

May 2008 – Grant Opportunities

Dear Sciences Faculty Members –

Here is our May 2008 listing of grant opportunities for faculty members in Science. All of these notices are posted as PDF file on the Office of Research and Economic Development webpage on the Research Funding webpage (<http://www.research.msstate.edu/funding/>).

Please let my office know if we can help in any way with grant proposals for these or other opportunities.

1. National Science Foundation – Mathematical Sciences Infrastructure Programs
(DEADLINE – December 31, 2008)

Synopsis – The Infrastructure Program provides support for activities that differ from the research projects supported by the disciplinary programs of the Division of Mathematical Sciences. These include working research sessions, such as conferences, symposia, colloquia, and special years, as well as training programs, such as grants for broadening education in the mathematical sciences or increasing the number of individuals in disciplines that are based in the mathematical sciences.

For More information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=6203>

2. National Science Foundation – Computational Mathematics
(DEADLINE – December 4, 2008)

Synopsis – Supports mathematical research in areas of science where computing plays a central and essential role, emphasizing algorithms, numerical methods, and symbolic methods. The prominence of computation in the research is a hallmark of the program. Proposals ranging from single-investigator projects that develop and analyze innovative computational methods to interdisciplinary team projects that not only create new mathematical and computational techniques but use them to model, study, and solve important application problems are encouraged.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=10635>

3. National Science Foundation – Theoretical Physics
(DEADLINE – September 24, 2008)

Synopsis – Supports the development of qualitative and quantitative understanding of fundamental physical systems, ranging from the most elementary constituents of matter through nuclei and atoms to astrophysical objects and the cosmos. This includes formulating new approaches for theoretical, computational, and experimental research that explore the fundamental laws of physics and the behavior of physical systems;

formulating quantitative hypotheses; exploring and analyzing the implications of such hypotheses analytically and computationally; and, in some cases, interpreting the results of experiments. Support is given for research and conferences in the following categories: elementary particle physics; nuclear physics; atomic, molecular, optical, and plasma physics; astrophysics and cosmology; gravitational physics, and a broad spectrum of topics in mathematical physics, described below. The effort also includes a considerable number of interdisciplinary grants. In addition, the program supports infrastructure activities such as short- and long-term visitor programs, workshops, and research centers involving the participation of external scientists from universities, national laboratories, and industry, as well as graduate students and postdoctoral fellows. Information for Principal Investigators

The categories listed above have separate Program Directors. These personnel are listed in the MPS/PHY Staff Directory. The names and descriptions are given below:

Atomic, Molecular, Optical, and Plasma Theory The Atomic, Molecular, Optical and Plasma Theory program supports research in all areas of atomic and molecular structure, electron and atomic collisions, time-dependent interactions with atoms and molecules, quantum optics, and ultracold phenomena in Bose and Fermi gases.

Nuclear Theory The Nuclear Theory program encompasses the structure and reactions of nuclei and of hadrons in few-nucleon and nuclear environments, and the quark/gluon substructure expressed by QCD. Thrusts include applications to the experimental programs at facilities such as RHIC and the Jefferson Laboratory and to astrophysical phenomena.

Elementary Particle Theory The Elementary Particle Theory program encompasses different theoretical tools for understanding the interaction of elementary particles at different energy scales. These include String Theory, Quantum Field Theory, Lattice Field Theory, Effective Field Theories, and Phenomenology based on the above theoretical tools. The program supports both formal string theory as well as string theory inspired model building. Predictions for upcoming experiments at the LHC involve Supersymmetric Model building, Grand Unified Theories, as well as high order calculations in the Standard Model (of strong weak and electromagnetic interactions) to sort out what new physics might be discovered at the next generation of accelerators. High precision simulations of QCD processes using lattice gauge theory are also a crucial ingredient for understanding present and future experiments at various colliders. Certain aspects of formal string theory are supported in Mathematical Physics.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=10669>

4. National Science Foundation – Joint DMS/NIGMS Initiative to Support Research in the Area of Mathematical Biology
(DEADLINE – October 1, 2008)

