This announcement is provided by the Oklahoma State Regents for Higher Education, Grant Writing Assistance once or twice weekly. Grant opportunities are screened for higher education eligibility, deadline date and grouped alphabetically by topic. Add your email address to the listserv at http://lists.onenet.net/mailman/listinfo/okhigheredgrants if you wish to be added to the direct mailing list. Check out the Grant Opportunities for Oklahoma Colleges and Universities web site at http://www.okhighered.org/grant-opps/. Thank you!

Dr. Linda Mason
Coordinator for Grants Writing
Oklahoma State Regents for Higher Education
655 Research Parkway, Suite 200 OKC 73104
405-225-9486 800-858-1840 lmason@osrhe.edu

WHAT’S HAPPENING?

Adapting Socio-Ecological Systems to Increased Climate Variability is a multi-institutional collaborative project that includes researchers from Oklahoma State University, Samuel Roberts Noble Foundation, University of Oklahoma and University of Tulsa. Researchers from these institutions are working together to significantly advance the understanding of how socio-ecological systems can adapt sustainably to increased climate variability caused by a changing climate.

Registration is free but required: http://www.okepscor.org/general-attendance-poster-registration-2017-ok-nsf-epscor-state-conference. If a poster will be presented, the information must be submitted at registration. Deadline March 15 for posters, March 21 for participants only.

TRAINING OPPORTUNITY

Beginning Grantwriting – May 26, 2017
9:00 am to 3:30 pm – 3 South Conference Room 3rd floor, 655 Research Parkway, OKC
(For faculty, staff and students of Oklahoma higher education institutions) Beginning Grantwriting: The Process is a practical application workshop for those who have not written a grant proposal but are going to try it soon. Limited to 18 participants. Dr. Linda Mason is the workshop leader. There is no fee, but you must register.

TRAINING OPPORTUNITY

Search for Grant Resources – May 25, 2017
1:00 pm to 4:00 pm – 3 South Conference Room 3rd floor, 655 Research Parkway, OKC
(For faculty, staff and students of Oklahoma higher education institutions) Search and Select: A Strategy for Finding Grant Resources is a practical application workshop for those who are searching for grant resources. Limited to 18. There is no fee, but you must register.

AGRICULTURE

Deadline Date – March 29, 2017
Grant Resource – US Department of Agriculture
Category – Children, Youth and Families at Risk Sustainable Communities Projects – Land Grant Universities
### ARTS AND CULTURE

**Deadline Date** – May 3, 2017  
**Grant Resource** – National Endowment for the Humanities  
**Category** – Humanities Access  
**Description** – Humanities Access grants help support capacity building for humanities programs that benefit one or more of the following groups: children, family, and young adults (defined to include those between ages 18 and 30). Humanities Access grants provide funding for existing programs at institutions such as public libraries, local and regional museums, historical societies, community colleges, four-year colleges and universities, archival repositories, and other cultural organizations.  
**Size of Grant** - $100,000  
**Cost Sharing or Match** – Yes  
**Web** - [https://www.neh.gov/grants/challenge/humanities-access-grants](https://www.neh.gov/grants/challenge/humanities-access-grants)

**Deadline Date** – May 2, 2017  
**Grant Resource** – National Endowment for the Humanities  
**Category** – Preservation Assistance Grants for Smaller Institutions  
**Description** – Preservation Assistance Grants help small and mid-sized institutions—such as libraries, museums, historical societies, archival repositories, cultural organizations, town and county records offices, and colleges and universities—improve their ability to preserve and care for their significant humanities collections. These may include special collections of books and journals, archives and manuscripts, prints and photographs, moving images, sound recordings, architectural and cartographic records, decorative and fine art objects, textiles, archaeological and ethnographic artifacts, furniture, historical objects, and digital materials.  
**Size of Grant** – up to $7 million  
**Cost Sharing or Match** – No  
**Web** - [https://www.neh.gov/grants/preservation/preservation-assistance-grants-smaller-institutions](https://www.neh.gov/grants/preservation/preservation-assistance-grants-smaller-institutions)

