**Volume 2, Issue 2: October 15, 2011**

- Strategies for Emerging Research Institutions
- Do Not Build Your Proposal Out of Spare Parts
- Supporting Faculty Research Affinity Groups
- NSF’s New Strategic Plan, 2011-2016, A Synopsis & Observations for the Grantwriter
- Workforce Development Grants
- Mentoring Students for the NSF GRFP
- Applying for a Ford Fellowship
- Funding for Grad Students and Postdocs
- Research Grant Writing Web Resources
- Educational Grant Writing Web Resources
- Agency Research News
- Agency Reports, Workshops & Roadmaps
- New Funding Opportunities
- About Academic Research Funding Strategies

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**About the co-publishers—**

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What challenges have you encountered in transitioning TAMU-CC to a more research-oriented institution?

I was hired at Corpus Christi with the charge to guide the institution to “Emerging Research Institution” status, in part because of my experience for over 20 years at Texas A&M University in College Station. The challenge was to define a research path for TAMUCC somewhere between that of a regional teaching university with few research expectations and that of a research-intensive institution. The challenges are most likely the same at many other institutions making the transition from an undergraduate teaching institution to one with a more robust research portfolio.

For this to work, there are several existing constituencies that must be engaged in the process, including the upper administration responsible for allocation of resources, including space; faculty who may see performance metrics changing as part of this process; and the offices that support the research enterprise in various ways; for example, offices such as sponsored projects, human resources and fiscal, particularly as this relates to the established processes and protocols that affect faculty research.

I found at Corpus Christi, and it’s probably similar elsewhere, that not everyone has the same idea of what an “emerging research institution” is. This is a problem because you need everyone on the same page in terms of goals and expectations. The challenge is to communicate the goals of an emerging research institution internally and get agreement on what it means, particularly when changing performance metrics affect the promotion and tenure process, or when there is a perceived lack of alignment of research goals with incentives, or when there is a disconnect between internal and external performance metrics.

For example, the State of Texas, probably like many states, has an incentive package to increase research at state institutions, and institutions must meet certain metrics to access those moneys. Some are clear; for example, reaching $45 million in research expenditures, $400 million in an endowment and graduating over 200 doctoral students each year. But some
are less clear; for example, a demonstrated commitment to graduate education excellence and high-quality faculty.

When faculty talk about the definition of an emerging research institution, they may not realize that some metrics are set by the state and some are set by the institution; for example, through the promotion and tenure process, in order to push toward that goal. If there is a lack of alignment between these internal incentives and outside criteria, there can be a big problem, and you can end up with a class system. Also, some of the metrics cannot be impacted by most faculty. This is the case for endowments, or membership in the Association of Research Libraries, or increasing the number of PhDs if their department doesn’t have a PhD program.

If changing metrics for promotion and tenure aren’t well-aligned, they won’t have the desired impact. When expectations are changing, faculty don’t necessarily see the link between what they are expected to do and what the goal is. Lack of communication with faculty can be a problem. What that means is that these larger goals need to be translated very clearly to what they mean for the different disciplines and colleges as part of this process of becoming an emerging research institution.

So even though the number of faculty is relatively small (perhaps 20 percent) that can impact things like the amount of restricted research, the number of PhDs, endowment, etc., the remaining 80 percent continue to do what they’ve done but with the angst that they need to do additional research and scholarship. So you need alignment between internal and external criteria, faculty need to understand what the institution is trying to achieve, and everyone needs to understand the roles of the different people in the institution.

If the goal is to become an emerging research institution then you need to get the institution to the point where decision-making is informed by the needs of the research world. When you decide to change a four-year institution into an emerging research institution, you can’t just turn a switch. For example, the university space committee must have an understanding of research needs. If you don’t have space to house your graduate students, you need to fundamentally change the allocation of space so that, when faculty are successful in getting grants, they can conduct their research. Another example is postdocs. Human resources departments must be educated on the role of postdocs in the research enterprise. The normal processes of HR advertising and hiring do not work for postdocs. So, basically, if you have an infrastructure that doesn’t understand research, and the culture doesn’t support it—doesn’t want to make waves, follow strict interpretation of regulations, etc.—then it’s difficult to be successful.

Another issue is that faculty who are successful in obtaining research funding become maxed out. So if you’re at $15 million in research expenditures and you want to get to $45 million, the research stars alone can’t do that. You need the percentage of faculty involved in research to triple. Generally, however, mid-career faculty have a difficult time going from little or no research to bringing in $200,000 a year over 5 years. It’s somewhat easier to bring in new faculty. They’ve just published their dissertations and have been publishing. One obvious solution is to increase the number of people who can compete, but you need resources to hire people, and you need space. These are big challenges.
In the current funding climate, the only way to increase revenue is to increase enrollment. This is easier at the undergraduate level, but a growing number of undergraduates means more classes and an increase in number of students in each class; this creates time-pressure in conflict with growing your graduate and research enterprise.

**How can you support faculty who want to do research at your institution?**

Look for opportunities where new faculty or anyone really committed to joining research can do something interesting or different things. An issue I have encountered at TAMUCC is that it’s just as easy to supplement salary by teaching in the summer as it is to go after a research grant that you have less than 20 percent chance of getting. If you’re tenure track, then you’ll pursue grants because it’s required for tenure, in some colleges for sure; but if you’re already tenured, you may wonder why you should take on the stress of finding funding when summer teaching income is readily available.

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So how can you increase their success rate? A strategy is to provide faculty professional development on writing grants in an interesting, exciting and fun way so the faculty can develop their skills while they continue to do the things they need to do, such as teaching, committee work, etc. Hire someone like our research development officer, who can help faculty with the first grant. Continue this support by adding opportunities for faculty to go to grant writing workshops. Providing one-on-one personalized service to faculty can really improve their chances of writing a successful grant. And even if faculty don’t get that first grant, they’ll learn a lot in the process. If the money I invested in this year’s cohort of junior faculty results in a third of them getting a grant, that money would be well-spent. I have invested both in the new position of research development officer and in bringing outside grants consultants to campus.

Also, institutions like TAMUCC need to identify barriers to working together. We have to make sure that good ideas and potential research partnerships don’t die on the vine because of rigid institutional structures that are artifacts of a time when research wasn’t promoted to the extent that it is now.

Other issues are that you may not have folks who have the needed research experience at the regional institutions, and it can be difficult to attract them. Also, you need to set up mechanisms to not only increase faculty success in grant writing, but also in project management. If there is a current grants office, how prepared is the person running the grants office to assist faculty from grant cradle to grave? It may be that the grants office staff also may need ongoing professional development. The most common mistake, in my opinion, is to focus totally on sponsored research administration. If the leadership is dealing in minutiae, then nothing will get done elsewhere to support faculty research development and grant writing.

Historically, sponsored projects office staff are not experienced in research development and grant writing, and by and large they have been hired for other administrative skill sets. In fact, over the past decade, there has been an explosion in creating separate
research development offices at universities nationally, particularly at research-intensive institutions that can support this infrastructure more easily than we might, and many of these people have advanced technical degrees and experience writing research grants to NSF and other agencies. However, for us to compete we need to find a way to match these skill sets. So the question is how do institutions with a goal becoming an emerging research institutions rationally get to the point of focusing available research resources effectively on that goal, including the management of research administrative infrastructures that help the faculty achieve funding success.

**What about research partnerships with R1’s?**

Well, we are part of The Texas A&M University System. So you need the “mothership” to be incentivized through the chancellor to support regional institutions. It is more comfortable for most faculty members at a research-intensive to partner with a colleague he or she went to graduate school with or knows well, so they need a reason to partner with regional universities, and to do so equably, with faculty at the regional institutions. This incentive must come from the leadership, and they need help to pick the right partners.

Partnering can open minds on what kinds of connections can be made, but you need to develop trust. Also, it’s important to identify roadblocks to working together. For example, different institutions have different perspectives on what rules apply; for example, for cost-share. So for an upcoming research partnership with a larger institution, we’re bringing together the sponsored research administrators from the two institutions to hash out these issues. It is important for these offices to understand the research objectives and provide an environment that facilitates the research and the partnership, and enables research in a way that makes the process easy for faculty.

However, the key here is to find research partners you can trust. Also, you have to identify what you want to be known for – you can’t do it all – and then identify a partner that benefits from your institutional strengths so that you are seen to bring value-added expertise to the research partnership. This can be difficult because you end up excluding some faculty. The key question is how do institutions get to some consensus on how to focus their research? Not everyone will have a PhD program. We’re an HSI (Hispanic Serving Institution) and have been proactive in identifying situations where that can bring something to the partnership, but we have other characteristics that can enhance a research partnership. For example, our location as an island university on the coastal Gulf of Mexico, or our populations in South Texas related to health disparities, or our long history of work in the ocean sciences, existing sensor platforms, and GIS.

My goal in all of this, or the metrics I will use to evaluate our roadmap for becoming an emerging research institution, is to increase year-to-year the percentage of tenured/tenure track faculty who are funded; increase the amount of money requested per proposal (not just low hanging fruit); and increase the number of proposals and successes that bring in restricted research funds, as opposed to program and training grants, and shift from those funds to more traditional agency funding. So the goal is to increase the number of grants, size of grants, and change where the dollars come from.
What about success of faculty who win a grant?

Too little attention is paid to the success of the first grant. If you don’t have the mentoring and culture for grants management, you can end up with poor expenditures or failure to publish from the grant. We are addressing this in several ways: Everyone who received a new grant will work with the post-award staff and will meet with them regularly; we’ll start a mechanism to mentor faculty successful in obtaining a grant so they understand the need to publish, etc.; and we’ll have follow-up processes to ensure faculty are successful managers of their grants.

The key thing is that someone in my position needs to be able to look at the whole thing from the 30,000-foot level and come up with a strategic plan for advancing to emerging research institution status. The key focus is on helping faculty become successful in obtaining research funding. We were fortunate enough to identify and hire an excellent research development officer for my office. We linked this to outsourcing some of our research development tasks to outside consultants who work with me and our research development officer on projects we identify as critical to our research goals.

Research-intensive universities often have this expertise in-house, and so to compete we need to find ways to duplicate it within our resource constraints. So, for several reasons, strategic outsourcing helps us bridge and complement our in-house capacities on some key issues in research development and grant writing: It’s difficult to find or afford the talent needed, so I’m looking into using current state funding for internal programs to bring in outside help; I also think that one-on-one assistance to guide faculty through that first grant can be very valuable as opposed to just sending them to a workshop; and another issue is that research-intensive have developed very sophisticated offices to help PIs develop their grants, so that makes it even more difficult to for us to compete. We need to use our resources strategically to compete.

How does your recently funded NSF Research Coordination Networks grant help this process?

The RCN opens up people’s minds to what can be accomplished with partnerships. It also makes us more competitive for other NSF funding, as well as a potential partner on larger grants addressing sustainability issues. Our research network model is a partnership of Hispanic Serving Institutions in South Texas, with Corpus as the lead institution, and two major research institutions. We have a start date for this coming spring and funding for five years. While the focus is on Climate, Energy, Environment and Engagement in Semi-Arid Regions, there will be enormous benefits as well in better understanding the best and most competitive configurations of research partnerships across all disciplines. It is a significant success in our goal of reaching emerging research institutions status, and the focus of the grant on development research networks will be invaluable.
Learning how to develop and write successful proposals begins with gaining an understanding of some of the key generic strategies that enhance the competitiveness of proposals regardless of discipline or agency. These core generic strategies form the necessary foundation for presenting your research idea in the best possible way to program officers and review panelists. The counterpart to understanding successful strategies amounts to understanding unsuccessful “strategies,” or unsuccessful practices that diminish the competitiveness of your proposal by obscuring your research idea in a patchwork research narrative.

In fact, a list of common mistakes, or common misconceptions, made in the development and writing of proposals can be of enormous value to new and junior faculty beginning a research career, as well as to more experienced investigators seeking to continuously improve the success rate of their proposals in a difficult funding climate. This critical information often comes from a senior faculty mentor with a history of successful funding, or it can come from research development and grant writing professionals who have benefitted from working with highly successful researchers on successful proposals of all sizes, especially center-level proposals in which many component parts comprise the center narrative. The most successful faculty researchers tend to be those whose success in funding begins with smaller grants of a few PIs and grows over time to research centers or other large grants. These researchers can develop a capacity to frame the development and writing of the proposal by thinking strategically about every part of the proposal narrative, from the overarching vision statement to the smallest details that illuminate the research team’s capacity to perform. New and junior faculty can learn from successful researchers that successful proposals represent new and exciting ideas originating from the PI and the PI’s research team, or as NSF and NIH might characterize the research, it must be “transformative” research. This requires that the research narrative be as close to perfect as possible—perfect in its vision, perfect in the operational details that advance the vision, perfect in its synthesis and integration of all component parts with the overall goals and objectives, and perfect in every section and subsection required to respond fully to the solicitation. Therefore, it is important not to be tempted to use spare parts from older proposals (successful or unsuccessful), or information archived in database files, or narrative text created as so-called boilerplate by known or unknown authors. While writing a successful proposal narrative that advances new ideas in a compelling way is hard work, it cannot be made easier by the use of off-the-shelf text or boilerplate text written by others. On the contrary, it can be significantly harmed by that practice.

In specific terms, the use of boilerplate imposes a distorting structure on the proposal narrative that should evolve logically, consistently, proportionally, and integratively from a core
research idea. This consistency should apply to the ideas advanced by the principal author as well as the language patterns and structure used by the author to describe those ideas. Unfortunately, no anti-rejection drugs exist to ameliorate the harm done by attempting to transplant boilerplate text into a proposal in hopes of making it more successful. In the successfully crafted proposal narrative, ideas and language interweave to create a coherent and seamless synthesis. Boilerplate or recycled text will destroy the needed symmetry at all scales.

What else is not a successful proposal? Edited collections of many short articles, or sections, written by an army of authors, some known and, in the case of boilerplate, some unknown, lacking a coordinated evolution of the research ideas, will not meet with success. Unfortunately, however, once a proposal narrative has been built in a way that reveals gaps between sections, parts, or topics, renovating that inchoate narrative will require significant time and energy. If a researcher also introduces boilerplate into the proposal narrative, either verbatim or modified, she will push the narrative structure further in the direction of a crazy quilt of ideas rather than a seamless integration of text and ideas. In many ways, the use of boilerplate text is akin to distributing a few counterfeit bills among the legal currency you use for cash purchases. At its worst, boilerplate text may come near to flirting with unintentional plagiarism, depending on the source of the text, and it is certainly not something federal research agencies would expect in a proposal that represents itself as a persuasive argument for the significance and merit of the proposed new research.

Having understood the disadvantages of boilerplate text, it’s worth taking a moment to ensure that we all understand what this term means. Most successful PI’s don’t use this term (or the text itself), but inexperienced and eager researchers may use it. While various professions may use the term to refer to various types of text, in most cases it refers to inferior, off-the-shelf writing, often of unknown and dubious origin, that operates as a static, plug-in set of phrases, sentences, paragraphs, or conceptual outlines. By definition, boilerplate fails to change or to reflect the evolving set of ideas associated with the successful proposal.

