

December, 2008 – Grant Opportunities

Here is our December, 2008 listing of grant opportunities for faculty members in Engineering. We are still working on establishing a good list of grant opportunities, and would appreciate any suggestions you might have.

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

**U.S. Department of Transportation
DOT Federal Aviation Administration
DOT - FAA Aviation Research Grants
FAA Open Solicitation
Modification 1**

<http://www07.grants.gov/search/announce.do;jsessionid=nBRvJL6YJYsWnp6TTQGRD5xxDnLLzCRnJNycLxn0TwDFtLw3qWLV!1216815379>

**THE FEDERAL AVIATION ADMINISTRATION (FAA) AVIATION
RESEARCH GRANTS PROGRAM**

The FAA is soliciting proposals for research grants and cooperative agreements to pursue the long-term growth and short-term technical needs of civil aviation.

The FAA Research Grants Program encourages and supports innovative, advanced research of potential benefit to the long-term growth of civil aviation and Commercial Space Transportation. The pursuit of basic and applied research in scientific and engineering disciplines that have the potential to further knowledge and understanding on a broad front of emerging technologies is crucial to the realization of this goal. The intent is to encourage applied research and development to enhance technology assimilation, transfer, and development in the FAA. The Research Grants Program does not require the immediate application to Research, Engineering, and Development (R,E&D) programs, although this may occur in some cases. The agency encourages the submission of proposals that embrace the entire spectrum of physical, chemical, biological, medical, psychological, mathematical, and engineering sciences.

The authorizing legislation that supports the Research Grants Programs covers two general categories: a) areas deemed by the Administrator to be required for the long-term growth of civil aviation; and b) areas related to research on the prevention of catastrophic failures. These specific areas of interest may be found within the broad program areas identified in the FAA R,E&D Plan, which comprises the agency's research and

development initiatives. These areas, which contribute to the FAA mission of improving aviation safety, capacity, efficiency, and security, are:

1. Capacity and Air Traffic Control Technology
2. Communications, Navigation, and Surveillance
3. Aviation Weather
4. Airports
5. Aircraft Safety Technology
6. Human Factors and Aviation Medicine
7. Environment and Energy
8. Systems Science/Operations Research
9. Commercial Space Transportation

The following more detailed descriptions of these program areas illustrate topics of interest to those who may consider applying for a grant.

1. Capacity and Air Traffic Control Technology. This area represents the FAA's effort to improve the capacity of the airspace while maintaining high safety standards. The primary goal is to increase the capacity and use of airspace and airport resources in a safe manner through automation of enroute and terminal air traffic control (ATC) and flow management. Successful implementation of the results of this research will reduce delays and enable as many aircraft as possible to operate on their preferred flight trajectories. Major areas of interest include research in advanced cockpit technologies and the development of automation tools for ATC in enroute and terminal airspace, and on the airport surface.

2. Communications, Navigation, and Surveillance. The principal initiatives of these areas are the development, standardization, and application of equipment required for air traffic services. The FAA's goals are to exploit emerging technologies in order to provide cost-effective services and equipment that have high levels of reliability, availability, and coverage. In particular, satellite based applications are paramount for the continuing modernization of the National Airspace System (NAS).

3. Aviation Weather. Weather is, and will continue to be, a critical factor in all flight operations. Inclement weather is the single largest contributor to delays and a major factor in aircraft accidents and incidents. Weather service users encompass the entire spectrum of the aviation community, from general aviation to large air transport

operators. An overall system is required that includes the acquisition of a wide variety of weather data, analysis, and forecasting based on ATC and pilot needs. The key is the ability of the system to quickly and efficiently communicate appropriate weather data to the controller and the pilot. Activities in the weather area include airborne wind shear detection equipment, hazardous weather cell detection and warning, and improved forecasting of winds, turbulence, etc., to support air traffic management automation.

4. Airports. Agency efforts in this area target a multiplicity of issues comprising the physical and environmental aspects of airports. Efforts in airport standards and guidelines address the design, construction, operation, and maintenance of airports. Specific considerations are: airport layout and geometrics; pavements, terminal buildings, and heliports; fire fighting and rescue equipment; runway friction; snow and ice control; surface lighting and visual guidance aids; bird and wildlife control; runway surface contamination detection and removal; and environmental impacts of aircraft operations. Landside capacity is also addressed through such considerations as highway systems, pedestrian systems, parking, and mass transit access.

