NSF Update: Investing in the Ideal University

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By Mark Marin

The National Science Foundation plans to fund more projects that emphasize two areas it believes encourage academic reform: the integration of research and education, and interdisciplinary research.

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When the National Science Foundation announced in late 1996 that reviewers in its merit review system would receive a new set of criteria upon which to base their decisions about who receives research funding, university researchers nationwide wondered what this would mean to their research and their universities. NSF officials repeatedly expressed their belief to encourage academic reform, and so is emphasizing in its strategic plan: the integration of research and education, and interdisciplinary research. This change in merit review criteria came partly as a result of a congressional push in the early 1990s to force federal agencies such as NSF to make several changes in how they conduct business. The domestic discretionary budget (where engineering and science research, development, and education programs are funded) was declining; universities could no longer rely on the steady increase in federal funding to which they were accustomed during the nearly 50 years of the Cold War. While the budget was shrinking, Congress began demanding greater accountability for projects supported by federal agencies. With the passing of the 1993 Government Performance and Results Act (GPRA) and the Clinton Administration's National Performance Review (NPR) program (best remembered as Vice-President Gore's fight against government waste), the government demanded that its agencies find ways to do better work at lower cost.

NSF, in preparation for GPRA compliance, which required each federal agency to create a five-year strategic plan by September 1997, issued a series of reports outlining various changes, including the one on merit review criteria changes. The new criteria, which took effect October 1, 1997, replaced the previous four criteria with a set of only two. The old criteria asked reviewers to consider: 1) research performer competence; 2) intrinsic merit of the research; 3) utility or relevance of the research; and 4) effect on the infrastructure of engineering and science.

The new criteria simply ask: 1) What is the intellectual merit and quality of the proposed activity? and 2) What are the broader impacts of the proposed activity? NSF officials say these criteria are clearer and easier for reviewers to understand, and therefore should make the entire merit review system more efficient.

They also claim that the larger breadth of the new questions gives program directors and reviewers the ability to fund more projects that fall under two areas NSF officials say these criteria are clearer and easier for reviewers to understand, and therefore should make the entire merit review system more efficient.

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What Should Researchers Seeking Funds Keep in Mind?

There are, of course, no surefire ways to guarantee funding for a project, but it seems safe to conclude that if a project includes a linkage between discovery and learning, or if it addresses a problem at the crossroads of disciplines, it stands a better than average chance of acceptance.

With regard to linking discovery and learning, Mary Hanson, head of NSF's Media and Publications Section, says that, "educational reform, specifically an effort to make research part of a whole [educational process] rather than a separate entity, is what is needed in these times of lower budgets and increased international competition. We need to ensure that we are training the next generation of researchers so that groundbreaking research is being done in the future as well as today. We're trying to nudge engineering and science researchers in this direction; we want to fund their projects, but we want them to seriously think about integrating the educational and research aspects as much as possible. This is what's important to us, and if they're smart, they'll do it."

Cristina Gabriel adds that "those seeking NSF funding should become as familiar as they can with how the process works. They should communicate with the program officers closest to their areas of expertise, and preferably visit with NSF staff in all the relevant funding programs to discuss their long-term research directions and proposal concepts. They should volunteer to serve as reviewers, especially on a panel where they can meet others in related fields. They should make sure that their university encourages faculty members to compete for program officer positions and allows them to take two to four-year leaves of absence to serve their colleagues" by working at NSF in Arlington, Virginia.

While NSF's new merit review criteria may not be revolutionary, they do reflect NSF's recent changes in priorities. NSF wants to move to the forefront of educational reform and cutting-edge, problem-solving research, and by offering funding to projects that incorporate those ideals, it is trying to bring the nation's universities along with it.

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