Grant Opportunity Alerts: Issue: ORD-GOA-2014-08

This issue includes Special Events, NSF Webinar, NSF new Grant Proposal Guide December 2014 information, and Grant Opportunities from EU, NSF, NIH, DoE, DoD and more.

You may be interested in the NSF report on **Research on the Science and Technology Enterprise: Statistics and Surveys - R&D, U.S. S&T Competitiveness, STEM Education, S&T Workforce** issued on Nov 21, 2014.
Available Formats:
HTML:
http://www.nsf.gov/pubs/2015/nsf15521/nsf15521.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
PDF:
http://www.nsf.gov/pubs/2015/nsf15521/nsf15521.pdf?WT.mc_id=USNSF_25&WT.mc_ev=click
TXT:
http://www.nsf.gov/pubs/2015/nsf15521/nsf15521.txt?WT.mc_id=USNSF_25&WT.mc_ev=click

Keywords and Areas Included in Funding Opportunities Alerts (see below)**:**
Simon Foundation: Global Brain Postdoctoral Fellowships, Collaborative Grants, Mathematics, Computer Science
NIH: R01, R21, System Science, Health and Behavior
NSF: Structural and Architectural Engineering; Mechanics of Materials and Structures; Civil Infrastructure, resilient and sustainable civil infrastructure Systems; Natural Hazards
ONR: Nanoscience and Nanotechnology**,** Silicon Based Thin Film Solar Cells, Nanoceramics

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Special Events

NJIT Distinguished Research Panel on NIH Funding Opportunities and Review Process

When: December 12, 2014; 11.30 AM to 1.30 PM
Where: Architecture Gallery, Weston Hall
Who are Speakers:

Daofen Chen, Ph.D.
Program Director, Extramural Research Program
National Institute of Neurological Disorders and Stroke (NINDS/NIH)

Weijia Ni, Ph.D
Chief, RPHB/DABP
Center for Scientific Review (CSR)
National Institutes of Health (NIH)

And others from Rutgers Medical School and SHRP

Why You Should Attend: You should attend to learn about NIH priorities, type of support and recent changes in NIH-CSR review process. Also, meet and network with researchers and faculty from Rutgers University, Rutgers Medical School, SHRP and EDC members during the networking and light refreshment event.

Distinguished Seminar with NSF CMMI Division Director

When: December 10, 2014; 9.00 AM to 10.30 AM
Where: 3710, GITC
Who is the Speaker: George Hazelrigg, PhD**,** Division Director, Civil, Mechanical and Manufacturing Innovation (CMMI) Division, National Science Foundation
Why You Should Attend: You should attend to learn about NSF priorities and grant opportunities with the Civil, Mechanical and Manufacturing Innovation (CMMI) Division, National Science Foundation
RSVP: Space is limited, so please reserve a space by contacting Professor Shawn Chester (shawn.a.chester@njit.edu).

Horizon 2020: The EU Framework Programme for Research and Innovation

When: December 5, 2014; 8.00 AM to 10.00 AM
Where: The Westin Princeton at Forrestal Village, Nassau Room 201 Village Boulevard, Princeton, NJ 08540
Who is the Speaker: Errol G. Levy, Deputy Head of the Science, Technology and Innovation Section, Delegation of the European Union to the USA
Why You Should Attend: Horizon 2020 is the main European Union program for funding research and innovation activities from 2014 to 2020. It focuses on three overarching priorities – excellent science, industrial leadership and societal challenges. During the presentation Mr. Errol Levy will describe the main elements of Horizon 2020, in terms of content, types of activities funded, forms of participation and the rules that apply. Opportunities for U.S. researchers and organizations to engage in transatlantic cooperation in science, technology and innovation, and to obtain funding, will be highlighted.
More Information: For more information about Horizon 2020:
http://ec.europa.eu/programmes/horizon2020/

Improving Undergraduate STEM Education: IUSE Webinar: Nov 24 2014 2:00PM to Dec 12 2014 2:00PM NSF

