Volume 8, Issue 1: September 15, 2017

Table of Contents

***NOTE TO SUBSCRIBERS*: ARFS Expands Editing Services (Link HERE)**

New Faculty Coming for Fall?

2nd edition *New Faculty Guide to Competing for Research Funding*!! now available on our website !! Order Here

Contact Katherine E. Kelly, PhD For: Editing of journal articles, book manuscripts, and proposal narrative (About the Editor, right column)

Our Services Include: Proposal narrative assistance—planning, developing, reviewing, editing, rewriting, etc.

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

Subscribe Online (Hotlink)

Queries: mjcronan@gmail.com

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 A&M Engineering Experiment Station (15 research divisions state-wide), including the Texas A&M College of Engineering.

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 clients on proposals, journal articles, and manuscripts.

Topics of Interest URLs

(Back to Page 1)

Dear Colleague Letter: NSF Accepting Proposals Related to Hurricane Harvey
NSF and CISE information related to Hurricane Harvey
NEH Chairman's Emergency Grants Available for Humanities Institutions Impacted by Harvey and Irma
Report Collection Provides Targeted Resources for All Stakeholders in a Disaster Response
NIH's Next Generation Researchers Policy Now Posted
NIH News in Health
FY18 Appropriations Bills: National Institutes of Health
PAPPG – Proposed Significant Changes
Summary of Upcoming Grants.gov Changes with User Impacts
NASA Nominee Jim Bridenstine Has Bold Vision for Space, Unclear Intentions for Science
Do interventions to reduce misconduct actually work? Maybe not, says new report
Apply for Grants using Grants.gov Workspace
Science and Engineering State Profiles: Spring 2017 update
Doctorate Recipients from U.S. Universities: 2015 Report
Defense Department Reorganization Aims to Foster 'Culture of Innovation'
Academic Biomedical Research Community Should Take Action to Build Resilience to Disasters
Strengthening the Disaster Resilience of the Academic Biomedical Research Community: Protecting the Nation's Investment
What should journals do when peer reviewers do not disclose potential conflicts?
Biogen Grants for Medical Education
Next Generation Researcher Policy Announcement at NIH – Coming Soon
Data by NIH On Trends According to Career Stage
NSF SBIR/STTR launches a new look and website
4 Questions For Researchers and Institutions Involved In Human Subjects Research
Crossing Boundaries: The Future of Science Education
Science Education Programs at ORNL
White House Releases R&D Priorities for Its Next Budget Request
NSF Grants Conference - Phoenix, AZ - November 2017
Joint Special Operations University Press Publications
Major Research Instrumentation Program: (MRI) Instrument Acquisition or Development
NSF Proposal & Award Policy Newsletter
NIH Format Attachments
N00174-17-0001 Naval Engineering Education Consortium (NEEC) Broad Agency Announcement for FY17
About the GEM Fellowship Program
Standing Together: The Humanities and the Experience of War
AHA Collaborative Sciences Award
Long-Term Fellowships In Humanities
Russell Sage Foundation's program on the Future of Work
National Academies Report Explores Benefits, Challenges of Large NASA Science Missions
A Look at College Applications for 2009 High School Freshmen
Principles and Practices for Federal Program Evaluation: Proceedings of a Workshop
Federal Support for Science and Engineering to Universities, Colleges, and Nonprofit Institutions: FY 2015
Business R&D Performed in the United States Reached $356 Billion in 2015
Weekend reads: An NIH grant scam; are calls for retraction useful?; how to end honorary authorship
Research Coordination Networks (RCN)
Science Breakthroughs 2030: A Strategy for Food and Agricultural Research
DOE Advanced Nuclear Reactor Program Deemed Ineffective

More Tol's Following Page

NSF Mathematical Sciences Infrastructure Program
IARPA-BAA-17-07 Finding Engineering-Linked Indicators (FELIX)
Preventing Cognitive Decline and Dementia: A Way Forward
Scientists put a 'smartfin' on my surfboard. Is it the next wave in ocean monitoring?
Supporting Students' College Success: The Role of Assessment of Intrapersonal and Interpersonal Competencies
Undergraduate Research Experiences for STEM Students: Successes, Challenges, and Opportunities (2017)
Assisting Students Struggling with Mathematics: Response to Intervention for Elementary and Middle Schools
Pacemaker Recall Exposes National Need for Research and Education in Embedded Security
Stanford Creative Writing Program -- Wallace Stegner Fellowship
CADRE Early Career Guide: Tips for Early Career STEM Education Researchers
Reminder to Review Accuracy of Your Institution's NIH Grant Award Data before October 9
Important News for NIH Applicants Using Downloadable Forms Packages
The Olympics of research into scientific publishing is happening now. Follow along here.
Active Social Engineering Defense (ASED) Department of Defense DARPA - Information Innovation Office
Career Enhancement Minority Fellowship Program
Deadline Approaching to Comment on IES Research Goals
Trans-NIH Strategic Plan for Research on Women's Health
How to Predict a Hostile Alien Invasion, Scientific American

Expectations for Institutions Addressing Responsible Conduct of Research by NSF/OIG

By Mike Cronan, co-publisher

(Back to Page 1)

The 20 June 2017 report, *Office of Inspector General (OIG) Review of Institutions' Implementation of NSF's Responsible Conduct of Research Requirements* (URL here), was presented to the National Science Board at its August 15, 2017 meeting. The report **identifies areas of significant concern** related to NSF's implementation of provisions addressing the responsible conduct of research (**RCR**). These provisions are specified in America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (America COMPETES Act). The long-term impact of this critical report on university research offices could be considerable as it will prompt a mandatory rethinking by NSF on its requirements for RCR training for universities, faculty, and students.

The bottom line from this OIG report is that NSF's current RCR requirements are ambiguous, lacking in appropriate scope and scale, and poorly administered for compliance, both by the agency itself and by many universities. Moreover, given that the report is critical of NSF's RCR policies, and will prompt significant changes, it is a must read for university research offices at any institution seeking even one NSF grant for research or education. The report is meant to initiate an NSF review of its administration of RCR requirements for universities as well as the process by which it recommends changes to current RCR policies. That NSF review will soon impact university research offices in several ways, particularly including the goals, objectives, scope, scale, and desired outcomes of campus RCR training for any faculty, staff, or student who is touched in any way by an NSF award. This will impact indirectly how proposal narratives and supplemental documents in NSF proposals address RCR training pre-award.

As background, NSF implemented its RCR requirement in 2010. As noted in the OIG report above (boldface/italic added to NSF quotes throughout) , "NSF's RCR requirement grew out of a provision in the America COMPETES Act of 2007, which directed NSF to ***require that each institution that applied for financial assistance for science and engineering research or education describe in its grant proposal a plan*** to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers (postdocs) participating in the proposed research project." (See *Responsible Conduct of Research (RCR)*, January 4, 2010; *Fostering Integrity in Research* ; *U.S. report calls for research integrity board;* and *America COMPETES at 5 years: An Analysis of Research-Intensive Universities' RCR Training Plans*.)

In 2013, three years after NSF's implementation of the Act, the "OIG contacted 53 institutions to learn how they had implemented their own RCR training in response to NSF's requirement." The OIG report noted: "When enacted in 2010, the policy ***established the following requirements for institutions seeking NSF research funding***: (1) The **institutions must have a plan** in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdocs who will be supported by NSF to conduct research. Institutional certification of compliance with this

responsibility is required for each proposal submitted to NSF. While institutions are not required to include training plans in their proposals, those plans are subject to review upon request; (2) The institutions must **designate one or more persons to oversee compliance** with the RCR training requirement; and (3) The institutions are responsible for **verifying** that the students and researchers supported by NSF to conduct research have received training in the responsible and ethical conduct of research."

However, last month (August 15) the OIG report update to the National Science Board noted, "**To date, NSF has not provided written guidelines or templates for universities to follow, as requested in 2007 by the America COMPETES Act report language**." The report notes: "We found that almost **one quarter of the institutions in our sample were not in compliance** with NSF's RCR requirements at the time they received our engagement letter. Specifically, 23 percent (11 out of 48) of institutions did not initially have an RCR plan, or, by default, a designated person to oversee the plan or verifying and tracking that the required participants took the training. While 8 out of the 11 such institutions developed a plan after being contacted by our office, the ***level of noncompliance raises a question as to whether institutions are uniformly and successfully implementing NSF's RCR policy***. Our specific findings for each requirement are set forth below.