Boilerplate is frozen in time, whereas the successful research proposal originates with a good idea that evolves during the development and writing of the proposal narrative to make an original and compelling case for funding. Moreover, even the most excellent writing has a very short shelf life, perhaps a matter of months. In fact, most often by the startup period of a grant, perhaps six to twelve months after the submission of the proposal, the successful narrative is typically dated and showing signs of age. If you are maturing research and educational ideas, then the ideas you have six months from now should be more robust and better explicated than the ones you have now. Do not encumber your good ideas with spare parts developed by someone else with absolutely no knowledge of why your ideas are significant and how best to configure those ideas within an integrated proposal narrative.

When the term “boilerplate” is used by those who develop and write proposals typically within private sector consulting firms (engineering, architectural, scientific, etc.), then it typically refers to a description of past performances on similar projects in a capabilities section of the proposal. This recycled language is used to bolster the case that a contract awarded to the applicant would once again result in successful deliverables of one kind or
another. However, when the term begins to migrate from contract work into proposals describing exploratory and transformational research to federal agencies, it has crossed a boundary from an appropriate use of the term to an inappropriate one.

While faculty should avoid boilerplate, they can become knowledgeable about successful models for some of the common sections required in a proposal, particularly in larger proposals, such as those related to institutional infrastructures, access to equipment, instrumentation and facilities, plans for undergraduate research or post-doc mentoring, management plans, diversity plans, data management plans, and the like. Descriptions of these resources may be adapted judiciously to inform possible topic points but not as transplanted text that disturbs the context of the proposal narrative. Moreover, research development professionals can make this information much more robust by working with successful PIs during the start-up period of grants where the concepts defined in the proposal may be significantly modified to work more effectively in actual operation. See the article in the June 15, 2011, issue of this newsletter “Writing Competitive Proposals: Topics in Brief—NSF Broader Impacts (BI) Revisited” for a more in-depth discussion of these issues specific to the NSF broader impacts. This represents one place where the use of boilerplate specific to BI can do a real disservice to the PI. Boilerplate is like the mini spare tires that come with new cars: it is not intended for use on your extended research journey.

Bottom line: if you are proposing new research ideas, express the significance of those new ideas, and all topic components of them, in newly-crafted writing for every word of the proposal narrative. Success in proposal writing will not be achieved using after-market parts—successful proposals are not renovations of the past but a creation for the future and the compelling arguments you make for the place and significance of your research ideas in that future.
Given the increase in federal agency funding for projects of all sizes that are multidisciplinary, interdisciplinary, or, to use NSF’s term, transdisciplinary in nature, there is a corresponding need for faculty to explore the development of institutional affinity groups, collaborations, and partnerships across university colleges, departments, and disciplines as well as consider potential multi-institutional initiatives at the regional or national level. Often the start of this process may begin with exploratory meetings to identify, define, and characterize the potential scope, vision, uniqueness, possible team configurations, and potential for funding from federal agencies that is a good fit for the research interests of a faculty affinity group, or possible subgroups.

Research affinity groups often function as a precursor to research partnerships and collaborations. Research partnerships and collaborations often have their origins in the pursuit of a specific open solicitation or anticipated solicitation on an annual grant cycle. By contrast, research affinity groups tend towards a more open-ended timeline that permits them to consider an array of possible funding opportunities across several agencies under an overarching research theme such as sustainability or health disparities.

This process of developing and configuring exploratory affinity groups can often challenge new and more junior faculty, nor does it always appear easy or obvious to more senior faculty. Often the research opportunities driving the need for affinity groups have very broad, overarching themes, such as sustainability, health disparities, climate, water, and energy, among many others. NSF often emerges as a major funder in many of these overarching research areas, e.g., through cross-cutting programs, but these global research themes can also receive significant funding from many of the federal mission agencies as well, and sometimes in partnership with each other. For example, NSF’s Water Sustainability and Climate program links water sustainability research interests at NSF with corresponding research at USDA-NIFA.

Another example includes the NSF program Research Coordination Networks. It offers funding not to conduct research but to advance a field or create new directions in research or education by developing a network of researchers. It supports groups of investigators (aka, affinity groups, partnerships, or collaborations) to communicate and coordinate their research, training, and educational activities across disciplinary, organizational, geographic, societal, and international boundaries. This interesting program promises over time to fund various model configurations of research partnerships and networks across disciplinary and institutional domains. These funded models will prove adaptable and adoptable as generic examples for faculty affinity groups of all sorts.

RCN’s have a recently announced (October, 2011) complementary program, SAVI, explained in a Dear Colleague Letter: Introducing Science Across Virtual Institutes. SAVI focuses on interactions between cohesive teams of researchers across national borders and takes advantage of existing U.S. and foreign investments in frontier research by leveraging
complementary intellectual strengths and sharing unique research infrastructures. Virtual institutes will serve as research hubs that originate new ideas, foster multidisciplinary research, and value developing diversity and long-term professional networks between U.S. researchers and students and their international counterparts.

Given these emerging developments, the need to establish research affinity groups is not new but increasingly common as federal research agencies address the so-called grand research challenges of all sorts, e.g., the 14 grand challenges of the 21st Century presented by the National Academies. While the processes and protocols for forming research affinity groups may already be fairly common across many disciplines, the disciplinary boundaries are being dramatically expanded by federal agency funding that recognizes the importance of such affinity groups to solving complex scientific challenges, particularly those with societal dimensions. An affinity group can be started and led by an experienced principal investigator working with a few colleagues and a shared vision, or, increasingly, it can be initiated by a group of new and more junior faculty who find intense intellectual excitement in transdisciplinary research. Regardless how it begins, the group then evolves as an affinity group, with a better defined research vision and more fully developed goals, objectives, and operational details to achieve the vision than would have been possible had they worked in disciplinary isolation.

The core of the research vision will be grounded in disciplines well supported at specific agencies of interest, often engineering and the sciences. But the affinity group for such overarching research themes as those listed above must also include disciplines that complement the core research in such areas as education, societal benefits and impacts, public policy, and economics. In addition, researchers from the social and behavioral sciences or humanities would give significant value added benefits to the core research by articulating its uses and benefits in terms societal impacts. In many cases, the absence of these complementary disciplines will disqualify the proposal for funding. For example, NSF makes this clear in the currently open Water Sustainability and Climate solicitation (URL above), stating: “Successful proposals are expected to study water systems in their entirety and to enable a new interdisciplinary paradigm in water research. Proposals that do not broadly integrate across the biological sciences, geosciences, engineering, and social sciences may be returned without review.”

As a result of this dramatic increase in the number of research funding opportunities appearing under the umbrella of overarching research themes or grand challenges, new and more junior faculty not only have to master the craft of writing successful research proposals but also develop the leadership skills to form, develop, and move forward a research affinity group in a way that enhances the opportunities for funding success of all the members. Over the past two decades, this skill set has most often resided with senior faculty who successfully competed for research centers funded by NSF (see Profiles in Team Science), NIH, DoD, DHS, and NASA, among other agencies. However, many new and junior faculty may have no connection with senior faculty who successfully secured major center or center-level funding in research areas that required a transdisciplinary partnership approach.

On many campuses, the experience and expertise in the processes and protocols of establishing successful research affinity groups may also reside in research development and
grant writing offices, typically at the university or college level, with a track record of assisting faculty on specific projects requiring the formation of research partnerships and collaborations. Regardless where that expertise resides, it is important that new and junior faculty benefit from it, either by linking successfully to senior faculty as mentors, or through the support of research office professionals experienced at working with faculty on developing affinity groups and the proposals resulting from such groups.

With this in mind, the first objective of a research affinity group is to define an overarching research vision or goal, e.g., sustainability of regional coastal ecosystems, that maps inclusively to group members and concurrently maps to one or more federal agency research funding areas, or agency mission areas. Depending on group dynamics and leadership, participation in exploratory meetings of potential research affinity groups requires at least a moderate tolerance of chaos, disorder, false starts, and confusion, preferably made more tolerable by an experience-based faith that good ideas can come out of what initially appears to be disorder. These early meetings are no place for biblical literalists or constitutional strict constructionists, or those with a preset idea about how an exploratory meeting should progress.

One caveat in this regard is to be both cautious and suspicious of those who offer and promote what might be called “pedagogies of partnerships” that are “canned protocols” for developing research partnerships but are most often disconnected totally from the research culture and completely disconnected experientially from the harder work of having actually developed a successful research partnership in the past. **When it comes to developing research affinity groups or partnerships the old adage about “experience is the best teacher” is excellent advice.** It is best to find an experienced faculty mentor whose past funding success makes her an excellent guide into what may seem like at daunting task at first—forming a successful affinity group or partnership. (While difficult, the partnership journey will likely not be as difficult as the journey of Buttercup and Westley through the Fire Swamp in *The Princess Bride.*)

Regardless, senior faculty or research development offices can assist in this process in several ways. Perhaps most importantly, they can bring an institutional memory to the meeting of models, processes, and protocols that work and those that may not. This helps to ensure the research affinity group does not reinvent the wheel, or, worse, reinvent the flat tire, as one NSF program officer observed. It is not uncommon for the initial meeting of an exploratory research affinity group to be an all-day affair, or even a weekend retreat. During this meeting, many opportunities will arise to offer observations that subtly redirect some of the more exuberant ideas disconnected from an agency mission or programmatic area of support. While the meeting will likely be called to develop a common research vision or goal as its overarching purpose, it still must be guided in an informed way about possible funding scenarios that can breathe life into the group if it is to sustain itself over the long term.

One way to do this is by a **judicious reverse engineering of potential funding opportunities.** This would not be expressed in the openly self-serving fashion of Willie Sutton who, when asked why he robbed banks, replied “because that is where the money is.” But there is, nonetheless, a bargain to be made that balances the research interests of the group
members with the availability of funding. Having someone informed about funding opportunities across some of the key research agencies, particularly NSF, can help this process immensely. Such a group member can ensure that ideas and actions plans for implementing them are informed in a general way about funding prospects, particularly the prospects for these overarching research themes with opportunities across agencies. Unfortunately, the “Field of Dreams” analogy does not work for the development of research affinity groups—if you build it they (funders) may not come, especially if the group vision is established and framed in a way that does not resonate with one or more of a funding agency’s mission or research priorities.

Newly forming research affinity groups also need to hear advice about what is and what is not a competitive proposal. Participants must be reminded that research agencies do not fund ideas, no matter how good, that do not align to the mission objectives of the agency. Some members of a newly formed research affinity group may be overly ambitious, or inexperienced in grant writing to the point that they confuse a research grant to NSF or another federal agency with applying for a MacArthur Foundation Fellowship, or so called “genius grant.” Excitement and exuberance must be tempered by a realistic assessment of a group’s capacities and the corresponding opportunities for funding. There are benefits to research affinity groups that sustain themselves on ideas alone and without external funding, but in most cases, various academic demands, particularly promotion and tenure for junior faculty, will force a more realistic and grounded expectation of anticipated outcomes, i.e., funding, or, as Samuel Johnson observed, “nothing so focuses the mind as the prospect of being hung.”

Support for research affinity groups can be significantly enhanced by offering the appropriate information at the appropriate time with regard to contextualizing research ideas to the mission, culture, and strategic plans of federal funding agencies, or programmatic areas within agencies. Some members of newly formed research affinity groups may not have more than a very cursory, at best, understanding of the research priorities of various federal agencies, and it is not uncommon that opinions of what will and will not fit the research mission are not grounded on any understanding of the mission and culture of the agency, or appreciation for what has been funded by the agency, or, more importantly, what characterizes successful principal investigators at the agency.

In some cases, research affinity groups may have ambitious expectations that the group will compete successfully for major awards or funding at the center level. Here, it is helpful to discuss a range of potential funding configurations. For example, in most cases, research center awards and other large grants go to a research team with a configuration of funded grants approximating a de facto center. It is helpful to disaggregate the constituent components of a center grant into discrete grants that the research affinity group may consider pursuing to build a track record of success before setting its sights on a major research award. These discrete grants may be developed by disciplinary subgroups within the affinity group, while remaining in harmony with the overall vision of the group. Faculty often overlook the option of configuring a research center as a collection of smaller grants funded in a piecewise fashion.
Moreover, these groups can often benefit from experience-based observations on the various processes, protocols, and sustaining practices related to communications, group dynamics, decision making, and leadership needed to advance an affinity group to successful competition for funding. It might be well to observe a caveat in directing the group’s dynamics: exercise caution in recommending the use of “group process techniques” that many group members might find personally intrusive, or worse, a waste of time. Rather than focusing on topical pedagogies of group dynamics outside the scope and charge of a research affinity group, consider focusing the group’s attention on the research. Success in funding a research team comes from the hard work of developing good ideas and crafting them into a compelling and competitive proposal.

Finally, in this process of supporting research affinity groups, a senior faculty mentor or an experienced research development professional can act as a referee or umpire at research affinity group development meetings. The referee need not pass judgment on the ideas but rather can offer advice when asked about whether development plans seem to be aligned with a potentially competitive idea based on a multitude of factors that come from repeated engagement and experience in research team development.
Introduction

At its core, every successful proposal asks a compelling question, poses a hypothesis, or fills a technical or societal need that advances the research agenda of the funding agency. The proposal must be framed within the context of the agency mission in a way that clearly demonstrates that your methods of investigation and potential outcomes will advance the field sufficiently to warrant investment in your proposed research. For a proposal to meet with success, it must contain a compelling and persuasive project narrative that poses a significant and exciting research question and convinces reviewers that your methods, expertise, and experience (e.g., preliminary data) will coalesce to contribute to a successful research outcome and bring value-added benefits to the agency’s research portfolio.

To achieve this result, you must frame the arguments in your research narrative in a way that demonstrates to program officers and reviewers a full response to the specific solicitation, as well as a complete understanding of how that solicitation fits within the larger context of the agency’s overarching research agenda or mission-critical research objectives. This becomes particularly important at NSF, which has framed its research vision in a manner that requires the research narrative to address issues such as the integration of research and education, broader impacts, and societal impacts, among many others specifically configured in the review criteria.

Perhaps more so than at any other agency, NSF requires a capacity to contextualize your research in the terms of its strategic plan. This capacity will play a major role in your success or failure at that agency. To develop this capacity, become knowledgeable about some of the key elements of the NSF strategic plan, presented here in abbreviated fashion, and use your narrative to demonstrate the relevance of your project to NSF’s objectives.

The following represents a very abbreviated “grant writer’s version” of the new NSF strategic plan. This condensed version, or “elevator synopsis,” of the plan emphasizes what is new in the plan, what within it continues from past NSF strategic plans, and what has evolved from the most recent strategic plan to the new plan. As you will see, recent developments place more demanding expectations on those engaged in research development and grant writing, particularly PIs and research teams and those professionals assisting them in writing the most competitive proposal possible to NSF.

NSF Strategic Plan, 2011-2016

The NSF Strategic Plan, Empowering the Nation Through Discovery and Innovation, was released on May 2, 2011, and covers Fiscal Years 2011-2016. The plan’s four long-term strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship, form the basis for NSF’s performance assessment. The new plan refined and refocused NSF’s vision statement and strategic goals to better integrate them with the concepts of research and
learning, and more closely align them with NSF’s merit review criteria of *intellectual merit and broader impacts*.

The strategic plan first introduces the NSF *Core Values*: the agency’s dedication to the visionary, to excellence, to learning and growing, to broad inclusivity, and to accountability. This general section offers few specifics.