About the Webinar
The following webinars are scheduled to provide information about the Improving Undergraduate STEM Education (IUSE) program.
To Join the Webinar

- Click the Webinar Address of the meeting you would like to attend (see below)
- If requested, enter your name and email address.
- Enter the meeting password.
- Click 'Join"

Follow the instructions that appear on your ... More at
http://www.nsf.gov/events/event_summ.jsp?cntn_id=133433&WT.mc_id=USNSF_13&WT.mc_ev=click

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NSF Proposal & Award Policies & Procedures Guide (PAPPG): New Version December 2014

The Proposal & Award Policies & Procedures Guide (PAPPG) is comprised of documents relating to the Foundation's proposal and award process. The PAPPG, in conjunction with NSF's Grant General Conditions, serves as the Foundation's implementation of 2 CFR § 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. If the PAPPG is silent on a specific area covered by 2 CFR § 200, the requirements specified in 2 CFR § 200 must be followed. It has been designed for use by both our customer community and NSF staff and consists of two parts:

- Part I, the *NSF Grant Proposal Guide* (GPG) contains NSF's proposal preparation and submission guidelines. The GPG provides guidance for the preparation and submission of proposals to NSF. Some NSF programs have program solicitations that modify the general provisions of the GPG, and, in such cases, the guidelines provided in the solicitation must be followed.

  The policy and procedural guidance contained in the NSF *Grants.gov Application Guide* should be followed when preparing and submitting proposals to NSF via Grants.gov.

- Part II, the *NSF Award and Administration Guide* (AAG), contains guidance on managing and monitoring the award and administration of grants and cooperative agreements made by the Foundation. Coverage includes the NSF award process, from issuance and administration of an NSF award through closeout. Guidance regarding other grant requirements or considerations that either is not universally applicable or which do not follow the award cycle also is provided. When NSF Grant General Conditions or an award notice reference a particular AAG section, that section becomes part of the award requirements through incorporation by reference.

Significant Changes and Clarifications to the PAPPG: NSF 15-1 December 26, 2014
For complete information please review website
http://www.nsf.gov/pubs/policydocs/pappguide/nsf15001/sigchanges.jsp

Major Changes in Proposal Submission:

Chapter II.C.2.g(iv), Travel, has been revised to state that **all travel** (both domestic and foreign) must now be justified. Additionally, temporary dependent care costs above and beyond regular dependent care that directly result **from travel to conferences** are allowable costs provided that the conditions established in 2 CFR § 200.474 are met. Finally, the definition of what constitutes domestic travel has been revised.
Chapter II.C.2.g(vi)(a), Materials and Supplies, includes coverage on costs of computing devices. Clarification on when a computing device is considered a supply is provided. The charging of computing devices as a direct cost is allowable for devices that are essential and allocable, but not solely dedicated, to the performance of the NSF award.
Chapter II.C.2..(vi)(c), Consultant Services, clarifies that costs of professional and consultant services are allowable when reasonable in relation to the services rendered and when not contingent upon recovery of costs from the Federal government. All contracts made under an NSF award must contain the applicable provisions identified in 2 CFR § 200 Appendix II.
Chapter II.C.2.g(vi)(e), Subawards, references 2 CFR § 200.330 and the requirement of proposing organizations to make a case-by-case determination regarding the role of a subrecipient versus contractor for each agreement. However, inclusion of a subaward or contract in the proposal budget or submission of a request after issuance of an NSF award to add a subaward or contract will document the organizational determination required. The section also clarifies NSF's expectations regarding indirect cost rate recovery under subawards.

