office (BTO). Proposed research should investigate leading edge approaches that enable revolutionary advances in science, technologies, or systems at the intersection of biology with engineering and the physical and computer sciences. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of the art. BTO seeks unconventional approaches that are outside the mainstream, challenge assumptions, and have the potential to radically change established practice, lead to extraordinary outcomes, and create entirely new fields. The mission of BTO is to foster, demonstrate, and transition breakthrough fundamental research, discoveries, and applications that integrate biology, engineering, computer science, mathematics, and the physical sciences. BTO’s investment portfolio goes far beyond life sciences applications in medicine to include areas of research such as human-machine interfaces, microbes as production platforms, and deep exploration of the impact of evolving ecologies and environments on U.S. readiness and capabilities. BTO’s programs operate across a wide range of scales, from individual cells to the warfighter to global ecosystems. BTO responds to the urgent and long-term needs of the Department of Defense (DoD) and addresses national security priorities. A listing of priority areas includes but is not limited to below:

- Developing and leveraging new technologies that can be applied to agricultural ecosystems for production stabilization, by improving quality or reducing losses from pathogens or pests.
- Developing and leveraging new insights into non-human biology across and between populations of microbes, insects, plants, marine life, and other non-human biologic entities.
- Developing new technologies and approaches that ensure biosafety, biosecurity, and protection of the bioeconomy.
- Understanding emerging threats to global food and water supplies and developing countermeasures that could be implemented on regional or global scales.
- Developing new technologies to treat, prevent, and predict the emergence and spread of infectious diseases that have the potential to cause significant health, economic, and social burden.

Proposal Abstracts and Full Proposals will be submitted on a rolling basis until April 26, 2018, 4:00pm ET

**Internet of Battlefield Things (IoBT) Collaborative Research Alliance (CRA)**

The ability of the Army to understand, predict, adapt, and exploit the vast array of internetworked things that will be present of the future battlefield is critical to maintaining and increasing its competitive advantage. The explosive growth of technologies in the commercial
sector that exploits the convergence of cloud computing, ubiquitous mobile communications, networks of data-gathering sensors, and artificial intelligence presents an imposing challenge for the Army. These Internet of Things (IoT) technologies will give our enemies ever increasing capabilities that must be countered, but commercial developments do not address the unique challenges that the Army will face in using them. The U.S. Army Research Laboratory (ARL) has established an Enterprise approach to address the challenges resulting from the Internet of Battlefield Things (IoBT) that couples multi-disciplinary internal research with extramural research and collaborative ventures. ARL intends to establish a new collaborative venture (the IoBT CRA) that seeks to develop the foundations of IoBT in the context of future Army operations. The Collaborative Research Alliance (CRA) will consist of private sector and government researchers working jointly to solve complex problems. The overall objective is to develop the fundamental understanding of dynamically-composable, adaptive, goal-driven IoBTs to enable predictive analytics for intelligent command and control and battlefield services. The Future Army will operate in a highly complex and rapidly changing environment, thus the U.S. Army’s Operating Concept is to “Win in a Complex World”. Due July 27.

**FY17 Acquisition Research Program Department of Defense**
The Acquisition Research Program (ARP) at the Naval Postgraduate School is interested in stimulating and supporting scholarly research in academic disciplines that bear on public procurement policy and management. These include economics, finance, financial management, information systems, organization theory, operations management, human resources management, risk management, and marketing, as well as the traditional public procurement areas such as contracting, program/project management, logistics, test and evaluation and systems engineering management. The ARP primarily supports scholarly research through assistance vehicles that will benefit the general public and/or private sector to a larger extent than any direct benefits that may be gained by the Government. Studies of government processes, systems, or policies should also expand the body of knowledge and theory of processes, systems, or policies outside the government. The ARP in this FOA is interested only in proposals that will provide unclassified and non-proprietary findings suitable for publication in open scholarly literature. Offerors bear prime responsibility for the design, management, direction and conduct of research. Researchers should exercise judgment and original thought toward attaining the goals within broad parameters of the research areas proposed and the resources provided. Due August 1.

