Funding Opportunities Bulletin
October 2012

This compilation of funding opportunities is provided by KUCR Proposal Services as a resource for Kansas University Researchers. We encourage you to utilize the campus subscription to PIVOT (formerly COS) to find funding opportunities specifically tailored to your research area based on keywords you provide. PIVOT is easy to use and offers other valuable services that are helpful to researchers http://pivot.cos.com/

ATTENTION: RGS will be providing a PIVOT training workshop on October 25th, from 3:00 to 4:00 at the Budig Instructional Center. To Reserve your place contact Dan Coonfield at dcoonfie@ku.edu or 864-7404

Click on the links below to go directly to the named section

**BUSINESS**
**EDUCATION**
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**SOCIAL SCIENCES**
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**BUSINESS**
See also opportunities listed under MULTIPLE DISCIPLINES

**Economics Program**
National Science Foundation (NSF)
**Due date: Jan 18, 2013**

The program supports research designed to improve the understanding of the processes and institutions of the U.S. economy and of the world system of which it is a part. This program also strengthens both empirical and theoretical economic analysis as well as the methods for rigorous research on economic behavior. It supports research in almost every area of economics, including econometrics, economic history, environmental economics, finance, industrial organization, international economics, labor economics, macroeconomics, mathematical economics, and public finance.

The program welcomes proposals for individual or multi-investigator research projects, doctoral dissertation improvement awards, conferences, workshops, symposia, experimental research, data collection and dissemination, computer equipment and other instrumentation, and research experience for undergraduates. The program places a high priority on interdisciplinary research. Investigators are encouraged to submit proposals of joint interest to this program and other NSF programs and NSF initiative areas.
The program also funds conferences and interdisciplinary research that strengthens links among economics and the other social and behavioral sciences as well as mathematics and statistics.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5437

**Kauffman Junior Faculty Fellowship in Entrepreneurship Research**
Kauffman Foundation, Ewing Marion
**Due date: Jan 23, 2013 (nomination); Mar 12, 2013 (application)**

The fellowship is intended to support the research activities of eligible junior faculty members who are actively pursuing research in the field of entrepreneurship.

The foundation established the fellowship in 2008 to recognize tenured or tenure-track junior faculty members at accredited U.S. universities who are beginning to establish a record of scholarship and exhibit the potential to make significant contributions to the body of research in the field of entrepreneurship.

This initiative will help to launch world-class scholars into a young and exciting field of research, thus laying a foundation for future scientific advancement. The findings generated by this effort will be translated into knowledge with significant applications for policymakers, educators, service providers, and entrepreneurs as well as high-quality academic research.


**Steven H. Sandell Grant Program in Retirement Research**
Boston College (BC)
**Due date: Jan 27, 2013**

The Center for Retirement Research (CRR) sponsors the annual Steven H. Sandell Grant Program for scholars in the field of retirement income and disability insurance research. The program's purpose is to promote research by junior scholars and senior scholars entering the field. The program is funded by the U.S. Social Security Administration to provide opportunities for scholars from all academic disciplines and senior scholars working in a new area to pursue cutting-edge projects on retirement income and disability insurance issues. Topics include (1) Social Security, retirement income and disability insurance; (2) macroeconomic analyses of Social Security; (3) wealth and retirement income; (4) program interactions; (5) international research; and (6) demographic research. Grants are not intended to fund dissertation research.

http://crr.bc.edu/index.php?option=com_content&task=view&id=122&Itemid=23
Doctoral Dissertation Grants  
Institute for Supply Management (ISM)  
Due date: Jan 31, 2013

Each year, the institute awards doctoral dissertation grants for support of outstanding doctoral research. The intent is to award grants to doctoral candidates who are conducting research in purchasing or related fields. The objectives of these grants are to produce useful research that can be applied to purchasing and supply management, and to help develop high-potential academicians who will teach and conduct research in purchasing and supply management.

http://www.ism.ws/education/content.cfm?ItemNumber=791

EDUCATION  
See also opportunities listed under MULTIPLE DISCIPLINES

Dissertation Grants  
Association for Institutional Research (AIR)  
Due date: Jan 06, 2013

With support from the National Science Foundation (NSF), the National Center for Education Statistics (NCES), and the National Postsecondary Education Cooperative (NPEC), AIR operates this dissertation grant program that supports research on a wide range of issues of critical importance to U.S. higher education. Dissertation grants are intended to support one year of research and writing conducted as part of the doctoral dissertation requirement and conducted under the guidance of a faculty dissertation advisor. At the time of the application, the dissertation should be in the early stage of development.

The program has two separate purposes:
1. NSF and NCES support grants aim to increase the number of researchers using national datasets and demonstrate the contribution that these datasets make to the national base of knowledge on higher education policy, theory, and practice.
2. The NPEC funding supports grants that increase the understanding and knowledge of a specific issue area identified by NPEC. This year, the focus will be "Exploring Postsecondary Non-Degree Programs."

To qualify for funding, proposal submissions must meet one or more of the following criteria:
1. Use data from one or more of the national datasets of NCES and NSF - Research topics may cover a wide range of policy- or practice-related issues. Applicants must include the analysis of data from at least one NSF or NCES dataset in the project. Additional large-scale, nationally representative datasets may be used in conjunction with the obligatory NSF or NCES dataset.
2. Address the NPEC Focus Topic: "Exploring Postsecondary Non-Degree Programs" - Proposals should focus on postsecondary non-degree programs, their role in higher education, and appropriate measures of student success and institutional effectiveness for these programs. The analyses can focus on federal, state, or regional data and does not require the use of NCES or NSF databases. Nonetheless, the results of the research should have some applicability to
IPEDS data collection efforts.

http://www.airweb.org/?page=1626

**Research Grant Program**  
Association for Institutional Research (AIR)  
**Due date: Jan 06, 2013**

With support from the National Science Foundation (NSF), the National Center for Education Statistics (NCES), and the National Postsecondary Education Cooperative (NPEC), AIR operates this research grant program that supports research on a wide range of issues of critical importance to U.S. higher education. The grant is intended to support independent research by faculty and practitioners.

The program has two separate purposes:
1. NSF and NCES support grants aim to increase the number of researchers using national datasets and demonstrate the contribution that these datasets make to the national base of knowledge on higher education policy, theory, and practice.
2. The NPEC funding supports grants that increase the understanding and knowledge of a specific issue area identified by NPEC. This year, the focus will be "Exploring Postsecondary Non-Degree Programs."

http://www.airweb.org/?page=1626

**Research Grants**  
NASPA - Student Affairs Administrators in Higher Education  
**Due date: Jan 15, 2013**

The NASPA Foundation, in conjunction with the NASPA Faculty Fellows welcomes proposals for research grants that support the discovery of new knowledge and innovation in the field of student affairs.

Special consideration will be given to proposals that address research questions that have been identified as critical to the profession. The following issues have been identified as these critical issues:
- Student Affairs Leadership, Administration and Organizational Management
ENGINEERING & COMPUTER SCIENCE
See also opportunities listed under MULTIPLE DISCIPLINES

United States Department of Energy (DOE)
Due date: Jan 09, 2013


NSF Fellowships for Transformative Computational Science Using CyberInfrastructure
National Science Foundation (NSF)
Due date: Jan 13, 2013

The overarching goal of the NSF Fellowships for Transformative Computational Science using Cyberinfrastructure (CI TRaCS) program is to support outstanding scientists and engineers who have recently completed doctoral studies and are interested in pursuing postdoctoral activities in computational science, and thereby nurturing the future leaders in this emerging and important multidisciplinary field. Computational research and education activities that are cyberinfrastructure-based and cross disciplinary boundaries are a key focus of this program. Successful fellows may, for example, use cyberinfrastructure to make revolutionary advances in their disciplines, and/or deploy cyberinfrastructure-based technologies that enable innovative computational practices.
Broadening Participation Research Initiation Grants in Engineering 2012 (BRIGE)
National Science Foundation (NSF)
Due date: Jan 20, 2013

To address the need to enhance diversity in its programs, ENG is offering research initiation
grants under the BRIGE program. ENG offers this BRIGE funding opportunity to all beginning
engineers with the intent of increasing the diversity of researchers in the engineering disciplines.
The goal of the BRIGE solicitation is to increase the number of proposals to the Directorate for
Engineering from individuals who can serve as role models and mentors for an increasingly
diverse engineering student population who will become the workforce of the future. BRIGE
aims to support innovative research and diversity plans that contribute to recruiting and retaining
a broad representation of engineering researchers especially those from groups that are
underrepresented in the engineering population. For this solicitation, the term underrepresented
groups refers to and includes the following: women, persons with disabilities, and ethnic/racial
groups which are in the minority in engineering such as African Americans, Hispanics, Native
Americans, Alaska Natives, and Pacific Islanders.

Cyber-Physical Systems (CPS)
National Science Foundation – NSF
Due date: Jan 22, 2013

Cyber-physical systems (CPS) are engineered systems that are built from and depend upon the
synergy of computational and physical components. Emerging CPS will be coordinated,
distributed, and connected, and must be robust and responsive. The CPS of tomorrow will need
to far exceed the systems of today in capability, adaptability, resiliency, safety, security, and
usability. Examples of the many CPS application areas include the smart electric grid, smart
transportation, smart buildings, smart medical technologies, next-generation air traffic
management, and advanced manufacturing. CPS will transform the way people interact with
engineered systems, just as the Internet transformed the way people interact with information. However, these goals cannot be achieved without rigorous systems engineering.

The December 2010 report of the President's Council of Advisors on Science and Technology,
Designing a Digital Future: Federally Funded Research and Development in Networking and
Information Technology calls for continued investment in CPS research because of its scientific
and technological importance as well as its potential impact on grand challenges in a number of
sectors critical to U.S. security and competitiveness, including aerospace, automotive, chemical
production, civil infrastructure, energy, healthcare, manufacturing, materials and transportation.

We do not yet have a mature science to support systems engineering of high confidence CPS,
and the consequences are profound. Traditional analysis tools are unable to cope with the full complexity of CPS or adequately predict system behavior. The present electric power grid, an ad hoc system, experiences blackouts over large regions, tripped by minor events that escalate with surprising speed into widespread power failures. This illustrates the limitations of the current science and technology, which do not enable us to conceptualize and design for the deep interdependencies among engineered systems and the natural world. At the same time, pressure to develop technologies such as renewable energy, wireless health, advanced manufacturing, smart materials, and electrified ground and air vehicles creates an unprecedented opportunity to rethink many important classes of systems.