Chapter I.F., When to Submit Proposals, includes revisions to the section on Special Exceptions to NSF's Deadline Date Policy. In cases of natural or anthropogenic disasters, approval from the cognizant NSF Program Officer (PO) should be requested in advance of the proposal deadline, where possible. If proposers are unable to contact the PO prior to the deadline, approval should be obtained as soon as possible afterwards. New coverage has been added on the procedure to follow when NSF is closed due to inclement weather or other reasons.
Chapter II.C.1.e, Proposal Certifications, contains a clarification to the Certification Regarding Conflict of Interest which states that conflicts that cannot be satisfactorily managed, reduced or eliminated, and research that proceeds without the imposition of conditions or restrictions when a conflict of interest exists, must be disclosed to NSF via use of NSF's electronic systems.
Chapter II.C.2, Sections of the Proposal, outlines the required sections of a research proposal. Other types of proposals (i.e., RAPID, EAGER, etc.) and program solicitations may deviate from the content requirements listed in Chapter II.C.2. Effective with this implementation of the PAPPG, FastLane will begin using the rules associated with each proposal mechanism to check for compliance prior to submission to NSF. Proposers are strongly advised to review the applicable sections of the GPG pertinent to the type of

proposal being developed PRIOR to submission.
Chapter II.C.2.d, Project Description, has been updated to reflect that the project description must now contain, as a separate section within the narrative, a section labeled "Broader Impacts of the Proposed Work".
Chapter II.C.2.d(iii), Results from Prior NSF Support, has been clarified to state that the listing of publications resulting from an NSF award must provide a complete bibliographic citation for each publication in either the Results from Prior NSF Support section or in the References Cited section of the proposal.
Chapter II.C.2.g, Budget and Budget Justification, has been revised to reflect that the budget justification for the proposing organization must be no more than three pages. For proposals that contain a subaward(s), each subaward must include a separate budget justification of no more than three pages.
Chapter II.D.3, Ideas Lab, is an entirely new section which details the four-stage process used with this funding mechanism, which is designed to support the development and implementation of creative and innovative project ideas that have the potential to transform research paradigms and/or solve intractable problems. Note that, in addition to Ideas Lab, NSF has launched another new funding mechanism titled Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) that is being piloted this year.

Chapter I.C.4, Program Solicitation, lists features that would require a funding opportunity to be issued as a program solicitation. The list has been updated to include when cost sharing is required or limitations are placed on recovery of indirect (F&A) costs, both of which require approval by the NSF Director before the program solicitation can be issued.
Chapter I.D.1, Letter of Intent, **has been clarified to state that if a program solicitation requires submission of a letter of intent (LOI) and the proposer does not submit an LOI, the full proposal will not be accepted or will be returned without review.**
Chapter I.E, Who May Submit Proposals, has amended language that shows that unaffiliated individuals, and other Federal agencies who think their project may meet one of the exceptions listed in section 7, must contact the appropriate program prior to preparing and submitting a proposal.
Chapter I.G.3, Requirements Relating to Data Universal Numbering System (DUNS) Numbers and Registration in the System for Award Management (SAM), informs proposers that NSF will now validate that each proposer's DUNS number and SAM registration are active and valid prior to allowing submission of a proposal to NSF. Additionally, the section clarifies that subrecipients named in the proposal are required to obtain a DUNS number and register in FastLane but do not need to be registered in SAM.
Chapter II, Introduction, has been revised to reflect the current strategic objective language from the new NSF Strategic Plan.
Chapter II.C.2.a.(4)(h), Cover Sheet Other Information, has been supplemented to reflect that a maximum of five countries may be listed in the International Activities Country Name(s) section.
Chapter II.C.2.f, Biographical Sketch(es), makes clear that including personal information in the biographical sketch is not appropriate nor is it relevant to the merits of the proposal. New information is being requested in Section II.C.2.f(i)(a), Professional Preparation. The location of the individual's undergraduate, graduate and postdoctoral

institution(s) must be provided. Section II.C.2.f(i)(e) clarifies that the total number of collaborators and co-editors, and graduate advisors and postdoctoral sponsors, must be identified in the appropriate areas in the Collaborators & Other Affiliations section. In addition, where applicable, information on "Other Personnel" biographical information (Section II.C.2.f.(ii)) should be clearly identified and uploaded in the Biosketches section of the proposal.

