NJIT Research Newsletter

Issue: ORN-2016-032

NJIT Research Newsletter includes recent awards, and announcements of research related seminars, webinars, national and federal research news related to research funding, and ***Grant Opportunity Alerts***. The Newsletter is posted on the NJIT Research Website http://www.njit.edu/research/

Recent Research Grant and Contract Awards

Congratulations to faculty and staff on receiving research grant and contract awards!

PI: Edward Dreizen (PI) and Mirko Schoenitz (Co-PI)
Department: Chemical, Biological and Pharmaceutical Engineering
Grant/Contract Project Title: Fully Dense Tailorable Nanocomposite Particulates
Funding Agency: Lavipharm Laboratories
Duration: 08/26/16-08/30/17

PI: Somenath Mitra (PI)
Department: Chemistry and Environmental Sciences
Grant/Contract Project Title: Development of Functionalized Nano Carbon Immobilized Membranes for Sea and Brackish Water Desalination
Funding Agency: NSF
Duration: 09/01/16-08/31/19

PI: Reza Curtmola (PI)
Department: Cybersecurity Center
Grant/Contract Project Title: Securing Software Supply Chain Logistics
Funding Agency: DARPA
Duration: 09/11/15-11/01/17

PI: Bryan Pfister (PI)
Department: Center for Injury Biomechanics, Materials and Medicine
Grant/Contract Project Title: Brain Injury Research (Pilot Projects) 2016
Funding Agency: NJ DOH
Duration: 07/01/16-06/30/17

PI: Wenda Cao (PI) and Phillip Goode (Co-PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: International Collaborations to Optimize Scientific Output of the New Solar Telescope in Big Bear
Funding Agency: The National Astronomical Observatory of China
Duration: 01/01/14-12/31/18

PI: Brittany Froese (PI)
Department: Mathematical Sciences
Grant/Contract Project Title: Meshfree Finite Difference Methods for Nonlinear Elliptic Equations
Funding Agency: NSF
Duration: 09/01/16-08/31/19

PI: Rajesh Dave (PI)
Department: Chemical, Biological and Pharmaceutical Engineering
Grant/Contract Project Title: Engineered Excipients
Funding Agency: FMC Corporation
Duration: 09/01/16-02/28/18

PI: Lazar Spasovic (PI)
Department: Civil and Environmental Engineering
Grant/Contract Project Title: MVRPC TELUS Upgrades
Funding Agency: Miami Valley Regional Planning Commission
Duration: 08/26/16-06/25/17

In the News…

(National and Federal News Related to Research Funding and Grant Opportunities)

NSF: The Network for Computational Nanotechnology (NCN) was established in 2002 as part of the National Nanotechnology Initiative and was envisioned to accelerate the development and applications of nanotechnology. NCN, a multi-university initiative, now consists of a standalone cyber platform, a scientific portal, and hubs that focus on specific applications. The NSF has announced a new round of awards intended to expand the present hubs to include three new applications areas. These include: nanoBIO, simulation of nano-scale biological phenomena; nanoMFG, Nano manufacturing processes; and, Nano-Engineered Electronic Device and Module Applications. Each node awardee is envisioned to receive $800 K per year for up to five years. **Network for Computational Nanotechnology (NCN)** is included in the grant opportunity alert below.

NIH: The National Institute of General Medical Sciences has announced exploratory grant funding for the establishment of Centers of Biomedical Research Excellence (COBRE). This is part of a multi-phase program intended to strengthen the biomedical research infrastructure and enhance the ability of investigators to compete for NIH grants for institutions located in designated *Institutional Development Award* (IDeA) states. There are 24 qualified IDeA states which have had historically had low success rates for NIH grants. This solicitation envisions awards up to $1.5 M per year for five years. Future phases of this award will further improve research infrastructure and to continue to development a critical mass of investigators with shared scientific interests. Information about Centers of Biomedical Research Excellence (COBRE) is included in the grant opportunity alert below.

NASA: NASA's Solar System Exploration Research Virtual Institute (SSERVI) is intended to engage multi-institutional collaborative US teams in the study of potential target bodies of human exploration, including the Moon, Near Earth Asteroids (NEAs), the Martian moons Phobos and Deimos, and the near space environments. Presently there are nine such teams. Now, NASA has solicited proposals for up to three new teams. These would be funded at $800 K for the first three years, and $1.3 M thereafter. The solicitation specifically invites proposals in the areas of astrophysics and heliophysics that are enabled through human and robotic exploration of the target bodies.

Equity PARTNERS: The National Science Foundation's Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) program "will support partnerships of two or more non-profit academic institutions and/or STEM organizations to increase gender equity in STEM academics. . . . Partnering STEM organizations can include any entity eligible for NSF support. Partners may include professional societies, industry, non-profit organizations, publishers, policy and research entities, state systems of higher education, higher education organizations, as well as institutions of higher education." Join a pre-proposal webinar Sept. 21. Please see information about the seminar in the next section.

Events and Announcements

Event: ADVANCE Partnerships pre-proposal Technical Assistance Webinars
When: September 21, 2016 2.00 PM – 3.00 PM
Website:
http://www.nsf.gov/events/event_summ.jsp?cntn_id=135008&WT.mc_id=USNSF_13&WT.mc_ev=click
Brief Description: The ADVANCE program office will hold a pre-proposal technical assistance webinar on the ADVANCE ***Partnership*** track described in the ADVANCE solicitation 16-594.
The ***Partnership*** track will support partnerships of two or more non-profit academic institutions and/or STEM organizations to increase gender equity in STEM academics. Projects should have national or regional impact and result in systemic change within one STEM discipline, several STEM disciplines, or all STEM disciplines. Partners may include professional societies, industry, non-profit organizations, publishers, policy and research entities, state systems of higher education, higher education organizations, as well as institutions of higher education. ***Partnership*** proposals must include a final year focused on sustainability and/or scale-up, communication, and evaluation. The other ADVANCE tracks will be outlined

briefly during this webinar so you are aware of the different program tracks but the focus will be on the ***Partnership*** track.

Please be sure to review the solicitation for the official guidelines and information on preparing and submitting proposals before the webinar so you can ask questions during the Q and A. Note that for ***Partnership*** proposals non-binding letters of intent are required by December 14, 2016 and full proposals are due January 11, 2017.

Registration Website:
https://nsf.webex.com/mw3100/mywebex/default.do?service=1&siteurl=nsf&nomenu=true&main_url=%2Fmc3100%2Fe.do%3Fsiteurl%3Dnsf%26AT%3DMI%26EventID%3D494004607%26UID%3D0%26Host%3DQUhTSwAAAAKfbUDT18065GRZpculB3BklT2eI88YekMxK6lUJdkgZa6P0rO5UEG2YfORBbOGfeMgSjtqnkKNBELDtsCdk9nG0%26RG%3D1%26FrameSet%3D2%26RGID%3Drbc44b12e8a6cd6a731f5f6d91be983cd

Event: Partnerships for Innovation: Building Innovation Capacity - Smart Service Systems
When:

- **Wednesday, September 7, 2016, 11:30am-1:00 pm EDT**
- **REGISTER HERE**
- **Friday, September 9, 2016, 2:00 pm - 3:30 pm EDT**
  REGISTER HERE

Website: https://www.nsf.gov/eng/iip/pfi/bic.jsp
Brief Description: The Partnerships for Innovation: Building Innovation Capacity (PFI:BIC) program supports academe-industry partnerships to carry out research to advance, adapt, and integrate technology (ies) into a specified, human-centered smart service system. The selected service system should function as a technology test bed. These translational research projects require additional effort to integrate the technology into a "smart" service system, one that can identify, learn, adapt, and make decisions. It is essential that this research incorporate human factors considerations to assure the system's efficacy. The research tasks in turn might generate additional discoveries inspired by the interaction of humans and technology.