The goal of the CPS program is to develop the core system science needed to engineer complex cyber-physical systems upon which people can depend with high confidence. The program aims to foster a research community committed to advancing research and education in CPS and to transitioning CPS science and technology into engineering practice. By abstracting from the particulars of specific systems and application domains, the CPS program aims to reveal cross-cutting fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application sectors. To expedite and accelerate the realization of cyber-physical systems in a wide range of applications, the CPS program also supports the development of methods, tools, and hardware and software components based upon these cross-cutting principles, along with validation of the principles via prototypes and test beds.

Three types of research and education projects will be considered, which differ in scope and goals:
1. Breakthrough projects must offer a significant advance in fundamental CPS science, engineering and/or technology that has the potential to change the field.
2. Synergy projects must demonstrate innovation at the intersection of multiple disciplines, to accomplish a clear goal that requires an integrated perspective spanning the disciplines.
3. Frontiers projects must address clearly identified critical CPS challenges that cannot be achieved by a set of smaller projects.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503286

Highways for LIFE Technology Partnerships Program
United States Department of Transportation (DOT)
Due date: Jan 26, 2013

The Federal Highway Administration (FHWA) hereby requests applications for assistance to result in the award of multiple grant agreements under the Highways for LIFE Technology Partnerships Program. The focus of the 2012 Technology Partnership Program solicitation is to work with the highway industry to accelerate the adoption of promising innovations that (1) have the potential to directly reduce crashes or crash severity or (2) innovations that significantly enhance decision-making relative to the deployment of treatments to reduce crashes, crash severity and the understanding of the effectiveness of the treatments. The program is intended to provide the financial impetus to demonstrate a proven non-highway related innovation or to refine or improve existing innovations that have been demonstrated but not become adopted as
routine or common practice in the highway industry.

http://www.grants.gov/search/search.do?mode=VIEW&oppId=134293

CHE-DMR-DMS Solar Energy Initiative (SOLAR)
National Science Foundation (NSF)
Due date: Jan 25, 2013

The purpose of the CHE-DMR-DMS Solar Energy Initiative is to support interdisciplinary efforts by groups of researchers to address the scientific challenges of highly efficient harvesting, conversion, and storage of solar energy. Groups must include three or more co-Principal Investigators, of whom one must be a researcher in chemistry, a second in materials, and a third in mathematical sciences, in areas supported by the Divisions of Chemistry, Materials Research, and Mathematical Sciences, respectively. The intent is to encourage new collaborations in which the mathematical sciences are linked in a synergistic way with the chemical and materials sciences to develop novel, potentially transformative approaches in an area of much activity but largely incremental advances. Successful proposals will offer potentially transformative projects, new concepts, and interdisciplinary education through research involvement based on the integrated expertise and synergy from the three disciplinary communities.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503298

SCaN Testbed Experiment Cooperative Agreement Notice
National Aeronautics and Space Administration (NASA)
Due date: Jan 31, 2013

NASA invites proposers to participate in the development, integration, and on-orbit execution of research and technology experiments and demonstrations using the Space Communication and Navigation (SCaN) Testbed aboard the International Space Station (ISS). The SCaN Testbed Project provides experimenters the opportunity to develop and field communications, navigation, and networking technologies in the laboratory and space environment based on reconfigurable, software defined radio platforms and the Space Telecommunications Radio System (STRS) Architecture. The SCaN Testbed flight system consists of reconfigurable, software defined radios, RF systems operating at S-band, Ka-band, and L-band, and command and data handling and networking systems.

This experiment call provides academia the opportunity to gain valuable flight experience of potential new applications, and raise the technology readiness level (TRL) of these space applications by operating within the space environment. NASA will gain insight into the opportunity to assess new concepts and research and technologies in communications, navigation, and networking, such as future GPS signal assessments, high data rate operation at Ka-band, reconfigurable SDR technology and STRS standards development.

NASA anticipates that each award from this Cooperative Agreement will consist of a)
participation in the SCAN Testbed Project, b) support from the SCaN Testbed Project engineers to assist in the development, testing, and verification of the experiment, c) development and delivery of software/firmware and documentation from the experimenter to NASA, d) access to the ground systems, support equipment, and on-orbit SCaN Testbed flight system aboard ISS, e) on-orbit study and demonstration associated with the SDR or flight computer application, and f) results dissemination by the experimenter.

The awards of this announcement will primarily be in the form of cooperative agreements that provide time with the on-orbit flight system, and ground systems to develop and test SDR applications for operation in space. NASA will make available engineers from the project to aid experimenters with access to the ground and space systems, provide system information, and have responsibility for mission operations. Experimenters will develop their experiment SDR application software and/or firmware using information about the radios and flight avionics computer provided by the project.

The SCAN Testbed flight system was installed on an Express Logistics Carrier (ELC) located on the exterior truss of the ISS.

The SCAN Testbed Mission has three research and technology objectives: First, to provide an on-orbit laboratory to investigate reconfigurable SDR technology and associated applications in communications, networking, and navigation to future, potential NASA missions. Second, to advance the technology readiness level of SDRs and their waveform applications compliant with the STRS Architecture, and develop ways to improve waveform portability and reuse among SDRs to reduce mission costs and risks. Third, to demonstrate future mission capabilities through an experiments program with emphasis on SDR reconfiguration affects, increased data rates, bandwidth efficiency, internetworking, improved navigation and timing, cognitive applications, standards developments and validations, and others.

This solicitation invites proposals for participation in the SCAN Testbed Project through the following research and technology areas:
- Demonstration of mission applicability of SDR, including aspects of reconfiguration, and unique/efficient use of processor, FPGA, DSP resources.
- Spectrum efficient technologies.
- Space internetworking, including Disruption Tolerant Networking.
- Position, navigation and timing (PNT) technology.
- Technologies/waveforms for formation flying.
- High data rate communications.
- Uplink antenna arraying technologies.
- Cognitive applications.
- Multi-access communication.
- RF sensing applications (science emulation).
- Inter-process communications.

HP Labs Innovation Research Program
Hewlett - Packard (HP) Company
Due date: Jan 27, 2013 (Abstract); Mar 30, 2013 (full proposal)

The HP Labs 2012 Innovation Research Program (IRP) is designed to create opportunities - at colleges, universities and research institutes around the world - for advanced collaborative research with HP. Awards under the IRP are primarily intended to provide financial support for a graduate student to assist the Principal Investigator conducting a collaborative research project with HP Labs. HP Labs is seeking compelling projects in a variety of areas that reflect HP's broad industry presence and research themes. The research topics for the 2012 IRP Call for Proposals are listed below.

1. Cloud & Security
   - Cloud Platforms and Services
   - Security for the Enterprise and the Cloud

2. Information Analytics
   - Analytics for the Enterprise
   - Intelligent Storage - Big Data, the Cloud and New Technologies
   - Live Analytics

3. Intelligent Infrastructure
   - High Performance Computing in Cloud
   - High Performance Electro-Optic Materials
   - High Radix Photonic Routers
   - Nanophotonic Coherent Optical Sources

4. Mobile and Immersive Experience
   - Client/Cloud Multimedia Computing
   - Mobile Multi-Modal Sensing
   - Novel Sensors and Associated Applications for Mobile Devices
   - Immersive Displays and Immersive Environments

5. Nanoelectronics
   - CeNSE
   - CMOS-nanoelectronics Hybrids for Terascale ICs

6. Printing and Content Delivery
   - Distributed Personal Archives
   - Material Appearance Characterization and Reproduction for Soft Proofing (MACREP)
   - Multimedia Understanding, Composition and User Analytics
   - Numerical Simulation of Plasma Discharges

7. Services Research
   - Research in Support of Enterprise 2.0
Software Development for Cyberinfrastructure (SDCI)
National Science Foundation (NSF)
Due date: Jan 30, 2013

NSF is committed to fostering the development of a scalable, comprehensive, secure and sustainable cyberinfrastructure that supports potentially transformative research in science and engineering. The development of a mature cyberinfrastructure relies on the development, deployment, and reliable use of new technologies to catalyze transformative research.

Software permeates cyberinfrastructure. Fully functional and performing software is essential to realizing the promises of cyberinfrastructure to transform the ways in which scientific research and education are conducted. NSF is committed to fostering the development of a scalable, comprehensive, secure and sustainable cyberinfrastructure that supports potentially transformative research in science and engineering. The development of a mature cyberinfrastructure relies on the development, deployment, and reliable use of new technologies to catalyze transformative research.

The purpose of the Software Development for Cyberinfrastructure (SDCI) program is to develop and deploy a set of reusable and expandable software components and systems that benefit a broad set of science and engineering applications. This program supports software development along two thrust areas, described below: end-to-end high performance computer networking and cyber security. Supported activities include development, testing, experimental deployment, and trial use of software in relevant settings enabling research and education activities in any area of science and engineering supported by NSF. A strong emphasis is placed on moving from cyberinfrastructure research to cyberinfrastructure capability. SDCI funds software activities for enhancing scientific productivity and for facilitating research and education collaborations through sharing of data, instruments, and computing and storage resources. The program requires open source software development.

Each proposal should clearly identify and justify the software focus area to which it is being submitted, as described in the proposal preparation instructions. The FY2011 SDCI solicitation
supports the development and deployment of software in two software focus areas - end-to-end high performance networking and cyber security.

1. End-to-end High Performance Networking - NSF solicits proposals in the SDCI end-to-end High Performance Data Networking area in the following topics:

   a. Data network measurement and monitoring tools and services supporting network researchers, network operations, or the owners and operators of cyberinfrastructure enabling scientific research. Proposals may also address capabilities supporting both off line analysis as well as near real time situational awareness. Together, these tools and services contribute to a deeper and more effective understanding of network behavior and conditions. Active and passive measurement projects are in scope.

   b. Network protocol development and deployment for increased performance and interoperability. An emphasis in this topic is the integration, limited deployment, and trial use of alternatives or modifications to the traditional TCP/IPv4 stack. This may include replacement of TCP as the transport protocol used by end systems across routed network paths. Porting applications and configuring environments to enable distributed applications to run natively on IPv6 end-to-end is also in scope. Work may also address emerging faster transmission speeds in tailoring protocols to enable end-to-end data transfer speeds in the range of 10-100 gigabits per second. Proposals may also address the deployment and use of network services required for end-to-end interoperability for new and alternative protocol environments. Proposals must address solutions for improved network performance end-to-end and identify target end system platforms. These projects are expected to build on an existing base of software, with new development associated with improvement, adaptation, integration and environment porting challenges, as opposed to completely new protocol creation. Proposals in this focus area must define relevant topologies prepared to accept and integrate new network stack software on end hosts; and include a description of applications impacted.


