

Research Development & Grant Writing News

Volume 6, Issue 6: February 15, 2016

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By Katherine E. Kelly, PhD

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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.

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Topics of Interest URLs

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The Jackson Pollock Narrative

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By Mike Cronan, co-publisher

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For those asked to review or edit a draft proposal narrative several days prior to the due date, the most dispiriting narrative to receive is what might be called the “**Jackson Pollock Narrative**.” This is a narrative produced by those who see little or **no connection between the solicitation guidelines and the organizational structure and content of the research narrative**. Jackson Pollock, of course, was the highly influential abstract impressionist painter in the late 1940s and early 1950s made famous for his “drip style” or “action style” of painting that involved spontaneously and impulsively dripping, smearing and pouring paint onto the canvas as inspiration dictated.

The lasting value of the paintings created by Pollock and his many contemporary imitators using this “drip style” technique is best left to art historians, but anyone involved in research development and grant writing knows the “drip style” of impulsive inspiration does not work well when applied to the research narrative. The drip style narrative produces a **mess** lacking the organizational structure that allows the reader to (1) **compare what is proposed in the narrative to what the funding agency asks applicants to address and in the order asked**, and (2) follow a linear narrative structured on a logical and stepwise presentation of the **core generic components of a successful proposal**. **The welcoming proposal, by contrast**, explains, **specifically** and in **detail** (1) what you propose to do, (2) why you propose to do it, (3) **how** you propose to do it, (4) why it is important to do it, (5) why you have the capacity to do it, (6) how the outcomes will impact the field in important and nonincremental ways, and (7) how the outcomes will bring value-added benefits to the funding agency’s mission.

By contrast, the Jackson Pollock Narrative spontaneously and impulsively drips, smears and pours words onto the page as inspiration dictates, while ignoring the many questions asked by the sponsor in the funding solicitation, or answering so few of them in such a disorganized way that the reader/reviewer cannot know exactly what is being proposed, let alone how what is proposed will be accomplished.

The Jackson Pollock Narrative avoids **specificity** as if it were a new and more deadly stain of avian influenza; omits **operational details** as if they were to subtract from inspirational, yet unsubstantiated, claims of transformational impact; provides a **tsunami of general introductory background details** as if the proposal were a textbook on the topic rather than a sales pitch; presents **ideas untethered** to the core seven questions enumerated above; and, **overall, reads like an exercise in stream of consciousness writing**.

How dispiriting it is to be asked to review and comment on or edit and rewrite a Jackson Pollock Narrative cannot be overstated. It literally just takes your breathe away! So what to do? Well, in fairness to the author(s), honesty, tempered by subtlety, is the best policy. The authors must be told that the narrative as written will not be funded because it fails to respond to the funding solicitation, and hence will require massive renovation to make it even competitive for funding, let alone successful. You may wish to ask the authors “*Did anyone actually read the solicitation in detail?*”, or “*Why wasn’t the solicitation used as a narrative template to ensure you answered every question asked in the order asked in the solicitation?*” or

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“This is a complicated solicitation in a new research direction; why was no thought given to a Red Team review of the solicitation prior to writing?” Unfortunately, time is short, and time spent on what might have been just takes time away from what still might be possible.

If you decide that the narrative might be salvaged by a total renovation, time is of the essence. Of course, this assumes the author(s) agree with your assessment that the proposal as structured and written will not be funded. Your credibility here is likely a function of your past history working with the author(s), or your general reputation as a research development professional among PIs on your campus. If you are in a research office, it can help to suggest that a second opinion be sought from a faculty member who has served as a reviewer at the funding agency, or a PI who has been funded in a related area from the same agency.

Most often, however, a very thorough verbal “walk through” of the narrative with the author(s) comparing what is required in the guidelines with what is lacking in the research narrative, ***both in content and organizational structure***, will be sufficient to convince the author(s) to agree to ***begin the proposal anew and set the existing narrative aside***. At a certain point, a poorly structured existing narrative becomes almost impossible to renovate because the narrative is so embedded in a failed narrative structure that it imposes too many constraints on any attempt to do a major rewrite.. So, as with auto insurance, a proposal involved in a major narrative wreck is best “totaled” so that you may proceed to finding a new vehicle.

In this case, the new vehicle is a narrative template created from the funding solicitation that ***lists in order every goal, objective, question, etc. addressed in the guidelines***. **This is your roadmap to narrative redemption**. Next, the author(s) have to draft narrative responses to every item listed in the template, and then weave those responses together into a new narrative that responds fully to the agency guidelines. This does not guarantee funding, but it does guarantee that the reviewers will be able to clearly understand and evaluate the ideas you propose for funding and make a determination based upon that. The original, i.e., failed, proposal narrative may be used as a reference in this process, but very cautiously. Resist the temptation to copy and paste huge sections of it into the new template, which can quickly metastasize the failed logic structure into the new effort. Unfortunately, in grant writing, as in life, you sometimes just need to start over to get it right.

Practical Teaming

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By Mike Cronan, co-publisher

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In a perfect world, teaming would be an orderly and prescient process, whereby a team with a track record of joint research would respond in a very organized way to an appropriate solicitation with a competitive proposal. In practice, however, the process is often a bit more messy, at best. For example, the team-building process often doesn't begin in earnest until a solicitation has been published. This is particularly the case when a new solicitation is anticipated but few of the specific details of the program will be known until the solicitation is published for the first time. This was the case in the recently published *Innovations at the Nexus of Food, Energy and Water Systems* (INFEWS) due NSF March 22, and the *Big Data Regional Innovation Hubs: Establishing Spokes to Advance Big Data Applications* (BD Spokes) due NSF February 25.

In these cases, it is helpful to have some team-building protocols in place to guide the PIs attempting to build a team that will respond fully to the funding solicitation. For example, in the case of the INFEWS proposal, the research team must incorporate science from three or more intellectually distinct disciplines that, in aggregate, represent scientific areas typically **supported by three or more of the participating NSF directorates**. This is not a trivial team configuration requirement, and it is becoming increasingly common across many research agencies.