A highly interdisciplinary collaboration is needed to achieve successful integration into a smart service system. Thus, required research components to be included in PFI:BIC projects are as follows:

- Engineered system design and integration;
- Computing, sensing, and information technologies; and
- Human factors, behavior sciences, and cognitive engineering.

There is a single funding competition each fiscal year. Click here to see current list of active awards. Please access the current solicitation here: NSF PFI:BIC 16-591 (see the Grant Opportunity section below).

Event: 2016 NRT (NSF Research Traineeship) Program Information Webinar
When: November 9, 2015 1:00 AM to December 9, 2016 11:45 PM
Website: http://www.nsf.gov/events/event_summ.jsp?cntn_id=134466&org=NSF
Brief Description: The NSF Research Traineeship program (NRT) prerecorded informational videos to provide an overview of the NRT program and describe the key similarities and differences of the two tracks. The aim of these webinars was to give potential principal investigators information on program announcement 16-503 by emphasizing several key features and requirements of each track.

Grant Opportunity Alerts

Keywords and Areas Included in Grant Opportunity Alerts**:**

NSF: NSF-NJIT Site iCorps Mini-grants; NSF Research Traineeship (NRT) Program; NRT Internal Competition; Ceramics (CER); Condensed Matter and Materials Theory (CMMT); ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers; Network for Computational Nanotechnology (NCN)
NIH: NCI Small Grants Program for Cancer Research (NCI Omnibus R03); Innovation Corps (I-Corps™) at NIH Program for NIH and CDC; Centers of Biomedical Research Excellence (COBRE) (P20); BRAIN Initiative: Non-Invasive Neuromodulation - New Tools and Techniques for Spatiotemporal Precision; BRAIN Initiative: Foundations of Non-Invasive Functional Human Brain Imaging and Recording - Bridging Scales and Modalities (R01)
Department of Homeland Security: DHS S&T Center of Excellence for Homeland Security Quantitative Analysis – Center Lead; Center of Excellence for Homeland Security Quantitative Analysis – Center Partner
Department of Defense/US Army/DARPA/ONR: Extreme Optics and Imaging (EXTREME) Proposers Day; Microsystems Technology Office (MTO) Office-wide Proposers Day; Young Investigator Program (YIP)
Department of Energy: Request For Information On Potential Technical Focus Areas For Advanced Manufacturing - Related Traineeships

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Grant Opportunities

NSF NJIT I-Corps Site Mini-Grants

NSF NJIT I-Corps Site
Grant Program: NSF NJIT I-Corps Site Mini-Grants
Agency: NSF Site-NJIT
RFP Website: https://judithsheft.wufoo.com/forms/fall-2015-nsf-icorps-at-njit/
Brief Description: NJIT has been designated as an NSF I-Corps Site and through the NJIT School of Management and NJ Center for Innovation Acceleration, we will provide specialized training and mini grants of up to $3,000 to teams interested in exploring the commercial viability of their ideas for products and businesses that are based on their own inventions or NJIT intellectual property.

Do you have an exciting technology that works in the lab? Would you like help to start a company to commercialize the technology? Do you want to test a prototype in the real-world environment?

Benefits: Learn the lean start up methodology – an approach that has significant advantages over traditional business planning / new product development approaches.

Get out of the building and spend the majority of your time talking to potential customers to discover how your technology could effectively 'solve' customers' unmet needs or pain points Make connections with experienced entrepreneurs and investors that can lead to potential follow-on support or collaboration

Eligibility: I-Corps mini grants are available to teams made up NJIT students and faculty. Each team must have:

- an entrepreneurial lead(typically an NJIT undergraduate or graduate student(s))

- an academic lead researcher/advisor (faculty member)
- a business mentor with significant entrepreneurial business experience.

The NJIT I-Corps Program Managers (Dr. Michael Ehrlich and Ms. Judith Sheft) will provide assistance to complete teams as necessary. You must have at least 2 teams members identified to apply. All team members must be able to participate for the 6 month project duration.

Awards and Expectations over Grant Period: Following the Mandatory Team Orientation meeting, the teams will be expected to participate in a self paced learning exercise for the Lean Startup Method, which is set up on Moodle. There will be several follow on mandatory team meetings scheduled to help provide support and to keep teams on target. There are video lessons, written assignments, and quizzes to help you keep on track. Teams will also be expected to get out of the building/lab and to interview prospective customers. Interview best practices and samples are posted in Moodle. This first phase should be completed within three months and could be done in as little as 30 days. Funding will be released in conjunction with this learning activity.

For the remainder of the grant period, we expect teams to advance the commercialization of their new technology to get to a GO/NO-GO point at which they will know whether they want to proceed.

Next steps for a GO decision could include an application for a $50,000 NSF I-Corps Grant, Submission of an SBIR application for $75,000-150,000, Submission of a NSF PFI-AIR-TT grant for $200,000, and Pitches before Angel Investors.

Deadline for Submissions: September 15, 2016
Interviews of Finalists: September 19 -23, 2016
Announcement of Awards: September 30, 2016
Mandatory Team Orientation: October 14, 2016
Final Report Due: March 31, 2017
Contacts for Question:

- Dr. Michael Ehrlich – NJIT School of Management and Co-Director of the NJ Innovation Acceleration Center - ehrlich@njit.edu
- Judith Sheft Co- Director of the NJ Innovation Acceleration Center - sheft@njit.edu

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Internal Competition: National Science Foundation

Grant Program: National Science Foundation Research Traineeship (NRT) Program
Agency: National Science Foundation NSF 16-503
RFP Website: http://www.nsf.gov/pubs/2016/nsf16503/nsf16503.htm
Brief Description: The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that ensure that graduate students in research-based master's and doctoral degree programs develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The NRT program includes **two tracks**: the **Traineeship Track** and the **Innovations in Graduate Education (IGE) Track**.

The **Traineeship Track** is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. For FY2016, there are four priority areas: (1) Data-Enabled Science and Engineering (DESE), (2) Understanding the Brain (UtB), (3) Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS), and (4) any other interdisciplinary research theme of national

priority. The priority research areas for the FY2017 competition will be (1) UtB, (2) INFEWS, and (3) any other interdisciplinary research theme of national priority.

The **IGE Track** focuses on test-bed projects aimed at piloting, testing, and validating innovative and potentially transformative approaches to graduate education. IGE projects are intended to generate the knowledge required for their customization, implementation, and broader adoption. While the Traineeship Track promotes building on the current knowledge base to develop comprehensive programs to effectively train STEM graduate students, the IGE Track supports testing of novel models or activities with high potential to enrich and extend the knowledge base on effective graduate education approaches.

The NRT program addresses both workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. For both tracks, strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged.

Awards: Standard Grants; **Anticipated Funding Amount:** $51,680,000.

Letter of Intent: December 09, 2016

Full Proposal Submission Due Date: February 7, 2017

Limit on Number of Proposals per Organization: 4

Limit on Number of Proposals per Organization: 2 for the Traineeship Track, 2 for the Innovations in Graduate Education Track

An eligible organization may participate in two Traineeship Track proposals and two Innovations in Graduate Education Track proposals per competition. **Participation includes serving as a lead organization on a non-collaborative proposal or as a lead organization, non-lead organization, or subawardee on a collaborative proposal.** Organizations participating solely as evaluators on projects are excluded from this limitation.

