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New Faculty Guide to Competing for Research Funding is an invaluable tool for faculty writing research grants, or for use by research offices developing grantwriting workshops to help faculty write more competitive proposals. Table of Contents.

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AFRI (USDA/NIFA) Competitive Grants Program, 2014

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By Mike Cronan, co-publisher

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The **Agriculture and Food Research Initiative** (AFRI) at the National Institute of Food and Agriculture (NIFA) funds research, education, and extension grants as well as integrated research, extension, and education grants that address key problems of national, regional, and multi-state importance in sustaining all components of agriculture, including farm efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, biotechnology, and conventional breeding. Providing this support requires that AFRI advance fundamental sciences in support of agriculture and coordinates opportunities to build on these discoveries.

Before submitting a proposal to AFRI, applicants can gain insight into writing and structuring a successful proposal by reviewing <u>Reports of Funded AFRI Projects by State</u>. This site lists by state the brief and full abstracts of funded AFRI Projects. In particular, note how successful applicants for AFRI funding crafted and organized key sections, including the *Non-Technical Summary*, *Objectives*, *Approach*, *Progress*, *Impact*, *Publications*, etc.

In addition, the <u>USDA/NIFA National Grantsmanship Workshop</u>: A Focus on Partnerships, Greenville, NC (December 11, 2012) may be viewed on YouTube. If you are new to USDA/NIFA or are trying to become more competitive for funding, viewing these USDA/NIFA YouTube-based webinar presentations will offer another competitive advantage that can increase your success, particularly in the difficult funding climate of budget uncertainty at federal research agencies. Every opportunity to gain a competitive edge becomes critical when budget cuts force research agencies to reduce the number of funded projects</u>. In particular, note: <u>Thinking Like a Panelist</u>, <u>Integrating Research</u>, <u>Education and Extension in Projects</u>, <u>The Importance of Impact Statements and How to Write Them</u>, and <u>Food and Agricultural Sciences Enhancement</u> Grants.

These statements should be understood in the context of how your proposal will be reviewed. NIFA reviews all proposals accepted in the individual competitive programs through the peer-review process. The description (NIFA Peer Review Process for Competitive Grant Applications) of that process portrays the general concepts shared among NIFA competitive grants programs. However, specific details on the panel meeting, review format, and evaluation criteria will vary among programs. Processes and procedures specific to the Agriculture and Food Research Initiative (AFRI) are noted at the above URL.

To gain a better understanding of what characterizes a successful AFRI proposal, review abstracts and view the USDA/NIFA workshops in conjunction with studying the peer-review process by which your proposal will be evaluated. Overall, AFRI Grants address priorities in United States agriculture in the following areas:

- Plant health and production and plant products
- Animal health and production and animal products

- Food safety, nutrition, and health
- Renewable energy, natural resources, and environment
- Agriculture systems and technology
- Agriculture economics and rural communities.

For FY 2013, AFRI program priorities included the below core program RFAs, a few of which remain open:

- AFRI Childhood Obesity Prevention Challenge Area RFA
- AFRI Climate Change Challenge Area RFA
- AFRI NIFA Fellowships Grant Program RFA
- AFRI Food Security Challenge Area RFA
- AFRI Foundational Program RFA
- AFRI Sustainable Bioenergy Challenge Area RFA

Request for Applications (RFA)

AFRI will solicit its core program through seven separate RFAs in FY 2014 as listed below by release date for late summer and fall of 2013. Additional AFRI information is available on the AFRI More Information Page.

- FY 2014 Foundational Program: August 15, 2013
- FY 2014 NIFA Fellowships Grant Program: August 15, 2013
- FY 2014 Agricultural and Natural Resources Science for Climate Variability and Change: October 1, 2013
- FY 2014 Food Safety: October 1, 2013
- FY 2014 Food Security: November 1, 2013
- FY 2014 Sustainable Bioenergy: November 1, 2013
- FY 2014 Childhood Obesity Prevention: December 1, 2013

To keep up with deadlines, it is important to subscribe to USDA/NIFA/ARFA email alerts and RSS feeds (NIFA RSS Feeds) that will keep you current on upcoming program activities; alternatively, you can talk to a program officer. For example, in anticipation of the above FY2014 RFAs, look for agency information on upcoming agency webinars specific to core program RFAs. In 2013, for example, the below webinars were offered. It would be prudent to assume a similar process will be followed for FY 2014.

Stakeholder Input Webinars for FY 2013 RFA Development

- AFRI Challenge Area Sustainable Bioenergy Webinar
- AFRI Foundational Program Plant Health and Production and Plant Products Webinar
- AFRI Challenge Area Climate Variability and Change Webinar
- AFRI Challenge Area Food Security Webinar
- AFRI Foundational Program Agriculture Systems & Technology Webinar
- <u>AFRI Foundational Program Renewable Energy, Natural Resources, and Environment</u> Webinar

- <u>AFRI Foundational Program Animal Health and Production and Animal Products</u> Webinar
- AFRI NIFA Fellowships Grant Program
- <u>AFRI Challenge Area Foo</u>d Safety Webinar
- AFRI Foundational Program Food Safety, Nutrition, and Health Webinar
- AFRI Foundational Program Agriculture Economics and Rural Communities Webinar
- FY2012 AFRI Sustainable Bioenergy Webinar
- FY2012 AFRI Fellowship Webinar
- FY 2012 AFRI Agriculture and Natural Resources Science for Climate Variability and Change Webinar
- FY 2011 AFRI Childhood Obesity Prevention FAQ / Webinar

ARFI Interagency Programs

AFRI also participates in partnership solicitations with other federal agencies, e.g., NSF, NASA, DOE. Upcoming interagency programs will be posted to both Grants.gov and the website of the partner agencies. Recent interagency programs include:

- Carbon Cycle Science
- Ecology and Evolution of Infectious Diseases
- National Robotics Initiative
- Plant Feedstock Genomics for Bioenergy
- Water Sustainability and Climate

NIFA Frequently Asked Questions - Applying for a Grant

<u>General</u> | Applying for a Grant | <u>Grant Management</u> Eligibility

- How do I know if I am eligible or my organization is eligible to apply for a NIFA grant?
- Does NIFA accept unsolicited grant applications?

Requests for Application (RFAs)

- What is a request for applications (RFA)?
- How do I know when to expect publication of an RFA?
- How are RFAs or funding opportunities announced?
- Where can I get a copy of an RFA and the application forms necessary to apply for a funding opportunity?
- Who should I contact if I have a question about a specific RFA?
- Where can I send comments about a particular RFA to be considered in the development of the RFA for the next fiscal year?

Preparing to Apply

- Do I have to register with Grants.gov before submitting an application through Grants.gov?
- How long does the registration process take?
- <u>Does NIFA require any agency specific registration in addition to the required Grants.gov</u> registration?

- What is involved in the Grants.gov registration process?
- Part of the Grants.gov process is registering in the Central Contractor Registry (CCR). What is the CCR and how does an applicant organization know if they have successfully registered in the CCR?
- I will be the project director on the proposal. Do I need to register with Grants.gov?
- What software do I need to apply through Grants.gov?

General Questions

- What process does NIFA use to evaluate proposals submitted for competitive review?
- How do I know when my application is due and where I should send it?
- What are indirect costs?
- May I include indirect costs in my application budget?
- How do I obtain an indirect cost rate agreement?

Electronic Submission

- Where can I find the information I need to complete and submit a NIFA application via Grants.gov?
- What type of notification will I receive after submitting an electronic application via Grants.gov?
- If I am required to submit a Conflict of Interest List with my Grants.gov application package, what format can I use?
- If I am required to submit Current and Pending Support documentation with my Grants.gov application package, what format can I use?
- If I am required to submit a Project Summary/Abstract with my Grants.gov application package, what format can I use?
- Where can I find help with the SF 424 (R&R) forms?
- How do I ensure that I am applying to the correct NIFA funding opportunity?
- There are a number of places where an attachment must be added to the application. What types of attachments will NIFA accept?
- Will applicants have to generate the PDFs?
- What date does NIFA use to determine if applications have met the deadline?
- How do I know my application was received by the deadline date and time?
- When do I need to submit my application?
- What contingency plans are in place in case the Grants.gov and NIFA systems have technical problems on a submission/receipt date?
- If a resubmission is required because of Grants.gov system problems, will the application be considered "late"?
- Should I look for an opportunity by entering the CFDA number on Grants.gov?
- What is the difference between the checks that Grants.gov performs on the application and those performed by NIFA?

USDA/NIFA General Grant Writing Tips for Success

This tip sheet was developed to aid in the preparation of competitive grant proposals. For applicants preparing an Integrated Proposal, please also refer to the "Tips for Developing and Implementing Integrated Projects" document.

Developing the Proposal:

• Read the RFA

- Develop idea to fit within program priorities
 - o consider eligibility
 - o consider relevance, review criteria
- Write project description for particular program, reviewers, review process, etc.
- Describe all elements if project is integrated
- Complete all paperwork, get signatures
- Submit on time

Improving the Proposal:

- Obtain a successful proposal from a successful colleague
- Review abstracts of recently funded projects in the programs of interest
- Obtain critical reviews from colleagues before you submit
 - o Ask a colleague in your research, education, or extension area to review the proposal for clarity and logic, including scientific and education methodology
 - o Ask a colleague outside your research area to review the proposal for clarity, logic, and significance
- High risk proposals need high potential impact need to sell it but admit risk

Successful Proposals:

- Excite the reviewers
- Can be read and understood easily
- Include an appropriate literature review
- State a clear rationale and objectives that fit program priorities
- State clearly the hypotheses or research questions for research proposals
- State clearly the learning objectives and expected outcomes/impacts for education and extension portion of the project (What will be different as a result of the proposed work?)
- Include specific objectives, methods, work plan, etc. for research, education, and extension components for integrated proposals
- Communicate clearly the importance of topic and potential contributions of work
- Contain a detailed project description methods, sample selection, analysis, educational program delivery, instructional materials development, etc.
- Include a discussion of expected outcomes
- Address potential pitfalls, including shortcomings of data and amelioration plans
- Contain a detailed plan for dissemination of results and use of research results in education programs
- Demonstrate appropriate expertise of the Project Director(s)
- Have undergone critical review by colleagues before submission
- Follow the submission rules!!!

Reasons for Lower Ratings:

- Project of little or no relevance to mission and/or program priorities
- Insufficient preliminary data or evidence from literature
- Exceeds page limit, poorly written, unclear objectives or hypotheses

- Poor record of results (e.g., publications) from previous funding
- Experiments or objectives not cohesive, various functions aren't integrated
- Low scientific merit, basic flaws in logic, demonstrates lack of scientific understanding
- No hypotheses, research questions, or learning objectives
- Not innovative, little new information gained
- Inappropriate methods or methods too vague
- Not as exciting as other proposals (i.e., worth funding, but ran out of funds)
- Project Director(s) not qualified

Red Teaming: Scalable, Adaptable, and Versatile

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By Mike Cronan, co-publisher

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Red teaming is a process typically reserved for very large center-level proposals and site visits. However, this powerful process for writing more successful proposals is *sufficiently adaptable and versatile to be usefully adopted for many of the critical waypoints of planning, developing, and writing a more competitive proposal at any scale*. Too often, the first – and final – substantive outside review of proposals occurs when the funding agency makes the funding decision.

The red team review intervenes before the final submission, essentially playing the role of a review panel, but with the enormous *added benefit of helping correct weaknesses and amplifying strengths in a proposal prior to submission*. The alternative is to learn about strengths and weaknesses via reviews of a declined proposal and then attempting to use reviewers' comments to guide the writing of a more competitive resubmission. Often, the resubmission opportunity may be a year or more in the future, or worse yet, the particular program may not be funded in the future, at least on a recurring basis. *These are good reasons for adapting the red teaming process to smaller proposals*. After all, when you submit a proposal, you either get it right or you get it wrong. So every possible effort, *and every possible extra effort*, to get it right must be made. Modifying the red team process to smaller proposals, particularly team proposals, is one extra effort that can result in a big payback for time spent—a funded proposal.

As background, red teaming is an independent process for challenging the assumptions, identifying the weaknesses, and amplifying the strengths of a strategy, process, plan, proposal, operation, idea, concept, etc. Using an independent red team or group for this purpose has a long history in evaluating military strategies, industrial production, cybersecurity, corporate plans, homeland security, and large research initiatives put forward by universities, among many other uses. For example, many corporate and government agencies have been known to hire the most successful computer hackers (hopefully reformed) as "red team" or "white hat" consultants to test the integrity and security of their cybersystems and infrastructures in order to expose vulnerability in the network.

Red teaming tests a system in a way that identifies vulnerabilities, or, in the case of proposals, identifies weaknesses in the arguments put forward, the clarity of the arguments, the *adherence of the proposal to the solicitation guidelines*, etc. Keep in mind that successful proposals approach excellence through repeated revisions that eradicate ambiguities and bring focus, specificity, and clarity to the proposal and its significance to the mission of the funding agency. Narratives relying on excessive generalities and unsupported claims rather than specific and validating detail that advances a research vision will quickly lose reviewers' attention and confidence. The red teaming process can help assure this does not happen.

Red teaming offers enormous benefits in terms of improving the quality of proposals prior to submission. Moreover, especially for team proposals, a red teaming process can be very helpful in reviewing and understanding the program solicitation. After all, a nuanced,

insightful, and accurate understanding of the solicitation is the first critical step in writing a successful proposal and *serves as the foundation for the vision, goals, objectives, rationale, outputs, and outcomes* put forward in the project narrative to convince program officers and reviewers of the significance of the research. *In the case of team proposals, red teaming the solicitation will help ensure that all team members are singing the same song in the same key*.

Moreover, given the importance of an insightful reading of the solicitation to the ultimate success of a proposal, particularly given that *small misinterpretations of the solicitation early on may well be amplified into missed opportunities* during the writing of the research narrative, putting together a red team *as a first step in the proposal writing process* to analyze the solicitation together rather than separately, offers a competitive advantage. *Solicitations, by analogy, place significant, exacting, and often nuanced initial conditions on the logical structure of your proposal*, e.g., what you propose, how you propose it, and the rationale and arguments you make for the significance of your research to the field or the mission-critical objectives of the funding agency.