**Deadline Date** – May 2, 2017  
**Grant Resource** – National Endowment for the Humanities  
**Category** – Preservation and Access Education and Training  
**Description** – The Preservation and Access Education and Training program supports the development of knowledge and skills among professionals responsible for preserving and establishing access to humanities collections. Thousands of libraries, archives, museums, and historical organizations across the country maintain important collections of books and manuscripts, photographs, sound recordings and moving images, archaeological and ethnographic artifacts, art and material culture collections, electronic records, and digital objects.  
**Size of Grant** - $440,000  
**Cost Sharing or Match** – No  

**Deadline Date** – April 13, 2017  
**Grant Resource** – National Endowment for the Arts  
**Category** – NEA Performing Arts Discovery  
**Description** – The National Endowment for the Arts’ Performing Arts Discovery program will support U.S. Regional Arts Organizations (RAOs) to undertake performing arts platforms in their region that will showcase the work of U.S. performing artists for presenters based outside of this country.  
**Size of Grant** - $100,000  
**Cost Sharing or Match** – Yes  
**Web** - [https://www.arts.gov/program-solicitation-performing-arts-discovery](https://www.arts.gov/program-solicitation-performing-arts-discovery)

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**Size of Grant** - 35 awards of $160,000  
**Cost Sharing or Match** – No  
Health Fields; Physical Education, Optometry, Pharmacy

**Deadline Date** – May 1, 2017
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – NIMHD Endowment Program for Increasing Research and Institutional Resources
**Description** – The purpose of this program is to build capacity and research infrastructure and to facilitate minority health and health disparities research at eligible institutions, but not to directly support the research projects itself.
**Size of Grant** – 3 awards of $2 million each
**Cost Sharing or Match** – No

**Deadline Date** – November 25, 2017
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – Neuroskeletal Biology of the Dental and Craniofacial Skeletal System (R01)
**Cost Sharing or Match** – No

**Deadline Date** – May 2, 2017
**Grant Resource** – US Department of Health and Human Services HRSA
**Category** – Regional Telehealth Resource Center
**Cost Sharing or Match** – No

**Deadline Date** – May 1, 2017
**Grant Resource** – US Department of Health and Human Services NIMHD
**Category** – Increasing Research and Institutional Resources
**Cost Sharing or Match** – No

**Deadline Date** – January 7, 2018
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – NCI Mentored Patient-Oriented Research Career Development Award to Promote Diversity (K23)
**Cost Sharing or Match** – No

**Deadline Date** – May 1, 2017
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – Pragmatic Research in Healthcare Settings to Improve Diabetes and Obesity Prevention and Care
**Cost Sharing or Match** – No

**Deadline Date** – May 1, 2107
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – Evaluating Natural Experiments in Healthcare to Improve Diabetes Prevention and Treatment
**Cost Sharing or Match** – No

**Deadline Date** – May 7, 2017; September 7, 2017
**Grant Resource** – US Department of Health and Human Services NIH
**Category** – Innovations in HIV Testing, Adherence and Retention
**Cost Sharing or Match** – No
Deadline Date – May 1, 2017; November 1, 2017
Grant Resource – US Department of Health and Human Services NIH
Category – Planning Grants for Pragmatic Research in Healthcare Settings to Improve Diabetes and Obesity Prevention and Care (R34)
Cost Sharing or Match – No

Deadline Date – May 25, 2017
Grant Resource – US Department of Health and Human Services NIH
Category – NICHD (National Institute of Child Health and Human Development) Research Education Programs (R25)
Cost Sharing or Match –

Deadline Date – September 18, 2017
Grant Resource –
Category – NIDCD Research Grants for Translating Basic Research into Clinical Tools (R01)
Cost Sharing or Match – No

Deadline Date – May 2, 2017
Grant Resource – US Department of Health and Human Services HRSA
Category – National Telehealth Resource Center
Cost Sharing or Match – No

**MATH; ENGINEERING**

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Biophotonics
Description – The Biophotonics program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Biophotonics program is to explore the research frontiers in photonics principles, engineering and technology that are relevant for critical problems in fields of medicine, biology and biotechnology. Fundamental engineering research and innovation in photonics is required to lay the foundations for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies.