Chapter II.C.2.g(i)(a), Senior Personnel Salaries and Wages Policy, has been supplemented to clarify proposer and awardee authority regarding rebudgeting.

Chapter II.C.2.j, Special Information and Supplementary Documentation, clarifies the use of letters of collaboration (formerly referred to as letters of commitment). Such letters should be limited to stating the intent to collaborate and should not contain endorsements or evaluation of the proposed project. Proposals that are not consistent with the instructions in this section will be returned without review. Also, the definition of an international activity has been clarified.

Chapter II.D.6, Proposals for Equipment, has been revised to remove the requirement to include a References Cited section for equipment proposals submitted in response to the GPG. Additionally, the Facilities, Equipment and Other Resources section needs to include a brief description of other support services available.

Chapter II.D.8, Proposals Involving Human Subjects, has been supplemented to clarify that the only acceptable Institutional Review Board (IRB) approval documents are those that approve a human subjects research protocol and approvals "in concept" or conditional IRB documents are not acceptable. Guidance also is provided on the procedure to follow if IRB approval cannot be obtained at the time of the award action because the development of a human subjects research protocol requires preliminary or other conceptual work to take place.

Chapter II.D.9, Proposals for Conferences, has been modified to specify that NSF funds are not to be spent for meals and coffee breaks for intramural meetings of an organization or any of its components as a direct cost. Budgets and budget justifications for conferences should be prepared in accordance with GPG Chapter II.C.2.g. A reference to the appropriate AAG section has been added to address program income generated by conferences. In addition, Facilities, Equipment and Other Resources information is now required for conference proposals.

Chapter II.D.11, Proposals for Doctoral Dissertation Research, has been removed, as information should be obtained from the cognizant program office and via the NSF website.

Exhibit II-1, Proposal Preparation Checklist, has been updated to reflect the changes made to the GPG. Proposers are strongly encouraged to conduct an administrative review prior to submission, to ensure that proposals comply with the instructions in the GPG and/or the program solicitation, in the format specified.

Chapter III.E, Funding Recommendation, has been updated to include coverage on abstracts, which serve to describe the project and justify the expenditure of NSF funds. The cognizant NSF Program Officer may contact the PI, should their proposal be recommended for award, for assistance in preparing the public award abstract and its title.

Exhibit III-1, NSF Proposal & Award Process & Timeline, has been updated to reflect the financial or administrative decline process discussed in Chapter III.F.

Simon Foundation

Grant Program: Simons Collaboration on the Global Brain Postdoctoral Fellowships
Agency: Simon Foundation
RFP Website: http://www.simonsfoundation.org/funding/funding-opportunities/life-sciences/simons-collaboration-on-the-global-brain-postdoctoral-fellowships/
Brief Description: The Simons Collaboration on the Global Brain (SCGB) seeks applicants for postdoctoral fellowships whose intended work is at the interface of theory and experiment on the nature, role and mechanisms of the neural activity that produces cognition. Of particular interest is work that emphasizes the recording and perturbation of population neural data at cellular resolution and the application of advanced statistical analysis and modeling to such data. Candidates with a background in fields including neuroscience, mathematics, and the physical and information sciences are encouraged to apply. Candidates who hold, or will hold a Ph.D., M.D. or equivalent degree at the time of activation of the fellowship are eligible to apply. Applications may be submitted from scientists in domestic and foreign nonprofit organizations; public and private institutions, such as colleges, universities, hospitals, laboratories and units of state and local government; and eligible agencies of the federal government.
Awards: Annual stipends will be $60,000 USD for the first year with a cost of living increase in subsequent years, increasing the stipend to $63,000 USD for the second year and $66,150 USD for the third year. In addition to the stipend, awards will include up to $15,000 USD annually for health insurance, small equipment (up to $5,000 USD), supplies, publications and travel. No indirect costs may be taken. Fellowships will be administered by the host institution.
Deadline: The deadline for full application submission is Monday, December 15, 2014, 5:00 PM Eastern Time. Applications must be completed electronically and submitted using forms provided at proposalCENTRAL.
NJIT Contact: For more information and towards submission of a proposal, please contact Eric Blitz in the advancement office.