Moreover, because solicitations are written documents used to convey an often complex set of a sponsor's vision, goals, objectives, and outcomes, they may leave room for significant ambiguity and misdirection to enter the process of accurately "decoding the solicitation." This ambiguity typically arises from several sources, often concurrently, including:

- lack of clarify in some portions of the solicitation itself (talk to the program officer);
- applicant's failure to thoroughly and accurately analyze the solicitation (read it; read it again);
- team members' failure to closely read the solicitation before advancing ideas (put them in in-school suspension);
- the PI or team members' failure to sufficiently understand the research culture and mission objectives of the specific agency in a way that gains a deeper and more nuanced insight into the solicitation (e.g., the capacity to "read between the lines" or "understand the subtext");
- the team's unfamiliarity with the agency's language used to describe its research vision, goals, and objectives at various scales, from the solicitation to the entire agency.

Furthermore, adapting and scaling the red teaming process to smaller proposals is an excellent way to improve the competitiveness of your proposal, and hence your success. The process itself is flexible enough to be used on smaller proposals. Recall that red teaming is based on challenging assumptions, identifying weakness, and amplifying strengths.

Therefore, the goals of a red team for smaller proposals are the same as they are for larger proposals, but the team is smaller in size and the process less time consuming. However, some basic assumptions remain. The ability of the red team to offer an informed and intelligent "outsider's perspective" by reviewing the document from a fresh and/or different vantage point is the key factor. Proposal teams spend extensive time and effort developing ideas and drafting text that goes through multiple iterations. In the process, they often become so familiar with their own writing and their own descriptions of the research vision, rationale, goals, objectives, and outcomes that they can lose the ability to judge how others might

perceive what they have written, i.e., program officers and reviewers. This is where red teaming enters the picture.

Moreover, the red teaming process needs to be unflinchingly objective and conducted in the spirit of Tom Hank's comment to right-fielder Bitty Schram in the movie *A League of Their Own: "Are you crying? Are you crying?! There's no crying in baseball!"* The same admonition needs to apply to the red team review process when giving feedback to proposal authors. It is always better to hear frank, open, and honest criticism from *red team friends* who want you to be successfully funded rather than harsh or tepid comments from reviewers whose interest lies not in your success, but only in the integrity of the award process. Below are some of the key goals of a red team review process.

What are the goals of a red team? Conduct a comprehensive, exhaustive, and extremely finegrained review and evaluation of the proposal narrative prior to submission, including, for example, to:

- find weaknesses, deficiencies, and ambiguities in the proposal text;
- identify inconsistencies and omissions between the proposal narrative and the requirements of the solicitation and review criteria;
- play the devil's advocate when necessary;
- challenge the vision, assumptions, and other statements in the text that are not well supported or clearly stated, or are poorly argued;
- make observations on the persuasiveness of the arguments put forward by the author(s)
 describing the uniqueness of their research and how compellingly they make the case
 for funding; and
- offer suggestions that both <u>correct</u> identified deficiencies and better <u>amplify</u> identified strengths.

When should the red team conduct the review?

The timing of the red team review is important in order to optimize the benefits of the process. *Consider four key factors when scheduling a red team review*:

- 1. the proposal narrative should be sufficiently complete and as close to final as possible to allow a through, substantive review;
- 2. the red team must have time to conduct a very finely-grained and exhaustive reading of the solicitation, review criteria, supporting documents, and the narrative, and then generate a detailed review document reflecting its recommendations;
- 3. the red team must have sufficient time to meet with the proposal team and present their recommendations; and
- 4. the authors must allow sufficient time to consider the recommendations of the red team and make those changes to the proposal with which they agree.

What is the role of red team members and what key factors should red team members address in their review?

- Clarity of the research vision
- Strength of the case made for the significance of the research

- Clarity of the statement and substantive claims of research synergy in the proposal
- Responsiveness of the narrative to all items/requirements listed in the solicitation
- Accessibility of the writing to the intelligent reader outside the discipline
- Appropriateness of the specificity, detail, and examples supporting the research goals and objectives
- Appropriateness of the synthesis of ideas with performance and operational detail
- Strength of the case made for the research team's capacity to perform
- Strength of the evidence of institutional capacity in place to support the project
- Strength of the case made that the management team's expertise will ensure success
- Clarity, logic, and strength of proposal arguments
- Persuasiveness of the claim that the project clearly contributes to the interests and objectives of the funding agency
- Likelihood that the narrative will convince a review panel
- Persuasiveness of the claim that the proposed project clearly advances the research objectives required by the solicitation.

What are the key documents needed for a red team review?

The key documents needed are the solicitation and any documents referenced in the solicitation, a close-to-final draft of the proposal, and any supporting documents, prior proposals, and prior reviews that have informed the proposal process. Based on these documents, red team members may find it helpful to construct a scoring matrix or table based on the above key factors as well as other factors red team members feel are important based on the specific solicitation. The scoring matrix will help guide the red team members in the review process and will structure the process of recording the comments/scoring for each of the key items.

Budgeting Strategies for Team Proposals

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By Mike Cronan, co-publisher

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Every team proposal must answer a key budget question: who gets how much money and why? The "why" part of the budget equation lies at the heart of the matter. In the case of research budgets, "how much" and "why" are not metaphysical questions. These questions are answerable under a straightforward budget allocation rubric that asks "what specific value-added benefits does each team member's research bring to the overall project?" Of course, determining the relative or proportional importance of each team member's contribution to the proposal's success can test the collegiality of the team, particularly newly formed teams still developing the foundations and dynamics of a collaborative research relationship based on trust. Moreover, this "value-added question" as the determinate of budget allocations mirrors the question program officers and reviewers will pose in evaluating your proposal's contribution to the agency's mission objectives.

The basic requirements of the budget process take place in two principal domains, both highly prescriptive, but neither playing a role in assigning budget allocations among team members: (1) the funding agency specific domain where the budget requirements are published by the agency, both in the solicitation itself and in other documentation typically referenced in the solicitation; and (2) the institutionally specific budget domain typically governed by various campus research offices and associated units, e.g., sponsored projects, pre- and postaward, and research development. All of these units play various roles in the processing and preparation of the proposal budget, including offering guidance on obtaining matching funds, cost sharing, and other key institutional commitments that impact the budget.

However, as in all cases where a transition is made from single-PI to multiple-PI proposals, the process of planning, developing, and writing these larger collaborative research proposals becomes more complex as a function of team size, and, in many cases, the institutional distribution of those team members who may be operating under different institutional protocols and processes for budgeting. While the coPIs on team proposals must navigate the highly prescriptive budget requirements of both the funding agency and the PI's home institution, most often with the assistance of professional staff, the real challenge in determining allocations for team budgets is not so much the agency or institutional regulations and process requirements as it is the challenge of addressing the fundamental question: "what specific value-added benefits does each team member's research bring to the overall project, and how is that reflected in the appropriate proportionality of the budget allocations for the entire team?"

Fortunately, in most cases, this can be answered in a way that achieves team consensus if some basic strategies related to managing team budgeting dynamics are followed:

1. Allocate the budget based on the value-added contributions of each team member. It raises a red flag when team proposal participants begin project discussions by suggesting that budget allocations should be made by dividing the project's total

- allowed costs by the number of team members (T\$/N). An equally divided "pie" is an appropriate initial "allocation" if you are hosting an after dinner dessert gathering, **but** it is not for team budgeting purposes. The fundamental goal of team budget allocations is to proportionally fund project components as a function of their contribution to the overall competitiveness of the proposed project.
- 2. Engage the team in the budget process. Once the project narrative has developed sufficiently to start the budgeting process, each team member responsible for specific project activities in the narrative will need to make an initial determination of the costs associated with those activities. The aggregate of these initial budget numbers will comprise a first rough draft project budget for the team. This draft budget will almost certainly be revised many times, often downward to conform to the budget guidelines published in the solicitation. It is a rare initial budget that comes in below the maximum funding level set by the sponsor.
- 3. **Keep the budget allocation process open and transparent**. Budget discussions that evaluate the value-added contributions of each team member and the proportional importance of those contributions to the competitiveness of the process are best achieved through an iterative process of consensus among all the team members. Another red flag will appear if budget allocations are developed as silos and in a way ensuring that only the PI, and not the team as a whole, can know the final allocations.
- 4. **Converge on the final budget allocations as a team**. The team will converge on a final team budget concurrent with the research narrative converging on the final narrative. That is, the final budget and the final narrative must mutually inform and support one another.
- All team members understand the budget requirements. It is important that team members understand allowed budget categories as well as eligible and noneligible budget costs.
- 6. **Keep the budget open and fluid as the proposal develops**. Making specific commitments to exact budget allocations prematurely can effectively lock down the budget before the ideas motivating the project are fully developed. Another red flag will fly should anyone request a budget allocation commitment before participating in project development discussions that sufficiently describe the scope and objectives of the project and the role of each team member in proposed project activities.
- 7. Make realistic budget requests to the agency. Inflated budgets send the wrong signal to program officers and reviewers. Likewise, budgets clearly attempting to "low ball" the project in hopes of securing a better chance at funding will result in disappointing outcomes, both for the agency and for you. If funding is insufficient to complete the project, the agency loses and you lose as well in terms of reputation and prospects for future funding.
- 8. **Ensure that budget proportionality reflects project narrative commitments**. Each team member needs to review the research narrative to identify proposed activities with budget implications. It is critical to look for "*unfunded mandates*" described in the project narrative but absent from any budget category funding that activity.

- 9. Get the budget justification right. Trivializing the importance of the budget justification will miss an opportunity to submit a more competitive proposal convincing the program officers and reviewers of your effectiveness and efficiency as a manager of funding agency resources, particularly in terms of achieving significant research results for reasonable costs.
- 10. Keep reviewing as a team the budget guidelines included in and referenced in the solicitation. Just as it is important in the writing of the project narrative to keep calibrating the narrative to the solicitation and review criteria to avoid drifting away from the funding agency's goals and objectives, it is equally important to keep calibrating the budget to the budget guidelines detailed in the solicitation. In the end, the project narrative, budget narrative, and budget must converge to a point of proportional, value-added "equilibrium" whereby a convincing case is made for funding the proposed project and your chances of success are optimized by the synthesis of these three key sections of the proposal.

Logic Models: Scalable, Adaptable, and Versatile

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By Mike Cronan, co-publisher

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Similar to the Red Team discussed in this issue of the newsletter (*Red Teaming: Scalable, Adaptable, and Versatile*), logic models are a useful and versatile tool for developing a more successful proposal. While the use of logic models in proposals is most often associated with specific funding agencies or specific program areas, particularly in the social and behavioral sciences, education, extension, and evaluation and assessment, they can also be of great value in all research proposals as a development tool to better organize the project narrative. In particular, they can help clarify the logical and relational sequence of the *common proposal core components of vision, goals, objectives, rationale, outputs, and outcomes*.

While these six core components, or a close variant, are generic to most proposals, explaining how they relate to each other logically and sequentially in the research narrative is not a trivial task for even the most experienced PIs. In fact, a common flaw in poorly rated proposals stems from a research narrative that does not offer a clear, well-organized, logical, and convincing argument for the significance of the proposed research as it impacts the agency mission priorities and the field. This becomes more challenging as PIs transition from small proposals to larger team proposals with multiple research objectives. In some cases, team members may not have a common definition of how to differentiate between goals and objectives, or how to distinguish between output and outcomes, or how to describe the integration of the proposal's various research strands and their resultant synergy, particularly as these relate to quantifiable outcomes that impact the agency mission or the field. Adapting logic model templates and protocols to this process can help bring organizational clarity to project discussions. Importantly, melding logic model protocols with a proposal narrative template outlining the project requirements and review criteria in the solicitation as the basis for writing the first full narrative draft will help you write a better proposal.

While logic model protocols differ somewhat by agency and discipline, a generic logic model is basically a conceptual tool for program planning, organization, and evaluation. Logic models offer a graphical template comprised of several core program categories that help map the sequence, relationship, and rationale of programmatic activities and expected outcomes. For example, a logic model diagram for a project will:

- Clarify the linkages between investments and activities, outputs, and expected outcomes of the policy, program, or initiative;
- Communicate externally about the rationale, activities, and expected results of the policy, program, or initiative;
- Test whether the policy, program, or initiative "makes sense" from a logical perspective;
 and
- Provide the fundamental framework on which the performance measurement and evaluation strategies will be based (i.e., determines what constitutes success).

Importantly, a logic model need not appear as a graphic in a proposal, nor is it necessary to use the common terms associated with various versions of logic models (situation, inputs, activities, outputs, and outcomes related to knowledge, actions, or conditions) in the project narrative. With or without the graphic and terms, the process can play a highly useful role in developing a more organized and clearly written research narrative. For example, USDA/NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the Generic Logic Model for NIFA (National Institute of Food and Agriculture), have published the <a href="

This goal is not unique to NIFA, but common across most federal agencies. It is particularly relevant to submitting proposals to NSF where a core agency mission is to integrate research, education, and training. In many cases, NSF recommends the use of logic models to evaluate and assess the educational components of large research grants, such as the NSF CREST proposal due June 6.

Moreover, some variant of logic models is helpful in developing the graphics that complement the research narrative on large team proposals requiring the integration of multiple partners, institutions, and research strands. In particular, large center-level grants will require milestone charts or graphics that represent the vision, goals, objectives, and outcomes of the project, such as NSF's ubiquitous 3-Plane Diagram meant to capture the synergistic core of Engineering Research Centers.

Adapting logic models as an adjunct to this process can be beneficial since logic models represent one more way to bring organizational clarity to a research narrative in a manner that is easily grasped and remembered by program officers and reviewers. Equally important, logic model protocols can help the proposal development team better communicate with each other during the writing of the proposal so that everyone on the team is better aligned with the core research vision, goals, objectives, rationale, outputs, and outcomes. *Reviewers will always punish confusion, ambiguity, lack of clarity, and the absence of logically sequenced arguments in the project description*. Adapting the scalable and versatile logic model process as another tool in your research and proposal development toolkit is one more way to increase your chances of achieving a successful proposal submission.

The below URLs provide links to some widely used logic model materials. The next time you are drafting the outline of a proposal, keep logic models in mind as another tool to use in writing more competitive proposals.