The NSF *Mission* statement follows the description of Core Values. The following quoted text comprises the key part of this section, which we have placed in bold type for discussion following the quote: “**NSF supports the basic research and education that enable advances in many areas including technology-based innovations that spur economic prosperity; understanding, mitigating, and adapting to climate change; developing sustainable approaches to the utilization of energy, water, and other natural resources; and transforming undergraduate education for the preparation of tomorrow’s leading scientists. NSF integrates research and education to support the development of a world-class scientific and engineering workforce as well as nurture the growth of a scientifically and technologically aware public.**”

Much of this is familiar from prior NSF publications, but it bears repeating that successful NSF proposals address basic research questions while also integrating research and education. NSF clearly has maintained its interest in undergraduate education and the future workforce. It has begun to weave sustainability as a theme into many of its research and educational opportunities, notably by dedicating close to one billion dollars of 2012 funding to research programs related to sustainability. You will gain a competitive advantage in submitting proposals to NSF if you take the time to gain a deeper and more nuanced understanding of how this NSF mission statement impacts research funded by the agency.

The next section of the plan addresses NSF’s *Vision*. It is to “**maintain an emphasis on funding fundamental, merit-reviewed research across the fields of S&E while paying special attention to potentially transformative research and education.**”

NSF next addresses Planning in a Dynamic Environment. Here, NSF *announces that it will intensify its efforts* to expand participation in the STEM workforce by currently underrepresented segments of the population—women, minorities, and persons with disabilities. The agency will continue activities that help foster a scientifically literate society. NSF will work to assure U.S. leadership in advancing S&E research and education to address global grand challenges. This will enable U.S. researchers and students to leverage increasing worldwide capabilities and investments by facilitating access to internationally located expertise, facilities, and data. NSF will support the development of new cyber tools for collecting, analyzing, communicating, and storing information, tools that are transforming the conduct of research and learning. One aspect of the information technology revolution is the “**data deluge,**” shorthand for the emergence of massive amounts of data and the changing capacity of scientists and engineers to maintain and analyze it. At the same time, the emergence of web-based social networking tools has increased both the availability of “open” content (ranging from data to peer-reviewed papers, wikis, and software), and the mechanisms for public participation in science.
Research Development & Grant Writing News

NSF next addresses its Strategic and Performance Goals:

- “Transform the frontiers” emphasizes the seamless integration of research and education as well as the close coupling of research infrastructure and discovery.” This continues NSF’s emphasis on integrating research and education, begun in the 1990’s, but shows its evolution in placing higher expectations on principal investigators to find new and more successful models for achieving this goal. Competitiveness at NSF requires PI’s to understand this NSF expectation and to ensure that your proposal addresses this in the context of the specific solicitation.

- “Innovate for society” points to the tight linkage between NSF programs and societal needs, and it highlights the role that new knowledge and creativity play in economic prosperity and society’s general welfare. By forging links between fundamental research and society’s needs, NSF helps articulate important new areas of S&E, improves quality of life, creates a scientifically literate populace, and empowers future generations.” The role of societal impacts of proposed research has evolved significantly at NSF over the past 15 years, both in the expectations placed on PIs of NSF Engineering Research Centers and Science and Technology Centers, but in many other solicitations as well, particularly those that deal with the overarching research themes that represent research grand challenges, e.g., sustainability, energy, and the like. It is helpful for PIs considering programs with this requirement to have laid the foundation for partnering with researchers in such disciplines as the social and behavioral sciences, economics, education, public policy, communications, design of websites and social media platforms, or researchers in the use of such tools as geographic information systems, among many others.

NSF’s Performance Goals target four key areas:

- Make investments that lead to results and resources that are useful to society. NSF’s mission speaks to addressing societal needs; thus, the Foundation looks for ways to link the results of fundamental research and resources derived from this research to national and global policy areas in which S&E can play a significant role. NSF’s longstanding commitment to addressing societal needs is largely achieved through investments at the frontiers, in efforts in education, and by partnerships. Engaging stakeholders directly in identifying key societal needs and ensuring communication about those needs with NSF staff involved in program planning and development and with investigators conducting relevant work are critical to addressing this performance goal. While the primary focus of NSF-supported research is the generation of new knowledge, NSF programs, where appropriate, consider stakeholder input to optimize the utility of research to address societal needs. The NSF portfolio fully incorporates emerging areas with transformative potential, including those forming at disciplinary boundaries.”

This is particularly evident currently in the many NSF solicitations that fall under the sustainability umbrella. It is a major NSF investment area, but to be competitive requires understanding the nature of effective research partnerships and the ways partnerships form to address such areas as stakeholder input, as noted above.

- Prepare and engage a diverse STEM workforce motivated to participate at the frontiers. NSF’s primary approach to addressing this performance goal is the integration of
research and education. Thus, the development of talented young people includes connection to the frontiers of knowledge and direct experience in the conduct of research in the U.S. and in other countries. The Foundation promotes inquiry-based instructional practices and ongoing research on the process of learning and the practice of education to improve the nation’s capacity to draw in and retain students in STEM fields, including students from underrepresented groups and institutions. All of these research-oriented programs seek to ensure a healthy balance of new investigators, broad participation from throughout the S&E community, and support for students and postdoctoral researchers involved in research projects. NSF STEM workforce development programs, models, or strategies have rigorous evidence about the impact on diversity and innovation in the workforce.”

“Keep the United States globally competitive at the frontiers of knowledge by increasing international partnerships and collaborations. The National Science Board describes the rapidly changing global nature of the S&E enterprise in its report, ‘Globalization of Science and Engineering Research: A Companion to Science and Engineering Indicators 2010.’ This performance goal acknowledges that international engagement will be critical to keeping the United States globally competitive at the frontiers of knowledge, while recognizing the need to focus NSF’s efforts on those international partnerships and investments that will have the greatest S&E impact. As S&E expertise and infrastructure advance across the globe, it is expected that the United States will increasingly benefit from international collaborations and a globally engaged workforce leading to transformational S&E breakthroughs. Therefore, NSF will promote cooperation among scientists and engineers from all nations and encourage funding of international collaborative activities through all of our programs, relying on the merit review process to assess the added value of proposed international activities in advancing research and education objectives and infrastructure. NSF also will work with our counterpart funding agencies in other countries to lower barriers to collaboration for our scientists, engineers, and students, and encourage jointly funded, bilateral, and multilateral projects.”

“Enhance research infrastructure and promote data access to support researchers’ and educators’ capabilities and enable transformation at the frontiers. A major element in the ability to expand S&E knowledge in general, as well as transform the frontiers, is having tools that enable new capabilities for measurement, observation, manipulation, and experimentation. Since NSF’s inception, we have developed and maintained forefront infrastructure capability for the broad academic S&E community in coordination with other research agencies. Additional components of the infrastructure portfolio include large datasets based on NSF-supported surveys, the provision of shared-use equipment for academic researchers, and interdisciplinary centers. The advent of widespread use of computational and communications capabilities across all S&E fields, and in STEM education, has made cyberinfrastructure, including its easy access and use, a vital element of tools and capabilities provided by NSF.”

NSF’s Innovate for Society Goals target three key areas:

“Make investments that lead to results and resources that are useful to society. NSF’s mission speaks to addressing societal needs; thus, the Foundation looks for ways to link the
results of fundamental research and resources derived from this research to national and
global policy areas in which S&E can play a significant role. NSF’s longstanding commitment to
addressing societal needs is largely achieved through investments at the frontiers, in efforts in
education, and by partnerships. Engaging stakeholders directly in identifying key societal
needs and ensuring communication about those needs with NSF staff involved in program
planning and development and with investigators conducting relevant work are critical to
addressing this performance goal. While the primary focus of NSF-supported research is the
generation of new knowledge, NSF programs, where appropriate, consider stakeholder
input to optimize the utility of research to address societal needs. NSF investments underpin
long-term solutions to societal challenges such as economic development, climate change,
energy, and cyber-security.”

“Build the capacity of the nation’s citizenry for addressing societal challenges through
science and engineering. Building human capacity to address societal needs requires attention
to the preparation and continued learning of tomorrow’s STEM workforce as well as attention
to STEM literacy for the public at large. NSF is committed to reaching across society to ensure
that the rich diversity of the nation’s cultures is well represented in the STEM workforce and
that individuals engaged in STEM fields are trained to participate fully in the global research
enterprise. These efforts will expand our capacity for synergy—simultaneously bringing the
country’s range of intellectual power and cultural perspective to bear on the most challenging
problems. A growing body of research in learning and STEM education serves as the basis
for guiding NSF programs and creating the links among schools, community colleges, colleges
and universities, workplaces, and informal education mechanisms that are critical to workforce
preparation and STEM literacy. NSF’s scientific literacy and public engagement programs are
supported by rigorous evidence about learning outcomes. NSF’s K-12 STEM education
investments are designed and tested for scale-up.”

Competitive PI’s for many NSF programs, particularly the larger research programs, will
need to understand the evidence-based models for STEM education that address learning, as
well as effective partnership configurations, particularly the protocols of partnership with
schools, community colleges, and informal science centers.

“Support the development of innovative learning systems. Technologies are already
depth entwined with people’s lives, especially the lives of young learners. Fully embracing
such technologies as learning tools in the nation’s classrooms and laboratories, and living
rooms and libraries, is part of innovating for society. Science itself is being transformed through
networked computing and communications technologies. Networked computing and
communications technologies that support learning, teaching, and education are already
opening up access for all learners, in all age groups, in all settings. Innovative learning systems
can bring authentic scientific data immediately to learners, which enable learners to experience
science through modeling, simulation, sensor networks, digital telescopes and remote
instruments. Technology has the potential to transform science learning as effectively as it has
transformed science itself. Learning can occur anytime, anywhere, and for anyone. NSF invests
in innovative learning tools and structures that use emerging technologies and are tested for
effectiveness and scalability. New partnerships among scientists, engineers, and educators (both theorists and practitioners) take innovations from development to practice.”

The above extractions from the NSF strategic plan are important to keep in mind when writing proposals to NSF. They will help you better frame the scope and nature of your project narrative, particularly in those areas that complement the core research goals, as it related to societal impacts, STEM education, international partnerships and the like emphasized by NSF herein. *Moreover, it is important go beyond the language NSF uses in this document and craft the sections of your proposal in a substantive and informed way.*
Workforce Development Grants

Funding agencies are increasing funding for grants to help prepare students for future workforce needs.

(Back to Page 1)

As concern has grown in recent years about the ability of the future workforce to meet the needs of an increasingly technical society, the federal government has increased funding for grants to help prepare students for future workforce needs. In President Obama’s innovation strategy, released by the White House in 2009 and updated in February of 2011, “educate Americans in 21st century skills and create a world-class workforce” was one of their top priorities, and this has been reflected by the funding agencies in the form of increased funding for current workforce programs and funding for new programs. While research-intensive universities can certainly win these types of grants, they also provide an excellent opportunity for predominantly undergraduate institutions and community colleges, who often serve the students that funders most want to reach, to obtain funding.

NSF and NIH have long funded programs aimed at training the next generation of scientists and health researchers; now other agencies are seeing the importance of making similar investments in their fields of interest. For example, in the US Navy’s STEM Workforce Roadmap, they announced their intention to double their investment in STEM over the next five years. Areas of funding will include K-12 programs (to stimulate students’ interest in studying STEM and to improve STEM education), programs to target under-represented populations, teacher training and development programs, and partnerships with “best practices” programs. These programs target students from K-12 up to the graduate level and will emphasize content of interest to the Navy.

While all programs that fund K-12 STEM education, undergraduate scholarships and graduate fellowships could be considered workforce development programs, we will focus in this article on programs awarded to institutions (as opposed to individual students) that have as their explicit goal the development of a targeted workforce at the community college, undergraduate and graduate levels. Example programs are:

- **NSF Advance Technology Education (ATE)** – Funds Community Colleges (or partnerships including Community Colleges) for programs that promote education of future technicians in high-tech fields. They also fund research on technician education.
- **Department of Education Graduate Assistance in Areas of National Need (GAANN)** – Provides funding for graduate fellowships and enhanced teaching to departments and programs to assist students in pursuing PhDs in fields designated as areas of national need.
- **NIH T-grants** – A suite of programs that fund training for students and postdocs to prepare them for the workforce in various biomedical areas.

When planning your workforce grant proposal, it’s important to keep several things in mind:

- Diversity is usually a high priority. A competitive proposal needs to include strong plans to attract and train a diverse group of students. **This is an area where institutions with diverse student populations can be very competitive.**
Many workforce proposals require extensive information on your institution’s track record in training (e.g., numbers and diversity of students graduated in the field in the last 5 years, retention rates, etc.). Collecting this information can be challenging, so start early and develop a good relationship with your office that collects institutional data.

Understand the needs of the funder. What kinds of skills do they want the graduates to have? Are they looking for technicians, engineers, or researchers? Do they want graduates who will work directly for their agency, or are they simply trying to augment the workforce in a particular discipline or in STEM in general?

Except for projects focused on education research, impact in terms of numbers of students you will produce is usually extremely important. Expectations concerning numbers vary markedly depending on the educational level and the field (for example, programs to produce PhDs will expect lower numbers than programs to produce students with Associates degrees), but proposals will be compared to each other based on the impact in terms of number of students produced.

Be sure to understand the current “best practices” for education and retention, both in and out of the classroom, in your field and include them in your project plans. Since the objective of these programs is to attract, train and graduate students in STEM fields who might otherwise not have pursued STEM, you may need to be creative about how you recruit and retain these students. This may mean including program components such as additional mentoring or tutoring, formation of learning cohorts, technology-based tools, targeted remediation in math, and other creative approaches.

Many workforce development programs require strong recruitment components. Be sure that these are innovative and well thought out and that they address diversity. Reviewers know, for example, that recruiting undergraduates into a graduate program by simply sending brochures or fliers to other universities is unlikely to be very successful, and it will hurt your chance of funding if that’s your main recruitment strategy.

Workforce Programs
In addition to the programs listed below, which are focused mostly or entirely on student training, many larger collaborative research programs and center-level grants require a workforce training component.

- **NIH T-grants** – A suite of programs that fund training for students and postdocs to prepare them for the workforce in various biomedical areas.

- **NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)** – Funds grants for scholarship for needy students pursuing an associate, baccalaureate or graduate degree in STEM fields along with activities to increase retention and improve their education in order to enable them to enter the STEM workforce.

- **NSF Alliances for Broadening Participation in STEM (LSAMP)** – Funds alliances to recruit and retain students in order to produce a more diverse STEM workforce.
Research Development & Grant Writing News

- **NSF Integrative Graduate Education and Research Traineeship (IGERT)** – Even though these programs have a large research component, their fundamental goal is to produce more and better-prepared PhD graduates with an interdisciplinary perspective.

- **NSF Teacher Learning for the Future (TLF)** – a new program to be implemented in 2012 that will fund projects to improve training of pre-service, in-service and future teachers.

- **Department of Education Vocational and Adult Education** – funds grants at the Community College level, career and technical education, and adult education and literacy.

- **Food and Agricultural Science National Needs Graduate and Postgraduate Fellowship Grants Programs** – Provides funding to support students’ training and completion of Master’s and/or doctoral degree programs in the food and agricultural sciences. (Last cycle did not fund postdocs.)

- **NSF Advance Technology Education (ATE)** – Funds Community Colleges (or partnerships including Community Colleges) for programs that promote education of future technicians in high-tech fields. They also fund research on technician education.