   Proposals in this area will have titles that begin with "SDCI Net:"

2. Cyber Security - NSF solicits proposals in the SDCI cyber security area in the following topics:

   a. Malware detection and prevention: while NSF and other US Government agencies have supported a wide range of successful and innovative research into malware detection and prevention, challenges remain, including the lack of effective technologies currently available and fielded. The "DHS Roadmap for Cybersecurity Research" describes a number of gaps in both major research and effective solutions, with new techniques struggling to keep pace with new malware development. Targets in this topic include, but are not limited to techniques to counter malware polymorphism; techniques to counter malware packing and other obfuscation methods; and automatic detection of command and control structure and communications.
b. Situational understanding: better tools for system administration in understanding the state and behavior of maintained platforms; tools to support awareness of events and behavior at multiple time scales from milliseconds to months; tools supporting attack attribution while maintaining appropriate privacy; tools promoting data sharing across organizational boundaries; and novel approaches to analyzing and presenting large scale network data.

c. Assurance techniques in sharing data: tools and services for safely sharing data, which may include, but are not limited to: stronger anonymization of network traffic traces; protecting data at rest; and other defense mechanisms for the safe and reliable collection and transfer of data.

d. Software assurance: tools and services supporting software testing and vulnerability analysis.

e. New tools and services to improve access to and use of High Performance Computing (HPC) resources and distributed computing environments for cyber security research and development. Proposals may also target software development to improve the security of existing NSF HPC resources.

f. Software supporting research infrastructure used for cyber security research and development.

Collaborations with industry are encouraged where appropriate. Strong preference will be shown for efforts that provide near-term benefit to a broad user base in the NSF community.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5174

FINE ARTS

Arts Grants
Fuller Foundation, Inc.
Due date: Jan 15, 2013

In funding the arts, the foundation seeks proposals from qualified agencies that carry on the life interests of Alan T. and Viola D. Fuller in this area. The foundation expects its grants to encourage, through the agencies, hands-on and participatory collaborations between established cultural institutions, artists and communities.

Specific program interests include the following:
1. Art for viewing and listening
2. Art education in school
3. Art and performing arts festivals
4. Art (murals and sculpture) that beautifies or inspires a community
5. Programs that bring symphony, opera and theatre to the community
6. Adult or children's museum education programs

http://www.fullerfoundation.org/FullerFoundation/HomePage.cfm?page=arts
Artslink Projects
CEC ArtsLink
Due date: Jan 15, 2013

ArtsLink Projects provides support to US artists, curators, presenters, and arts organizations undertaking projects in any of the 32 eligible countries listed in the Activity Location field. Applicants must be working with an artist or organization in that region and projects should be designed to benefit participants and audiences in both the U.S. and the host country.

ArtsLink has a cycle of alternate year deadlines according to discipline. In 2014, applications will be accepted from individual artists, presenters and non-profit arts organizations working in dance, music, literature, and theater. In 2013, applications will be accepted from individual artists, curators and non-profit arts organizations working in visual and media arts.

Support is provided to create new work that draws inspiration from interaction with artists and the community in the U.S.; to establish mutually beneficial exchange of ideas and expertise between artists, arts organizations and the local community and to pursue artistic cooperation that will enrich creative or professional development or has potential to expand the community's access to the art of other cultures.

http://www.cecartslink.org/grants/artslink_projects/

HUMANITIES
See also opportunities listed under MULTIPLE DISCIPLINES

Predoctoral Fellowships
Smithsonian Institution (SI)
Due date: Jan 15, 2013

The Smithsonian Institution offers fellowships to provide opportunities for predoctoral students to conduct research in association with members of the Smithsonian professional research staff, and to utilize the resources of the Institution. Fellowships are available in fields that are actively pursued by the museums and research organizations of the institution. These fellowships support research in residence at all Smithsonian facilities except the Smithsonian Astrophysical Observatory. The Smithsonian facilities, other than the Smithsonian Astrophysical Observatory, include the following: African American History and Culture Museum; African Art Museum; Air and Space Museum; Air and Space Museum Udvar-Hazy Center; American Art Museum; American History Museum; American Indian Museum; American Indian Museum Heye Center; Anacostia Community Museum; Archives of American Art; Arts and Industries Building; Conservation Biology Institute (SCBI); Cooper-Hewitt, National Design Museum; Environmental Research Center (SERC); Freer Gallery of Art; Hirshhorn Museum and Sculpture Garden; Marine Station at Fort Pierce; Museum Conservation Institute (MCI); National Zoo; Natural History Museum; Portrait Gallery; Postal Museum; Renwick Gallery; Sackler Gallery; Smithsonian Institution Archives; Smithsonian Institution Building, The Castle; Smithsonian
Cultural Anthropology Scholars Awards  
National Science Foundation (NSF)  
**Due date: Aug 16, 2012**

NSF 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.


National Digital Newspaper Program (NDNP)  
National Foundation for the Arts and the Humanities  
**Due date: Jan 17, 2013**

NEH is soliciting proposals from institutions to participate in the National Digital Newspaper Program (NDNP). NDNP is creating a national, digital resource of historically significant newspapers published between 1836 and 1922, from all the states and U.S. territories. This searchable database will be permanently maintained at the Library of Congress (LC) and be freely accessible via the Internet. An accompanying national newspaper directory of bibliographic and holdings information on the Web site directs users to newspaper titles available in all types of formats. During the course of its partnership with NEH, LC will also digitize and contribute to the NDNP database a significant number of newspaper pages drawn from its own collections.

NEH intends to support projects in all states and U.S. territories, provided that sufficient funds allocated for this purpose are available. One organization within each U.S. state or territory will receive an award to collaborate with relevant state partners in this effort. Previously funded projects will be eligible for continued support, but the program will give priority to new projects.

Applications that involve collaboration between previously funded and new projects are welcome. Such collaborations might involve, for example, arranging with current awardees to manage the creation and delivery of digital files; offering regular and ongoing consultation on managing aspects of the project; or providing formal training for project staff at an onsite institute or workshop.

Successful applicants will select newspapers -- published in their state or territory in English between 1836 and 1922 -- and convert, primarily from microfilm, over a period of two years, approximately 100,000 pages into digital files, according to the technical guidelines outlined by
Digital Humanities Implementation Grants
National Foundation for the Arts and the Humanities
Due date: Jan 24, 2013

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. Such projects might enhance our understanding of central problems in the humanities, raise new questions in the humanities, or develop new digital applications and approaches for use in the humanities. 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.

Unlike NEH's start-up grant program, which emphasizes basic research, prototyping, experimentation, and potential impact, the Digital Humanities Implementation Grants program seeks to identify projects that have successfully completed their start-up phase and are well positioned to have a major impact.

Proposals are welcome for digital initiatives in any area of the humanities. Digital Humanities Implementation Grants may involve
- implementation of computationally-based methods or techniques for humanities research;
- implementation of new digital tools for use in humanities research, public programming, or educational settings;
- efforts to ensure the completion and long-term sustainability of existing digital resources (typically in conjunction with a library or archive);
- studies that examine the philosophical or practical implications of the use of emerging technologies in specific fields or disciplines of the humanities, or in interdisciplinary collaborations involving several fields or disciplines; or
- implementation of new digital modes of scholarly communication that facilitate peer review, collaboration, or the dissemination of humanities scholarship for various audiences.

Successful projects must make digital innovations and be significant to the humanities. All projects must already have completed a start-up phase prior to application.

http://www.neh.gov/grants/guidelines/digitalhumanitiesimplementation.html

INTERNATIONAL AREA STUDIES
See also opportunities listed under HUMANITIES and MULTIPLE DISCIPLINES
Conference/Seminar/Workshop Grants
Chiang Ching-Kuo Foundation for International Scholarly Exchange (CCKF)
**Due date: Jan 15, 2013**

The foundation's grants provide support for research on Chinese Studies in the humanities and social sciences. The foundation will consider applications from institutions for grants to hold conferences, workshops, or seminars on specific subjects related to the foundation's goals and objectives. Applicants should submit the names of all participants, as well as titles of papers to be presented. The academic background of the participants and the significance of the meeting will be key factors in the evaluation process. In principle, the foundation does not provide funding for annual meetings.

[http://www.cckf.org.tw/e-americaCS.htm](http://www.cckf.org.tw/e-americaCS.htm)

Next Generation Fellowship
National Bureau of Asian Research
**Due date: Jan 15, 2013**

This is a post-master's degree program that is cultivating a new generation of Asian affairs specialists committed to and capable of bridging the gap between the best scholarly research and the pressing needs of U.S. foreign policy toward a rapidly changing Asia. The National Bureau of Asian Research (NBR) organizes its research around three broad topics: politics and security, economics and trade, and health and societal issues, with emphasis on those of interest to the United States.

Recent master's and professional degree holders (e.g., M.A., M.B.A., L.L.M., J.D.) are invited to apply for a year-long fellowship at NBR's headquarters in Seattle. Fellows will collaborate with leading scholars to conduct independent research and participate in the briefing of research findings to the policymaking community in Washington, D.C.

This one-year fellowship is designed to further the professional development of Asia specialists in the year just after the completion of their master's degree. Successful fellows will gain further knowledge of Asia and an understanding of the U.S. foreign policymaking process by: supporting NBR research projects; conducting independent research under the guidance of NBR fellowship staff and two NBR affiliated scholars; co-managing the NextGen Network blog; arranging seminars and discussion forums hosting Asia experts; and traveling to Washington, D.C., to participate an orientation and the briefing of research findings to relevant constituents within the policy community.

[http://www.nbr.org/about/nextgenfellowship.aspx](http://www.nbr.org/about/nextgenfellowship.aspx)

Boren Fellowships
Institute of International Education (IIE)
**Due date: Jan 31, 2013**
Boren Fellowships are funded by the National Security Education Program (NSEP), which focuses on geographic areas, languages, and fields of study deemed critical to United States national security. NSEP draws on a broad definition of national security, recognizing that the scope of national security has expanded to include not only the traditional concerns of protecting and promoting American well-being, but also the challenges of global society, including sustainable development, environmental degradation, global disease and hunger, population growth and migration, and economic competitiveness.

Boren Fellowships provide funds to United States graduate students to add an important international and language component to their graduate education through specialization in area study, language study, or increased language proficiency. Boren Fellowships support study and research in areas of the world that are critical to United States interests, including Africa, Asia, Central & Eastern Europe, Eurasia, Latin America, and the Middle East. The countries of Western Europe, Canada, Australia, and New Zealand are excluded.

The program will give preference to applicants planning to study in one of the following emphasized countries listed at http://www.borenawards.org/boren_fellowship/where_study.html.