Logic Model Resource Links

- <u>Logic Model Planning Process: Integrated Research, Education, and Extension Programs,</u>
 NIFA logic model resources:
 - NIFA Guidance on Logic Models
 - University of Wisconsin Extension
 - University of Idaho Extension

- University of Florida IFAS Extension
- W.K. Kellogg Foundation Logic Model Development Guide
- Frequently Asked Questions about Logic Models
- Generic Logic Model for NIFA Reporting
- Logic Model Overview (8-minute narrated slide presentation)

Additional Resources

- Aligning a logic model with a strategic plan
- An Introduction to Logic Modeling and Story Boards
- An Introduction to Logic Modeling, Michigan Public Health Institute
- Browse logic model Resources | Innovation Network
- CDC Office of Disease Control and Prevention
- Center for Civic Partnerships
- Creating Program Logic Models
- Developing a Basic Logic Model For Your Program
- <u>Developing a Logic Model or Theory of Change</u>
- Developing a logic Model: Teaching and training guide
- Enhancing Program Performance with Logic Models
- FY14 Logic Model Resource Guide.pdf
- Generic Logic Model
- Logic Model basics
- Logic Model Tutorial
- Logic Model Workbook
- Office of Justice Program Logic Models
- Online Logic Model Training
- Outputs/outcomes/impacts: A framework for objectifying key aspects of a program's intended intervention and identifying resulting intended change
- The Logic Model University of Idaho
- The Logic Model for Program Planning and Evaluation
- The logic model for program planning and evaluation
- UAF Logic Model Resources
- Using the Logic Model for Program Planning
- W.K. Kellogg Foundation Logic Model Development Guide

Resources for Developing Your CAREER Education Plan

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By Lucy Deckard, co-publisher

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Many PIs find that the most challenging aspect of developing an <u>NSF CAREER</u> proposal is developing the required Education Plan. While PIs are intimately familiar with the literature and state of the art in their research fields, they are often not well-acquainted with literature and prior work in education. Below, we'll discuss some resources that you can use to identify STEM education needs, challenges, and opportunities as well as places where you can find information on scholarship, state of the art, and best practices related to these educational issues. The literature and data you find there can also be cited in your proposal, creating a more persuasive case for the need, significance, and rigor of your plan.

Resources Listed in the CAREER Solicitation

Look first at the CAREER solicitation for important publications and resources related to challenges and best practices in STEM education that particularly reflect NSF's outlook and priorities. In Section V under Education Activities, you will find eleven different resources. Seven of these are National Research Council reports; three are websites affiliated with various education and outreach initiatives; and one refers to NSF's User-Friendly Handbook on Project Evaluation. A quick description of each and how they might be used is provided below.

 National Research Council. (2000). How People Learn: Brain, Mind, Experience, and School. Committee on Developments in the Science of Learning. Bransford, J.D., Brown, A.L., Cocking, R.R., Editors, with additional material from the Committee on Learning Research and Educational Practice. Donovan, M.S., Bransford, J.D., and Pellegrino, J.W., Editors.

This classic report is often cited in NSF solicitations and in education-related proposals to NSF. You can find this report online here (click "download free pdf"). It provides an accessible overview of the research conducted up to the publication date on the science of learning and how that research can be translated to classroom practice. Of particular interest for faculty, this report discusses the evidence supporting the effectiveness of inquiry-based and active learning. They also discuss superficial versus deeper learning, the influences of culture and community on learning, and assessment. While this report focuses more on K-12 students, many of the principles discussed also apply to undergraduates.

• National Research Council. (2001). *Adding it up: Helping children learn mathematics*. Mathematics Learning Study Committee. Kilpatrick, J., Swafford, J., and Findell, B., Editors

You can find this report <u>here</u>. This report focuses on math learning by pre-K through 8th grade students.

• National Research Council. (2001). *Knowing what students know: The science and design of educational assessment*. Committee on the Foundations of Assessment. Pellegrino, J., Chudowsky, N., and Glaser, R., Editors

You can find this report <u>here</u>. It discusses various kinds of educational assessment and the value of informing assessment with new understandings of cognition, memory, and learning. Some of this material could be helpful in planning how you will evaluate your education activities.

• National Research Council. (2002). *Scientific research in education*. Committee on Scientific Principles for Education Research. Shavelson, R.J., and Towne, L., Editors.

You can find this report <u>here</u>. This is a relatively high-level report on the science and practice of education research; it does not address specific results of education research.

 National Research Council. (2007). Taking Science to School: Learning and Teaching Science In Grades K-8. Duschl, R. A, Schweingruber, H. A, and Shouse, A. W., Editors.

You can find this report <u>here.</u> As the title suggests, this report discusses science teaching and learning from K through 8^{th} grade levels. This may be helpful in planning an outreach component for this group of students.

 National Research Council. (2009). Learning in Informal Environments: People, Places, and Pursuits. Bell, P., Lewenstein, B., Shouse, A. W., and Feder, M. A., Editors.

You can find this report here. It may prove useful for planning science outreach activities.

• National Research Council. (2010). Surrounded by Science: Learning Science in Informal Environments. Fenichel, M. and Schweingruber, H.A., Editors.

You can find this report <u>here</u>. This is a comprehensive and accessible guide to designing and assessing informal science environments such as those you might develop for an outreach activity.

- Council of Graduate Schools, *Broadening Participation in Graduate Education* (2009). You can find this report by the Council of Graduate Schools <u>here</u> if you are a member (or order it if you aren't). This report discusses the need to increase diversity and inclusiveness in graduate education.
- <u>National Lab Network</u> website for NLN, a national initiative that connects K-12 teachers with STEM professionals.
- Broadening Participation in the Computer Sciences Portal *This website should be* <u>here</u> but was not working at the time of writing this article.
- The 2002 User-Friendly Handbook for Evaluation

This handbook can be found \underline{here} . It gives a comprehensive guide to project evaluation and is generally meant for much larger projects than those in a CAREER education component. However, a

quick read (particularly Section II, Chapter 3) could be useful to familiarize yourself with the general principles, methods, and terms used in project evaluation.

Other Helpful Resources

• The Boyer Commission on Educating Undergraduates in the Research University, REINVENTING UNDERGRADUATE EDUCATION: A Blueprint for America's Research Universities (1998)

This older but highly influential report describes the challenges and needs for improving undergraduate education, particularly STEM education. It is frequently cited by NSF and by proposals to NSF. You can find this report <u>here</u>.

• National Academies Press, Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future (2007).

Another highly influential report on needed reforms in education particularly related to the importance of STEM education. You can find that one <u>here</u>.

- <u>Education Resources Information Center</u> searchable database of education research articles. Very accessible to those who lack expertise in education research. Great place to start your literature search.
- The MSPnet Hub This is the website for NSF-funded Math and Science Partnerships. It contains a wealth of information on projects, lessons learned, resources, and publications coming out of these NSF-funded projects aimed at improving K-12 STEM education. This information can be especially useful because NSF likes to see researchers using and building on successful approaches developed by other NSF-funded projects.
- <u>STEPCentral</u> Similar to the MSPnet, this website provides a portal to resources and lessons learned by NSF-funded STEP (<u>STEM Talent Expansion Program</u>) projects, which focus on increasing numbers, success, and diversity of STEM undergraduate students.
- <u>National Academy of Engineering Center for Advancement of Scholarship on</u>
 <u>Engineering Education</u> You can find information on CASEE projects and read their reports online. Their "resources" page also features workshop materials and videos.
- <u>Council on Undergraduate Research</u> Information on new models and best practices for undergraduate education. Pay special attention to their "publications" page.
- <u>National Center for Science and Engineering Statistics</u> This is a good place to look for data to support the need for more STEM students and graduates at various levels as well as the need for increased diversity.
- On the above site, you'll find the <u>Science and Engineering Indicators 2012 Report</u>, which brings together a lot of data on STEM education, labor force and R&D trends.

Research Grant Writing Web Resources

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What is an Innovation Ecosystem?

By Deborah J. Jackson, National Science Foundation, Arlington, VA

NOAA Developing And Writing Grant Proposals

NOAA Grants Application Manual

Writing Successful NOAA Grant Proposals

Key Steps to Finding NOAA Funding Opportunities and Developing Successful Grant Proposals

NSF EHR Core Research (ECR) Outreach Webinars

We anticipate posting a recording of one of the webinars as well as a transcript after approximately May 20th on the <u>ECR program page</u>. The EHR Core Research (ECR) program establishes a mechanism in the Directorate for Education and Human Resources to provide funding in foundational research areas that are broad, essential and enduring. EHR seeks proposals that will help synthesize, build and/or expand research foundations in the following core areas: STEM learning, STEM learning environments, workforce development, and broadening participation in STEM. We invite researchers to identify and conduct research on questions or issues in order to advance the improvement of STEM learning in general, or to address specific challenges of great importance.

2013 Investing in Innovation Competition Continues with Invitation for Scale-Up and Validation Applications

Following the <u>launch of the 2013 Investing in Innovation (i3) Development competition</u> earlier this spring, the U.S. Department of Education announced the start of the competition for the i3 program's Scale-up and Validation categories. These grants will continue the Department's investments in promising strategies that can help to close achievement gaps and improve student learning. "As the Department begins the fourth round of the i3 competition, we are encouraged by the work our current i3 grantees are undertaking, and look forward to supporting the scaling of effective practices in classrooms across the country through i3's Validation and Scale-up grants," said Jim Shelton, assistant deputy secretary for innovation and improvement. "These grants will target federal funds where they are needed most, and we are eager to continue to advance innovative strategies in education."

Webinars for Applicants, FY 2013 i3 Development Pre-Application Overview

For entities interested in submitting a 2013 Development pre-application, below is a prerecorded overview of the i3 Development Pre-Application Competition and the corresponding PowerPoint.

Recording of the FY 2013 i3 Development Pre-Application Overview

Webinar PowerPoint PowerPoint (2 MB)

Question and Answer Webinar for FY 2013 i3 Development Pre-Application

The i3 team hosted a question and answer webinar on April 16, 2013, for entities interested in submitting a 2013 Development Pre-Application. Below is a recording of the webinar and the corresponding PowerPoint. A Word document containing the transcript of the question and answer session is also provided.

Recording of the Question and Answer Webinar for FY 2013 i3 Development Pre-Application Webinar PowerPoint and Q&A Transcript Document PowerPoint (1MB) | MS Word (84KB) IES FY2014 Funding Opportunities

The FY 2014 Research and Research Training opportunities were announced in the <u>Federal</u> <u>Register</u> on April 23, 2013. The Institute anticipates posting the FY 2014 RFAs on this page in early May. The Institute will host a series of webinars related to research funding opportunities on Tuesday and Thursday afternoons beginning in May 2013. These webinars will focus on a range of topics, including overviews of specific funding opportunities, the application process, and grant writing. Descriptions about these webinars and the registration process will be available soon.

Research Funding Webinars

The National Center for Special Education Research (NCSER) and the National Center for Education Research (NCER) within the Institute of Education Sciences (IES) host a series of webinars related to research funding opportunities. The FY 2014 funding opportunities webinar series begins May 2013. *REGISTRATION WILL BEGIN THE WEEK OF MAY 10TH*. To view slides from previous webinar sessions discussing research funding opportunities, browse <a href="https://example.com/here-education-new-market-education-new-mar

First Impressions: How to Win Grants and Influence Your Research Career: This webinar
is aimed at graduate students/pre-doctoral fellows, postdoctoral fellows, and other
early career investigators. The presentation will take a broad view of writing grants,
examining how to conceptualize your research idea clearly and translate that concept
into a structured grant application.

Thursday, MAY 23, 2013, 2:00PM – 3:30PM ET Click here to register

• Basic Overview: During this webinar, IES staff will provide a general overview of IES, NCER funding opportunities, the IES goal structure, and the peer review process.

Tuesday, MAY 28, 2013, 3:00PM - 4:30PM ET

 Application Submission Process: During this webinar, IES staff will provide information regarding the grant submission process. The webinar will focus on information in the application instructions package, including content and formatting requirements, human subjects clearance, and application forms.

Tuesday, JULY 9, 2013, 2:00PM – 3:30PM ET Tuesday, JULY 16, 2013, 2:00PM – 3:30PM ET Tuesday, JULY 23, 2013, 2:00PM – 3:30PM ET GRANT WRITING OVERVIEWS

• Grant Writing Workshop (84.305A): During this workshop, IES staff will provide more indepth information about preparing applications in response to current requests for applications and the IES goal structure.

Tuesday, JUNE 4, 2013, 1:30PM – 4:00PM ET

• Grant Writing Workshop for Minority Serving Institutions: During this workshop, IES staff will provide more in-depth information about preparing applications in response to current requests for applications and the IES goal structure. Topics focus on general research requirements, preparing a research narrative, building a strong research team, and forming partnerships with schools.

Wednesday, JUNE 5, 2013, 2:00PM - 4:30PM ET

 Grant Writing Seminar for Minority Serving Institutions: The National Center for Education Research and the Minority Serving Institutions - Community of Partners Council are sponsoring the Grant Writing Seminar for Minority Serving Institutions. The objective of this 4-session webinar series is to help researchers at Minority Serving Institutions prepare successful grant applications for the Education Research Grants program (84.305A). For more information on applying for this webinar series, see the workshop series announcement.

JUNE 11, 2013 to JULY 9, 2013

Click here for more information

OVERVIEWS OF SPECIFIC FUNDING OPPORTUNITIES

Overview of Predoctoral Interdisciplinary Research Training (Topic 1 under 84.305B): The
Predoctoral Interdisciplinary Research Training funding opportunity was established to
increase the supply of scientists and researchers in education who are prepared to
conduct rigorous and relevant education research addressing issues that are important
to education leaders and practitioners. During this webinar, IES staff will provide an
overview of the requirements for the predoctoral training program, training plan
development, and the grant review criteria.

Tuesday, MAY 28, 2013, 12:30PM - 2:00PM ET

Overview of Methods Training for Education Researchers and Training in Education
Research Use and Practice (Topics 2 & 3 under 84.305B): The Methods Training for
Education Researchers and Training in Education Research Use and Practice funding
opportunity (84.305B) was established to help current education researchers maintain
and upgrade their methodological skills and to provide education practitioners and
policymakers working on a specific program or policy with evidence from rigorous
education research. During this webinar, IES staff will provide an overview of the
training programs and the requirements for training projects aimed at researchers and
the requirements for training projects aimed at policymakers and practitioners. IES staff
will also discuss training plan development and the grant review criteria.