Unfortunately, PIs commonly respond to such a solicitation by changing their usual practice of assembling a few PIs with a history of collaborating in the topic area to holding huge team-building meetings with a cast of invited researchers reminiscent of a Cecil B. DeMille movie. DeMille's movies were known for their sweeping and epic style and cast of thousands in lavish productions, such as the 1952 Academy Award-winning *The Greatest Show on Earth*. Unfortunately, casting such a broad net has many pitfalls, **not the least of which is that the wrong people will often be eager to join the project while the right people, sensing disorder in large numbers, will not.**

Bottom line: Any new team member brought onto a proposal effort needs to be vetted with some agreed-upon protocols to determine whether or not the potential team member brings clearly defined, value-added benefits to the team and enhances team competitiveness in very specific ways. Team proposals must not become bandwagons allowing any and all to jump on board. The goal is a funded proposal, and for that to happen requires a hard-headed approach to team building, expanding thoughtfully from an initial small core of one or a few PIs to a team sufficiently large **but no larger** to compete successfully for the grant. Always keep in mind that it is very awkward to disinvite someone too hastily added to a team when it is discovered that the person does not offer sufficient value to the project to warrant inclusion in the budget.

One of the more common errors committed when putting together a team to develop and write a major interdisciplinary proposal is to conduct initial meetings without having closely read **the funding solicitation**. Consequently, a meeting meant to explore a potential

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partnership project can end up as a collection of multiple, siloed monologues unguided by the sponsor's vision of how interdisciplinarity will achieve its goals and objectives.

It is a simple matter to build a team more slowly and thoughtfully if the "founding PIs" adopt initial, stepwise planning for the process, along with a group assessment of the capacities the team initially possesses and those the team needs to add to compete successfully for funding in an interdisciplinary environment. Vetting and adding team members benefits enormously from a planned process, particularly for such programs as NSF's INFEWS and BD Spokes, of which there are many across the federal funding agencies. In short, team-building protocols and team member selection should be motivated by the same criterion used by funding agencies when deciding whether or not to select a proposal for funding: what value-added benefits will accrue from the selection?

Big Data and the Internet of Things

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By Mike Cronan, co-publisher

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If you are in a research office providing proposal development and grant-writing support to faculty, it would be hard not to notice the increasing number of proposals that explicitly or implicitly involve **Big Data (BD)** and/or **The Internet of Things (IoT)**. Graphics are helpful in understanding The Internet of Things, for example: [Graphic 1](#), [Graphic 2](#), and [Graphic 3](#). Basically, the IoT consists of devices designed with built-in wireless connectivity and used in homes, hospitals, electric grid, industry, and on and on. This allows devices, from the very small to the very large, to be monitored, controlled, and linked over the Internet, thereby allowing their performance to be optimized and operational costs reduced, among many other benefits, including convenience, particularly through real-time data collection that equates to Big Data.

The IoT leads to smart things, like a smart home, for example, in which every appliance is smart and usage and usage patterns are captured continuously in real time (e.g., [50 Sensor Applications for a Smarter World](#)). This capturing of data continuously in real time yields Big Data, along with analytics, the analysis of the data. Home energy use patterns for every electric device in the home, for instance, might be analyzed using behavioral analytics as a component of the overall smart grid, much like the baseball analytics made famous in the book and movie, *Moneyball* (2011). If you are a football fan, you will likely know that the Cleveland Browns, having given up on quarterback Johnny Manziel, have recently hired an expert in football analytics.

Real-time data collection leads to massive amounts of data that have to be collected, stored, moved, merged, managed for access, and then analyzed. This explains the increase in the number of funding solicitations that address BD and the IoT coming out of many federal agencies, such as BD- and IoT-related BD HUBS and Spoke solicitations from NSF or to the Brain Initiative from NIH, among many others. Moreover, BD and IoT impact broadly interdisciplinary areas, including the social and behavioral sciences. For example, as part of NSF's Cyberinfrastructure Framework for 21st Century Science and Engineering ([CIF21](#)) activity, the Directorate for Social, Behavioral, and Economic Sciences seeks to develop "user-friendly large-scale next-generation data resources and relevant analytic techniques to advance fundamental research in SBE areas of study" under its currently open solicitation for *Resource Implementations for Data Intensive Research in the Social Behavioral and Economic Sciences* ([RIDIR](#)).

NSF's BD HUB program, for example, has established four [BD HUBs](#) inclusive of all 50 states ([Establishing a brain trust for data science](#)). In program areas like NSF's [INFEWs](#), the BD and IoT components are implicit in the research itself, which must address the nexus of food, energy, and water and must use cyberinfrastructures, computational modeling, and analytics to better understand what NSF calls a "system of systems." These two concepts are now embedded in many solicitations across multiple research agencies in which Big Data, the Internet of Things, and analytics are key to the research itself.

These two concepts are providing an important knowledge base for those in research offices who assist faculty in the planning, development, and writing of proposals for several

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reasons: (1) the number of proposals explicitly or implicitly featuring BD analytics and IoT components fundamental to the research is dramatically increasing across disciplinary domains; (2) broader Impacts and educational training components of research proposals as well as educational proposals will require new courses, modules, and training based on BD and IoT to prepare students for the future workforce; and (3) funding agency expectations of transformational and interdisciplinary research to address national [grand challenges](#) (e.g., BRAIN, smart grid, precision medicine, food-energy-water nexus, etc.) will depend increasingly on a BD and IoT platform.

Given this reality, research offices will see more and more proposals that require an understanding of the ubiquity of BD, IoT, and analytics. To better assist, edit and review these proposals in support of faculty will require some basic understanding of these topics.

Big Data and Agricultural Research Funding

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By Mike Cronan, co-publisher

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Big Data has many generic as well as domain-specific attributes. The generic attributes include how it is collected, stored, merged, moved, shared, analyzed, and even monetized; the domain-specific attributes connect it to a specific industry, for example, health care, civil infrastructure, environment, energy, water, smart cities, weather, genomics, among many others, including agriculture. Moreover, Big Data has its own terminology, including the so-called V-terms--value, volume, velocity, variety, veracity, and visualization.

The agricultural domain, specifically [precision agriculture](#), is an increasingly intensive user of Big Data and analytics. Big Data is Big because it collects and stores continuous real-time data (often at fractions of a second) on key agricultural variables that affect production and have significant economic impacts, e.g., crop growth patterns, weather (at macro and micro scales), air quality (temperature, humidity), soil characteristics, and chemical applications (fertilizers, pesticides, etc.). Analytics are then applied to these data to enable smarter decisions to be made, particularly as the data are linked to finely-grained spatial and temporal identifiers.