Size of Grant – Awards totaling $6.6 million
Cost Sharing or Match – No

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Environmental Engineering
Description – The Environmental Engineering program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Sustainability; and 2) Biological and Environmental Interactions of Nanoscale Materials. The goal of the Environmental Engineering program is to support transformative research which applies scientific and engineering principles to avoid or minimize solid, liquid, and gaseous discharges, resulting from human activities on land, inland and coastal waters, and air, while promoting resource and energy conservation and recovery.

Size of Grant – Awards totaling $10.8 million
Cost Sharing or Match – No

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Particulate and Multiphase Processes
Description – The Particulate and Multiphase Processes program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Fluid Dynamics; and 3) Thermal
Transport Processes. The goal of the Particulate and Multiphase Processes (PMP) program is to support fundamental research on physico-chemical phenomena that govern particulate and multiphase systems, including flow of suspensions, drops and bubbles, granular and granular-fluid flows, behavior of micro- and nanostructured fluids, and self-assembly/directed-assembly processes that involve particulates. The program encourages transformative research to improve our basic understanding of particulate and multiphase processes with emphasis on research that demonstrates how particle-scale phenomena affect the behavior and dynamics of larger-scale systems. Although proposed research should focus on fundamentals, a clear vision is required that anticipates how results could benefit important applications in advanced manufacturing, energy harvesting, transport in biological systems, biotechnology, or environmental sustainability.

**Size of Grant** – Awards totaling $8.3 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Process Separations

**Description** – The Process Separations program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Systems, Reaction Engineering, and Molecular Thermodynamics; and 3) Energy for Sustainability. The Process Separations program supports research focused on novel methods and materials for separation processes, such as those central to the chemical, biochemical, bioprocessing, materials, energy, and pharmaceutical industries. A fundamental understanding of the interfacial, transport, and thermodynamic behavior of multiphase chemical systems as well as quantitative descriptions of processing characteristics in the process-oriented industries is critical for efficient resource management and effective environmental protection. The program encourages proposals that address long standing challenges and emerging research areas and technologies, have a high degree of interdisciplinary work coupled with the generation of fundamental knowledge, and the integration of education and research.

**Size of Grant** – Awards totaling $3.2 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Process Systems, Reaction Engineering and Molecular Thermodynamics

**Description** – The Process Systems, Reaction Engineering and Molecular Thermodynamics program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Systems, Reaction Engineering, and Molecular Thermodynamics; and 3) Energy for Sustainability. The goal of the Process Systems, Reaction Engineering and Molecular Thermodynamics (PRM) program is to advance fundamental engineering research on the rates and mechanisms of chemical reactions, systems engineering and molecular thermodynamics as they relate to the design and optimization of chemical reactors and the production of specialized materials that have important impacts on society. The program supports the development of advanced optimization and control algorithms for chemical processes, molecular and multi-scale modeling of complex chemical systems, fundamental studies on molecular thermodynamics, and the integration of this information into the design of complex chemical reactors.

**Size of Grant** – Awards totaling $4.9 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Thermal Transport Processes

**Description** – The Thermal Transport Processes program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Fluid Dynamics; and 3) Particulate and Multiphase Processes. The Thermal Transport Processes (TTP) program supports engineering research projects that lay the foundation for new discoveries in thermal transport phenomena. These projects should either develop new fundamental knowledge or combine existing knowledge in thermodynamics, fluid mechanics, and heat and mass transfer to probe new areas of innovation. The program seeks transformative projects with the potential for improving our basic understanding, predictability and application of thermal transport processes. Projects should articulate the contribution(s) to the
fundamental knowledge supporting thermal transport processes and state clearly the potential application(s) impact when appropriate. Projects that combine analytical, experimental and numerical efforts, geared toward understanding, modeling and predicting thermal phenomena, are of great interest.

**Size of Grant** – Awards totaling $7 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Cellular and Biochemical Engineering

**Description** – The Cellular and Biochemical Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Engineering of Biomedical Systems; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The Cellular and Biochemical Engineering (CBE) program supports fundamental engineering research that advances the understanding of cellular and biomolecular processes in engineering biology and eventually leads to the development of enabling technology for advanced biomanufacturing in support of the therapeutic cells, biochemical, biopharmaceutical and biotechnology industries. A quantitative treatment of biological and engineering problems of biological processes is considered vital to successful research projects in the CBE program.

