Grant Opportunity Alerts: Issue: ORD-GOA-2015-11

In This Issue: Events, Internal Competition (NSF Big Data Innovation Hub), and Grant Opportunities

Events

Event: Panel Discussion on NSF CAREER Grant Opportunities
Panel Speaker: Dr. Raj Mutharasan, Program Director, NanoBioSensing, NSF
Panelists:
Dr. Treena Arinzeh, Professor, NJIT (NSF CAREER grant recipient)
Dr. Yi Chen, Associate Professor, NJIT (NSF CAREER grant recipient)
Dr. Edgardo Farinas, Associate Professor, NJIT (NSF CAREER grant recipient)

When and Where: 1.00 PM – 3.30 PM, April 8, 2015; 112 Eberhardt Hall

Panel Speaker Bio: Dr. Raj Mutharasan is the Frank A. Fletcher Professor of Chemical and Biological Engineering. Currently he serves as the Program Director of NanoBioSensing at the National Science Foundation. He led Engineering Curriculum Innovation Program – a seven university coalition on engineering education - at Drexel funded by the National Science Foundation during 1995-2004. He is a Fellow of American Institute of Chemical Engineers (2000), Fellow of American Institute for Medical and Biological Engineering (2006) and Fellow of the American Association of Advancement of Science (2011). He serves on the Editorial Board of Applied Biochemistry and Biotechnology, a Springer journal.

Agenda:
1.00 PM - 1.10 PM: Welcome and Introductions
1.10 PM - 1.45 PM: Presentation by Dr. Raj Mutharasan, Program Director, NSF
1.45 PM - 2.15 PM: Panel Discussion
2.15 PM – 3.30 PM: Group Meetings with Faculty

Event: NSF Webinar on  The Science of Learning, Technology, Big Data, and Transformation in Education
When: 11.00 AM-12.00 Noon, April 9, 2015

Speaker Bio: Candace Thille is the founding director of the Open Learning Initiative (OLI) at Carnegie Mellon University and at Stanford University. She is a senior research fellow in the Office of the Vice Provost for Teaching and Learning and an assistant professor in the Graduate School of Education at Stanford University. Her focus is in applying the results from research in the science of learning to the design and evaluation of open web-based learning environments and in using those environments to conduct research in human learning. Dr. Thille serves on the board of directors of the Association of American Colleges and Universities; as a fellow of the International Society for Design and Development in Education; on the Assessment 2020 Task Force of the American Board of Internal Medicine; on the advisory council for the Association of American Universities STEM initiative; on the advisory council for the National Science Foundation Directorate for Education and Human Resources. She served on on the working group of the President¹s Council of Advisors on Science and Technology (PCAST) for the Obama Administration that produced the Engage to Excel report. She served on the U.S. Department of Education working group, co-authoring The 2010 National Education Technology Plan and is currently serving on the working group to co-author The 2015 National Education Technology Plan. She has a bachelor¹s degree from
the University of California, Berkeley, a masters degree from Carnegie Mellon University, and a doctorate from the University of Pennsylvania.

Abstract: Using intelligent tutoring systems, virtual laboratories, simulations, and frequent opportunities for assessment and feedback, The Open Learning Initiative (OLI) has been creating and evaluating open web-based learning environments for over twelve years. The OLI environments also serve as a laboratory for fundamental research on human learning. In this talk I will discuss how we make use of expertise from the learning sciences to produce high-quality learning environments and how studies of student use inform both the next iteration of the environment and the underlying learning theory. I will present examples from OLI courses, discuss results from several research studies, and describe the second phase of OLI at Stanford University.

To Join the Webinar: Please register at: https://nsf.webex.com/nsf/j.php?RGID=ra1991bf582d3d9058a6ed163f7ac99bd by 11:59pm EST on Wednesday, April 8, 2015. After your registration is accepted, you will receive an email with a URL to join the meeting. Please be sure to join a few minutes before the start of the webinar. This system does not establish a voice connection on your computer; instead, your acceptance message will have a toll-free phone number that you will be prompted to call after joining. Please note that this registration is a manual process; therefore, do not expect an immediate acceptance. In the event the number of requests exceeds the capacity, some requests may have to be denied.

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Grant Opportunities Alerts:
Keywords and Areas Included in Funding Opportunities Alerts:
NSF: Big Data Regional Innovation Hub: One Proposal per Organization: Please see Internal Competition Information; Hydrologic sciences
NASA: ROSES 2015: Planetary Data Archiving, Restoration, and Tools
National Endowment for Humanities: Research and Development Grants
ARL and DoD: BASIC, APPLIED & ADVANCED SCIENTIFIC RESEARCH
National Institute of Health: Exosomes in HIV Neuropathogenesis, Advancing Mechanistic Probiotic/Prebiotic and Human Microbiome Research (R01)

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Grant Program: Big Data Regional Innovation Hubs (BD Hubs): Accelerating the Big Data Innovation Ecosystem
Agency: National Science Foundation NSF 15-562
RFP Website: http://www.nsf.gov/pubs/2015/nsf15562/nsf15562.htm
Brief Description: In March 2012, the Administration announced the National Big Data Research and Development Initiative, which aims to solve some of the Nation's most pressing R&D challenges related to extracting knowledge and insights from large, complex collections of digital data. As part of this initiative, the Administration encouraged multiple stakeholders including federal agencies, private industry, academia, state and local governments, non-
profits, and foundations, to develop and participate in Big Data research and innovation projects across the country.