Tuesday, JUNE 11, 2013, 3:00PM - 4:30PM ET

 Overview of Funding Opportunities for Researcher-Practitioner Partnerships in Education Research (Topic 1 under 84.305H): The Researcher-Practitioner Partnerships in Education Research (Research Partnerships) funding opportunity will support new and existing partnerships composed of research institutions and State or local education

agencies. These partnerships will identify an education issue or problem that has important implications for improving student outcomes from prekindergarten through postsecondary and adult education and that is of high priority for the education agency. These partnerships will then carry out initial research regarding the education issue and develop a plan for further research on the issue. During this webinar, IES staff will provide information on applying for a Research Partnerships grant including the requirements for the partnerships and their research.

Thursday, MAY 30, 2013, 2:00PM - 3:30PM ET

Overview of Evaluation of State & Local Education Programs & Policies (Topic 3 under 84.305H): The Evaluation of State and Local Education Programs and Policies (State/Local Evaluation) funding opportunity will support new and existing partnerships composed of research institutions and State and local education agencies to carry out rigorous evaluations of education programs or policies that are implemented by State or local education agencies under routine conditions to improve student outcomes from prekindergarten through postsecondary and adult education. During this webinar, IES staff will provide information on applying for a State/Local Evaluation grant including the requirements for the partnerships and their research.

Thursday, JUNE 6, 2013, 2:00PM – 3:30PM ET

• Overview of Continuous Improvement in Education Research (Topic 2 under 84.305H): The Continuous Improvement in Education Research (Continuous Improvement) funding opportunity will support well-established partnerships among research institutions and State or local education agencies. These partnerships will address a specific education issue or problem of high importance to the education agency and implement and improve an existing approach (or approaches) with some promise of evidence for improving student outcomes from prekindergarten through postsecondary and adult education around this education issue. During this webinar, IES staff will provide information on applying for a Continuous Improvement grant including the requirements for the partnerships and their research.

Thursday, JUNE 20, 2013, 2:00PM - 4:00PM ET

Overview of Education Research & Development Centers Competition (84.305C): IES
Research and Development Centers are charged with contributing to the production and
dissemination of rigorous research and providing national leadership on a specific
education topic. For FY 2014, NCER will be competing two Research and Development
Centers, specifically Developmental Education Assessment & Instruction and Knowledge
Utilization. During this webinar, IES staff will provide information about the focus of
these centers, the application requirements, and the peer review process.

Tuesday, JUNE 25, 2013, 2:00PM - 3:30PM ET

Fulbright Senior Scholar Fellowships

Five grants are offered for lecturing/research/combined lecturing and research in all disciplines or for artists/writers-in-residence. Full Fellowship Announcement

Fulbright Post-Doctoral Fellowships

Eight fellowships are offered for post-doctoral research in all academic disciplines. <u>Full</u> <u>Fellowship Announcement</u>

Fulbright Post-Graduate Student Fellowships

Approximately six grants are offered to students in all disciplines for pre-doctoral study and research. Full Fellowship Announcement

Fulbright English Teaching Assistantship Fellowships

The Fulbright Israel ETA Program aims to enhance cross-cultural communication by placing native English speakers from the United States in Israeli classrooms. The award of two grants to Fulbright English Teaching Assistants is planned. Full Fellowship Announcement

Fulbright Middle East and North Africa Regional Research Fellowships

Up to six grants are offered to professionals who have a demonstrated record of research achievements for research in any academic or professional field, to be carried out in more than one country of the Middle East, North Africa, or South Asia. <u>Full Fellowship Announcement</u>

Fulbright Senior Specialists Fellowships

Ten grants are offered in support of short (2-6 week), non-research visits by US scholars and professionals in twenty selected fields. Full Fellowship Announcement

Educational Grant Writing Web Resources

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Jump-Start: College Planning, NIH Office of Science Education

In the 21st century, college is viewed as a necessity, a ticket to opportunities and success. Not only does a college degree provide entree to many jobs, it also fine-tunes important skills, such as critical thinking, teamwork, and problem solving. A college planning conference can give students (from all demographics including underserved students from minority groups) access to the resources they need to navigate the path to a college education.

This free college-planning manual is based on a highly successful program from the NIH Office of Science Education in collaboration with leaders in science education in the Washington D.C. metropolitan area. The program helps students learn how to apply to college, sign up for the right college courses, and how to choose from the many career possibilities in the science, technology, engineering, and math (STEM) disciplines. The Jump-Start manual includes information for conference planners on:

- how to get started, team building and setting goals
- building partnerships and marketing
- program planning
- workshop ideas
- setting up for the event
- evaluations

NIH Office of Science Education

Topics

- Animals in Research
- Bioethics
- Blood & Lymphatic System
- Bones, Joints, & Muscles
- Brain & Nervous System
- Cell Biology & Cancer
- Child & Teen Health
- Complementary & Alternative

Medicine

- Digestive System
- Ears, Nose, & Throat
- Endocrine System
- Environmental Health & Toxicology
- More... (41 total)

Scientists Volunteer for Education

- NIH SciEd Nation
- NIH Science Education

Conversations Series

Grade Levels

- High School
- Middle School
- Elementary School

Resource Formats

Lesson Plans and Supplemental

Curricula

- Bookmarks
- E-books
- Español (Spanish)
- Multimedia
- Newsletters
- Online Exhibits
- Online Resources
- Photos, Images, & Graphics
- Posters
- Print Materials
- <u>Professional Development</u>
- Public Outreach

- <u>NIH Science Education Volunteer</u> Opportunities
- <u>Science Education as an Official</u> <u>Duty Activity</u>
- <u>More...</u> (5 total)

- Slides & Presentations
- Supplemental Curricula
- Tutorials & Reviews

Wiley Open Access

Wiley Open Access is a publishing program designed to drive quality, peer reviewed publishing with speed and efficiency through open access publication. The program of fully open access journals launched in early 2011. Each journal is supported by a network of high-quality journals and societies as well as a dedicated Editor-in-Chief and an international Editorial Board. The majority of Wiley Open Access journals publish open access articles under the terms of the Creative Commons Attribution (CC BY) License which permits use, distribution and reproduction in any medium, provided the original work is properly cited. A limited number of Wiley Open Access journals continue to use the Creative Commons Attribution Non-Commercial (CC BY NC) license. The Creative Commons Attribution License (CC-BY) allows users to copy, distribute and transmit an article, adapt the article and make commercial use of the article. The CC BY license permits commercial and non-commercial re-use of an open access article, as long as the author is properly attributed.

Building Knowledge for Teaching: Three Cases of Physics Graduate Students

Over the past two decades education researchers have demonstrated that various types of knowledge, including pedagogical content knowledge, influence teachers' instructional practices and their students' learning opportunities. Findings suggest that by engaging in the work of teaching, teachers acquire knowledge of how students think, but the education research community has not yet captured this learning as it occurs. We examined whether novice physics instructors can develop such knowledge via the activities of attending to student work and have identified several mechanisms that supported instructors in building this knowledge. We analyzed data from interviews with physics graduate teaching assistants as they examined and discussed students' written work. During those discussions, some instructors appeared to develop new knowledge--either about students' thinking or about the physics content--and others did not. We compare and contrast three cases representing a range of outcomes and identify factors that enabled some instructors to build new knowledge.

Guiding Teachers in the Use of a Standards-Based Mathematics Curriculum

This study uses Guskey's framework as a guide to examining teachers' perceptions of the impact of the professional development that they received; their perceptions of mathematics teaching and learning; and how elements of the professional development translated into practice. Twenty-two participants were randomly selected from the 53 professional development participants to be interviewed and observed during their mathematics teaching. Using a constant comparison method, the data sources in this study highlighted themes surrounding teachers' experiences with professional development and the implementation of the curricula. The analysis of the data sources in this study highlighted themes surrounding

teachers' experiences with professional development: teachers as learners, teachers as self-evaluators, shifting paradigms, enactment of professional development content into practice, and the influence of the state standardized mathematics test. The results of this study have several implications for future professional development and also highlight some of the more general issues that teachers face when attempting to enact new knowledge and skills into their practice.

<u>The Association between Teachers' Beliefs, Enacted Practices, and Student Learning in Mathematics</u>

Mathematics educators continue to explore ways to improve student learning. Of particular interest are the relationships between teachers' instructional practices, their beliefs towards mathematics teaching, and student learning outcomes. While some studies have found empirical links between teachers' enactment of specific instructional practices and gains in student learning, there is no conclusive connection between beliefs, instructional practices, and gains in student learning outcomes. This study examines a few critical relationships between: teachers' beliefs and instructional practices, teachers' beliefs and student learning outcomes, and teachers' instructional practices and student learning outcomes. Data from 35 teachers and 494 elementary school students indicated significant relationships between teacher beliefs and practices but not between teacher beliefs or instructional practice when related to student achievement in mathematics measured by curriculum-based tests. Implications for the design of professional development and for further research related to mathematics teachers' beliefs, their instructional practice and their student learning outcomes are also shared.

Teaching Science From Cultural Points Of Intersection

This study focuses on a professional development program for science teachers near or on American Indian reservations in Montana. This program was framed by culturally relevant pedagogy premises and was characterized by instructional strategies and content foci resulting from the intersection between three cultures: tribal, science teaching, and science. The study employs a quasi-experimental design and quantitative methods to examine the impact of the program on teachers' practice and beliefs, and to determine the relationship between studentcentered equity-focused instruction and students' science test score gains. Results of the analyses indicate that after 2 years in the program teachers changed their teaching practices and beliefs about their ability to teach science and to implement equitable instruction in a way that positively impacted students' performance. Using a multiple regression analysis it was found that gains in teacher beliefs about their ability to implement equitable strategies and the increase of teaching strategies that prompt students to make connections between science and their real-life issues significantly explained the 36.7% of the variance of student science test scores gains in treatment classrooms. No significant changes in beliefs or teaching strategies were found for comparison teachers. The results obtained from this study contribute to the identification of characteristics of a professional development program that positively impacted the science teaching of American Indian students.

Leadership Through Professional Collaborations

Leaders in mathematics are responsible for implementing positive change within their school districts and motivating teachers of mathematics to improve their practices. One way mathematics leaders can achieve this goal is by establishing professional collaborations. We analyzed the research and summarized the common attributes found in successful professional collaborations into a research-based framework we present as the COTEAMS framework. Using this framework, mathematics leaders can empower teachers and provide the necessary support for them to participate successfully in professional collaborations.

Leadership in Mathematics Education: Roles and Responsibilities

This article partitions leadership in mathematics education into two categories: leadership in defining and maintaining important principles in teaching mathematics, and leadership in informing the public about the importance of mathematics today and in the future. Examples of both types of leadership are given in the article. Teacher leaders in the field should be skilled in enriching instruction and linking best practice with research activities and results in the professional development of the teachers they lead.

Agency Research News

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Career Directory 2013

This booklet is brought to you by the AAAS/Science Custom Publishing Office

ERC 2013 Solicitation Informational Webinar

May 22, 2013 11:00 AM to May 22, 2013 1:00 PM

NSF, Stafford I - Room 350

Informational Webinar on Engineering Research Center Solicitation (NSF 13-560)

Engineering Research Center (ERC) FY13

May 22, 2013 11:00 a.m. to 1 p.m. (EDT)

Schedule for the Two-hour Informational Webinar is:

11:00 a.m. to 11:45 a.m. Slide Presentation on "What is an ERC?"

11:45 a.m. to 12:10 p.m. Questions and Answers on Vision, Strategy Planning, and Research

12:10 p.m. to 12:35 p.m. Questions and Answers on Education

12:35 p.m. to 1:00 p.m. Questions and Answers on Innovation Ecosystem

The Webinar will provide information on the Solicitation (NSF 13-560) for the ERC Program, which will include an overview presentation on the ERC construct and answers to questions pertaining to the first stage of the competition - preliminary proposals. As registration is required for the webinar, interested participants can register here: ERC 2013 Solicitation Webinar. You must include your full first and last name, University in the Company name section, zip code, and a valid email address. (Note: Participants must register by May 17, 2013 by 5:30 EDT.)

Notice of Intent: Fuel Cell Hybrid Electric Medium Duty Trucks, Roof-top Backup Power, and Advanced Hydrogen Refueling Components

The purpose of this Notice is to provide potential applicants advance notice that the The Fuel Cell Technologies Office (FCTO), on behalf of the DOE Office of Energy Efficiency and Renewable Energy (EERE), intends to issue a FOA titled Fuel Cell Hybrid Electric Medium Duty Trucks, Rooftop Backup Power, and Advanced Hydrogen Refueling Components. The Notice of Intent is posted on the EERE eXCHANGE website at https://eere-exchange.energy.gov. 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 EERE Exchange in May 2013. The applicant must first register and create an account on the EERE eXCHANGE website.

NIH Peer Review: Grants and Cooperative Agreements

The mission of the National Institutes of Health (NIH) is to seek fundamental knowledge about the nature and behavior of living systems and to apply that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability. NIH has a longstanding and

time tested system of peer review to identify the most promising biomedical research. This document provides an overview of the NIH peer review system, including descriptions of its core values and safeguards on fairness.

NSF Audit of Successful Proposals Finds Numerous Cases of Alleged Plagiarism

The National Science Foundation (NSF) is investigating nearly 100 cases of suspected plagiarism drawn from a single year's worth of proposals funded by the agency.

NSF ARCHIVE for April 13 Webcast for Earth Day: An EKG for the Earth With NEON

Answers to this question have traditionally been woefully inadequate because scientists have lacked a mechanism to systematically measure the long-term health of large ecosystems. But that is now changing as a new, precedent-setting, nationwide, multidisciplinary infrastructure—the National Ecological Observatory Network (NEON)—is starting to go online across the U.S. NEON will be to ecological health what an EKG is to heart health. Like an EKG generates snapshots of heart health by measuring heart activity at strategic locations on a patient's body, NEON will generate snapshots of ecosystem health by measuring ecological activity at strategic locations throughout the U.S. Resulting ecological data will enable scientists to generate the first apples-to-apples comparisons of ecosystem health throughout large regions of the U.S. and the entire country over multiple decades. Funded by the National Science Foundation (NSF), NEON will be fully operational for some 30 years. More information about NEON is provided in the short video attached to this release. What: Participate in a webcast on NEON to learn more about what NEON is, how it has already advanced ecological research and educations, and the locations of its geographically dispersed components.