- **NSF Workforce Program in the Mathematical Sciences** – Funds programs to increase the number of well-prepared graduates in the mathematical sciences.

- **Department of Education Graduate Assistance in Areas of National Need (GAANN)** – Provides funding for graduate fellowships and enhanced teaching to departments and programs to assist students in pursuing PhDs in fields designated as areas of national need.

- **NOAA Cooperative Science Centers (CSC)** – Funds Minority Serving Institutions in research and education activities with the principal aim to produce a better-qualified and more diverse workforce with graduate degrees to work in NOAA sciences.

- **CDC’s Collaboration with Academia to Strengthen Public Health Workforce in Academia** – Funds project to prepare public health, medical, and baccalaureate and higher degree nursing students.

- **Clinical Research Education and Career Development (CRECD) in Minority Institutions** – Funds minority institutions that offer doctorate degrees in the health professions and health-related sciences for projects to expand the national capability to improve diversity for research in the health sciences.

- **DHS Scientific Leadership Awards** – Supports Minority Serving Institutions to develop a coordinated program of education and Homeland Security-related STEM to prepare students for careers in research and development of the technology needed to secure our nation.

- **NINDS Diversity Research Education Grants in Neuroscience** – Funds projects whose goals are to support the development and/or implementation of programs to: (1) increase the number of Ph.D.-level research scientists from diverse backgrounds including graduate, post-doctoral and/or junior-faculty career levels; and (2) advance the careers of the participants to the next step in their education toward a career in neuroscience.

**Additional Resources**

- [NSF report](#) on the use of cyber infrastructure to enhance workforce education (released March 2011)
• Lists of Department of Education funding opportunities for Community Colleges out of various DoEd offices can be found [here](#).
• **Information on NIH Research Workforce Working Group** – The group will recommend actions to ensure a diverse and sustainable biomedical and behavioral research workforce.
• [NSF Math and Physical Sciences Education and Workforce program](#) webpage
• [NSF Directorate for Education and Human Resources 2012 budget](#) and description of new programs
• **Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM) Programs** – Describes a collection of programs to enhance the STEM workforce. At the Community College, undergraduate and graduate levels, these include scholarships, internships at DoN labs and fellowships.
Research Development & Grant Writing News

Mentoring Students for NSF Graduate Research Fellowships

The NSF GRFP is submitted by individual graduate students, but they need your help to be competitive.

The NSF Graduate Research Fellowship Program (GRFP), which funded 2,000 fellowships last year, is the largest fellowship program in the U.S. It funds early graduate students (current senior undergraduates and graduate students up to the second semester of their second year) who are pursuing graduate degrees in fields of study funded by NSF (engineering; physical, life, computer, and social sciences; geosciences; psychology; and STEM education and learning). Awardees, who must be US citizens, nationals or permanent residents, receive a $30,000 per year stipend for up to 3 years, usable over a 5-year period. In addition, their institutions receive a $10,500 cost-of-education allowance that covers tuition and fees (if the institution’s tuition and fees are higher then that, they must waive the cost to the student). This year, the GRFP application is due November 14th – 18th, depending on discipline. See the solicitation for details on eligibility, due dates, and disciplines funded (look for the list at the very end).

While students apply as individuals for these fellowships, most GRFP winners can point to a faculty mentor who encouraged them to apply and worked with them on their research plans and essays. Helping students apply for fellowships not only benefits the student, it can benefit you as a faculty member in several ways. It can help you to recruit excellent graduate students. By working with talented undergraduates to make them aware of this fellowship opportunity and help them develop a research plan, you will develop a relationship with the student and you’ll have a chance to explore together the research they might do with you, increasing the likelihood that they’ll continue to graduate school instead of deciding to take that tempting job offer, and making it more likely that they’ll choose you as their advisor.

If you are already their advisor, winning a fellowship means your graduate student will be partially or fully supported. Even if they don’t win, the exercise of developing and writing up a research plan will help them to focus their ideas and learn to articulate their proposed research concisely. Moreover, your students who have won graduate fellowships will mentor and encourage your newer students as they apply for fellowships, setting up a culture of competing for fellowships among your graduate students. For all of these reasons, it’s worth your time to identify students who can be competitive, encourage them to apply, and work with them to polish their essays.

GRFP applications require several components (go here for detailed instructions):

- biographical information for the applicant
- GRE scores and transcript
- Personal Statement (2 pages)
- Previous Research Experience (2 pages)
- Proposed Plan of Research (2 pages)
- Letters of reference (3 to 5 letters)
Because most applicants have good GRE scores and high GPAs, the quality of the letters of reference and the essays often determines who wins and who does not (to be competitive for the GRFP, students need good, but not perfect, GPAs—3.7 or higher is typical). Encourage your students to start working on their essays early and have many people read them. You, as their mentor, should also work with your students on their essays, particularly their research plan. Your role can include helping the student develop their research plan, pointing them to the appropriate background material, and reading the essays for style and organization as well as substance (many students, particularly undergraduates, don’t yet have an understanding of how to write in a scholarly style, and you can help them with this). Remember, though, that reviewers will also be looking for evidence of independence and original thought, so the essays should be written by the student with your guidance. It will be very clear to reviewers if an essay was written largely by you and not the applicant.

**Personal Statement:** This essay should describe why the applicant wants to pursue a career in research. It should discuss personal as well as professional and education experiences, but many students make the mistake of making it too personal. The essay should communicate the student’s passion for his chosen area of study and career path, but if it’s maudlin you may need to help him make the tone a bit more professional. In all of the essays, the student must address “Broader Impacts.” They might discuss future plans to reach out beyond their research lab. If the student is a member of a group that’s underrepresented in his field, he should be sure to mention that fact and discuss how he plans to leverage that status to reach out to others to broaden participation.

**Previous Research Experience:** Reviewers expect students to have had an undergraduate research experience; for this reason, it’s a good idea to encourage good students early in their undergraduate careers to pursue undergraduate research. Summer internships, coops or past employment can also provide the experience that reviewers are looking for. In this essay students should discuss at least one research experience in detail with the goal of demonstrating to the reviewers that she has understands the research process. The essay should describe the problem/goal of the project, the scientific background, the methodology and the results. She should also describe her role in the project and what she learned from the experience. If the student had more than one research experience, she should mention the others briefly, but focus on one project so that she has room to describe it in detail. For broader impacts, she could describe any experience she’s had with outreach (such as participation in K-12 or community programs) as well as, for example, helping younger students or being a peer mentor.

**Proposed Plan of Research:** Reviewers will be looking for evidence that the applicant understands the research process, understands the background of the research project, has a good grasp of the hypothesis, objectives and methods to be used, and knows how to describe the project and its significance. Since students can apply as senior undergraduates (even before they have selected a graduate school and advisor) all the way up until their second year
of graduate school (when they probably have at least a preliminary start on their research), these essays will look very different depending on the stage of the student. Reviewers understand this and judge the essays accordingly. You should also remind the early-stage students that they are not required to pursue the research plan they describe in their essays. NSF understands that projects may change; they are really looking for the students’ understanding of the research process and their ability to communicate, rather than intending to fund a particular project. Broader impacts must also be addressed in this essay. Will they mentor undergraduates in the lab? Will they participate in K-12 or community outreach? How will they disseminate the results of their research?

**Letters of Reference:** If you are mentoring, or have mentored, a student, chances are you may be asked to provide a letter of reference for that student. Reviewers look at these letters very carefully, so providing a strong letter is extremely important. If you’re not helping him with the rest of the application, ask the student to provide you with copies of all of his essays as well as a resume and any other detailed information that you think might be helpful. For example, if he conducted undergraduate research in your lab two years ago, you may not remember all the details of what he did. Ask the student for a summary of this project, and include some of those details in the letter. The more specific the details you can provide to support your positive statements about the student, the stronger the letter will be.

As with all NSF proposals, the GRFP application must be uploaded through Fastlane; however, the applicant can self-register, and she doesn’t have to go through your research office to submit the application. Encourage your student to register early and take a look at the online application and instructions to avoid last-minute crises with the uploading process.

Also, keep in mind that your student can apply more than once as long as she’s still eligible (hasn’t finished more than two semesters of graduate study). The good news is that even if they don’t win the first time, applicants will receive review comments that will help them improve their application the next year. Many students apply unsuccessfully the first time as an undergraduate or first-year graduate student and then apply again the next year and win.
Applying for a Ford Fellowship

The Ford Foundation funds predoctoral, dissertation and postdoctoral fellowships for students committed to a career in teaching at the college or university level to promote diversity.

The goal of the Ford Fellowship programs is to increase the diversity of the nation’s college and university faculties by “increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and increasing the number of professors who can and will use diversity as a resource for enriching the education of all students.” Generally, applicants are from racial or ethnic groups that are underrepresented in the professoriate (listed here under “criteria”), although this is not an eligibility requirement. Applicants must be US citizens or nationals and committed to a career in teaching and research at the college or university level.

In contrast to the other large fellowship programs funded by NSF and DoD, Ford funds fellowships in the humanities and liberal arts as well as in the sciences and engineering. In addition to the money, a big advantage of the Ford Fellowship program is that it provides mentoring and networking opportunities. Fellowships are available for individuals at the predoctoral, dissertation and postdoctoral levels, and it’s common that a student who received a fellowship at an earlier level will receive another fellowship at a more senior level (although this is not a requirement for applying for the later-stage fellowships).

Each type of fellowship is described below. For more detailed information, go to the how to apply page and the online application instruction page.

Predoctoral Fellowship

The Ford Predoctoral Fellowship supports students who have enrolled in or plan to enroll in a Ph.D. or Sc.D. program no later than fall 2012, including undergraduates in their senior year, students who have completed undergraduate study, individuals who have completed some graduate study, and students who are already enrolled in a Ph.D. or Sc.D. program who can provide evidence that they can utilize a 3-year fellowship award. It provides an annual stipend of $20,000 and $2,000 to the awardee’s institution in lieu of tuition and fees, plus expenses paid to attend at least one Conference of Ford Fellows, and access to Ford Fellow liaisons for mentoring. See the Predoctoral Fellowship webpage for details on eligibility (you can find a link to a pdf file listing all eligible fields of study in this section of the webpage). The deadline for Predoctoral Fellowship applications is November 14, 2011. (Supplementary materials due January 6, 2012).

Applications require:

- Personal information, educational background, etc.
- Statement of Previous Research (2 pages, double-spaced)
- A list of publications and presentations (single-spaced)
- Proposed Plan of Graduate Study and Research (2 pages, double spaced)
- Personal statement (2 pages, double-spaced)
- Letters of reference
- Transcripts, GRE scores, verification of predoctoral status form
Research Development & Grant Writing News

Dissertation Fellowship
The Ford Foundation Dissertation Fellowship provides a one-year stipend of $21,000 to support individuals working to complete a dissertation leading to a Ph.D. or Doctoral Science (Sc.D) degree (also see this page to find a link to a pdf file listing all eligible dissertation fields). The Fellowship also funds expenses paid to attend at least one Conference of Ford Fellows, and access to Ford Fellow liaisons for mentoring. Applicants should expect to complete their dissertation during the 2012 – 2013 academic year, and not later than fall 2013. Applications are due November 17, 2011. (Supplementary materials due January 6, 2012.)

Applications require:
- Personal information, educational background, etc.
- Statement of previous research (2 pages, double-spaced)
- Annotated bibliography (2 – 3 sentences for no more than 10 key sources)
- Abstract of dissertation (1 page, double-spaced)
- Personal statement (2 pages, double-spaced)
- Letters of reference
- Verification of Doctoral Degree Candidacy Form

Postdoctoral Fellowship
The Ford Foundation Postdoctoral Fellowship provides one year ($40,000) of support for individuals engaged in postdoctoral study after the attainment of a Ph.D. or Sc.D degree. An “employing institution allowance” of $1,500 will also be paid to the fellow’s employing institution, which will be asked to provide a matching amount to help the fellow with research expenses. The Fellowship also funds expenses paid to at least one Conference of Ford Fellows, and access to Ford Fellow liaisons for mentoring. Applicants should expect to be able to use 9 to 12 months of postdoctoral support. Eligible postdoctoral fields are listed in a pdf file linked to the “Eligible Fields of Study” section of the webpage. Application are due November 17, 2011 (Supplementary materials due January 6, 2012.)

Applications require:
- Personal information, educational background, etc.
- Statement of previous research (2 pages, double-spaced)
- Annotated bibliography (2 – 3 sentences for no more than 10 key sources)
- Abstract of dissertation (1 page, double-spaced)
- Abstract of Proposed Plan of Study or Research (1 page, double-spaced)
- Personal statement (2 pages, double-spaced)
- Letters of reference
- PhD or Sc.D. transcript
- Name and contact information for host mentor/colleague

Writing the Essays
When you write the required essays (Personal Statement, Proposed Plan of Research, etc.), remember what the Ford Foundation’s goals are, and connect your narrative to those goals.
How will you help them increase the diversity of the nation’s college and university faculties, maximize the educational benefits of diversity, and increase the number of professors who can and will use diversity as a resource in education? It’s not enough to be a member of an underrepresented group; you need to explain how that will inform your educational approach and scholarly activities. In your Statement of Previous Research, be sure to highlight previous accomplishments in that vein. Did you serve as a peer mentor for other students? Were you involved in organizations for minority students in your field? Did you participate in outreach activities to K-12 students? All of these things will demonstrate a commitment to Ford Foundation’s goals. If it happens that your research relates to issues around diversity, be sure to highlight how that research will enrich your students’ educational experiences.

The Review Process
It’s always helpful when you’re preparing a proposal or application to understand how it will be reviewed. For the Ford Fellowships, professors meet in Washington, DC and are organized into groups by discipline (typically 6 – 12 professors per group). The number of awards in an area is based on the number of applications in that area. Reviewers read the letters of reference and the essays very carefully.

The things they look for in general are:
- How much time and effort did the applicant put into the application?
- Were the essays precise and detailed?
- Are there typos or improper sentence structure?

For the Research Plan:
- Does the applicant understand how to lay out a research plan?
- Do they have a hypothesis?
- Do they know how to go about gathering data?
- What kinds of literature do they reference?

For the Personal Statement:
- Did the applicant clearly identify how diversity will contribute to their teaching?
- Have they thought through how they will incorporate diversity in the classroom?
- What have they done from a diversity perspective thus far?

Putting Together Your Application
When putting together your application, be sure to involve your faculty mentor. (If you’re still an undergraduate and don’t have an advisor yet, recruit a faculty mentor from your department or field.) Start working on your essays as soon as possible, and ask a number of people to read and critique them. Applications must be submitted electronically, so go onto the website, read all of the instructions, register, and start working with the electronic application so that you can identify any questions about the uploading process. If you are having trouble and your faculty mentor can’t help you, feel free to contact the Ford Foundation with your question – they are usually very responsive.
Remember that even if you don’t win, you’ll get review back which will help you with subsequent applications. Many people who don’t win a fellowship at one stage (for example, the predoctoral stage) go on to win one at a later stage (for example, the dissertation fellowship).