For example, [AgFunder](#) reported that over \$2 billion in such agricultural technology areas as food ecommerce, water, drones and robotics, decision-support technology, bioenergy, soil and crop technology, biomaterials, biochemicals, sustainable protein, and food storage, have been impacted by Big Data and analytics. Over \$1 billion in investments were made in the areas of food ecommerce and water alone. While these represent private sector investments, federal agency research funding relevant to precision or Big Data Agriculture from USDA/NIFA, NSF, EPA, NOAA, among others, has also been growing.

In June, 2015, Dr. Sonny Ramaswamy, director of the USDA's National Institute of Food and Agriculture (NIFA), delivered a speech on this topic entitled "[Big Data and the Future of Agriculture](#)" at the Soil, Big Data, and Future of Agriculture Conference in Canberra, Australia (also see [Soil, Big Data and the Future of Agriculture](#) and Global Open Data for Agriculture and Nutrition ([GODAN](#))). Not only is NIFA investing in Big Data and analytics but also the innovations will play a key role in the president's [FY2017 budget](#), which calls for an investment of \$700 million in USDA's Agriculture and Food Research Initiative.

Moreover, Big Data plays a key role in agricultural management decisions, particularly as those management decisions allow unit based cost savings in planting, production and distribution. Big Data domains used to improve management decision include such areas as geospatial imagery maps linking data to precise spatial and temporal identifiers, public agency data on weather and soil, satellite images, and analytics that model crops, distribution and markets. The key to the usefulness of Big Data in agriculture, or any other area for that matter, is the capacity to derive value from the data by coupling it with the appropriate analytics.

For example, Big Data in agriculture will have a role in the more than \$30.1 million in grants will be awarded in 2017 through AFRI to fund 80 projects at universities, research institutes and laboratories across the nation. These grants address crucial issues facing agricultural producers, consumers, and researchers such as food safety and quality, nutrients in

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plants, plant growth, and antimicrobial resistance strategies, all Big Data and analytics intensive research directions.

Over the coming weeks, more information on the how the proposed FY 2017 budget for USDA/NIFA will translate into specific research areas to be funded in 2017. A good place to track this is at [AAAS R&D Budget and Policy website](#). The key here is to look at specific research programs that will result in 2017 funding solicitations and make a determination of the role Big Data and analytics will play in these FOAs and plan accordingly. An early indication of where this may go is the recently released joint NSF/NIFA [INFEWS](#) that clearly has a Big Data and analytics focus addressing the nexus of food, water and energy. If USDA research is in your future you can count on Big Data and analytics playing an increasingly key role.

Heads-up: New NSF GPG requirements

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By Lucy Deckard, co-publisher

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The National Science Foundation's Grant Proposal Guide (GPG) provides default instructions for all proposal submitted to NSF. If a specific solicitation provides instructions on a particular requirement, those instructions take precedence, but for aspects where no specific directions are included in the solicitation, or if you're preparing a "core" or "investigator-initiated" proposal, you'll need to look to the GPG for guidance on proposal requirements. For example, NSF solicitations often don't specify the page limit for the Project Description. In that case, the GPG limit of 15 pages applies.

NSF periodically issues new versions of the GPG, and the most recent version **just went into effect on January 25, 2016**. You can find a summary of all the changes to the new GPG [here](#). For most PIs, the most important change relates to new instructions for the two-page biosketches. Since non-compliant biosketches are a common reason for NSF to return proposals without review, we'll take this opportunity to review current requirements for NSF 2-page biosketches. After that, we'll talk about other requirements that PIs often overlook that can result in return without review.

Biosketch Change

The new instructions for preparing an NSF-formatted biosketch can be found [here](#). In the past, the final required section of the biosketch was **Collaborators & Other Affiliations**, which NSF uses to avoid conflicts of interest when recruiting reviewers. NSF realized that it would be much easier to manage and use that information by splitting this section out into a separate document. For that reason, the biosketch no longer must contain the Collaborator & Other Affiliations section. Instead, that information is uploaded separately as a single-copy document. The good news is that this should make it easier to stay within the 2-page limit for the biosketch.

An example biosketch template follows. Note that the specific formatting (e.g., whether or not to use a table for the Professional Preparation section, whether to number or bullet your products/publications) is up to you. Just be sure to comply with the text restrictions (listed [here](#): no smaller than 11 pt Times New Roman or Computer Modern, or 10 pt Arial, Courier New, or Palatino) and margin requirements (1" margins all around). We'll comment on requirements for each section below; see [Section II.C.2.f.i](#) of the GPG (page II-11 in the [pdf version](#)) for the detailed instructions.

- **Professional Preparation:** In this section, your undergraduate and graduate degrees should be listed in chronological order. If applicable, your postdoc(s) should also be included with inclusive dates. Don't forget to include the location of the institution where you earned each degree or did your postdoc.
- **Appointments:** These are listed in reverse chronological order
- **Products:** You can now include data sets, patents, and software as well as publications. (If you include only publications in the section, the heading may be called "Publications" instead of "Products.") For publications, remember to include names of all authors, date of publication or release, title, title of enclosing work (e.g., journal or book info), and

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URL or other Persistent Identifier. It's a good idea to put an asterisk by any undergraduate authors (with an explanation in the heading or at the end of this section).

- **Synergistic Activities:** You may include **no more than five** examples that demonstrate the broader impacts of your scholarly and professional activities. Many people list five broad categories (e.g., service on editorial boards), with specifics under each. While you may include awards and professional service here, it's wise also to include examples of any activities that involve improving education and contributing to diversity in your discipline.
- **There is no longer a section on Collaborations & Other Affiliations.**

Collaborators & Other Affiliations Single-copy Document

A single copy document must now be separately uploaded that includes information on collaborators and other affiliations **for all Senior Personnel**. The following instructions are provided in [Section II.C.1.e](#) (page II-6 in the [pdf version](#) of the GPG):

"The following information regarding collaborators and other affiliations must be separately provided for each individual identified as senior project personnel:

- **Collaborators and co-Editors.** A list of all persons in alphabetical order (including their current organizational affiliations) who are currently, or who have been collaborators or co-authors with the individual on a project, book, article, report, abstract or paper during the 48 months preceding the submission of the proposal. Also include those individuals who are currently or have been co-editors of a journal, compendium, or conference proceedings during the 24 months preceding the submission of the proposal. If there are no collaborators or co-editors to report, this should be so indicated.
- **Graduate Advisors and Postdoctoral Sponsors.** A list of the names of the individual's own graduate advisor(s) and principal postdoctoral sponsor(s), and their current organizational affiliations, if known.
- **Thesis Advisor and Postgraduate-Scholar Sponsor.** A list of all persons (including their organizational affiliations, if known), with whom the individual has had an association as thesis advisor. In addition, a list of all persons with whom the individual has had an association within the last five years as a postgraduate-scholar sponsor."