5. Aircraft Safety Technology. One of the primary responsibilities of the FAA is to provide safety and regulatory oversight in the certification, manufacture, maintenance and operation of U.S. civil aircraft. Changes in technology, aircraft fleet composition, and aircraft operational profiles along with increased commercial traffic result in corresponding needs for new or updated safety enhancements and requirements. The research goal in the Aircraft Safety Technology Program is to develop and transfer of new technologies that can provide needed safety enhancements and establish minimum safety requirements. These technologies, in turn, can be applied to improving safety standards that govern civil aircraft airworthiness and operational performance. Major safety research activities include: fire research and safety, structural safety/advanced materials, propulsion systems research, flight safety/structural safety/advanced materials, propulsion systems research, flight/atmospheric hazards, aging aircraft (structural integrity; maintenance and inspection), aircraft catastrophic failure prevention, and aviation safety risk analysis.

6. Human Factors and Aviation Medicine. Research in this area also leads to standards and recommendations for crew and passenger protective equipment and procedures, and identifies crew and passenger limitations that may jeopardize the safety of the occupants and the aircraft. Areas of research include human tolerance and behavior under decelerative stresses, hypoxia, visual degradation, and various medicinal and non-medicinal chemicals; occupant behavior is evaluated under both secondary and emergency evacuation conditions.

7. Environment and Energy. This area represents the FAA's efforts to improve regulatory standards for sources of air and noise pollution, and to develop better

technologies for predicting, measuring, and abating the environmental impact of emissions. Projects in this area support national goals to protect the environment and keep the transportation industry strong and competitive. R,E&D goals are technology improvements that address environmental and regulatory issues such as noise abatement, aircraft pollution, and improved certification of clean, quiet, fuel efficient aircraft.

8. Systems Science/Operations Research. The importance of Systems Science and Operations Research to the National Airspace System has come to be magnified in recent years. The macroscopic tools of mathematical modeling, simulation, decision support systems and prototyping, as well as optimization, are playing a greater role in research related to the NAS. In some cases, this will involve new paradigms implemented as novel algorithms and software packages. In other cases, innovative computational platforms and architectures may emerge as major contributors. The goal of research in all facets of this technical area is common: the improvement of the safety, security, capacity, and efficiency of the NAS.

9. Commercial Space Transportation. The primary responsibility of the Office of the Associate Administrator for Commercial Space Transportation (AST) is to regulate commercial launch activities in order to protect the public health, safety of property, and national security and foreign policy interests of the United States. The U.S. commercial space transportation industry is growing and becoming more diverse. The industry includes both small and large companies launching traditional Expendable Launch Vehicles (ELVs) as well as newly developed reentry vehicles and air-launched rockets. Presently, the industry is developing Reusable Launch Vehicles (RLVs) that have the potential to become the primary launch vehicles for the 21st century. The safety of these new launch vehicles (expendable, reusable, air and sea launch systems) are bringing a host of issues to the forefront that must be addressed. Some of the major issues the commercial space industry and Government policy makers must deal with as the industry develops during the rest of this decade and into the next century are:

- o The viability of new U.S. and foreign vehicle technologies;
 - o safety and orbital debris problems as new satellite constellations are deployed;
 - o international liability for joint U.S./foreign launch service providers;
 - o coordination of reusable launch vehicle operations within the air traffic control system;
- and,
- o innovative means of leveraging private investment into improvements in launch vehicles and facilities.

Research that supports the planning and implementation of results that address the growing needs of this evolving industry will greatly assist in improving launch capacity, reduce operating costs and improve the international competitiveness of the industry.

Eligibility

The eligibility of applicants for the award of a research grant varies depending upon the nature of the proposer's organization as well as the character of work one proposes to perform. In general, colleges, universities, and other non-profit research institutions are eligible to qualify for research grants in all specified areas. FAA is seeking to ensure an equitable geographic distribution of grant funds and the inclusion of Historically Black Colleges and Universities (HBCU's), Hispanic Serving Institutions (HSIs), and other minority institutions for funding consideration.

When to Submit

Proposals may be submitted at any time under the open FAA solicitation number FAA-06-01. This solicitation will remain open until January 1, 2012. Applicants should allow at least 90 days for review and processing.