Synopsis – The Division of Mathematical Sciences in the Directorate for Mathematical and Physical Sciences and the National Institute of General Medical Sciences at the National Institutes of Health plan to support research in mathematics and statistics related to mathematical biology research. Both agencies recognize the need and urgency for additional research at the boundary between the mathematical sciences and the life sciences. This competition is designed to encourage new collaborations at this interface, as well as to support existing ones.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=10967>

5. Department of Health and Human Services – Large-Scale Collaborate Project Awards
(DEADLINE – June 17, 2010)

Synopsis – The National Institute of General Medical Sciences (NIGMS) re-announces the program of large-scale collaborative project awards (glue grants), last issued as PAR-04-128 in July, 2004. These awards are intended to solve critical, complex biological problems within the mission of NIGMS by supporting a team of independently funded investigators to synergize and integrate their research efforts. -A phase I award consists of \$50,000 in direct costs for up to one year, for project planning. -Because the nature and scope of the proposed research will vary from phase II application to application, it is anticipated that the size and duration of each award will also vary. The maximum phase II award is \$25 million in direct costs over a five-year period; applications for fewer years may not exceed an average annual direct cost of \$5 million. Direct costs for one year may not exceed \$7 million. This high level of resources is intended to allow investigators to form a consortium to solve a research problem by using a comprehensive and highly integrated approach. Indirect costs for consortium arrangements are not counted toward the maximum amounts.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=14912>

6. Department of Health and Human Services – Grants for Injury Control Research Centers (R49)
(DEADLINE – September 2, 2008)

Synopsis – CDC’s Procurement and Grants Office has published a funding opportunity announcement entitled, “Grants for Injury Control Research Centers (R49)” Approximately \$5,400,000 will be available in fiscal year 2009 to fund 6 awards. The purposes of this announcement are to 1) solicit applications from new or existing injury centers to conduct injury and violence prevention research, 2) build the scientific base for the prevention and control of injuries and violence, 3) integrate professionals from a wide spectrum of disciplines to perform injury and violence prevention research, 4) encourage research that involves intervention development and testing and intervention adoption and maintenance methods.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=16978>

7. Department of Health and Human Services – Modeling of Infectious Disease Agent Study Research Projects (U01)
(DEADLINE – July 17, 2008)

Synopsis – This Funding Opportunity Announcement (FOA) issued by the National Institute for General Medical Sciences, National Institutes of Health, solicits Cooperative

Agreement (U01) applications from institutions/organizations that propose to provide the U.S. scientific and public health communities better resources, knowledge, and tools to improve their ability to identify and prevent the spread of diseases resulting from the emergence or intentional release of pathogens and their products. Research projects will become part of the Models of Infectious Disease Agent Study (MIDAS) Network. This FOA is a reannouncement of a prior FOA (RFA GM-05-011). The MIDAS Network will consist of a centralized information technology resource (announced separately), a Centers of Excellence component (announced separately) and, with this announcement, the continuation of a network of multidisciplinary scientists conducting computational and mathematical research to improve the ability to detect, control, and prevent emerging infectious diseases caused by naturally occurring or intentionally released pathogens, including those relevant to biodefense.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17484>

8. Department of Health and Human Services – SBIR E-learning for HAZMAT and Emergency (SBIR R43/R44)
(DEADLINE – July 25, 2008)