Other Requirements to Keep in Mind

There are a number of other requirements (many of them made in prior GPG revisions in recent years) that can result in your proposal being returned without review, so you'll want to keep these in mind:

- You must include a separate, labeled section in the Project Description called "**Broader Impacts.**" (In the previous version of the GPG, they specified a slightly different label, "Broader Impacts of the Proposed Work," but that label has been simplified in the most recent version.) More info in the GPG [here](#).
- Be sure to [follow the instructions](#) for reporting **Results of Prior NSF Support** for any NSF funding received by the PI and co-PIs of the current proposal with a start date in the last

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five years (no matter their role in the previously funded project), including current funding and no-cost extensions. Include all the required grant information, report Intellectual Merit and Broader Impacts of each project in separate, labeled sections, and ***cite all products/publications*** that resulted from the project (PIs often forget to do this). Note that if a PI or co-PI has had more than one award in the last five years, they can choose the most relevant award (although you can include more than one if you feel it would be to your advantage).

- **Don't include URLs** in the body of your Project Description. Instead, cite the website as you would a journal article and include the URL in the References Cited section. However, the website should be for reference only and should not be used to provide additional information that is important to the review of the proposal. See full instructions [here](#) and [here](#).
- Follow the rules for providing references in the **References Cited** section. Be sure to include the names of all of the authors (no *et al.* here, although they can be used in citations in the Project Description text), and be sure to include the titles of journal articles along with page numbers. Full instructions are [here](#).
- Another change in the new GPG is in the [Current & Pending Support](#) forms provided by all Senior Personnel. NSF now requires that you include internal funding for specific projects. So this might include, for example, an internal seed grant for which you wrote an internal proposal, but it would not include start-up funds. They also state, “[all other projects or activities requiring a portion of time of the PI and other senior personnel must be included, even if they receive no salary support from the project\(s\).](#)” (This situation often comes up for senior faculty who may commit to participate in a project, particularly an education-focused project such as an [NSF REU](#), but ask for no budget support.) Also, be sure to include the information for the current proposal in the pending section.

An example biosketch template follows on the next page.

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Jane L. Doe

Civil & Environmental Engineering, University of Metropolis

PROFESSIONAL PREPARATION

Institution	Location	Major	Degree	Year
University of Minton	Lovely Park, MD	Biological Sciences	B.S.	1977
Kingsdam College of Technology	Kingsdam, NY	Civil & Environ. Eng.	M.S.	1981
Kingsdam University	Kingsdam, NY	Civil & Environ. Eng.	Ph.D.	1986

APPOINTMENTS

2008-Present Associate Dean of Graduate Programs, College of Engineering, University of Metropolis
2000-Present Professor, Department of Civil & Environmental Engineering, University of Metropolis
1993-2000 Associate Professor, Department of Civil Engineering, University of Metropolis
1986-1993 Assistant Professor, Department of Civil Engineering, University of Metropolis
1983-1985 Instructor, Kingsdam College of Technology
1979-1983 Research Assistant, Kingsdam College of Technology
1977-1979 Environmental Chemist/Biologist, Giganto Corporation

PRODUCTS (* denotes undergraduate co-author)

Five Products Most Closely Related:

1. Smith, J., Kim, H., Doe, J. (2014). "Title of Article 1." *Journal of Whatever*, vol. 165, issue 3, pp 599-603, URL or other Persistent Identifier.
2. Jones, J., Wee, H., Doe, J. (2011). "Title of Article 2." *Journal of Whatever*, vol. 1450, issue 10, pp 599-603, URL or other Persistent Identifier.
3. Johnson, J., Song, * H., Doe, J. (2013). "Title of Article 3." *Journal of Whatever*, vol. 839, issue 24, pp 599-603, URL or other Persistent Identifier.
4. Smith, J., Wee, H., Doe, J. (2010). "Title of Article 4." *Journal of Whatever*, vol. 14, issue 15, pp 599-603, URL or other Persistent Identifier.
5. Wilkerson, J.*, Garcia, H., Doe, J. (2015). "Title of Article 5." *Journal of Whatever*, vol. 75, issue 47, pp 599-603, URL or other Persistent Identifier.

Five Other Significant Products:

6. Bowlen, J., Marsh, H., Doe, J. (2009). "Title of Article 6." *Journal of Whatever*, vol. 173, issue 11, pp 599-603, URL or other Persistent Identifier.
7. Doe, J., Kasque, I., Minson, Q. (2010). "Title of Article 7." *Journal of Whatever*, vol. 4, issue 23, pp 599-603, URL or other Persistent Identifier.
8. Kasque, I., Martin, H., Doe, J. (2005). "Title of Article 8." *Journal of Whatever*, vol. 57, issue 4, pp 599-603, URL or other Persistent Identifier.
9. Foster, J., Wee, H., Doe, J. (2012). "Title of Article 9." *Journal of Whatever*, vol. 16, issue 7, pp 599-603, URL or other Persistent Identifier.
10. Smith, J., Foster, J., Doe, J. (2011). "Title of Article 10." *Journal of Whatever*, vol. 22, issue 9, pp 599-603, URL or other Persistent Identifier.

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SYNERGISTIC ACTIVITIES

1. Honorary Award 1, 1997, Awarding organization.
2. Jason Award for Excellence in Teaching, 1991
3. Co-editor, Journal X, 1998 - present
4. Community Service Y, Program X, 2009. Description...
5. Student Mentoring activity Z, 2001 - 2010, Description...

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[Archived Webcast of Plenary Sessions](#)

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Designing Surveys Using Construct Mapping - Handout

Karen and Erin presented a session entitled Designing Surveys Using Construct Mapping at the American Evaluation Association Conference on November 12, 2015 in Chicago, IL. This is the handout from that session. If you have any questions or comments about the session or survey design more broadly, please contact the authors. The session abstract is below.

The purpose of this session will be to review best practices in designing surveys, to introduce participants to the concept of construct mapping, and then to engage participants with applying construct mapping to their own surveys. Construct mapping provides a 1) coherent and substantive definition for the construct's content and 2) involves designing items based on an underlying, hierarchical continuum. This facilitates more precise measurement of the latent variable of interest (e.g., attitudes, beliefs). We will also provide a brief introduction to Rasch modeling and its application to developing measures.

