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RESEARCH REPORT

National Science Foundation Now Funding More High Risk Projects

The National Science Foundation (NSF) is the second largest source of federal funding for colleges and universities. For federal fiscal year 2001, the NSF will receive \$4.4 billion, a \$529 million increase over FY2000. With regard to its funding philosophy, the agency has always been known as being conservative in its approach to how it awards the research projects it supports. In May of 1999 though, this philosophy began showing signs of change.

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Lobbyist Watch: College Lobbyists Get Help From Aerospace Industries Group

Colleges are getting some help in lobbying for research funds from an industry that reaches for the stars.

The Aerospace Industries Association, a trade organization representing companies that build spacecraft, will ask the new administration to spend an additional \$50-billion on space research over the next five years. During a recent meeting at the group's Washington offices, industry leaders said pressing for more research funds will be a key

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New PHS Policy on Instruction in the Responsible Conduct of Research (RCR)

On December 1, 2000, the Office of Research Integrity (ORI) issued the final version of the Public Health Service (PHS) Policy on Instruction in the Responsible Conduct of Research (RCR). This new policy has been in the works for a number of years and requires that all institutions receiving research funds from the Department of Health and Human Services (DHHS) provide training on a variety of research ethics issues. This requirement extends to all

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Research News

National Science Foundation Now Funding More High Risk Projects

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For several years, external review panels have urged the NSF to offer larger awards in the hope of receiving more applications from the best researchers in the country. Finally, in May of 1999, Rita R. Colwell, the agency's director, urged NSF administrators to heed the advice of these reviewers, who were telling the agency to fund a larger number of cutting-edge proposals.

Shortly thereafter, NSF's chemistry division began requiring review panels to assess the "risk" of each proposal, based on the odds for success. The foundation hopes to use this information to determine whether high-risk applications are being given greater consideration. Early reviews indicate that the administrators in this division are indeed taking more chances. According to Morris L. Aizenman, senior science associate in the NSF math and physical sciences area, projects showing higher risk have been more likely to be funded than lower-risk projects over the past year.

The agency's new information-technology research program, which made awards for the first time in September of 2000, exemplifies the new approach. In a competition designed to attract large-scale proposals, the program awarded 62 grants with an average size of \$1 million per year for up to 5 years. In a competition designed for "small awards", this same program awarded 148 grants with an average award amount of \$166,000 per year. By comparison, the average grant awarded by NSF in federal fiscal year 1999 was \$92,788 with an average duration of 2.7 years.

This more aggressive posture on the part of NSF means that it is now spending millions of dollars on promising, but wholly experimental projects. The largest grant awarded in the information-technology competition for large-scale proposals was made jointly to the Universities of Florida and Chicago in the amount of \$11.9 million. This project, called the Grid Physics Network, is attempting to develop a new computer data processing system with one million times the power and speed of today's computers.

Another project with a value of \$4.6 million is for the development of a new generation of software infrastructure, which could replace database systems as we currently know them. The goal of this project, headed up by the University of Wisconsin at Madison, is to create a system that would analyze and sift through every piece of online digital data.

NSF officials understand that the foundation's reputation for conservatism will take some time to change. "It may take a couple of years for people submitting proposals to know that we are looking for more revolutionary ideas," says Ruzena Bajcsy, director of the agency's computer and information-sciences group.

(12/9/00, portions of the above have been excerpted from the Chronicle of Higher Education, 12/1/00 edition)∇

Lobbyist Watch: College Lobbyists Get Help From Aerospace Industries Group

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goal in the coming year.

The group says colleges are well-suited for basic research, such as developing materials that could lead to lighter aircraft. It also hopes colleges will explore new propulsion systems. "So much of the research we need is not product development, but very basic research, which universities do", says Bruce Mahone, director of space policy for the association.

The National Aeronautics and Space Administration received \$14-28-billion for the 2001 fiscal year, a \$675-million increase. It was NASA's first increase in seven years.

New PHS Policy on Instruction in the Responsible Conduct of Research (RCR)

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persons involved in scientific studies, including university investigators, grant administrators, lab technicians, and students, as determined by each institution in accordance with the PHS definition of "research staff".

The policy will require instruction in nine core areas determined by PHS to be significant in conducting

responsible research and ensuring integrity of the research record. The nine core instructional areas are:

1. Data acquisition, management, sharing, and ownership
2. Mentor/trainee responsibilities
3. Publication practices and responsible authorship
4. Peer review
5. Collaborative science
6. Human subjects¹
7. Research involving animals
8. Research misconduct
9. Conflict of interest and commitment

¹Once this new policy is fully implemented as indicated below, the recent requirement for education in the protection of human subjects, effective October 1, 2000, will be superseded by this policy.