Synopsis – This funding opportunity announcement (FOA) solicits Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) that propose to further the development of Advanced Technology Training (ATT) Products for the health and safety training of hazardous materials (HAZMAT) workers, emergency responders, and skilled support personnel. These products would complement the goals and objectives of the Worker Education and Training Program (WETP). The major objective of the NIEHS/WETP is to prevent work related harm by assisting in the training of workers in how best to protect themselves and their communities from exposure to hazardous materials. There is a need to ensure that learning and training technologies are further developed, field tested and applied to real world situations. It is the intent of this solicitation to support the development of products to support e-collaboration, e-teaching, e-certification, and e-learning in safety and health training for workers engaged in hazardous materials response. The financial support for this initiative comes directly from NIEHS Worker Education and Training Branch SBIR funds. This FOA is for SBIR applications only. Mechanism of Support. This FOA will utilize the SBIR (R43/R44) grant mechanisms for Phase I, Phase II, and Fast-Track applications. Funds Available and Anticipated Number of Awards. The estimated amount of funds available for support of 4 projects awarded as a result of this announcement is \$400,000 for fiscal year 2009. Future year amounts will depend on annual appropriations. Budget and Project Period. For this funding opportunity, budgets up to \$100,000 total costs per year and time periods up to 1 year for Phase I may be requested. Budgets up to \$200,000 total costs per year and up to 2 years may be requested for Phase II. Eligible Institutions/Organizations: Only United States SBCs are eligible to submit SBIR applications. A SBC is one that, on the date of award for both Phase I and Phase II funding agreements, meets ALL of the criteria as described in Section III. Eligible Project Directors/Principal Investigators: Individuals with the skills, knowledge, and resources necessary to carry out the proposed research are invited to work with their organization to develop an application for support. Individuals

from underrepresented racial and ethnic groups as well as individuals with disabilities are always encouraged to apply for NIH support. On an SBIR application, the PD/PI must have his/her primary employment (more than 50%) with the SBC at the time of award and for the duration of the project. Number of PDs/PIs. More than one PD/PI, (i.e., multiple PDs/PIs), may be designated on the application. Number of Applications: Applicant SBCs may submit more than one application, provided each application is scientifically distinct.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17740>

9. National Science Foundation – Theoretical Atomic, Molecular, and Optical Physics
(DEADLINE – September 24, 2008)

Synopsis – The Theoretical Atomic, Molecular, and Optical Physics (TAMOP) program supports theoretical and computational research in all areas of atomic structure, the molecular structure of small molecules, electron, and atomic collisions, photoionization and photodetachment of electrons from atoms and small molecules, time-dependent interactions with atoms and small molecules, quantum optics, ultracold phenomena in Bose and Fermi gases, and quantum information. Investigations primarily directed toward a theoretical understanding of larger molecules or condensed matter systems should be directed toward the appropriate programs in the Division of Chemistry or the Division of Materials Research.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17741>

10. Department of Defense – Electronics Discovery and Invention (D&I)
(DEADLINE – August 1, 2008)

Synopsis – The goal of the electronics program is to develop and transition affordable, high performance Radio Frequency (RF) electronics that will provide a decisive edge to the warfighter. The program encompasses RF research, design, modeling, fabrication, and testing of devices, integrated circuits, and multi-chip assemblies that span digital, analog, microwave and millimeter wave technologies. The technology developed cannot be obtained through Commercial-Off-the-Shelf (COTS) products as a result of the requirements placed on power, frequency, linearity, bandwidth (instantaneous and operating), weight, and size. The applications areas that provide the strongest pull for the Electronics Program are Electronic Warfare, Surveillance, and Communications technologies. Within Surveillance the primary thrusts are Apertures and Architectures, Information Extraction and Exploitation, and Asymmetric Threat Detection. Within Electronic Warfare the primary thrusts are Self Protection/Counter Targeting, Threat Warning/Situational Awareness, and Network Centric Mission Support. Within Communications the primary thrusts are Spectral and Energy Efficient Radio/Antenna Technology, Tactical Communications, and Tactical Networking.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17742>

11. National Science Foundation – Computational Mathematics
(DEADLINE – December 15, 2008)

Synopsis – Supports mathematical research in areas of science where computing plays a central and essential role, emphasizing algorithms design, numerical methods and their analysis, and symbolic methods. The prominence of computation in the research is a hallmark of the program. Proposals ranging from single-investigator projects that develop and analyze innovative computational methods to interdisciplinary team projects that not only create new mathematical and computational techniques but use them to model, study, and solve important application problems are encouraged.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17743>