**Size of Grant** – Awards totaling $8.2 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Environmental Sustainability

**Description** – The Environmental Sustainability program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Engineering; and 2) Biological and Environmental Interactions of Nanoscale Materials. The goal of the Environmental Sustainability program is to promote sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. Research efforts supported by the program typically consider long time horizons and may incorporate contributions from the social sciences and ethics.

**Size of Grant** – Awards totaling $7 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Energy for Sustainability

**Description** – The Energy for Sustainability program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Separations; and 3) Process Systems, Reaction Engineering, and Molecular Thermodynamics. The goal of the Energy for Sustainability program is to support fundamental engineering research that will enable innovative processes for the sustainable production of electricity and fuels, and for energy storage. Processes for sustainable energy production must be environmentally benign, reduce greenhouse gas production, and utilize renewable resources.

**Size of Grant** – Awards totaling $13 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Engineering of Biomedical Systems

**Description** – The Engineering of Biomedical Systems program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Engineering of Biomedical Systems (EBMS) program is to provide research opportunities to develop novel ideas into discovery-level and transformative projects that integrate engineering and life sciences in solving biomedical problems that serve humanity in the long-term. EBMS projects must be at the interface of engineering and biomedical sciences and include objectives that advance both engineering and biomedical sciences.

**Size of Grant** - $300,000 to $600,000

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NANOSCIENCE

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Biophotonics
Description – The Biophotonics program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Biophotonics program is to explore the research frontiers in photonics principles, engineering and technology that are relevant for critical problems in fields of medicine, biology and biotechnology. Fundamental engineering research and innovation in photonics is required to lay the foundations for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies.
Size of Grant – Awards totaling $6.6 million

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Nano-Biosensing
Description – The Nano-Biosensing program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Biophotonics; and 4) Disability and Rehabilitation Engineering. The Nano-Biosensing program supports fundamental engineering research on devices and methods for measurement and quantification of biological analytes. Proposals that incorporate emerging nanotechnology methods are especially encouraged. Areas of interest include:
- Multi-purpose sensor platforms that exceed the performance of current state-of-the-art devices.
- Novel transduction principles, mechanisms and sensor designs suitable for measurement in practical matrix and sample-preparation-free approaches. These include error-free detection of pathogens and toxins in food matrices, waterborne pathogens, parasites, toxins, biomarkers in body fluids, and others that improve human condition.
- Nano-biosensors that enable measurement of biomolecular interactions in their native states, transmembrane transport, intracellular transport and reactions, and other biological phenomena.
- Studies that examine intracellular measurements must include discussion on the significance of the measurement.
Size of Grant – Awards totaling $7.6 million

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Disability and Rehabilitation Engineering
Description – The Disability and Rehabilitation Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Biophotonics; and 4) Nano-Biosensing. The Disability and Rehabilitation Engineering program supports fundamental engineering research that will improve the quality of life of persons with disabilities through: development of new technologies, devices, or software; advancement of knowledge regarding normal or pathological human motion; or understanding of injury mechanisms. Research may be supported that is directed toward the characterization, restoration, rehabilitation, and/or substitution of human functional ability or cognition, or to the interaction of persons with disabilities and their environment may be supported.
Size of Grant – Awards totaling $4.6 million

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Engineering of Biomedical Systems
Description – The Engineering of Biomedical Systems program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Engineering of Biomedical Systems (EBMS) program is to provide research opportunities to develop novel ideas into discovery-level and transformative projects that integrate engineering and life sciences in solving biomedical problems that serve humanity in the long-term. EBMS projects must be at the interface of engineering and biomedical sciences and include objectives that advance both engineering and biomedical sciences.

Size of Grant - $300,000 to $600,000
Cost Sharing or Match – No

Deadline Date – Anytime
Grant Resource – National Science Foundation
Category – Biological and Environmental Interactions of Nanoscale Materials.
Description – The Biological and Environmental Interactions of Nanoscale Materials program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Engineering; and 2) Environmental Sustainability. The goal of the Biological and Environmental Interactions of Nanoscale Materials program is to support research to advance fundamental and quantitative understanding of the interactions of biological and environmental media with nanomaterials and nanosystems.

