Volume 6, Issue 8: April 15, 2016

!!Check out our New Website HERE!!

Table of Contents

Contact Us For:

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

By Katherine E. Kelly, PhD

NSF CAREER Webinar

Access to a recording of our recent NSF CAREER Webinar is now available along with background materials.

Our Large Team Grant eBook!

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

! Ask about our "Writing Team Grants Workshop" !

Our New Faculty Guide eBook

New Faculty Guide to Competing for Research Funding Table of Contents

! Ask about our New Faculty Workshop !

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 proposals at Texas A&M University. He was named a **Texas A&M University System *Regents Fellow*** (2001-2010) for developing and writing A&M System-wide grants funded at over $100 million by NSF and other funding agencies. He developed and directed two research development and grant writing offices, one for Texas A&M's VPR and the other for the Texas Engineering Experiment Station (15 research divisions state-wide).

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

About the editor

Katherine E. Kelly, Ph.D., is a retired English professor from Texas A&M University. She is the author of several books and numerous articles and served as a contributing editor for an academic journal for five years. She provides **editorial services** to ***RD&GW News*** and to **ARFS** clients on proposals, journal articles, and manuscripts.

Topics of Interest URLs

(Back to Page 1)

Wounded Warrior Service Dog Program Department of Defense
Grants for Adaptive Sports Programs for Disabled Veterans, Members of the Armed Forces
Inside the Panama Papers: How Cloud Analytics Made It All Possible
Retraction Watch
Guide by AAAS to the President's Budget: Research & Development FY 2017
The President's Fiscal Year 2017 Budget Request for the National Science Foundation
NSF 2015 Awards by State; Funding Trends at NSF (Budget Internet Information System)
NSF Policy Update
Science Communication Toolkit for Principal Investigators
Say again? NSF massages grant titles with eye on critics in Congress
NIH-Wide Strategic Plan (FY 2016-2020); NIH's Commitment to Basic Science
View and subscribe to Fogarty's *Global Health Matters* e-newsletter
View all Fogarty funding opportunities
A Pilot Partnership to Find Private Support for Unfunded NIH Applications
Opportunities and challenges for peer review at NIH
FY 2017 Department of Energy's Budget Request to Congress
Department of Energy FY 2017 Congressional Budget Request (In Brief)
Online Partnership to Accelerate Research (OnPAR)
Accelerating Medicines Partnership (AMP)
FY2015 by the Numbers, and a Quick Look at Recent Trends
National Science Foundation invests in a clean water future
Air Force Research Laboratory (AFRL) Funding
DARPA Funding Opportunities
Getting Started with IARPA
How to (seriously) read a scientific paper
DARPA-BAA-16-32 Next Generation Social Science (NGS2)
Water Is Broken. Data Can Fix It.; Water Use in the United States
Using PowerPoint to shine on stage
Long-Term Drought Resilience Federal Action Plan of the National Drought Resilience Partnership
Fiscal Year 2017 Defense University Research Instrumentation Program (DURIP)
The Patent Litigation Landscape: Recent Research And Developments
EAR to the Ground Newsletter – NSF Winter 2015
EIA reviews and enhances data and projections for wind and solar electricity
FY17 President's Budget Request for NOAA Office of Education
Updated: Field Guide to the Birds of the Western Great Basin for RC-2202: Field Guide to the Birds of the Western Great Basin (Dr. Erica Fleishman, University of California, Davis)
Poll: Should there be a way to "self-retract" for honest error?
What happens before a retraction? A behind-the-scenes look from COPE
House Budget Plan Would Rearrange And Restrict Federal Research Portfolio
Influx of Foreign Graduate Students and Inclusion of Newly Eligible Institutions Lead to a Significant Increase in U.S. Graduate Enrollment in Science and Engineering
NIJ Director's Corner: Upcoming Solicitations for Fiscal Year 2016
NIJ Director's Corner: Building Our Next Generation of Researchers
Becoming a Peer Reviewer for NIJ

How Readers Read Your Proposal

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

An article by Elisabeth Pain in the March 21, 2016 issue of *Science* entitled **How to (seriously) read a scientific paper** offers many observations collected from a dozen scientists about the strategies and techniques they employ to avoid the difficulties of reading scientific papers while promoting a better understanding of their content. This article also has relevance to those who work with faculty in the planning, development and writing of proposals. An understanding of how a dozen scientists approach reading a scientific paper to determine its importance to them transfers readily to an understanding of how many peer reviewers will likely review proposals for federal research agencies.

In both cases, the reader is attempting to understand complex information quickly and clearly and, most importantly, **to determine whether or not the value of the proposal or paper warrants a further close reading**. At the point where the reader of either a proposal or scientific paper determines that there is not sufficient value and merit in the research to continue the review, the review process stops either with a "do not fund" recommendation or by setting the paper aside.

While it is well understood that a research proposal amounts to a compelling sales pitch promising potentially transformational results of significance to the field, and that a scientific paper reports on the results of research, there are some commonalities. For example, both research proposals and scientific papers are typically peer reviewed by sending them to outside experts who provide written evaluations on the significance and impact of the research to the disciplinary field. Also, both proposals and scientific papers, while differently organized, contain similar sections that typically include an abstract (aka project summary), introduction and background, research goals, hypotheses or critical research questions, results (aka results from prior support), methodology, references, etc.

In this case, Pain's article of March 21 was published as a more serious response to an earlier satirical article by Adam Ruben, PhD, entitled **How to read a scientific paper** published in *Science* January 20, 2016. In this article, Ruben introduces the topic with observations on how stupid he often feels reading scientific papers that are "ultra-congested and aggressively bland manuscripts so dense that scientists are sometimes caught eating them to stay regular." He goes on in the article to enumerate the "*10 Stages of Reading a Scientific Paper*," including "optimism, fear, regret, corner cutting, bafflement, distraction, the realization that 15 minutes have gone by and you haven't progressed to the next sentence, determination, rage, and contemplation of a career change."

The common thread between a research paper and a research proposal is that, in both cases, the reader is trying to digest complex information quickly in order to make a determination on the value of the research. In so doing, ***the reader is looking for shortcuts*** that help them do an "end run" around the organizational structure of the document ***in a non-linear way*** in order to more quickly determine whether or not there is value to be gained from a continued reading. Pain's article reveals that a scientific article does not get a full and close reading unless the reader is intrigued by a quick review of the abstract, research goals and objectives, and conclusions. As one scientist Pain quotes noted, "*I nearly always read the*

abstract first ***and only continue on to the paper if the abstract indicates that the paper will be of value to me***." Or as another scientist noted, "*It is important to realize that* ***shortcuts have to be taken when reading papers*** *so that there is time left to get our other work done, including writing, conducting research, attending meetings, teaching, and grading papers*."

Because these situations are so similar, there are several "take aways" here for those who write research proposals. For example:

- Write a compelling proposal project summary that will entice the reader to ***complete a reading of the proposal***. Note that Pain's article reveals that most of the scientists ***used the abstract as a gate to determine whether or not they would read the article in full or in depth***;
- Structure your narrative in a way that ***gives the reader the most important information quickly***, i.e., on the first page of the proposal. Pain reveals that readers determined how closely they would read an article by giving it a non-linear scan to determine its value;
- ***Make sure the narrative is well written***, which implies well edited and well organized, to ensure the reader is not put off by mangled syntax, poor grammar, and convoluted sentence structures. Again, the Pain essay quotes one scientist on poorly written articles, "*Simultaneously, some papers are written terribly and are not worth the effort. Someone else has surely written about the concepts more clearly* ***so that I can keep my confusion focused on understanding substance rather than poor grammar.***"

This last observation is a critical one to keep in mind when writing, editing or revising a proposal prior to submission.

Organizing the Proposal Narrative

By Mike Cronan, co-publisher

(Back to Page 1)

The organization of the proposal narrative (aka project description) is a key factor in determining a proposal 's competitiveness in the review process. It determines how accessible the proposed research is to reviewers, how easily it is understood, and establishes the stepwise logic used to present arguments on the importance of the proposed research. Determining the organization of the research narrative is a critical first step to making it easier to write the proposal, edit the proposal, and revise the proposal multiple times prior to submittal.

Unfortunately, ***the organization of the proposal narrative often occurs as an afterthought rather than a first thought***, especially on interdisciplinary team proposals with multiple research strands. In such situations, contributing authors often begin writing research sections with little attention to the final shape of the proposal, ***or without a full awareness of what co-authors are contributing to the project description***. There are few things as discouraging to those who assist faculty with the writing of proposals than to be asked to help edit or rewrite narrative text that is poorly organized and requires a major narrative renovation and re-organization to become competitive.

The organization of a proposal is determined by the solicitation guidelines specific to an agency and the funding opportunity. In some cases, the organization of the proposal narrative is highly prescriptive, and in other cases less so, but in either case, it is detailed within the solicitation. There is, therefore, no excuse for a poorly organized project description, since it requires only that the proposal authors copy and paste the required narrative organization into the first draft of the proposal and respond to what is required.

In other instances, however, the program solicitation may not contain guidelines for organizing the research, but may refer applicants to another document where these are contained. This is the case for many NSF proposals, particularly cross-cutting programs with multiple participating directorates. In these cases, the guiding document for organizing the project description is the Grant Proposal Guide (GPG), Section II, Proposal Preparation Instructions.

The project description must also contain a separate section within the narrative, labeled "Broader Impacts." NSF guidance on the order of the project description is very general: "*The Project Description should provide a clear statement of the work to be undertaken and must include the* ***objectives*** *for the period of the proposed work and expected* ***significance****; the relationship of this work to the* ***present state of knowledge in the field****, as well as to work in progress by the PI under other support. The Project Description should outline the* ***general plan of work****, including the broad design of activities to be undertaken, and, where appropriate, provide a clear* ***description of experimental methods and procedures****.* ***Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful****.*"

NSF does not provide specific guidance on the order of the research narrative. This can be good for the experienced grant writer and challenging for those less experienced in planning, developing, and writing a research narrative. However, while not specifically stated,

the order to the proposal narrative implied in the above NSF quote is clear—the research narrative will need to address the bolded items above. For example, based on above, a project description outline might include the following basic sections: (1) Introduction/Project Overview; (2) Background, Current State of the Field & Significance of Proposed Research; (3) Goals, Objectives, and Outcomes; (4) Plan of Work/Methodology; and (5) Broader Impacts.