Limit on Number of Proposals per PI or Co-PI: 1

An individual may serve as Lead Principal Investigator (PI) or Co-PI on only one proposal submitted to the NRT program per annual competition

Contacts:

- Claire Hemingway, telephone: (703) 292-7135, email: nrt@nsf.gov
- ichard Tankersley, telephone: (703) 292-5199, email: nrt@nsf.gov

NJIT Internal Competition for Selection of Proposals

Internal Competition Deadline: Submit an internal Letter of Intent following the NSF LOI instructions (copied below) to your college/school dean by October 7, 2016.

Dean's recommendations with the internal Letter of Intents (not more than 2 for the Traineeship Track and 2 for the Innovation in Graduation Track) should be submitted to the Office of Research for Institutional Reviews and selection by October 17, 2016. PIs and deans will be notified for selected LOIs by October 24.

Instruction of Preparation of Letters of Intent *(required)*:

A Letter of Intent (LOI) submitted by the lead institution only is required for proposal submissions planned for either NRT track. Limits on the number of proposals submitted per institution and per PI/coPI also apply to the Letters of Intent. Letters of Intent are not reviewed but are used to gauge review requirements. They are not used as pre-approval mechanisms for the submission of proposals, and no feedback is provided to the submitters.

Submit a one-page LOI through FastLane with the following information:

- The name and departmental affiliation of the Principal Investigator (PI);
- The name(s) and departmental affiliation(s) of the Co-PI(s) and others composing the 10 Core Participants;
- The names(s) of any other participating institutions or organizations;
- Project Title: For Traineeship Track proposals, the title must begin with "NRT-DESE:", "NRT-UtB:", "NRT-INFEWS:", for projects targeting the Data-Enabled Science and Engineering, Understanding the Brain, and Nexus of Food, Energy, and Water Systems research areas, respectively. Titles for projects addressing another interdisciplinary theme must begin with "NRT:". For Innovations of Graduate Education Track proposals, the title must begin with "NRT-IGE:".
- Project Synopsis (2500 text-based characters): For Traineeship Track proposals, provide a brief summary of the vision and goals of the proposed training program, including a brief description of the interdisciplinary research theme, the main training elements, the integration of the research and training, and the need for the program; for IGE Track proposals, provide a brief description of the graduate education model(s), approach(es), or activities to be piloted and tested, including a brief description of the disciplinary or interdisciplinary needs and/or challenges addressed.

Keywords: For Traineeship Track proposals, include 4-5 keywords that specify the disciplines and/or themes targeted; for IGE Track proposals, include 4-5 keywords that describe the model, approach, and/or activities to be piloted and tested.

National Science Foundation

Grant Program: Ceramics (CER)
Agency: National Science Foundation NSF 16-597
RFP Website: http://www.nsf.gov/pubs/2016/nsf16597/nsf16597.htm
Brief Description: This program supports fundamental scientific research in ceramics (e.g., oxides, carbides, nitrides and borides), glass-ceramics, inorganic glasses, ceramic-based composites and inorganic carbon-based materials. Projects should be centered on experiments; inclusion of computational and theory components are encouraged. The objective of the program is to increase fundamental understanding and to develop predictive capabilities for relating synthesis, processing, and microstructure of these materials to their properties and ultimate performance in various environments and applications. Research to enhance or enable the discovery or creation of new ceramic materials is welcome. Development of new experimental techniques or novel approaches to carry out projects is encouraged. Topics supported include basic processes and mechanisms associated with nucleation and growth of thin films; bulk crystal growth; phase transformations and equilibria; morphology; surface modification; corrosion, interfaces and grain boundary structure; and defects.
Additional Information
Eligibility rules apply for submissions; please see the Program Description section of the CER solicitation for details.
PIs are encouraged to include all anticipated broader impact activities in their initial proposals, rather than planning on supplemental requests. Most projects include: (1) the anticipated significance on science, engineering and/or technology including possible benefits to society, (2) plans for the dissemination, and (3) broadening participation of underrepresented groups and/or excellence in training, mentoring, and/or teaching. Many successful proposals include one additional broader impact activity.
Awards: Standard Grants. Anticipated funding amount: $10,000,000

Letter of Intent: Not Required
Full Proposal Submission Due Date: Anytime
Contacts:

- Dr. Lynnette D. Madsen, Program Director (CER), 1065 N, telephone: (703) 292-4936, fax: (703) 292-9035, email: lmadsen@nsf.gov

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Grant Program: Condensed Matter and Materials Theory (CMMT)
Agency: National Science Foundation NSF 16-596
RFP Website: http://www.nsf.gov/pubs/2016/nsf16596/nsf16596.htm
Brief Description: CMMT supports theoretical and computational materials research in the topical areas represented in DMR's core or individual investigator programs, which include: Condensed Matter Physics (CMP), Biomaterials (BMAT), Ceramics (CER), Electronic and Photonic Materials (EPM), Metals and Metallic Nanostructures (MMN), Polymers (POL), and Solid State and Materials Chemistry (SSMC). The program supports fundamental research that advances the conceptual understanding of hard and soft materials, and materials-related phenomena; the development of associated analytical, computational, and data-centric techniques; as well as predictive materials-specific theory, simulation, and modeling for materials research. The broad spectrum of research supported in CMMT includes first-principles, quantum many-body, statistical mechanics, classical and quantum Monte Carlo, and molecular dynamics methods. Computational efforts span from workstations to advanced and high-performance scientific computing. Emphasis is on approaches that begin at the smallest appropriate length scale, such as electronic, atomic, molecular, nano-, micro-, and mesoscale, required to yield fundamental insight into material properties, processes, and behavior, to predict new materials and states of matter, and to reveal new materials-related phenomena. Approaches that span multiple scales of length and time may be required to advance fundamental understanding of materials properties and phenomena, particularly for polymeric materials and soft matter. Examples of areas of recent interest appear in the program description.

CMMT encourages potentially transformative theoretical and computational materials research, which includes but is not limited to: i) developing materials-specific prediction and advancing understanding of properties, phenomena, and emergent states of matter associated with either hard or soft materials, ii) developing and exploring new paradigms including cyber- and data-enabled approaches to advance fundamental understanding of materials and materials related phenomena, or iii) fostering research at interfaces among subdisciplines represented in the Division of Materials Research.

Research involving significant materials research cyberinfrastructure development, for example, software development with an aim to share software with the broader materials community, should be submitted to CMMT through Computational and Data-Enabled Science and Engineering (CDS&E) within its annual proposal submission window in the fall.

Additional Information

Eligibility rules apply for submissions; please see the Program Description section of the CMMT solicitation for details.
Awards: Standard Grants. Anticipated funding amount: $15,000,000
Letter of Intent: Not Required
Full Proposal Submission Due Date: Anytime
Limit on Number of Proposals per PI or Co-PI: The submission date of a proposal from an investigator, whether PI or co-PI, to the CMMT program cannot be within 6 months before or after the submission date of any proposal from that same investigator, whether PI or co-PI, to

any DMR disciplinary research activity program (also called individual-investigator program) or the Chemical Theory, Models and Computational Methods program in the Division of Chemistry. Failure to observe this submission constraint may lead to the CMMT proposal being returned without review. Investigators with proposals submitted to the DMREF, PREM, MRSEC, and MIP programs may have a concurrent CMMT submission. In addition, investigators must wait at least 12 months between submissions to CMMT.