**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 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.**

**Big Data Regional Innovation Hubs: Establishing Spokes to Advance Big Data Applications (BD Spokes)**

This solicitation calls for new BD Spoke proposals to be awarded in FY 2018. Collaborating with BD Hubs, each BD Spoke will focus on a particular topic that requires Big Data approaches and solutions. The set of activities managed by a BD Spoke will promote progress towards solutions in the chosen topic area. The regional BD Hub Steering Committee will provide general guidance to each BD Spoke and will assist the BD Spoke in coordinating with the national BD Hub network, with other BD Spokes, and with the broader innovation ecosystem. **Due September 18.**

**USDA-NIFA-AFRI-006351 Agriculture and Food Research Initiative - Foundational Program**

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

**FY 2018 Department of Defense Multidisciplinary Research Program of the University Research Initiative**

MURI competition is open only to, and proposals are to be submitted only by, U.S. institutions of higher education (universities) including DoD institutions of higher education, with degree-granting programs in science and/or engineering. To the extent that it is a part of a U.S. institution of higher education and is not designated as a Federally Funded Research and Development Center (FFRDC), a University Affiliated Research Center (UARC) or other University Affiliated Laboratory (UAL) is eligible to submit a proposal to this MURI competition and/or receive MURI funds. Ineligible organizations (e.g., industry, DoD laboratories, FFRDCs, and foreign entities) may collaborate on the research but may not receive MURI funds directly or via subaward. When additional funding for an ineligible organization is necessary to make the proposed collaboration possible, such funds may be identified via a separate proposal from that organization. This supplemental proposal shall be attached to the primary MURI proposal and will be evaluated in accordance with the MURI review criteria by the responsible Research Topic Chief. If approved, the supplemental proposal may be funded using non-MURI or non-Government funds. **Nov 01, 2017 White Papers: 17 Jul 2017 (Monday) 11:59 PM Eastern Daylight Time** Proposals: 01 Nov 2017 (Wednesday) 11:59 PM Eastern Daylight Time

**Mind, Machine and Motor Nexus (M3X)**

The Mind, Machine and Motor Nexus (M3X) program supports fundamental research at the intersection of mind, machine and motor. A distinguishing characteristic of the program is an integrated treatment of human intent, perception, and behavior in interaction with embodied and intelligent engineered systems and as mediated by motor manipulation. M3X projects should advance the holistic analysis of cognition and of embodiment as present in both human and machine elements. This work will encompass not only how mind interacts with motor function in the manipulation of machines, but also how, in turn, machine response and function may shape and influence both mind and motor function. The M3X program seeks to support the development of theories, representations, and working models that draw upon and contribute to fundamental understanding within and across diverse fields, including but not limited to systems science and engineering; mechatronics; cognitive, behavioral and perceptual sciences; and applied computing. Research funded through this program is expected to lead to new computable theories and to the physical manifestation of these theories. Application areas supported by the M3X program span the full breadth of the Division of Civil, Mechanical and Manufacturing Innovation. Methodological innovation is emphasized, as is a focus on engaging new and emerging thematic areas. The M3X program does not support disaggregated, parallel
efforts from individual disciplines or investigators: rather, supported activities must strongly integrate across disciplines to enable discoveries that would not otherwise be possible. Additionally, the M3X program will not consider proposals that do not integrate physical considerations in a fundamental way. Principal investigators proposing pure artificial intelligence or pure machine learning research are referred to funding opportunities in the Directorate for Computer and Information Science and Engineering. Due September 1-15.

**Research Education: Bridges to the Doctorate (R25)**
Funding Opportunity PAR-17-209 from the NIH Guide for Grants and Contracts. The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The over-arching goal of this National Institute of General Medical Sciences (NIGMS) R25 program is to support educational activities that enhance the diversity of the biomedical research workforce. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on Courses for Skills Development and Research Experiences. Due September 25.

**Bridges to the Baccalaureate Program (R25)**
Funding Opportunity PAR-17-210 from the NIH Guide for Grants and Contracts. The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The over-arching goal of this National Institute of General Medical Sciences (NIGMS) R25 program is to support educational activities that enhance the diversity of the biomedical research workforce. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on Courses for Skills Development, Research Experiences, and Curriculum or Methods Development. A program application must include each activity, and describe how they will be synergized to make a comprehensive program. Due September 25.

**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 or by utilizing Modified Opportunities by Agency to receive a Grants.gov notification of recently modified opportunities by agency name.]