While some variant of this may be sufficient for a single PI proposal, or a proposal with a single disciplinary focus, interdisciplinary team proposals with multiple research strands will require additional sections or more detailed subsections incorporated into the above sections. However, some thought needs to be put into arriving at a sequence of section headings for the project description, particularly when the governing document is the Grant Proposal Guide, because the nature of the research itself will most often suggest important section headings as well as the order in which they are listed in the research narrative.

For example, for interdisciplinary team proposals involving distinct disciplines from multiple NSF directorates, researchers will want to ask: "***What is the story I want to tell about the importance of funding this research and what is the most effective order in which to tell that story***?" The answer(s) to this question will suggest how to organize the project description. For example, one of the more challenging organizational questions to address in a team proposal is the optimum structure of the project description for addressing multiple research strands in a way that is integrative and convinces the reviewers and program officers that the proposed effort is synergistic and not siloed.

For instance, perhaps a research project has three research strands from three distinct disciplines involving co-PIs from three separate NSF directorates. It can be challenging to organize these research tasks within the narrative structure ***to best clarify for the reviewers the interdependency of the proposed research and the value-added benefits of the team configuration***. These three research tasks typically would each be addressed separately, e.g., as subsections to a major section heading of Goals, Objectives, and Outcomes, by one or more of the co-PIs or senior research personnel.

The challenge lies in coming up with an integrated narrative organization that all contributing authors agree upon before beginning the process of writing narrative text. In the above example, it may be that each of the three research subtasks is organized under some overarching goals, objectives, and outcomes that address the project's overall research vision, hypothesis (or questions), and anticipated outcomes or results. It is often the case that a narrative section addressing anticipated project outcomes will need to be very strong to make the case for funding, since it will demonstrate the value of the research to the agency.

The question that needs to be answered in this instance is whether each research task-specific subsection requires its own outcomes discussion, followed later in the narrative by a concluding major section, perhaps entitled "Expected Outcomes, Potential Pitfalls, and Significance" that clarifies, along with the required Broader Impacts section, why, in conclusion, your proposed research will provide significant value.

Also, depending on your proposed research, you would likely have to make a decision on where to include, i.e., in this section or perhaps in a section where you discuss the research plan and methodology, a discussion related to potential project pitfalls that occur when things do not go as planned. After all, it is rare indeed that a proposal is a perfect predictor of what will transpire during a multiyear performance period of a funded proposal. It is important to

address these potential pitfalls and discuss workarounds in your research narrative to demonstrate to reviewers that you have thought about the proposed project in sufficient depth to give assurances that you can successfully manage the unexpected.

The take away here is that ***a proposal organizational plan should be one of the first tasks accomplished once a decision is made to respond to a funding solicitation***. As noted, in some cases this is done for you within the solicitation guidelines. But in other cases, as in the case of the NSF when the GPG is the operative authority, you will have to spend sufficient time to think through, hopefully as a team of contributing authors, which organizational narrative structure makes the best sense for the proposed research. ***Of course, the end goal here is to make it easy for the program officers and reviewers to read your project description and make an informed funding decision***.

Helping Your Junior Faculty: Successful Models

By Lucy Deckard, co-publisher

(Back to Page 1)

It's not surprising that many university leaders are looking for ways to help their junior faculty become successful. Recruiting new faculty and helping them get started entails a significant investment for universities. Start-up packages, equipment, and lab space can easily run into the hundreds of thousands of dollars, not to mention the time and resources invested in the search and hiring process. What's more, a university's future depends on the success of the next generation of junior faculty in their roles as researchers and educators.

One key area where mentoring, training and resources can make a big difference is in competing for external research funding. We've been fortunate to be able to visit universities across the country and learn what they are doing to help their junior faculty get a fast start in developing their research programs and competing successfully for funding. Below we discuss some models that stand out in terms of their comprehensiveness and success.

Virginia Tech

For the last six years, Virginia Tech has offered the ***Proposal Development Institute (PDI)***, a spring/summer-long experience for faculty who are relatively new to pursuing external research funding. PDI classes have typically numbered 35 to 45 junior faculty from across all colleges in the university, selected based on nominations submitted through the Associate Deans of each college. PDI has several components:

- A series of seminars about various aspects of grant development (e.g., the mechanics of submitting a proposals, resources on campus to leverage, how to develop broader impacts, etc.), spread over the spring semester.
- An intensive 2-day hands-on proposal development workshop followed by individual consultations presented in early June (which *Academic Research Funding Strategies* has helped develop and present annually since 2011). This workshop covers grantsmanship as well as specific information on various agencies, with agency-specific Q&A panels composed of awardees, reviewers, and former Program Officers from Virginia Tech. It also includes a number of activities to promote interaction among PDI participants and a lunch with PDI alumni from previous years.
- A group trip to Washington DC, where PDI participants meet with Program Officers at the agencies and programs where they plan to apply. PDI participants are responsible for setting up these individual meetings. PDI also hosts program officers who give presentations to the group.
- Mentoring by senior faculty.

An important characteristic of the PDI is its comprehensive approach. It starts with the basics and helps shepherd junior faculty through the entire proposal development process. This is an effective way to address the challenge posed by the diversity of needs and experience of junior faculty. Some junior faculty, particularly those who had several postdocs, arrive on campus with considerable grant writing experience but may not be familiar with the strategic

side of the process (identifying new funding sources, talking to Program Officers, etc.). Others have never written a grant proposal and may be new to the entire process. In addition, faculty in different fields may face different challenges. For some faculty, it's obvious where they should apply for funding, while other faculty may have to work harder to identify possible funders. Moreover, developing collaborations is more important to faculty conducting research in some areas than others.

When former PDI participants are asked which features of the PDI experience they found most valuable, their answers emphasize the value of this comprehensive approach. Brian Badgley, Assistant Professor in Virginia Tech's Department of Crop & Soil Environmental Sciences, said that the key for him was the trip to Washington DC to talk to Program Officers. He said, "I had had experience as a grad student and postdoc helping to write proposals, but I didn't have any experience identifying funding sources, building relationships with Program Officers, strategizing, and pre-writing tasks. The trip to DC was key. Talking to the POs was huge." He also found PDI helpful because it helped provide carved-out time specifically for proposal development.

Leigh-Anne Krometis, Assistant Professor of Biological Systems Engineering and former PDI participant, said that she found all of the components of the PDI experience helpful. She agreed that PDI spurred her "to begin talking to program officers and familiarizing myself with the federal grant processes early in my career, which was very valuable." However, she identified the opportunity to meet potential collaborators as the most valuable aspect of the experience. She stated that "its greatest value to me was in introducing me to other new assistant professors and providing us with time to get to know each other's interests. I have had at least two collaborations from PDI that resulted in extramural funding and I doubt I would have met those folks otherwise!"

Importantly, PDI focuses on early junior faculty (typically in their first one to three years), although for colleges where pursuing external funding usually starts after tenure, Associate Professors can apply. This helps faculty get up to speed quickly before they've spent two or three years spinning their wheels or learning funding lessons the hard way. Also important, the PDI application process is selective and requires potential participants to demonstrate that they're serious about pursuing external funding and are committed to fully participating in all of PDI's activities. This avoids having participants who don't show up, don't fully participate, or who fail to develop proposals after participating in PDI.

Arizona State University's Schools of Engineering

Arizona State University's School of Engineering takes a somewhat different approach, providing a suite of proposal development resources for junior faculty:

- Travel funding to visit Program Officers
- Individual proposal editing assistance
- Grants to pay for outside graphics development support for all early/young investigator proposals
- Full-day hands-on NSF CAREER proposal development workshop (which *Academic Research Funding Strategies* has presented the last two years)
- Editing assistance for one journal article manuscript annually

- An extensive infrastructure for K-12 outreach and assessment to which faculty can connect
- Program manager support for large/strategic proposal development

ASU Engineering faculty have had considerable success with NSF CAREER and other early career grant programs, and faculty who have won those awards have credited all of these resources as extremely helpful to their efforts, with many identifying the individual editing assistance and workshop as particular useful.

Strategies for PUIs and Smaller Universities

Of course, not all universities have the same level of resources, are within an easy drive of Washington DC, or have the same needs. Predominantly Undergraduate Universities (PUIs) may want to invest strategically in activities that address the most urgent needs of their junior faculty. For example, many smaller universities and those that are transitioning from a teaching focus to an increased research focus find that junior faculty often don't have access to research funding mentors in their fields on campus. To address this need, in addition to individual editing assistance and proposal development workshops, Northern Illinois University includes a component in their **PI Academy** program that provides funding and assistance with recruiting mentors for PI Academy participants. These mentors, leading scholars in the participant's field identified by the participant, are invited to participate by the Vice President for Research & Innovation Partnerships and are provided with travel funding and an honorarium. This approach has been quite successful in helping junior faculty broaden their disciplinary networks, develop new collaborations, and prepare more competitive proposals.

Universities that aren't able to provide large start-up packages may provide competitive internal seed funding to help junior faculty generate the preliminary results they need to compete successfully for external funding. However, care should be taken that faculty have a clear plan to use work supported by these internal grants to position themselves for external funding.

What Constitutes Success?

Senior university administrators, understandably, want to know if initiatives they are financing are successful, and this also applies to programs to assist junior faculty compete for research funding. However, when assessing the effectiveness of these programs, it's important to understand the research development process and define success appropriately.

The metric for success that might, at first glance, seem logical is simply: Are junior faculty winning more research grants over the next two or three years? However, the assumption underlying such a metric is that if support programs are effective, junior faculty will win grants on their first or second try. This is an unrealistic expectation. If you ask senior faculty who are now extremely well-funded and are leaders in their research fields how many proposals they submitted before they were awarded a grant, many will tell you that they submitted four or five proposals before they were ultimately successful. There are many reasons for this:

1. The funding environment is extremely competitive, and even good proposals are often not funded, so any PI should plan to submit a proposal more than once before it is funded.

2. Research project ideas often require some time to develop to the level of maturity where they are competitive for funding. However, a key part of this maturing process is writing grant proposals on those ideas and getting feedback in the form of reviews.
3. Junior faculty often need to publish and become known in their disciplinary community in order to be competitive for funding. However, applying for funding, getting to know program officers, and reviewing for agencies is an important part of that process for many disciplines.
4. Writing proposals is a learned skill. It often takes several proposals—and the accompanying reviews—for faculty to learn how to write compelling proposals and also understand what specific funders are looking for. However, this process can be accelerated by providing proposal development training, editing support and mentoring such as the resources described above.