This new policy will be phased in and implemented during the next 2 years. By October 1, 2001, each institution that applies for or receives PHS funding for research or research training must provide assurance that it has a program of instruction that complies with this policy, including a written description documenting the program. By October 2, 2003, all research staff at each institution shall have received a program of instruction in the responsible conduct of research.

The Office of Research Administration (ORA) is attempting to identify ways to prepare for implementation of this new policy for its research staff working on PHS-supported projects. Once the picture becomes clearer, an announcement will be made on the ORA web site and plans will be made for making the required instruction available to the campus community. In the meantime, researchers and their staff are encouraged to become familiar with the requirements set forth in this policy by visiting the ORI web site at <http://ori.dhhs.gov/multimedia/acrobat/rcrploicy.pdf>. A frequently asked questions (FAQ) web site about the implementation requirements of this policy is available at <http://ori.dhhs.gov/multimedia/acrobat/rcrfaq.pdf>.

Please address any questions you may have to ORA at resadm@wpi.edu.

NSF Finalizes FY2001 Funding

In a December 18, 2000 Dear Colleague Letter, the National Science Foundation (NSF) announced that the VA, HUD, and Independent Agencies appropriations legislation for FY2001 was signed by the President. The legislation provides a 13.6% or \$510 million increase for

NSF, the largest dollar increase ever. For specific major initiatives at NSF, the appropriations include:

- \$150M for Nanoscale Science and Engineering (NSE), an increase of \$52.7M,
- \$215M for Information Technology Research (ITR), an increase of \$125M, and
- \$75M for Biocomplexity in the Environment (BE), an increase of \$25M.

The Dear Colleague Letter goes on to describe specific targeted research areas for the Engineering Directorate at NSF under its Information Technology Research (ITR) program solicitation (NSF 00-126). These areas are Engineering Simulations, Process Modeling for the Service Sector, and Tetherfree Communications and Networking. Detailed definitions of relevant research areas may be found in the sections of the announcement on Applications in Science and Engineering and Scalable Information Infrastructure at the ITR web site located at <http://www.itr.nsf.gov>. The ITR announcement itself, which was disseminated to department heads on September 14, 2000, is available at <http://www.nsf.gov/cgi-bin/getpub?nsf00126>.

Besides responses to general Frequently Asked Questions (FAQs) at the ITR web site, there is also a separate Panel FAQ section for those who have an interest in volunteering as a candidate panelist for reviewing proposals in the ITR competition. Questions about the ITR program may be addressed to the individual Engineering Directorate contacts listed in the announcement. ▽

Funding for Distance Learning

Last month, Congress approved the \$30 million request by the Department of Education (DED) for its distance-education program called Learning Anytime Anywhere Partnerships (LAAP). This amount is up \$6 million from FY2000 and up \$10 million from the year before. Out of the current year appropriation, DED plans to award \$15 million in new grants to institutions for experimentation with educational technology to create innovative distance-education programs. The application process for the LAAP program is still under development by DED and the Office of Research Administration will notify appropriate departments when the program announcement is released.

In another area of the government, the U.S. Army has announced that the consulting firm

PricewaterhouseCoopers (PWC) will lead a \$453 million project to deliver distance-education to soldiers around the world. As the "integrator" for the project, PWC has created an initial team of 29 academic institutions and 10 companies to bring the project together. The good news for other academic institutions wishing to get involved in this activity is that PWC plans to expand the pool of universities in the future. To this end, PWC is already finalizing deals with other institutions, including the University of Massachusetts. ▽

Local News and Events

Proposal Writing Workshop Coming to WPI

The Office of Research Administration is pleased to announce that Dr. Robert A. Lucas from the Institute for Scholarly Productivity will be visiting WPI to conduct an "An Introduction to Proposal Writing" workshop on Friday, April 6, 2001. Dr. Lucas, the author of more than 60 papers, chapters and articles, is a teacher, writer, research administrator, and columnist. His book, *The Grants World Inside Out*, is a humorous and true reflection on the world of sponsored programs.

This workshop is scheduled for 6 hours and will cover the how-to's on topics such as:

- identifying fundable ideas,
- locating likely sponsors,
- building a grant record incrementally,
- tailoring the initial approach to fit the sponsor,
- drafting a concept paper/foundation inquiry letter,
- developing a strong and convincing proposal,
- dealing positively with reviewers' comments,
- writing blocks, weak areas in proposals, where to get help, and much more!