About 30 percent (16 out of 53) of the institutions in our sample did not have an RCR plan when we first contacted them... Some of the institutions said they did not have a plan because they only received education funding from NSF. We found that, although the America COMPETES Act training requirement applies to institutions that apply for funding for science and engineering research and for education, ***NSF's RCR policy applies only to institutions that receive research funding***… **The fact that there were so many noncompliant institutions in the group we examined indicates that NSF may have an implementation problem with this requirement**."

The report continues: "The lack of guidance from NSF as to what constitutes 'appropriate training' means that ***NSF cannot guarantee that the instruction provided in response to the RCR training requirement meets a minimum level of quality***. The core of the NSF policy is that institutions should provide 'appropriate training' in the responsible conduct of research to undergraduate students, graduate students, and postdocs who are directly supported by an NSF award for research. ***Because NSF has not defined what constitutes appropriate training, that determination is left up to each individual institution***. As a result, when we examined the training provided by the institutions we reviewed, ***we had no basis for concluding that the training provided was insufficient to meet the RCR training requirement***, even though some of the approaches we found did little to ensure that students and postdocs were being adequately educated about the responsible conduct of research."

This report raises a core issue that affects all research offices providing proposal development support to faculty, specifically: "The lack of guidance as to what constitutes appropriate RCR training has implications for NSF and its community that extend beyond the implementation of the COMPETES requirement. ***NSF generally requires subjects of research misconduct investigations to take RCR training with an emphasis in the area in which the misconduct occurred. In the absence of minimum quality standards for RCR training for NSF students and researchers, neither NSF nor the research RCR misconduct subjects know***

whether the training available at the subject's institution is sufficient to satisfy this requirement."

Moreover, the report notes, "Although faculty play a critical role in the research enterprise and constitute a significant percentage of research misconduct subjects, ***only 15 percent of the plans we reviewed require faculty to take RCR training***. We observed that only 15 percent (7 out of 46—we do not have data from one university on this specific point) of the institutions currently require faculty involvement in RCR training, either by requiring all new PIs or those new to NSF funding to take training, or by requiring those with supported participants to take RCR training. NSF does not require any faculty involvement with or participation in RCR training, either as a provider or a recipient. An exception is when a PI is found to have committed research misconduct. In those cases, NSF generally requires the PI to take RCR training, with a focus on the particular category of research misconduct that occurred and in an interactive format (e.g., an instructor-led course).

"We reviewed NSF's findings of research misconduct for plagiarism for the last 5 fiscal years to determine the group from which our subjects were most likely to come — undergraduates, graduate students, and postdocs or faculty members/PIs. **Faculty/PIs were the subjects of 96 percent (67 out of 70) of plagiarism cases in which NSF made a finding of research misconduct from FY2012-2016**. Because subjects are not required to provide a reason for why they plagiarized, not all cases have such information. In many of the faculty/PI investigations, however, the ***subjects argued that the plagiarized material was not actually plagiarism. In fact, several of the faculty/PIs in those cases, with positions ranging from assistant to full professor, claimed a faulty understanding of some aspect of proper attribution, with most of those claiming a faulty understanding also stating they were unaware that using someone else's words verbatim required quotation marks.***

"As our data show, faculty/PIs are overwhelmingly more likely to be subjects of plagiarism cases. Recent research highlighted by the online blog Retraction Watch studied the effectiveness of RCR training. That research showed that training specifically for plagiarism seemed to be more effective than general training on research integrity. This is possibly due to the formulaic application of quotation, citation, and referencing and the ability to use plagiarism software to identify copied text. ***Therefore, NSF should consider encouraging RCR training, or at least plagiarism training, for all new faculty or faculty who have not submitted an NSF proposal***."

The foregoing summary of the report should be sufficient to initiate a full reading of the OIG report by research offices and a discussion of the long-term impacts this report will have on those who assist faculty in the planning, development, and writing of research and education proposals to NSF and other federal agencies. As noted in the companion article in this month's newsletter, "*A Heads Up to New Faculty about Research Misconduct,*" as well as the above OIG recommendation, plagiarism training for new faculty or those faculty unfamiliar with the principles that address what is and what is not plagiarism, is highly recommended. As noted in the companion article, plagiarism is treated harshly at NSF and can, in some cases, be a career-ending offence for new faculty.

A Heads Up to New Faculty about Research Misconduct

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

The recent Semiannual Report to Congress by the NSF Office of Inspector General is a must read for research offices who assist faculty with developing proposals to federal agencies. While specific to NSF, this report can help faculty understand and avoid what falls under the term of research misconduct (plagiarism, data fabrication, and data falsification), ***particularly as it relates to plagiarism in the research narrative and supplemental proposal documents***. Moreover, new faculty submitting proposals and graduate students submitting fellowship applications may be uninformed and unaware of what actually constitutes plagiarism, and thereby susceptible to this potentially disastrous pitfall.

The old legal principle of "*ignorance of law excuses no one*" applies to research misconduct as well, and while a proposal's author(s) may be unaware of the standards related to plagiarism, violating them, even unknowingly, particularly at NSF, can have harsh and at times career-ending consequences. The report lists many possible reasons motivating research misconduct, ranging from premeditated, intentional, and purposeful fraud, falsification, and deception to the inadvertent committing of these acts. The former reasons point to an immutable character flaw, while ***the latter reason is entirely avoidable***. This avoidance can occur with support and information provided to new faculty by research offices explaining what does and what does not constitute plagiarism. This information can be conveyed to faculty in many ways, including, perhaps, as part of a grant- writing workshop for new faculty. But one-on-one consultations with faculty during the development of the research narrative may be one of the best ways to explain this important issue.

When discussing plagiarism, it is helpful to have examples of actual cases that will offer a detailed understanding of what it is and what it isn't. The following verbatim examples (bold/italic added for emphasis) taken from the current report illustrate two cases involving an assistant professor and two involving a graduate student. This is followed by a brief quote from the report on the consequences of research misconduct at NSF.

"Assistant Professor Submits Proposal Containing Plagiarism
An assistant professor submitted a proposal to NSF containing ***copied material in its background and motivation section and its proposed research section***. The assistant professor stated that he was unaware that proposals needed to be held to the same citation standards as publications, and that one of his students had prepared the background section. We referred the investigation to his university.

The university's investigation concluded that the assistant professor committed plagiarism. ***It further found a pattern of plagiarism in other NSF proposals, in a proposal submitted to another Federal agency, and in one conference paper***. It determined that, although the assistant professor asked his student to prepare a literature review, the student did not know the purpose of the review and was not told that the assistant professor would use his text verbatim. The university required the assistant professor to take online RCR training

and, for 4 years, ***submit all proposals to plagiarism detection software and provide evidence of this review to a university official before any proposal submission***.

We reviewed the university's report and determined that we needed to clarify the assessment of intent. Our review of intent concluded that the assistant professor had an awareness or understanding that he was including verbatim material into the proposal, thereby acting with knowing intent. ***We recommended that NSF require the assistant professor to submit certifications and assurances for 2 years***.

"Assistant Professor Informs Us of Additional Plagiarism

An assistant professor submitted an NSF proposal containing ***copied material in its plan of work section describing nonstandard experimental procedures***. During our inquiry, the assistant professor told us he did not know when to properly use quotation marks and acknowledged he failed to reference one of the sources we identified. He also informed us that the proposal contained additional copied text from other sources and that his two other NSF proposals also contained copied text. We referred the investigation to the assistant professor's university.

The university's investigation concluded that the assistant professor intentionally committed plagiarism, which it deemed a significant departure from accepted practices. It further found a pattern of plagiarism in two other proposals submitted to another Federal agency. The university required the assistant professor to complete RCR training, be mentored by a senior faculty member, and have all proposal submissions reviewed for 3 years. It also required all his students to complete RCR training.

Our investigation concluded that the assistant professor committed the plagiarism knowingly. We found that he had an awareness or understanding of his actions but did not act with a motive to achieve a specific illicit purpose through the misconduct. We recommended that NSF require the assistant professor submit certifications and assurances for 1 year.

"Graduate Student Falsifies Data in Conference Poster

A graduate student who was supported by an NSF Graduate Research Fellowship Program award and was also a participant on another NSF award ***falsified data in a poster that she presented at a conference***. The other award's PI, who was the student's mentor, then included the falsified data in the award's Annual Report.

The student admitted to her actions and the university's Inquiry Committee concluded the student's data falsification was intentional. ***The university suspended the student for 1 year and prohibited her from returning to the University for an additional 3 years. The student departed the university***. We concurred with the university's findings and recommended that NSF debar her for 3 years. We further recommended that, for 3 years after the debarment period, NSF require certifications and assurances and submission of a detailed data management plan, and bar her from participating as a peer reviewer, advisor, or consultant for NSF.