In contrast, if you ask midcareer and senior faculty who have not been successful in competing for grant funding about their early career experiences, they will often tell you that they applied for grants two or three times (or more), were not funded, and then gave up, assuming that they just couldn't be competitive. Others will say that they never really pursued grant funding since they either didn't know where to start or assumed they couldn't be competitive.

The main goal (and measure of success) for these junior faculty support programs should therefore be: Did you help your junior faculty follow the path of those ultimately successful faculty who learned from their reviews, improved their understanding of—and connections with—potential funders, and stayed engaged in the pursuit of research funding? The ultimate payoff, in the form of actual funding dollars, may be four or more years away, but faculty who build their skills and connections, and continue to submit proposals are likely to be successful in the long run. Once a faculty member becomes discouraged and gives up for several years on efforts to compete for external funding, it's very difficult for them to recover from that, and the university pays a huge opportunity cost, particularly for faculty who conduct research in fields that require external funding.

It might be tempting, particularly if you are an administrator with a tight budget, to reason that you are hiring smart faculty – won't they figure these things out for themselves? It is true that many faculty will ultimately figure out the funding landscape and develop their grantsmanship skills either on their own or, if they're lucky, through a mentor. However, the process will be significantly more frustrating and will often take longer than it would have if the university had provided support and training. This "sink-or-swim" philosophy also disproportionately disadvantages minority and women faculty who, research shows, often do not have as robust mentoring networks. And, importantly, those who are successful and become star funded researchers may not feel that their university supported them in their efforts, making it more likely that they will parlay their funding success into a position at another university.

That brings us to another reason to support junior faculty: it will help your university recruit and retain the best junior faculty. Faculty candidates are understandably nervous about their ability to compete for grants and get their independent research program going quickly. A university that offers programs and resources to help them succeed has a significant advantage

in recruiting. Similarly, faculty who feel supported by their university (particularly when many PUIs and smaller universities are increasing their research expectations), are more likely to stay at that university.

To conclude, providing resources, training and mentoring to help junior faculty compete more successfully for research funding may seem like an extravagance in this era of tight budgets, but consider how much it costs to recruit and hire a new faculty member, and what's at stake. Refusing to commit the resources to help your junior faculty succeed is like buying a Maserati and then trying to save money by not changing the oil.

The Chronicle of Proposal Flaws

By Mike Cronan, co-publisher

(Back to Page 1)

The physicist Niels Bohr observed that "*an expert is a person who has made all the mistakes possible in a narrow field*." These are words to live by for those involved in the planning, development, and writing of proposals. It also points to the key role research support offices can play in helping faculty submit proposals to funding agencies. Anyone who has worked in research development and grant writing for any period of time can benefit by observing the flaws made in the pre-submission proposal development process, as well as from reading the reviews of declined proposals.

Even the most successful research offices will have ample opportunity to read and learn from reviewers' comments on declined proposals given the funding success rate at federal research agencies. Fortunately, there is really nothing more informative than a thorough, insightful, and conscientious review of a proposal declined for funding where the reviewer(s) elaborates with detail on the reasons the proposal was not recommended for funding. Of course, reading the reviews of a funded proposal also provides valuable insights. In both cases, the "lessons learned" from reading the reviews is fungible, i.e., applicable in a generic way to many future proposals across multiple agencies.

Second to the reviews, and of equal importance, is the experience of assisting with the planning, development, and writing of numerous proposals over a period of time, particularly as those experiences move across disciplines, agencies, and various proposal team configurations. After all, proposal development is not a theoretical pursuit, but rather one based on an accumulation of practical, "hands-on" experiences gained from repetition, practice, and persistence.

The advantage of gaining this experience in a university research office is considerable. Over time, you will encounter almost every conceivable proposal development scenario, some successful and many flawed, that will form the basis of your proposal development knowledge base. The importance of this knowledge base is that you will be able to better inform faculty with whom you work on the most competitive strategies and best practices to be followed in the development of a proposal. You'll also be able to warn them of the pitfalls of flawed strategies and flawed practices that experience has shown will likely result in a declined proposal.

For example, many junior faculty are already (hopefully) well into the process of planning for the submission of an NSF CAREER award, due in July. This is a long-standing annual program of major significance to junior faculty that has a well documented "portfolio" of best practices and flawed practices associated with it to help applicants plan, develop, and write a successful CAREER proposal. Many research offices offer CAREER workshops for their faculty. NSF offers a CAREER workshop, and many other CAREER support services are offered, including CAREER Assistance provided by Lucy Deckard, co-publisher of this newsletter.

The key point here is that the CAREER "portfolio of best practices" provides a model for how research offices can chronicle their unique experiential knowledge of proposal development best practices and flawed practices in service to the faculty they assist on a daily

basis. You might think of this best and flawed practices portfolio as your magnum opus that gives faculty the advantage associated with the adage, "forewarned is forearmed."

New and junior faculty in particular benefit from assistance on proposal best practices. More senior faculty will also benefit, particularly as research agencies increasingly emphasize interdisciplinarity and team proposals that require a new understanding of what constitutes a competitive proposal in a new funding environment. Over time, those who assist faculty with proposals will recognize a number of common denominator best practices that lead to a recommendation for funding, and an even larger number of flawed practices that lead to a declined proposal.

In the case of more junior faculty, having to learn proposal best practices and proposal flawed practices can be a somewhat brutal experience, akin to running a proposal development gauntlet under pressure of the tenure and promotion timeline. While former Speaker of the House Sam Rayburn famously observed, "*there is no education in the second kick of the mule*," the role of a research office that systematically chronicles experiential best practices and flawed practices is to impart that knowledge to faculty so they don't suffer even the first kick of the mule—so that they avoid encountering the mule altogether.

Research Grant Writing Web Resources

(Back to Page 1)

2016 CBET CAREER Proposal Writing Webinar

The NSF Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) will host a CAREER Proposal Webinar, Wednesday, April 27, 2016, 12pm-5pm EDT, to share best practices regarding the development and submission of proposals to the CAREER program. The webinar is designed for the CBET community but is open to all.

Topics will include:

- CAREER guidelines and eligibility
- Tips for proposal preparation
- Recommendations for integrating research, education and outreach into a CAREER proposal
- Insight into a proposal review (watch a video of a mock panel)

The webinar will also feature live question-answer sessions with ENG program officers and CAREER awardees.

Webinar materials for the NIJ solicitation "***New Investigator/Early Career Program in the Social and Behavioral Sciences***" solicitation are now available online.

- Video recording
- Transcript
- Presentation Slides

Innovating to Make it Easier for You to Find the NIH Grants Information You Need

More isn't always better, especially when it comes to wading through information on NIH grant policies and processes. We talk about burden frequently, usually in reference to policies and processes that add burden to our grantee community. But there is another source of burden: having to spend time digging through resources to find critical information you need to apply for or manage your grant award.

For the past year my staff have been strategizing how to improve upon the way we deliver information, with the goal of reducing the time it takes you to find the information you need. To do this, they embarked on a comprehensive, data-driven approach to understand how you use key resources, including our NIH's grants and funding website and our application guides. They examined web analytics, looked at search term patterns, surveyed website visitors, asked you how you use — and would *like* to use — our application guides, and engaged usability experts to ensure we are following best practices.

We listened, we learned, and we've put these experiences into practice. If you've visited grants.nih.gov last week, you likely noticed a complete transformation. What you will find now is a simplified interface that streamlines how you find information and provides the context you need for understanding the information you find.

We reimagined the application guide to better serve your needs. We completely disaggregated the application guides and reassembled them in a way that addresses many of the needs expressed by the community. Some highlights of the changes include:

- We have separated the details of the grants process information from the form instructions, providing both on a How to Apply – Application Guide page for at-a-glance access to key pieces of information.
- We have provided the general instructions for the newest version of NIH application forms (known as FORMS-D), in an interactive HTML version for ease of on-line use, in addition to a pdf version for those of you who still feel compelled to print.
- We consolidated instructions for all types of grant programs into the general instructions, and reorganized the information to make very clear how each instruction applies to each of the various grant programs (research, training, career development, etc.). These general instructions are a great option for those of you who submit applications for various types of grant programs.
- For those of you who may only be applying to single type of grant program, we have a more personalized option for you. We have created filtered PDF versions of the form instructions that show only the instructions you need for the type of grant program to which you are applying, instructions specific to research, career development, training, fellowships, multi-project, or small business (SBIR/STTR) applications.

You will find a lot of changes across the site, all designed to simplify how you get to the information you need. You may want to try the new search interface for the NIH Guide for Grants and Contracts, and use the "save this search" feature to get notified of future postings that match your search. Check out the new forms library. Poke around. See what's new!

NIJ Director's Corner: Tips for Making Your Proposal Competitive

As I discussed in my last Director's Corner, NIJ is developing a number of exciting new solicitations this year. We have now started releasing our solicitations and will continue to do so over the coming months, so be sure to subscribe to get an email when one is released. As you and your colleagues begin creating proposals, keep in mind that NIJ is a science agency, and as the Director, my decisions are guided by multiple factors, including the peer review process and input from NIJ scientists. Peer reviewers are academics, practitioners, and other subject matter experts; we rely heavily on them to ensure fairness and integrity. Reviewers judge proposals on various criteria such as the problem and its importance; quality and technical merit; impact of the proposed project; and capabilities, demonstrated productivity, and experience of the applicant. I encourage all of you to apply to become a peer reviewer and see first-hand how the review process works. Learn how to apply on our peer review page.

In addition to the peer review summaries and input from staff, I keep several other factors in mind as I review proposals: how the proposed research aligns with the priorities of NIJ, the Department of Justice and the Administration, the research that is already in our portfolios, the generalizability of the research, the needs of and potential impact on the field, and the availability of funds.

The following are several other common elements of successful proposals to consider as you create the most competitive proposal you can:

Problem Statement and Research Questions – Be responsive to the research questions and focus areas. You might be surprised how many proposals are rejected because they do not respond to what we requested. When a solicitation lists specific research questions or focus areas, your statement of the problem and narrative discussion should respond to those topics. It is crucial that your narrative be responsive to the "Program-Specific Information" section of the solicitation.

Methods – Develop a strong research design. The hallmark of a competitive research proposal is a strong methodology. NIJ encourages its grantees to use the most rigorous method available to answer their research questions. For example, this could be a randomized controlled trial, an experimental or quasi-experimental approach, innovative survey and data collection techniques, or the evaluation of a program, tool or methodology. We also recommend that applicants seek guidance from a statistician to ensure rigorous design, testing, and analysis methods are used. Such partnerships can foster a greater understanding of testing and validation issues as well as strengthen the scope of the proposed research.