HHS

Department of Health and Human Services

National Institutes of Health

**Ruth L. Kirschstein National Research Service Award (NRSA) Institutional
Research Training Grants (T32)**

Modification 2

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=18171>

Purpose: The National Institutes of Health (NIH) will award Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (T32) to eligible institutions as the primary means of supporting predoctoral and postdoctoral research training to help ensure that a diverse and highly trained workforce is available to assume leadership roles related to the Nation's biomedical, behavioral and clinical research agenda. The primary objective of the T32 program is to prepare qualified individuals for careers that have a significant impact on the health-related research needs of the Nation. This program supports predoctoral, postdoctoral and short term research training programs at domestic institutions of higher education with the T32 funding mechanism. Note that programs solely for short-term research training should not apply

to this announcement, but rather the separate (T35) NRSA Short-Term Institutional program exclusively reserved for short-term programs (see [PA-08-227](#)).

Mechanism of Support: This Funding Opportunity Announcement (FOA) will utilize the Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (T32).

Funds Available and Anticipated Number of Awards: Because the nature and scope of the proposed research training will vary from application to application, it is anticipated that the size and duration of each award will also vary. The total amount awarded and the number of awards will depend upon the number, quality, duration, and costs of the applications received

Budget and Project Period: Awards for T32 institutional NRSA research training grants may be for project periods up to five years in duration and are renewable. Trainees are required to pursue full-time research training.

Eligible Institutions/Organizations: Institutions/organizations listed in [Section III, 1.A.](#) are eligible to apply.

Eligible Program Director(s)/Principal Investigator(s) (PD/PI): An eligible Training PD/PI is any individual with the skills, knowledge, successful past training record, and available resources necessary to carry out the proposed research training program. The PD/PI should be an established basic, behavioral, and/or clinical researcher at the sponsoring institution. The PD/PI will be responsible for the selection and appointment of eligible trainees to the NRSA training grant, for the overall direction, management and administration of the research training program, program evaluation, and the submission of all required forms in a timely manner. Individuals from underrepresented racial and ethnic groups as well as individuals with disabilities are always encouraged to apply for NIH support.

Number of PDs/Pis: More than one PD/PI, i.e. multiple PDs/Pis may be designated on the application.

Number of Applications: Applicants may submit more than one application, provided the research training programs are scientifically distinct.

Resubmissions: Resubmission applications will be accepted. Such application must include an Introduction addressing the previous peer review critique (Summary Statement).

Renewals: Applicants may submit a renewal application.

HHS

Department of Health and Human Services

National Institutes of Health

Superfund Basic Research and Training Program (P42)

Modification 1

<http://www.grants.gov/search/search.do?&mode=VIEW&flag2006=true&oppId=18431>

Purpose. The National Institute of Environmental Health Sciences (NIEHS) is announcing the continuation of the Superfund Hazardous Substances Basic Research and Training Program [referred to as the Superfund Basic Research Program (SBRP)]. SBRP grants will support coordinated, multi-project, interdisciplinary research programs to address the mandates legislated under the Superfund Amendments and Reauthorization Act of 1986. These mandates include the development of (1) methods and technologies to detect hazardous substances in the environment; (2) advanced techniques for the detection, assessment, and evaluation of the effect on human health of hazardous substances; (3) methods to assess the risks to human health presented by hazardous substances; and (4) basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances. The objective for the SBRP is to develop a holistic research agenda for the protection of human health. This is accomplished by the establishment of interdisciplinary programs that link and integrate biomedical research with related engineering, hydrogeologic, and ecologic components within the context of unique scientific themes developed by the applicant.

Mechanism of Support. This FOA will utilize the NIH P42 multi-project grant mechanism. Successful applicants must include a minimum of two biomedical projects and two non-biomedical projects.

Funds Available and Anticipated Number of Awards. The NIEHS intends to commit a total of approximately \$11.0 million dollars in FY 2010 to fund four to five SBRP grants in response to this Funding Opportunity Announcement (FOA).

Budget and Project Period. A new applicant may request a budget for direct costs of up to \$1.8 million dollars for the first year. Applicants submitting renewal (competing continuation) applications may request up to a ten percent increase above the budget level (direct cost) of the last year of their continuation project (non-competitive renewal). For all applicants, budgets submitted in subsequent years may not exceed an escalation of three percent on recurring direct costs.

Eligible Institutions/Organizations. Institutions/organizations listed in [Section III, 1.A.](#) are eligible to apply. Eligible organizations include accredited domestic institutions of higher education.

Eligible Project Directors/Principal Investigators (PDs/PIs). Individuals with the skills, knowledge, and resources necessary to carry out the proposed research are invited to work with their institution/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.

Number of Applications. Only one application per accredited institution of higher education will be accepted

Resubmissions. Resubmission applications will be accepted. Such applications must include an Introduction addressing the previous peer review critique (Summary Statement).

Renewals. Applicants may submit a renewal application.