**Helpful Resources**
The Ford Foundation website includes a lot of helpful information, including:

- [Links to articles](#) on how to prepare successful fellowship applications
- [FAQs](#) page
- Use the [Ford Fellowship Directory](#) to search for Ford Fellows at your institution (they can be valuable mentors).
National Fellowship Databases

About GRAPES
The GRAPES database catalogs extramural funding opportunities of interest to prospective and current graduate students, students working on a master's thesis or doctoral dissertation, and postdoctoral scholars. It contains information on over 500 private and publicly funded awards, fellowships, and internships. Advanced search options allow users to refine their search by field, academic level, award type, award amount, and other criteria. GRAPES is maintained by the Graduate Outreach, Diversity and Fellowships Office. Access the database through the GRAPES Search Form.

Cornell Fellowships Database (Updated URL)

Michigan State University Graduate Fellowships Database

Duke Humanities & Social Science Fellowships and Grants for Graduate and Professional Students.

Externally Funded Fellowships, University of Texas, Arlington

National Postdoctoral Association
Headquartered at AAAS; an independent voice for postdocs.

American Psychological Association, Scholarships, Grants and Awards
APA and its affiliate organizations provide a wide range of grants, scholarships, awards with the aim of advancing the science and practice of psychology as a means of understanding behavior and promoting health, education, and human welfare.

APA Scholarships, Fellowships and Dissertation Awards
Psychology cannot thrive without nourishing our most intelligent and inquiring minds to pursue the discipline. To this end, the Foundation supports a number of programs aimed at helping graduate students further their education in psychology.

University of California, Berkeley Links
- Postdoc Funding in the Biosciences
- Postdoc Funding in the Social Sciences
- Postdoc Funding in the Humanities
Fellowship Reports and News
Sandia offers the following fellowship opportunities:

- Truman Fellowship
- Masters Fellowship
- The Critical Skills Master’s Program
- Alexander Hollander Distinguished Post-doctoral Fellowship
- John Von Neumann Research Fellowship in Computational Science

Information for Atmospheric and Geospace Sciences Postdoctoral Research Fellowship
Handbook for 2011 Atmospheric and Geospace Sciences Postdoctoral Research Fellows AGS-PRF (more).

Humboldt Research Fellowship for Postdoctoral Researchers
Scientists and scholars of all nationalities and disciplines may apply to the Alexander von Humboldt Foundation directly at any time. The Humboldt Foundation grants approximately 600 Humboldt Research Fellowships for postdoctoral researchers and experienced researchers annually. Short-term study visits, participation in congresses and training courses cannot be financed.

National Academy of Education/Spencer Postdoctoral Fellowship
The National Academy of Education/Spencer Postdoctoral Fellowship Program supports early career scholars working in critical areas of education research. This nonresidential postdoctoral fellowship funds proposals that make significant scholarly contributions to the field of education. The program also develops the careers of its recipients through professional development activities involving National Academy of Education members.

National Academy of Education/Spencer Dissertation Fellowship Program
The Dissertation Fellowship Program seeks to encourage a new generation of scholars from a wide range of disciplines and professional fields to undertake research relevant to the improvement of education. These $25,000 fellowships support individuals whose dissertations show potential for bringing fresh and constructive perspectives to the history, theory, or practice of formal or informal education anywhere in the world.

Upcoming (2011-2012) Fellowship Funding Opportunities

Resident Scholars
The School for Advanced Research (SAR) awards approximately six Resident Scholar Fellowships each year to scholars who have completed their research and analysis and who need time to think and write about topics important to the understanding of humankind. Resident scholars may approach their research from anthropology or from related fields such as history, sociology, art, and philosophy. Both humanistically and scientifically oriented scholars are encouraged to apply. SAR provides Resident Scholars with low-cost housing and office space on
campus, a stipend up to $40,000, library assistance, and other benefits during a nine-month tenure, from September 1 through May 31. A six-month fellowship is also available for a female postdoctoral scholar from a developing nation, whose research promotes women’s empowerment. SAR Press may consider books written by resident scholars for publication in its Resident Scholar Series. Deadlines vary.

**Franklin Research Grants**
Since 1933 the American Philosophical Society has awarded small grants to scholars in order to support the cost of research leading to publication in all areas of knowledge. In 2010–2011 the Franklin Research Grants program awarded $330,000 to 62 scholars, and the Society expects to make a similar number of awards in this year’s competition. The Franklin program is particularly designed to help meet the costs of travel to libraries and archives for research purposes; the purchase of microfilm, photocopies, or equivalent research materials; the costs associated with fieldwork; or laboratory research expenses. Deadlines vary.

**Fellowship and Grant Opportunities**
The American Museum of Natural History (AMNH) and our Richard Gilder Graduate School (RGGS) are leaders in the education and training of young scientists in the natural history disciplines represented in this institution. Our fellowships and research grants programs provide training across these disciplines, including comparative biology and the fields of anthropology, invertebrate zoology, paleontology, physical sciences (astrophysics and earth and planetary sciences), and vertebrate zoology. Deadlines vary.

**Japan Society for the Promotion of Science**
JSPS offers six fellowship programs, each with different eligibility requirements.

**SBE Doctoral Dissertation Research Improvement Grants (SBE DDRIG)**
The National Science Foundation’s Division of Behavioral and Cognitive Sciences (BCS), Division of Social and Economic Sciences (SES), National Center for Science and Engineering Statistics (NCSES), and the SBE Office of Multidisciplinary Activities (SMA) award grants to doctoral students to improve the quality of dissertation research. These grants provide funds for items not normally available through the student’s university. Multiple due dates.

**National Estuarine Research Reserve System’s Graduate Research Fellowship Program**
The National Estuarine Research Reserve System’s (NERRS) Graduate Research Fellowship (GRF) Program was established in 1997 to support graduate students interested in coastal and estuarine sciences. By providing stipends, a living laboratory, and a broad network of fellow scientists, the Reserve system aims to encourage and enable talented young scientists to contribute to the knowledge base, provide the science to support coastal decision-making, and train future coastal scientists and policy-makers. Due by November 1.

**Wenner-Gren Foundation For Anthropological Research, Individual Research Grants**
Grants for Doctoral Students: A variety of the Foundation's grants support students enrolled in doctoral programs leading to a Ph.D. (or equivalent), including grants for dissertation research. There are also fellowship programs for doctoral students from countries where anthropology is underrepresented and where there are limited resources for educational training. Grants for Post-Ph.D. Scholars: Grants are available to scholars with a doctorate include individual research grants, a limited number of writing fellowships, training for scholars from countries where academic training in anthropology is limited and awards to encourage collaborative research between international scholars. Due November 1.

US Air Force/ National Research Council, Resident Research Associateship Program
Finding Research Opportunities - The first step in the application process is identifying the laboratory or laboratories to which you will apply. This may be accomplished by using the search functions on this website to identify the Research Opportunity(s) of interest to you. Shown with each Research Opportunity are the names of one or more Research Advisers who conduct or direct the work described in the opportunity. An Adviser is a scientist or engineer at the sponsoring laboratory with whom an Associate works most closely. Once you have identified a Research Adviser, it is recommended that you contact him or her to discuss your interest in applying for an NRC Research Associateship Award. After completing the WebRAP application, you must submit supporting documents by email to rap@nas.edu or by mail to the Associateship Programs office at 500 Fifth Street, NW (Keck 568), Washington, DC 20001. Please refer to the How to Apply and the Supporting Documents page for complete details. (More) (USAF Lab). Submission Date: November 1, February 1, May 1, and August 1.

SSRC International Dissertation Research Fellowship (IDRF)
The International Dissertation Research Fellowship offers nine to twelve months of support to graduate students in the humanities and social sciences who are enrolled in doctoral programs in the United States and conducting dissertation research outside of the United States. IDRF promotes research that is situated in a specific discipline and geographical region but is also informed by interdisciplinary and cross-regional perspectives. Research topics may address all periods in history, but applicants should be alert to the broader implications of their research as it relates to contemporary issues and debates. Seventy-five fellowships are awarded annually. Fellowship amounts vary depending on the research plan, with a per-fellowship average of $19,000. The fellowship includes participation in an SSRC-funded interdisciplinary workshop upon the completion of IDRF-funded research. Due November 3.

Fall 2012 EPA Science To Achieve Results Fellowships For Graduate Environmental Study
The EPA, as part of its Science to Achieve Results (STAR) program, is offering Graduate Fellowships for master’s and doctoral level students in environmental fields of study. The deadline is November 8, 2011 at 4:00 PM ET for receipt of paper applications, and November 8, 2011 at 11:59:59 PM ET for submittal of electronic applications via Grants.gov. Subject to availability of funding and other applicable considerations, the Agency plans to award approximately 80 new fellowships by July 31, 2012. Master’s level students may receive support
for a maximum of two years. Doctoral students may be supported for a maximum of three years, usable over a period of five years. The fellowship program provides up to $42,000 per year of support per fellowship. Due November 8.

**Doctoral Dissertation Improvement Grants in the Directorate for Biological Sciences**
The National Science Foundation awards Doctoral Dissertation Improvement Grants in selected areas of the biological sciences. These grants provide partial support of doctoral dissertation research to improve the overall quality of research. Allowed are costs for doctoral candidates to participate in scientific meetings, to conduct research in specialized facilities or field settings, and to expand an existing body of dissertation research. Due November 10.

**Ocean Sciences Postdoctoral Research Fellowships**
The Division of Ocean Sciences (OCE) offers Postdoctoral Research Fellowships to increase the participation of under-represented groups in the ocean sciences. Awards are intended to support the individual fellows’ research and increase the diversity of the U.S. ocean sciences research community. In this solicitation, the term under-represented groups will refer to and include the following: women, persons with disabilities, African Americans, Hispanics, Native Americans, Alaska Natives, and Pacific Islanders. Fellowships are awards to individuals, not organizations, and are administered by the fellows. Due January 13.

**Agriculture and Food Research Initiative: NIFA Fellowships Grant Program**
The AFRI NIFA Fellowship RFA focuses on developing the next generation of scientists who will lead agriculture into the future by solving current and future challenges facing our society. The AFRI NIFA Fellowships Grant Program targets talented, highly-motivated doctoral candidates and postdoctoral trainees that demonstrate remarkable promise and the ability to increase the number of gifted agricultural scientists in the United States. The NIFA Fellows are individuals who have the potential for remarkable accomplishments in agricultural science. The Program seeks to develop the technical and academic competence of doctoral candidates and the research independence and teaching credentials of postdoctoral scientists in the food, forestry and agricultural sciences that are within NIFA’s challenge areas through well-developed and highly interactive mentoring and training activities. Project types supported by AFRI within this RFA include single-function Research, Education, and Extension Projects and multi-function Integrated Research, Education, and/or Extension Projects. (solicitation pdf) Due January 19.

**The Thomas R. Pickering Graduate Foreign Affairs Fellowship**
The Thomas R. Pickering Graduate Foreign Affairs Fellowship Program provides funding to participants as they are prepared academically and professionally to enter the United States Department of State Foreign Service. Women, members of minority groups historically underrepresented in the Foreign Service, and students with financial need are encouraged to apply. The goal of the Fellowship Program is to attract outstanding students who enroll in two-year master’s degree programs in public policy, international affairs, public administration, or academic fields such as business, economics, political science, sociology, or foreign languages.
who represent all ethnic, racial and social backgrounds and who have an interest in pursuing a Foreign Service career in the U.S. Department of State. The program develops a source of trained men and women who will represent the skill needs of the Department and who are dedicated to representing America's interests abroad. **NOTE:** The application for the 2012 [Thomas Pickering Graduate Fellowship](#) competition is now open. All application materials are due by January 30, 2012. [Register/Apply here.](#)
Research Grant Writing Web Resources

National Academies Press
NAP makes all PDF versions of Academies reports free to download; more than 4,000 titles available free to users. Read More National Academy RSS feeds.

NIAID Funding Blog

Get NSF Updates by Email
The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, National Science Foundation Update is a free e-mail subscription service designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

State and Local Policy Initiatives to Reduce Health Disparities: Workshop Summary
Although efforts to reduce health disparities receive attention at the national level, information on the successes of state and local efforts are often not heard. On May 11, 2009, the Institute of Medicine held a public workshop to discuss the role of state and local policy initiatives to reduce health disparities. The workshop brought together stakeholders to learn more about what works in reducing health disparities and ways to focus on localized efforts when working to reduce health disparities. Download free pdf at above URL.

NIH Launches Research Program to Explore Health Effects from Climate Change
A new research program funded by the National Institutes of Health will explore the role that a changing climate has on human health. Led by NIH’s National Institute of Environmental Health Sciences (NIEHS), the program will research the risk factors that make people more vulnerable to heat exposure; changing weather patterns; changes in environmental exposures, such as air pollution and toxic chemicals; and the negative effects of climate change adaptation and mitigation efforts. In addition to better understanding the direct and indirect human health risks in the United States and globally, one of the program’s goals is to determine which populations will be more susceptible and vulnerable to diseases exacerbated by climate change. Children, pregnant women, the elderly, people from low socioeconomic backgrounds, and those living in urban or coastal areas and storm centers may be at elevated risk. This program will also help to develop data, methods, and models to support health impact predictions.
Educational Grant Writing Web Resources
(Back to Page 1)

Writing educational grants to federal agencies and foundations is helped by developing a knowledge base of proven and successful educational models and STEM standards at the K-12, community college, and university level.

National Academies Press
NAP makes all PDF versions of Academies reports free to download; more than 4,000 titles available free to users. Read More National Academy RSS feeds.

Successful STEM Education: A Workshop Summary
The following papers were commissioned for the Workshop on Successful STEM Education in K-12 Schools:

- **Engineering for Effectiveness in Mathematics Education: Intervention at the Instructional Core in an Era of Common Core Standards**, Jere Confrey and Alan Maloney
- **Effective STEM Education Strategies for Diverse and Underserved Learners**, Okhee Lee
- **Building on Learner Thinking: A Framework for improving learning and assessment**, Jim Minstrell, Ruth Anderson, and Min Li
- **Mathematics Learning and Diverse Students**, Nailah Suad Nasir, Niral Shah, Jose Gutierrez, Nicole Louie, Kim Seashore, and Evra Baldinger,
- **Study of the Impact of Specialized Science High Schools**, Rena Subtonik and Robert Tai
- **Stem Reform: Which Way to Go**, William Schmidt
- **Delivering STEM Education through Career and Technical Education Schools and Programs**, James Stone,
- **Inclusive STEM Schools: Early Promise in Texas and Unanswered Questions**, Viki Young
- **Effective Stem Teacher Preparation, Induction, and Professional Development**, Suzanne Wilson

Learning at a Distance: Undergraduate Enrollment in Distance Education Courses and Degree Programs
This Statistics in Brief investigates undergraduates’ participation in distance education using nationally representative student-reported data collected through the three most recent administrations of the National Postsecondary Student Aid Study (NPSAS:2000, NPSAS:04, and NPSAS:08).

STEM Smart: Lessons Learned From Successful Schools
A conference hosted by the National Science Foundation (NSF) at Drexel University
A growing number of jobs -- not just those in professional science -- require knowledge of science, technology, engineering, and mathematics, says Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics, a
recent report from the National Research Council. The report identifies key elements of high-quality STEM education to which policymakers could target improvements. Listen to a convocation being hosted by the National Science Foundation at Drexel University in Philadelphia, where educators and government leaders will share lessons learned about successful K-12 STEM education and discuss ways to put recommendations from the report into action.

**The SEPA Program**
The Science Education Partnership Award (SEPA) Program funds grants for innovative educational programs. Such projects create partnerships among biomedical and clinical researchers and K-12 teachers and schools, museums and science centers, media experts, and other educational organizations. SEPA is sponsored by the National Center for Research Resources (NCRR), part of the National Institutes of Health (NIH).