"Graduate Student Falsified Data in Papers and Dissertation

A former graduate student falsified data in a research project supported by NSF. A university investigation into these allegations concluded the graduate student intentionally falsified data and, thus, committed research misconduct.

The falsified data was contained in his dissertation as well as in two published research articles. The university notified the articles' co-authors of its finding and requested the journal retract them; it directed the former graduate student's advisor (PI on the NSF grant) to immediately change several laboratory practices to include ensuring original data are retained. ***Based on the recommendation of the investigation committee, the university rescinded the student's Ph.D. degree***.

We concurred with the university and concluded the former graduate student committed research misconduct. We recommended NSF debar him for 1 year. We further recommended that, for 2 years after the debarment period, NSF require him to provide certifications and assurances and bar him from serving as a peer reviewer, advisor, or consultant.

"Actions by NSF Management on Previously Reported Research Misconduct Investigations
NSF has taken administrative action to address our recommendations on eight research misconduct cases reported in previous Semiannual Reports. In each case, NSF made a finding of research misconduct, issued a letter of reprimand, and required RCR training. NSF also took additional significant actions in response to our recommendations:

- In the case of a graduate student who falsified data, NSF found the graduate student committed research misconduct and **debarred her for 5 years**.
- In the case of a university associate professor who falsified data and fabricated results in a published manuscript, **NSF proposed a 5-year debarment followed by 5 years of certifications**, assurances, and the submission of detailed data management plans with annual certifications of adherence. NSF also proposed barring the associate professor from serving as an NSF reviewer, advisor, or consultant for 5 years.
- In the case of a doctoral student who fabricated data in an NSF-funded project that was published in a journal article, NSF **debarred the student for 3 years and required certifications and assurances for 6 years**.
- In the case of an assistant professor who submitted nine proposals containing both plagiarized text and ideas already published by other researchers, **NSF required 4 years of certifications and assurances, and imposed a 2-year ban on service as a reviewer, advisor, or consultant for NSF. NSF also proposed a 2-year debarment**.
- In the case of a graduate student who fabricated data in multiple publications, NSF **imposed a 1-year debarment and directed the student to provide certifications and assurances for 2 years**.
- In the case of a full professor whose awarded proposal was determined to have plagiarized text, **NSF allowed the suspended award to expire without extension**, resulting in more than $80,000 of Federal Government funds put to better use.

This 31-page report is ***replete with detailed examples of cases related to research misconduct and as such can serve as a valuable source of information in a workshop for***

faculty on research misconduct, particularly plagiarism. Additional sources of information for such a workshop, or components of a larger grant-writing workshop, are contained in the companion article in this month's issue of the newsletter "*Expectations for Institutions Addressing Responsible Conduct of Research by NSF/OIG*." This report recommends significant improvements to NSF's administration and monitoring of its responsible conduct of research requirements for proposals submitted to that agency.

What You Need to Know About Research Reproducibility

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

Research misconduct and research reproducibility are not necessarily the same thing, although in some cases they may be. For example, both data fabrication and fraud fall under the umbrella of research misconduct, but so does plagiarism, whereas the lack of research reproducibility, i.e., can research findings be independently verified or replicated, may be the result of data fabrication, or other factors, in some smaller subset of cases. The former is often a pre-award issue and the latter a post-award issue, but regardless, for research offices engaging faculty both pre- and post-award these terms have important meanings.

For instance, data fabrication in a proposal pre-award will compromise research reproducibility post-award, i.e., scientists repeating the experiment using the same data and methods will be unable to produce the same results. Research validation is achieved when the same data and methods succeed in replicating the results. So while these terms differ, they do "rhyme" sufficiently in some cases to make noting them beneficial both in research office grant-writing workshops and consultations, particularly to faculty new to both grant writing and funded research.

Much has been written about research reproducibility by such agencies as NSF (Video: The basics of reproducibility | NSF - National Science Foundation) and the National Academies (Research Reproducibility, Replicability, Reliability; Reproducibility and Replicability in Science). It's important that faculty new to research grant writing should share a definitional understanding of the terms "research reproducibility," "replicability," and "reliability," as well as "research misconduct" as defined by the NSF Office of Inspector General (NSF/OIG),. Research offices in particular are well positioned to address these issues in the extremely important context of writing the research narrative, descriptions of preliminary data and results from prior support, and providing supplemental data in appendices to research proposals. (Research misconduct is addressed in two companion articles in this month's newsletter in the context of NSF/OIG).

This is not to say that research office staff assisting faculty on proposals need to be sufficiently informed on these terms to make the final determinative observations about where they do or don't apply to a particular proposal. But, as in many areas of proposal development, ***research office staff can develop a robust general knowledge*** of the topic to better inform faculty about critical issues that may impact proposal success. In this case, providing faculty new to grant writing with general information and links to more specific information on these issues at NSF, NIH, and the National Academies, should be sufficient to help them navigate these issues in their research narrative.

For example, NIH (Rigor and Reproducibility at NIH) offers applicants a guide (Rigor and Reproducibility in NIH Applications: Resource Chart) for knowing where and how to address reproducibility in the application. Another excellent discussion of these topics can be found in the 29-page NSF report (May, 2015) Social, Behavioral, and Economic Sciences Perspectives on

Robust and Reliable Science, a Report of the Subcommittee on Replicability in Science Advisory Committee to the National Science Foundation Directorate for Social, Behavioral, and Economic Sciences. This report identifies a variety of "**questionable research practices**" that serve to illustrate what not to do, including:

"(a) failing to report analyses of all of the measures collected in a study and describing only those that yield desired findings;
(b) deciding whether to collect more data after determining whether obtained results with a smaller sample document yield desired results;
(c) failing to report analyses of data from all relevant experimental conditions that were executed in the course of data collection because data from those conditions did not yield desired results;
(d) stopping collecting data earlier than initially planned because desired results have already been obtained;
(e) "rounding off" a p value in a way inconsistent with conventional practice (e.g., reporting that a p value of .054 is less than .05) in order to enhance the apparent robustness of a desired finding;
(f) reporting only studies that produce desired findings and discarding studies that did not produce desired findings;
(g) deciding to exclude data points only after determining that doing so will enhance the degree to which a study seems to produce desired findings;
(h) keeping in data points because without them the desired findings will no longer be found;
(i) reporting an unexpected finding as if it had been predicted a priori and thereby increasing its apparent plausibility;
(j) claiming that analytic results are unaltered by controlling for other variables when this has not been fully checked empirically."

Illustrative examples such as those above are helpful when presenting workshops on grant writing to faculty that include drawing attention to research misconduct, ***which in some cases may slip below the radar of faculty drafting the research narrative***. Moreover, these issues are particularly important to faculty participating in team proposals, large or small, ***to ensure that every team member has an understanding of what constitutes research misconduct, including plagiarism***.

Moreover, plagiarism belongs in the wheel house of everyone in a research office assisting faculty with writing and editing the research narrative. The good news here is that plagiarism seems more amenable to training designed to avoid it than other forms of research misconduct, as the below quote from Retraction Watch (April 12, 2016) illustrates (bold/italic added for emphasis).

"RW: The one reasonably bright spot appeared to be with plagiarism, where interventions had some effect. Can you talk more about what appeared to work?
EW and AM: ***Yes, training on plagiarism did seem to be more effective than general training on research integrity although not all the studies showed positive effects****. We found several studies that used text-matching software (such as Turnitin) on students' work, or included practical exercises in paraphrasing text, and some of these showed effects both in students' understanding of plagiarism and in reducing plagiarism in coursework. We can think of a couple*

of reasons why plagiarism might respond better to training than other types of misconduct. ***The first is that definitions of plagiarism are quite technical, so students and researchers may be unaware of them.*** *(In our training, we often come across students who don't realize that citing a reference doesn't mean you can copy large chunks from it,* ***so this clearly isn't instinctive and needs to be learned****.) The other reason may be that text-matching tools make plagiarism easy to quantify, so it's much easier to measure a small change in such behavior than, say, a change in attitude towards guest authorship, which is more nebulous."*

The take away here is that research offices need to be sufficiently aware of what constitutes research misconduct, including issues related to reproducibility, replicability, and reliability, to give faculty they assist some general guidance and point them to more detailed sources of information as noted by several hotlinks above, and including the following sites: ASA Advice for Funding Agencies on Reproducible Research; A Simple Explanation for the Replication Crisis in Science; A manifesto for reproducible science : Nature Human Behaviour; What does "reproducibility" mean? New paper seeks to standardize the lexicon. As the old English proverb notes, "***forewarned is forearmed***." This is important to faculty because the repercussions from research misconduct, even inadvertent, are severe and can be career threatening.