Contacts:

- Daryl W. Hess, telephone: (703) 292-4942, email: dhess@nsf.gov
- Alexios Klironomos, telephone: (703) 292-4920, email: aklirono@nsf.gov

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Grant Program: ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE)
Agency: National Science Foundation NSF 16-594
RFP Website: http://www.nsf.gov/pubs/2016/nsf16594/nsf16594.htm
Brief Description: Despite significant increases in the proportion of women pursuing science, technology, engineering, and mathematics (STEM) doctoral degrees, women are significantly underrepresented as faculty, particularly in upper ranks, and in academic administrative positions, in almost all STEM fields. The problems of recruitment, retention, and advancement that are the causes of this underrepresentation vary by discipline and across groups of women faculty (e.g., by race/ethnicity, disability status, sexual orientation, foreign-born and foreign-trained status, and faculty appointment type). The ADVANCE program is designed to foster gender equity through a focus on the identification and elimination of organizational barriers that impede the full participation and advancement of all women faculty in academic institutions. Organizational barriers that inhibit equity may exist in areas such as policy, practice, culture, and organizational climate. For example, practices in academic departments that result in the inequitable allocation of service or teaching assignments may impede research productivity, delay advancement and create a culture of differential treatment and rewards. Policies and procedures that do not mitigate implicit bias in hiring, tenure, and promotion decisions could mean that women and underrepresented minorities are evaluated less favorably, perpetuating their underrepresentation and contributing to a climate that is not inclusive.

The goals of the ADVANCE program are (1) to develop systemic approaches to increase the representation and advancement of women in academic STEM[1] careers; (2) to develop innovative and sustainable ways to promote gender equity that involve both men and women in the STEM academic workforce; and (3) to contribute to the research knowledge base on gender equity and the intersection of gender and other identities in STEM academic careers. The ADVANCE program contributes to the development of a more diverse science and engineering workforce because of the focus on equity for STEM academic faculty who are educating, training, and mentoring undergraduate and graduate students and postdoctoral scholars.

There are three program tracks. All projects are expected to build on prior ADVANCE work and gender equity research and literature to broaden the implementation of organizational and systemic strategies to foster gender equity in STEM academic careers. All ADVANCE proposals are expected to recognize that gender does not exist in isolation from other characteristics, such as race/ethnicity, disability status, sexual orientation, foreign-born and foreign-trained status, faculty appointment type, etc., and should offer strategies to promote gender equity for all faculty:

- The ***Institutional Transformation (IT)*** track supports the development of *innovative* organizational change strategies to produce comprehensive change within one non-profit

two-year or four-year academic institution across all STEM disciplines. ***IT*** projects are also expected to contribute new research on gender equity in STEM academics. Projects that do not propose innovative strategies may be more appropriate for the ***Adaptation*** track.

- The ***Adaptation*** track supports the adaptation and implementation of evidence-based organizational change strategies, ideally from among those developed and implemented by ADVANCE projects. ***Adaptation*** awards may support the adaptation and implementation of proven organizational change strategies within a non-profit two-year or four-year academic institution that has not had an ADVANCE ***IT*** award. ***Adaptation*** awards may also be made to a STEM organization to implement systemic change strategies focused across all STEM disciplines, several STEM disciplines, or within one STEM discipline.
- The ***Partnership*** track will support partnerships of two or more non-profit academic institutions and/or STEM organizations to increase gender equity in STEM academics. Projects should have national or regional impact and result in systemic change within one STEM discipline, several STEM disciplines, or all STEM disciplines. Partnering STEM organizations can include any entity eligible for NSF support. Partners may include professional societies, industry, non-profit organizations, publishers, policy and research entities, state systems of higher education, higher education organizations, as well as institutions of higher education. ***Partnership*** proposals must include a final year focused on sustainability and/or scale-up, communication, and evaluation.

Awards: Standard Grants. Anticipated funding amount: $22,200,000
Letter of Intent: Required: December 14, 2016
Preliminary Proposal Due Date(s) *(required)*: April 12, 2017
Limit on Number of Proposals per Organization: 1
One for ***IT-Preliminary, Institutional Transformation (IT),*** or ***Adaptation;*** no limit for ***Partnership, ADVANCE Resource and Coordination Network,*** *and* ***ADVANCE Longitudinal Evaluation*:**

- ***IT-Preliminary****:* Non-profit academic institutions are allowed to submit one preliminary proposal in the competition***.***
- ***IT*** and ***Adaptation:*** Non-profit academic institutions are allowed to submit one proposal in the competition to **either** the ***IT*** (if invited after the preliminary proposal stage) or the ***Adaptation*** track but not both.
- Non-profit, non-academic organizations are allowed to submit one ***Adaptation*** proposal in the competition and may also be a partner on ***Partnership*** and/or ADVANCE Resource and Coordination Network proposals.

A non-profit academic institution or non-profit, non-academic organization may be a partner on multiple ***Partnership*** proposals in the same competition but lead only one and may also be a partner on an ADVANCE Resource and Coordination Network and/or an ADVANCE Longitudinal Evaluation proposal if appropriate**.**
Internal Notification: If planning to submit, *IT-Preliminary, Institutional Transformation (IT),* or *Adaptation*, please send a notice of intent to your respective dean and research office at dhawan@njit.edu
Full Proposal Submission Due Date: January 11, 2017
Contacts:

- Dana Britton, Program Officer, telephone: (703) 292-5178, email: ADVANCE@nsf.gov
- Jessie DeAro, Program Officer, telephone: (703) 292-5350, email: ADVANCE@nsf.gov

Grant Program: Network for Computational Nanotechnology (NCN)
Supporting the Next Phase of NCN Nodes Programs
Agency: National Science Foundation NSF 16-593
RFP Website: http://www.nsf.gov/pubs/2016/nsf16593/nsf16593.htm
Brief Description: The goals of the Network for Computational Nanotechnology (NCN) are to: 1) accelerate the transformation of nanoscience to nanotechnology through the integration of simulation with experimentation; 2) engage an ever-larger and more diverse cyber community sharing novel, high-quality nanoscale computation and simulation research and educational resources; 3) develop open-access, open-source software to stimulate data sharing; and 4) inspire and educate the next-generation workforce. The NCN consists of a stand-alone Cyber Platform, which provides computation, simulation, and education services to over 330,000 researchers, educators, students, and industry members of the nanoscience and engineering community annually worldwide; and Nodes, which develop compelling new computational and simulation tools to disseminate through Cyber Platform (nanoHUB.org) and cultivate communities of users in emerging areas of nanoscale science and engineering. For more information on NCN, please see http://nanohub.org/about#funding .
This solicitation will support the next phase of NCN Nodes Programs. Current awards for existing NCN Nodes expire in September 2017. Those who submit proposals in response to this solicitation will need to address the following questions:

- What compelling new nanoscience modeling and computational tool(s) will be developed and how will it advance nanotechnology to meet critical national needs?
- What will the Node undertake to nucleate a community of academic and industry users engaged in the new tool(s) and increase quality and quantity of nanoHUB tools, resources, and usage?
- How will the Node interact productively with the Cyber Platform and other Nodes to augment existing capabilities and ensure seamless and complementary advancement of the NCN's goals?