12. Department of Defense – Compact Power Conversion Technologies Future Naval Capabilities (FNC) Enabling Compatibility Project
(DEADLINE – June 16, 2008)

Synopsis – The Navy is embarking on the development of Next Generation Integrated Power System (NGIPS) for application on future surface ships and submarines as a means of providing better fuel economy, architectural flexibility and electricity for high energy mission systems. Limited by the shipboard space and weight allocated to power generation, distribution and conversion equipment, the Navy is interested in technology solutions that can cost-effectively increase Power System power density. This BAA seeks efforts to develop electrical power conversion component, subsystem and architectural solutions that align with or enhance the efforts put forth under NGIPS. In addition, consideration will be given for advanced technologies suitable for Navy-after-Next systems where technologies or concepts align with Navy power system development plans beyond NGIPS. Please see the full announcement.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17744>

13. Department of Defense – Communications and Networking Science and Technology
(DEADLINE – June 30, 2008)

Synopsis – Communications technology that can provide seamless, robust, connectivity is at the foundation of the Sea Power 21 and FORCEnet Vision “... to have the right information, at the right place, at the right time ...” The performance of Command and Control (C2) systems and decision making at all levels of command depend critically on reliable, interoperable, survivable, secure and timely communications and networking, and the availability of high capacity multimedia (voice, data, imagery) communication networks is fundamental to nearly all Department of Navy missions. The current evolution of naval warfighting from a platform-centric to a network-centric paradigm

depends on successfully meeting the implied need for significantly enhanced communications and networking capabilities, extending both to fixed shore facilities and to highly mobile air, surface, land and subsurface platforms, including the so-called “disadvantaged user”, e.g., small-deck combatants, submarines, unmanned air vehicles (UAVs), dispersed ground units in urban and radio frequency (RF) challenged environments. The goal of the Communications and Networking Program within the Office of Naval Research (ONR 312) is to support the FORCEnet vision by developing measurable advances in technology that can directly enable and enhance end-to-end connectivity for mission-critical information exchange among such widely dispersed naval, joint and coalition forces.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17745>

14. Department of Health and Human Services – Environmental Health and Toxicology Research Program
(DEADLINE – June 20, 2008)

Synopsis – CDC’s Procurement and Grants Office has published a funding opportunity announcement entitled, “Environmental Health and Toxicology Research Program.” Approximately \$1,000,000 will be available in fiscal year 2008 to fund 1 award. The purpose of the program is to address substance-specific data needs for priority hazardous substances identified by ATSDR. For complete program details, please see the full announcement on the CDC website at <http://www.cdc.gov/od/pgo/funding/TS08-003.htm> the estimated funding date is August 31, 2008.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17747>

15. National Science Foundation – Integrative Hybrid and Complex Systems (IHCS)
(DEADLINE – October 7, 2008)

Synopsis – The Integrative, Hybrid and Complex Systems (IHCS) program supports innovative research in areas that integrate device concepts and systems principles in the design, development and implementation of new nano/micro/macro hybrid and complex systems with engineering solutions for domain specific applications. Hybrid systems incorporating both continuous and discrete representations are of increasing interest in the study of distributed networks. Proposals are sought that address fundamental research issues associated with modeling, design, simulation and development of engineering systems with applications in telecommunications, homeland security, biotechnology and manufacturing. Examples include: 1. Miniature implantable devices that combine sensors, actuators, computational algorithms and microcircuits for biomedical applications ranging from drug delivery to microsurgery; 2. Wireless networks of handheld or wearable computing devices that incorporate microsystem transmitters, receivers, antennas and sensors, and constitute a complex distributed network with high bandwidth and high information-transfer rates; 3. Optoelectronic and photonic integrated circuits, scalable in density and functionality, for chip-based wavelength division multiplexing; 4.