Also learn about:

- The revolutionary influence that NEON will have on ecological research.
- The types of data and educational resources that NEON will produce--and when.
- Unparalleled research opportunities that NEON will create for any interested researchers and students.
- Educational/outreach materials that NEON will disseminate and activities that NEON will facilitate for educators, students, decision-makers and the public.
- How NEON will increase participation in the sciences by underrepresented groups, minority-serving institutions, community colleges and other resource-limited sectors.
- Career opportunities that will be created by NEON for researchers, students and others.
- Impending milestones in NEON's development.

When: The webcast will be held on April 18, 2013 at 3:00 p.m. EDT, and will be archived on NSF's website.

RFI - Environmental Research and Observations at the First U.S. Offshore Wind Facilities

The Department of Energy (DOE) and Bureau of Ocean Energy Management (BOEM) invite input from the public regarding a research campaign to inform our understanding of offshore wind energy development that could be conducted in the next two to five years during the construction and operation of the first generation of deployed facilities. We aim to quantify the impact-producing factors (i.e. the characteristics of a project that may cause an impact, such as

the sound produced during construction) associated with a project and to evaluate the efficacy of monitoring technologies and techniques deployed at offshore wind farms selected at a future date. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of responses can be found in the full RFI posted on the EERE Exchange website at https://eere-exchange.energy.gov.

<u>USDA Partners with the Department of Defense and the Cooperative Extension Service to Develop Guides Focused on Supporting Military Families</u>

The family members of military members often face unique challenges during and after deployment. In an effort to involve entire communities in supporting these families, the U.S. Department of Agriculture (USDA) and the Department of Defense (DoD) developed a series of publications with guidance for various audiences that assist and support members of the military, veterans and their families. The publications were developed in collaboration with the Military Family Research Institute at Purdue University and the National Military Family Association. USDA Under Secretary for Research, Education and Economics Catherine Woteki helped unveil these publications at an event in Washington today in support of April as "Month of the Military Child" and the 2-year anniversary of Joining Forces.

Agency Reports, Workshops & Research Roadmaps

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The competitiveness of proposals can be enhanced by grounding the arguments you make in the proposal narrative, as appropriate, on national reports, agency research roadmaps, and research workshops that demonstrate your understanding of the national research agenda and how your research advances and maps to that agenda.

Report Traces Baccalaureate Origins of Science and Engineering Doctoral Recipients

The National Science Foundation recently released a <u>report</u> detailing the large role played by U.S. research universities in the baccalaureate education of U.S.-trained science and engineering (S&E) doctorate recipients. In 2011, the year the latest information is available, 35 percent of individuals earning S&E doctorates from U.S. universities held bachelor's degrees from foreign institutions, and 29 percent earned bachelor's degrees from U.S. doctorate-granting institutions with very high research activity. Of the top 50 U.S. baccalaureate-origin institutions that awarded S&E doctorate degrees from 2002-2011, all but one are research universities with very high research activity. Public universities also play a prominent role in the baccalaureate training of U.S. S&E doctorate recipients: approximately two-thirds of the institutions on the top 50 list are public institutions. For more information on this report, please contact Mark Fiegener. Please visit the NSF's National Center for Science and Engineering Statistics (NCSES) for more reports and other products.

Triennial Review of the National Nanotechnology Initiative

Triennial Review of the National Nanotechnology Initiative is the latest National Research Council review of the NNI, an assessment called for by the 21st Century Nanotechnology Research and Development Act of 2003. The overall objective of the review is to make recommendations to the NSET Subcommittee and the NNCO that will improve the NNI's value for basic and applied research and for development of applications in nanotechnology that will provide economic, societal, and national security benefits to the United States. In its assessment, the committee found it important to understand in some detail—and to describe in its report—the NNI's structure and organization; how the NNI fits within the larger federal research enterprise, as well as how it can and should be organized for management purposes; and the initiative's various stakeholders and their roles with respect to research. Because technology transfer, one of the four NNI goals, is dependent on management and coordination, the committee chose to address the topic of technology transfer last, following its discussion of definitions of success and metrics for assessing progress toward achieving the four goals and management and coordination. Addressing its tasks in this order would, the committee hoped, better reflect the logic of its approach to review of the NNI. Triennial Review of the National Nanotechnology Initiative also provides concluding remarks in the last chapter.

A Review of the Draft 2013 National Climate Assessment

As mandated by the Global Change Research Act (GCRA), the U.S. Global Change Research Program is currently producing a "National Climate Assessment" (NCA). The NCA is a report to inform the President, the Congress, and the American people about the current state of

scientific knowledge regarding climate change effects on U.S. regions and key sectors, now and in the coming decades. This document contains an evaluation of the draft NCA report, presented through consensus responses to the Panel's Task Statement questions, and through a large collection of individual Panel member comments and suggestions for specific chapters, statements, figures, etc. While focusing primarily on practical suggestions for immediately improving the current draft, the Panel also raises some broader considerations about fundamental approaches used in certain parts of the NCA report, and about the scope of USGCRP research that underlies the NCA findings. Some suggestions can be viewed as longer-term advice.

An Evaluation of the U.S. Department of Energy's Marine and Hydrokinetic Resource Assessments

Increasing renewable energy development, both within the United States and abroad, has rekindled interest in the potential for marine and hydrokinetic (MHK) resources to contribute to electricity generation. These resources derive from ocean tides, waves, and currents; temperature gradients in the ocean; and free-flowing rivers and streams. One measure of the interest in the possible use of these resources for electricity generation is the increasing number of permits that have been filed with the Federal Energy Regulatory Commission (FERC). As of December 2012, FERC had issued 4 licenses and 84 preliminary permits, up from virtually zero a decade ago. However, most of these permits are for developments along the Mississippi River, and the actual benefit realized from all MHK resources is extremely small. The first U.S. commercial gridconnected project, a tidal project in Maine with a capacity of less than 1 megawatt (MW), is currently delivering a fraction of that power to the grid and is due to be fully installed in 2013.

As part of its assessment of MHK resources, DOE asked the National Research Council (NRC) to provide detailed evaluations. In response, the NRC formed the Committee on Marine Hydrokinetic Energy Technology Assessment. As directed in its statement of task (SOT), the committee first developed an interim report, released in June 2011, which focused on the wave and tidal resource assessments (Appendix B). The current report contains the committee's evaluation of all five of the DOE resource categories as well as the committee's comments on the overall MHK resource assessment process. This summary focuses on the committee's overarching findings and conclusions regarding a conceptual framework for developing the resource assessments, the aggregation of results into a single number, and the consistency across and coordination between the individual resource assessments. Critiques of the individual resource assessment, further discussion of the practical MHK resource base, and overarching conclusions and recommendations are explained in *An Evaluation of the U.S. Department of Energy's Marine and Hydrokinetic Resource Assessment*.

New Funding Opportunities

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Content Order

New Funding Posted Since April 15 Newsletter
Links to New & Open Funding Solicitations
Solicitations Remaining Open from Prior Issues of the Newsletter

New Funding Solicitations Posted Since April 15 Newsletter

<u>Integrated Research, Education, and Extension Competitive Grants Program - Methyl Bromide</u> Transitions

The methyl bromide transitions program addresses the immediate needs and the costs of transition that have resulted from the scheduled phase-out of the pesticide methyl bromide. Methyl bromide has been a pest and disease control tactic critical to pest management systems for decades for soilborne and postharvest pests. The program focuses on integrated commercial-scale research on methyl bromide alternatives and associated extension activity that will foster the adoption of these solutions. Projects should cover a broad range of new methodologies, technologies, systems, and strategies for controlling economically important pests for which methyl bromide has been the only effective pest control option. Research projects must address commodities with critical issues and include a focused economic analysis of the cost of implementing the transition on a commercial scale. **Due May 21.**

Investing in Innovation Fund (i3)

On May 3, 2013, the Department of Education published two documents in the Federal Register: the Notices Inviting Applications for the 2013 <u>Scale-up</u> and <u>Validation</u> competitions. **Deadline for Notice of Intent to Apply:** May 23, 2013; **Deadline for Transmittal of Applications:** July 2, 2013.

<u>Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS)</u>

The Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) Funding Opportunity Announcement (FOA) that is being issued by the U.S. Department of Energy (DOE) is seeking applications that integrate Thermochemical Energy Storage (TCES) systems with a minimum of 6 hours of thermal storage to be used in ≥1 Megawatt-electric (≥1 MWe) scale CSP electricity generation that have promise to achieve a cost target of ≤\$15 per kilowatt-hour-thermal (≤\$15/kWhth) are the focus of this FOA. Successful projects will culminate in an on-sun demonstration of the thermochemical reactor along with reliable projections of the full scale performance of the integrated storage system through the utilization of validated performance models developed as part of the research and development effort. **Concept paper due May 23; full July 23.**

Transformation Initiative: Sustainable Communities Research Grant program

The purpose of the FY13 Sustainable Communities Research Grant Program (SCRGP) is to fill key data and information gaps, and to begin to develop and evaluate policy alternatives that communities can adopt to facilitate decision making about various community investments in sustainability initiatives. For this round of sustainability research grants, HUD is primarily interested in sponsoring cutting edge research in quality, equitable affordable housing development and preservation; transportation and infrastructure planning; and "green," energy-efficient practices. Priority is given to applications that advance evidence-based research on the effectiveness of Federal programs in these areas, which includes HUD programs, such as HOME Investment Partnerships, Community Development Block Grant (CDBG), Public Housing, and Choice Neighborhoods Grant programs, and the range of HUD programs that address issues related to sustainability. HUD believes that the results from the program will enable it to develop a broader sustainability agenda beyond current departmental priorities, as well as any future efforts or initiatives that may be considered based on the results of the research. **Due May 29.**

Capacity Building Grants for Non Land Grant Colleges of Agriculture Program

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 May 30.**

Marine and Hydrokenetic Component Advancement

The objective of the Marine and Hydrokinetic System Performance Advancement FOA is to advance technology performance of existing marine and hydrokinetic systems through the development and application of innovative components that are designed and built specifically for MHK applications. This FOA will focus on improving the cost competitiveness of systems already in development, with the goal of advancing the technology performance of these systems. This FOA will support component development projects in three topic areas that have the greatest potential to impact power to weight ratio and availability:

- Topic Area 1: Advanced Controls to improve energy capture, availability, and safety.
- Topic Area 2: Next-Gen Power Take-Off (PTO) to increase energy efficiency, reduce weight, and improve reliability.
- Topic Area 3: Optimized Structures to improve energy capture, reduce weight, and improve reliability.

Due May 31.

Office of Postsecondary Education (OPE): Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA) Fellowship Program CFDA Number 84.022A

The Fulbright-Hays DDRA Fellowship Program provides opportunities to doctoral candidates to engage in full-time dissertation research abroad in modern foreign languages and area studies. The program is designed to contribute to the development and improvement of the study of modern foreign languages and area studies in the United States. **Applications due June 3.**

Announcement of the Availability of Funds for Office of Research Integrity (ORI) Extramural Research Grants

The purpose of this exploratory/ developmental grant program is to foster research on research integrity in areas that have been inadequately explored. Successful applications will evaluate existing paradigms critically, be developed around an innovative hypothesis or address critical barriers to progress in understanding the multiple factors that underlie deviation from integrity in research, or conversely, that promote research integrity. The application should address the societal, organizational, group, or individual factors that affect integrity in research, both positively and negatively. Successful projects will be designed to produce clear evidence (rates of occurrence and impacts) of problem areas in community standards, self-regulation, practice norms, and non-adherence to accepted codes of conduct, and/or to solutions to those problems. **Due June 10.**

FY 2013 University Center Economic Development Program Competition

This FFO announces the availability of funding for EDA's FY 2013 University Center Economic Development Program Competition. The purpose of EDA's University Center Economic Development Program (also referred to as the University Center program) is to assist institutions of higher education and consortia of institutions of higher education in establishing and operating University Centers specifically focused on leveraging university assets to build regional economic ecosystems that support high-growth entrepreneurship. University Centers collaborate with other EDA partners by providing resources to develop, implement, and support regional strategies that promote job creation, the development of high-skilled regional talent pools, and business expansion in a region's innovation clusters. These resources may include technology commercialization, feasibility studies, market research, economic impact analyses training, and other technical assistance to help communities foster vibrant economic ecosystems. EDA solicits competitive applications from accredited institutions of higher education and from consortia of accredited institutions of higher education that are located in, and have programs targeting, only the following geographic areas in EDA's Austin Region: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; and in EDA's Denver Region: Colorado, Iowa, Kansas, Missouri, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. Due June 17.

DARPA Arrays at Commercial Timescales (ACT)

ACT aims to dramatically shorten the timescales associated with electromagnetic array development, deployment and upgrade. Specifically, this program will depart from traditional

highly-specialized and time-consuming array design methodologies and focus on three enabling thrust areas: 1) realization of a common hardware module that can be broadly applied to many disparate array functions, 2) development of a reconfigurable electromagnetic interface capable of supporting a wide variety of parameters such as different polarizations, frequencies, bandwidths, etc. and 3) demonstration of a scalable infrastructure in which arrays on physically disconnected platforms can be coherently combined into a larger effective aperture through the use of precise timing and localization data. **Due June 17.**

Early Care and Education Research Scholars: Head Start Graduate Student Research Grants

The Office of Planning, Research and Evaluation (OPRE) of the Administration for Children and Families (ACF) plans to provide funds for Head Start Graduate Student Research Grants to support dissertation research by advanced graduate students who are working in partnership with Head Start programs and with faculty mentors. Competitive applicants will 1) demonstrate a collaborative partnership with their program partners, and 2) pursue research questions that directly inform local, State, or Federal policy relevant to multiple early care and education contexts. Applicants should consider pursuing data collection across contexts, including child care, pre-k, home-visiting programs, Head Starts, Early Head Starts, and/or others. Applicants are expected to demonstrate an established partnership with their early care and education program partners that should be apparent throughout the research plan, from development and refinement of the research questions through the proposed data collection, interpretation, and dissemination. **Due June 28.**

Clean Energy Manufacturing Innovation Institute

The goal of this Funding Opportunity Announcement (FOA) is to establish a Clean Energy Manufacturing Innovation Institute (Institute) to support U.S. prosperity and security; and that will contribute to the creation of the National Network for Manufacturing Innovation (NNMI). The primary goals of the Institute are to revitalize American manufacturing and support domestic manufacturing competitiveness by driving innovation, and developing and accelerating adoption of next generation manufacturing technologies that will increase energy productivity, improve product quality, reduce cost, waste or pollution leading to increased domestic production capacity, jobs for American workers and regional economic development. The Institute established through this FOA will focus on wide bandgap (WBG) semiconductors for power electronic devices. Funding from this FOA (including required cost share) is not permitted for construction of new buildings or for major renovation of existing buildings. Allowable costs include those necessary to house the Institute (including a possible lease for the first five years of the project), to make minor renovations as needed, and to purchase research equipment and instrumentation. The full Funding Opportunity Announcement is posted on the EERE Exchange website at https://eere-exchange.energy.gov . Mandatory LOI July 11; full August 23.