Size of Grant – Awards totaling $4.5 million
Cost Sharing or Match – No

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Cellular and Biochemical Engineering
Description – The Cellular and Biochemical Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Engineering of Biomedical Systems; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The Cellular and Biochemical Engineering (CBE) program supports fundamental engineering research that advances the understanding of cellular and biomolecular processes in engineering biology and eventually leads to the development of enabling technology for advanced biomanufacturing in support of the therapeutic cells, biochemical, biopharmaceutical and biotechnology industries. A quantitative treatment of biological and engineering problems of biological processes is considered vital to successful research projects in the CBE program.

Size of Grant – Awards totaling $8.2 million
Cost Sharing or Match – No

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Disability and Rehabilitation Engineering
Description – The Disability and Rehabilitation Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Biophotonics; and 4) Nano-Biosensing. The Disability and Rehabilitation Engineering program supports fundamental engineering research that will improve the quality of life of persons with disabilities through: development of new technologies, devices, or software; advancement of knowledge regarding normal or pathological human motion; or understanding of injury mechanisms. Research may be supported that is directed toward the characterization, restoration, rehabilitation, and/or substitution of human functional ability or cognition, or to the interaction of persons with disabilities and their environment may be supported.

Size of Grant – Awards totaling $4.6 million
Cost Sharing or Match – No

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Fluid Dynamics
Description – The Fluid Dynamics program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Particulate and Multiphase Processes; and 3) Thermal
Transport Processes. The Fluid Dynamics program supports fundamental research toward gaining an understanding of the physics of various fluid dynamics phenomenon. Proposed research should contribute to basic scientific understanding via experiments, theoretical developments, and computational discovery. Encouraged are proposals that focus on high Reynolds number turbulence scaling and modeling. Major areas of interest and activity in the program include: Turbulence and Transition; high Reynolds number experiments; large eddy simulation; direct numerical simulation; transition to turbulence; 3-D boundary layers; separated flows; multi-phase turbulent flows; flow control and drag reduction; Bio-inspired Fluid Mechanics; fluid-structure interactions; biological flow processes; Flow of Complex Fluids; non-Newtonian fluid mechanics; viscoelastic flows; Micro- and Nano-fluidics; micro-and nano-scale flow phenomena; Interfacial Interactions and Instabilities; hydrodynamic stability; droplet interactions; Wind and Ocean Energy Harvesting; focused on fundamental fluid dynamics phenomena associated with renewal energy. Proposals on wind and ocean energy harvesting and on environmental flows could be submitted to the program when the proposed research is focused on fundamental fluid dynamics phenomena or on development of novel computational fluid dynamics (CFD) approaches, rather than applications or devices and materials.

**Size of Grant** – Awards totaling $9 million  
**Cost Sharing or Match** – No  

**SCIENCE; ENVIRONMENTAL SCIENCE; BIOLOGY; CHEMISTRY**

**Deadline Date** – May 23, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Antarctic Research  
**Description** – The U.S. Antarctic Program (USAP) supports scientific research in Antarctica and provides operational research support. The NSF Office of Polar Programs Antarctic Sciences Section (ANT) supports research to: 1) expand fundamental knowledge of the Antarctic region, 2) improve understanding of interactions between the Antarctic region and global earth systems, and 3) utilize the unique characteristics of the Antarctic continent as an observing platform. Antarctic fieldwork is supported for research that can only be performed or is best performed in Antarctica. ANT encourages research using existing samples, data, and models that do not require fieldwork. ANT encourages research that crosses and combines disciplinary perspectives and approaches.

**Size of Grant** – Awards totaling $55 million  
**Cost Sharing or Match** – No  

**Deadline Date** – November 6, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Petascale Computing  
**Description** – In 2013, a new NSF-funded petascale computing system, Blue Waters, was deployed at the University of Illinois at Urbana-Champaign. The goal of this project and system is to open up new possibilities in science and engineering by providing computational capability that makes it possible for investigators to tackle much larger and more complex research challenges across a wide spectrum of domains. The purpose of this solicitation is to invite research groups to submit requests for allocations of resources on the Blue Waters system. Proposers must show compelling science or engineering challenges that require petascale computing resources. Proposers must also be prepared to demonstrate that they have science or engineering research problems that require and can effectively exploit the petascale computing capabilities offered by Blue Waters. Proposals from or including junior researchers are encouraged, as one of the goals of this solicitation is to build a community capable of using petascale computing.