Power grids and systems designed to be reliable, efficient and environmentally sustainable; 5. Control methods for image-guided therapy and surgery; and 6. Cyberengineering systems that integrate the physical layer (devices, sensors) with the informational layer (communication networks, computational intelligence, decision/control) to optimize the performance of distributed systems. Such integrative systems offer new challenges in basic research and promise for future applications. Proposals for the Integrative, Hybrid and Complex Systems program may involve collaborative research among investigators to capture the breadth of expertise needed for such multidisciplinary integrative activities. Areas of opportunity are announced and updated on the ECS Division home page. In addition, researchers are invited to propose, and are encouraged to discuss, with the IHCS Program Directors, potential innovative systems and associated areas of research. Areas of current interest include: hybrid and complex systems at the nano, micro and macro scales.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=1255>

16. National Science Foundation – Cultural Anthropology
(DEADLINE – August 5, 2008)

Synopsis – The Cultural Anthropology Program promotes basic scientific research on the causes and consequences of human social and cultural variation. The program solicits research proposals of theoretical importance in all substantive and theoretical subfields within the discipline of Cultural Anthropology.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=1258>

17. National Science Foundation – Cultural Anthropology Scholars Awards
(DEADLINE – August 16, 2008)

Synopsis – The National Science Foundation announces an opportunity for methodological training by cultural anthropologists who are active researchers. The purpose is to help cultural anthropologists upgrade their methodological skills by learning a specific analytical technique which will improve their research abilities.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=12344>

18. National Science Foundation – Doctoral Dissertation Improvement Grants in The Directorate for Biological Sciences
(DEADLINE – November 21, 2008)

Synopsis – Proposals may only be submitted by the following: -U.S. institutions and organizations that are eligible for awards from the National Science Foundation, including colleges, universities, and other nonprofit research organizations such as botanical gardens, marine and freshwater institutes, and natural history museums may

submit proposals. See Chapter I, Section E of the NSF Grant Proposal Guide (GPG) for specific definitions of these categories of proposers. The NSF encourages collaborations with scientists at foreign organizations; however, primary support for any foreign participants' activities must be secured through their own national sources. *PI Limit: A student must have advanced to candidacy for a Ph.D. degree before the submission deadline to be eligible to submit a proposal. A statement that the student has advanced to candidacy for a Ph.D., signed and dated by the department chairperson, graduate dean, or similar administrative official is required (see "Proposal Preparation and Submission Instructions"). The proposal must be submitted through regular organizational channels by the dissertation advisor(s) on behalf of a graduate student who is at the point of initiating or is already conducting dissertation research. The student must be enrolled at a U.S. institution, but need not be a U.S. citizen. Organizations should limit applications to outstanding dissertation proposals with unusual financial requirements that cannot be met otherwise. Preference may be given to projects that are underway and for which feasibility is demonstrated.

For More Information:

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=17727>

19. National Science Foundation – Innovation and Organizational Sciences in the Division of Social and Economic Sciences (DEADLINE: September 3, 2008)

SYNOPSIS

The Innovation and Organizational Sciences (IOS) program supports scientific research directed at advancing understanding of innovation and organizational phenomena. Levels of analysis may include (but are not limited to) individuals, groups and/or institutional arrangements. Disciplinary perspectives may include (but are not limited to) organization theory, organizational behavior, organizational sociology, social and industrial psychology, public administration, computer and information sciences, complexity sciences, decision and management sciences. Research methods may span a broad variety of qualitative and quantitative methods, including (but not limited to) archival analyses, surveys, simulation studies, experiments, comparative case studies, and network analyses. Research may involve industrial, educational, service, government, not-for-profits, voluntary organizations or interorganizational arrangements.

IOS-funded research must be grounded in theory and generalizable. It must advance our scientific understanding of innovation and organizations. Scientific inquiries that are relevant to real problems and organizations in generalizable ways are encouraged. Proposals that aim to implement or evaluate innovations or particular organizational changes rather than to advance fundamental, generalizable knowledge about innovation and organizations are not appropriate for IOS.

Researchers who seek to conduct work pertinent specifically to manufacturing organizations are invited to also look at the Grant Opportunities for Academic Liaisons

with Industry (GOALI) homepage

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13706.

For more information: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5378