**Mathematics Learning and Diverse Students**
This literature review synthesizes the research on issues of mathematics teaching, learning, and achievement for students from marginalized groups, including Black students, Latina/o students, English language learners, and poor students. In Part 1, we outline national trends in mathematics achievement and learning for students in these groups. In Part 2, we describe what we know about the extent to which students in these groups are provided access to high-quality mathematics instruction and we detail some of the challenges these students face. In Part 3, we summarize what existing research tells us about effective instruction for equity in mathematics, and the necessary conditions at the district, school, and department levels to support such instruction. We also consider the implications for schools; what can schools do to better support equity in mathematics learning outcomes? Throughout, we will consider the case of one school that developed an equity pedagogy in mathematics, Railside High School, as an example of successful equity pedagogy in mathematics, and as a cautionary illustration of the kinds of institutional and district support required to sustain such pedagogy."

**Assessing 21st Century Skills: Summary of a Workshop, National Academies Press**
The routine jobs of yesterday are being replaced by technology and/or shipped off-shore. In their place, job categories that require knowledge management, abstract reasoning, and personal services seem to be growing. The modern workplace requires workers to have broad cognitive and affective skills. Often referred to as "21st century skills," these skills include being able to solve complex problems, to think critically about tasks, to effectively communicate with people from a variety of different cultures and using a variety of different techniques, to work in collaboration with others, to adapt to rapidly changing environments and conditions for performing tasks, to effectively manage one's work, and to acquire new skills and information on one's own. Download free pdf at above URL.
Successful STEM Education: A Workshop Summary
What students learn about the science disciplines, technology, engineering, and mathematics during their K-12 schooling shapes their intellectual development, opportunities for future study and work, and choices of career, as well as their capacity to make informed decisions about political and civic issues and about their own lives. Most people share the vision that a highly capable STEM workforce and a population that understands and supports the scientific enterprise are key to the future place of the United States in global economics and politics and to the well-being of the nation. Indeed, the solutions to some of the most daunting problems facing the nation will require not only the expertise of top STEM professionals but also the wisdom and understanding of its citizens. Although much is known about why schools may not succeed, it is far less clear what makes STEM education effective. Successful STEM Education: A Workshop Summary discusses the importance of STEM education. The report describes the primary types of K-12 schools and programs that can support successful education in the STEM disciplines and examines data and research that demonstrate the effectiveness of these school types. It also summarizes research that helps to identify both the elements that make such programs effective and what is needed to implement these elements. Download free pdf at above URL.

STEM Reform: Which Way to Go
"This paper addresses the issue of STEM related reform for non-STEM K-8 schools. The National Research Council (NRC) was charged with identifying highly successful strategies, practices and schools for STEM education. The majority of students learn STEM subjects in schools that do not have a specific STEM focus. These schools are continually looking to improve or reform their STEM education. Various models for reforming and improving STEM education have been developed across the country. This paper provides greater insight into the types of STEM education reform approaches found in non-STEM focused schools. The focus is on mathematics, as it serves as the language for science, engineering and technology and is the area in which the most reform has taken place. It is also impossible in a short paper to cover all four of these areas in depth. Some specific comments related to science will be incorporated at various points in the paper."
NIH Grant Success Rate Likely Hit Historic Low in 2011
Grant success rates at the National Institutes of Health (NIH) appear to have plunged to an all-time low in 2011. ScienceInsider has learned that an early estimate from the NIH Office of Extramural Research (OER) puts the success rate for research grants at 17.4% for the fiscal year that ended 30 September. A rate of 17% to 18% would be a historic low, NIH Director Francis Collins told a Senate panel in May. (OER chief Sally Rockey, who confirmed the 17.4% figure, notes that it is "very preliminary" and will likely rise a bit after her staff finishes cleaning up the data in early November.)

Nov. 28 is Deadline to Apply for 2012 EPA Brownfields Funding
EPA is encouraging eligible entities to apply now through Nov. 28, 2011, for 2012 Brownfields funding. These grant funds can be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants, including hazardous substances comingled with petroleum. Available grants from EPA’s Brownfields Program include assessment grants (each funded up to $200,000 over three years; coalitions are funded up to $1 million over three years); cleanup grants (each funded up to $200,000 over three years); and revolving loan funds (each funded up to $1 million over five years).

NIH Announces 79 Awards to Encourage Creative Ideas in Science
The National Institutes of Health announced that it is awarding $143.8 million to challenge the status quo with innovative ideas that have the potential to propel fields forward and speed the translation of research into improved health for the American public. These awards are granted under three innovative research programs supported by the NIH Common Fund: the NIH Director’s Pioneer, New Innovator, and Transformative Research Projects Awards. The Common Fund, enacted into law by Congress through the 2006 NIH Reform Act, supports trans-NIH programs with a particular emphasis on innovation and risk taking.

NSF Innovation Corps (I-Corps)
The NSF Innovation Corps (I-Corps) guides promising research with commercial potential out of university laboratories. The National Science Foundation (NSF) has established a new opportunity to assess the readiness of emerging technology concepts for transitioning into valuable new products through a public-private partnership. The NSF Innovation Corps (I-Corps) program will bring together the technological, entrepreneurial, and business know-how to bring discoveries ripe for innovation out of the university lab. While the knowledge gained from NSF-supported basic research frequently advances a particular field of science or engineering, some results also show immediate potential for broader applicability and impact in the business world. These results may be translated into technologies with near-term benefits for the economy and society. With the I-Corps grants, NSF will strategically identify these nascent
Research Development & Grant Writing News

concepts and leverage its investment in basic research for technology innovation. To do so successfully—and to address the national need for economic growth—will require a public–private partnership. Find out more in the NSF news release and through monthly I-Corps webinars. Also see NSF Director Subra Suresh's talking points on NSF's Innovation Corps.

Resources:
- NSF I-Corps Program Home
- NSF Innovation Corps Program (I-Corps) Announcement (NSF 11-560)
- NSF I-Corps Q&A
- NSF I-Corps Webinars
- NSF Press Release I-Corps: To Strengthen the Impact of Scientific Discoveries

Waiting for Your NIAID Program Officer to Respond? Here’s What to Do
Most of you have no problems communicating with your program officer, but if you do have difficulty getting a response within the timeframe you need, here are some actions to take.

- If you’ve applied for a grant or have an award, contact your grants management specialist. This person may have the information you need or can help you get an answer.
- Leave a message at the appropriate general NIAID number.
  - DAIDS: 301-496-0545
  - DAIT: 301-496-1886
  - DMID: 301-496-1884
- If your inquiry is related to a specific topic or service covered on an NIAID Web site, look for contact information for the people who coordinate the activity in question.
  - As an example, for training and career development awards, you may contact our general help desk at AITrainingHelpDesk@niaid.nih.gov even if you’re already working with your program officer. When you get in touch, reference that person and any related correspondence.
  - All Resources for Researchers and scientific programs have a contact person for general inquiries.

Check that you go through the following steps before you do the actions above:

- Confirm you have the right person.
  - If you have a grant, check the Commons.
  - If you do not have a grant, go to Finding People or see the contact information in the funding opportunity announcement or Guide notice.
- Clearly explain why you are getting in touch and describe what you want.
- Follow up your phone call with an email, or follow up your email with a phone call.
- Provide additional contact numbers and email addresses if you have them.
- Convey a sense of urgency or provide a time or date by which you need a response.

Expect to wait longer than normal if you try to contact your program officer immediately after the release of a funding opportunity announcement or Guide notice. We get a spike of inquiries whenever we publish new opportunities or policies, and it takes time to respond to each person who gets in touch.
Frequently Asked Questions for the Dynamics of Coupled Natural and Human Systems Competition (CNH) Program

1. What kinds of projects does the CNH program fund?
2. What is considered to be a human or natural system in CNH?
3. Does my team need to include a natural/social scientist?
4. How long should my project last?
5. Are the maximum budget amounts for each award type per year or for the full duration of the award?

Metrics for Team Science — What’s Your Take?
In a feature on PhysOrg.com titled “Is Team Science Productive? Study Measures the Collaborative Nature of Translational Medicine,” researchers at the University of Pennsylvania School of Medicine studied how to measure productivity in a collaborative environment. They came to the following conclusion:

- “…network analysis, which examines a social structure made up of individuals connected by a common interdependency...could help inform decisions about which institutes, centers, or departments are most likely to facilitate collaboration, and learn how they’re doing it. This will point the way to ideas to increase cross-discipline collaborations such as trans-center grants to facilitate collaborations between departments.”
- What are your thoughts? Leave us a comment.
- Note: the researchers’ published findings are available in the October 13, 2010, Science Translational Medicine article, “Network Dynamics to Evaluate Performance of an Academic Institution” (requires subscription).

How to Get Funding for Innovative Research at NIH
(from NIAID Funding Newsletter, September 14, 2011)

Although innovation is a review criterion, some people have told us how hard it is to succeed in peer review when proposing highly innovative research. Reviewers tend to be conservative. Especially in times of tight budgets and tough competition, they often go with projects that have more preliminary data and entail less risk. While understandable, that tendency can stymie innovation as reviewers shy away from highly innovative, more risky research.

Here’s an approach we think may help. Let’s start by noting that your reviewers are the most important audience for your application, so you can’t ignore their perspective. When choosing a topic for your application, don’t start with an innovative idea they are unlikely to appreciate. Instead, propose work they will view as important, which is critical for your success (we tell you more about that subject below in “Getting Your Reviewers Onboard”). At this point, you are regarding your application as your means to getting funded, your primary objective. While you can’t conduct research without funding, what about that innovative idea?

Getting to Innovation

Think of your aims as the core of your research from which new leads may follow.
Once you secure funding, you will begin to work on your proposed aims, knowing that you can take your research in new directions as long as your project stays within the scope of its peer-reviewed aims.

If you do have to expand the scope, you can talk to your program officer about the possibility of applying for a revision, or you may want to consider applying for a new grant. Read more in links below and talk with your grants management specialist and program officer for additional help.

**Getting Your Reviewers Onboard**

As with any object, beauty is in the eye of the beholder: first and foremost, your reviewers will need to share your perspective that the topic you chose is vital to your field. They will also have to agree that you can successfully complete the research you propose. The repercussions of not having the right reviewers are huge, e.g., they may not see the field as having other priorities (you chose the wrong project) or believe that the research you proposed is too innovative.

Thus, it's critical to make sure at the outset—before choosing a project—that NIH has a review committee that would embrace the direction in which you are planning to take the research you describe in your application.

We suggest that you not proceed before taking time to analyze the Center for Scientific Review's review committees and find one that would appreciate the work you are planning to propose.

Learning the perspectives of different review committees and their members is well worth your time first to guide you in choosing a project and later for writing the application. It’s much more efficient to do this before you pick a project than to learn you made the wrong choice after the review.

**Related Links**

To search for a study section, go to the [CSR Study Section Roster Index](#).

- **New Investigator Series**
  - "Your Application Takes Center Stage"
  - "Your Project's Scope: Plot Your Boundaries"
  - "May the Force Be With Your Application"
  - "Writing the Research Strategy"

- **Revision of a Grant** SOP

- **Prior Approvals for Post-Award Grant Actions** SOP

- **What Constitutes a Change in Scope?** in the [NIH Grant Cycle: Application to Renewal](#)
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.

Increasing National Resilience to Hazards and Disasters: The Perspective from the Gulf Coast of Louisiana and Mississippi: Summary of a Workshop
Assessing National Resilience to Hazards and Disasters reviews the effects of Hurricane Katrina and other natural and human-induced disasters on the Gulf Coast of Louisiana and Mississippi and to learn more about the resilience of those areas to future disasters. Topics explored in the workshop range from insurance, building codes, and critical infrastructure to private-sector issues, public health, nongovernmental organizations and governance. This workshop summary provides a rich foundation of information to help increase the nation’s resilience through actionable recommendations and guidance on the best approaches to reduce adverse impacts from hazards and disasters. New from National Academies Press. Downloadable as free pdf.

Securing Our Future: The Navy Science, Technology, Engineering and Mathematics (STEM) Workforce Roadmap
Recognizing that a healthy science, technology, engineering and mathematics (STEM) workforce is critical to meeting the Navy and Marine Corps’ greatest challenges, the Department of the Navy is committed to doubling its investment in STEM over the next five years. This commitment answers a national call by President Obama to improve our country’s STEM education over the next decade. The Department of the Navy’s STEM Roadmap is built around five priorities that combine best-in-class experiences for students along-side the needs of the Navy for a STEM workforce pipeline. Initiatives include exciting new programs that will increase participation by students and teachers, allow for hands-on and meaningful learning experiences, and meet the underserved where they live. The five priorities are:

- Inspire the next generation of scientists and engineers.
- Engage students and build their STEM confidence and skills through hands-on learning activities that incorporate Naval relevant content.
- Educate students to be well prepared for employment in STEM careers that support the Navy and Marine Corps.
- Employ, retain and develop Naval STEM professionals.
- Collaborate on STEM efforts across the Department of the Navy, the Federal government and best practice organizations.