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

**Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology Department of Defense**
All responsible sources from academia and industry may submit proposals under this BAA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion
of this BAA will be set aside for Small Business or other socio-economic participation. All businesses both small and large are encouraged to submit proposals and compete for funding consideration. B. Federally Funded Research & Development Centers (FFRDCs), including Department of Energy National Laboratories, are not eligible to receive awards under this BAA. However, teaming arrangements between FFRDCs and eligible principal Offerors are allowed so long as such arrangements are permitted under the sponsoring agreement between the Government and the specific FFRDC. C. Navy laboratories, military universities, and warfare centers as well as other Department of Defense and civilian agency laboratories are also not eligible to receive awards under this BAA and should not directly submit either white papers or full proposals in response to this BAA. If any such organization is interested in one or more of the programs described herein, the organization should contact an appropriate ONR Technical POC to discuss its area of interest. The various scientific divisions of ONR are identified at http://www.onr.navy.mil/. As with FFRDCs, these types of federal organizations may team with other eligible sources from academia and industry that are submitting proposals under this BAA. D. University Affiliated Research Centers (UARCs) are eligible to submit proposals under this BAA unless precluded from doing so by their Department of Defense UARC contract. E. Teams are also encouraged and may submit proposals in any and all areas. However, Offerors must be willing to cooperate and exchange software, data and other information in an integrated program with other contractors, as well as with system integrators, selected by ONR. Open to September 30, 1917.

**HM0210-14-BAA-0001 National Geospatial-Intelligence Agency Academic Research Program**

NGA welcomes all innovative ideas for path-breaking research that may advance the GEOINT mission. The NGA mission is to provide timely, relevant, and accurate geospatial intelligence (GEOINT) in support of national security objectives. GEOINT is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. GEOINT consists of imagery, imagery intelligence, and geospatial information. NGA offers a variety of critical GEOINT products in support of U.S. national security objectives and Federal disaster relief, including aeronautical, geodesy, hydrographic, imagery, geospatial and topographical information. The NGA Academic Research Program (NARP) is focused on innovative, far-reaching basic and applied research in science, technology, engineering and mathematics having the potential to advance the GEOINT mission. The objective of the NARP is to support innovative, high-payoff research that provides the basis for revolutionary progress in areas of science and technology affecting the needs and mission of NGA. This research also supports the National System for Geospatial Intelligence (NSG), which is the combination of technology, systems and organizations that gather, produce, distribute and consume geospatial data and information. This research is aimed at advancing GEOINT capabilities by improving analytical methods, enhancing and expanding systems capabilities, and leveraging resources for common NSG goals. The NARP also seeks to improve education in scientific, mathematics, and engineering skills necessary to advance GEOINT capabilities. It is NGA’s intent to solicit fundamental research under this BAA. Fundamental research means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from Industrial development, design, production, and product
utilization, the results of which ordinarily are restricted for proprietary or national security reason. (National Security Decision Directive (NSDD) 189, National Policy on the Transfer of Scientific, Technical, and Engineering Information). NGA seeks proposals from eligible U.S. institutions for path-breaking GEOINT research in areas of potential interest to NGA, the DoD, and the Intelligence Community (IC). Open to September 30, 2017.

**NOAA-NFA-NFAP0-2016-2004791 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 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
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-Feat-ured 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.

FY17 Funding Opportunity Announcement for Navy and Marine Corps Science, Technology, Engineering & Mathematics Education, Outreach and Workforce Program
The ONR seeks a broad range of proposals for augmenting existing or developing innovative solutions that directly maintain, or cultivate a diverse, world-class STEM workforce in order to maintain the U.S. Navy and Marine Corps’ technological superiority. The goal of any proposed effort must provide solutions that will establish and maintain pathways of diverse U.S. citizens who are interested in uniformed or civilian DoN (or Navy and Marine Corps) STEM workforce opportunities. As the capacity of the DoN Science and Technology (S&T) workforce is interconnected with the basic research enterprise and STEM education system, ONR recognizes the necessity to support efforts that can jointly improve STEM student outcomes and align with Naval S&T current and future workforce needs. This announcement explicitly encourages projects that improve the capacity of education systems and communities to create impactful
STEM educational experiences for students including active learning approaches and incorporating 21st century skills. Projects must aim to increase student engagement in STEM and persistence of students in STEM degrees, while improving student technical capacity. ONR encourages proposals to utilize current STEM educational research for informing project design and advancing our understanding of how and why students choose STEM careers and opportunities of naval relevance. While this announcement is relevant for any stage of the STEM educational system, funding efforts will be targeted primarily toward the future and current DoN (naval) STEM workforce in High School, all categories of Post-Secondary institutions, the STEM research enterprise, and efforts that enhance the current naval STEM workforce and its mission readiness. Open to December 31, 2017.