NSF EHR Core Research (ECR)

The EHR Core Research (ECR) program establishes a mechanism in the Directorate for Education and Human Resources to provide funding in foundational research areas that are

broad, essential and enduring. EHR seeks proposals that will help synthesize, build and/or expand research foundations in the following core areas: STEM learning, STEM learning environments, workforce development, and broadening participation in STEM. We invite researchers to identify and conduct research on questions or issues in order to advance the improvement of STEM learning in general, or to address specific challenges of great importance. Two types of proposals are invited: *Core Research Proposals* (maximum 5 years, \$1.5 million) that propose to study a foundational research question/issue designed to inform the transformation of STEM learning and education and *Capacity Building Proposals* (maximum 3 years, \$300,000) intended to support groundwork necessary for advancing research within the four core areas. **Due July 12.**

Humanities Collections and Reference Resources

The Humanities Collections and Reference Resources (HCRR) program supports projects that provide an essential underpinning for scholarship, education, and public programming in the humanities. Thousands of libraries, archives, museums, and historical organizations across the country maintain important collections of books and manuscripts, photographs, sound recordings and moving images, archaeological and ethnographic artifacts, art and material culture, and digital objects. Funding from this program strengthens efforts to extend the life of such materials and make their intellectual content widely accessible, often through the use of digital technology. Awards are also made to create various reference resources that facilitate use of cultural materials, from works that provide basic information quickly to tools that synthesize and codify knowledge of a subject for in-depth investigation. HCRR offers two kinds of awards: 1) for implementation and 2) for planning, assessment, and pilot efforts (HCRR Foundations grants). **Due July 18.**

AHA Summer 2013 - National Established Investigator Award

To support mid-career investigators with unusual promise and an established record of accomplishments; candidates have a demonstrated commitment to cardiovascular or cerebrovascular science as indicated by prior publication history and scientific accomplishments. A candidate's career is expected to be in a rapid growth phase. Research broadly related to cardiovascular function and disease and stroke, or to related clinical, basic science, bioengineering or biotechnology, and public health problems, including multidisciplinary efforts. Proposals are encouraged from all basic disciplines as well as epidemiological, behavioral, community and clinical investigations that bear on cardiovascular and stroke problems. **Due July 18.**

AHA Summer 2013 - National Innovative Research Grant

To support highly innovative, high-risk, high-reward research that could ultimately lead to critical discoveries or major advancements that will accelerate the field of cardiovascular and stroke research. Research deemed innovative may introduce a new paradigm, challenge current paradigms, look at existing problems from new perspectives, or exhibit other uniquely creative qualities. The Innovative Research Grant (IRG) promotes new ideas; therefore, proposals need not include preliminary data. However, a solid rationale for the work must be

provided. Proposed work should not be the next logical step of previous work, but should have a high probability of revealing new avenues of investigation, if successful. This program aims to provide pilot or seed funding that should lead to successful competition for additional funding beyond the pilot period. The principal investigator (PI) is responsible for clearly and explicitly articulating the project's innovation and the potential impact on cardiovascular and stroke research. Research broadly related to cardiovascular function and disease and stroke, or to related clinical, basic science, bioengineering or biotechnology, and public health problems, including multidisciplinary efforts. **Due July 18.**

AHA Summer 2013 - Mentored Clinical and Population Research Award

To encourage early career investigators who have appropriate and supportive mentoring relationships to engage in high quality introductory and pilot clinical studies that will guide future strategies for reducing cardiovascular disease and stroke while fostering new research in clinical and translational science, and encouraging community- and population-based activities. This grant does not fund basic science or support senior researchers, but encourages mentoring of early career investigators. Funding is available for research related to cardiovascular disease and stroke prevention or treatment, or to related clinical and public health problems, including multidisciplinary efforts. Proposals are encouraged on provider behavior, patient behavior, behavioral outcomes, risk factor outcomes, disease outcomes, cost benefit analyses, efforts to evaluate outcomes of patient care delivery and patient/provider and/or system compliance and adherence to recommendations, as well as pilot clinical research studies that may provide preliminary data for larger-scale investigation. Studies using existing databases are also encouraged. Ancillary studies or a clearly defined sub-study of an ongoing clinical research study are also encouraged. There must, however, be clear justification that the proposal is a sub-study and not a piece of an already funded project. **Due July 18.**

AHA Summer 2013 - Scientist Development Grant

To support highly promising beginning scientists in their progress toward independence by encouraging and adequately funding research projects that can bridge the gap between completion of research training and readiness for successful competition as an independent investigator. Research broadly related to cardiovascular function and disease and stroke, or to related clinical, basic science, bioengineering or biotechnology, and public health problems, including multidisciplinary efforts. **Due July 18.**

<u>Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering</u> New Thermochemical Storage (CSP: ELEMENTS)

The Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage (CSP: ELEMENTS) Funding Opportunity Announcement (FOA) that is being issued by the U.S. Department of Energy (DOE) is seeking applications that integrate Thermochemical Energy Storage (TCES) systems with a minimum of 6 hours of thermal storage to be used in \geq 1 Megawatt-electric (\geq 1 MWe) scale CSP electricity generation that have promise to achieve a cost target of \leq \$15 per kilowatt-hour-thermal (\leq \$15/kWhth) are the focus of this FOA. Successful projects will culminate in an on-sun demonstration of the

thermochemical reactor along with reliable projections of the full scale performance of the integrated storage system through the utilization of validated performance models developed as part of the research and development effort. **Due July 23.**

Instrument Development for Biological Research (IDBR)

The Instrument Development for Biological Research (IDBR) Program supports the development, production, and distribution of novel instrumentation that addresses demonstrated needs in biological research in areas supported by NSF Biology programs (see http://www.nsf.gov/bio). These systems would benefit a broad user community through mass distribution of the technology. Interdisciplinary collaborations are strongly encouraged, as are partnerships with U.S. industries that can facilitate knowledge transfer, commercialization and broad utilization in the research community. **Due July 31.**

Bridging Cultures at Community Colleges

NEH *Bridging Cultures* at Community Colleges grants are intended to strengthen and enrich humanities education and scholarship at community colleges or community college systems. These projects must be planned and implemented in collaboration with another institution with appropriate resources, such as a college or university, museum, research library, or professional association. Grants may be used to enhance the humanities content of existing programs, develop new programs, or lay the foundation for more extensive endeavors in the future. NEH *Bridging Cultures* at Community Colleges grants

- create opportunities for community college faculty members to study together while improving their capacity to teach the humanities;
- enhance or develop areas of need in an institution's humanities programs; and
- give community college faculty access to humanities resources through partnerships with other institutions with appropriate resources.

Due August 27.

<u>Institute of Education Sciences (IES): Education Research and Development Centers CFDA</u> <u>Number 84.305C</u>

The Director of the Institute of Education Sciences (Institute) announces the Institute's FY 2014 competitions for grants to support education research and special education research. The Director takes this action under the Education Sciences Reform Act of 2002. The Institute's purpose in awarding these grants is to provide national leadership in expanding fundamental knowledge and understanding of developmental and school readiness outcomes for infants and toddlers with or at risk for disability, and of education outcomes for all students from early childhood education through postsecondary and adult education. Purpose of Program: The central purpose of the Institute's research grant programs is to provide parents, educators, students, researchers, policymakers, and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. The Institute's National Center for Education Research (NCER) will hold five competitions: One

competition for education research, one competition for education research training, one competition for education research and development centers, one competition for statistical and research methodology in education, and one competition for partnerships and collaborations focused on problems of practice or policy. The Institute's National Center for Special Education Research (NCSER) will not hold competitions in FY 2014. **Due September 4.**

Institute of Sciences (IES): Research Training Program in the Education Sciences CFDA Number 84.305B

The Director of the Institute of Education Sciences (Institute) announces the Institute's FY 2014 competitions for grants to support education research and special education research. The Director takes this action under the Education Sciences Reform Act of 2002. The Institute's purpose in awarding these grants is to provide national leadership in expanding fundamental knowledge and understanding of developmental and school readiness outcomes for infants and toddlers with or at risk for disability, and of education outcomes for all students from early childhood education through postsecondary and adult education. Purpose of Program: The central purpose of the Institute's research grant programs is to provide parents, educators, students, researchers, policymakers, and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. The Institute's National Center for Education Research (NCER) will hold five competitions: One competition for education research, one competition for education research training, one competition for education research and development centers, one competition for statistical and research methodology in education, and one competition for partnerships and collaborations focused on problems of practice or policy. The Institute's National Center for Special Education Research (NCSER) will not hold competitions in FY 2014. Catalog of Federal Domestic Assistance (CFDA) Numbers: 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H. Applications for grants under the Education Research, Education Research Training, Education Research and Development Centers, Statistical and Research Methodology in Education, and the Partnerships and Collaborations Focused on Problems of Practice or Policy competitions, CFDA Numbers 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H must be submitted electronically using the Governmentwide Grants.gov Apply site at www.Grants.gov. Through this site, you will be able to download a copy of the application package, complete it offline, and then upload and submit your application. Due September 4.

<u>Institute of Education Sciences (IES): Partnerships and Collaborations Focused on Problems of Practice or Policy CFDA Number 84.305H</u>

The Director of the Institute of Education Sciences (Institute) announces the Institute's FY 2014 competitions for grants to support education research and special education research. The Director takes this action under the Education Sciences Reform Act of 2002. The Institute's purpose in awarding these grants is to provide national leadership in expanding fundamental knowledge and understanding of developmental and school readiness outcomes for infants and toddlers with or at risk for disability, and of education outcomes for all students from early

childhood education through postsecondary and adult education. Purpose of Program: The central purpose of the Institute's research grant programs is to provide parents, educators, students, researchers, policymakers, and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. The Institute's National Center for Education Research (NCER) will hold five competitions: One competition for education research, one competition for education research training, one competition for education research and development centers, one competition for statistical and research methodology in education, and one competition for partnerships and collaborations focused on problems of practice or policy. The Institute's National Center for Special Education Research (NCSER) will not hold competitions in FY 2014. Catalog of Federal Domestic Assistance (CFDA) Numbers: 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H. Applications for grants under the Education Research, Education Research Training, Education Research and Development Centers, Statistical and Research Methodology in Education, and the Partnerships and Collaborations Focused on Problems of Practice or Policy competitions, CFDA Numbers 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H must be submitted electronically using the Governmentwide Grants.gov Apply site at www.Grants.gov. Through this site, you will be able to download a copy of the application package, complete it offline, and then upload and submit your application. You may not email an electronic copy of a grant application to us. You may access the electronic grant applications for the Education Research, Education Research Training, Education Research and Development Centers, Statistical and Research Methodology in Education, and the Partnerships and Collaborations Focused on Problems of Practice or Policy competitions at www.Grants.gov. You must search for the downloadable application package for each competition by the CFDA number. Due September 4.

<u>Institute of Education Sciences (IES): Statistical Research Methodology in Education CFDA</u> Number 84.305D

The Director of the Institute of Education Sciences (Institute) announces the Institute's FY 2014 competitions for grants to support education research and special education research. The Director takes this action under the Education Sciences Reform Act of 2002. The Institute's purpose in awarding these grants is to provide national leadership in expanding fundamental knowledge and understanding of developmental and school readiness outcomes for infants and toddlers with or at risk for disability, and of education outcomes for all students from early childhood education through postsecondary and adult education. Purpose of Program: The central purpose of the Institute's research grant programs is to provide parents, educators, students, researchers, policymakers, and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need. The Institute's National Center for Education Research (NCER) will hold five competitions: One competition for education research training, one

competition for education research and development centers, one competition for statistical and research methodology in education, and one competition for partnerships and collaborations focused on problems of practice or policy. The Institute's National Center for Special Education Research (NCSER) will not hold competitions in FY 2014. Catalog of Federal Domestic Assistance (CFDA) Numbers: 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H. Applications for grants under the Education Research, Education Research Training, Education Research and Development Centers, Statistical and Research Methodology in Education, and the Partnerships and Collaborations Focused on Problems of Practice or Policy competitions, CFDA Numbers 84.305A, 84.305B, 84.305C, 84.305D, and 84.305H must be submitted electronically using the Governmentwide Grants.gov Apply site at www.Grants.gov. Through this site, you will be able to download a copy of the application package, complete it offline, and then upload and submit your application. **Due September 4.**

NEH Summer Stipends

Summer Stipends support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources. Summer Stipends support continuous full-time work on a humanities project for a period of two months. Summer Stipends support projects at any stage of development. Summer Stipends are awarded to individual scholars. **Due September 26.**

DARPA Defense Sciences Research and Technology

DARPA is soliciting innovative research proposals of interest to the Defense Sciences Office. Proposed research should investigate innovative approaches that enable revolutionary advances in science and technology. Specifically excluded is research that results primarily in evolutionary improvements to the existing state of the art. **Open to May 22, 2014.**