Boren Fellows represent a variety of academic and professional disciplines, but all are interested in studying less commonly taught languages, including but not limited to Arabic, Chinese, Korean, Portuguese, Russian and Swahili. The complete list of languages is at http://www.borenawards.org/boren_fellowship/languages.html.

http://www.borenawards.org/boren_fellowship

**Next Generation Fellowship**  
National Bureau of Asian Research  
**Due date: Jan 15, 2013**

This is a post-master's degree program that is cultivating a new generation of Asian affairs specialists committed to and capable of bridging the gap between the best scholarly research and the pressing needs of U.S. foreign policy toward a rapidly changing Asia. The National Bureau of Asian Research (NBR) organizes its research around three broad topics: politics and security, economics and trade, and health and societal issues, with emphasis on those of interest to the United States.

Recent master's and professional degree holders (e.g., M.A., M.B.A., L.L.M., J.D.) are invited to apply for a year-long fellowship at NBR's headquarters in Seattle. Fellows will collaborate with leading scholars to conduct independent research and participate in the briefing of research findings to the policymaking community in Washington, D.C.

This one-year fellowship is designed to further the professional development of Asia specialists in the year just after the completion of their master's degree. Successful fellows will gain further knowledge of Asia and an understanding of the U.S. foreign policymaking process by:
supporting NBR research projects; conducting independent research under the guidance of NBR fellowship staff and two NBR affiliated scholars; co-managing the NextGen Network blog; arranging seminars and discussion forums hosting Asia experts; and traveling to Washington, D.C., to participate an orientation and the briefing of research findings to relevant constituents within the policy community.

http://www.nbr.org/about/nextgenfellowship.aspx

**MEDICINE & LIFE SCIENCES**
See also opportunities listed under MULTIPLE DISCIPLINES

**The Michelson Grants**
FoundAnimals
**Due date: Nov 1, 2012 (LOI); March 4, 2013 (full proposal)**

The Foundation seeks proposals for up to $250,000 per year for up to 3 years of funding for research in pursuit of permanent contraceptives for male and female cats and dogs. The first step in the Michelson Grant process is submission of a Letter of Intent (LOI).

A **$25 million prize** will be awarded to the first entity to provide to Found Animals a safe, effective, and practical non-surgical sterilant for use in cats and dogs. The winning entry for the Michelson Prize in Reproductive Biology must meet the following criteria:

- Single dose, permanent non-surgical sterilant
- Safe and effective in male and female cats and dogs
- Ablates sex steroids and/or their effects
- Suitable for administration in a field setting
- Viable pathway to regulatory approval
- Reasonable manufacturing process and cost

http://michelson.foundanimals.org

**Grand Challenges: TB Vaccine Accelerator Grant Opportunity**
Gates Foundation
**Due date: Nov 26, 2012 (LOI)**

The TB Vaccine Accelerator, a program to strengthen the pipeline of tuberculosis (TB) vaccine candidates and enable a more rational and accelerated vaccine development process, is launching a grant opportunity that is part of the Grand Challenges in Global Health—a large set of grant programs aimed at overcoming persistent bottlenecks that prevent the creation of effective health solutions for the developing world. This grant opportunity, the first public request for applications (RFA) launched by the TB Vaccine Accelerator, focuses on two interrelated program goals:
1. To develop novel approaches to vaccination against *Mycobacterium tuberculosis* (Mtb), with a particular focus on approaches that aim to induce protection against infection with Mtb; and
2. To develop models of natural Mtb transmission and methods for defining the relevant molecular and biological characteristics of naturally transmitted mycobacteria and their interactions with vertebrate hosts.

http://www.grandchallenges.org/GrantOpportunities/Pages/TBVaccineAccelerator.aspx

**McKnight Scholar Awards**
McKnight Endowment Fund for Neuroscience
**Due date: Jan 07, 2013**

The Endowment Fund supports innovative research designed to bring science closer to the day when diseases of the brain can be accurately diagnosed, prevented, and treated. To this end, the fund established these awards to encourage emerging neuroscientists to focus on disorders of learning and memory.


**Division of Environmental Biology (Core Programs) (DEB)**
National Science Foundation (NSF)
**Due date: Jan 09, 2013 (preliminary proposal); Aug 02, 2013 (full proposal)**

The DEB supports fundamental research on populations, species, communities, and ecosystems. Scientific emphases range across many evolutionary and ecological patterns and processes at all spatial and temporal scales. Areas of research include biodiversity, phylogenetic systematics, molecular evolution, life history evolution, natural selection, ecology, biogeography, ecosystem structure, function and services, conservation biology, global change, and biogeochemical cycles. Research on organismal origins, functions, relationships, interactions, and evolutionary history may incorporate field, laboratory, or collection-based approaches; observational or manipulative experiments; synthesis activities; as well as theoretical approaches involving analytical, statistical, or computational modeling.

Proposals are welcome in all areas of science supported by the Ecosystem Science Cluster:
- Ecosystem Studies Program

Proposals are welcome in all areas of science supported by the Evolutionary Processes Cluster:
- Evolutionary Ecology Program
- Evolutionary Genetics Program

Proposals are welcome in all areas of science supported by the Population and Community
The SBS supports research that advances our understanding of the diversity, systematics, and evolutionary history of organisms in natural systems. This research addresses fundamental questions in biodiversity, taxonomy, and phylogenetics, such as: What kinds of organisms exist in the natural world? How are they related? How did evolution lead to patterns of global biodiversity in time and space? How can phylogenetic history shed light on evolutionary patterns and processes in nature? Example topics include: expeditionary biodiversity research and discovery; identification and classification of organisms; and phylogeny and comparative phylogenetic biology. The SBS Cluster seeks to fund projects that are transformative - that is, those that innovatively and fundamentally transform our approaches to analyzing and understanding global biodiversity, its origins, distribution, and evolutionary history. The Cluster places a high value on integrative and holistic approaches to systematics research and training - i.e., those approaches and projects that integrate across all the components within the cluster (biodiversity discovery, organismal biology, taxonomy, phylogenetics, and evolution) and that train highly integrative systematists who can conduct research across the entire spectrum of these activities.

The Systematics and Biodiversity Science Cluster comprises two core programs: Biodiversity: Discovery & Analysis and Phylogenetic Systematics. In addition, the cluster includes a unique category of proposal with specific requirements (Advancing Revisionary Taxonomy and Systematics - see Dear Colleague Letter NSF 11-037 for details). All proposals sent to the SBS cluster should be submitted to one of the two core programs.

1. Biodiversity: Discovery & Analysis program. Supports all aspects of Biodiversity Science, including expeditionary and exploratory research in natural environments to advance the discovery, identification, description, classification and cataloguing of the world's biodiversity. These investigations should be focused at the organismal level and within an evolutionary context. Proposals may target any group of organisms from any natural habitat. Proposals should address biodiversity discovery questions and may entail a primarily clade-based approach (i.e., regional to planetary species-level inventories for a particular taxonomic group), a guild-based approach (i.e., focused on ecological assemblages, common habitats, or host-symbiont
assemblages), or a geographically-based approach. Such projects should focus on clades, guilds, or areas for which species-level biodiversity is very poorly known, and successful proposals will make a compelling case demonstrating that lack of knowledge. Projects that include fieldwork, work in existing collections, taxonomic identifications, revisionary classifications, monographs, hypothesis testing, and bioinformatics are appropriate in this program.

Biodiversity: Discovery & Analysis proposals should include well-documented plans for fieldwork coordination and permitting, vouchering of new collections, specimen preparation, long-term specimen storage regimes that are openly accessible, specimen identifications and descriptions, georeferencing, data modeling and databasing, and rapid dissemination of data into public biodiversity databases. The rationale for targeting specific taxonomic groups/areas and proposed sampling approaches should be well-justified. Innovative approaches, such as rapid identification/description, cybertaxonomy, and automated identification tools, are encouraged.

2. Phylogenetic Systematics program. Supports research that addresses significant questions about organismal evolution using phylogenetic approaches. The primary foci of this program are to investigate the origins of biodiversity and to resolve the relationships among species across the hierarchy of life. All "tree-based" approaches to studies of organismal evolution, including tree-building at all taxonomic levels, tree-based studies of character evolution, and tree-enabled comparative biology fall within this program. Projects that build, refine, and use phylogenies to study biogeographic distributions; temporal patterns of evolution; evolution of morphological, physiological, developmental, behavioral and molecular traits; adaptation; or other macroevolutionary patterns are appropriate. Projects that use phylogenies to produce revisionary classifications and monographs are also appropriate. Additionally, proposals that advance theory and methods of phylogenetic analysis and phylogenetic comparative approaches are also encouraged.

Phylogenetic Systematics proposals should include well-explicated methods of phylogenetic analysis, justification for targeting specific taxonomic groups, explanation of proposed data sampling approaches, well-justified phylogenetic comparative methods if appropriate, and plans for broad dissemination of results. Proposals that focus primarily on tree-based comparative biology should include a tree-building component sufficient to ensure that: the tree(s) used for comparative studies are strongly supported; previously published trees are enhanced and augmented; and tree(s) used include sufficient sampling for the questions proposed. Such proposals should also include explanations of phylogenetic comparative methods to be used.

If proposals include fieldwork or new collections: include well-documented plans for fieldwork coordination and permitting, vouchering of new collections, specimen preparation, long-term specimen storage regimes that are openly accessible, specimen identifications and descriptions, georeferencing, data modeling and databasing, and rapid dissemination of data into public biodiversity databases.

The Cluster also funds proposals submitted in response to the CAREER, RCN and OPUS solicitations.

The Cluster also funds conference and workshop proposals, requests for supplemental funding,
and RAPID or EAGER applications, all of which should be submitted following the standard guidelines directly to the GPG

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503618

**Long Term Research in Environmental Biology (LTREB)**  
National Science Foundation (NSF)  
**Due date: Jan 10, 2013- (preliminary proposal); Aug 01, 2013 (full proposal)**

Through the LTREB program, the Division of Environmental Biology (DEB) and the Division of Integrative Organismal Systems (IOS) encourage the submission of proposals that generate extended time series of biological and environmental data to address ecological and evolutionary processes and resolve important issues in organismal and environmental biology. Researchers must have collected at least six years of previous data to qualify for funding, and these data must motivate the proposed research. The proposal also must present a cohesive conceptual rationale or framework for ten years of research. Questions or hypotheses outlined in this conceptual framework must guide an initial five-year proposal as well as a subsequent, abbreviated renewal. Together, these will constitute a decadal research plan appropriate to begin to address critical and novel long-term questions in organismal and environmental biology. As part of the requirements for funding, projects must show how collected data will be shared broadly with the scientific community and the interested public.