The workshop will be held in Room 301 of the new Campus Center from 8:30 AM to 3 PM, including a short break for lunch. Because space is limited, potential attendees will be asked to make a firm commitment to attend. A combined informational flyer and registration form is currently being developed and will be distributed on or around February 15, 2001. ▽

Plans for Sponsored Project Administration Workshop Series

The Office of Research Administration (ORA) is developing plans to conduct a series of workshops on pertinent sponsored project topics. This series will be implemented in the form of elective modules, which will be offered either during the summer months or throughout the academic year. While actual implementation of this workshop series will be contingent upon available resources, we expect that at some of the modules may be available by the Fall of 2001. In the future, we hope to offer these modules as self-study courses via the ORA web site. Your help is needed, though, to tailor this program to best meet your specific needs. Please review the following listing of potential workshop offerings and feel free to comment or suggest additional topics of interest to you.

Module 1: Funding Opportunities and Reference Materials

This workshop will provide an overview for faculty interested in identifying appropriate sources of funding using a variety of methods, including Sponsored Programs Information Network (SPIN) and the associated SMARTS and GENIUS features to assist in matching faculty interests and providing electronic notification when matches are made, GrantsNet (Bioengineering-oriented funding opportunities), The Grant Advisor Plus, Sciencewise, Commerce Business Daily (CBDNet), Federal Register, and ORA Periodicals (Federal Grants & Contracts Weekly, Grant Advisor).

Module 2: The Regulatory Environment for Sponsored Projects

Information you need to know, but were hesitant to really learn about. This workshop will provide information about key Federal regulations that directly influence how you submit proposals, how awards are administered, and your responsibilities as an investigator. Topics will include OMB Circular A-21 Cost Principles for Educational Institutions, OMB Circular A-110 Administrative Requirements, OMB Circular A-133 Audits of Institutions of Higher Education, Federal Acquisition Regulation (for those times you receive contracts instead of grants), and other important regulations & guidelines.

Module 3: The Proposal Submission Process at WPI

Writing a quality proposal can be a daunting task all by itself. Getting it reviewed, authorized, and submitted is another story. Learn about the proposal submission

process at WPI and find out who is responsible for what, including suggested lead times to ensure your proposal deadline can be met, services offered by the Office of Research Administration (ORA), what ORA looks for when reviewing a proposal, required internal forms and how to complete them, follow up activities, negotiation of awards, etc.

Module 4: Facilities & Administrative (Indirect) Costs Explained

If the concept of indirect costs (now called Facilities & Administrative Costs by the government) is a mystery to you, you're not alone! This workshop will offer insights into this often misunderstood subject and explain what indirect costs really are and how they are calculated, why indirect costs are necessary for the success of sponsored projects, how indirect costs are calculated in your budgets using simplified examples, what's in it for you and your department (the news is not all bad!), and how WPI's indirect cost rate stacks up against rates at other universities.

Module 5: Award Conditions and Administrative Issues

This discussion will touch upon a variety of issues near and dear to the heart of every investigator and provide problem resolution strategies for managing awards, including when can funds be rebudgeted and how to do it, correcting errors on awards by using cost transfers, investigator responsibilities (project oversight, expense approval, programmatic reporting), who's award is it anyway, and your rights to what you create.

Module 6: Subcontracting Issues:

If you plan to have a colleague at another institution (university or otherwise) collaborate on your project, learn about what's required in the process of "subbing out" a portion of your award, including proposal submission requirements, creating and negotiating an appropriate sub-award - how is it done and why it can take so long, your responsibilities as principal investigator of the "prime" award and working toward the creation of lasting relationships with faculty at other institutions.

Module 7: Intellectual Property Issues

This session covers a variety of topics of interest to investigators hoping to make an invention or other important discovery. Learn what should happen, what can happen, and what often does happen when intellectual property issues are not addressed, including why rights to intellectual property must be assigned to WPI, the Bayh-Dole Act and the protections it offers, controlling what you create, what you must disclose under the Freedom of Information Act (the answer may surprise you!), and access to and retention of the data you create

Module 8: Legal Issues

Learn about a variety of legal issues surrounding the negotiation and acceptance of awards (especially contracts) from Federal, industrial, and foundation sponsors and how these issues can impact you personally, including what rights your sponsors have in your project's findings, indemnification against product and other liabilities, personal liability, confidentiality, insurance, and other issues, what happens when your sponsor terminates your award, and how long you can be legally bound by the terms of your award.