Links to New & Open Funding Solicitations

Links verified: Monday, February 11, 2013

- SAMHSA FY 2013 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 2013 Science To Achieve Results (STAR) Research Grants
- NASA Open Solicitations
- Defense Sciences Office Solicitations
- The Mathematics Education Trust
- EPA Open Funding Opportunities
- DOE Funding Opportunity Exchange
- CDMRP FY 2013 Funding Announcements
- Office of Minority Health
- Department of Justice Open Solicitations
- DOE/EERE Funding Opportunity Exchange
- New Funding Opportunities at NIEHS (NIH)
- National Human Genome Research Institute Funding Opportunities
- Army Research Laboratory Open Broad Agency Announcements (BAA)
- SBIR Gateway to Funding
- Water Research Funding
- Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences
- DARPA Current Solicitations
- Office of Naval Research Currently Active BAAs
- HRSA Health Professions Open Opportunities
- NIH Funding Opportunities Relevant to NIAID
- National Institute of Justice Current Funding Opportunities
- Funding Opportunities by the Department of Education Discretionary Grant Programs
- EPA's Office of Air and Radiation (OAR) Open Solicitations
- NETL Open Solicitations
- **DoED List of Currently Open Grant Competitions**
- Foundation Center RFP Weekly Funding Bulletin

Solicitations Remaining Open from Prior Issues of the Newsletter

NIH Summer Research Experience Programs (R25)

The purpose of the NIH Summer Research Experience Program (referred to as the Summer Research Program) is to provide a high quality research experience for high school and college students and for science teachers during the summer academic break. The NIH expects that such programs will: help attract young students to careers in science; provide opportunities for college students to gain valuable research experience to help prepare them for graduate

school; and enhance the skills of science teachers and enable them to more effectively communicate the nature of the scientific process to their students. The programs would also contribute to enhancing overall science literacy. Summer Research Programs that expand and complement existing summer educational and training programs are encouraged. Note: Not all participating Institutes and Centers (ICs) support all aspects of this program. Therefore, prospective applicants must consult the Table of IC-Specific Information, Requirements and Staff Contacts in this announcement to determine if your application will be accepted for review, and should contact staff at the relevant IC (see also Section VII) to discuss the proposed Program. **Due May 21.**

Agriculture and Food Research Initiative: Foundational Program

The U.S. Department of Agriculture (USDA) established the Agriculture and Food Research Initiative (AFRI) under which the Secretary of Agriculture may make competitive grants for fundamental and applied research, education, and extension to address food and agricultural sciences (as defined under section 1404 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) (7 U.S.C. 3103)), as amended, in six priority areas. The six priority areas include: 1) plant health and production and plant products; 2) animal health and production and animal products; 3) food safety, nutrition, and health; 4) renewable energy, natural resources, and environment; 5) agriculture systems and technology; and 6) agriculture economics and rural communities. **Due May 22.**

Nanotechnology Undergraduate Education (NUE) in Engineering

This solicitation aims at introducing nanoscale science, engineering, and technology through a variety of interdisciplinary approaches into undergraduate engineering education. The focus of the FY 2013 competition is on nanoscale engineering education with relevance to devices and systems and/or on the societal, ethical, economic and/or environmental issues relevant to nanotechnology. Related funding opportunities are posted on the web site for the National Nanotechnology Initiative, www.nsf.gov/nano. In addition, research and education projects in nanoscale science and engineering will continue to be supported in the relevant NSF programs and divisions. **Due May 22.**

Theoretical Research in Magnetic Fusion Energy Science

The Office of Fusion Energy Sciences (FES) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving new or renewal grant applications for theoretical and computational research relevant to the U.S. magnetic fusion energy sciences program. Applications selected in response to this Funding Opportunity Announcement (FOA) will be funded in Fiscal Year 2014, subject to the availability of appropriated funds. The specific areas of interest are: 1. Macroscopic Stability 2. Confinement and Transport 3. Boundary Physics 4. Plasma Heating & Non-inductive Current Drive, and 5. Energetic Particles Specific information about each topical area is included in the supplementary information section in the FOA document which is located on FedConnect. Due May 22.

NIJ Graduate Research Fellowship Program

The NIJ Graduate Research Fellowship (GRF) program provides awards for research on crime, violence, and other criminal justice-related topics to accredited universities that offer research-based doctoral degrees. NIJ invests in doctoral education by supporting universities that sponsor students who demonstrate the potential to successfully complete doctoral degree programs in disciplines relevant to the mission of NIJ and who are in the final stages of graduate study. Applicants sponsoring doctoral students are eligible to apply only if the doctoral research dissertation has direct implications for criminal justice policy and practice in the United States and is in an NIJ-supported discipline; e.g., social and behavioral sciences, operations technology, information and sensors research and development, and investigative and forensic sciences. Awards are granted to successful applicants in the form of a grant to cover a doctoral student fellowship. The GRF award for research projects using qualitative research methods is anticipated to be \$30,000. The GRF award for research projects using a quantitative approach is anticipated to be \$25,000. Applicants should submit an appropriate funding request based on the type of research proposed. Final award decisions, including decisions on funding amounts, will be made by the Director of the National Institute of Justice. **Due May 23.**

NSF Research Experiences for Undergraduates

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. This solicitation features two mechanisms for support of student research: (1) REU Sites are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Sites may be based in a single discipline or academic department or may offer interdisciplinary or multi-department research opportunities with a coherent intellectual theme. Proposals with an international dimension are welcome. (2) REU Supplements may be included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects. Undergraduate student participants in either REU Sites or REU Supplements must be U.S. citizens, U.S. nationals, or permanent residents of the United States. Students do not apply to NSF to participate in REU activities. Students apply directly to REU Sites or to NSF-funded investigators who receive REU Supplements. To identify appropriate REU Sites, students should consult the directory of active REU Sites on the Web at http://www.nsf.gov/crssprgm/reu/reu search.cfm. Due May 24.

Atmospheric System Research Program (ASR)

The Atmospheric System Research Program (ASR) 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), supports research on key cloud, aerosol, precipitation, and radiative transfer processes that has the potential to improve the accuracy of regional and global climate models. The ASR program hereby announces its interest in research grant applications for observational, data analysis, and/or modeling studies that use data from the Atmospheric Radiation Measurement (ARM) or ASR programs to address current scientific uncertainties in the properties of boundary layer and mixed phase clouds, ice nucleation

processes, and aerosol processes; that make use of new ARM field campaign data to address ASR science goals; or that develop new integrated datasets or new algorithms from ARM observations that can be used to address ASR science questions. **Due May 29.**

Minority Science and Engineering Improvement Program

The MSEIP is designed to effect long-range improvement in science and engineering education at predominantly minority institutions and to increase the flow of underrepresented ethnic minorities, particularly minority women, into scientific and technological careers. The eligibility of an applicant is dependent on the type of MSEIP grant. There are four types of MSEIP grants: Institutional projects, special projects, cooperative, and design. Institutional project grants are grants that support the implementation of a comprehensive science improvement plan, which may include any combination of activities for improving the preparation of minority students for careers in science. There are two types of special projects grants. **Due May 31.**

Antarctic Artists and Writers Program

The Antarctic Artists and Writers Program furnishes U.S. Antarctic Program operational support, and round-trip economy air tickets between the United States and the Southern Hemisphere, to artists and writers whose work requires them to be in the Antarctic to complete their proposed project. The Program does not provide any funding to participants, including for such items as salaries, materials, completion of the envisioned works, or any other purpose. U.S. Antarctic Program infrastructure consists of three year-round stations and numerous austral-summer research camps in Antarctica, research ships in the Southern Ocean, and surface and air transportation. These assets support the artist and writer projects. The main purpose of the U.S. Antarctic Program is scientific research and education. The Antarctic Artists and Writers Program supports writing and artistic projects specifically designed to increase understanding and appreciation of the Antarctic and of human activities on the southernmost continent. The program does not support short-term projects that are essentially journalistic in nature. **Due May 31.**

United Engineering Foundation Grants - 2014

The United Engineering Foundation Inc. (UEF) is the successor organization to the United Engineering Society (UES) which was founded in 1904 with the generous support of Andrew Carnegie. The members of the UEF are the American Institute of Chemical Engineers (AIChE), American Institute of Mining Engineers (AIME), American Society of Civil Engineers (ASCE), American Society of Mechanical Engineers, and Institute of Electrical and Electronics Engineers (IEEE). **Concept paper due June 1.**

Camille and Henry Dreyfus Special Grant Program in the Chemical Sciences

The Foundation encourages proposals that are judged likely to significantly advance the chemical sciences. Examples of areas of interest include (but are not limited to): the increase in public awareness, understanding, and appreciation of the chemical sciences; innovative approaches to chemistry education at all levels (K-12, undergraduate, and graduate); and

efforts to make chemistry careers more attractive. Research proposals are not customarily considered. **Initial inquiry deadline: June 5**

Bioengineering Research Grants (BRG) (R01)

The purpose of this funding opportunity announcement is to encourage collaborations between the life and physical sciences that: 1) apply a multidisciplinary bioengineering approach to the solution of a biomedical problem; and 2) integrate, optimize, validate, translate or otherwise accelerate the adoption of promising tools, methods and techniques for a specific research or clinical problem in basic, translational, or clinical science and practice. An application may propose design-directed, developmental, discovery-driven, or hypothesis-driven research and is appropriate for small teams applying an integrative approach that can increase our understanding of and solve problems in biological, clinical or translational science. **Due June 5.**

NSF Small Business Innovation Research Program Phase I Solicitation FY-2014

The SBIR program solicits proposals from the small business sector consistent with NSF's mission. A main purpose of the legislation is to stimulate technological innovation and increase private sector commercialization. The NSF SBIR program is therefore in a unique position to meet both the goals of NSF and the purpose of the SBIR legislation by transforming scientific discovery into both social and economic benefit, and by emphasizing private sector commercialization. Accordingly, NSF has formulated broad solicitation topics for SBIR that conform to the high-technology investment sector's interests. The topics are:

- Biological and Chemical Technologies (BC)
- Education Applications (EA)
- Electronics, Information and Communication Technologies (EI)
- Nanotechnology, Advanced Materials, and Manufacturing (NM)

Due June 11.

Digitizing Historical Records

The National Historical Publications and Records Commission seeks proposals that use cost-effective methods to digitize nationally significant historical record collections and make the digital versions freely available online. Projects must make use of existing holdings of historical repositories and consist of entire collections or series. The materials should already be available to the public at the archives and described so that projects can re-use existing information to serve as metadata for the digitized collection. **Due June 11.**

Bridging Cultures through Film: International Topics

The *Bridging Cultures* through Film: International Topics program supports documentary films that examine international and transnational themes in the humanities. These projects are meant to spark Americans' engagement with the broader world by exploring countries and cultures outside of the United States. Proposed documentaries must be analytical and deeply grounded in humanities scholarship. **Due June 12.**

NIJ FY 13 Research on Offender Decision-Making

The <u>U.S. Department of Justice</u> (DOJ), <u>Office of Justice Programs</u> (OJP), <u>National Institute of Justice</u> (NIJ) is seeking applications for funding for research related to adult offender decision-making with respect to crime. With this solicitation, NIJ seeks research to extend the rational choice models or expand into other theories and models (e.g., behavioral economics, business models, or cognitive models) in order to advance our understanding of adult offenders' decision-making process. This program furthers the Department's mission by sponsoring research intended to provide objective and independent knowledge to meet the challenges of crime and justice, particularly at the State and local levels. **Due June 17.**

Consolidated Innovative Nuclear Research

The Department of Energy's (DOE) Office of Nuclear Energy (NE) conducts crosscutting nuclear energy research and development (R&D) and associated infrastructure support activities to develop innovative technologies that offer the promise of dramatically improved performance for advanced reactors and fuel cycle concepts while maximizing the impact of DOE resources. NE funds research activities through both competitive and direct mechanisms, as required to best meet the needs of NE. These efforts are essential to balancing NE's R&D portfolio and encourage new nuclear power deployment with creative solutions to the universe of nuclear energy challenges. The competitive portion of NE's R&D portfolio is accomplished in part by promoting integrated and collaborative research conducted by university, industry, international and national laboratory partners under the direction of Office of Nuclear Energy's programs: Nuclear Energy University Programs (NEUP), elements of the Nuclear Energy Enabling Technologies (NEET) Crosscutting Technology Development Program, the Advanced Test Reactor (ATR) National Scientific User Facility (NSUF), and Small Business Innovative Research (SBIR) / Small Business Technology Transfer (STTR). Specifically, NE designates up to 20 percent of funds appropriated to its R&D programs for R&D and infrastructure support at university and research institutions, through open, competitive solicitations. Additionally, through the NEET Crosscutting Technology Development Program, NE provides direct and competitive awards for university, industry and national laboratory-led research that crosscuts the NE R&D portfolio. The primary objective of consolidating fiscal year (FY) 2013 competitive research sought by NE in the area of innovative nuclear research into a single FOA is to promote efficiency and the effective use of resources. **Due June 12.**

Science for Sustainable and Healthy Tribes Climate Change Impacts

The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing research on science for sustainable and healthy tribes. This solicitation is focused on research to develop sustainable solutions to environmental problems that affect tribes. The objectives of the awards to be made under this solicitation are to improve understanding of: 1) the health impacts of climate change on tribal populations; and 2) the health impacts of indoor air pollution exposures that derive from or are directly affecting traditional tribal life-ways and cultural practices. In both cases, projects should focus on impacts to vulnerable sub-populations of the Tribal communities. Proposals should also consider sustainable, culturally appropriate and acceptable pollution prevention, and

adaptation/mitigation strategies. EPA plans to host three webinars to discuss this RFA and respond to questions. **Due June 25.**

Early Career Projects: Science for Sustainable and Healthy Tribes Climate Change Impacts

The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing research on science for sustainable and healthy tribes. This solicitation is focused on research to develop sustainable solutions to environmental problems that affect tribes. The objectives of the awards to be made under this solicitation are to improve understanding of: 1) the health impacts of climate change on tribal populations; and 2) the health impacts of indoor air pollution exposures that derive from or are directly affecting traditional tribal life-ways and cultural practices. In both cases, projects should focus on impacts to vulnerable sub-populations of the Tribal communities. Proposals should also consider sustainable, culturally appropriate and acceptable pollution prevention, and adaptation/mitigation strategies. EPA plans to host three webinars to discuss this RFA and respond to questions. **Due June 25.**

Science for Sustainable and Healthy Tribes Indoor Air Impacts

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DOE Cost-Shared Development of Innovative SMR Designs

The U.S. Department of Energy (DOE) Office of Nuclear Energy, through this Funding Opportunity Announcement (FOA), seeks to facilitate the development of innovative SMR designs that have the potential to address the nation's economic, environmental and energy security goals. Specifically, the DOE is soliciting applications for SMR designs that offer unique and innovative features that can serve to improve nuclear safety, operability, efficiency, economics, security, and performance over existing plants and previously certified nuclear plant designs and that can achieve NRC design certification on a schedule that supports deployment in the 2025 timeframe. **Due July 1.**

Partnerships for Biodefense (R01)

This Funding Opportunity Announcement (FOA) issued by the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), invites research applications for projects that support preclinical development of lead candidate therapeutics, vaccines and related technologies, or diagnostics against NIAID Category A, B, or C priority agents. Applications must include a Product Development Strategy attachment and demonstrate substantive investment by at least one industrial participant. **Due July 2.**

Widening Implementation & Demonstration of Evidence-Based Reforms (WIDER)

The chief goal of WIDER is to transform institutions of higher education into supportive environments for STEM faculty members to substantially increase their use of evidence-based teaching and learning practices. The first recommendation in the Report of the President's Council of Advisors on Science and Technology (PCAST), "Engage to Excel," is to increase widespread implementation of evidence-based practices in order to increase persistence in STEM and contribute to the goal of producing 1 million additional STEM graduates. Through this process, WIDER seeks to substantially increase the scale of application of highly effective methods of STEM teaching and learning in institutions of higher education, by employing instructional materials and methods that have a convincing evidentiary basis of effectiveness. In particular WIDER seeks this transformation for high enrollment, lower division courses required for many STEM majors and taken by many other students to fulfill general education distribution requirements.