**Size of Grant** – 15 awards totaling $225,000  
**Cost Sharing or Match** – No  

**Deadline Date** – October 20, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Environmental Sustainability  
**Description** – The Environmental Sustainability program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Engineering; and 2) Biological and Environmental Interactions of Nanoscale Materials. The goal of the Environmental Sustainability program...
is to promote sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. Research efforts supported by the program typically consider long time horizons and may incorporate contributions from the social sciences and ethics.

**Size of Grant** – Awards totaling $7 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Energy for Sustainability

**Description** – The Energy for Sustainability program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Separations; and 3) Process Systems, Reaction Engineering, and Molecular Thermodynamics. The goal of the Energy for Sustainability program is to support fundamental engineering research that will enable innovative processes for the sustainable production of electricity and fuels, and for energy storage. Processes for sustainable energy production must be environmentally benign, reduce greenhouse gas production, and utilize renewable resources.

**Size of Grant** – Awards totaling $13 million

**Cost Sharing or Match** – No


**Deadline Date** – Anytime

**Grant Resource** – National Science Foundation

**Category** – Biological and Environmental Interactions of Nanoscale Materials.

**Description** – The Biological and Environmental Interactions of Nanoscale Materials program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Engineering; and 2) Environmental Sustainability. The goal of the Biological and Environmental Interactions of Nanoscale Materials program is to support research to advance fundamental and quantitative understanding of the interactions of biological and environmental media with nanomaterials and nanosystems.

**Size of Grant** – Awards totaling $4.5 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Cellular and Biochemical Engineering

**Description** – The Cellular and Biochemical Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Engineering of Biomedical Systems; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The Cellular and Biochemical Engineering (CBE) program supports fundamental engineering research that advances the understanding of cellular and biomolecular processes in engineering biology and eventually leads to the development of enabling technology for advanced biomanufacturing in support of the therapeutic cells, biochemical, biopharmaceutical and biotechnology industries. A quantitative treatment of biological and engineering problems of biological processes is considered vital to successful research projects in the CBE program.

**Size of Grant** – Awards totaling $8.2 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Engineering of Biomedical Systems

**Description** – The Engineering of Biomedical Systems program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Biophotonics; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Engineering of Biomedical Systems (EBMS) program is to provide research opportunities to develop novel ideas into discovery-level and transformative projects that integrate engineering and life sciences in solving biomedical problems that serve humanity in the long-term. EBMS projects must be at the interface of engineering and biomedical sciences and include objectives that advance both engineering and biomedical sciences.

**Size of Grant** - $300,000 to $600,000

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Cost Sharing or Match – No

**Deadline Date** – October 20, 2017
**Grant Resource** – National Science Foundation
**Category** – Disability and Rehabilitation Engineering
**Description** – The Disability and Rehabilitation Engineering program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Biophotonics; and 4) Nano-Biosensing. The Disability and Rehabilitation Engineering program supports fundamental engineering research that will improve the quality of life of persons with disabilities through: development of new technologies, devices, or software; advancement of knowledge regarding normal or pathological human motion; or understanding of injury mechanisms. Research may be supported that is directed toward the characterization, restoration, rehabilitation, and/or substitution of human functional ability or cognition, or to the interaction of persons with disabilities and their environment may be supported.