Content areas of the three new Nodes will be:

Engineered nanoBIO - Create integrated computational tools that support new understanding and simulation of biological phenomena from the nanoscale across length scales for the design of devices and systems;

Hierarchical nanoMFG - Computation and simulation software to address the challenges of hierarchical nanomanufacturing processes from nanoscale components to devices and systems, and their scale up;

Nano-Engineered Electronic Device and Module Application Node (NEEDMA) - Develop computation and simulation tools that can be employed for turning nanoscale science and engineering into applications through the discovery and development of nanoelectronic-based devices and modules with impact on circuit and systems responding to grand challenges.
Proposals will be accepted only for the above Node content areas. A proposal for another Node content area will be returned without review.
Awards: Cooperative Agreement. Anticipated funding amount: $2,500,000
Letter of Intent: Required: November 03, 2016
Full Proposal Submission Due Date: December 02, 2016
Contacts:

- Eduardo A. Misawa,ENG/EEC, telephone: (703) 292-5353, email: emisawa@nsf.gov
- Khershed Cooper,ENG/CMMI, telephone: (703) 292-7017, email: khcooper@nsf.gov
- William Olbricht,ENG/CBET, telephone: (703) 292-2563, email: wolbrich@nsf.gov

National Institutes of Health

Grant Program: NCI Small Grants Program for Cancer Research (NCI Omnibus R03)
Agency: National Institutes of Health PAR-16-416
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-16-416.html
Brief Description: This funding opportunity announcement (FOA) supports discrete, well-defined projects in any area of cancer research using the NIH R03 small grant mechanism.
The NIH R03 small grant mechanism supports discrete, well-defined projects that realistically can be completed in 2 years and that require limited levels of funding. Examples of the types of projects that the R03 grant mechanism include, but are not limited to, the following:

- Pilot or feasibility studies;
- Secondary analysis of existing data;
- Small, self-contained research projects;
- Development of research methodology; and
- Development of new research technology.

Specific Research Objectives

All areas of cancer research relevant to the mission of the NCI are appropriate for projects submitted in response to this FOA [for a list of extramural research funding programs at the NCI, go to http://www.cancer.gov/researchandfunding/extramural]. Projects submitted to this FOA may involve basic, translational, clinical, and/or population research related to cancer. Examples of relevant areas include but are not limited to studies of: cancer biology; cancer control; cancer diagnosis; cancer disparities; cancer prevention; and cancer treatment.
Awards: A budget for direct costs of up to $50,000 per year may be requested.
Letter of Intent: Not Required.
Deadline: February 28, 2017; June 27, 2017; October 26, 2017; February 27, 2018; June 29, 2018; October 26, 2018; February 26, 2019; June 28, 2019; October 25, 2019, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on dates.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Phase I Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Grantees (Admin Supp)
Agency: National Institutes of Health PA-16-414
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PA-16-414.html
Brief Description: This funding opportunity announcement (FOA) seeks to develop and nurture a national innovation ecosystem that builds upon biomedical research to develop technologies, products and services that benefit society. Toward meeting this objective, the I-Corps™ program is being offered. The I-Corps™ at NIH program is focused on educating researchers and technologists on how to translate technologies from the lab into the marketplace. Under this FOA, participating NIH and CDC Institutes and Centers will provide administrative supplement awards to two cohorts of currently-funded SBIR and STTR Phase I grantees to support entrepreneurial training under the I-Corps™ at NIH Program. The program is designed to provide three-member project teams with access to instruction and mentoring in order to accelerate the translation of technologies currently being developed with NIH and CDC SBIR and STTR funding. It is anticipated that outcomes for the I-Corps™ teams participating in

this program will include significantly refined commercialization plans and well-informed pivots in their overall commercialization strategies. Prospective applicants are strongly encouraged to contact NIH or CDC Scientific/Research staff for more information about the program before applying.

The goal of the I-Corps™ Program is to accelerate the translation of biomedical research to the marketplace by providing training to SBIR and STTR grantees in the areas of innovation and entrepreneurship. Under this program, the NIH and CDC foster the development of early-stage biomedical technologies, focus on teaching researchers how to gain a clearer understanding of the value of their inventions in the marketplace, and ultimately how to advance their technologies from the research lab into the commercial world. This program is designed to complement activities within the scope of the parent SBIR Phase I (R43) or STTR Phase I (R41) grant or the Phase I portion of an SBIR/STTR Fast-Track grant (R43/R41, respectively), to help accelerate the commercialization of new products and services derived from NIH and CDC funded technical feasibility studies.

Through this program, I-Corps™ teams will participate in an Entrepreneurial Immersion course. The I-Corps™ curriculum uses a hypothesis-driven method of customer discovery in order to gain insights into the issues associated with technology commercialization. As part of this program, participants are required to get "out of the lab" and gather information by conducting a large number of interviews (i.e., 100+) with potential customers, strategic partners, and other third-party stakeholders. During the course, I-Corps™ teams share what they learn with other teams, gaining new insights into the prospective impact of the technology being developed under the SBIR or STTR grant. It is anticipated that the feedback and learning gained during the I-Corps™ program will help inform future Phase II SBIR/STTR projects and commercialization strategies.

The I-Corps™ at NIH Program will be supported through administrative supplement awards to active NIH or CDC SBIR and STTR Phase I grantees. Administrative supplement awards are intended only to support travel and other costs associated with the training program. Two cohorts (24 teams per cohort) will be selected to participate in the I-Corps™ at NIH Program, which is expected to last approximately eight weeks. **The NIH anticipates that applicants receiving administrative supplements under this FOA will be enrolled in the I-Corps™ at NIH Program in one of two cohorts in 2017**

Awards: Application budgets are limited to no more than $50,000 in direct costs, and must reflect the actual needs of the proposed project.

The award budget should only be used to cover travel and other costs associated with participation in the I-Corps™ at NIH Program.

Letter of Intent: Not required.

Deadline: November 1, 2016; January 9, 2017, by 5:00 PM local time of applicant organization.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Centers of Biomedical Research Excellence (COBRE) (P20)
Agency: National Institutes of Health PAR-16-415
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-16-415.html

Brief Description: The application in response to this FOA must have a thematic scientific focus in a specific research area and may use basic, clinical, and/or translational research approaches, including community engagement and outreach research, to attain the goals of the proposed center. The center is intended to support investigators from several complementary disciplines. It will enable the institution to develop a critical mass of investigators and enhance

their competitiveness in a specific research area that accelerates the rate at which those investigators compete for other complementary NIH, Federal or non-Federal external peer-reviewed research grant support. It is also anticipated that, in some instances, the support through this FOA will facilitate the development of new disease-specific research centers or augment the capability of existing centers.

Although the individual career development of the junior investigators is an important part of this program, the primary objective of the COBRE initiative is to build and develop thematic multi-disciplinary research centers. This is accomplished through the leadership of a peer-reviewed, funded investigator with expertise central to the research theme of the application. The scientific leadership provided by one or more established biomedical research faculty is critical to the success of this FOA, especially for the career guidance of promising junior investigators.

Although the individual career development of the junior investigators is an important part of this program, the primary objective of the COBRE initiative is to build and develop thematic multi-disciplinary research centers. This is accomplished through the leadership of a peer-reviewed, funded investigator with expertise central to the research theme of the application. The scientific leadership provided by one or more established biomedical research faculty is critical to the success of this FOA, especially for the career guidance of promising junior investigators.

Support for research core facilities necessary to carry out the objectives of the center may be proposed in the Overall Center Organization and Management Plan.