In support of these STEM priorities, our STEM portfolio includes:

1. High-engagement, long-duration, and hands-on learning K-12 programs, particularly at the middle school level
2. Programs and practices that target under-represented populations
3. Naval-relevant content as an integral part of programs
4. Programs that improve student interest, confidence and retention in STEM
5. Teacher training and development programs
6. Partnerships with “Best Practice” programs

As part of the plan, the Office of Naval Research will manage the coordination of the Navy's STEM effort, a portfolio of more than 80 localized outreach and education efforts across the country. Read the complete plan: Download the 2011 Navy STEM roadmap
New Funding Solicitations Posted Since September 15 Newsletter

Fiscal Year 2012 Funding Opportunity Announcement (FOA) for Navy and Marine Corps Science, Technology, Engineering and Mathematics (STEM) Programs 12-002

The purpose of this announcement is to receive proposals in support of the Naval Strategic Plan and the Office of Naval Research’s scientific outreach and education mission to develop its next generation of scientists and engineers. **The objective of these activities will be to:** 1. Establish successful, sustainable, and affordable long-term, national Navy-sponsored programs targeted at elementary and secondary schools as well as institutions of higher learning. 2. Increase the awareness of and exposure to Naval relevant STEM content, research experience and career options through education and outreach programs. 3. Establish and maintain a pipeline of students, particularly women and under-represented minorities, who will apply for and participate in Naval education and outreach programs. 4. Increase the number of domestic students (particularly students from under-represented groups) completing STEM degrees through enhancing student interest and attitudes toward science, technology, engineering, and mathematics. 5. Strengthen peer, family, and school support for STEM programs. 6. Ensure long-term inclusiveness of women and minorities in Naval science and technology programs. 7. Increase the number of students taking college-prep science and mathematics courses. 8. Strengthen the resources and training offered to STEM teachers. Additional activities supported may include providing financial assistance to organizations supporting STEM activities, providing funding and support for national competitions by arranging for DoD personnel to participate as judges and presenters, providing support for STEM education and outreach conferences and supporting teacher STEM education and training initiatives. Stipends for teachers undertaking professional training in connection with these activities may be supported as well as funding for the acquisition of materials and resources needed to launch, implement, assess, and improve the program. For more information on these priorities, please review the Naval STEM Strategic Plan at [www.onr.navy.mil](http://www.onr.navy.mil). (MORE). Open to September 30, 2012

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
Research Development & Grant Writing News

intent that the SBC will develop the invention into a commercial product to benefit the public. **Open November 5, 2011, to September 8, 2014.**

**Fall 2012 EPA Science To Achieve Results Fellowships For Graduate Environmental Study**
The EPA, as part of its Science to Achieve Results (STAR) program, is offering Graduate Fellowships for master’s and doctoral level students in environmental fields of study. The deadline is November 8, 2011 at 4:00 PM ET for receipt of paper applications, and November 8, 2011 at 11:59:59 PM ET for submittal of electronic applications via Grants.gov. Subject to availability of funding and other applicable considerations, the Agency plans to award approximately 80 new fellowships by July 31, 2012. Master’s level students may receive support for a maximum of two years. Doctoral students may be supported for a maximum of three years, usable over a period of five years. The fellowship program provides up to $42,000 per year of support per fellowship. **Due November 8.**

**Scientific Discovery through Advanced Computing Institutes: Scientific Data Management, Analysis and Visualization**
The Office of Advanced Scientific Computing Research (ASCR) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving Applications to the Scientific Discovery through Advanced Computing (SciDAC) program for SciDAC Institutes and specifically in the topic area of Scientific Data Management, Analysis and Visualization. The mission of the SciDAC Institutes is to provide intellectual resources in applied mathematics and computer science, expertise in algorithms and methods, and scientific software tools to advance scientific discovery through modeling and simulation in areas of strategic importance to the Office of Science and the National Nuclear Security Administration (NNSA). A companion Program Announcement to DOE Laboratories (LAB 11-589) will be posted on the SC Grants and Contracts web site at: [http://www.science.doe.gov/grants](http://www.science.doe.gov/grants) (FedConnect). **Due November 9.**

**Discovery Research K-12**
The Discovery Research K-12 (DRK-12) program solicitation supports projects that lead to significant and sustainable improvements in STEM learning, advance STEM teaching, and contribute to improvements in the nation’s formal education system. Successful DRK-12 projects emphasize both research on and development of innovative STEM resources, models, and tools. DRK-12 is interested in projects that build upon educational research (theory, knowledge, findings) and promote effective STEM practices in diverse preK-12 classrooms. DRK-12 is also interested in high risk/high return projects that have the potential to radically transform formal STEM education. **LOI due November 17; full due January 10.**

**Rural Health Care Services Outreach Grant Program**
The Office of Rural Health Policy’s Outreach Program supports projects that demonstrate effective models of outreach and service delivery through collaboration, adoption of an evidence-based or promising practice model, demonstration of health outcomes, replicability and sustainability. Proposed projects will have an outcomes-oriented approach that will
Research Development & Grant Writing News

enhance and sustain the delivery of effective health care in rural communities by tracking specific health indicators that will demonstrate the impact of their project at the end of their grant period. They will be based on evidence-based or promising practice models in order to avoid "reinventing the wheel" and demonstrate health status improvement in rural communities. Proposed Outreach projects can take the framework of an evidence-based or promising proactive model and tailor it to their community’s need and organization. Due November 22.

Scientific Discovery through Advanced Computing: Scientific Computation Application Partnerships in Earth System Science
The Office of Advanced Scientific Computing Research (ASCR) of the Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving collaborative applications to the Scientific Discovery through Advanced Computing (SciDAC) program for SciDAC Scientific Computation Application Partnerships (hereafter, Partnerships) in support of BER’s Earth System Modeling research. A companion Program Announcement to DOE Laboratories (LAB 11-588) will be posted on the SC Grants and Contracts web site at: http://www.science.doe.gov/grants. This FOA is soliciting university-only, collaborative-only applications, not lead applications. Lead proposals that may be accepted will be only those from DOE National Laboratories responding to the corresponding LAB 11-588 Program Announcement (FedConnect). Due December 5.

Scholarly Editions and Translations
These NEH grants support the preparation of editions and translations of pre-existing texts and documents that are currently inaccessible or available in inadequate editions. These grants support full-time or part-time activities for periods of a minimum of one year up to a maximum of three years. Due December 8.

Collaborative Research Grants
These NEH grants support interpretive research undertaken by a team of two or more scholars, for full-time or part-time activities for periods of a minimum of one year up to a maximum of three years. Support is available for various combinations of scholars, consultants, and research assistants; project-related travel; field work; applications of information technology; and technical support and services. All grantees are expected to communicate the results of their work to the appropriate scholarly and public audiences. Due December 8.

DARPA Microphysiological Systems
DARPA seeks an in vitro platform of human tissues that accurately predicts the safety, efficacy, and pharmacokinetics of drugs and vaccines before their administration to humans. Alternative testing methods that rely on isolated human cells hold the promise of authentic human responses to candidate drugs, vaccines, and biologics. Recent research has shown that three-dimensional constructs of one or more cell types are able to reproduce relatively authentic human tissue and organ physiology in an in vitro environment. As a result, DARPA seeks in vitro
platforms comprised of human tissue constructs that will accurately assess efficacy, toxicity, and pharmacokinetics in a way that is relevant to humans and suitable for regulatory review.  
**Due December 12**

**Software Infrastructure for Sustained Innovation (SI²); Scientific Software Innovation Institutes (S2I2)**  
NSF’s vision of a Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) identifies advancing new computational infrastructure as a priority for driving innovation in science and engineering.  
**Due December 14.**

**Agriculture and Food Research Initiative: Sustainable Bioenergy**  
The Sustainable Bioenergy Challenge Area RFA focuses on the societal challenge to secure America’s energy future. In the Sustainable Bioenergy Challenge Area RFA, specific program areas are designed to achieve the long-term outcome of reducing the National dependence on foreign oil through the production of sustainable bioenergy. Project types supported by AFRI within this RFA include single-function Research, multi-function Integrated Research, Education, and/or Extension Projects, and Food and Agricultural Science Enhancement (FASE) Grants ([solicitation pdf](#)).  
**Due December 15.**

**Cyberlearning: Transforming Education**  
Through the Cyberlearning: Transforming Education program, NSF seeks to integrate advances in technology with advances in what is known about how people learn to better understand how people learn with technology and how technology can be used productively to help people learn, through individual use and/or through collaborations mediated by technology; better use technology for collecting, analyzing, sharing, and managing data to shed light on learning, promoting learning, and designing learning environments; and design new technologies for these purposes, and advance understanding of how to use those technologies and integrate them into learning environments so that their potential is fulfilled. Of particular interest are technological advances that allow more personalized learning experiences, draw in and promote learning among those in populations not served well by current educational practices, allow access to learning resources anytime and anywhere, and provide new ways of assessing capabilities. Letter of Intent required.  
**Due December 15 and various 2012 due dates.**

**Agriculture and Food Research Initiative: Agriculture and Natural Resources Science for Climate Variability and Change**  
The Agriculture and Natural Resources Science for Climate Variability and Change Challenge Area RFA focuses on the societal challenge to adapt agro-ecosystems and natural resource systems to climate variability and change and implement mitigation strategies in those systems. In the Agriculture and Natural Resources Science for Climate Variability and Change Challenge Area RFA, specific program areas are designed to achieve the long-term outcome of reducing the use of energy, nitrogen, reducing GHG emissions from practices, and water in the production of food, feed, fiber, and fuel and increase carbon sequestration. Project types
Research Development & Grant Writing News

supported by AFRI within this RFA include multi-function Integrated Research, Education, and/or Extension Projects and Food and Agricultural Science Enhancement (FASE) Grants. ([solicitation pdf](#)) Due December 16.

**9th Annual P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity and the Planet**
The U.S. Environmental Protection Agency (EPA), as part of the P3-People, Prosperity and the Planet Award Program, is seeking applications proposing to research, develop, and design solutions to real world challenges involving the overall sustainability of human society. The P3 competition highlights the use of scientific principles in creating innovative projects focused on sustainability. The P3 Awards program was developed to foster progress toward sustainability by achieving the mutual goals of economic prosperity, protection of the planet, and improved quality of life for its people—people, prosperity, and the planet—the three pillars of sustainability. The EPA offers the P3 competition in order to respond to the technical needs of the world while moving towards the goal of sustainability. Please see the [P3 website](#) for more details about this program. **Due December 22.**

**Scientific Discovery Through Advanced Computing: Nuclear Physics (SciDAC)**
Scientific Discovery Through Advanced Computing: Nuclear Physics (SciDAC) - The primary goal of these projects will be to enable and support research on current high-profile computationally intensive topics in theoretical nuclear physics of direct relevance to the experimental research programs at existing or approved NP facilities ([FedConnect](#)). **Due January 5.**

**Scientific Discovery through Advanced Computing: Computational High Energy Physics**
Scientific Discovery through Advanced Computing: Computational High Energy Physics - The specific areas of interest under this FOA are Cosmic Frontier Scientific Simulations (CFSS), Lattice Gauge Theory Research (LGTR), and Accelerator Science Modeling and Simulation (ASMS) [http://science.energy.gov/hep](http://science.energy.gov/hep). **Due January 9.**

**Sustainable Energy Pathways**
The creation of a secure and prosperous future for humanity depends on the contributions that science, engineering, and education will make towards building sustainable pathways to meet the energy needs of future generations. The dual roles of NSF - to support basic research and education - are ideally suited to stimulate vibrant science and engineering discovery and innovation efforts that will be needed to meet the challenge of building a sustainable energy future. **Sustainable Energy Pathways is part of the NSF-wide initiative on Science, Engineering, and Education for Sustainability (SEES).** The Sustainable Energy Pathways solicitation calls for innovative, interdisciplinary basic research in science, engineering, and education by teams of researchers for developing systems approaches to sustainable energy pathways based on a comprehensive understanding of the scientific, technical, environmental, economic, and societal issues. The SEP solicitation considers scalable approaches for sustainable energy conversion to useful forms, as well as its storage, transmission, distribution,
and use. The following Topic Areas illustrate the broad scope of sustainable energy interest areas of this solicitation: Energy Harvesting; Conversion from Renewable Resources; Sustainable Energy Storage Solutions; Critical Elements; Materials for Sustainable Energy; Nature-Inspired Processes for Sustainable Energy Solutions; Reducing Carbon Intensity from Energy Conversion; Use; Sustainable Energy Transmission; Distribution; Energy Efficiency; Management.  Due February 1.

SciDAC: Scientific Computation Application Partnerships in Materials and Chemical Sciences
The BES SciDAC Partnership portfolio will focus on the development of new algorithms and computational approaches which could dramatically accelerate the discovery of new materials and processes as well as provide fundamental understanding and improvement of current materials and processes. These elements are critical to the recently announced Materials Genome Initiative (MORE). Implementing these new algorithms on current and next generation massively parallel computers requires a team approach which includes materials and chemical scientists, applied mathematicians and computer scientists (Fedconnect). Due March 12.

Agriculture and Food Research Initiative: NIFA Fellowships Grant Program
The AFRI NIFA Fellowship RFA focuses on developing the next generation of scientists who will lead agriculture into the future by solving current and future challenges facing our society. The AFRI NIFA Fellowships Grant Program targets talented, highly-motivated doctoral candidates and postdoctoral trainees that demonstrate remarkable promise and the ability to increase the number of gifted agricultural scientists in the United States. The NIFA Fellows are individuals who have the potential for remarkable accomplishments in agricultural science. The Program seeks to develop the technical and academic competence of doctoral candidates and the research independence and teaching credentials of postdoctoral scientists in the food, forestry and agricultural sciences that are within NIFA’s challenge areas through well-developed and highly interactive mentoring and training activities. Project types supported by AFRI within this RFA include single-function Research, Education, and Extension Projects and multi-function Integrated Research, Education, and/or Extension Projects. (solicitation pdf) Due January 19.

Air Force Defense Research and Development Rapid Innovation Fund (RIF) Program
The National Defense Appropriation Act (NDAA) for FY2011 provided the Department of Defense (DoD) with the authorities and funds to facilitate the rapid insertion of innovative technologies into military systems or programs meeting critical national security needs. It is primarily for the transition of technologies developed by small businesses, including those resulting from the Small Business Innovation Research (SBIR) Program and DoD-reimbursed Independent Research and Development (IR&D). Due May 5.

Links to New & Open Funding Solicitations

- American Psychological Association, Scholarships, Grants and Awards
Research Development & Grant Writing News

- NIAID Funding Blog
- EPA 2011 Science To Achieve Results (STAR) Research Grants
- NASA Open Solicitations
- Defense Sciences Office Solicitations
- The Mathematics Education Trust
- Opportunities for Humanities Funding Announced
- EPA Open Funding Opportunities
- DOE Funding Opportunity Exchange
- CDMRP FY 2011 Funding Announcements
- Office of Minority Health
- Department of Justice Open Solicitations
- DOE/EERE Funding Opportunity Exchange
- HHS/Administration for Children and Families Funding Opportunities
- New Posting of Funds Available at HUD (more)
- New Funding Opportunities at NIEHS (NIH)
- National Human Genome Research Institute Funding Opportunities
- Army Research Laboratory Open Broad Agency Announcements (BAA)
- Institute of Education Sciences FY 2012 Opened Funding Opportunities
- SBIR Gateway to Funding
- Water Research Funding
- Fellowship and Grant Opportunities for Faculty Humanities and Social Sciences
- Humanities Funding Sources A-to-Z
- DARPA Current Solicitations
- Office of Naval Research Currently Active BAAs
- Department of Commerce, Notice of Grants for FY 2011
- HRSA Health Professions Open Opportunities
- NIH Funding Opportunities Relevant to NIAID
- Active Funding Opportunity Announcements (FOAs) for All NICHD
- National Institute of Justice Current Funding Opportunities
- NIST Fiscal Year FY2011 Measurement Science and Engineering Research Grants
- Funding Opportunities by the Department of Education Discretionary Grant Programs
- Science and Technology Funding Sources A-to-Z
- EPA’s Office of Air and Radiation (OAR) Open Solicitations
- NETL Open Solicitations
- 2011 Funding Calendar
- Duke University Funding Alerts
- DoED List of Currently Open Grant Competitions
- Foundation Center RFP Weekly Funding Bulletin
- NIST Funding Opportunities
- Funding News RSS; Deadline Watch; International Grants and Fellowship Index
Innovation Corps Program (I-Corps)
The National Science Foundation (NSF) seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output of scientific discoveries closer to the development of technologies, products and processes that benefit society. In order to jumpstart a national innovation ecosystem, NSF is establishing the NSF Innovation Corps (NSF I-Corps). The NSF I-Corps' purpose is to identify NSF-funded researchers who will receive additional support - in the form of mentoring and funding - to accelerate innovation that can attract subsequent third-party funding. The purpose of the NSF I-Corps grant is to give the project team access to resources to help determine the readiness to transition technology developed by previously-funded or currently-funded NSF projects. The outcome of the I-Corps projects will be threefold: 1) a clear go/no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan to do so, and 3) a technology demonstration for potential partners. **WEBINAR:** A webinar will be held on the first Tuesday of every month, beginning in August 2011 to answer questions about this program. Details will be posted on the I-Corps website as they become available. **Open October 1, 2011 - December 15, 2011.**

**Advancing Digitization of Biological Collections**
This program seeks to enhance and expand the national resource of digital data documenting existing vouched biological and paleontological collections and to advance scientific knowledge by improving access to digitized information (including images) residing in vouched scientific collections across the United States. **Due October 31.**

**National Estuarine Research Reserve System’s Graduate Research Fellowship Program**
The National Estuarine Research Reserve System’s (NERRS) Graduate Research Fellowship (GRF) Program was established in 1997 to support graduate students interested in coastal and estuarine sciences. By providing stipends, a living laboratory, and a broad network of fellow scientists, the Reserve system aims to encourage and enable talented young scientists to
contribute to the knowledge base, provide the science to support coastal decision-making, and train future coastal scientists and policy-makers. The Graduate Research Fellowship Program's Focus Areas are:

- Nutrient dynamics and/or effects of non-point source pollution and eutrophication;
- Habitat conservation and restoration;
- Biodiversity and/or effects of invasive species;
- Mechanisms of sustaining estuarine ecosystems;
- Economic, sociological, and anthropological research applicable to estuarine ecosystem management.