**Size of Grant** – Awards totaling $4.6 million
**Cost Sharing or Match** – No

**Deadline Date** – October 20, 2017
**Grant Resource** – National Science Foundation
**Category** – Thermal Transport Processes
**Description** – The Thermal Transport Processes program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Fluid Dynamics; and 3) Particulate and Multiphase Processes. The Thermal Transport Processes (TTP) program supports engineering research projects that lay the foundation for new discoveries in thermal transport phenomena. These projects should either develop new fundamental knowledge or combine existing knowledge in thermodynamics, fluid mechanics, and heat and mass transfer to probe new areas of innovation. The program seeks transformative projects with the potential for improving our basic understanding, predictability and application of thermal transport processes. Projects should articulate the contribution(s) to the fundamental knowledge supporting thermal transport processes and state clearly the potential application(s) impact when appropriate. Projects that combine analytical, experimental and numerical efforts, geared toward understanding, modeling and predicting thermal phenomena, are of great interest.

**Size of Grant** – Awards totaling $7 million
**Cost Sharing or Match** – No

**Deadline Date** – October 20, 2017
**Grant Resource** – National Science Foundation
**Category** – Combustion and Fire Systems
**Description** – The Combustion and Fire Systems program is part of the Transport Phenomena cluster, which includes also 1) Fluid Dynamics; 2) Particulate and Multiphase Processes; and 3) Thermal Transport Processes. The goal of the Combustion and Fire Systems program is to generate cleaner global and local environments, enhance public safety, improve energy and homeland security, and enable more efficient energy conversion and manufacturing.

**Size of Grant** – Awards totaling $4.7 million
**Cost Sharing or Match** – No

**Deadline Date** – October 20, 2017
**Grant Resource** – National Science Foundation
**Category** – Process Systems, Reaction Engineering and Molecular Thermodynamics
**Description** – The Process Systems, Reaction Engineering and Molecular Thermodynamics program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Separations; and 3) Energy for Sustainability. The goal of the Process Systems, Reaction Engineering and Molecular Thermodynamics (PRM) program is to advance fundamental engineering research on the rates and mechanisms of chemical reactions, systems engineering and molecular thermodynamics as they relate to the design and optimization of chemical reactors and the production of specialized materials that have important impacts on society. The program supports the development of advanced optimization and control algorithms for chemical processes, molecular and multi-scale modeling of complex chemical
systems, fundamental studies on molecular thermodynamics, and the integration of this information into the design of complex chemical reactors.

**Size of Grant** – Awards totaling $4.9 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Process Separations

**Description** – The Process Separations program is part of the Chemical Process Systems cluster, which includes also 1) Catalysis; 2) Process Systems, Reaction Engineering, and Molecular Thermodynamics; and 3) Energy for Sustainability. The Process Separations program supports research focused on novel methods and materials for separation processes, such as those central to the chemical, biochemical, bioprocessing, materials, energy, and pharmaceutical industries. A fundamental understanding of the interfacial, transport, and thermodynamic behavior of multiphase chemical systems as well as quantitative descriptions of processing characteristics in the process-oriented industries is critical for efficient resource management and effective environmental protection. The program encourages proposals that address long standing challenges and emerging research areas and technologies, have a high degree of interdisciplinary work coupled with the generation of fundamental knowledge, and the integration of education and research.

**Size of Grant** – Awards totaling $3.2 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Nano-Biosensing

**Description** – The Nano-Biosensing program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Biophotonics; and 4) Disability and Rehabilitation Engineering. The Nano-Biosensing program supports fundamental engineering research on devices and methods for measurement and quantification of biological analytes. Proposals that incorporate emerging nanotechnology methods are especially encouraged. Areas of interest include:

- Multi-purpose sensor platforms that exceed the performance of current state-of-the-art devices.
- Novel transduction principles, mechanisms and sensor designs suitable for measurement in practical matrix and sample-preparation-free approaches. These include error-free detection of pathogens and toxins in food matrices, waterborne pathogens, parasites, toxins, biomarkers in body fluids, and others that improve human condition.
- Nano-biosensors that enable measurement of biomolecular interactions in their native states, transmembrane transport, intracellular transport and reactions, and other biological phenomena.
- Studies that examine intracellular measurements must include discussion on the significance of the measurement.