Grant Program: Collaboration Grants for Mathematicians
Agency: Simon Foundation
RFP Website: http://www.simonsfoundation.org/funding/funding-opportunities/mathematics-physical-sciences/collaboration-grants-for-mathematicians/
Brief Description: The goal of the program is to support the 'mathematical marketplace' by substantially increasing collaborative contacts between mathematicians. The foundation will make a large number of grants to accomplished, active researchers in the United States who do not otherwise have access to funding for research that supports travel and visitors. Awards will be based on the quality of the applicant's previous research, as outlined in the

'Statement of Recent Work,' and on the likely impact that the Collaboration Grant will have on future research, both for the applicant and the applicant's graduate students and/or postdoctoral fellows.
Awards: A Collaboration Grant will provide $7,000 per year for five years; this includes $5,000 per year for collaboration, travel and research expenses, $1,000 per year in discretionary funds for the awardee's department, and $1,000 per year in indirect costs to the awardee's institution. The five-year grant will commence September 1, 2015, and end August 31, 2020.
Deadline: Applicants may apply through proposalCENTRAL (http://proposalcentral.altum.com/default.asp?GMID=50) beginning September 1, 2014. The deadline to apply is January 31, 2015.
NJIT Contact: For more information and towards submission of a proposal, please contact Eric Blitz in the advancement office.

Grant Program: Simons Award for Graduate Students in Theoretical Computer Science
Agency: Simon Foundation
RFP Website: http://www.simonsfoundation.org/funding/funding-opportunities/mathematics-physical-sciences/simons-award-for-graduate-students-in-theoretical-computer-science/
Brief Description: Theoretical computer science is unique in that graduate students working independently produce some of the best results in the field. With the Simons Award for Graduate Students in Theoretical Computer Science, the foundation seeks to identify and support these emerging stars by providing additional support to enable them to freely pursue their research interests. The award is not intended to replace the regular academic-year support of these outstanding students.
Awards: A Simons Award for Graduate Students is awarded for a period of two years for up to $24,000 per year. The award will commence June 1, 2015, and end May 31, 2017. An awardee must be a graduate student for the duration of the award.
Deadline: Applicants must apply through proposalCENTRAL (http://proposalcentral.altum.com/default.asp?GMID=50) beginning October 1, 2014. The deadline to apply is February 12, 2015.
NJIT Contact: For more information and towards submission of a proposal, please contact Eric Blitz in the advancement office.

National Institutes of Health:

Grant Program: Systems Science and Health in the Behavioral and Social Sciences (R01)
Agency: NIH R01 Research Projects; PAR-15-048
Related Announcements for other programs:
PAR-15-047 , R21 Exploratory/Developmental Grant

RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-15-048.html
Brief Description: This FOA is intended to increase the breadth and scope of topics that can be addressed with systems science methodologies. This FOA calls for research projects that are applied and/or basic in nature (including methodological and measurement development), have a human behavioral and/or social science focus, and employ methodologies suited to addressing the complexity inherent in behavioral and social phenomena, referred to as systems science methodologies. Additionally, this FOA seeks to promote interdisciplinary collaboration among health researchers and experts in computational approaches to further the development of modeling- and simulation-based systems science methodologies and their application to important public health challenges.
Systems science methodologies are specific methodological approaches that have been developed to understand connections between a system's structure and its behavior over time. "Systems science methodologies" is an umbrella term that refers to a variety of such methodologies including, but not limited to, agent-based modeling, microsimulation, system dynamics modeling, network analysis, discrete event analysis, Markov modeling, control systems engineering and related engineering methods, and a variety of other dynamic and computational modeling and simulation approaches.
Awards: Standard Awards; Applicants requesting $500,000 or more in direct costs in any year (excluding consortium F&A) must contact NIH program staff at least 6 weeks before submitting the application and follow the Policy on the Acceptance for Review of Unsolicited Applications that Request $500,000 or More in Direct Costs as described in the SF424 (R&R) Application Guide.
Letter of Intent: Required: 30 days prior to application due date
Deadline: Standard Dates: February 5, June 5 and October 5, 2015