FACT SHEET: President Obama Announces Computer Science For All Initiative

The President's Computer Science for All Initiative includes:

- Providing \$4 billion in funding for states, and \$100 million directly for districts in his forthcoming Budget to **increase access to K-12 CS by training teachers**, expanding access to high-quality instructional materials, and building effective regional partnerships. The funding will allow more states and districts to offer hands-on CS courses across all of their public high schools, get students involved early by creating high-quality CS learning opportunities in elementary and middle schools, expand overall access to rigorous science, technology, engineering and math (STEM) coursework, and ensure all students have the chance to participate, including girls and underrepresented minorities.
- Starting the effort this year, with more than \$135 million in investments by the National Science Foundation (NSF) and the Corporation for National and Community Service (CNCS) to support and train CS teachers, who are the most critical ingredient to offering CS education in schools. The agencies will make these investments over five years using existing funds.
- Calling on even more Governors, Mayors, education leaders, CEOs, philanthropists, creative media and technology professionals, and others to get involved. Today, Delaware, Hawaii and more than 30 school districts are committing to expand CS opportunities; Cartoon Network, Google and Salesforce.org are announcing more than \$60 million in new philanthropic investments, and Microsoft is announcing a fifty-state campaign to expand CS; and Code.org is announcing plans to offer CS training to an additional 25,000 teachers this year. Read more about the more than 50 organizations responding to the President's call to action [HERE](#).

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The President's Computer Science for All plan builds on the momentum at the state and local level. The President's upcoming budget will include \$4 billion in funding at the [Department of Education](#), available over three years, for states to increase access to CS in P-12 classrooms. Under the program, states would submit comprehensive five-year "Computer Science for All" plans, and every state with a well-designed strategy would receive funds. In addition to state-level grants, the budget will also dedicate \$100 million in competitive grants specifically for leading districts to execute ambitious CS expansion efforts for all students, including traditionally underrepresented students, and serve as models for national replication.

A Study of How Angry Birds Has Been Used in Mathematics Education

Understanding how teachers are leveraging entertainment media for educational purposes is imperative in this age with near ubiquitous presence of digital games. In this qualitative study that considered videos posted to YouTube, we report how the digital game Angry Birds® has been implemented in a variety of settings in mathematics education. In particular we describe certain aspects the research team deemed effective and ineffective. Findings suggest that incorporation of this digital game should be done with planning and systematic organization that considers how the game can be used to explicitly connect mathematical ideas within and to the context of the game.

A Conceptual Approach To Calculus Made Possible By Technology

Calculus reform and using technology to teach calculus are two longtime endeavors that appear to have failed to make the differences in student understanding predicted by proponents. We argue that one reason for the lack of effect is that the fundamental structure of the underlying curriculum remains unchanged. It does not seriously consider students' development of connected meanings for rate of change functions and accumulation functions. We report an approach to introductory calculus that takes coherence of meanings as the central criterion by which it is developed, and we demonstrate that this radical reconstruction of the ideas of calculus is made possible by its uses of computing technology.

Studying Technology-Based Strategies For Enhancing Motivation In Mathematics

During the middle school years, students frequently show significant declines in motivation toward school in general and mathematics in particular. One way in which researchers have sought to spark students' interests and build their sense of competence in mathematics and in STEM more generally is through the use of technology. Yet evidence regarding the motivational effectiveness of this approach is mixed. Here we evaluate the impact of three brief technology-based activities on students' short-term motivation in math. 16,789 5th to 8th grade students and their teachers in one large school district were randomly assigned to three different technology-based activities, each representing a different framework for motivation and engagement and all designed around an exemplary lesson related to algebraic reasoning. We investigated the relationship between specific technology-based activities that embody various motivational constructs and students' engagement in mathematics and perceived competence in pursuing STEM careers.

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[FY 2017 President's Budget Request for DOE's Office of Science](#)

[FY 2016 Budget Request to Congress for DOE's Office of Science](#)

[DE-FOA-0001505 Support of Fossil Energy Research at U.S. Colleges and Universities](#)

The purpose of this Notice is to provide potential applicants advance notice that the Department of Energy (DOE) plans to issue Funding Opportunity Announcement (FOA), number DE-FOA-0001488 titled Support of Fossil Energy Research at U.S. Colleges and Universities Including University Coach Research (UCR) and Research by Historically Black Colleges (HBCU) and Universities and Other Minority Institutions (OMI). PLEASE NOTE NO APPLICATIONS WILL BE ACCEPTED THROUGH THIS NOTICE. Please do not submit questions or respond to this Notice of Intent. Prospective applicants to the FOA should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of this FOA. **It is anticipated that this FOA will be posted to grants.gov and FedConnect (www.fedconnect.net) in February 2016.**

[DOE FY 2017 Budget Highlights](#)

Department of Energy (DOE). About 80 percent of the government-wide Mission Innovation investment supports DOE research, development, and demonstration activities across the spectrum of clean energy technologies. FY 2017 DOE highlights include:

- Over \$105 million for new innovation initiatives to accelerate the rate of invention and successful commercialization of sustainable transportation, renewable power, and energy efficiency technologies, including expanded innovation partnerships with the National Laboratories;
- Over \$110 million for new Regional Clean Energy Innovation Partnerships that will support clean energy R&D solutions targeted to the unique characteristics of each region, and draw upon the strengths of each region's innovation ecosystem;
- Over \$261 million for advanced clean energy manufacturing R&D projects and facilities, including two new National Network for Manufacturing Innovation Institutes;
- Over \$880 million in cutting-edge sustainable transportation technologies to increase the affordability and convenience of advanced vehicles and domestic renewable fuels;
- Over \$500 million to increase the use and reduce the costs of clean renewable power from solar, wind, water, and geothermal energy, including \$213 million to support the SunShot Initiative mission to make solar energy fully cost-competitive with traditional energy sources before the end of this decade;
- Over \$1.8 billion in basic clean energy research on energy production, conversion, storage, and use, as well on as advancing our understanding of the earth and its climate;
- Over \$804 million for programs and infrastructure that support the advancement of nuclear energy technologies, including R&D in advanced nuclear reactor technologies, life extension for existing power plants, and advanced nuclear fuels;

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- Over \$177 million to support grid modernization, resiliency, and integration of clean energy into the grid; and
- Nearly \$564 million in research focused predominantly on development and deployment of carbon capture and storage technologies as well as other approaches to improve the emissions performance of energy generated from fossil fuels.