Is Anyone in Charge of this Orphan Proposal?

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

Unfortunately, some proposals, particularly large institutional efforts, remain orphans during their development and consequently suffer from a lack of direct commitment and oversight. Often begun as "top-down" efforts initiated at the system or university level and motivated primarily by a desire for institutional prestige and big dollars, these proposal can depend entirely on a conscripted team of reluctant faculty "volunteers" to plan, develop and write a proposal only tenuously relevant to their own research and who are largely unfamiliar with the research of each other.

These "top-down" proposals face very long odds for success, but are not nearly as rare as they should be, especially if the proposers were to consider how poorly these efforts typically fare in the review process. In the end, there is no substitute for a committed, passionate, and engaged PI leading a team of researchers who are excited about the benefits that will accrue to their research from the proposed project, particularly the intersection of their research with that of others in novel ways. When that is absent, so is the prospect of funding success.

For those "drafted" into participating in a "top down" project, it is often as unnerving an experience as the iconic 1985 thriller "Runaway Train" where a driverless, out-of-control train careens towards a chemical plant manufacturing explosives. While it is the case that two actors portraying characters trapped on this train, John Voight and Eric Roberts, were both nominated for academy awards, team members on a "runaway proposal" will most likely not find an award nomination in their future.

Of course every proposal is a gamble against difficult odds, but, in many cases, the "top-down" proposal is initiated with little attention paid to ensuring that the right configuration of conditions exist to enable a competitive effort worthy of a commitment of resources. This configuration must include an experienced PI willing to take on the task, a capable proposal manager to assist the PI in organizing the effort, research team members that benefit from the effort, a team consensus to submit or not submit based on a SWOT (strengths, weaknesses, opportunities, threats) analysis of the proposed project rather than on wishful thinking, and experienced and available proposal development support services from various research offices.

Most importantly, there has to be enthusiasm among the partnered researchers for the project and not the passivity that comes from being conscripted into an effort with few, if any, obvious rewards. This is bound to result in a proposal development process that seems leaderless and adrift without a clearly defined vision, goals, and research objectives. The successful PI and research team originate and generate their own ideas and are driven to see them funded. To achieve success, ideas must originate with the PI and research team and not be thrust upon them.

In the "top down" proposal, no great idea inspires faculty participation, but only a focus on award dollars and hopes that during the proposal development process some idea worthy of funding might reveal itself. However, in the end, faculty do not need ideas handed down to

them to compete for large proposals. They need research office support and assistance managing the day-to-day operational, organizational, and communications details of producing a large proposal.

Moreover, an enormous hidden tax burdens such efforts in the form of squandered resources and time lost, both faculty time and proposal support staff time. Being involved in such efforts is somewhat akin to being asked to join the crew of the Titanic knowing full well what is to come. However, the real issue is that major efforts with little or no likelihood of success consume proposal support resources and services that would be better committed elsewhere. Over time, proposal development resources need to be committed to projects with a competitive chance at success where those resources can make an important contribution at the margin of success and failure.

Wisely allocated proposal support services would not attempt to transition a "D grade" proposal draft to a "C grade" proposal, since neither is fundable; rather, proposal development resources are best allocated to proposals that can be made competitive on the funding boundaries, e.g., transitioning a "B grade" proposal draft to a "B+ grade" or "A- grade" proposal that puts it within striking distance of funding, depending on payline or ratio of "excellent" and "very good" reviews.

Some proposals can be significantly improved, e.g., transitioned from a "C grade" draft to an "A grade" submittal in those cases where the research ideas are sound but obstructed by structural flaws in the narrative, e.g., in organization, writing, specifics, details and the like. But in the case of the "top down" proposal, the flaws are not only structural but also conceptual, the latter being almost impossible to overcome because the project was not motivated by compelling research ideas but by visions of a big dollar payout untethered to any initial SWOT analysis of competitiveness.

Regardless, it sometimes falls to research offices to assist in the process of trying to save a runaway proposal in hopes of preventing it from running off the tracks. One common failing of "top down" proposals is their lack of leadership, organization, management, and engaged participation by the team members. In short, they are diffuse efforts lacking a coherent research focus and any team member's willingness to take a clear leadership role. Moreover, participants on such projects are often implicitly highly skeptical of success and tend to make sure they are only marginally, at most, associated with the project, thereby casting the proposal adrift.

Of course, research offices can point out conceptual flaws in a proposal, most often related to a lack of clarity and detail in vision, goals, objectives, significance, rationale, etc., but they cannot generate the novel research ideas that make the effort competitive for funding. That must come from the committed and fully engaged PI and research team members, which are most often lacking in the "top down" proposal. In these cases, the best research offices can do is provide proposal management support services to the PI and co-PIs in the form of a detailed milestone chart for proposal production, organizing and tracking tasks and narrative contributions, reviewing and editing narrative text and supplemental documents, and generally supporting the leader's efforts to give the proposal a fighting chance to earn favorable reviews.

HBCUs and MIs: DoD Wants You to Apply For Funding

By Lucy Deckard, co-publisher
(Back to Page 1)

If you heard that there was a funder who was looking for proposals from institutions like yours and was complaining that they weren't getting enough proposals, what would you do? Well, that's the case for Department of Defense (DoD) HBCU/MI programs. If your institution is a Historically Black College or University (HBCU) or a Minority Institution (MI), and you don't already have multiple DoD grants, this may be a ripe opportunity to bring in research funding, build your institution's research capacity, and provide internship opportunities and scholarships for your students.

Is My Institution Eligible?

The various HBCU/MI programs are open to faculty and students at HBCUs and MIs. If your institution is an HBCU, you probably know it, but if you're not sure you can find a list of HBCUs compiled by the Department of Education here. The definition of MIs is a bit trickier. With the changing demographics in the US, many institutions have recently been designated Hispanic Serving Institutions (HSIs), which requires that at least 25% of enrolled undergraduates are Hispanic. However, your institution may be an HSI without reaching the bar to be declared an MI. In order to be an MI, the ***combination of all minority students must add up to over 50%*** of the total enrollment. You can find the full definition here. In addition, some DoD HBCU/MI programs (particularly those that involve faculty conducting research at a DoD facility) may require US citizenship. However, US citizenship is not required for many of the programs, such as research, that are conducted at the university. Be sure to check eligibility requirements for the specific HBCU/MI program to which you are considering applying.

What Types of Funding Opportunities are Available?

The DoD HBCU/MI program provides grant funding for research and education at HBCUs/MIs with the goal of improving the "capabilities of HBCU/MIs to conduct research and educate scientists and engineers in areas important to national defense." Each branch of the DoD administers its own HBCU/MI programs. You can find information on these programs at the links below:

- **Basic Research** - The Broad Agency Announcement (BAA) for the HBCU/MI Research and Education Program is posted here. While this BAA expired in August, a new one is posted annually on Grants.gov as well as on the ARL BAA website. The BAA was issued by the Army, but it also covers programs administered by the Office of Naval Research and the Air Force Office of Scientific Research. There is a limit of no more than 3 applications per institution per year. (There is no US citizenship requirement.)
- **Equipment/Instrumentation** – The Research and Education Program for HBCU/MI Equipment/Instrumentation Program BAA has expired, but keep an eye out for a new one. (There is no US citizenship requirement.) This is part of the DoD HBCU/MI Infrastructure Program.

Department of Navy

- Naval Opportunity Awareness Workshop - designed to allow program officers and program managers across DoD agencies to **interact directly with presidents, vice presidents, provosts, and faculty at HBCUs and MIs**.
- Navy HBCU/MI Faculty Start-up Program In Materials – provides start-up funding for new, untenured faculty members whose teaching and research impact DoD needs in materials science/engineering.
- Naval Research Laboratory HBCU/MI Internship Program provide opportunities for undergraduate students at HBCU/MIs to participate in research, under the guidance of an appropriate research mentor, at NRL. (Students must be US citizens.)

The following Navy programs are not limited to HBCU/MIs, but faculty/students from HBCU/MIs are strongly encouraged to apply:

- Summer Faculty Research Program (SFRP) – provides faculty with the opportunity to participate in research at a Navy laboratory or warfare center in the summer. This is a great way for researchers to develop collaborations with DoD intramural researchers and learn more about their priorities, challenges and interests. The summer faculty experiences help faculty submit more competitive proposals and often lead to on-going research funding for the faculty and their students. (Faculty must be a US citizen.)
- Sabbatical Leave Program (SLP) – similar to the SFRP but for the academic year while the faculty member is on sabbatical. (Faculty must be a US citizen.)
- Naval Air Systems Command (NAVAIR) Internship Program – provides a 6- to 8-week research experience during which students work side-by-side with assigned mentors to explore topics related to naval aviation.