All proposals submitted to the LTREB program are co-reviewed by participating Clusters in the two participating Divisions: Ecosystem Science, Population and Community Ecology, and Evolutionary Processes in DEB, and Behavioral Systems and Physiological and Structural Systems in IOS. Proposals must address topics supported by these programs. Researchers who are uncertain about the suitability of their project for the LTREB Program are encouraged to contact the cognizant program director.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13544

**Division of Integrative Organismal Systems Core Programs**  
National Science Foundation (NSF)  
**Due date: Jan 12, 2013 (preliminary proposal); Aug 02, 2013 (full proposal)**

The Division of Integrative Organismal Systems (IOS) supports research aimed at understanding why organisms are structured the way they are and function as they do. Proposals should focus on organisms as a fundamental unit of biological organization. PIs are encouraged to apply systems approaches that will lead to conceptual and theoretical insights and predictions about emergent organismal properties. Areas of inquiry include, but are not limited to, developmental biology and the evolution of developmental processes, nervous system development, structure, and function, physiological processes, functional morphology, symbioses, interactions of organisms with biotic and abiotic environments, and animal behavior.
Proposals are welcomed in all areas of science supported by the Division of Integrative Organismal Systems.

1. Behavioral Systems

2. Developmental Systems
   - Plant, Fungal and Microbial Developmental Systems
   - Animal Developmental Systems
   - Evolution of Developmental Systems

3. Neural Systems
   - Organization
   - Activation
   - Modulation

4. Physiological and Structural Systems
   - Symbiosis, Defense and Self-recognition
   - Processes, Structures and Integrity
   - Organism-Environment Interactions


Translational Postdoctoral Fellowship Program
Autism Speaks (AS)
Due date: Jan 24, 2013 (LOI); Mar 06, 2013 (full proposal)

This program is designed to support promising, well-qualified postdoctoral scientists in their pursuit of research training in translational research. Translational research seeks to accelerate the pace at which basic scientific discoveries are translated into novel and effective ways of diagnosing, preventing, and treating conditions. The fellowship is designed to encourage new investigators to enter into the field of autism spectrum disorders (ASD) research by providing funding for multidisciplinary translational training. This fellowship thus aims to support research training that involves the translation of biological discoveries toward novel and more effective methods or strategies for treating or diagnosing ASD.

For the Translational Postdoctoral Fellowships, the following areas of research are particularly encouraged:
   - Biomarker Discovery
   - Outcome Measure Development
   - Preclinical Target Validation
   - Experimental Therapeutics

Trainees are required to have a primary mentor, the faculty member with whom they directly carry out their research, as well as one or more secondary mentors, who will provide integrated training experiences in different disciplines. Integration of these elements of the training plan and
team will be weighted heavily in the evaluation of the fellowship applications.

http://www.autismspeaks.org/science/grants-program/open-grants-how-apply

Cognitive Neuroscience Program  
National Science Foundation (NSF)  
**Due date: Jan 24, 2013**

This program seeks highly innovative and interdisciplinary proposals aimed at advancing a rigorous understanding of how the human brain supports thought, perception, affect, action, social processes, and other aspects of cognition and behavior, including how such processes develop and change in the brain and through time.

The following funding opportunities are available under this program:
1. Individual Investigator Research Projects. Many research topics are studied most effectively by individual research scientists or by small teams of collaborating investigators. Investigators are invited to submit proposals that focus on cognitive neuroscience topics.
2. Workshops. Workshops will be supported that bring together diverse scientific partners around specific topics. Meetings will be focused on topics that can benefit from intensive small group discussions.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5316

Analysis of Alzheimer's Disease Genome Sequencing Project Data [U19]  
United States Department of Health and Human Services (HHS)  
**Due date: Jan 25, 2013**

The National Institute on Aging invites applications specific to the analysis of whole exome and genome sequencing data provided by the National Human Genome Research Institute Large-Scale Sequencing Program for the Alzheimer's disease research community.


Division of Molecular and Cellular Biosciences: Investigator-Initiated Research Projects  
National Science Foundation (NSF)  
**Due date: Jan 28, 2013**

The Division of Molecular and Cellular Biosciences (MCB) supports fundamental research and related activities designed to promote understanding of complex living systems at the molecular, subcellular, and cellular levels. The Division is soliciting proposals for hypothesis-driven and discovery research and related activities in the MCB's four core clusters, described below: Biomolecular Dynamics, Structure, and Function; Cellular Processes; Genetic Mechanisms; and Networks and Regulation. The Division will accept investigator-initiated research proposals only
in response to this solicitation.

1. Biomolecular Dynamics, Structure, and Function - This cluster supports fundamental research in the areas of molecular biophysics and biochemistry. The cluster gives high priority to creative projects that address the relationships between structure, function, and dynamics in studies of individual biomolecules and their complexes by an integrated approach of theory, computation, and experimental methods such as NMR, X-ray crystallography, EPR, and optical spectroscopy including single molecule methods. The cluster encourages research projects that are designed to discover and define general principles of macromolecular structure, dynamics, and mechanisms, as well as projects that will develop cutting-edge technologies in the context of biological questions relevant to the cluster. The cluster also encourages multidisciplinary research at the interface of biology with physics, chemistry, mathematics, computer science, and engineering. Funding priority is given to proposals that identify critical gaps in our understanding, propose imaginative experiments to fill the gaps, and promise high-impact breakthroughs. The cluster receives proposals in the following areas of research: structure, dynamics, and function of biomolecules; biomolecular interactions and mechanisms; and energy transduction: photosynthesis and biological electron transfer.

2. Cellular Processes - The Cellular Processes Cluster encourages the use of innovative approaches and technologies that address new concepts or resolve long-standing questions in cell biology. The cluster seeks to support imaginative projects that integrate research on processes at the supramolecular and cellular scales. The cluster recognizes the need for rigorous, quantitative approaches for cell biology and welcomes multidisciplinary research that includes physical, mathematical, and computational approaches. Areas of particular interest include evolutionary and comparative cell biology, live-cell imaging, single-particle analysis of macromolecular assemblies, architectural organization and dynamics of structures over broad dimensional scales. This cluster entertains proposals in the following areas of cell biology: membrane organization and function, extracellular matrices; organelle biogenesis, maintenance, and trafficking; and cytoskeletal dynamics, cell division and motility.

3. Genetic Mechanisms - The Genetic Mechanisms Cluster supports inventive studies seeking to address the following fundamental questions: How do genes work? How are genes maintained and inherited? How do genes and genomes change? The Cluster encourages research projects that capitalize on the growing abundance of genomic data to understand the relationship of genotype to phenotype. The Cluster also welcomes the development and use of innovative in vivo and in vitro approaches, including biochemical, biophysical, computational, genetic, genomic, and metagenomic methods. Research at the interfaces between biology and other disciplines such as physics, chemistry, mathematics, computer science, and engineering is encouraged. Funding priority is given to proposals that promise high-impact contributions and significant forward movement in the following areas: gene expression and epigenetics; chromosome dynamics, DNA replication, repair, recombination and inheritance; and evolution of genes and genomes.

4. Networks and Regulation - The Networks and Regulation Cluster seeks to support creative proposals that offer a comprehensive understanding of the emergent properties of cells, organisms, and microbial communities. The cluster promotes fundamental research addressing
the manner in which cells integrate environmental signals with their internal genetic and metabolic programs to regulate physiology, development or behavior. The Cluster is interested in supporting research in areas that include the nature and behavior of cellular networks; the elucidation of novel or important metabolic pathways (especially in plants and microbes); synthetic biology and the origin of living systems. Research projects are given high priority if they are likely to lead to quantitative, predictive models of cellular function through iterative cycles of theory and experiment. The proposals in the areas listed below are particularly encouraged: signaling, metabolic and gene regulatory networks; the minimal cell, synthetic biology and the origins of life; and environmental interactions, metabolic pathways and microbial communities.

The Division supports research using a range of experimental approaches - including in vivo, in vitro and in silico strategies - and a broad spectrum of model and non-model organisms, especially microbes and plants. Typical research in areas supported by MCB integrates theory and experimentation. The Division gives high priority to research projects that use theory, methods, and technologies from physical sciences, mathematics, computational sciences, and engineering to address basic biological questions. Projects that address the emerging areas of single molecule or single cell studies, molecular dynamics, small RNA and chromatin biology, predictive modeling of complexity at molecular and cellular levels, and synthetic biology are particularly welcome. The Division is also interested in projects aimed at understanding and predicting the molecular and cellular underpinnings of phenotypic variation and adaptation to environmental change. Highest funding priority is given to applications that are outstanding in both intellectual merit and broader impacts. The Division supports both hypothesis-driven research and discovery-based, large-scale biology research. Proposals that are motivated by relevance of the proposed research to human health or proposals that address the molecular basis of human diseases and treatment are not appropriate for the Division and will be returned without review.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503626

**PHYSICAL SCIENCES & MATHEMATICS**
See also opportunities listed under MULTIPLE DISCIPLINES

**Postdoctoral Fellowship**
University Corporation for Atmospheric Research (UCAR)
**Due date: Jan 05, 2013**

The HAO division is involved in four primary research areas: Atmosphere, Ionosphere and Magnetosphere (AIM), Lower Solar Atmosphere (LSA), Corona and Heliosphere (C&H), and Solar Interior and Variability (SIV). Scientists at HAO conduct research related to solar/stellar interiors and variability (including asteroseismology), the lower solar atmosphere, corona and heliosphere, and terrestrial and planetary atmospheres, ionospheres, and magnetospheres. Projects involving radiative transfer, hydrodynamics, magnetohydrodynamics, radiation hydrodynamics, plasma physics and other topics are pursued both out of fundamental physical interest and for their application in the above areas of research. Successful applicants will be
expected to pursue research in collaboration with members of the scientific staff and other long-term visitors in these and related areas.