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Agency Reports, Workshops & Research Roadmaps

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Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways (2016): Nearly 40 percent of the students entering 2- and 4-year postsecondary institutions indicated their intention to major in science, technology, engineering, and mathematics (STEM) in 2012. But the barriers to students realizing their ambitions are reflected in the fact that about half of those with the intention to earn a STEM bachelor's degree and more than two-thirds intending to earn a STEM associate's degree fail to earn these degrees 4 to 6 years after their initial enrollment. Many of those who do obtain a degree take longer than the advertised length of the programs, thus raising the cost of their education. Are the STEM educational pathways any less efficient than for other fields of study? How might the losses be "stemmed" and greater efficiencies realized? These questions and others are at the heart of this study. *Barriers and Opportunities for 2-Year and 4-Year STEM Degrees* reviews research on the roles that people, processes, and institutions play in 2- and 4-year STEM degree production. This study pays special attention to the factors that influence students' decisions to enter, stay in, or leave STEM majors—quality of instruction, grading policies, course sequences, undergraduate learning environments, student supports, co-curricular activities, students' general academic preparedness and competence in science, family background, and governmental and institutional policies that affect STEM educational pathways. Because many students do not take the traditional 4-year path to a STEM undergraduate degree, *Barriers and Opportunities* describes several other common pathways and also reviews what happens to those who do not complete the journey to a degree. This book describes the major changes in student demographics; how students view, value, and utilize programs of higher education; and how institutions can adapt to support successful student outcomes. In doing so, *Barriers and Opportunities* questions whether definitions and characteristics of what constitutes success in STEM should change. As this book explores these issues, it identifies where further research is needed to build a system that works for all students who aspire to STEM degrees. The conclusions of this report lay out the steps that faculty, STEM departments, colleges and universities, professional societies, and others can take to improve STEM education for all students interested in a STEM degree.

Frontiers of Engineering: Reports on Leading-Edge Engineering from the 2015 Symposium

This volume presents papers on the topics covered at the National Academy of Engineering's 2015 US Frontiers of Engineering Symposium. Every year the symposium brings together 100 outstanding young leaders in engineering to share their cutting-edge research and innovations in selected areas. The 2015 symposium was held September 9-11 at the Arnold and Mabel Beckman center in Irvine, California. The intent of this book is to highlight innovative developments in engineering research and technical work.

Promising Practices for Strengthening the Regional STEM Workforce Development Ecosystem

U.S. strength in science, technology, engineering, and mathematics (STEM) disciplines has formed the basis of innovations, technologies, and industries that have spurred the nation's

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economic growth throughout the last 150 years. Universities are essential to the creation and transfer of new knowledge that drives innovation. This knowledge moves out of the university and into broader society in several ways – through highly skilled graduates (i.e. human capital); academic publications; and the creation of new products, industries, and companies via the commercialization of scientific breakthroughs. Despite this, our understanding of how universities receive, interpret, and respond to industry signaling demands for STEM-trained workers is far from complete. Promising Practices for Strengthening the Regional STEM Workforce Development Ecosystem reviews the extent to which universities and employers in five metropolitan communities (Phoenix, Arizona; Cleveland, Ohio; Montgomery, Alabama; Los Angeles, California; and Fargo, North Dakota) collaborate successfully to align curricula, labs, and other undergraduate educational experiences with current and prospective regional STEM workforce needs. This report focuses on how to create the kind of university-industry collaboration that promotes higher quality college and university course offerings, lab activities, applied learning experiences, work-based learning programs, and other activities that enable students to acquire knowledge, skills, and attributes they need to be successful in the STEM workforce. The recommendations and findings presented will be most relevant to educators, policy makers, and industry leaders.

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New Funding Opportunities

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New Funding Posted Since January 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 January 15 Newsletter

[Climate Model Development and Validation DOE National Laboratory Announcement Number: LAB 16-1530](#)

The Climate Model Development and Validation (CMDV) Activity in the Climate and Environmental Sciences Division (CESD), Office of Biological and Environmental Research (BER) of the Office of Science (SC), U.S. Department of Energy (DOE), is a new effort to improve climate model architecture, software, and computational design to prepare for exascale computing, to develop scale-aware physics for climate systems, and to enhance methods for model validation. This solicitation focuses mainly on the development and validation of scaleaware physics parameterizations for the atmosphere, with the goal of including these in either the current or next generation version of DOE's Accelerated Climate Model for Energy (ACME). A recent workshop report (<http://www.arm.gov/publications/programdocs/acme-arm-asr-draftreport>) describes a new strategy to better align DOE capabilities across scales and disciplines in order to much more rapidly advance ACME development. In line with this strategy, this Announcement solicits multi-institutional team projects led by DOE National Laboratories (and including non-DOE Laboratory collaborators, as appropriate), that will work in an end-to-end manner between measurements and modeling, and across scales from local and/or regional to global, in order to improve the fidelity of global climate model simulations, with a view to enhanced predictability, and address critical climate science challenges. **LOI due March 3; full March 25.**

[Critical Resilient Interdependent Infrastructure Systems and Processes \(CRISP\)](#)

Critical infrastructures are the mainstay of our nation's economy, security and health. These infrastructures are interdependent. They are linked to individual preferences and community needs. For example, the electrical power system depends on the delivery of fuels to power generating stations through transportation services, the production of those fuels depends in

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turn on the use of electrical power, and those fuels are needed by the transportation services. Social networks, interactions, and policies can enable or hinder the successful creation of resilient complex adaptive systems. **Due March 9.**

USDA-NIFA-SAECF-005616 Secondary Education, Two-Year Postsecondary Education, and Agriculture in the K-12 Classroom (SPECA) Challenge Grant Program

The Secondary Education, Two-Year Postsecondary Education, and Agriculture in the K-12 Classroom Challenge Grants (SPECA) program seeks to: (a) promote and strengthen secondary education and two-year postsecondary education in agriscience and agribusiness in order to help ensure the existence in the United States of a qualified workforce to serve the food and agricultural sciences system; and (b) promote complementary and synergistic linkages among secondary, two-year postsecondary, and higher education programs in the food and agricultural sciences in order to advance excellence in education and encourage more young Americans to pursue and complete a baccalaureate or higher degree in the food and agricultural sciences. **Due March 18.**

DE-FOA-0001441 Industry Partnerships for Cybersecurity of Energy Delivery Systems (CEDS) Research Department of Energy National Energy Technology Laboratory