Impact – Focus on implications and generalizability. Be as specific as possible when discussing your research generalizability, implications and deliverables. Reference how generalizable the research questions and findings can be to other populations. Proposals should also thoughtfully discuss how scientific knowledge *and* criminal justice practice will be improved if the research objectives are achieved. This is a high priority at NIJ. Impact often relates to how generalizable the research questions and findings can be to other populations. It also relates to how the work can be disseminated widely, and reach both academic and practitioner audiences in a way that helps to promote change and improve understanding and knowledge.

Capabilities – Propose dynamic and multidisciplinary teams. Another area NIJ will look for in your proposal is the extent to which it is multidisciplinary and interdisciplinary in nature. We are looking for research teams that complement the criminologists, sociologists, chemists, and engineers who regularly make up our study teams. That's because addressing crime and justice issues requires expertise from a broad range of disciplines. Proposed teams should also, to the extent possible, include practitioners who can contribute not only to the research design but can also help ensure that the findings are accurately translated to the field. While letters of support suffice for the application process, applications that include signed memorandums of understanding (MOUs) are more desirable because they demonstrate that the roles of partners have been carefully considered by both sides.

Budget – Be bold but frugal. Like most federal agencies, NIJ is trying to accomplish as much as possible with our funding. The solicitation states the approximate amount of funding that may be available. Competitive proposals tend to be those that do not come in at the top of the allocated funding amounts. Since NIJ's research funds are mostly discretionary, it is not uncommon for us to award more dollars in one solicitation than another – depending on the quality of the proposals that are submitted. Therefore, applicants should construct their budgets carefully, keeping in mind that maximizing resources is one way to be more competitive.

See current and forthcoming solicitations and plan to attend one of our solicitation-specific webinars. *Date Created: February 18, 2016*

Educational Grant Writing Web Resources

(Back to Page 1)

Interconnecting STEM with Informed Engineering Design Pedagogy

This paper describes how K-12 Engineering can be an important pedagogical approach in mathematics and science courses. K-12 Engineering is examined in a STEM context with examples provided. As part of an NSF middle school science project, a framework was developed using informed engineering design pedagogy. Feedback from science teachers who participated in a professional development workshop using this framework indicated that they were greatly interested in using and confident in their ability to use the engineering instructional pedagogy in science. Furthermore, when surveyed again after several months about their use of the informed engineering design, these teachers provided similar feedback, with several reporting that they had already begun implementing one of the engineering based science lessons introduced during the summer workshop.

Factors That Support Teacher Shift to Engineering Design

This paper presents a professional development (PD) program conducted at the University of Cincinnati for middle school and high science and math teachers. Teachers commit to the National Science Foundation (DUE-1102990) funded Cincinnati Engineering Enhanced Science and Math Program (CEEMS) for two years and learn to transform their classrooms into places where students collaboratively tackle real world, open-ended challenges by using the engineering design process. This paper focuses on three important elements of the PD that prepares teachers to incorporate engineering design process into the teaching of core science and math content. First, teachers experience engineering challenges themselves. By engaging in teamwork and collaboration, learning from failure, and experiencing the iterative nature of the engineering design process for themselves, teachers better identify with students. Second, the PD program is structured such that teachers are accountable to create and implement engineering design activities in their classrooms. Finally, teachers are supported and guided as they create and implement engineering design modules. This is accomplished using resource coaches, engineers and master teachers, who guide the teachers through the process of creating and implementing lessons incorporating engineering design activities and provide invaluable feedback as teachers reflect on their own practice. Program evaluation focuses on teacher changes in instructional practices, student growth in content knowledge, and student engagement. Related evaluation results and teacher feedback are documented. As indicated by teacher self-report current instructional practices, teachers' shift in practices to a student-centered, engineering design based approach seems to support students' growth in content knowledge as measured by pre-post assessment results.

U.S. Department of Education Issues Guidance for Schools on Leveraging Federal Funding to Support STEM Education

The U.S. Department of Education issued a Dear Colleague Letter to states, school districts, schools and education partners on how to maximize federal funds to support and enhance innovative science, technology, engineering and math (STEM) education for all students.

Agency Research News

(Back to Page 1)

AHQR Research Education and Career Development Opportunities

This fact sheet presents general information about the various predoctoral, postdoctoral, and career development opportunities sponsored by AHRQ.

Purdue Offers Course on Big Data to Biomedical Researchers

The President's Fiscal Year 2017 Budget Request for the National Science Foundation

- NSF's FY 2017 Budget Request includes two areas of major emphasis: Clean Energy R&D and strengthening support for core activities, with a special focus on support for early career investigators.
- New one-year mandatory funding totaling $400 million will support the fundamental, curiosity-driven research that is NSF's principal contribution to the Nation's science and technology enterprise. In particular, this funding will support more scientists and engineers at the early stages of their careers -- who bring particular expertise in data- and computationally-intensive activities -- to quicken the pace of discovery and advance the leading edge of research and education. **This funding will allow for an estimated 800 additional research grants to be made from a pool of highly-rated proposals that would otherwise be declined for lack of funding.** This additional funding would bring NSF's FY 2017 funding rate to an estimated 23 percent.
- The Budget for NSF includes $512.22 million for investments in Clean Energy R&D. NSF's clean energy portfolio supports research and education in innovative renewable and alternative energy sources for electricity (solar, wind, wave, geothermal) and fuels (chemical and biofuels). NSF funding also addresses the collection, conversion, storage, and distribution of energy from diverse power sources, including smart grids; the science and engineering of energy materials; and energy use and efficiency, including for computing systems. Clean energy research addresses our advancement toward reliable and sustainable energy resources and systems that preserve essential ecosystems and environmental services, promote positive social and economic outcomes, and prepare society to responsibly adopt them.
- Understanding the Brain (UtB) ($141.62 million) encompasses ongoing cognitive science and neuroscience research and NSF's contributions to the Administration's Brain Research through Advancing Innovation and Neurotechnologies (BRAIN) Initiative.
- Risk and Resilience ($43.15 million) investments aim to improve predictability and risk assessment and increase preparedness for extreme natural and man-made events in order to reduce their impact on quality of life, society, and the economy.
- Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) ($62.18 million) is an NSF-wide investment that aims to understand, design, and model the interconnected food, energy, and water system through an interdisciplinary research effort that incorporates all areas of science and engineering and addresses the natural, social, and human-built factors involved. Throughout NSF, activities address food,

energy, or water, such as Water Sustainability and Climate and Hazards; Coupled Natural and Human Systems; and Basic Research to Enable Agricultural Development. **INFEWS, however, is the first program to study the interconnected food-energy-water nexus**. The need for this program is increasingly urgent, as growing U.S. and global populations, changes in land use, and increasing geographic and seasonal variability in precipitation patterns are placing an ever-increasing stress on these critical resources. NSF, through INFEWS, is uniquely poised to focus not only on the fundamental science and engineering questions at this nexus, but to train the next generation of researchers in this interdisciplinary area.

Dear Colleague Letter: Developing New Data to Illuminate Science and Innovation Policy

The National Science Foundation's Science of Science and Innovation Policy (SciSIP) Program seeks to encourage projects that develop data resources to support research that advances the scientific basis of science and innovation policy. The purpose of this Dear Colleague Letter is to **invite EArly-concept Grants for Exploratory Research (EAGER) proposals** for projects that use, augment, improve or create data on the U.S. science and innovation enterprise.

Data may be from a variety of sources, including but not limited to: STAR METRICS® (Science and Technology for America's Reinvestment: Measuring the Effect of Research on Innovation, Competitiveness and Science), the National Center for Science and Engineering Statistics (NCSES), the administrative records of Federal science agencies such as the National Institutes of Health, or the administrative records from other entities in the science and innovation enterprise, such as universities, government labs and standard setting organizations. Other efforts to pilot the collection of new data relevant to science and innovation are encouraged.

STAR METRICS® (https://www.starmetrics.nih.gov/) is a multi-agency venture led by the National Institutes of Health (NIH), National Science Foundation (NSF), the U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), and the White House Office of Science and Technology Policy. STAR METRICS Level II – Federal RePORTer (Research Portfolio Online Reporting Tool), provides a searchable database of scientific awards from Federal agencies. Investigators may familiarize themselves with the details of the STAR METRICS data collection effort by reviewing information available online at https://www.starmetrics.nih.gov/.

STAR METRICS Level I (now U-Metrics, https://www.cic.net/projects/umetrics) provides data that allows investigators to conduct research using data from university administrative records. Investigators are encouraged to propose projects to develop similar institutional data. NCSES, the nation's leading provider of statistical data on the U.S. science and engineering enterprise, collects data related to the science and engineering enterprise in the United States and other nations. More information is available at www.nsf.gov/statistics. An overview of available data can be found at http://www.nsf.gov/sbe/NCSES/Datasets.pdf.

Researcher access to administrative records can strengthen the evidence base through research analyses. To promote open exchange and dialogue with the broader academic community about the most rigorous methods, tools, and data sources a joint NIH-NSF workshop (https://palladianpartners.cvent.com/ScienceofScienceWorkshop) will be held April 7 & 8, 2016. Research that develops, improves and expands models, analytical tools, data and

metrics using these types of agency administrative records are encouraged to apply for funding under this DCL.

This is not a new competition or a new program; interested investigators should first submit a one page summary of their ideas to initiate discussion with the program director listed below by **April 29, 2016**. Upon approval, investigators may then submit an EAGER proposal to the SciSIP program via PD 09-7626. EAGER proposals should be prepared in accordance with the guidance found in Chapter II.D.2 of the NSF Grant Proposal Guide. To be considered for funding this fiscal year, proposal should be submitted by June 9, 2016. Questions should be directed to Maryann Feldman, Program Director, at mfeldman@nsf.gov.

Dear Colleague Letter: National Science Foundation, Directorate for Social, Behavioral & Economic Sciences (NSF/SBE) and US-Israel Binational Science Foundation (BSF) Opportunity for Collaborations in Economics and Psychology

To facilitate the support of collaborative work between US groups and their Israeli counterparts, NSF's Directorate for Social, Behavioral & Economic Sciences (SBE) and the BSF have recently signed a Letter of Intent that outlines a review process for projects in Economics and Psychology. Israeli researchers are invited to read the BSF solicitation: http://www.bsf.org.il/ElectronicSubmission/GatewayFormsAndGuidelines.aspx?PageId=7&innerTextID=0.