National Science Foundation

Grant Program: Structural and Architectural Engineering
Agency: National Science Foundation NSF PD 15-1637
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13358
Brief Description:
The overall goal of the Structural and Architectural Engineering (SAE) program is to evolve sustainable structures, such as buildings, that can be continuously occupied and /or operational during the structure's useful life. The SAE program supports fundamental research for advancing knowledge and innovation in structural and architectural engineering that enables holistic approach to design, construction, operation, maintenance, retrofit, repair and end-of-life disposal of structures. For buildings, holistic approach incorporates the foundation-structure-envelope-nonstructural system, as well as the façade and roofing. Research topics of interest for sustainable structures include the following: strategies for structures that over their lifecycle are cost-effective, make efficient use of resources and energy, and

incorporate sustainable structural and architectural materials; deterioration due to fatigue and corrosion; serviceability concerns due to large deflections and vibrations; and advances in physics-based computational modeling and simulation. Research is encouraged that integrates discoveries from other science and engineering fields, such as materials science, building science, mechanics of materials, dynamic systems and control, reliability, risk analysis, architecture, economics and human factors.
Awards: Up to $500,000
Deadline: Feb 17, 2015 Submission Window Dates: Full Proposal Window: February 01, 2015 - February 17, 2015 Full Proposal Window: September 01, 2015 - September 15, 2015

Grant Program: Mechanics of Materials and Structures
Agency: National Science Foundation NSF PD 15-1630
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13355
Brief Description: The Mechanics of Materials and Structures program supports fundamental research in mechanics as related to the behavior of deformable solid materials and respective structures under internal and external actions. A diverse and interdisciplinary spectrum of research is supported with emphasis on research that leads to advances in i) theory, experimental, and/or computational methods in mechanics, and/or ii) uses contemporary mechanics methods to address modern challenges in materials and structures. Proposed research can focus on existing or emerging materials and structural systems, across time and length scales. Proposals related to material response are welcome, and would propose, but not limited to, advances in fundamental understanding of deformation, fracture, fatigue, as well as on contact and friction through constitutive modeling, multi-scale (spatial or temporal) and multi-physics analysis, computational methods, or experimental techniques. Proposals that relate to structural response are welcome and would propose, but not limited to, advances in the understanding of nonlinear deformation, instability and collapse in the context of large deformation, wave propagation, multi-scale (spatial or temporal) and multi-physics analysis, computational methods, or experimental techniques.

Proposals at the intersection or considerate of the integration of material and structure (such as, but not limited to, metamaterials, hierarchical, microarchitectured and low-dimensional materials) are especially welcome. Of particular interest are research questions that address the integration and combination of geometry, topology of material distributions, lengthscales and deformation/failure mechanics. Within this context, the challenge of the notion of what constitutes a “material” or a “structure” is expected to lead to unique opportunities in terms of analysis and experimentation of novel response characteristics.
Awards: Up to $500,000

Deadline: Feb 17, 2015 Submission Window Dates: Full Proposal Window: February 01, 2015 - February 17, 2015 Full Proposal Window: September 01, 2015 - September 15, 2015