Air Force HBCU/MI Program page

- Summer Faculty Fellowship Program - offers hands-on exposure to Air Force research challenges through 8- to 12-week research residencies at participating Air Force research facilities for full-time science, mathematics, and engineering faculty at U.S. colleges and universities. (Not limited to HBCU/MIs, but faculty/students from HBCU/MIs are strongly encouraged to apply; must be a US citizen.)

Army Research Laboratory HBCU/MI page

- HBCU/MI Seminar Series - Senior administrators, deans, and department heads from HBCU/MI tour ARL facilities and conduct seminars describing the technical capabilities of their university.
- HBCU/MI Internship Program - Students from HBCU/MI are provided research opportunities within ARL through a 10-week internship.
- ARL-ARO Faculty Fellowship Program (in collaboration with the Thurgood Marshall College Fund) – Funds STEM faculty to participate in a 10-week summer research fellowship. The research "campaigns" at the ARL are focused on the following topics: Computational Sciences, Materials Research, Sciences for Maneuver, Information

Sciences, Sciences-for-Lethality and Protection, Human Sciences, and Assessment and Analysis.

There are also a number of other opportunities that come and go, such as the HBCU/MI Center of Excellence for STEM, which was due last May. As we have said many times about DoD, it's important to anticipate funding opportunities before they come out, and the best way to do that is to get to your Program Officer or contact. In this case, you'll want to get to know the HBCU/MI Program contacts at each branch:

- Office of Naval Research Education Program Director: Anthony C. Smith, Sr.
- Air Force HBCU/MI Program contact: Mr. Edward Lee
- ARL Outreach Program Manager Vallen L. Emery, PhD or ARL_Outreach@arl.army.mil

The Strategic Role of the Funding Solicitation

Reprinted from September 15, 2010 Issue
By Mike Cronan, co-publisher
(Back to Page 1)

A flawed understanding of the requirements of the RFP and the role they play in structuring a competitive research narrative is one of the common reasons proposals are poorly reviewed and declined by funding agencies--

The RFP (aka FO, FOA, BAA, etc.) is an invitation by a funding agency to submit proposals on **research topics of interest to the agency**. It contains the key information you will need to develop and write a competitive proposal. To be competitive, your proposal must be **fully responsive** to an agency's submission process, program objectives, review criteria, budget guidelines, and other requirements specific to the program. It is important to read the RFP carefully and in its entirety, ***including review criteria and all referenced documents***.

Writing a competitive proposal requires that you understand the RFP for what it is--*an expression of agency interest in a specific research domain that advances the mission priorities of the agency*--and ***not what you might wish it to be***. It is almost never a perfect mirror of your desires. From the funding agency's perspective, the RFP is a **non-negotiable listing of performance expectations** reflecting the agency's goals, objectives, and investment priorities that **you must meet** to be funded. The RFP is ***not meant as a menu or smorgasbord offering you a choice*** of addressing some topics and review criteria but not others.

The competitiveness of your proposal will depend on how well you understand the RFP as an expression of an agency's interest in a topic. Once you clearly understand the agency's objectives, map your expertise to the RFP. If your interests and expertise do not map tightly to an RFP, it is wise not to submit and wait for a more appropriate solicitation. Invest your time, resources, and energy wisely—they are your most valuable assets and they must not be squandered. Having a good idea is a necessary **but not a sufficient condition** for successful funding. Funding agencies are seeking exciting ideas clearly stated that ***make a compelling case that your expertise will advance the mission priorities of the sponsor***.

The RFP needs to be closely analyzed and understood as an integrated whole. This includes understanding the agency's research objectives, desired outcomes or deliverables, the way in which those research objectives will be reviewed, and any referenced strategic plans or research roadmaps that define the research context in more detail. RFPs are written documents and, like all written documents, they are not always perfectly clear. Any uncertainties you have regarding the meaning or intent of any portion of the RFP need to be resolved early in the proposal process to ensure your proposal research narrative fully responds to the guidelines. You can often resolve uncertainties through repeated, closer readings of the RFP, discussions with colleagues who have been funded by the agency in similar research areas, or by ***contacting the program officer directly***. The latter is often the best option.

Never hesitant to contact a program officer—**timidity is never rewarded in the competitive proposal process*, and ambiguities in the research narrative are always punished.*** You cannot write a competitive proposal narrative based on an ambiguous understanding of any portion of

the RFP. If you don't clarify ambiguities in the RFP, they will metastasize to the research narrative and almost certainly result in a declined proposal. Program officers usually are happy to respond to queries by potential applicants, especially questions that are thoughtful, clearly stated, and focused on the research topic. Do not ask the program officer to make speculative comments on your likelihood of being funded, or to engage in similarly inappropriate discussions. But **do call them to resolve any ambiguities you feel exist in the RFP**, or to develop a more nuanced understanding of the agency's intent.

Many larger proposals are collaborative research efforts involving one or more disciplines and multiple PIs. It is important that **all potential team members** understand the RFP. To be successful, these proposals have to be an integrated effort representing a research team and not a vehicle to advance individual research interests **that do not add value to the effort**, or do not map to the research objectives of the agency. For this to happen, all participants must take the time to read and understand the RFP in detail to keep the research development discussions focused on the agency's interests as defined in the RFP. ***There is usually enough disorder in the initial research development discussions without amplifying it with opinions uninformed by the research objectives of the sponsor as detailed in the RFP.***

Role of the RFP in Proposal Organization

The RFP plays a key role in proposal organization by establishing the order, required level of detail, and focus of the research narrative. It is a good idea to simply copy and paste the RFP's key sections, research objectives, and review criteria into a beginning draft narrative. This allows the RFP to serve as an **organizational template** for the full proposal and a reference point to ensure that subsequent draft iterations of the narrative are **continuously calibrated to the guidelines**. For example, an RFP will often contain a detailed description defining the agency's objectives for the program (e.g., goals, objectives, rationale, performance timeline, outcomes, research management, evaluation, etc.) that must be addressed in the proposal narrative. This detail, including review criteria, can be selectively copied and pasted into the first draft of the proposal itself. This statement can provide initial section and subsection headings under which the applicant can draft out preliminary written responses to every requested item in the guidelines, thereby ensuring that the first draft of the proposal fully mirrors the program solicitation requirements in every way.

This copy and paste process of transforming the RFP into a narrative template helps ensure that several elements key to a successful proposal are addressed at the beginning, and adhered to throughout the writing process, even though ideas and approaches may change as they mature during the proposal development process. Using this approach, you will ensure that the proposal narrative:

- fully responds to all requested information,
- offers information in the order requested,
- provides the required detail,
- integrates review criteria into the narrative, and
- remains on track and in sequence.

If the RFP refers to any publications, reports, or workshops, it is important to read those materials, analyze how that work has influenced the agency's vision of the program, and cite

those publications in the proposal in a way that illustrates that you have read and absorbed the ideas behind those publications.

Bottom line: consider the agency solicitation to be analogous to a treasure map—a very detailed and precise set of instructions that must be followed "to the letter" if you hope to unearth the chest of gold coins in the form of an award from the agency.

Research Grant Writing Web Resources

(Back to Page 1)

IES Announces Additional Research Funding Webinars

The Institute of Education Sciences (IES) announces additional on-demand webinars for those who are interested in Fiscal Year 2018 funding opportunities and learning more about IES. These pre-recorded webinars are hosted by staff from the National Center for Special Education Research (NCSER) and the National Center for Education Research (NCER) and can be accessed on the IES Webinar Series website. The first found of on-demand webinars were posted in mid-July and a second round was posted this month. **The following pre-recorded webinars are now available:**

- Public Access and Data Sharing
- Funding Opportunities for Minority Serving Institutions
- Research Networks Focused on Critical Problems of Policy and Practice in Special Education: Multi-Tiered Systems of Support
- National Research and Development Centers: Improving Rural Education
- National Research and Development Centers: Improving Education Outcomes for Disadvantaged Students in Choice Schools
- National Research and Development Centers: Writing in Secondary Schools
- National Research and Development Centers: Exploring Science Teaching in Elementary School Classrooms

Previously posted webinars include:

- IES Basic Overview of Research Grants
- IES Application Process
- IES Grant Writing Workshop
- New Applicants to IES
- NCSER Research Training Programs in Special Education: Early Career Development and Mentoring
- NCSER Research Training Programs in Special Education: Postdoctoral Research Training in Special Education and Early Intervention
- Researcher-Practitioner Partnerships in Education Research Topic – Partnerships and Collaborations Focused on Problems of Practice or Policy Grant Program
- Evaluation of State and Local Education Programs and Policies Topic – Partnerships and Collaborations Focused on Problems of Practice or Policy Grant Program
- Low-Cost, Short-Duration Evaluation of Education and Special Education

For more information on the funding opportunities, visit the IES website.