Administrative Core:

The administrative core will provide management in administrative, fiscal, and scientific aspects of the proposed COBRE center. The plans for the administrative core should identify established senior faculty members who will provide career guidance and oversight to the junior investigator; constructive evaluations by members of the External Advisory Committee (EAC, see details below); and how the COBRE PD/PI will coordinate the management of all of these individuals. An internal advisory committee may provide additional oversight and input, but this committee may not act as a substitute for the EAC.

Each junior investigator should have at least one scientific advisor. The advisor must be an established investigator who has demonstrated the ability to advise others through the acquisition of external support and the maintenance of an independent research laboratory. In some instance a suitable advisor may not be available within the applicant's institution, and it is therefore acceptable to enlist appropriate advisors from outside institutions, including institutions in non-IDeA states.

All research project leaders must submit an investigator-initiated Research Project Grant (RPG) application by the end of two years of COBRE support. It is expected that a research project investigator will be supported by the COBRE for 3 years and move to independent research support. COBRE support beyond three years may be provided in circumstances where the PD/PI and the EAC have carefully evaluated the progress and research project and concluded that continued support is justified. Support of a research project investigator by the COBRE mechanism beyond a total of 5 years is not allowed.

The award of a RPG to a junior investigator should be viewed as a milestone and a criterion for changing the status of an investigator from mentored support via the COBRE to independent investigator. A junior investigator also may be considered for a status change if independence is indicated by the acquisition of sufficient skills and knowledge. However, it is stressed that the goal of the COBRE program is to promote the development of an independent and sustainable center.

External Advisory Committee: Each COBRE must be advised by an EAC comprised of 3-5 scientists with national scientific reputations in their fields. Their expertise must be directly relevant to the scientific theme of the COBRE. The EAC critiques the scientific progress of the COBRE and also offers advice on scientific matters to the COBRE PD(s)/PI(s). The EAC will be involved in developing and planning concepts and programs, encouraging and assisting faculty development and career guidance, identifying resources, evaluating the development of the center, evaluating the progress of the individual research projects, and evaluating the junior investigators' progress toward acquiring independent status. The PD(s)/PI(s) will share the advice and critiques provided by the EAC with other COBRE investigators at the center. The EAC also will review and recommend candidate investigators for replacement/substitute projects, as required, before such requests are forwarded to the NIGMS for programmatic review. The EAC should meet at least twice per year. Video-, teleconferencing or other means may be used in situations where it would be difficult to hold an in-person meeting. The applicant should not contact potential EAC members or provide the names of potential EAC members during the preparation or review of the application as this complicates the peer review process.

Research Core: Funds may be requested to establish core facilities. Although the COBRE award is not intended to replace support for ongoing investigator-initiated research projects, all center participants, including the advisors, as well as other non-center investigators at the institution, may use core facilities.

Sharing research resources among COBRE and IDeA Networks of Biomedical Research Excellence (INBRE) investigators is strongly encouraged. As much as practicable, applicants should seek to utilize existing equipment and instrumentation supported by other COBRE or INBRE awards.

It is expected that proposed core should be unique and not duplicate services or facilities that already exist at the applicant institution. Utilization/modification/expansion of existing resources to accomplish the goals of proposed research is strongly encouraged. Proposed research cores that appear to replicate services already available at the applicant institution will not be allowed without extensive justification.

Research Projects: The individual research projects should stand alone, but share the COBRE's common thematic scientific focus. Each research project should be led by a single junior investigator who is responsible for ensuring that the Specific Aims of that project are met.

Alteration and Renovation: Alteration and Renovation (A&R) costs to improve existing research laboratories or animal facilities are allowed. A&R projects must be relevant to the scope of the proposed research.

Awards: The annual budgets must not exceed $1.5 million in direct costs. Additional direct costs in year one only of up to $300,000 as a one-time expenditure for Alteration and Renovation may be requested.

Letter of Intent: 30 days prior to the application due date

Deadline: January 24, 2017; January 24, 2018; and January 24, 2019, by 5:00 PM local time of applicant organization. All types of applications allowed for this funding opportunity announcement are due on these dates.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: BRAIN Initiative: Non-Invasive Neuromodulation - New Tools and Techniques for Spatiotemporal Precision

Agency: National Institutes of Health RFA-MH-17-240

RFP Website: http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-240.html

Brief Description: Non-invasive neuromodulation devices are rapidly becoming one of the tools considered for the treatment and diagnosis of brain disorders and could become an alternative or an adjunct to neurological, neuropsychopharmacological, rehabilitative, or cognitive behavioral therapies. Non-invasive devices can be defined as those that do not require surgery and do not penetrate the brain parenchyma. These devices include, but are not limited to, those used for focused ultrasound stimulation, magnetic seizure therapy, electroconvulsive therapy, static magnets, transcranial alternating current stimulation, transcranial direct current stimulation, and transcranial magnetic stimulation. Applications involving devices that require surgery or penetrate the brain parenchyma will be deemed nonresponsive and will not be reviewed.

The first area is in the development and testing of novel tools and methods of neuromodulation that go beyond the existing variations on magnetic or electrical stimulation. These novel approaches/tools must be clearly beyond incremental advances over existing approaches. The rationale for this objective is that existing magnetic and electrical stimulation methods have limited spatial and temporal precision. To overcome these obstacles and move beyond incremental advances in the field, collaborations between physicists, engineers, neuroscientists, and clinicians are encouraged. The fresh perspective of such integrative teams would enable the development and testing of novel approaches that leverage other types of energy in a way that can lead to novel tools for scientific discovery and for therapeutic brain stimulation with high spatial and temporal resolution. This type of application may be in the initial stages and may therefore still be in the animal testing phase; however, the proposed tools and methods must be adaptable for use in humans.. In recognition of the fact that these methods might be in early stages of development, work with human volunteers can, but does not need to, be included.

The second, distinct, area that this FOA seeks to encourage is the significant improvement of existing electrical and magnetic stimulation methods. The related FOA (RFA-MH-17-245) in the area of non-invasive technology seeks applications focused on understanding how neural activity is modified in response to an exogenously applied stimulus using existing devices. This second area of this FOA is aimed at improving existing devices rather than elucidating their mechanism of action. Applications should propose technology improvements and testing methods in areas such as: (1) substantial improvement of the focality and depth of penetration of the stimulus, (2) prevention of extraneous stimulation (e.g. auditory clicking, scalp sensation, stimulation of non-target brain regions), (3) integration with endogenous rhythmic activity and advancing closed-loop stimulation capabilities, (4) use in natural ambulatory settings such as home or community settings, and (5) improved sham and control conditions. These five topics are discussed below in greater detail. They are not meant to be an exhaustive list, but provide examples of the types of improvements that are needed in this field.

- The first type of improvement is related to improving the focality and depth of the stimulation signal. The issue of focality is compounded for deep brain areas where existing non-invasive devices and protocols do not adequately provide both depth of penetration and target resolution. Advances toward noninvasive devices that allow deep and focal stimulation of the brain are strongly desired. Devices that could specifically stimulate more than one site are welcome.
- A second type of improvement involves the elimination of unintended extraneous stimulation. Current noninvasive techniques generally stimulate large regions of the brain. This is due both to the lack of focality of the stimulation signal as well as extraneous mechanical effects associated with device operation that independently stimulate auditory and somatosensory systems, thereby confounding experimental

protocols. These extraneous effects can be a significant confound in trying to deliver precise stimulation.