The Department of Energy (DOE) National Energy Technology Laboratory (NETL) on behalf of the Office of Electricity Delivery and Energy Reliability (OE) is seeking applications under this Funding Opportunity Announcement (FOA), to conduct research, development and demonstrations (RD&D). This RD&D will lead to next generation tools and technologies that will become widely adopted to enhance and accelerate deployment of cybersecurity capabilities for the U.S. energy infrastructure, including cyber secure integration of smart grid technologies. **Due March 18.**

ADVANCEMENTS IN ALGAL BIOMASS YIELD, PHASE 2 (ABY2)

Under this [FOA](#), BETO's Advanced Algal Systems Program seeks projects that will develop technologies that are likely to succeed in producing 3,700 gallons of algal biofuel intermediate (or equivalent dry weight basis) per acre per year (gal/acre/yr) on an annualized average basis (not peak or projected) through multiple batch campaigns or on a semi-continuous or continuous basis, in an outdoor test environment by 2020. In general, "biofuel intermediates" are **biomass-based feedstocks** that can replace petroleum-based feedstocks in downstream refining. Biofuel intermediates should be able to be treated as commodities and passed from a producer to a refiner through the supply chain. Biofuel intermediates can be refined into a variety of liquid transportation fuels such as, but not limited to: ethanol, renewable diesel, and renewable jet fuel. The average yield target of 3,700 gal/acre/yr of intermediate must be achieved under conditions that result in favorable lifecycle greenhouse gas reductions and techno-economic analyses (energy return on investment – energy content of final products/energy input, assuming mature scale deployment of technologies). BETO's Advanced Algal Systems Program has a goal of demonstrating, at a process development unit scale, algal biofuel intermediate yield of 2,500 gallons per acre per year by 2018 and 5,000 per acre per year by 2022. This FOA is directed at the interim yield between the two target yields and target years. It is expected that projects selected under this FOA will be well on their way to

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demonstrating the 2,500 gal/acre/yr (at a minimum, projects must be able to produce between 1,900 and 2,500 gal/acre/yr on an annualized average basis at the beginning of the proposed project – the project baseline) with a reasonable and realistic plan to produce 3,700 gal/acre/yr by the end of the performance period. The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at <https://eere-exchange.energy.gov> . To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange at <https://eere-Exchange.energy.gov> , EERE's online application portal. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of applications is found in the full FOA posted on the EERE eXCHANGE website. **Due March 25.**

DE-FOA-0001369 NE Traineeship for Radiochemistry Department of Energy Idaho Field Office

Department of Energy (DOE) has mission-specific workforce needs in Science, Technology, Engineering and Math (STEM) fields and a responsibility to support the training of the next generation of STEM professionals who will serve that mission. The complex nature of the scientific and technical work supported by DOE and carried out by the DOE laboratories, institutes of higher education (IHE), and the private sector generally requires advanced graduate level training. Historically, the Department's primary mechanism for supporting the training of graduate students has been through the inclusion in standard research awards to IHE and DOE laboratories. This FOA ([FedConnect](#)) will establish DOE-sponsored IHE-led traineeships as a mechanism for graduate-level training critical to DOE mission-driven workforce needs. This will be accomplished through a focused academic graduate program that delivers unique, innovative curriculum, coupled with a rigorous thesis or dissertation research requirement, in the desired DOE-relevant scientific or technical discipline(s). The DOE-sponsored IHE-led traineeships will strategically address identified STEM workforce training needs in the area of radiochemistry. The total Government funding available for any single award under this FOA shall not exceed \$3M over five (5) years, subject to availability of funds. This FOA is available at FedConnect (<https://www.fedconnect.net>) under reference number DE-FOA-0001369. Any Government obligation under this program is contingent upon the availability of appropriated funds from which payment for award purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer, notice of award is made to the recipient by the Contracting Officer, and the recipient receives notice of such availability of funds, to be confirmed in writing by the Contracting Officer. Applications in response to this FOA must be submitted through Grants.gov. DOE intends to allow for approximately 60 days for applicant response to this FOA. The application due date is March 28, 2016. Interested parties are encouraged to review the FOA and submit any questions, comments, suggestions, or concerns to DOE on or before February 29, 2016 (see FOA Part VII, Section A). Questions may be submitted either through the FedConnect portal (identified in the FOA Section VII.A.) or directly to DOE at the following email address: tinslesm@id.doe.gov. DOE will make every effort to address questions submitted. **Due March 28.**

Competition for Regional Educational Laboratories Opens

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The Institute of Education Sciences (IES) aims to bridge research and practice in education. In addition to collecting education statistics and funding a wide range of research, IES also makes major investments in building capacity among states, districts, and others to use objective, scientific evidence to improve education outcomes. The Regional Educational Laboratory (REL) program is one of IES's largest programs supporting the use of scientific evidence in education. Today (February 5, 2016), the Department of Education opened the competition for the next generation of RELs. [The solicitation and all supporting information can be found on the FedBizOpps website](#). Each of the 10 RELs conducts applied research; seeks out and widely disseminates findings from high-quality research through live events and a wide range of media; and provides training, coaching, and technical support for applying research to education improvement. The current RELs have carried out their work in *research alliances*, which are partnerships of researchers and practitioners that use research to identify where, when, and how to intervene to improve education outcomes. The next RELs are expected to begin their work in early 2017 and continue for a period of 60 months. Questions about the new REL competition must be directed to the Department's contract personnel for this procurement:

- Jonathan Bettis, contract specialist, jonathan.bettis@ed.gov; and
- Heather Watroba, contracting officer, heather.watroba@ed.gov.

Helpful Links

- [REL Solicitation on FedBizOpps website](#)
 - o [Additional pre-solicitation information](#)
- [Regional Educational Laboratories website](#)

ESTCP FY 2017 Solicitations

The Department of Defense's (DoD) Environmental Security Technology Certification Program (ESTCP) released solicitations on February 9, 2016, requesting proposals for demonstrations of *Environmental and Installation Energy and Water* technologies.