**Size of Grant** – Awards totaling $7.6 million

**Cost Sharing or Match** – No


**Deadline Date** – October 20, 2017

**Grant Resource** – National Science Foundation

**Category** – Particulate and Multiphase Processes

**Description** – The Particulate and Multiphase Processes program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Fluid Dynamics; and 3) Thermal Transport Processes. The goal of the Particulate and Multiphase Processes (PMP) program is to support fundamental research on physico-chemical phenomena that govern particulate and multiphase systems, including flow of suspensions, drops and bubbles, granular and granular-fluid flows, behavior of micro- and nanostructured fluids, and self-assembly/directed-assembly processes that involve particulates. The program encourages transformative research to improve our basic understanding of particulate and multiphase processes with emphasis on research that demonstrates how particle-scale phenomena affect the behavior and dynamics of larger-scale systems. Although proposed research should focus on fundamentals, a clear vision is required that anticipates how results could benefit important applications in
advanced manufacturing, energy harvesting, transport in biological systems, biotechnology, or environmental sustainability.

**Size of Grant** – Awards totaling $8.3 million  
**Cost Sharing or Match** – No  

**Deadline Date** – October 20, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Environmental Engineering  
**Description** – The Environmental Engineering program is part of the Environmental Engineering and Sustainability cluster, which includes also 1) Environmental Sustainability; and 2) Biological and Environmental Interactions of Nanoscale Materials. The goal of the Environmental Engineering program is to support transformative research which applies scientific and engineering principles to avoid or minimize solid, liquid, and gaseous discharges, resulting from human activities on land, inland and coastal waters, and air, while promoting resource and energy conservation and recovery.

**Size of Grant** – Awards totaling $10.8 million  
**Cost Sharing or Match** – No  

**Deadline Date** – October 20, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Biophotonics  
**Description** – The Biophotonics program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Biophotonics program is to explore the research frontiers in photonics principles, engineering and technology that are relevant for critical problems in fields of medicine, biology and biotechnology. Fundamental engineering research and innovation in photonics is required to lay the foundations for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies.

**Size of Grant** – Awards totaling $6.6 million  
**Cost Sharing or Match** – No  

**Deadline Date** – October 20, 2017  
**Grant Resource** – National Science Foundation  
**Category** – Fluid Dynamics  
**Description** – The Fluid Dynamics program is part of the Transport Phenomena cluster, which includes also 1) Combustion and Fire Systems; 2) Particulate and Multiphase Processes; and 3) Thermal Transport Processes. The Fluid Dynamics program supports fundamental research toward gaining an understanding of the physics of various fluid dynamics phenomenon. Proposed research should contribute to basic scientific understanding via experiments, theoretical developments, and computational discovery. Encouraged are proposals that focus on high Reynolds number turbulence scaling and modeling. Major areas of interest and activity in the program include: Turbulence and Transition; high Reynolds number experiments; large eddy simulation; direct numerical simulation; transition to turbulence; 3-D boundary layers; separated flows; multi-phase turbulent flows; flow control and drag reduction; Bio-inspired Fluid Mechanics; fluid-structure interactions; biological flow processes; Flow of Complex Fluids; non-Newtonian fluid mechanics; viscoelastic flows; Micro- and Nano-fluidics; micro-and nano-scale flow phenomena; Interfacial Interactions and Instabilities; hydrodynamic stability; droplet interactions; Wind and Ocean Energy Harvesting; focused on fundamental fluid dynamics phenomena associated with renewal energy. Proposals on wind and ocean energy harvesting and on environmental flows could be submitted to the program when the proposed research is focused on fundamental fluid dynamics phenomena or on development of novel computational fluid dynamics (CFD) approaches, rather than applications or devices and materials.

**Size of Grant** – Awards totaling $9 million  
**Cost Sharing or Match** – No  
VOCATIONAL REHABILITATION

Deadline Date – October 20, 2017
Grant Resource – National Science Foundation
Category – Biophotonics
Description – The Biophotonics program is part of the Engineering Biology and Health cluster, which includes also 1) Cellular and Biochemical Engineering; 2) Engineering of Biomedical Systems; 3) Nano-Biosensing; and 4) Disability and Rehabilitation Engineering. The goal of the Biophotonics program is to explore the research frontiers in photonics principles, engineering and technology that are relevant for critical problems in fields of medicine, biology and biotechnology. Fundamental engineering research and innovation in photonics is required to lay the foundations for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies.
Size of Grant – Awards totaling $6.6 million
Cost Sharing or Match – No