Included in our broad definition of effective STEM teaching and learning are not only instructional practices in traditional learning environments, but also modern laboratory methods and field research, proven distance education methods (or hybrid designs incorporating both face-to-face and distance methods), and improved approaches to motivating student interest in STEM. In all cases, the primary goal of WIDER is to increase substantially the scale of these improvements within and across the higher education sector in order to achieve:

- (1) Improved student learning;
- (2) Increased numbers of students choosing STEM majors, particularly from demographic groups underrepresented in STEM;
- (3) Improved retention in the first two years of undergraduate study and to graduation of all STEM majors.

Due July 3.

ONR Computational Methods for Decision Making

The purpose of this topic is to identify, understand, and resolve key issues, develop and mature algorithms and methods; determine and demonstrate performance of algorithms, methods, techniques, and strategies for automated computational methods and information systems that support decision making. The algorithms, methods, techniques, and strategies must support autonomous information processing systems that can successfully and securely execute a variety of missions in complex environments while exploiting multiple sources of sensor and open domain data. The program will pursue a wide variety of approaches that enable automated systems to, within the context of a mission, automatically analyze multiple sources of data supporting interpretation of the data; combine data and generate interpretations from multiple data sources to provide understanding of the battle space, provide management of sensor and other resources to maintain and improve the battle space picture, and to enable and build high performance software systems that are defect free and trustworthy to implement these algorithms, methods, techniques, and strategies. **Due July 15.**

Bridging Cultures at Community Colleges

NEH invites proposals for a cooperative agreement to develop and administer a national or regional (multistate) project to advance the role of the humanities at community colleges through curriculum and faculty development focused on the theme of *Bridging Cultures*. **Due August 27.**

Water Sustainability and Climate

The goal of the Water Sustainability and Climate (WSC) solicitation is to enhance the understanding and predict the interactions between the water system and land use changes (including agriculture, managed forest and rangeland systems), the built environment, ecosystem function and services and climate change/variability through place-based research and integrative models. Studies of the water system using models and/or observations at specific sites, singly or in combination, that allow for spatial and temporal extrapolation to other regions, as well as integration across the different processes in that system are encouraged, especially to the extent that they advance the development of theoretical frameworks and predictive understanding. **Due September 10.**

Digital Humanities Start-Up Grants

The National Endowment for the Humanities (NEH) invites applications to the Digital Humanities Start-Up Grants program. This program is designed to encourage innovations in the digital humanities. By awarding relatively small grants to support the planning stages, NEH aims to encourage the development of innovative projects that promise to benefit the humanities. Proposals should be for the planning or initial stages of digital initiatives in any area of the humanities. **Due September 12.**

Enduring Questions

The NEH Enduring Questions grant program supports faculty members in the teaching and development of a new course that will foster intellectual community through the study of an enduring question. This question-driven course will encourage undergraduates and teachers to grapple with a fundamental concern of human life addressed by the humanities, and to join together in a deep and sustained program of reading in order to encounter influential thinkers over the centuries and into the present day. **Due September 12.**

High-End Instrumentation Grant Program (S10)

The ORIP High-End Instrumentation Grant (HEI) program encourages applications from groups of NIH-supported investigators to purchase a single major item of equipment to be used for biomedical research that costs at least \$750,000. The maximum award is \$2,000,000. Instruments in this category include, but are not limited to, biomedical imaging systems, NMR spectrometers, mass spectrometers, electron microscopes and supercomputers. **Due Sept. 13.**

Documenting Endangered Languages

The Documenting Endangered Languages (DEL) program is a partnership between the National Endowment for the Humanities (NEH) and the National Science Foundation (NSF) to develop and advance knowledge concerning endangered human languages. Made urgent by the imminent death of an estimated half of the 6000-7000 currently used languages, this effort aims also to exploit advances in information technology. Awards support fieldwork and other activities relevant to recording, documenting, and archiving endangered languages, including the preparation of lexicons, grammars, text samples, and databases. DEL funding is available in the form of one- to three-year project grants as well as fellowships for six to twelve months. At least half the available funding will be awarded to projects involving fieldwork. All DEL applications are submitted to NSF for review. Upon completion of the review process, the administration of awards is conducted separately by NEH or NSF. **Due September 16.**

NEH Summer Stipends

Summer Stipends support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources. Summer Stipends support full-time work on a humanities project for a period of two months. Summer Stipends support projects at any stage of development. Summer Stipends are awarded to individual scholars. Organizations are not eligible to apply. **Due September 26.**

Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology This BAA is intended for proposals related to basic research, applied research, or advanced technology development. **Open to September 2013.**

APS for Food Security, Nutrition, Biodiversity and Conservation

The U.S. Agency for International Development (USAID) continues its commitment to foster more strategic alliances with the private sector's "solution holders" who are often well positioned to address specific development challenges. The purpose of this APS is to announce

USAID/Uganda's plans to fund a limited number of Public Private Alliances to enhance food security and address issues of biodiversity and conservation. Competition under this APS will consist of a two-step process where applicants first submit a Concept Paper for an initial competitive review. All Concept Papers received will be evaluated for responsiveness to the application criteria specified in this APS. Open to September 15, 2013.

National Oceanic and Atmospheric Administration (NOAA)

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. It is not a mechanism for awarding congressionally directed funds or existing funded awards.

Open until September 30, 2013.

National Geospatial-Intelligence Agency Academic Research Program

The National Geospatial-Intelligence Agency (NGA) is releasing this solicitation for its *sponsored academic research program*. This publication constitutes a Broad Agency Announcement (BAA) as contemplated in Department of Defense (DoD) Grant and Agreement Regulations (DoDGARs) 22.315(a). Awards will take the form of grants. However, other instruments may be considered as appropriate based on the proposals. **Open to September 30, 2013.**

FY 2013 Continuation of Solicitation for the Office of Science Financial Assistance Program

The Office of Science 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, Nuclear Physics, and Workforce Development for Teachers and Scientists. This annual FOA DE-FOA-0000768 succeeds FOA DE-FOA-0000600, which was published September 30, 2011. **Open to September 30. 2013.**

U.S. Army Medical Research and Materiel Command 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 Warfighter at home and abroad. 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 program plays a vital role in the fulfillment of the objectives established by the USAMRMC. General information on USAMRMC can be obtained at:

(https://mrmc.detrick.army.mil/). This 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 6.102(d)(2) and 35.016. This announcement provides a general description of USAMRMC's research programs, including research areas of interest; general information; proposal/application preparation instructions; and the evaluation and selection criteria. This fiscal year's BAA contains several changes from previous USAMRMC BAAs. Read each section carefully. **Open to September 30. 2013.**

Long Range BAA for Navy and Marine Corps Science and Technology

ONR is constantly looking for innovative scientific and technological solutions to address current and future Navy and Marine Corps requirements. We want to do business with educational institutions, nonprofit and for-profit organizations with ground-breaking ideas, pioneering scientific research and novel technology developments. The following list includes currently active broad agency announcements (BAAs) -- each announcement provides technical and contracting points of reference. Required: All BAAs incorporate a standardized template for the submission of technical and cost proposals for all contract awards. Guidance and assistance in completing the form and spreadsheet can be obtained from points of contact provided in the BAA. Download the forms (updated for 2012) | Email your feedback Open to September 30, 2013.

FAA Center of Excellence for Environment and Energy

The FAA is forming a Center of Excellence for Environment and Energy during FY-13. The COE will be a consortium of the FAA, university partners, and private industry affiliates selected by the FAA Administrator to work collectively on business and operational issues of mutual interest and concern. **Due October 4, 2013.**

Research Interests of the Air Force Office of Scientific Research

AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in three scientific directorates: Aerospace, Chemical and Material Sciences, Physics and Electronics, and Mathematics, Information and Life Sciences. **Open until superseded.**

Research Interests of the Air Force Office of Scientific Research

AFOSR solicits proposals for basic research through this general Broad Agency Announcement (BAA). This BAA outlines the Air Force Defense Research Sciences Program. AFOSR invites proposals for research in many broad areas. These areas are described in detail in Section I, Funding Opportunity Description. AFOSR is seeking unclassified, white papers and proposals that do not contain proprietary information. We expect our research to be fundamental. **Open until superseded.**

DARPA 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. Proposals may be submitted at any time while this solicitation is open. TTO may publish groups of special topics as modifications to this BAA throughout the year. **Open to April 9, 2014**.

DARPA Microsystems Technology Office-Wide

The Microsystems Technology Office (MTO) supports DARPA's mission of maintaining technological superiority and preventing technological surprise by investing in areas such as microelectromechanical systems (MEMS), electronics, system architecture, photonics, and biotechnology. In recent years, the proliferation of commercial components and manufacturing processes has allowed our adversaries to achieve capabilities that were previously not possible. **Open to September 1, 2014.**

NINDS SBIR Technology Transfer (SBIR-TT [R43/R44])

This Funding Opportunity Announcement (FOA) encourages Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) for projects to transfer technology out of the NIH intramural research labs into the private sector. If selected for SBIR funding, the SBC will be granted a royalty-free, non-exclusive internal research-use license for the term of and within the field of use of the SBIR award to technologies held by NIH with the intent that the SBC will develop the invention into a commercial product to benefit the public. **Open November 5, 2011, to September 8, 2014.**

Army Engineer Research and Development Center BAA

The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Environmental Lab (EL) and the Information Technology Lab (ITL) in Vicksburg, Mississippi; the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire; the Construction Engineering Research Lab (CERL) in Champaign, Illinois; and the Topographic Engineering Center (TEC) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/ chemical properties of snow and other frozen precipitation, infrastructure and environmental issues for installations, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. This research is conducted by Government personnel and by contract

with educational institutions, non-profit organizations and private industries. 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 Allison Hudson at 601-634-5233 or via email at Allison.B.Hudson@usace.army.mil. For questions concerning proposals to CERL, contact Jim Dowling at 217-373-4479 or via email at james.p.dowling@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at james.p.dowling@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at james.p.dowling@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at james.p.dowling@usace.army.mil or Questions concerning proposals to CRREL, contact Wendy Adams at 603-646-4323 or via email at wendy.A.Adams@usace.army.mil . Contact the technical personnel listed at the end of each topic area for questions concerning the topic areas themselves. Open to January 31, 2014.

Science, Technology, Engineering & Mathematics BAA

ERDC solicits basic research proposals in the general DoD STEM Education and Outreach Program from colleges, universities, and non-profit organizations. Depending upon the availability of appropriated funds, ERDC may: (1) Make multiple awards under this BAA; and (2) Consider options exercisable for multi-year performance. Area of performance for proposals may be limited to one of the selected locations listed above or may address multiple locations. Funding is limited and proposals are primarily sought in the not-to-exceed \$30,000 range; however, larger awards may be considered when appropriate. Geographically targeted. **Open to January 31, 2014.**

<u>Small University Grants Open 5-Year Broad Agency Announcement</u> Open to August 26, 2015

Nuclear Energy University Programs - Fellowship and Scholarship

This program supports education and training for future nuclear scientists, engineers and policy-makers who are attending U.S. universities and colleges in nuclear-related graduate, undergraduate and two-year study programs. These are zero-dollar awards that will be funded as students apply through the Department of Energy, Office of Nuclear Energy. **Open until November 30, 2015.**

FY2011 – 2016 Basic Research for Combating Weapons of Mass Destruction (C-WMD) Broad Agency Announcement (BAA)

This BAA is focused on soliciting basic research projects that support the DTRA mission to safeguard America and its allies from WMD (e.g., chemical, biological, radiological, nuclear, and high-yield explosives) by providing capabilities to reduce, eliminate, and counter the threat and mitigate its effects.

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**.

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

Air Force Research Laboratory, Directed Energy Directorate 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.**

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

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

Research Interests of the Air Force Office of Scientific Research

The Air Force Office of Scientific Research (AFOSR) manages the basic research investment for the U.S. Air Force (USAF). To accomplish this task, AFOSR solicits proposals for basic research

through this general Broad Agency Announcement (BAA). This BAA outlines the Air Force Defense Research Sciences Program. AFOSR invites proposals for research in many broad areas. These areas are described in detail in Section I of the BAA, Funding Opportunity Description. AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force; fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support USAF needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national warfighting and peacekeeping capabilities. These areas are organized and managed in five scientific directorates: Dynamical Systems and Control (RTA), Quantum & Non-Equilibrium Processes (RTB), Information, Decision, and Complex Networks (RTC), Complex materials and Devices (RTD), and Energy, Power, and Propulsion (RTE). The research activities managed within each directorate are summarized in Section I of the BAA. **Open until superseded.**

Academic Research Funding Strategies, LLC (Page 1)

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What We Do--

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

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

Workshops by Academic Research Funding Strategies

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

(View Index of Articles)

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