International collaborations are invited to submit proposals in the areas described in the following SBE programs:

Division of Behavioral and Cognitive Sciences Core Programs:

- Social Psychology (PD 98-1332)
- Perception, Action, and Cognition (PD 09-7252)
- Cognitive Neuroscience (PD 15-1699)
- Developmental and Learning Sciences (PD 08-1698)
- Division of Social and Economic Sciences Core Programs:
    - Economics (PD 98-1320)
    - Decision, Risk and Management Sciences (PD 98-1321)

NOTE: Only proposals focused on Decision Science are eligible to submit to this call. Proposals on Risk and Management Science are not eligible to participate in this collaborative opportunity.

Proposals will be submitted to NSF, and the Israeli institution will submit a parallel proposal to BSF immediately afterwards. The proposals will be reviewed in competition with other proposals received for the same funding round by NSF using NSF's merit review process. It is important to note that there are no separate NSF funds available for these efforts; proposals must compete with all other proposals within the NSF program and must succeed on the strengths of their intellectual merit and broader impact. BSF will check the role of the Israeli scientist and her/his eligibility at the onset of the process, but will not conduct a parallel review and will not rank proposals; BSF is likely to fund any Israeli whose research partner is funded by NSF.

NIJ Director's Corner: Upcoming Solicitations for Fiscal Year 2016

I am excited to tell you about NIJ's upcoming solicitations. Fiscal year 2016 will reflect some key shifts at NIJ. Our overarching priority has not changed: to strengthen science and advance justice. But, for those of you who follow us closely and apply each year, you will see a few changes. The main goal of these changes is to better align NIJ's internal structure and processes with the research needs of the field and the priorities of the Administration. This realignment will nurture NIJ as a scientific agency and help us better support the researchers and practitioners whom we serve.

Multidisciplinary Approach. Specifically, we are placing more emphasis on multidisciplinary approaches across our three science offices (social science, forensic science, and science and technology) as well as putting more emphasis on creating long-term research agendas. As I have said many times, criminal justice issues are multifaceted, and our research must draw on a range of expertise to solve problems and fill gaps in our knowledge. So, this year, our solicitations will be more reflective of the multidisciplinary expertise that occurs among practitioners in the field. Behavioral, technological and forensic research questions may all be covered in a single solicitation, requiring new collaborations and partnerships between different types of researchers and practitioners. I believe that when cross-discipline and complementary experts collaborate, we are more likely to see longer lasting and innovative, evidence-based solutions. Similarly, by outlining multiyear research priorities, I hope to better facilitate the collaborations, both inside and outside NIJ, to answer those research questions over the long term.

Fostering Partnerships. We believe that one of the most effective ways to make research relevant to the practitioner is to work side by side with those who will eventually be using the research to adopt evidence-based practices. Researcher-practitioner partnerships foster translational work by giving both sides the opportunity to see, firsthand, the impact of their joint efforts and make adjustments accordingly. In our fiscal year 2016 solicitations, we are expanding our traditional emphasis on researcher-practitioner partnerships and the dissemination and translation of research for practitioners; these principles will be reflected in several of our solicitations. NIJ will also be working with our sister agencies in the Office of Justice Programs to evaluate the outcomes and impact of their partnerships.

2016 Research Priorities

The specific research questions in NIJ solicitations change every year to reflect gaps in our knowledge and meet the needs of policymakers and practitioners. What does not change is our support for rigorous and innovative science that will deliver evidence-based knowledge about issues of great interest to the country and the administration of justice.

Fiscal year 2016 solicitations are now being drafted, reviewed and approved. At this time, I can say that we plan to issue solicitations on a variety of topics, several of which relate directly to the Administration's priorities, including research on:

- Policing practices — including building and strengthening police-community relationships — and officer training, technology and wellness.
- Longitudinal examination of violence and victimization among college-age individuals.
- Illegal drug markets (including diversion of legal drugs) and criminal behavior.
- The use of restrictive housing, and correctional officer safety and wellness.
- Reducing firearms violence, and understanding the causes and effects of firearms violence.

- Identifying best practices for testing and interpreting physical evidence.

You can read more on our Forthcoming Funding Opportunities page. By issuing more multidisciplinary solicitations that cover many of these priority areas, we hope to spur innovative ideas and useful collaborations across research fields.

Improving Grantee Support. As many of you know, NIJ is in the process of realigning the duties and responsibilities of our scientists and grant managers. This means that, once an award is made, professional grant managers focus on the major duties of administering the grant, and scientists focus on building and managing portfolios of research, including long-range planning and intramural scientific activities. This will streamline NIJ's processes to better serve our grantees and advance NIJ's scientific abilities. Another change for this year is that the point of contact for solicitations will be centralized rather than being assigned to various scientists.

The centralized approach is designed to ensure more consistency and fairness in the competition for funding. For more background on my priorities, read my previous Director's Corner messages. For more information about our forthcoming solicitations, visit our Forthcoming Funding Opportunities page. From our Funding page, you can subscribe to receive alerts when solicitations are open, read descriptions of our past awards, and get details on how to apply.

Agency Reports, Workshops & Research Roadmaps

(Back to Page 1)

Analytic Research Foundations for the Next-Generation Electric Grid

Electricity is the lifeblood of modern society, and for the vast majority of people that electricity is obtained from large, interconnected power grids. However, the grid that was developed in the 20th century, and the incremental improvements made since then, including its underlying analytic foundations, is no longer adequate to completely meet the needs of the 21st century. The next-generation electric grid must be more flexible and resilient. While fossil fuels will have their place for decades to come, the grid of the future will need to accommodate a wider mix of more intermittent generating sources such as wind and distributed solar photovoltaics. Achieving this grid of the future will require effort on several fronts. There is a need for continued shorter-term engineering research and development, building on the existing analytic foundations for the grid. But there is also a need for more fundamental research to expand these analytic foundations. Analytic Research Foundations for the Next-Generation Electric Grid provide guidance on the longer-term critical areas for research in mathematical and computational sciences that is needed for the next-generation grid. It offers recommendations that are designed to help direct future research as the grid evolves and to give the nation's research and development infrastructure the tools it needs to effectively develop, test, and use this research.

John Ring LaMontagne Memorial Lecture: "The State of the World's Antibiotics"

Don't miss the 2016 John Ring LaMontagne Memorial Lecture today! Economist and epidemiologist Ramanan Laxminarayan will address the growing problem of antibiotic resistance and possible solutions. The lecture was videocast live from Lipsett Amphitheater in the NIH Clinical Center. Click **here** to watch.

Infusing Ethics into the Development of Engineers: Exemplary Education Activities and Programs

Ethical practice in engineering is critical for ensuring public trust in the field and in its practitioners, especially as engineers increasingly tackle international and socially complex problems that combine technical and ethical challenges. This report aims to raise awareness of the variety of exceptional programs and strategies for improving engineers' understanding of ethical and social issues and provides a resource for those who seek to improve ethical development of engineers at their own institutions. This publication presents 25 activities and programs that are exemplary in their approach to infusing ethics into the development of engineering students. It is intended to serve as a resource for institutions of higher education seeking to enhance their efforts in this area.

Global Health Impacts of Vector-Borne Diseases: Workshop Summary (2016)

Pathogens transmitted among humans, animals, or plants by insects and arthropod vectors have been responsible for significant morbidity and mortality throughout recorded history. Such vector-borne diseases – including malaria, dengue, yellow fever, and plague – together

accounted for more human disease and death in the 17th through early 20th centuries than all other causes combined. Over the past three decades, previously controlled vector-borne diseases have resurged or reemerged in new geographic locations, and several newly identified pathogens and vectors have triggered disease outbreaks in plants and animals, including humans.

Domestic and international capabilities to detect, identify, and effectively respond to vector-borne diseases are limited. Few vaccines have been developed against vector-borne pathogens. At the same time, drug resistance has developed in vector-borne pathogens while their vectors are increasingly resistant to insecticide controls. Furthermore, the ranks of scientists trained to conduct research in key fields including medical entomology, vector ecology, and tropical medicine have dwindled, threatening prospects for addressing vector-borne diseases now and in the future.

In June 2007, as these circumstances became alarmingly apparent, the Forum on Microbial Threats hosted a workshop to explore the dynamic relationships among host, pathogen(s), vector(s), and ecosystems that characterize vector-borne diseases. Revisiting this topic in September 2014, the Forum organized a workshop to examine trends and patterns in the incidence and prevalence of vector-borne diseases in an increasingly interconnected and ecologically disturbed world, as well as recent developments to meet these dynamic threats. Participants examined the emergence and global movement of vector-borne diseases, research priorities for understanding their biology and ecology, and global preparedness for and progress toward their prevention, control, and mitigation. This report summarizes the presentations and discussions from the workshop.

Improving the Health of Women in the United States: Workshop Summary (2016)
The environment for women's health has changed over the last 25 years. Increased use of automobiles can lead to health risks from lack of physical activity. There has also been an increase in access to and consumption of unhealthy food. Other changes in the past 2 to 3 decades include the significant increase in the number of women who are heads of households and responsible for all aspects of a household and family. Many women now are also having children later in life, which poses interesting issues for both biology and sociology. The growing stress faced by women and the effect of stress on health and illness are issues that need a more comprehensive examination, as do issues of mental health and mental illness, which have been more common and thus increasingly prominent issues for U.S. women. In September 2015, the National Academies of Sciences, Engineering, and Medicine convened a workshop to shed light on important determinants, consequences, effects, and issues attending the relative disadvantage of women in the United States in comparison with women in other economically advanced nations. This report summarizes the presentations and discussions from the workshop.

New Funding Opportunities

(Back to Page 1)

Content Order

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

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

New Funding Solicitations Posted Since March 15 Newsletter

DE-FOA-0001493 Addressing Risk and Uncertainty in the Future Power System
The nation's wholesale electricity markets and transmission planning are in a state of transition. The Department of Energy's (DOE's) Office of Electricity Delivery and Energy Reliability (OE) is interested in both operational and planning modeling and computation methodologies/techniques needed to support the future engineering and market functions required by these systems. Addressing risk and uncertainty is central to meeting the needs and ensuring reliability is a fundamental requirement of the system. There are three research areas for this Funding Opportunity Announcement (FOA): a) wholesale market operations, b) transmission planning, and c) demand-side participation. In accordance, with Section III-Eligibility Requirements, this FOA is being restricted to United States (US) Colleges, Universities, and University-affiliated Research Institutions with accredited undergraduate and graduate programs. **Due April 26**.

Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship Program
The Fulbright-Hays DDRA Fellowship Program provides opportunities to doctoral candidates to engage in full-time dissertation research abroad in modern foreign languages and area studies. The program is designed to contribute to the development and improvement of the study of modern foreign languages and area studies in the United States. **Due May 6**.

DARPA-BAA-16-32 Next Generation Social Science (NGS2)
The Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals to build a new capability (methods, models, tools, and a community of researchers) to perform rigorous, reproducible experimental research at scales necessary to understand emergent properties of human social systems. DARPA anticipates that the Next Generation Social Science (NGS2) program may require a fundamental reimagining of the social science research cycle and encourages participation from a wide and diverse

combination of disciplines and skill sets – to include social sciences, but also physics, computer science, biology, game design, mathematics, and others. Specifically excluded is research that primarily results in incremental improvements to the existing state of practice. **Due May 18.**

NOAA-NWS-NWSPO-2016-2004829 Education, Training and Capacity Development for Weather, Water and Climate Forecasting (ETCD)

The ETCD Program's goal is to improve performance of all operational meteorologists and hydrologists worldwide. Improving human performance for enhanced decision support services is done through collaborative training and education. ETCD is accomplished through collaboration between operational hydrologists/meteorologists, scientists and academic staff with expertise across a wide range of environmental, educational and social sciences. These activities engage operational hydrologists/meteorologists, researchers, instructors and students in applied training and simulation exercises which are pivotal to the operational climate, water and weather communities. The goal of improving performance is achieved through a Competency-based education and training program. By meeting the goal of ETCD, forecasts and warnings of environmental hazards will be improved. **Due May 20.**

RFA-FD-16-034 Strategies that Support Global Food Safety (U01) Department of Health and Human Services Food and Drug Administration

FDA announces its intention to accept and consider a single source application for award of a $1 million cooperative agreement to the World Health Organization (WHO) Department of Food Safety and Zoonoses (FOS) to support strategies that address global food safety. This Cooperative Agreement is expected to contribute to the knowledge base of the current state of food safety globally, including challenges, risks and emerging trends, based on WHO's existing network efforts, such as the Global Foodborne Infections Network (GFN), International Food Safety Authorities Network (INFOSAN), Global Environment Monitoring System for Food (GEMS/Food); Global Early Warning Systems for Animal Diseases Including Zoonoses (GLEWS); Enable the sharing of scientific findings and data through expert meetings and technical consultations; Enhance capacity at international and national levels in such areas of laboratory analyses, surveillance, and risk assessment/risk management, including through the Advisory Group on Integrated Surveillance of Antimicrobial Resistance (AGISAR); Contribute to the scientific, standard-setting work of the Codex Alimentarius Commission (Codex) through scientific advisory groups including the Joint Food and Agriculture Organization of the United Nations (FAO)/WHO Expert Committee on Food Additives (JECFA), the Joint FAO/WHO Meetings on Pesticide Residues (JMPR), the FAO/WHO Joint Meetings on Microbiological Risk Assessment (JEMRA), and the Joint FAO/WHO Expert Meetings on Nutrition (JEMNU) currently in development phase; and Enable participation of Member States through the Codex Trust Fund. **Due May 26.**

Air Force Fiscal Year 2017 Young Investigator Research Program (YIP)

The Fiscal Year 2017 Air Force Young Investigator Research Program (YIP) intends support for scientists and engineers who have received Ph.D. or equivalent degrees 1 April 2011 or later that show exceptional ability and promise for conducting basic research. The program objective is to foster creative basic research in science and engineering; enhance early career

development of outstanding young investigators; and increase opportunities for the young investigator to recognize the Air Force mission and related challenges in science and engineering. Individual awards are made to U.S. institutions of higher education, industrial laboratories, or non-profit research organizations where the principal investigator is employed on a full-time basis and holds a regular position. YIP primary investigators must be a U.S. citizen, national, or permanent resident. Researchers working at a Federally Funded Research and Development Center or DoD Laboratory are not eligible for this competition. Most YIP awards are funded at $120,000 per year for three years, for a total of $360,000. Exceptional proposals will be considered individually for higher funding levels and/or longer duration. Please review the remainder of this announcement for additional information. We anticipate approximately fifty (50) awards under this competition if funds are available. **Due June 1.**

NOAA-NWS-NWSPO-2017-2004858 NOAA Science Collaboration Program

The NOAA Science Collaboration Program (NSCP/**$75 million)** represents an effort to support the development of undergraduate, graduate, and postdoctoral researchers and scientists with expertise in NOAA-related sciences. This will be accomplished through collaborations between these scientists and professionals in areas of mutual interest across the full spectrum of NOAA sciences. It is expected that some of the scientists will collaborate onsite at NOAA facilities and laboratories. NOAA will also support associated workshops that will serve to further enhance collaborative relationships. Through this funding opportunity, NOAA is also interested in supporting complementary earth-systems modeling efforts in areas such as hydrology and coastal dynamics which can serve as a catalyst for collaborations between NOAA professionals and scientists supported through this program. NOAA will support social science research that evaluates the impact of NOAA-related science to society and seeks to find ways to determine how environmental and related sciences can be communicated and utilized more effectively to protect life and property, assist decision makers, and enhance economic development. **Due June 13.**

US Ignite: Networking Research and Application Prototypes Leading to Smart & Connected

US Ignite is an initiative that seeks to promote US leadership in the development and deployment of next-generation gigabit applications with the potential for significant societal impact. The primary goal of US Ignite is to break a fundamental deadlock: there is insufficient investment in gigabit applications that can take advantage of advanced network infrastructure because such end-to-end infrastructure is rare and geographically dispersed. And conversely, there is a lack of broad availability of advanced broadband infrastructure for open experimentation and innovation because there are few advanced applications and services to justify it. US Ignite aims to break this deadlock by providing incentives for imagining, prototyping, and developing gigabit applications that address national priorities, and by leveraging and extending this network testbed across US college/university campuses and cities.

This solicitation builds on the experience and community infrastructure gained from initial US Ignite activities to further engage the US academic research and non-profit communities along with local cities, municipalities, and regions in exploring the challenges of developing and applying next-generation networking to problems of significant public interest

and benefit. In particular, this solicitation has two focus areas: the first encourages the development of application ideas and prototypes addressing national priority areas that explore new uses for high-speed networks and give rise to the Smart & Connected Communities of the future, as well as novel networking and application paradigms; and the second pursues fundamental research advances in networking technology and protocols that will further both the capabilities and our understanding of gigabit networking infrastructure to meet current and future application demands. **In 2016, NSF is also working with the U.S. Department of Justice (DOJ) Office for Access to Justice (ATJ)** to identify additional application ideas and prototypes and basic research directions that may serve national priority areas of mutual interest. **Due June 14**.

Small Business Innovation Research Program Phase I (SBIR) - June 2016 Submission

The Small Business Innovation Research (SBIR) Program is intended to stimulate technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The SBIR/STTR program solicits proposals from the small business sector consistent with NSF's mission. The program is governed by Public Law 112-81 (SBIR/STTR Reauthorization Act of 2011). SBIR/STTR policy is provided by the Small Business Administration (SBA) through the SBA Policy Directive. A main purpose of the legislation is to stimulate technological innovation and increase private sector commercialization. The NSF SBIR/STTR program is therefore in a unique position to meet both the goals of NSF and the purpose of the SBIR/STTR legislation by transforming scientific discovery into both social and economic benefit, and by emphasizing private sector commercialization. **Due June 16.**

Accordingly, NSF has formulated broad solicitation topics that conform to the high-technology investment sector's interests. The topics are detailed on the SBIR/STTR website.

PD-16-7680 Broadening Participation in Engineering

The Broadening Participation in Engineering (BPE) Program is a Directorate-wide initiative dedicated to supporting the development of a diverse and well-prepared engineering workforce. Across every educational juncture (e.g., elementary, secondary, and postsecondary levels), efforts to improve engineering interests, preparation, connections, experiences, and opportunities among underrepresented groups is of major importance to BPE.

In FY 2016, aligned with NSF-wide INCLUDES, BPE is interested in funding projects that bring together multiple groups (e.g., school districts, community colleges, engineering schools, industry, philanthropy, government, etc.) and offer the greatest return on investment by producing outcomes that are scalable, sustainable, and applicable to various contexts, settings, and demographics within the engineering enterprise. For example, it is interested research projects that help us to analyze and understand the problem of insufficient interest and poorly sustained participation in engineering across underrepresented demographic groups; insignificant preparation and scarce opportunities for members of underrepresented demographic groups to learn meaningful, relevant engineering and other STEM-related content; insufficient access to support systems and social networks that raises career

awareness about different engineering pathways among underrepresented groups; and structural inequalities and biases within educational and workforce systems that may influence engineering persistence.

For FY 2016, BPE is equally interested in funding demonstration projects that focus on issues associated with diversity within the engineering professoriate, with a particular interest in proposals concentrating on racial and ethnic minorities. Such projects should be informed by the current theoretical and scientific literature as well as add to the extant knowledge base. Given the breadth of targeted groups, it is expected that all institutions of higher learning (i.e., 2-year and 4-year) have at least one if not more targeted demographics that they could propose a strategy for improving diversity (e.g., creation of a professoriate preparation program for graduate students, development of a postdoctoral program, or creation of a mentoring program for early career faculty).

A successful proposal should, therefore, provide appropriate data to support selection of the targeted group(s), with specific and applicable objectives, demonstrate applicable knowledge of the relevant literature on underrepresentation and describe a clear strategy for improving representation. These demonstration projects should also integrate assessment and evaluation protocols capable of measuring how well they achieve their stated objectives as part of the project management plans. The effectiveness of the proposed evaluation is one aspect of a project's intellectual merit. Similarly, there should be evidence of clear, measureable outcomes and consideration of how the strategy will work for disparate institutions. It is expected that proposed projects would advance our knowledge of this field in many ways.

In closing, before submitting a research or demonstration project proposal to the BPE program, prospective PIs are strongly encouraged to speak to the program director to obtain guidance as to whether the proposed ideas are aligned with the strategic goals of the BPE. It is also strongly recommended that proposals be submitted to the BPE not later than the **Full Proposal Target Date of June 16** to enable full consideration of the proposed project for the related fiscal year's funding.