HAO Fellowships will be granted on the basis of proven scientific ability and relevance to HAO research programs. Fellows are expected to work at HAO in Boulder, Colorado, with the exception of time spent participating in field research and observing programs. Fellows will have access to the HAO Linux/Unix computers, NCAR supercomputer systems, and the HAO and NCAR libraries and data archives from Mauna Loa Solar Observatory and other facilities.

http://www.hao.ucar.edu/people/visitors/postdoc.php

**Tectonics**  
National Science Foundation (NSF)  
**Due date: Jan 06, 2013**

The Tectonics Program supports a broad range of field, laboratory, computational, and theoretical investigations aimed at understanding the formation, evolution, and deformation of continental lithosphere through time. Proposals to elucidate the processes that act on the lithosphere at various time-scales and length-scales, either at depth or the surface, are encouraged. Because understanding such large-scale phenomena commonly requires a variety of expertise and methods, the Tectonics Program supports integrated research involving the disciplines of structural geology, petrology, geochronology, sedimentology, stratigraphy, geomorphology, rock mechanics, paleomagnetics, geodesy, and other geophysical techniques. EAR will consider co-funding of projects with other agencies and supports international work and collaborations.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13673

**Petrology and Geochemistry**  
National Science Foundation (NSF)  
**Due date: Jan 06, 2013**

The Petrology and Geochemistry Program supports basic research that address the formation and evolution of our planet using petrological and geochemical characteristics of Earth materials in the crust, mantle, and core. Proposals in this program generally address the petrology and high-temperature geochemistry of igneous and metamorphic rocks (including mantle samples), mineral physics, economic geology, and volcanology. Proposals that bridge disciplinary boundaries or that include development of analytical tools for potential use by the broad community are also encouraged.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13683

**Mathematical Biology Program**
National Science Foundation (NSF)

**Due date: Jan 13, 2013**

The program supports research in areas of applied and computational mathematics with relevance to the biological sciences. Successful proposals are mathematically innovative and address challenging problems of interest to members of the biological community. Projects may include development of mathematical concepts and tools traditionally seen in other disciplinary programs within DMS, e.g., topology, probability, statistics, and computation, etc. To receive appropriate and timely review, such proposals should be submitted directly to the relevant disciplinary program, but will be considered for co-review by the Mathematical Biology program, which may be selected as a secondary program. Proposals that use established mathematical, statistical and computational tools to address problems in the biological sciences are typically not appropriate for consideration by the disciplinary programs within DMS.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5690

Geobiology and Low-Temperature Geochemistry Program
National Science Foundation (NSF)

**Due date: Jan 16, 2013**

This program supports research on (1) the interactions between biological and geological systems at all scales of space and time; (2) geomicrobiology and biomineralization processes; (3) the role of life in the transformation and evolution of the Earth's geochemical cycles; (4) inorganic and organic geochemical processes occurring at or near the Earth's surface now and in the past, and at the broad spectrum of interfaces ranging in scale from planetary and regional to mineral-surface and supramolecular; (5) mineralogy and chemistry of soils and sediments; (6) surficial chemical and biogeochemical systems and cycles and their modification through natural and anthropogenic change; and (7) development of tools, methods, and models for low-temperature geochemistry and geobiological research - such as those emerging from molecular biology - in the study of the terrestrial environment.

The program is committed to supporting the most meritorious research in any relevant area, including interdisciplinary and multidisciplinary research, as well as research involving international collaboration. The program is especially interested in proposals in emerging fields. Where appropriate, proposals may be considered for joint support with other programs in EAR or with other divisions at the NSF. In some cases, proposals may be transferred to other programs within EAR or to other divisions within the NSF when it is deemed appropriate by program officers from the respective programs or divisions. Principal investigators are encouraged to contact the cognizant program officers regarding proposals that may cross disciplinary boundaries before submission.

The program encourages proposals for large projects that will contribute to transformative methodologies and cross-disciplinary research. Interdisciplinary teams considering submitting such proposals are strongly encouraged to contact the cognizant program officer with an expression of interest and to communicate their anticipated needs before proceeding with
proposal development.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13689

Geomorphology and Land Use Dynamics
National Science Foundation (NSF)
Due date: Jul 16, 2013

This program supports innovative research into processes that shape and modify landscapes over a variety of length and time scales. The program encourages research that investigates quantitatively the coupling and feedback among such processes, their rates, and their relative roles, especially in the contexts of variation in climatic and tectonic influences and in light of changes due to human impact.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13690

Sedimentary Geology and Paleobiology
National Science Foundation (NSF)
Due date: Jan 17, 2013

The Sedimentary Geology and Paleobiology Program (SGP) supports research in a wide variety of areas in sedimentary geology and paleobiology in order to comprehend the full range of physical, biological, and chemical processes of Earth's dynamic system. The program supports the study of deep-time records of these processes archived in the Earth's sedimentary carapace (crust) at all spatial and temporal scales. These records are fingerprints of the processes that produced them and continue to shape the Earth.

For the years 2013-2017, the Sedimentary Geology and Paleobiology Program will be sponsoring a two track opportunity that will consist of the normal SGP competition (Track 1) and bi-annually, a new track termed Earth-Life Transitions (ELT) (Track 2).

Track 1: General Program: Sedimentary Geology and Paleobiology supports general studies of: (1) the changing aspects of life, ecology, environments, and biogeography in past geologic time based on fossil plants, animals, and microbes; (2) all aspects of the Earth's sedimentary carapace - insights into geological processes recorded in its records and rich organic and inorganic resources locked in rock sequences; (3) the science of dating and measuring the sequence of events and rates of geological processes as manifested in Earth's past sedimentary and biological (fossil) record; (4) the geologic record of the production, transportation, and deposition of physical and chemical sediments; and (5) understanding Earth's deep-time (pre-Holocene) climate systems.

Track 2: Earth-Life Transitions: In fiscal years 2013-2017, the Sedimentary Geology and Paleobiology program is sponsoring a bi-annual second track opportunity termed Earth-Life Transitions (ELT) within the normal programmatic spring competition. The goals of the ELT
track are: 1) to address critical questions about Earth-Life interactions in deep-time through the synergistic activities of multi-disciplinary science and 2) to enable team-based interdisciplinary projects involving stratigraphy, sedimentology, paleontology, proxy development, calibration and application studies, geochronology, and climate modeling at appropriately resolved scales of time and space, to understand major linked events of environmental, climate and biotic change at a mechanistic level.


National Spatial Data Infrastructure Cooperative Agreements Program G12AS20000
United States Department of the Interior (DOI)
Due date: Jan 24, 2013

The purpose of the National Spatial Data Infrastructure Cooperative Agreements Program (NSDI CAP) is to fund innovative projects in the geospatial data community to build the infrastructure necessary to effectively discover, access, share, manage, and use digital geospatial data. The NSDI consists of the technologies, policies, organizations, and people necessary to promote cost-effective production, ready availability, and greater utilization of geospatial data among a variety of sectors, disciplines, and communities. Specific NSDI CAP areas of emphasis include documenting, implementing, and providing outreach for FGDC geospatial standards including metadata; expanding geographic information coordination and collaboration across and between organizational levels; promoting geospatial best practices; and advancing the implementation and exchange of common geospatial data, services, and applications. The results of the awarded projects benefit multiple Federal agencies as well as the overall geospatial community. Since 1994, the Federal Geographic Data Committee (FGDC), hosted by the U.S. Geological Survey, has awarded projects that advance the NSDI in partnership with the geospatial community.

The following are the 2012 categories:

Category 1: Metadata Trainer and Outreach
Category 2: ISO Geospatial Metadata Standards Implementation
Category 3: Expanding the State GIS Inventory
Category 4: Fifty States Initiative: Business Plan Development and Implementation
Category 5: FGDC-endorsed Standards Implementation Training and Outreach
Category 6: FGDC Standards Development Assistance
Category 7: Geospatial Platform Cloud Service Testbed

http://www.fgdc.gov/grants/2012CAP/2012CAPDescriptions

Proliferation Detection Research
United States Department of Energy (DOE)
Due date: Jan 30, 2013
The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Defense Nuclear Nonproliferation (DNN), Office of Nonproliferation and Verification Research and Development (DNN R&D) is soliciting applications for the research and development (R&D) needs described herein. DNN R&D has the responsibility to sponsor R&D activities to improve capabilities to detect and monitor indicators of foreign nuclear weapons programs. DNN R&D is sponsoring research in Radiation Sensors and Advance Materials Research; Remote Sensing; Simulations, Algorithms and Modeling; and Enabling Technology for Mass Spectrometry. To meet its mission, DNN R&D applies the broad base of U.S. technical expertise to include the DOE National Laboratories, academia and industry.

http://www.grants.gov/search/search.do?mode=VIEW&oppId=134133

Research Areas of Upper Air Physics, Astronomy, Astrophysics, and Remote Geo-Sensing
United States Department of Defense (DOD)
Due date: Jan 31, 2013

The Naval Research Laboratory (NRL) conducts research in the fields of astronomy and astrophysics, solar terrestrial physics, and atmospheric science of both the earth and other planets in the solar system. Satellites, rockets and ground-based facilities are used to study the behavior of the ionosphere and the upper, middle, and lower atmospheres. In order to carry out such investigations, research and development is needed for satellite instrumentation, data analysis, remote sensing methods, first principles modeling of atmospheric processes, supporting calibration/validation activities, and supporting missile defense modeling and simulation systems development. This requirement is to provide R&D expertise for experimental and theoretical support to NRL projects using on-site and off-site personnel. Experiment support includes calibration, upgrades, repairs, refurbishments, and flat fielding of optical systems. Theoretical support includes modeling of processes in the middle and upper atmospheres, development and application of remote sensing techniques (from microwave to far ultraviolet wavelengths), data analysis (solar and terrestrial), and investigations of signals utilizing trans ionospheric propagation models. Support will also address missile defense high-fidelity modeling and simulation through requirements management systems analysis, testing, and user support.

https://www.fbo.gov/?s=opportunity&mode=form&id=12fcfc2c3eae3d63672fdecef599f91e&tab=core&_cview=0

SOCIAL SCIENCES
See also opportunities listed under HUMANITIES; INTERNATIONAL AREA STUDIES: and MULTIPLE DISCIPLINES

Methodology, Measurement, and Statistics (MMS)
National Science Foundation (NSF)
Due date: Jan 16, 2013
The Methodology, Measurement, and Statistics (MMS) Program is an interdisciplinary program in the Social, Behavioral, and Economic Sciences that supports the development of innovative analytical and statistical methods and models for those sciences. MMS seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social and behavioral sciences. As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the development of new and innovative approaches to surveys and to the analysis of survey data.

The MMS Program supports a variety of different types of awards, including:
1. Regular Research Awards
2. Mid-Career Research Fellowships
3. Doctoral Dissertation Research Improvement Grants
4. Research Experience for Undergraduates (REU) Supplement

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5421

Metadata for Long-standing Large-Scale Social Science Surveys (META-SSS)
National Science Foundation (NSF)
Due date: Jan 31, 2013

The American National Election Studies (ANES), General Social Survey (GSS) and Panel Study of Income Dynamics (PSID) are long-term survey projects that form key research infrastructure for the social and behavioral sciences. The value of these three projects depends in part on data accessibility and ease of use. These data dissemination activities provide value far beyond the original data collection effort. That value consists of providing access and tools that enable dissemination to a wide range of user communities - from social scientists to advance knowledge and test theories, to teachers in secondary schools to explain basic statistical and analytic methods, to citizens outside of the higher education and research communities who use the data to generate basic descriptive statistics and graphs.