Educational Grant Writing Web Resources

(Back to Page 1)

REL Webinar: Using Questioning Strategies to Support Struggling Math Students

Regional Educational Laboratory (REL) Central will host a free webinar on September 20 designed to help educators improve mathematics outcomes in the middle grades. The webinar will introduce the What Works Clearinghouse practice guide *Assisting Students Struggling with Mathematics: Response to Intervention for Elementary and Middle Schools* and will aim to increase educators' understanding of research-based questioning strategies in order to increase student readiness for Algebra I. REL Central researcher David Yanoski will facilitate the webinar and Barb Dougherty, from the University of Hawaii, will lead participants through the guide and related activities. The event will include:

- An introduction to the practice guide;
- An overview of the practice guide's eight recommendations;
- A close review of the Explicit and Systematic Instruction recommendation and discussion of how to implement it; and
- A guided explanation of questioning strategies and discussion of how to implement that framework into instruction.

This webinar is intended for teachers, personnel, coaches, and administrators at the upper elementary and middle school levels who want to improve math instruction for struggling students. State education agency officials are also welcome to attend.

An Exploration of Instructional Practices that Foster Language Development and Comprehension: Evidence from Prekindergarten through Grade 3 in Title I Schools

To date, efforts to include evidence-based instruction in large-scale reading programs have not generated meaningful improvements in student outcomes. To identify additional instructional practices that merit further evaluation, this evaluation brief provides an exploratory analysis of practices that are related to young students' growth in language skills and comprehension in listening and reading. The analysis is based on student test scores and observations of instructional practices in 1,035 classrooms in prekindergarten through grade 3 within 83 Title I schools during the 2011–2012 school year. Among the practices measured, those that were most consistently related to student growth include engaging students in defining new words, making connections between students' prior knowledge and the texts they read, promoting higher-order thinking, and focusing instruction on the meaning of texts

CADRE Early Career Guide: Tips for Early Career STEM Education Researchers

The CADRE Early Career Guide offers advice on becoming a successful researcher in the field of STEM education and a portrait of an early career researcher support program. The advice offered throughout the guide comes from experienced researchers who are part of the National Science Foundation's Discovery Research PreK-12 (NSF DRK-12) community. Over the past eight years, they have graciously shared their experiences with small groups of doctoral students and other early career researchers through the CADRE Fellows program. Those experiences and insights have been compiled to provide guidance on navigating the STEM education field as an

early career professional.

The guide is divided into three parts. Parts I and II offer tips and resources to address the needs of STEM education researchers who are early in their careers, primarily doctoral students and research associates. These materials are organized around four focal themes: (1) pursuing academic and non-academic career pathways, (2) writing for publication, (3) building professional networks, and (4) developing NSF proposals. Early career researchers may choose to independently access the resources in Parts I and II on an as-needed basis or pick from the resources and other elements of the Fellows program (described in Part III) to share with, for example, a study group with other graduate students and professional peers.

Building on Parts I and II, Part III describes a model for supporting early career STEM education researchers based on the CADRE Fellows program, and provides strategies and resources to guide those who supervise, advise, or mentor groups of early career STEM education professionals. Part III offers a detailed description of the structure and objectives of the CADRE Fellows program and the design of the activities within the focal themes. It also provides insights into the impact of the program. The guide is organized in such a way that advisors, supervisors, mentors, and program leads who work with early career researchers can choose those elements from Parts I, II, and III that are most appropriate and use them to develop customized supports to use on an ad-hoc basis or in the formation of a more formal early career researcher program. Early career researchers might also choose to use several of the guiding questions associated with each strand in Part III when talking with more-experienced researchers, or work on one of the assignments independently or with another colleague.

Agency Research News

(Back to Page 1)

Foundation for Food and Agriculture Research Webinar

On August 24, the Foundation for Food and Agriculture Research (FFAR) held a webinar introducing its mission and staff, outlining some of its funding history, and presenting future funding opportunities. The webinar's recording, slides, and a transcript of the post-presentation Q&A are available online.

Dear Colleague Letter: NSF Accepting Proposals Related to Hurricane Harvey

The National Science Foundation (NSF) and its staff are deeply concerned for the people and institutions affected by Hurricane Harvey and its aftermath. Now that the consequences of Hurricane Harvey are upon us, new science and engineering questions are being raised. Through this Dear Colleague Letter (DCL), NSF encourages the submission of proposals that seek to address the challenges related to this storm. NSF also will support fundamental science and engineering research projects whose results may enable our country to better prepare for, respond to, recover from, or mitigate future catastrophic events. Research proposals relating to a better fundamental understanding of the impacts of the storm (physical, biological and societal), human aspects of natural disasters (including first responders and the general public), emergency response methods, and approaches that promise to reduce future damage also are welcome.

Message to NIH grant applicants/awardees, contractors, researchers and research administrators

We have developed a new Clinical Trial Requirements for NIH Grantees and Contractors web page to bring together all the information you need to know. Please review this information carefully. Your attention to detail will be critical to ensuring successful funding of your clinical trial awards. We will be putting out a series of reminder policy notices, training opportunities, and other resources in the NIH Guide to Grants and Contracts, in the NIH Extramural Nexus, and on my blog. The success of clinical trials relies on the public trust in scientific rigor and ethical oversight. We all play a critical role in this process. We are most grateful to you for your help and support.

If you are conducting NIH-funded research that involves human subjects, or are considering applying to NIH for support of such research, we want to call your attention to important changes that may affect how you:

- select the right NIH funding opportunity announcement
- write the research strategy and human subjects sections of your application
- comply with appropriate policies and regulations

First, familiarize yourself with the new PHS Human Subject and Clinical Trial Information form. For application due dates of January 25, 2018, and beyond, you will be required to use an updated application forms package (FORMS-E), which includes the new human subject and clinical trial form. This form requests human subject and clinical trials information at the study

level using discrete form fields, which is a change from current practice. Contract proposals will also require this information. Learn about the new form here.

Second, take a moment to answer these four questions about your current or proposed research:

1) Does the study involve human participants?
2) Are the participants prospectively assigned to an intervention?
3) Is the study designed to evaluate the effect of the intervention on the participants?
4) Is the effect that will be evaluated a health-related biomedical or behavioral outcome?

If the answer to all four questions is yes, then your proposed research meets the NIH definition of a clinical trial. Clarified and broadened in 2014, the definition encompasses a wide range of trial types: mechanistic, exploratory/developmental, pilot/feasibility, behavioral, and more. NIH expanded the clinical trial definition in response to widespread calls from diverse stakeholders for improved reporting of research milestones and outcomes, and for assuring maximal transparency.

Need help determining whether your study would be considered by NIH to be a clinical trial? See our webpage on the definition that includes case studies, FAQs and other resources that can help. Still unsure? Contact your NIH program official or the scientific point of contact listed on the funding opportunity announcement to which you are applying. Third, familiarize yourself with NIH policy changes related to enhancing stewardship of clinical trials.

NIH made a number of policy changes to improve the stewardship of clinical trials across the life cycle of the trial. We encourage you to familiarize yourself with all that is changing, including:

· the requirement to apply to an FOA that specifically allows for the submission of clinical trial applications for due dates beginning January 25, 2018.
· Good Clinical Practice training expectations for NIH staff, grantees, and contractors that went into effect January 2017.
· updated peer review criteria that will be included in FOAs for clinical trial applications and solicitations for due dates on/after January 25, 2018.
· new Human Subject Information form requirements for clinical trials that will be included in updated application forms (FORMS-E) for due dates on/after January 25, 2018, and contract solicitations published as of January 25, 2018.
· use of a single IRB for non-exempt, multi-site clinical trials for application due dates on/after January 25, 2018.
· expanded ClinicalTrials.gov registration and reporting to include all NIH supported clinical trials.