PA-AFRL-AFOSR-2016-0001 Fiscal Year 2017 Defense University Research Instrumentation Program (DURIP)

The Department of Defense (DoD) announces the Fiscal Year 2017 Defense University Research Instrumentation Program (DURIP). DURIP is designed to improve the capabilities of accredited United States (U.S.) institutions of higher education to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for the acquisition of research equipment or instrumentation. For-profit organizations are not eligible for DURIP funding. This announcement seeks proposals from universities to purchase equipment and instrumentation in support of research in areas of interest to the DoD. DoD interests include the areas of research supported by the Army Research Office (ARO), the Office of Naval Research (ONR), and the Air Force Office of Scientific Research (AFOSR), hereafter generally referred to collectively as "we, our, us, or administering agency." Each administering agency will make grant awards to fund the purchase of research equipment or instrumentation costing $50,000 or more that cannot typically be purchased within the budgets of single-investigator awards. We generally cannot make any individual award that exceeds more than $1,500,000 in DoD funding unless your proposal qualifies for an exception. We intend to award

approximately $47 million this competition, subject to availability of funds. DURIP awards are typically one year in length. DURIP is part of the University Research Initiative (URI).All the application forms you need are available electronically on Grants.gov. We will not provide paper copies of this announcement, or accept paper applications. All applications must be submitted electronically through Grants.gov. **Due July 22.**

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

The MURI program supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interacts to provide rapid advances in scientific areas of interest to the DoD. As defined in the DoD Financial Management Regulation: Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 050201.B). DoD's basic research program invests broadly in many specific fields to ensure that it has early cognizance of new scientific knowledge. The FY 2017 MURI competition is for the topics listed below. Detailed descriptions of the topics and the Topic Chief for each can be found in Section VIII, entitled, "Specific MURI Topics," of this FOA. The detailed descriptions are intended to provide the offeror a frame of reference and are not meant to be restrictive to the possible approaches to achieving the goals of the topic and the program. Innovative ideas addressing these research topics are highly encouraged. White papers and full proposals addressing the following topics should be submitted to the Air Force Office of Scientific Research (AFOSR): Topic 1 (AFOSR): Foundations of Interactive Protocols for Quantum Computation and Communications Topic 2 (AFOSR): Bioinspired Low-Energy Information Processing Topic 3 (AFOSR): Autonomous Research Systems for Materials Development Topic 4 (AFOSR): Beam/Wave Dynamics in Geometrically Complex Systems with Emitting Boundaries Topic 5 (AFOSR): Atmospheric disturbances at high altitudes Topic 6 (AFOSR): Revolutionary Advances in Computational Quantum Many Body Physics Topic 7 (AFOSR): Melanin: Unique Biopolymers for Functional Precision Nanoscale Materials Topic 8 (AFOSR): Adaptive Oxides for Biomimetic Synapse Design via Modulation of Internal States White papers and full proposals addressing the following topics should be submitted to the Office of Naval Research (ONR): Topic 9 (ONR): Physics, Chemistry and Mechanics of Polymer Dielectric Breakdown Topic 10 (ONR): Percept formation and scene analysis in echolocating systems Topic 11 (ONR): Phase Change Materials for Photonics Topic 12 (ONR): Event Representation and Episodic Memory Topic 13 (ONR): Nonlinear Phenomena and Interactions Induced by Short and Ultra-Short Pulsed Lasers in the Long-Wave Infrared Regime Topic 14 (ONR): High-Fidelity Simulation Methodologies for Multi-Phase Flows Topic 15 (ONR): Novel Approaches to Modeling Factions and Conflict Topic 16 (ONR): Assuring Composability and Correctness for Intelligent and Learning Systems that Interact with Unstructured Physical

Environments White papers and full proposals addressing the following topics should be submitted to the Army Research Office (ARO): Topic 17 (ARO): Additive 3D Self-Assembly of Responsive Materials Topic 18 (ARO): Anyons in 2D materials and cold Atomic gases Topic 19 (ARO): Characterization of Information Content in Data for Multimodal Data Analysis Topic 20 (ARO): Nutritional and Environmental Effects on the Gut Microbiome and Cognition Topic 21 (ARO): Spectral Decomposition and Control of Strongly Coupled Nonlinear Interacting Systems Topic 22 (ARO): Toward Room Temperature Exciton-Polaritonics Topic 23 (ARO): Cyber Deception through Active Leverage of Adversaries' Cognition Process Proposals from a team of university investigators are warranted when the necessary expertise in addressing the multiple facets of the topics may reside in different universities, or in different departments in the same university. By supporting multidisciplinary teams, the program is complementary to other DoD basic research programs that support university research through single-investigator awards. Proposals shall name one Principal Investigator (PI) as the responsible technical point of contact. Similarly, one institution shall be the primary awardee for the purpose of award execution. The PI shall come from the primary institution. The relationship among participating institutions and their respective roles, as well as the apportionment of funds including sub-awards, if any, shall be described in both the proposal text and the budget. For topic 19, proposals are invited that include participation from UK academic institutions (see Section III.2); however, UK participation is not a requirement. In the case of proposals with UK participation, there still should be a single US primary institution and one PI submitting the overall proposal. However, funding for the UK participation will be allocated separately by the UK government. **Due November 15.**

URL Links to New & Open Funding Solicitations

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

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

Solicitations Remaining Open from Prior Issues of the Newsletter

Humanities Access Grants, National Endowment for the Humanities

Humanities Access grants help support capacity building for humanities programs that benefit one or more of the following groups: youth, communities of color, and economically disadvantaged populations. Humanities Access grants establish or augment term endowments (that is, endowments whose funds are entirely expended over the course of a set time period) to provide funding for existing programs at institutions such as public libraries, local and regional museums, historical societies, community colleges, HBCUs and tribal colleges, Hispanic-serving institutions, archival repositories, and other cultural organizations. Humanities Access grants are intended to seed longer-term endowment-building efforts. Programs supported by Humanities Access grants might include, for example: a summer project for teens at a local historical society; internships for Native American students at a tribal museum; or a Clemente course at a homeless shelter organized by a community college. Humanities Access Grants offer two years of match-based funding to be expended through a term endowment

over the final three years of the five-year grant period. Humanities Access grant funds should not be used to replace existing program funds. Instead, the grant should expand or enhance an existing exemplary humanities program. Institutions that have never received an NEH grant and small to mid-sized institutions are especially encouraged to apply. **Due May 4.**

NSF/USDA/NIFA Plant-Biotic Interactions

The Plant-Biotic Interactions (PBI) program supports research on the processes that mediate beneficial and antagonistic interactions between plants and their viral, bacterial, oomycete, fungal, plant, and invertebrate symbionts, pathogens and pests. This joint NSF-NIFA program supports projects focused on current and emerging model and non-model systems, and agriculturally relevant plants. The program scope extends from fundamental mechanisms to translational efforts, with the latter seeking to put into agricultural practice insights gained from basic research on the mechanisms that govern plant-biotic interactions. Projects must be strongly justified in terms of fundamental biological processes and/or relevance to agriculture and may be purely fundamental or applied, or include aspects of both perspectives. All types of symbiosis are appropriate, including commensalism, mutualism, parasitism, and host-pathogen interactions. Research may focus on the biology of the plant host, its pathogens, pests or symbionts, interactions among these, or on the function of plant-associated microbiomes. The program welcomes proposals on the dynamics of initiation, transmission, maintenance and outcome of these complex associations, including studies of metabolic interactions, immune recognition and signaling, host-symbiont regulation, reciprocal responses among interacting species and mechanisms associated with self/non-self recognition such as those in pollen-pistil interactions. Explanatory frameworks may include molecular, genomic, metabolic, cellular, network and organismal processes, with projects guided by hypothesis and/or discovery driven experimental approaches. Where appropriate, quantitative modeling in concert with experimental work is encouraged. Overall, the program seeks to support research that will deepen our understanding of the fundamental processes that mediate interactions between plants and the organisms with which they intimately associate and advance the application of that fundamental knowledge to benefit agriculture. Note that PBI does not require submission of preliminary proposals. **Due June 6**.

Materials Research Science and Engineering Centers

Materials Research Science and Engineering Centers (MRSECs) provide sustained support of interdisciplinary materials research and education of the highest quality while addressing fundamental problems in science and engineering. MRSECs address research of a scope and complexity requiring the scale, synergy, and interdisciplinarity provided by a campus-based research center. They support materials research infrastructure in the United States, promote active collaboration between universities and other sectors, including industry and international institutions, and contribute to the development of a national network of university-based centers in materials research, education, and facilities. A MRSEC may be located at a single institution, or may involve multiple institutions in partnership. **Preliminary July 1; full December 2.**

Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS)

The Division of Mathematical Sciences in the Directorate for Mathematical and Physical Sciences at the National Science Foundation and the National Institute of General Medical Sciences at the National Institutes of Health plan to support research in mathematics and statistics on questions in the biological and biomedical sciences. Both agencies recognize the need and urgency for promoting research at the interface between the mathematical sciences and the life sciences. This program is designed to encourage new collaborations, as well as to support existing ones. **Due September 14.**

Bridges to the Baccalaureate (R25)

The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The over-arching goal of this NIGMS R25 program is to support educational activities that enhance the diversity of the biomedical, behavioral and clinical research workforce. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on Courses for Skills Development, Research Experiences, and Curriculum or Methods Development. A proposed program must include each activity and describe how they will be integrated. The Bridges to Baccalaureate Program is intended to provide these activities to community college students to increase transfer and retention to BS graduation in biomedical sciences. This program requires partnerships between community colleges or other two-year post-secondary educational institutions granting the associate degree with colleges or universities that offer the baccalaureate degree. Applicants should directly address how the set of activities will complement and/or enhance the training of a workforce to meet the nation's biomedical and clinical research needs by discussing 1) the rationale underlying the balance of effort and resources dedicated to each activity; 2) how the activities integrate; and 3) objective indicators that can measure the effectiveness of the program. Recruitment and retention plans are required elements of the program. **Due September 25**.