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

BAA-HPW-RHX-2014-0001 Human-Centered Intelligence, Surveillance Air Force Research Lab
This effort is an open-ended BAA soliciting innovative research concepts for the overall mission of the Human-Centered Intelligence, Surveillance, & Reconnaissance (ISR) Division (711 HPW/RHX). It is intended to generate research concepts not already defined and planned by RHX as part of its core S&T portfolio. The core RHX mission is to develop human-centered S&T that (1) enables the Air Force to better identify, locate and track humans within the ISR environment and (2) enhance the performance of ISR analysts. To accomplish this mission, the RHX core S&T portfolio is structured into three major research areas: (1) Human Signatures - develop technologies to sense and exploit human bio-signatures at the molecular and macro (anthropometric) level, (2) Human Trust and Interaction – develop technologies to improve human-to-human interactions as well as human-to-machine interactions, and (3) Human
Analyst Augmentation – develop technologies to enhance ISR analyst performance and to test the efficacy of newly developed ISR technologies within a simulated operational environment. The RHX mission also includes research carried over from the Airman Biosciences and Performance Program. While not directly linked to the core S&T strategic plan, there exists a unique capability resident within RHX to address critical Air Force operational and sustainment needs resulting from chemical and biological hazards. Research areas include contamination detection, hazard assessment and management, individual and collective protection, and restoration and reconstitution of operational capability. Open to Feb. 12, 2018.

**Strategic Technologies Department of Defense DARPA - Strategic Technology Office**

Current Closing Date for Applications: Mar 21, 2018

**Air Force BAA - Innovative Techniques and Tools for the Automated Processing and Exploitation (APEX) Center**

The AFRL/RIEA branch performs Research and Development (R&D) across a broad area of Air Force Command, Control, Communications, Computers/Cyber, and Intelligence (C4I). All applicable "INTs" are investigated with emphasis on Ground Moving Target Indication (GMTI), Electronic Intelligence (ELINT), Signals Intelligence (SIGINT), Image Intelligence (IMINT), Non Traditional Intelligence, Surveillance and Reconnaissance (NTISR), and Measurement and Signature Intelligence (MASINT). The APEX Center is used to perform analysis for seedling efforts, provide baseline tool development for major programs, and to provide realistic operational systems/networks/databases for integration efforts. The APEX Center resources will be used by the Government to perform the necessary research, development, experimentation, demonstration, and conduct objective evaluations in support of emerging capabilities within the Processing and Exploitation (PEX) area. Software tools, data sets, metrics (Measures of Performance/Measures of Effectiveness), and analysis are needed for the Government to perform the vetting, maturing, and analysis of efforts related to PEX, e.g. Automatic Tracking, Activity Based Intelligence, Entity, Event & Relationship (EER) Extraction, Association & Resolution (A&R), Analysis & Visualization (A&V), Social Network Analysis, Network Analytics, Pattern Discovery, Scalable Algorithms, and Novelty Detection. The AFRL APEX Center is the AFRL/RI gateway into the cross-directorate PCPAD-X (Planning & Direction, Collection, Processing & Exploitation, Analysis & Production, and Dissemination eXperimentation) initiative. Open to FY 2018.

**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 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.

Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research

This BAA sets forth research areas of interest to the ARO. This BAA is issued under FAR 6.102(d)(2), which provides for the competitive selection of basic and applied research proposals, and 10 U.S.C. 2358, 10 U.S.C. 2371, and 10 U.S.C. 2371b, which provide the authorities for issuing awards under this announcement for basic and applied research. The definitions of basic and applied research may be found at 32 CFR 22.105. 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 to April 30, 2022.
What We Do--

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

- **Strategic Planning** - Assistance in formulating research development strategies and building institutional infrastructure for research development (including special strategies for Emerging Research Institutions, Predominantly Undergraduate Institutions and Minority Serving Institutions)

- **Training for Faculty** - Workshops, seminars and webinars on how to find and compete for research funding from NSF, NIH, DoE and other government agencies as well as foundations. Proposal development retreats for new faculty.

- **Large proposals** - Assistance in planning, developing and writing institutional and center-level proposals (e.g., NSF ERC, STC, NRT, ADVANCE, IUSE, Dept of Ed GAANN, DoD MURI, etc.)

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

- **Assistance on your project narrative**: in-depth reviews, rewrites, and edits

- **Editing and proof reading of journal articles, book manuscripts, proposals, etc.**

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

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

**Workshops by Academic Research Funding Strategies**

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

(View Index of Articles)

Copyright 2017 Academic Research Funding Strategies. All rights reserved.