DOD ORGANIZATIONS: The DoD Calls for Proposals request pre-proposals related to:

- Environmental Restoration
- Munitions Response in Underwater Environments
- Resource Conservation
- Weapons Systems and Platforms
- Energy Efficiency for Military Buildings
- Improved Water Use for Military Industrial Operations

BAA and FEDERAL ORGANIZATIONS OUTSIDE DOD: The Broad Agency Announcements (BAA) and Calls for Proposals for Federal Organizations Outside DoD request pre-proposals responding to the following topics only:

- In Situ Management of Contaminated Aquatic Sediments
- Reduce Source Loading of Munitions Constituents

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- Detection, Classification, and Remediation of Military Munitions in Underwater Environments
- Fugitive Dust Technologies, Methodologies, and Tools for Department of Defense Installations
- Ecosystem Process Model Intercomparison
- Energy Efficiency for Military Buildings
- Improved Water Use for Military Industrial Operations

The due date for all pre-proposals is April 5, 2016 by 2:00 p.m. ET. More information about the solicitations, including instructions and deadlines, is available on the ESTCP website under [Funding Opportunities](#).

WEBINAR FOR THE ESTCP SOLICITATIONS: ESTCP Director Dr. Anne Andrews and Deputy Director Dr. Andrea Leeson will conduct an online seminar “ESTCP Funding Opportunities” **on February 19, 2016, from 1:00-2:00 p.m. ET.** This briefing will offer valuable information for those interested in new ESTCP funding opportunities. During the online seminar, participants may ask questions about the funding process, the current ESTCP solicitation, and the proposal submission process. **Due April 5.**

[Pre-registration](#) for this webinar is required. If you have difficulty registering, please contact the ESTCP Support Office at serdp-estcp@noblis.org or by telephone at 571-372-6565.

Capacity Building Grants for Non-Land Grant Colleges of Agriculture Program (NLGCA)

NLGCA Institutions may use the funds: (a) to successfully compete for funds from Federal grants and other sources to carry out educational, research, and outreach activities that address priority concerns of national, regional, State, and local interest; (b) to disseminate information relating to priority concerns to interested members of the agriculture, renewable resources, and other relevant communities, the public, and any other interested entity; (c) to encourage members of the agriculture, renewable resources, and other relevant communities to participate in priority education, research, and outreach activities by providing matching funding to leverage grant funds; and (d) through: (1) the purchase or other acquisition of equipment and other infrastructure (not including alteration, repair, renovation, or construction of buildings); (2) the professional growth and development of the faculty of the NLGCA Institution; and (3) the development of graduate assistantships. **Due April 22.**

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

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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.**

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](#)

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- [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](#)
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- [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

USDA-NIFA-AFRI-005515 National Institute of Food and Agriculture International Wheat Yield Partnership Program

NIFA aims to support the G20 nations' Wheat Initiative which is committed to coordinate wheat research in the areas of genetics, genomics, physiology, breeding and agronomy internationally. NIFA in coordination with the International Wheat Yield Partnership (IWYP), requests applications to seek breakthroughs for cereal breeding using new technologies and also discoveries that lead to significantly greater grain size, grain set and grain filling duration following embryo formation, in diverse environments, without compromising grain protein concentration in Triticeae species. RFA: http://nifa.usda.gov/sites/default/files/rfa/16_NIFA-IWYP.pdf **LOI due March 1; full May 3.**

Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP)

The goals of the Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) solicitation are to: (1) foster an interdisciplinary research community of engineers, computer and computational scientists and social and behavioral scientists, that creates new approaches and engineering solutions for the design and operation of infrastructures as processes and services; (2) enhance the understanding and design of interdependent critical infrastructure

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systems (ICIs) and processes that provide essential goods and services despite disruptions and failures from any cause, natural, technological, or malicious; (3) create the knowledge for innovation in ICIs so that they safely, securely, and effectively expand the range of goods and services they enable; and (4) improve the effectiveness and efficiency with which they deliver existing goods and services. **Due March 9.**

USDA-NIFA-ICGP-005517 Organic Agriculture Research and Extension Initiative

The OREI RFA (<http://nifa.usda.gov/sites/default/files/rfa/FY16%20OREI%20RFA.pdf>) seeks to solve critical organic agriculture issues, priorities, or problems through the integration of research, education, and extension activities. The purpose of this program is to fund projects that will enhance the ability of producers and processors who have already adopted organic standards to grow and market high quality organic agricultural products. Priority concerns include biological, physical, and social sciences, including economics. The OREI is particularly interested in projects that emphasize research, education and outreach that assist farmers and ranchers with whole farm planning by delivering practical research-based information. Projects should plan to deliver applied production information to producers. Fieldwork must be done on certified organic land or on land in transition to organic certification, as appropriate to project goals and objectives. Refer to the USDA National Organic Program (<http://www.ams.usda.gov/nop>) for organic production standards. Visit the NIFA website to access a factsheet on the Center of Excellence (COE) designation process, including COE criteria, and a list of programs offering COE opportunities in fiscal year 2016. You can also review a recording of COE outreach webinars held in February and March of 2015 from the site. The COE WebPages will be updated throughout FY 2016 with additional information, such as a summary of comments received from stakeholders. **Due March 10.**

USDA-NIFA-ICGP-005596 Organic Transitions

The overall goal of the Organic Transitions Program (ORG) is to support the development and implementation of research, extension and higher education programs to improve the competitiveness of organic livestock and crop producers, as well as those who are adopting organic practices. In FY 2014, ORG will continue to prioritize environmental services provided by organic farming systems in the area of soil conservation and climate change mitigation, including greenhouse gases (GHG). Two new priorities have been added to support (1) the development of educational tools for Cooperative Extension personnel and other agricultural professionals who advise producers on organic practices and (2) the development of cultural practices and other allowable alternatives to substances recommended for removal from the National Organic Programs National List of Allowed and Prohibited Substances. Practices and systems to be addressed include those associated with organic crops, organic animal production, and organic systems integrating plant and animal production. **Due April 15.**

Open Solicitations and BAAs

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[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

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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.detrack.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-

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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.**

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,

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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),

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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

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war-fighting technologies for the nation's air, space and cyberspace forces through specific AFRL Core Technical Competencies (CTCs). **Open until December 20, 2017.**

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

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

BAA-HPW-RHX-2014-0001 Human-Centered Intelligence, Surveillance Air Force Research Lab

This effort is an open-ended BAA soliciting innovative research concepts for the overall mission of the Human-Centered Intelligence, Surveillance, & Reconnaissance (ISR) Division (711 HPW/RHX). It is intended to generate research concepts not already defined and planned by 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.**

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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

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Effectiveness: - Methods and techniques to enhance human performance and resiliency in challenging environments - Man – Machine teaming and coordinated activities Sensors and Sensing Systems: - Sensor and sensing system concept development, design, integration and prototyping - Data integration and exploitation. **Open to July 12, 2019.**

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

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

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

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

Academic Research Funding Strategies, LLC ([Page 1](#))

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