The ANES is a 60-year time series of survey data collections that began in 1948. The ANES conducts national surveys of the American electorate during election years as well as conducts research and development work through pilot studies. The ANES is considered the 'gold standard' data source for election studies; it sheds light on how American democracy works by exploring the causes and consequences of citizen opinion, vote choices, and electoral outcomes. The GSS has provided data on contemporary American society since 1972, serving as a barometer of social change and trends in attitudes, behaviors, and attributes of the United States adult population. The GSS is a nationally representative personal interview survey of the United States adult population that collects data on a wide range of behavioral items, personal psychological evaluations, and demographic characteristics of respondents and their parents. Lastly, the PSID is a longitudinal survey of a nationally representative sample of U.S. families that began in 1968. The PSID is the world's longest running nationally representative panel survey. With over forty years of data on the same families and their descendants, the PSID is considered a cornerstone of the data infrastructure for empirically based social science research in the USA and the world.
Over the course of the extensive survey cycles the three survey projects have accumulated important metadata, or "data about data" including technical reports, survey instruments and other information that describe the survey process. These metadata exist in many different formats (text and non-text-based) and have been stored in different ways depending on the date of the original data collection, the available technologies at that date (paper, scanned into PDF, and other formats), and access to storage facilities. Currently, these metadata are not in a format that allows for easy analysis within any one survey and the surveys do not have common data formats that would enable analysis of data across surveys. The lack of metadata limits the usefulness of the legacy data from early survey waves. Researchers interested in using the data under current conditions must invest significant time and effort to understand the data structure. This limits the ability of interdisciplinary scientists to analyze data from two or more of the surveys. And finally it limits the availability of the survey results from all three surveys to the broad public that is interested in questions about democracy, family well being, and social attitudes.

This solicitation seeks proposals that will develop tools to bridge data collection and dissemination by first, collecting and coding metadata associated with future waves of the ANES, GSS, and PSID surveys as collection and processing techniques evolve; and second, migrating (or "retrofitting") metadata associated with earlier (i.e., legacy) waves of these surveys into formats and schema that are compatible with current and future collection efforts. The goal is to fund projects that will help make the many years of legacy data available to researchers who seek to answer current scientific questions.

NSF prefers proposals that incorporate metadata for all three surveys. However, given the additional complexity of metadata for panel surveys, proposals which code metadata for the PSID alone, or for the cross-sectional ANES and GSS together, excluding the PSID, will also be considered.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504705

MULTIPLE DISCIPLINES

Kansas Soybean Commission’s FY2014 Request for Proposals
Kansas Soybean Commission
Due date: Oct, 14

1. Breeding/Production/Environmental Programs
Suggested/Prioritized proposals include, but are not limited to: Sudden Death Syndrome, spider mites, drought resistance, higher yielding high-oleic beans, stink bugs, stem borer, technology transfer/diffusion of innovation.

2. Livestock & Human Nutrition Studies/Food Safety
Suggested/Prioritized proposals include, but are not limited to: commercially viable supplies of non-food-grade soy-protein concentrates, goat feeds, aquaculture feeds, raw soybeans as a diet food, outreach to school nutrition programs.

3. Value-Added Projects
Suggested/Prioritized proposals include, but are not limited to: alternative fuels, bio-based materials, commercialization of technologies in the materials industry, adhesives in the auto industry, soy-based plastics, binders in pressed-wood products, weather-proofing products, dust suppressants.

4. Marketing Extension Program and Transportation
The proposed program should include extensive educational training of soybean pricing, crop disappearance/market share, crop insurance options, yield protection, farm program considerations, and options in marketing available to Kansas soybean producers. Programming should be conducted in conjunction with private sector industry representatives to further explore opportunities in the marketplace for pricing and/or value-added options

http://www.kansassoybeans.com/production_research/index.html

Research on the Science and Technology Enterprise: Statistics and Surveys
National Science Foundation (NSF)
Due date: Jan 15, 2013

NCSES is one of the thirteen principal federal statistical agencies within the United States. It is responsible for the collection, acquisition, analysis, reporting and dissemination of objective, statistical data related to the science and engineering enterprise in the United States and other nations that is relevant and useful to practitioners, researchers, policymakers and the public. NCSES uses this information to prepare a number of statistical data reports as well as analytical reports including the National Science Board's biennial report, Science and Engineering (S&E) Indicators, and Women, Minorities and Persons with Disabilities in Science and Engineering.

The Center would like to enhance its efforts to support analytic and methodological research in support of its surveys, and to engage in the education and training of researchers in the use of large-scale nationally representative datasets. NCSES welcomes efforts by the research community to use NCSES data for research on the science and technology enterprise, to develop improved survey methodologies for NCSES surveys, to create and improve indicators of S&T activities and resources, and strengthen methodologies to analyze and disseminate S&T statistical data. To that end, NCSES invites proposals for individual or multi-investigator research projects, doctoral dissertation improvement awards, workshops, experimental research, survey research and data collection and dissemination projects under its program for Research on
the Science and Technology Enterprise: Statistics and Surveys.

NCSES welcomes proposals for research, workshops and studies to advance the development, understanding, and quality of the S&T enterprise. Research could include improved approaches to indicator construction and presentation, new S&T indicator development, strengthening of methodologies to improve the surveys of S&T data, analytical or theoretical work on S&T policy relevant issues, and better understanding of the S&T enterprise in the United States and globally. NCSES encourages proposals that analyze NCSES data or NCSES data in conjunction with those from other sources, but does not limit the work to the analysis of the data it collects. NCSES mission is very explicitly geared toward activities that support use of data it collects through surveys, to methodological improvement of those surveys, and support of researchers in using this type of information.

Potential topics for consideration include but are not limited to:
- Improving analytical techniques to produce better indicators of issues related to: (1) the education and retention of scientists and engineers including minorities, women or persons with disabilities, (2) the demand, supply or characteristics of science and engineering personnel, (3) outcomes and impacts of research and development (R&D) expenditures in various sectors, countries, and fields including emerging fields, (4) estimates of current and near-term future S&T resources; and (5) innovation systems and measures, and competitiveness.
- Developing data, analyses, and indicators of the globalization of science, engineering and technology and analyses leading to a better understanding of the emerging global economy. This could include, for example, international comparisons of S&T capabilities and activities, including inputs, outputs, and impacts and interactions; indicators of international education and mobility of scientists and engineers; as well as foreign investment in S&T activities.
- Developing new and improved indicators and advances in the analysis and understanding of existing indicators of the inputs, outputs, linkages and social or economic impacts of S&T activities.
- Developing new and improved techniques to develop S&T indicators through the use of administrative records, social media, or novel data extraction methods.
- Improving the methodologies to collect, analyze, and disseminate statistical data through surveys, censuses, use of administrative records, and social media. Such studies could include research on survey design or quality of surveys conducted by NCSES. Studies of survey design could include the target population, sample frame, sample design, development of new data collection techniques, imputation, or estimation techniques. Survey quality could include studies on sampling error, coverage, non-response, measurement error, or data consistency with earlier or related surveys. Interest also relates to dissemination and analysis of the information in a timely and user-friendly format.
- Conducting studies that examine improved methods of presenting complex statistical analysis in an accessible, indicator format - either in hard copy or electronic form. This could include studies that examine various reports in "indicator" formats and develop new approaches for potential use in Science and Engineering Indicators reports, or historical reviews of approaches to presenting indicators that build on previous styles to develop suggestions for new generations of policy indicators.

http://nsf.gov/funding/pgm_summ.jsp?pims_id=5265
Developmental and Learning Sciences (DLS)
National Science Foundation (NSF)
Due date: Jan 15, 2013

DLS supports fundamental research that increases our understanding of cognitive, linguistic, social, cultural, and biological processes related to children's and adolescents' development and learning. Research supported by this program will add to our basic knowledge of how people learn and the underlying developmental processes that support learning, with the objective of leading to better educated children and adolescents who grow up to take productive roles as workers and as citizens.

Among the many research topics supported by DLS are developmental cognitive neuroscience; development of higher-order cognitive processes; transfer of knowledge from one domain or situation to another; use of molecular genetics to study continuities and discontinuities in development; development of peer relations and family interactions; multiple influences on development, including the impact of family, school, community, social institutions, and the media; adolescents' preparation for entry into the workforce; cross-cultural research on development and learning; and the role of cultural influences and demographic characteristics on development. Additional priorities include research that: incorporates multidisciplinary, multi-method, microgenetic, and longitudinal approaches; develops new methods, models, and theories for studying learning and development; and integrates different processes (e.g., learning, memory, emotion), levels of analysis (e.g., behavioral, social, neural), and time scales (e.g. infancy, middle childhood, adolescence).

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=8671

Graduate Assistance in Areas of National Need (GAANN)
United States Department of Education (ED)
Due date: Jan 20, 2013

The GAANN program provides grants to academic departments and programs of institutions of higher education (IHEs) to support graduate fellowships for students with excellent academic records who demonstrate financial need and plan to pursue the highest degree available in their course of study at the institution.

A project must provide fellowships in one or more of the following areas of national need: Area Studies; Biological Sciences/Life Sciences; Chemistry; Computer and Information Sciences; Engineering; Foreign Languages and Literatures; Mathematics; Nursing; Physics; and Educational Evaluation, Research, and Statistics

Young Faculty Award
United States Department of Defense (DOD)
Due date: Jan 19, 2013

This RA solicits ground-breaking single-investigator proposals from junior faculty for research and development in the areas of Physical Sciences, Engineering, Mathematics, Medicine, Biology, Information and Social Sciences of interest to DARPA’s Microsystems Technology Office (MTO), Defense Science Office (DSO), and Information Innovation Office (I2O). The DARPA Young Faculty Award (YFA) program aims to identify and engage rising stars in junior faculty positions in academia and expose them to DOD needs. In particular, YFA will provide high-impact funding to the elite junior faculty early in their careers in order to develop their research ideas in the context of DoD issues. The long term goal of the program is to develop the next generation of academic scientists, engineers, biologists and mathematicians in key disciplines of interest to DARPA who will focus a significant portion of their career on DOD and National Security issues. The topic areas are as follows:

1. Quantum Science and Technology: DARPA is interested in experimental or theoretical research to advance the understanding of quantum sciences and technology. Proposed research should exploit uniquely quantum properties to develop technologies that will help to address outstanding challenges in physics, computer science, materials, and biological sciences.