- A third type of improvement entails enhanced control of the temporal component of the delivered stimulation dose. Such temporal control can apply both to the stimulation signal itself as well as the interaction of the stimulation with dynamic brain processes. Applications could focus on developing closed-loop devices that are sensitive and responsive to dynamic neural activity recorded from the brain, but this is not a requirement. Improvements that enable an exploration of the frequency of the stimulation, the duration, number, or shape of pulses that are delivered during the stimulation, or the shape of the pulse of the delivered stimulation would allow the research community to understand how those parameters affect the functioning.
- A fourth area would be modifying devices for use in more natural settings. For example, devices that could be used outside the clinic, that allow long term stimulation, that are informed by endogenous oscillations, or are personalized to individual anatomy and physiology could all be significant improvements to existing technologies.
- A fifth area entails creating a common standard for sham and control conditions for non-invasive neuromodulation.

As mentioned above, this FOA uses two paths to foster development of new neuromodulation tools and techniques: development of wholly novel brain stimulation methods that do not involve the existing electrical or magnetic stimulation methods, and optimization of existing technologies. The higher risk inherent in the former is balanced overall by the parallel emphasis on improving existing methods in the second area.

The following types of studies are not responsive to this FOA and will not be reviewed:

- Studies with devices that require surgery or penetrate the brain parenchyma
- Projects without a description of how the methods would be scaled up for use in humans
- Projects that propose to explore the use of non-invasive devices for recreational uses
- Studies directed toward inducing maladaptive behaviors

Applicants may want to make use of some of the ideas that have been made available as part of the NIH BRAIN Initiative Public Private Partnership program (http://braininitiative.nih.gov/BRAIN_PPP/).

Awards: Application budgets are not limited but need to reflect the actual needs of the proposed project.

Letter of Intent: October 23, 2016.

Deadline: November 23, 2016 , by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

No late applications will be accepted for this Funding Opportunity Announcement.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Department of Homeland Security

Grant Program: DHS S&T Center of Excellence for Homeland Security Quantitative Analysis – Center Lead
Center of Excellence for Homeland Security Quantitative Analysis – Center Partner
Agency: Department of Homeland Security DHS-16-ST-061-HSQA-LEAD
DHS-16-ST-061-HSQA-PARTNER
Website: https://readfomag.com/wp-content/uploads/2016/08/CHSQA_NOFO_LEAD_2016_07_29-2.pdf

Brief Description: The Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Office of University Programs (OUP) is requesting applications from U.S. colleges and universities to serve as a partner institution for the Center for Homeland Security Quantitative Analysis (CHSQA). OUP is also posting a separate NOFO for eligible applicants to submit lead proposals for consideration. DHS will select qualified individual projects from applications received for either the Center Lead NOFO or the Center Partner NOFO, regardless of the institution that is awarded as lead institution. Principal Investigators that are already Partners under a Center Lead application may not submit the same application under this Partner NOFO.

The DHS COEs are university consortia that work closely with DHS Components and their partners to conduct research, develop and transition mission-relevant science and technology, educate the next generation of homeland security technical experts, and train the current workforce in the latest scientific applications. Each COE is led by a U.S. college or university and involves multiple partners for varying lengths of time. COE partners include other academic institutions, industry, DHS Components, Department of Energy National Laboratories and other Federally-Funded Research and Development Centers (FFRDCs), other federal agencies that have homeland security-relevant missions, state/local/tribal governments, non-profits, and first responder organizations. DHS envisions the COEs as long-term trusted academic partners that provide an array of resources to help DHS and its partners achieve their missions, and improve their operations. OUP maintains both financial assistance and contract mechanisms for DHS to access COE capabilities. The COEs that make up the COE network are listed at https://www.dhs.gov/st-centersexcellence. The new Center will be a fully-integrated component of the COE network and will take advantage of the network's resources to develop missioncritical research, education, and technology transition programs.

The Center for Homeland Security Quantitative Analysis (CHSQA) will conduct end user-focused research to enhance the application of analytic tools that support real-time decision making to address homeland security-related threats and hazards. This Center of Excellence (COE) will also provide education and professional development to improve data management and analysis, to facilitate operations research and systems analysis, to identify the economic impact of security threats and hazards, and to critically assess future risks posed to the DHS mission set. The overarching goal of the Center will be to develop the next generation of mathematical, computational, and statistical theories (including algorithms, methods, and tools) to advance quantitative analysis capabilities of the homeland security enterprise (HSE).

Homeland security enterprise (HSE) challenges require customized and innovative products that can provide a competitive advantage in operational settings. Research-based solutions generated by this Center must be intuitive, insightful, timely, and innovative. CHSQA's research will be based on HSE needs, as expressed by its practitioners in this NOFO. Research outcomes will include analytical tools, technologies, and knowledge products, e.g., best practices, resource guides, and case studies, which can be transitioned effectively to the workforce. It is DHS's intent to produce new capabilities and work with partners and stakeholders at all levels to test these capabilities in operational and strategic settings, and then take steps to make these solutions available and useful to agencies at all levels.

OUP expects selected COE Partners to become fully integrated into the COE. Partner applicants should understand DHS's expectations for a COE. The DHS Centers of Excellence (COEs) are university consortia that work closely with each other and with DHS Offices and Components and their partners to conduct research, develop and transition mission-relevant science and technology, educate the next generation of homeland security technical experts, and train the current workforce in the latest scientific applications. DHS COEs operate using a unique research management approach where researchers work alongside operational and

decision-making personnel to explore opportunities to use science and technology to enhance capabilities in line with DHS' mission. The skill sets required to make a COE successful are more extensive than research expertise alone. COEs need to have an ability and a commitment to communicate frequently with a variety of actors from federal staff, to attorneys, to university administrators. COE teams should include experts in finance, project management, education, training, outreach and marketing, intellectual property management, technology development, and technology transfer. Applicants should also have an understanding of how to translate research to practice including licensing, the ability to work with transition partners, and an understanding of federal acquisition. The COE team must demonstrate their commitment to develop a long-term trust-based partnership between universities and federal agencies; to do that, this wide range of skills is essential

S&T expects any Partner institution awarded under this NOFO to become a fully integrated component of the COE. Partner applicants must select and clearly identify if their proposed project aligns with the Research Program or the Workforce Development Program. Applicants may only propose 1 project per proposal; however they may submit more than 1 proposal.

Limited Submission: DHS will accept only one (1) application for Center Lead from any single university for review. Proposals must be submitted by an accredited U.S. institution of higher education that, along with its chosen partners, has the ability and capacity to conduct the required research. The applicant institution must be identified as the official lead for proposal submission and subsequent negotiations.

Principal Investigators that are already Partners under a Center Lead application may not submit the same application under this Partner NOFO. Institutions that are already Partners under a Center Lead application may not make an application under this Partner FOA for any single research projects.

Internal Submission of Notice of Intent: Please contact Office of Research at dhawan@njit.edu if you plan to prepare a proposal to submit.