Grant Program: Civil Infrastructure Systems
Agency: National Science Foundation NSF PD 15-1631
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13352
Brief Description: The Civil Infrastructure Systems (CIS) program supports fundamental and innovative research necessary for designing, constructing, managing, maintaining, operating and protecting efficient, resilient and sustainable civil infrastructure systems. Research that recognizes the role that these systems play in societal functioning and accounts for how human behavior and social organizations contribute to and affect the performance of these systems is encouraged. While component-level, subject-matter knowledge may be crucial in many research efforts, this program focuses on the civil infrastructure as a system in which interactions between spatially-distributed components and intersystem connections exist. Thus, intra- and inter-physical, information and behavioral dependencies of these systems are also of particular interest. Topics pertaining to transportation systems, construction engineering, infrastructure systems and infrastructure management are a focus of this program. Research that considers either or both ordinary and disrupted operating environments is relevant. Methodological contributions pertaining to systems engineering and design, network analysis and optimization, performance management, vulnerability and risk analysis, mathematical and simulation modeling, exact and approximate algorithm development, control theory, statistical forecasting, dynamic and stochastic systems approaches, multi-attribute decision theory, and incorporation of behavioral and social considerations, not excluding other methodological areas or the integration of methods, specific to this application are encouraged. Additional research of interest exploits data/information, and takes advantage of relevant technological advances, such as social media. In general, research that has the promise of long-lasting, cascading (hopefully escalating) impact on the wider research community through its theoretical, scientific, mathematical or computational contributions is valued.
Awards: Up to $500,000
Deadline: Feb 17, 2015 Submission Window Dates: Full Proposal Window: February 01, 2015 - February 17, 2015 Full Proposal Window: September 01, 2015 - September 15, 2015

Grant Program: Engineering for Natural Hazards (ENH)
Agency: National Science Foundation NSF PD 15-7396
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505177
Brief Description: The goals of the Engineering for Natural Hazards (ENH) program are to prevent natural hazards from becoming disasters, and to broaden consideration of

natural hazards independently to the consideration of the multi-hazard environment within which the constructed civil infrastructure exists. The ENH program, PD 15-7396, replaces the annual George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) research (NEESR) program solicitations to enable proposal submissions during the two CMMI unsolicited proposal submission windows each year, with the due dates shown above, and to support fundamental research for a broader range of natural hazards, including earthquakes, windstorms (tornadoes and hurricanes), tsunamis and landslides. The ENH program also supports natural hazards engineering research that had been supported under the Hazard Mitigation and Structural Engineering Program (HMSE) (PD 13-1637) and the Geotechnical Engineering (GTE) Program (PD 12-1636). .
The constructed civil infrastructure supported by the ENH program includes building systems such as the soil-foundation-structure-envelope-nonstructural system, as well as the façade and roofing, and other structures, geostructures, and underground facilities such as tunnels. While research may focus on a single natural hazard, research that considers civil infrastructure design and performance in the context of multiple hazards, that is, a multi-hazard approach, is encouraged. Research may integrate geotechnical, structural, and architectural engineering advances with discoveries in other science and engineering fields such as earth and atmospheric sciences, materials science, mechanics of materials, dynamical systems and control, systems engineering, decision theory, risk analysis, high performance computational modeling and simulation, and social, behavioral, and economic sciences. Multi-disciplinary and international collaborations are encouraged.
Awards: Up to $500,000
Deadline: Feb 17, 2015 Submission Window Dates: Full Proposal Window: February 01, 2015 - February 17, 2015 Full Proposal Window: September 01, 2015 - September 15, 2015

Office of Naval Research

Grant Program: Select Topics in Nanoscience and Nanotechnology
Agency: ONR Special Notice 15-SN -0002
RFP Website: http://www.onr.navy.mil/~/media/Files/Funding-Announcements/Special-Notice/2015/15-SN-0002.ashx
Brief Description: Topic #1 - Self-Assembly Error Detection and Analysis in Complex DNA Nanostructures:

Molecular self-assembly with DNA is an attractive approach to creating nanoscale devices given the range of DNA nanostructures that can be designed and built (e.g. periodic, aperiodic, two- dimensional, three-dimensional, and reconfigurable nanostructures), and the ability of DNA nanostructures to precisely organize heteroelements (e.g. proteins, peptides, nanoparticles, and carbon nanotubes). Some of the technological applications of DNA nanostructures and DNA nanostructure-based devices that have already been explored include shape controlled synthesis of inorganic materials, macromolecular structure determination, templating of functional enzyme systems, single molecule sensing with nanopores or nanobarcodes, plasmonic metamaterials, and “smart” medical devices that deliver drugs selectively to disease sites. The process of DNA self- assembly has error, though, and experimental feedback on the

structure and composition of DNA nanostructures will be required to develop robust design principles minimizing DNA self- assembly defects if the full potential of DNA-based nanostructure-devices is to be realized. The standard methods of imaging single DNA nanostructures at multiple nanometer resolution by atomic force microscopy or transmission electron microscopy are insufficient to resolve defects. The objective of this program is to develop a high-throughput approach for the atomic-resolution structural analysis of DNA nanostructures.

Topic #2 – Electric Field Assisted Sintering of Ceramics:

Flash sintering, the sintering of ceramics (including Nanoceramics) by application of an electric field during the sintering process, results in very rapid densification at greatly reduced temperatures, as well as enhanced sintering of very difficult to process materials such as B4C and ZrB2. At this point, we have a commercially viable field-enhanced sintering process with a large volume of empirical evidence to demonstrate the ultra-fast, low temperature, pressureless sintering of ceramics. Our lack of quantitative understanding of the fundamental physical mechanisms involved hampers our use of this process by industry for both DoD and civilian applications. At this time, it is not possible to predict what ceramics one can process or what fields (or currents) and temperatures one might require. The objective of this project is to develop and validate a high-fidelity model for the effect of applied electric fields and/or currents on mass transport in a powder compact of complex (that is non-trivial) geometry. The ability of the model to predict the required conditions for flash sintering and to explain the unprecedented high diffusion rates created will define success of the project.

Topic #3 Low Cost, Large Area Processing of Silicon Based Thin Film Solar Cells:

The Navy has interest in lightweight, flexible, robust, low cost photovoltaics and has a basic research program centered around organic photovoltaics, though other low cost approaches have been considered. Thin film silicon cells have shown promise as robust flexible solar cells but cost and performance are lacking. PECVD manufacturing allows large area processing but not at a desirable cost point. The Navy is soliciting white papers for basic research into alternative approaches, possibly with liquid or polymeric silicon precursors, towards low cost, large area processing of silicon based thin film solar cells. In this topic area we are soliciting only white papers to fund seed grant(s) in this area. White papers should provide significant details on the technical feasibility of the approach and the potential for this approach to compete, in terms of cost and performance, with other thin film and silicon-based approaches.

Awards: ONR plans to fund up to one (1) grant with an approximate not-to-exceed value of $900,000 for a total period of performance of 36 months with a maximum number of team members not-to-exceed three (3) unique entities. NOTE: Lower funding amounts will be considered.

Topic #2:

ONR plans to fund up to two (2) grants that will typically average $450,000 for a total period of performance of 24 months. There is no maximum number of team members for each award. NOTE: Higher or lower amounts will also be considered.

Topic #3:
It is anticipated that two (2) seed grants will be funded at $170,000.00 per year for two years.
White Paper: White papers are strongly encouraged for all offerors seeking funding. Each white paper will be evaluated by the Government to determine whether the technology advancement proposed appears to be of particular value to the Department of the Navy. Initial Government evaluations and feedback will be issued via e-mail notification from the Technical Point of Contact. The initial white paper appraisal is intended to give entities a sense of whether their concepts are likely to be funded.
Deadline: Recommended White Paper Due Date: December 11, 2014
Full proposals for grants should be submitted in accordance with the requirement of the FY 15 Long Range BAA, ONRBAA 15-001 by **February 26, 2015**. Full proposals must be submitted through www.grants.gov.