Bridges to the Doctorate (R25)

The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The over-arching goal of this NIGMS R25 program is to support educational activities that enhance the diversity of the biomedical, behavioral and clinical research workforce. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on Courses for Skills Development and Research Experiences. The Bridges to Doctorate Program is intended to provide these activities to master's level students to increase transition to and completion of PhDs in biomedical sciences. This program requires partnerships between master's degree-granting institutions with doctorate degree-granting institutions. Applicants should directly address how the set of activities will complement and/or enhance the training of a diverse workforce that also meets the nation's biomedical and clinical research needs by discussing 1) the rationale underlying the balance of effort and resources dedicated to each activity; 2) how the activities integrate; and 3) objective indicators that can measure the effectiveness of the program. A program application must include each activity, and describe how they will be synergized to make a

comprehensive program. Additionally, recruitment and retention plans are expected as part of the application. **Due September 25.**

Open Solicitations and BAAs

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

DARPA-BAA-15-27 Innovative Systems for Military Missions

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

APS-OAA-15-000048 U.S. Agency for International Development (Higher Education Partnerships for Innovation and Impact (HEPII) Annual Program Statement (APS)

The United States Agency for International Development (USAID) is seeking concept papers from qualified U.S. and non-U.S. higher education institutions (HEIs) to work with USAID to advance strategic priorities and objectives and achieve sustainable development outcomes, results, and impact. This Annual Program Statement (APS) has the flexibility to award Cooperative Agreements, Grants, Fixed Amount Awards, and leader with Associate Awards. This APS is not supported by specific funding, and any funding for any USAID-HEI partnership proposed under this APS would have to be requested from the specific USAID Mission, Bureau, or Independent Office with which the prospective applicant seeks to collaborate and to which the Concept Paper will be submitted. USAID seeks to optimize its relationship with HEIs by identifying and promoting successful partnerships and collaboration models, and increasing USAID's access to higher education technical resources. The purpose of this APS is to promote opportunities for leveraging HEI capabilities across USAID's portfolio and its program cycle, and strengthen developing country HEI capabilities to respond to and solve critical development challenges. **Original Closing Date for Applications: Jun 29, 2016**

DARPA-BAA-15-39 DSO Office-wide BAA Department of Defense

The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and pursue high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and to transform these initiatives into important, radically new, game-changing technologies for U.S. national security. In support of this mission, this DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts in one or more of the following technical areas: Physical Systems; Mathematics, Modeling and Design; and Human-Machine Systems. Each

of these areas is described below and includes a list of example research topics. For each technical area addressed, proposed research should investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice. **Open to July 2, 2016.**

FY 2016 Continuation of Solicitation for the Office of Science Financial Assistance Program

The Office of Science (SC) of the Department of Energy hereby announces its continuing interest in receiving grant applications for support of work in the following program areas: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, and Nuclear Physics. On September 3, 1992, DOE published in the Federal Register the Office of Energy Research Financial Assistance Program (now called the Office of Science Financial Assistance Program), 10 CFR 605, as a Final Rule, which contained a solicitation for this program. Information about submission of applications, eligibility, limitations, evaluation and selection processes and other policies and procedures are specified in 10 CFR 605. This Funding Opportunity Announcement (FOA), DE-FOA-0001414, is our annual, broad, open solicitation that covers all of the research areas in the Office of Science and is open throughout the Fiscal Year. **This FOA will remain open until September 30, 2016**, 11:59 PM Eastern Time, or until it is succeeded by another issuance, whichever occurs first.

DoD USAMRMC FY16 Broad Agency Announcement for Extramural Medical Research

The U.S. Army Medical Research and Materiel Command's (USAMRMC) mission is to provide solutions to medical problems of importance to the American Service member at home and abroad, as well as to the general public at large. The scope of this effort and the priorities attached to specific projects are influenced by changes in military and civilian medical science and technology, operational requirements, military threat assessments, and national defense strategies. The extramural research and development programs play a vital role in the fulfillment of the objectives established by the USAMRMC. General information on USAMRMC can be obtained at https://mrmc.detrick.army.mil/ . This Fiscal Year 2016 (FY16) Broad Agency Announcement (BAA) is intended to solicit extramural research and development ideas and is issued under the provisions of the Competition in Contracting Act of 1984 (Public Law 98-369), as implemented in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016. In accordance with FAR 35.016, projects funded under this BAA must be for basic and applied research and that part of development not related to the development of a specific system or hardware procurement. Projects must be for scientific study and experimentation directed toward advancing the state-of-the-art or increasing knowledge or understanding rather than focusing on a specific system or hardware solution. Research and development funded through this BAA is intended and expected to benefit and inform both military and civilian medical practice and knowledge. This BAA provides a general description of USAMRMC's research and development programs, including research areas of interest, evaluation and selection criteria, pre-proposal/pre-application and full proposal/application preparation instructions, and general administrative information. Specific submission information and additional administrative requirements can be found in the document titled "General Submission Instructions" available

in Grants.gov along with this BAA. This FY16 BAA is continuously open for a 12-month period, from October 1, 2015 through September 30, 2016, at 11:59 p.m. Eastern Time. Submission of a pre-proposal/pre-application is required and must be submitted through the electronic Biomedical Research Application Portal (eBRAP) (https://eBRAP.org/). Pre-proposals/pre-applications may be submitted at any time throughout the 12-month period. If the USAMRMC is interested in receiving a full proposal/application, the PI will be sent an invitation to submit via eBRAP. A full proposal/application must be submitted through Grants.gov (http://www.grants.gov/). **Invited full proposals/applications can be submitted under the FY16 BAA through September 30, 2016**.

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

The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Environmental Lab (EL), and the Information Technology Lab (ITL) in Vicksburg, Mississippi; the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire; the Construction Engineering Research Lab (CERL) in Champaign, Illinois; and the Topographic Engineering Center (TEC) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/chemical properties of snow and other frozen precipitation, infrastructure and environmental issues, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. The BAA is available at http://erdc.usace.army.mil and is open until superseded. Proposals may be accepted at any time. For questions regarding proposals to CHL, EL, GSL, TEC & ITL, contact Mike Lee at 601-634-3903 or via email at Michael.G.Lee@usace.army.mil . For questions regarding proposals to CERL, contact Wanda Huber at 217-373-6730 or via email at Wanda.L.Huber@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at Andrea.J.Krouse@usace.army.mil . For questions regarding proposals at CRREL, contact Ashley Jenkins at 217-373-7297 or via email at Ashley.M.Jenkins@usace.army.mil . Contact the technical personnel listed at the end of each topic area for questions concerning the topic areas themselves. **Open until January 31, 2017**.

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

This Broad Agency Announcement (BAA), which sets forth research areas of interest to the **Army Research Laboratory** (ARL) Directorates and Army Research Office (ARO), is issued under the paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of basic research proposals. Proposals submitted in response to this BAA

and selected for award are considered to be the result of full and open competition and in full compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. **Open June 1, 2012 to March 31, 2017**.

W911NF-12-R-0012 Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research

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

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

University Small Grants Broad Agency Announcement

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

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

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

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

NOAA-NFA-NFAPO-2016-2004791 FY2016 to FY2017 NOAA Broad Agency Announcement
This notice is not a mechanism to fund existing NOAA awards. The purpose of this notice is to request applications for special projects and programs ***associated with NOAA's strategic plan and mission goals***, as well as to provide the general public with information and guidelines on how NOAA will select proposals and administer discretionary Federal assistance under this Broad Agency Announcement (BAA). **This BAA is a mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through our competitive discretionary programs**. Funding for activities described in this notice is contingent upon the availability of Fiscal Year 2016 and Fiscal Year 2017 appropriations. Applicants are hereby given notice that funds have not yet been appropriated for any activities described in this notice. Publication of this announcement does not oblige NOAA to review an application beyond an initial administrative review, or to award any specific project, or to obligate any available funds. **Open to September 30, 2017.**

NOAA-OAR-SG-2016-2004772 National Sea Grant College Program 2016-17 Special Projects
The purpose of this notice is to request proposals for special projects associated with the National Sea Grant College Program's (Sea Grant) strategic focus areas, and to provide the general public with information and guidelines on how Sea Grant will select proposals and administer Federal assistance under this announcement. This announcement is a mechanism to encourage research or other projects that are not normally funded through Sea Grant national competitions. This opportunity is open only to Sea Grant Programs. Section III of this announcement describes eligibility requirements in more detail. Funding has not yet been made available to support applications submitted to this Federal Funding Opportunity (FFO), but such funding may become available during the year. Section II.A. below describes individual competition announcements that will be used to announce when funding is available; any restrictions or requirements on such funding, such as matching funds; and other funding details. Awards will be made under this FFO only if funds have been announced as provided in this FFO. **Open to September 30, 2017.**

BAA-16-100-SOL-00002 Broad Agency Announcement (BAA) for the Advanced Development of Medical Countermeasures for Pandemic Influenza- BARDA
BARDA (full announcement) encourages the advanced research, development and acquisition of medical countermeasures such as vaccines, therapeutics, and diagnostics, as well as innovative approaches to meet the threat of Pandemic Influenza in support of the preparedness mission and priorities of the HHS Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) articulated in the 2014 PHEMCE Implementation Plan.

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

AFRL Research Collaboration Program

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

United States Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic, Applied, and Advanced Scientific Research (FY13-18)

Announcement for Basic, Applied, and Advanced Scientific Research. This Broad Agency Announcement (BAA), which sets forth research areas of interest to the United States Army Research Institute for the Behavioral and Social Sciences, is issued under the provisions of paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Proposals submitted in response to this BAA and selected 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.**

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

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

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

BAA-RQKD-2014-0001 Open Innovation and Collaboration Department of Defense Air Force -- Research Lab

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

HDTRA1-14-24-FRCWMD-BAA Fundamental Research to Counter Weapons of Mass Destruction

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

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

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

Academic Research Funding Strategies, LLC (Page 1)

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

What We Do--

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

- Strategic Planning - Assistance in formulating research development strategies and building institutional infrastructure for research development (including special strategies for Predominantly Undergraduate Institutions and Minority Serving Institutions)
- Training for Faculty - Workshops, seminars and webinars on how to find and compete for research funding from NSF, NIH, DoE and other government agencies as well as foundations. Proposal development retreats for new faculty.
- Large proposals - Assistance in planning and developing institutional and center-level proposals (e.g., NSF ERC, STC, NRT, ADVANCE, IUSE, Dept of Ed GAANN, DoD MURI, etc.)
- Assistance for new and junior faculty - help in identifying funding opportunities and developing competitive research proposals, particularly to NSF CAREER, DoD Young Investigator and other junior investigator programs
- Facilities and Instrumentation - Assistance in identifying and competing for grants to fund facilities and instrumentation
- Training for Staff - Professional Development for research office and sponsored projects staff

Workshops by Academic Research Funding Strategies

We offer workshops on research development and grant writing for faculty and research professionals based on all published articles.
(View Index of Articles)