Awards: There are two funding opportunities associated with the Center for Homeland Security Quantitative Analysis (CHSQA) award: (1) one for Center Lead (DHS-16-ST-061- HSQA-Lead) and (2) one for Center Partner (DHS-16-ST-061-HSQA-Partner). Subject to availability of funds, DHS estimates that a total of up to $4 million per year will be available for funding the Center and all direct and indirect costs for the selected Center lead and Partner applications. DHS does not guarantee any total amount of annual or cumulative funding. Anticipated total funding: $40,000,000

Proposal Deadline: November 1, 2016

Department of Defense/US Army/DARPA/ONR

Grant Program: Extreme Optics and Imaging (EXTREME) Proposers Day
Agency: Department of Defense DARPA-SN-16-62
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=7583672f3835994c93cc4af781c65908&tab=core&_cview=0

Brief Description: The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is sponsoring a Proposers Day to provide information to potential proposers on the objectives of an anticipated Broad Agency Announcement (BAA) for the Extreme Optics and Imaging (EXTREME) program. The Proposers Day will be held on September 1, 2016 from 2:00 PM to 3:00 PM. This event will be conducted solely via webcast and advance registration is

required. Note, all times listed in this announcement and on the registration website are Eastern Time. More on DARPA-SN-16-62.pdf
Proposer Day: September 1, 2016 , 2.00 PM – 3.00 PM

Grant Program: Microsystems Technology Office (MTO) Office-wide Proposers Day
Agency: Department of Defense DARPA-SN-16-59
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=56df9d77f07333a10341f64dfc5b8879&tab=core&_cview=0
Brief Description: The objectives of the MTO office-wide proposers day are to: (1) familiarize participants with MTO's mission and facilitate discussion on MTO's thrust areas (listed below) and on-going efforts, (2) provide information on the anticipated MTO office-wide BAA and Commercial Performer Program Announcement, (3) promote understanding of ways to work with DARPA, and (4) provide an opportunity for potential proposers to share their capabilities and ideas. More on https://www.fbo.gov/utils/view?id=f5bc406ab2218000bac41bdc5b8624fd
REGISTRATION OPENS: Friday, September 2, 2016, 11:00AM EDT
REGISTRATION DEADLINE: Tuesday, September 13, 2016, 5:00PM EDT
REGISTRATION WEBSITE: http://www.cvent.com/d/jvqkv8
E-MAIL: DARPA-SN-16-59@darpa.mil

Grant Program: Young Investigator Program (YIP)
Agency: Office of Naval Research ONR N00014-16-S-FO15
Website: http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx
Brief Description: The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR's Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or tenure-track-equivalent academic appointment, have begun their first appointment on or after 04 November 2011, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education (hereafter also called "universities") to the Department of the Navy's research program, to support their research, and to encourage their teaching and research careers.

Applicants are STRONGLY ENCOURAGED to contact the appropriate Program Officer who is the point of contact for a specific technical area to discuss their research ideas. A list of Program Officers and their contact information can be found at: http://www.onr.navy.mil/en/Science-Technology/Contacts.aspx Brief informal pre-proposals may be submitted to facilitate these discussions but are not required. Such discussions can clarify the content and breadth of the priority research areas and enhance the match between a subsequent proposal and Department of the Navy research needs. Please allow adequate time for such discussions with the ONR Program Officer.

An individual wishing to apply for a Young Investigator award must submit a research proposal and at least one letter of support through the appropriate university officials. Refer to Section V "Evaluation Information" regarding the importance of the letter(s) of support in the overall evaluation criteria and Section IV "Application and Submission Information" regarding its content. The research proposal should follow the format described in FOA Section IV entitled, "Application and Submission Information." ONR makes awards to institutions, not to individuals.

Offerors may request up to $170,000 per year for three (3) years. These funds may be budgeted against any reasonable costs related to conducting the proposed research, for example, salary for the Young Investigator, graduate student support, supplies, and applicable indirect cost. Additional funds (beyond the basic $170,000 yearly amount) for capital equipment which enhances the Young Investigator's proposed research may be requested for the first budget period based on the needs of the research.

The competition for YIP awards continues to be intense. In 2016 more than 260 proposals were received resulting in 47 Young Investigator awards. Past awardees have both submitted outstanding research proposals and possessed outstanding records of prior professional accomplishments. Given that "past performance" is a selection criterion, applicants are advised that the biographical information submitted as part of the proposal (see "Qualifications" under "Proposal Content," below) should list all relevant past and present activities. See Section V, "Evaluation Information" for more details regarding evaluation of submitted proposals.

Proposals not selected for the Young Investigator Program may be considered for grant award under the ONR Long Range Broad Agency Announcement. Under the ONR Long Range BAA, grant proposals would be in competition with all other research proposals submitted in response to the ONR Long Range BAA. Historically, only a limited number of proposals initially submitted to the YIP received funding under the ONR Long Range BAA. The YIP is not a "research initiation" opportunity with standards that are less demanding than ONR's other research grant programs; instead, it is intended to confer honor upon awardees beyond the funding being provided. Consideration of any YIP proposal to another ONR research grant program is at the discretion of the cognizant program officer

Awards: Proposed research should be structured to have a three (3) year period of performance beginning 01 June 2017. It is anticipated that individual awards will be up to $170,000 per year for three (3) years (with the possibility of greater support for equipment and/or to support additional, collaborative research with a Navy laboratory). The $170,000 limit includes all funds paid to the university, including all indirect costs.

Questions Due: 07 October 2016 (Friday) 3:00 PM Eastern Daylight Time (EDT)

Full Proposal Deadline: Full Proposals: The due date for receipt of Full Proposals is 11:59 PM (EDT) on Friday, 04 November 2016. Full proposals received after the published due date and time will not be considered. It is STRONGLY recommended that proposals be uploaded sufficiently in advance to avoid any possible delays with Grants.gov.

After the final full proposal evaluation process is completed, offerors will be notified via email of their project's selection or non-selection for FY17 funding.

Department of Energy

Grant Program: Request For Information On Potential Technical Focus Areas For Advanced Manufacturing - Related Traineeships

Agency: Department of Energy DE-FOA-0001635

Website: https://eere-exchange.energy.gov/#FoaId701f4169-15f7-46ae-85af-99acb2ab9c0c

Brief Description: The Department of Energy (DOE) funds university-led traineeship programs that strategically address workforce training needs in key technical focus areas.The following objectives guide DOE's Office of Energy Efficiency and Renewable Energy (EERE) Advanced Manufacturing Office's (AMO) traineeship efforts:

- Advance the DOE mission relative to advanced manufacturing – DOE funded Traineeship Programs are designed and implemented to advance specific Science, Technology,

Engineering and Math (STEM) workforce competencies required for the DOE's unique mission to ensure America's security and prosperity by addressing its science, energy, and environmental challenges.

- Address priority STEM workforce needs and identified gaps – DOE funded Traineeship Programs focus on advancing those critical STEM disciplines and competencies specifically relevant to the EERE and AMO missions where other U.S. Government or academic workforce development programs either do not exist or where DOE-relevant applications are not being leveraged to support specific DOE mission responsibilities.

In July 2015, EERE released a Funding Opportunity Announcement (FOA) to address emerging needs in graduate training enabling preparedness for the field of advanced Power Electronics Engineering careers beyond those in academia. As a result, EERE made two competitively-selected awards supporting five-year graduate-level programs in Power Electronics Engineering, leveraging existing DOE assets including the wide band gap National Network for Manufacturing Innovation (NNMI) Institute, PowerAmerica.

The purpose of this Request for Information (RFI) is to gather from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to future EERE-funded and AMO-funded graduate-level Traineeships. This RFI is not a FOA; therefore, DOE is not accepting applications at this time. All responses to this RFI must be provided as an attachment (in Microsoft Word format) to an e-mail message addressed to AMOTraineeship@ee.doe.gov.

Deadline: Responses must be received no later than 5:00pm (ET) on October 14th, 2016.

Contact Information:

- EERE-ExchangeSupport@hq.doe.gov
- EERE Exchange support.
- AMOTraineeship@ee.doe.gov
  Responses to this Request for Information