2. DARPA seeks unconventional approaches for modulating and recording system-level biological properties. Technical areas below are of particular interest for addressing unmet challenges in medicine, materials, manufacturing and other areas of biotechnology. Applicants must choose one subtopic technical area (modulation and measurement of biological networks and signaling pathways, hybrid biotic-abiotic interfaces, or minimally invasive recording and modulation), describe unmet needs to which their approach can be applied, evaluate the approach relative to the state of the art, and propose future collaborators that will help transition their approach toward application.

3. Mathematics: DARPA is interested in both theoretical mathematics that provides the foundations for advanced science and technology programs, as well as applied and computational mathematics that will help ensure continued technical superiority. Potential applications should encompass interdisciplinary efforts that target and clarify the mathematical aspects of the other core technologies listed in this RA.

4. Strongly Correlated Materials: As defense needs grow to require ever greater system functionality and performance, new materials with previously unrealized physical, electronic, and magnetic properties will be required, and fundamental research must meet these emerging needs. Experimental and theoretical research efforts that leverage or enable exciting results from strongly correlated materials are of interest to DARPA. Broad areas of interest include materials development, novel tools or techniques for synthesis and characterization, and novel theoretical techniques. Specific areas of interest include, but are not limited to low-dimensional materials, high temperature superconductivity, metal-insulator transitions, topological insulators, computational modeling and gauge/gravity duality.

5. Predictive Materials Science: DARPA is interested in research to speed the development of
new materials and to enable improved predictive control over material performance, longevity, and failure. Research in modeling, metrology, and combinations of these two areas is of interest. Computational methods to facilitate development of new materials and to improve existing materials are of interest. Modeling or computational approaches to design materials with properties based on composition, structure, order/disorder, and periodicity are of interest. Research to advance metrology, testing, or modeling and to develop techniques that predict material failure or performance may also be of interest. Topics of interest may also include revolutionary characterization techniques that forecast material failure and longevity.

6. New Engineered Materials: DARPA is interested in the development of materials with new and revolutionary functionality to enable continued high performance as military systems and missions demand ever greater performance in challenging environments. Future defense needs will require materials that feature as-yet unrealized capabilities or combinations of properties. Specific areas of interest include, but are not limited to: high-strength and light-weight materials, high-stiffness and high-loss materials, as well as materials capable of actuated changes in structural, electronic, or optical properties. New materials synthesis and processing techniques that utilize extreme conditions to attain new materials are also of interest, as well as materials and composites that obtain their properties not just from composition but from their structure.

7. Advanced Electronics: DARPA is interested in innovative fundamental and applied research in next-generation semiconductor devices, integrated circuit technologies, circuit architectures and design methodologies for future DoD electronic systems. Research topics of interest include, but are not limited to: end-of-roadmap-and-beyond nanoscale devices; spintronic devices; high-power RF/microwave devices; power electronics; sub-mm-wave and THz electronics; power electronics; emerging memory technologies; high-speed mixed-signal circuits; adaptive and reconfigurable circuits; linearization; ultra-low-power electronics; radiation hard electronics; system-on-chip (SoC), heterogeneous, and 3D integration strategies; computer-aided-design and modeling; and co-design of hardware and algorithms. Integrated microsystems, incorporating components from other domains such as MEMS/NEMS and photonics are also of great interest.

8. MEMS/NEMS: DARPA is interested in innovative research addressing fundamentals, technologies, and devices based on the unique phenomena, properties and structures available at the micro and nanoscale. Microelectromechanical and nanoelectromechanical systems (MEMS/NEMS) with applications for improved energy capture and conversion; navigation; communication; thermal management; and sensing of chemical, biological, optical, infrared, acoustic, magnetic, and many other signals are areas of interest. DARPA is also interested in capabilities to predict the behavior and failure of micro and nanomechanical structures based on theoretical and/or experimental studies. In addition, the integration of such devices and structures with signal processing and communications electronics to realize complex microsystems is of great interest.

9. Photonics and Lasers: DARPA seeks innovative research to develop and demonstrate future generations of photonic materials, devices and applications. This includes fundamental and applied research in novel photonic materials and devices, devices for photonic integrated circuits, and research applicable to future DoD systems related to communications, sensing and targeting,
signal processing, directed energy and defensive countermeasures. DARPA is interested in a wide range of research topics including, but not limited to: nanostructured materials and devices; high-performance photonic materials; revolutionary concepts and devices for chip-scale photonic communications, RF/microwave photonic signal processing, and multispectral focal plane sensors; and novel concepts for lasers such as chip-scale frequency-stable low-noise lasers, high brightness laser diode arrays, high power coherently-combinable fiber lasers, and lasers for operation in MWIR, LWIR, visible, UV and X-ray spectral ranges.

10. Digital Direct Manufacturing: DARPA is interested in innovative research on topics addressing affordable production of structural components including, but not limited to exploiting additive and/or subtractive digital manufacturing methods. Processes are desired that are capable of producing parts directly from digital files and with properties comparable to or better than mass manufacturing. The goal is to use cloud-like resources to unite the physical and information content of components across a geographically dispersed manufacturing network. Methods are also desired to "print" components that are not easily fabricated conventionally, especially when these processes enable improved spatial control of composition, crystal texture, or macrostructure. Proposals combining integrated computational materials engineering (ICME) approaches with manufacturing are also desired as an approach to qualify lot sizes as small as a single part.

11. Neuroscience: DARPA is seeking cutting-edge neuroscience programs to enable breakthrough science and technology for improved human performance, and more specifically, to enable members of our forces to thrive within a broad spectrum of operational missions and conditions. The areas for research may span fundamental, applied, and computational neuroscience.

12. Computational and Quantitative Social, Decision, and Behavioral Sciences: DARPA is interested in the intersection of traditional social, decision and behavioral sciences with advanced computational methods such as statistics, natural language processing, deductive reasoning and problem solving, knowledge representation, modeling and simulation. Interdisciplinary approaches to develop, test and apply social science theory to real world issues with national security implications are of particular interest. Proposals should clearly identify research questions, a plan to extract insights through computational methods, and to validate the proposed theoretical solution across multiple cases. Applicants may also explore and develop new or under-utilized interdisciplinary perspectives to the research question. With regards to methodology, DARPA is interested in automating as much as possible the formalization and instantiation of social science theories for testing and integration in simulations. Applicants may propose to develop efficient, effective ways to identify data or modeling requirements for specific kinds of social science theories. Finally, social science modeling and simulation platforms that can generate enormous amounts of data and new methodologies for exploring this rich data space are also encouraged.

13. Robotics: DARPA seeks research in robotics science and systems. Specific areas of interest include, but are not limited to: autonomy, including perception, planning, and task-level control; design tools; human-robot interaction and human-robot symbiosis; manipulation and mobile manipulation; mobility, including legged, tracked, wheeled, snake, and hybrid locomotion; as
The PRIME program seeks to support research on evaluation with special emphasis on exploring innovative approaches for determining the impacts and usefulness of STEM education projects and programs; building on and expanding the theoretical foundations for evaluating STEM education and workforce development initiatives, including translating and adapting approaches from other fields; and growing the capacity and infrastructure of the evaluation field.

Two types of proposals will be supported by the program: Exploratory Projects that include proof-of-concept and feasibility studies and more extensive Full-Scale Projects.

Exploratory Projects are small-scale explorations that include proof-of-concept and feasibility studies. Exploratory projects must describe relevant literature, evaluation research questions, data to be gathered and analytic approaches to be taken. Not all Exploratory Projects will result in a subsequent, full-scale proposal. However, for those that do, the results and implications of the exploratory work must be explicitly described.

Full-Scale Projects are larger in scope and may investigate pressing issues facing the field; develop innovative evaluation methodologies or approaches; translate evaluation approaches from other fields and/or disciplines; or build capacity for rigorous, useful evaluations.

The PRIME program may support a few well-focused conferences and workshops that have the potential to transform the field. Budgets are expected to be related to the duration of the event and the number of participants. Proposals should include a conceptual framework for the conference, a draft agenda, a possible participant list, and the likely outcomes or products that will result from the conference.
To prepare a complete proposal, authors should have a copy of the Avian Health and Disease Program-Region 7 Request for Proposals (FY2012) and the National Strategic Plan.

The objectives of the Avian Health and Disease Program are to conduct health and disease surveillance of wild bird populations to:
1. Establish avian health baselines
2. Identify existing and emerging avian health and disease risks
3. Ensure disease preparedness and prevention
4. Develop, guide, and implement appropriate and effective management actions

To address these objectives, the National Strategic Plan (NSP) (1) provides support for the following six main areas:
1. Personnel
2. Morbidity and mortality monitoring, response and technical assistance
3. Health and disease impact investigations
4. Technical assistance for management issues
5. Infrastructure and provisions needed for field operations
6. Communications and informing policy
7. Collaborations

The Regional Avian Health and Disease Coordinator (acting coordinator: Russ Oates) is responsible for ensuring that Alaska's AHD program is meeting the objectives and fulfilling requirements identified in the NSP. This Request for Proposals (RFP) is designed specifically to address Health and Disease Impact Investigations (Number 3 above). Although, many of the other areas, such as Morbidity and Mortality Monitoring and Response will require partnering between the Regional Office and many field stations across the state, these activities will be developed with the Coordinator and field personnel separately from this proposal process.

Below are specific topics identified within the NSP that should be considered in proposals seeking funding from the R7-AHD program. Note: Not all of these topics will be addressed in every proposal. The author will be asked how their proposal addresses the objectives and activities outlined in the NSP.

Health and Disease Impact Investigations:

Integrate health surveillance into field activities
- Initiate or expand investigation of regionally specific avian health and disease problems
- Collect baseline data on avian species to assess health and disease concerns
- Evaluate critical avian populations: species of concern, threatened and endangered species (conduct field investigations in combination with the ongoing management activities)
- Investigate infectious diseases (viruses, bacteria, fungal infections)
- Investigate non-infectious diseases (parasites, bioxins, contaminants)
- Conduct targeted pathogen surveillance
- Investigate indigenous and exotic disease problems
Climate change
- Incorporate AHD activities into DOI climate change strategic plans, LCCs, CCPs and other planning documents.
- Integrate health surveillance with National Wildlife Refuges Inventories and Monitoring disease surveillance priorities
- Investigate the impact of climate change on the biology of wildlife disease reservoirs and vector species
- Investigate disease impacts on species adaptation strategies
- Identify ancillary stressors influencing avian susceptibility to disease (decoupling of biological processes)

Human-induced effects on disease transmission
- Assess the increased disease risks associated with urban, suburban, and agricultural environments (water quality, habitat fragmentation, contaminants)
- Aid in the prevention and management of invasive species introduction
- Adjust FWS personnel behaviors during field activities to decrease the potential of disease transmission to humans, other wildlife, other geographic sites

http://www.grants.gov/search/search.do?mode=VIEW&oppId=133693