Dear Colleague Letter: Life STEM

Through this DCL, NSF invites eligible organizations to submit research proposals that inform, create, implement, and evaluate models of intervention that will advance the knowledge base for establishing and retaining underrepresented minorities in STEM fields with particular attention to life science and the biosciences. Researchers from minority-serving institutions, including Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges and Universities, are particularly encouraged to apply. Proposals should partner eligible organizations with local elementary, middle or high schools to foster collaborative

relationships between K-12 science educators and the research community. The activities may occur in formal and/or informal settings. Proposals may address science topics and activities related to curriculum development, teacher support, and student engagement. Proposals should describe effective methods to disseminate findings broadly to the K-16 science education community.

Agency Reports, Workshops & Research Roadmaps

(Back to Page 1)

Microbiomes of the Built Environment: A Research Agenda for Indoor Microbiology, Human Health, and Buildings

People's desire to understand the environments in which they live is a natural one. People spend most of their time in spaces and structures designed, built, and managed by humans, and it is estimated that people in developed countries now spend 90 percent of their lives indoors. As people move from homes to workplaces, traveling in cars and on transit systems, microorganisms are continually with and around them. The human-associated microbes that are shed, along with the human behaviors that affect their transport and removal, make significant contributions to the diversity of the indoor microbiome.

The characteristics of "healthy" indoor environments cannot yet be defined, nor do microbial, clinical, and building researchers yet understand how to modify features of indoor environments—such as building ventilation systems and the chemistry of building materials—in ways that would have predictable impacts on microbial communities to promote health and prevent disease. The factors that affect the environments within buildings, the ways in which building characteristics influence the composition and function of indoor microbial communities, and the ways in which these microbial communities relate to human health and well-being are extraordinarily complex and can be explored only as a dynamic, interconnected ecosystem by engaging the fields of microbial biology and ecology, chemistry, building science, and human physiology.

This report reviews what is known about the intersection of these disciplines, and how new tools may facilitate advances in understanding the ecosystem of built environments, indoor microbiomes, and effects on human health and well-being. It offers a research agenda to generate the information needed so that stakeholders with an interest in understanding the impacts of built environments will be able to make more informed decisions.

New Funding Opportunities

(Back to Page 1)

Content Order

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

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

New Funding Solicitations Posted Since August 15 Newsletter

Energy, Power, Control, and Networks (EPCN)

Recent advances in communications, computation, and sensing technologies offer unprecedented opportunities for the design of cyber-physical systems with increased responsiveness, interconnectivity and automation. To meet new challenges and societal needs, the Energy, Power, Control and Networks (EPCN) Program invests in systems and control methods for analysis and design of cyber-physical systems to ensure stability, performance, robustness, and security. Topics of interest include modeling, optimization, learning, and control of networked multi-agent systems, higher-level decision making, and dynamic resource allocation as well as risk management in the presence of uncertainty, sub-system failures and stochastic disturbances. EPCN also invests in adaptive dynamic programing, brain-like networked architectures performing real-time learning, and neuromorphic engineering. EPCN supports innovative proposals dealing with systems research in such areas as energy, transportation, and nanotechnology. EPCN places emphasis on electric power systems, including generation, transmission, storage, and integration of renewables; power electronics and drives; battery management systems; hybrid and electric vehicles; and understanding of the interplay of power systems with associated regulatory and economic structures and with consumer behavior. Also of interest are interdependencies of power and energy systems with other critical infrastructures. Topics of interest also include systems analysis and design for energy scavenging and alternate energy technologies such as solar, wind, and hydrokinetic. The program also supports innovative tools and test beds, as well as curriculum development integrating research and education. In addition to single investigator projects, EPCN encourages cross-disciplinary proposals that benefit from active collaboration of researchers with complementary skills.

Proposals for the EPCN program may involve collaborative research to capture the breadth of expertise needed for such multidisciplinary integrative activities. ECCS will consider supporting a limited number of small team proposals of three or more Investigators from different disciplines and/or universities.

Areas covered by the EPCN Group (Abed, Baheti and Khaligh):
•Control Theory and Hybrid Dynamical Systems
•Networked Multi-agent Systems
•Cyber Physical Systems Modeling and Control
•System Theory for Biology and Medicine; Modeling of the Brain
•Control and Optimization in Buildings, Transportation, and Robotics
•Adaptive and Intelligent Systems; Neural Networks
•Energy Harvesting, Storage Devices and Systems
•Solar and Wind Energy and Integration of Renewables with Grid
•Monitoring, Protection and Cyber Security of Power Grid
•Advanced Power Electronics and Electric Machines
•Electric and Hybrid Electric Vehicles
•Innovative Grid-tied Power Electronic Converters
•Policy, Economics, Consumer Behavior and the Power Grid
Proposal Window: October 1, 2017 - November 1, 2017

DE-FOA-0001788 Fossil Fuel Large-Scale Pilots
This FOA seeks applications for projects to design, construct, and operate large-scale pilots of transformational coal technologies aimed at enabling step change improvements in coal powered system performance, efficiency, and cost of electricity. The FOA will be carried out in three phases, with a down-select between phases. Phase I, Feasibility, will be aimed at supporting recipients' efforts to secure team commitments, including host sites and recipient cost share for Phase II, update the preliminary cost estimate and schedule for design, construction, and operation, and complete an environmental information volume. Projects selected for Phase II, Design, will complete a Front End Engineering Design study, secure construction-operation cost share funding, and complete the National Environmental Policy Act process. Finally, at least two projects will be selected for Phase III, Construction-Operation, which will support construction and operation of the large-scale pilot facilities. Any recipients proceeding to Phase III will be required to utilize domestic coal and/or domestic coal-derived fuels in the operation period. Applicants to Phase I who plan to primarily use other fuel sources during operations will be judged non-responsive. While only detailed Phase I applications are being solicited at this time, information relating to preliminary plans to carry out Phases II and III will be required to assess the potential viability of the overall project. **Due October 19.**

NRC issued its Funding Opportunity Announcement for FY18
Funding for scholarships, fellowships, faculty development, and trade school and community college grants. The FOA is available at grants.gov and closes on **October 30, 2017**.
On this page:

- Minority Serving Institutions Program

- Nuclear Education Program (Brochure)
  - Scholarship and Fellowship
  - Faculty Development
  - Trade School and Community College Scholarship
- Office of Nuclear Regulatory Research (RES) Financial Assistance Program
- Outreach and Compliance Coordination Program

For more information about Grant Opportunities, review the following information:
Information from NRC Grants Workshop (held on 09/21/10 - 09/22/10)

- Panel Presentation on NRC Grant Programs
- Evaluation Criteria Handout
- Discussion of Common Grant Issues
- NRC Grant "Issues" Handout
- Office of General Counsel Presentation

Grant Awards
Frequently Asked Questions
Federal Financial Report - Standard Form 425 (select Excel version)
Scholarship, Fellowship and Trades Service Agreement (June 2016)
Budget Justification Information
Contact Us About Grant Opportunities

FOA for Research Initiatives at The Naval Postgraduate School Department of Defense

The Naval Postgraduate School (NPS) is interested in receiving proposals for research initiatives that offer potential for advancement and improvement in the NPS core mission of graduate education and research. Readers should note that this is an announcement to declare NPS's solicitation in competitive funding of meritorious research initiatives across a spectrum of science and engineering, business, politics and public/foreign policy, operational and information sciences, and interdisciplinary disciplines that are in-line with the NPS' graduate education and research mission. Prior to preparing proposals, potential Offerors are strongly encouraged to contact an NPS point of contact (POC) whose program and research efforts best match the Offeror's field of interest. The academic and research programs links above can be used to locate an appropriate POC by exploring the information provided about the faculty members in NPS' schools, research institutes, and interdisciplinary centers and research groups. **Due October 31.**

Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science

Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES) is a comprehensive national initiative designed to enhance U.S. leadership in science, technology, engineering and mathematics (STEM) discoveries and innovations focused on NSF's commitment to diversity, inclusion, and broadening participation in these fields. The initiative is developing a National Network composed of NSF INCLUDES Design and Development Launch Pilots, NSF INCLUDES Alliances, NSF-funded broadening participation projects, other relevant NSF-funded projects, scholars engaged in broadening participation research, and other organizations that support the

development of talent from all sectors of society to build the STEM workforce. To facilitate the Network's operation, the program is soliciting proposals for a NSF INCLUDES Coordination Hub that will drive and support the work of the NSF INCLUDES National Network over the lifecycle of the initiative by: (a) promoting the NSF INCLUDES guiding vision and strategy; (b) developing a collaborative infrastructure to support the activities of the various entities partnering in the NSF INCLUDES National Network; (c) fostering progress among Network partners toward shared models, measurement practices, and evaluation criteria; (d) communicating the discoveries of and generating enthusiasm for the NSF INCLUDES National Network; and (e) advancing the expansion and scale of the NSF INCLUDES National Network by connecting expertise from multiple sectors and other private and public funders. **Due November 27**.