Module 9: Compliance Issues and Audits

This workshop will provide an overview of important compliance issues and offers an explanation of what it takes to survive an audit, including what compliance is and how we are "locked" into being compliant after accepting an award, using human subjects and/or animals in research, using hazardous materials, creating hazardous waste, and laboratory safety issues, recent Federally-mandated education requirements for "players" and what an audit is really like (examples of lessons learned from other institutions).

Module 10: Internal Funding Opportunities at WPI

This session will help you understand the various types of funding supported by the University and how to get involved in getting it, including the mission of the Research Development Council (RDC) award process, the Indirect Costs Incentive Fund, and other options for internal support. ▽

WPI Millennium Trivia

Just when you thought you wouldn't hear any more about the old or new millennium, here comes an Office of Research Administration announcement of some noteworthy proposal and award trivia.

Old Millennium

Last Proposal - The last proposal of the old millennium, entitled "Advanced Modeling of Multiphase Flow Problems (Phase III: Vortex-Based Large Eddy Simulations of Three-Dimensional Multiphase Flows in Pipes), was submitted by Prof. Gretar Tryggvason in Mechanical Engineering on Thursday, December 21, 2000 to Chevron Petroleum Technology Co.

Last Award - On Thursday, December 28, 2000, an award from the University of Colorado at Boulder was received to provide continuation support to Prof. Alex

Zozulya in Physics for his research project on "Atom Beam Splitters".

New Millennium

First Proposal - the first proposal submitted in the new millennium was by Prof. Gretar Tryggvason in Mechanical Engineering. This proposal, entitled "Computational Modeling of the Effect of Secondary Forces on the Phase Distribution in Dispersed Multiphase Channel Flows" was sent to NASA on Wednesday, January 3, 2001.

First Award - Prof. Homer Walker in Mathematical Sciences is the recipient of the new millennium's first award. This award was received from Sandia National Laboratories on Monday, January 8, 2001 for a project entitled "Nonlinear Solvers Research and Short Course".

Congratulations to all on these not-so-trivial accomplishments! ▽

Final Newsletter Issue

Due to a shifting of priorities in response to increases in proposal activity, contract negotiations, and currently available resources, The Office of Research Administration (ORA) regrets that it will no longer be able to provide this newsletter until further notice. We hope to publish this document again at some point in the future.

Proposal and Award Activity Through December 31, 2000

Below is a summary of proposal and award activity for the first half of fiscal year 2001.

	FY2001	FY2000	Difference	Change %
Number of Proposals Submitted	121	88	33	37.5%
Dollar Volume of Proposals	\$25,106,282	\$21,653,513	\$3,452,769	15.9%
Number of Awards Received	51	40	11	27.5%
Dollar Volume of Awards	\$3,841,282	\$2,786,650	\$1,054,632	37.8%

Upcoming Deadlines

If you are interested in any of the following programs, please contact the Office of Research Administration (ORA) and we will be happy to provide you with a hard copy of the announcement or the web site address.

<u>Date</u>	<u>Sponsor</u>	<u>Program Name</u>
02/15	Nat'l. Council for Eurasian & East European Research	National Research Competition
02/21	ARI Army Research Grants	Basic Research in the Behavioral and Social Sciences
02/28	DOE	Steel Industry Research Challenge
03/01	NEH	Seminars & Institutes (Education Programs)
	NSF	Advanced Computational Research
	US Institute of Peace	Unsolicited Grants Program
	Tinker Foundation	Institutional Grants (Policy & Governance Issues)
03/12	NSF	Biophotonics Partnership Initiative II
03/14	DOE	Nanoscale Science, Engineering & Technology
03/16	DOE Idaho Operations	Metalcasting Industries of the Future
03/19	NSF	Information Technology Workforce (ITW)
03/20	DOE	Robotics & Intelligent Machines (RIM)
03/23	NSF	Quantitative Systems Biotechnology
03/29	DOE	Human Genome Program: Ethical, Legal & Social Implications
	NSF	Biocomplexity in the Environment
03/30	NSF	Program for Gender Equity in Science, Math, Engineering & Technology (SMET)
04/01	Hewlett Foundation	Conflict Resolution Program
	Whitaker Foundation	Biomedical Engineering Research Grants
04/15	NEH	Humanities Focus Grants
04/16	National Research Council	Collaboration in Basic Science & Engineering (COBASE) - Central Europe & Eurasia

Proposals may be submitted at any time to the following programs:

Robert Wood Johnson Foundation	Changes in Health Care Financing and Organization
Ford Foundation	Education, Media, Arts, Culture
MacArthur Foundation	Global Security and Sustainability
Russell Sage Foundation	Research in Social Science