**Due by November 1.**

**International Collaboration in Chemistry between US Investigators and their Counterparts Abroad (ICC)**

The ICC program will give higher priority to proposed projects in the area of sustainable chemistry. Examples of sustainable chemistry focus areas include but are not limited to: 1) new chemistry that will replace rare, expensive and/or toxic chemicals and nanomaterials with earth abundant, inexpensive and benign chemicals and nanomaterials; 2) new chemistry to economically recycle chemicals that cannot be replaced, such as phosphorus and the rare earth elements; 3) new chemistry to convert non-petroleum based sources of organics to feedstock chemicals; 4) new environmentally friendly chemical reactions and processes that require less energy, water, and organic solvents than current practice. **Preliminary proposal due November 4; full January 11.**

**EPScO R Research Infrastructure Improvement Program: Track-1 (RII Track-1)**

Research Infrastructure Improvement Program: Track-1 (RII Track-1) awards provide up to $4 million per year for up to 5 years to support physical, human, and cyber infrastructure improvements in research areas selected by the jurisdiction's EPScO R governing committee as having the best potential to improve future R&D competitiveness of the jurisdiction. **Due November 4.**

**2011 Environmental Education Sub-Grants**

The Grants Program sponsored by EPA's Office of Environmental Education (OEE), Office of External Affairs and Environmental Education, supports environmental education projects that enhance the public's awareness, knowledge, and skills to help people make informed decisions that affect environmental quality. EPA awards grants each year based on funding appropriated by Congress. Annual funding for the program ranges between $2 and $3 million. **Due November 8.**

**Multidisciplinary University Research Initiative (MURI)**

The MURI program supports basic research in science and engineering at U.S. institutions of higher education that is of potential interest to DoD. The program is focused on multidisciplinary research effort where more than one traditional discipline interact to provide
Rapid advances in scientific areas of interest to the DoD. Detailed description of the topics can be found in Section VIII entitled Specific MURI Topics. **Due November 10.**

**FY2012 Multidisciplinary University Research Initiative (MURI) - For Submission to AIR FORCE**
This MURI competition is open only to U.S. Institutions of higher education, including DoD institutions of higher education, with degree-granting programs in science and/or engineering. To the extent that it is a part of a U.S. Institution of higher education and is not designated as an FFRDC, a University Affiliated Research Center (UARC) or other University Affiliated Laboratory (UAL) is eligible to submit a proposal to this MURI competition and receive MURI funds. **Due November 10.**

**FY2012 Multidisciplinary University Research Initiative (MURI) - For Submission to ARMY**
This MURI competition is open only to U.S. institutions of higher education, including DoD institutions of higher education, with degree-granting programs in science and/or engineering, to the extent that the institution is not designated as an FFRDC, a University Affiliated Research Center (UARC), or other University Affiliated Laboratory (UAL). **Due November 10.**

**Multidisciplinary University Research Initiative (MURI) Office of Naval Research**
The MURI program supports basic research in science and engineering at U.S. institutions of higher education that is of potential interest to DoD. The program is focused on multidisciplinary research effort where more than one traditional discipline interact to provide rapid advances in scientific areas of interest to the DoD. Detailed description of the topics can be found in Section VIII entitled Specific MURI Topics. **Due November 10.**

**NSF Graduate Research Fellowship Program**
The NSF Graduate Research Fellowship Program (GRFP) provides Fellowships to individuals selected early in their graduate careers based on their demonstrated potential for significant achievements in science and engineering. Three years of support is provided by the program for graduate study that is in a field within NSF's mission and leads to a research-based master's or doctoral degree. **Due November 14.**

**Ford Foundation Fellowship Programs**
Through its Fellowship Programs, the Ford Foundation seeks to increase the diversity of the nation’s college and university faculties by increasing their ethnic and racial diversity, to maximize the educational benefits of diversity, and to increase the number of professors who can and will use diversity as a resource for enriching the education of all students. **Due dates November 14 to 17 depending on program.**

- About the Program
- 2012 Predoctoral Program Announcement (pdf)
- 2012 Dissertation Program Announcement (pdf)
- 2012 Postdoctoral Program Announcement (pdf)
- NSF Small Business Technology Transfer Program Phase I Solicitation FY-2012
The Small Business Technology Transfer program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The Small Business Technology Transfer Program (STTR) requires researchers at universities and other non-profit research institutions to play a significant intellectual role in the conduct of each STTR project. (Replaces Document: NSF 10-590). Due November 17.

**Basic Research to Enable Agricultural Development**
The National Science Foundation (NSF) and the Bill & Melinda Gates Foundation (BMGF) are partnering to support a new research program to be administered by NSF. The objective of the BREAD Program is to support innovative basic scientific research designed to address key constraints to smallholder agriculture in the developing world. A significant distinction between BREAD and other NSF programs is that proposals to BREAD must make a clear and well-defined connection between the outcomes of the proposed basic research and its direct relevance and potential application to agriculture in the developing world. The Program's focus is on novel, transformative basic research at the proof-of-concept stage rather than its application or development. Especially encouraged are original proposals that address major constraints to the productivity of crops important to smallholder farmers, or on the development of novel and efficient production practices. Due November 20.

**Interface between Computer Science and Economics & Social Sciences**
The three divisions of CISE and the SES division of SBE seek interdisciplinary research and education projects that develop new knowledge at the Interface between Computer Science and Economics & Social Sciences. Projects should advance knowledge on both sides of the interface. Projects that use known techniques and results from Computer Science or Economics & Social Sciences to advance only one field (either CS or Econ/SS) are not of interest to the program. Submission window: November 21, 2011 - December 06, 2011

**NOAA Sea Grant Community Climate Adaptation Initiative 2011**
NOAA Sea Grant expects to make available up to $1,000,000 for a national competition to fund climate adaptation efforts for FY 2012-2013 as part of an overall plan to enhance climate adaptation in coastal communities. This Federal Funding Opportunity includes information on how to apply for this funding opportunity and criteria for climate adaptation projects requesting a total of up to $100,000 in federal funds. Due November 22.

**DOE Office of Science Early Career Research Program**
The purpose of this program is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by the DOE Office of Science. PDF posted at FedConnect. Due November 29.
**Sustainability Research Networks Competition**
Sustainability Research Networks will engage and explore fundamental theoretical issues and empirical questions in sustainability science, engineering, and education that will increase our understanding of the ultimate sustainability challenge - maintaining and improving the quality of life for the nation within a healthy Earth system. The goal of the Sustainability Research Networks (SRN) competition is to support the development and coalescence of entities to advance collaborative research that addresses questions and challenges in sustainability science, engineering, and education. SRNs will link scientists, engineers, and educators, at existing institutions, centers, networks, and also develop new research efforts and collaborations. Preliminary due December 1 and full April 1.

**National Estuarine Research Reserve Graduate Research Fellowship Program for FY 2012**
The National Estuarine Research Reserve System (NERRS) consists of estuarine areas of the United States and its territories which are designated and managed for research and educational purposes. Each Reserve within the system is chosen to reflect regional differences and to include a variety of ecosystem types in accordance with the classification scheme of the national program as presented in 15 CFR Part 921. Each Reserve supports a wide range of beneficial uses of ecological, economic, recreational, and aesthetic values which are dependent upon the maintenance of a healthy ecosystem. The sites provide habitats for a wide range of ecologically and commercially important species of fish, shellfish, birds, and other aquatic and terrestrial wildlife. Each Reserve has been designed to ensure its effectiveness as a conservation unit and as a site for long-term research and monitoring. As part of a national system, the Reserves collectively provide an excellent opportunity to address research questions and estuarine management issues of national significance. For detailed descriptions of the sites, refer to the NERRS Web site. December 1.

**Small Business Innovation Research Program Phase I Solicitation FY-2012**
The SBIR program solicits proposals from the small business sector consistent with NSF's mission. The program is governed by Public Law 112-17. 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 four broad topics are:
- Biological and Chemical Technologies (BC)
- Education Applications (EA)
- Electronics, Information and Communication Technologies (EI)
- Nanotechnology, Advanced Materials, and Manufacturing (NM)
Due December 2. Submittal window Nov. 2 to Dec. 2.
Fall 2012 EPA Greater Research Opportunities (GRO) Fellowships For Undergraduate Environmental Study
The U.S. Environmental Protection Agency (EPA), as part of its Greater Research Opportunities (GRO) Fellowships program, is offering Greater Research Opportunities (GRO) undergraduate fellowships for bachelor level students in environmental fields of study. Subject to availability of funding, and other applicable considerations, the Agency plans to award approximately 40 new fellowships by July 30, 2012. Eligible students will receive support for their junior and senior years of undergraduate study and for an internship at an EPA facility during the summer of their junior year. **Due December 12.**

FY11 Vision Research Program Hypothesis Development Award
The Vision Research Program (VRP) was established in fiscal year 2009 (FY09) to provide support for scientifically meritorious research. Investigators continue to assess new technologies and therapies to address the ocular issues of service members. In order to implement therapeutic strategies to prevent or treat visual problems common to combat service members, the military wants to discover, develop and validate compounds and strategies. **Open until December 15, 2011.**

FY11 Vision Research Program Investigator-Initiated Research Award
The Vision Research Program (VRP) was established in fiscal year 2009 (FY09) to provide support for scientifically meritorious research. Investigators continue to assess new technologies and therapies to address the ocular issues of service members. In order to implement therapeutic strategies to prevent or treat visual problems common to combat service members, the military wants to discover, develop and validate compounds and strategies. **Open until December 15, 2011.**

Fiscal Year 2012 Office of Naval Research Young Investigator Program (YIP)
The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR's Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or tenure-track-equivalent academic appointment and for FY2012, have begun their first appointment on or after 01 November 2006, and who show exceptional promise for doing creative research. **Due December 22.**

2011 Broad Agency Announcement
The U.S. Army Engineer Research and Development Center (ERDC) has issued a BAA for various research and development topic areas, including 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. **Open until January 1, 2012.**

**Geoinformatics**
The Division of Earth Sciences (EAR) will consider proposals for the development of cyberinfrastructure for the geosciences (Geoinformatics). EAR seeks the development and implementation of enabling information technology with impacts that extend beyond an individual investigator or small group of investigators and that facilitates the next generation of geosciences research. Proposals to this solicitation may seek support for community-driven development and implementation of databases; tools for data integration, interoperability, and visualization; software development and code hardening; and data-intensive/new computing methodologies that support the enhancement of geosciences research and education activities. Collaboration with computational scientists and the development of public/private partnerships are strongly encouraged. **Due January 13.**

**Ocean Sciences Postdoctoral Research Fellowships**
The Division of Ocean Sciences (OCE) offers **Postdoctoral Research Fellowships** to increase the participation of under-represented groups in the ocean sciences. Awards are intended to support the individual fellows' research and increase the diversity of the U.S. ocean sciences research community. In this solicitation, the term under-represented groups will refer to and include the following: women, persons with disabilities, African Americans, Hispanics, Native Americans, Alaska Natives, and Pacific Islanders. Fellowships are awards to individuals, not organizations, and are administered by the fellows. **Due January 13.**

**Digital Humanities Implementation Grants**
This program is designed to fund the implementation of innovative digital-humanities projects that have successfully completed a start-up phase and demonstrated their value to the field. The program can support innovative digital-humanities projects that address multiple audiences, including scholars, teachers, librarians, and the public. Applications from recipients of NEH's Digital Humanities Start-Up Grants are welcome. **Due January 24.**

**Fundamental Research Program for Industry/University Cooperative Research Centers**
The National Science Foundation encourages the submission of industry-defined fundamental research proposals from NSF Industry/University Cooperative Research Centers (I/UCRC) in areas of shared value to both centers and their members. Industry-defined fundamental research broadens the scientific and engineering understanding beyond the more specific applied research interests of the industries traditionally served by the I/UCRC. Industry participation extends the scope and horizon of center research projects so as to drive innovation with industrially relevant fundamental research projects. **Due February 1.**
**Camille Dreyfus Teacher-Scholar Awards Program**
The Camille Dreyfus Teacher-Scholar Awards Program supports the research and teaching careers of talented young faculty in the chemical sciences. Based on institutional nominations, the program provides discretionary funding to faculty at an early stage in their careers. Criteria for selection include an independent body of scholarship attained within the first five years of their appointment as independent researchers, and a demonstrated commitment to education, signaling the promise of continuing outstanding contributions to both research and teaching. The Camille Dreyfus Teacher-Scholar Awards Program provides an unrestricted research grant of $75,000. **Due February 12, 2012.**

**Supporting Universities to Partner Across the Pacific**
The purpose of this APS is to support partnership between institutions of higher education in Indonesia and the United States. Component I of the APS is directed toward partnerships which support fields of applied science underlying USAID Indonesia's strategic objectives in health, economic growth and the environment; Component II is to support university partnerships, supporting science, technology and math education at the secondary level, by creating model secondary science and technology schools. **Due March 16.**

**Bridges to the Doctorate Program (R25)**
This FOA issued by the National Institute of General Medical Sciences of NIH encourages Research Education Grant (R25) applications from institutions that propose to increase the pool of masters degree students from underrepresented backgrounds who go on to research careers in the biomedical and behavioral sciences, and who are trained and available to participate in NIH-funded research. This initiative promotes partnerships/consortia between colleges or universities granting a terminal masters degree with institutions that offer the doctorate degree. **Due May 25, 2012**

**DARPA-BAA-11-65: Defense Sciences Research and Technology, Response Date 8/09/2012**
The mission of the Defense Advanced Research Projects Agency’s (DARPA) Defense Sciences Office (DSO) is to pursue and exploit fundamental science and innovation for National Defense. Therefore, DSO is soliciting proposal abstracts and full proposals for advanced research and development in a variety of enabling technical areas ([more](#)). **Due August 9.**

**Small University Grants Open 5-Year Broad Agency Announcement**
Open to August 26, 2015

**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.**

**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.
What We Do--

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

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

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

- Large proposals - Assistance in planning and developing institutional and center-level proposals (e.g., NSF ERC, STC, IGERT, STEP, Dept of Ed GAANN, DoD MURI, etc.)

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

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

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

Note to Potential Contributors

If you have an idea for an article related to academic research development and grant writing you would like to write for Research Development & Grant Writing News email co-publisher Lucy Deckard with a query proposal of up to ~75 words. Our goal is to publish two articles each issue from faculty, researchers, STEM educators, and research development professionals, among others, to gain a diversity of perspectives related to all areas of academic grant writing.

$100 honorarium paid for published articles

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