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 BAAs
- 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

Fellowships at the National Humanities Center

Portal opens July 10, 2017. Fellowship applicants are asked to complete the online application form and to upload the following documents: 1,000-word project proposal, short bibliography, curriculum vitae, and a one-page tentative outline of the structure of the project (if the project is a book, provide an outline of chapters; otherwise, give an outline of the components of the project and their progress to date). Applicants will also be asked to provide names and contact information for three references. References will receive a prompt inviting them to upload a letter on behalf of the applicant. Applicants are encouraged to contact their references separately to alert them to expect to receive the prompt. Applications and supporting materials, including reference letters, must be submitted by midnight EDT, **October 18, 2017**.

Innovations in Graduate Education (IGE) Program

The Innovations in Graduate Education (IGE) program is designed to encourage the development and implementation of bold, new, and potentially transformative approaches to STEM graduate education training. The program seeks proposals that explore ways for graduate students in research-based masters and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. IGE focuses on projects aimed at piloting, testing, and validating innovative and potentially transformative approaches to graduate education. IGE projects are intended to generate the knowledge required for their customization, implementation, and broader adoption. The program supports testing of novel models or activities with high potential to enrich and extend the knowledge base on effective graduate education approaches. The program addresses both workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged. **Due October 25**.

Getty/ACLS Postdoctoral Fellowships in the History of Art

ACLS invites applications for Getty/ACLS Postdoctoral Fellowships in the History of Art, made possible by the generous support of the Getty Foundation. These fellowships are intended to support an academic year of research and/or writing by early career scholars for a project that will make a substantial and original contribution to the understanding of art and its history. The ultimate goal of the project should be a major piece of scholarly work by the applicant. ACLS does not fund creative work (e.g., novels or films), textbooks, straightforward translation, or pedagogical projects. ACLS will award 10 fellowships, each with a salary-replacement stipend of $60,000, plus $5,000 for research and travel during the award period. The fellowships are portable and are tenable at the fellow's home institution, abroad, or at another appropriate site for the work proposed. Awards also will include a one-week residence at the Getty Research Institute following the fellowship period. **Due October 25**.

Advancing Informal STEM Learning

The Advancing Informal STEM Learning (AISL) program seeks to advance new approaches to and evidence-based understanding of the design and development of STEM learning

opportunities for the public in informal environments; provide multiple pathways for broadening access to and engagement in STEM learning experiences; advance innovative research on and assessment of STEM learning in informal environments; and engage the public of all ages in learning STEM in informal environments. The AISL program supports six types of projects: (1) Pilots and Feasibility Studies, (2) Research in Service to Practice, (3) Innovations in Development, (4) Broad Implementation, (5) Literature Reviews, Syntheses, or Meta-Analyses, and (6) Conferences. **Due November 6**.

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**.

Discovery Research PreK-12

The Discovery Research PreK-12 program (DRK-12) seeks to significantly enhance the learning and teaching of science, technology, engineering, mathematics and computer science (STEM) by preK-12 students and teachers, through research and development of STEM education innovations and approaches. Projects in the DRK-12 program build on fundamental research in STEM education and prior research and development efforts that provide theoretical and empirical justification for proposed projects. Projects should result in research-informed and field-tested outcomes and products that inform teaching and learning. Teachers and students who participate in DRK-12 studies are expected to enhance their understanding and use of STEM content, practices and skills. The DRK-12 program invites proposals that address immediate challenges that are facing preK-12 STEM education as well as those that anticipate radically different structures and functions of preK-12 teaching and learning. The DRK-12 program has three major research and development strands: (1) Assessment; (2) Learning; and (3) Teaching. The program recognizes the synergy among the three strands and that there is some overlap and interdependence among them. However, proposals should identify a clear focus of the proposed research efforts (i.e., assessment, learning, or teaching) consistent with the proposals main objectives and research questions. The program supports five types of projects: (1) Exploratory, (2) Design and Development, (3) Impact, (4) Implementation and Improvement, and (5) Conferences and Syntheses. All five types of projects apply to each of the three DRK-12 program strands. **Due November 14**.

NEA Literature Fellowships: Translation Projects, FY2019

An individual may submit only one application for FY 2019 funding. You may not apply for both a Translation Project under this deadline (December 5, 2017) and a Literature Fellowship (in prose or poetry) under the 2018 deadline (when fellowships in prose are offered). The Arts

Endowment's support of a project may begin any time between November 1, 2018, and November 1, 2019, and extend for up to two years. Program Description Through fellowships to published translators, the National Endowment for the Arts supports projects for the translation of specific works of prose, poetry, or drama from other languages into English. We encourage translations of writers and of work that are not well represented in English translation. All proposed projects must be for creative translations of literary material into English. The work to be translated should be of interest for its literary excellence and value. Priority will be given to projects that involve work that has not previously been translated into English. Competition for fellowships is rigorous. Potential applicants should consider carefully whether their work will be competitive at the national level. **Due December 5.**

Ford Foundation Fellowship Programs

Awards will be made for study in research-based Ph.D. or Sc.D. programs; practice oriented degree programs are not eligible for support (see eligible fields). Prospective applicants should read carefully the eligibility requirements, the terms of the fellowship awards, application instructions and other information pertaining to the individual fellowship (Predoctoral, Dissertation, or Postdoctoral) for which they are applying. In addition to the fellowship award, Ford Fellows are eligible to attend the Conference of Ford Fellows, a unique national conference of a select group of high-achieving scholars committed to diversifying the professoriate and using diversity as a resource for enriching the education of all students. Due **Date of Dec. 7, 14 and January 9**.

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.]

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**.

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

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**.

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**.

Changes at Academic Research Funding Strategies

By Lucy Deckard

(Back to Page 1)

Expanded Editing Services

In response to numerous requests, we are now expanding our editing services to accommodate clients working on manuscripts as well as proposals. We are also offering editing only (as opposed to intensive grantsmanship assistance) at several levels:

- **Technical editing**: Editing for technical clarity as well as grammar, punctuation, etc.
- **Editing:** Editing for grammar, punctuation, etc.
- **Editing Especially for Non-native English Speakers:** Editing for grammar, punctuation, usage, etc. with special attention to mistakes commonly made by non-native English speakers.

These options will provide a more economical option for authors who don't need our intensive review and editing services. More information will be posted on our website soon.

Former NIH branch chief, Dr. John Williamson, joining ARFS

We are excited to announce that Dr. John Williamson is joining Academic Research Funding Strategies as one of our consultants. He will work with clients applying to NIH, providing one-on-one mentoring as well as reviews of NIH proposal drafts. A short bio is provided below.

Dr. Williamson is an emeritus professor of medicinal chemistry at the University of Mississippi, a former NIH branch chief, and currently a research initiatives coordinator at the University of Dayton. During his tenure as a full professor he garnered millions in extramural funding from: federal agencies including the NIH, NSF, CDC, and DoD; pharmaceutical companies including Merck and Schering-Plough; as well as foundations and societies including the Elsa Pardee Foundation, Sigma Xi, the American Society of Pharmacognosy, and the Bill and Melinda Gates Foundation.

At NIH he served as a Branch Chief of Basic and Mechanistic Research, maintaining a branch grants and contract portfolio of approximately $50M/yr. The portfolio included projects associated with brain neuroscience, bioengineering of opiate pathways, mechanisms associated with chronic pain, brain microbiome connection mechanisms, pharmacodynamics and pharmacokinetics and methodologies associated with bioactive natural products, analgesic cannabinoids, various small business awards, complementary medical approaches, and training programs. While at NIH, Williamson's portfolio contained a broad array of funding mechanisms including: DP1, DP2, F31, F32, K00, K01, K99, P01, P20, P30, P50, R01, R03, R13, R15, R21, R41, R42, R43, R44, R61, R61, R90, T32, T42, T90, and U01s. In addition, he was the named program contact on more than 75 published funding opportunity announcements (RFAs & PAs). Williamson also worked on interagency collaborative programs with the NSF, FDA, USDA, and FTC. He is currently associated with the University of Dayton where, as Research Initiatives Coordinator, he helps faculty and staff in developing and submitting competitive research proposals.

Academic Research Funding Strategies, LLC (Page 1)

http://academicresearchgrants.com/home
ph: 979-693-0825
LDeckard@academicresearchgrants.com
mjcronan@gmail.com

What We Do--

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

- Strategic Planning - Assistance in formulating research development strategies and building institutional infrastructure for research development (including special strategies for 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)