To augment ongoing activities and to ignite new Big Data public-private partnerships across the Nation, NSF’s Directorate for Computer and Information Science and Engineering (CISE) is seeking to establish a National Network of Big Data Regional Innovation Hubs (BD Hubs). Each BD Hub would be a consortium of members from academia, industry, and/or government. This solicitation aims to establish four Hubs across distinct geographic regions of the United States, including the Northeast, Midwest, South, and West, as defined later in the Program Description section. Each BD Hub should focus on key Big Data challenges and opportunities for its region of service. The BD Hubs should aim to support the breadth of interested local stakeholders within their respective regions, while members of a BD Hub should strive to achieve common Big Data goals that would not be possible for the independent members to achieve alone.

To foster collaboration among prospective partners within a region, NSF is sponsoring a series of regional, intensive, one-day workshops (called "charrettes"). One charrette will be held in each geographic region to convene stakeholders, explore Big Data challenges, and aid in the establishment of that consortium. For more information on these charrettes, see the following webpage: [http://www.usenix.org/BDHubs15](http://www.usenix.org/BDHubs15). To facilitate discussion among interested parties, a HUBzero community portal has been established at [http://bdhub.info](http://bdhub.info). Interested parties may leverage this portal to communicate with members within their region or other stakeholders nationwide.

This solicitation is the first of a multi-phase process meant to develop a National Network of BD Hubs. The first phase will set up the governance structure of each BD Hub’s consortium of members as well as develop approaches to ensure cross-hub collaboration and sustainability over the long term. The next phase will focus on building out various sectors of particular interest to each BD Hub (e.g., transportation, smart cities, health, energy, public safety, and education) so as to advance sector innovation in that region. The final phases will focus on connecting the BD Hubs and their regional sectors into a national Big Data innovation ecosystem.

This solicitation is part of NSF’s Big Data program, which includes: research and infrastructure development; education and workforce development; and multi-disciplinary collaborative teams and communities that address complex science and engineering grand challenges. Before preparing a proposal in response to this or any other Big Data solicitation, applicants are strongly encouraged to review those solicitations and consult with cognizant NSF program officers to determine appropriateness of fit. For example, this solicitation funds the establishment and coordination of a BD Hubs National Network, but is not meant to be a source of funding for new research. By contrast, the BIGDATA solicitation may be more relevant for research funding.

**Awards:** Each project will be funded up to a maximum of $1,250,000 for up to 3 years, subject to the availability of funds.

**Cost Sharing Requirements:** Inclusion of voluntary committed cost sharing is prohibited.

**Letter of Intent:** Not Required

**Limit on Number of Proposals per Organization:** 1

**Deadlines:** June 24, 2015

**Internal Competition:**

Please submit an internal pre-proposal (up to five pages) following the instructions describes in the proposal preparation section of the RFP in the following format by April 21, 2015.
through College/School Deans. Deans are requested to forward the pre-proposals with their recommendations to the Office of Research by April 27, 2015. Notification on selection will be provided by May 1, 2015.

Internal Pre-proposal Format (5 pages):

**Project Summary and List of Participants/Collaborators** (1-page)

**Data Management Plan, Postdoctoral Mentoring Plan and Brief Budget Outline** (1 page)

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**Grant Program: Hydrologic Sciences**

**Agency:** National Science Foundation NSF 15-558


**Brief Description:** The Hydrologic Sciences Program focuses on the fluxes of water in the environment that constitute the water cycle as well as the mass and energy transport function of the water cycle. The Program supports the study of processes from rainfall to runoff to infiltration and streamflow; evaporation and transpiration; the flow of water in soils and aquifers; and the transport of suspended, dissolved, and colloidal components. The Hydrologic Sciences Program retains a strong focus on linking fluxes of water and the components carried by water across boundaries between various interacting facets of the terrestrial system and the mechanisms by which these fluxes co-organize over a variety of timescales and/or alter fundamentals of water cycle interactions within the terrestrial system. The Program is also interested in how water interacts with the landscape and the ecosystem as well as how the water cycle and its coupled processes are altered by land use and climate. Studies may address physical, chemical, and biological processes that are coupled directly to water transport. Projects submitted to Hydrologic Sciences commonly involve expertise from basic sciences, engineering and mathematics; and proposals may require joint review with related programs. The Hydrologic Sciences Program will also consider synthesis projects.

**Awards:** Standard Grants, Total funding available: $10 million

**Cost Sharing Requirements:** Inclusion of voluntary committed cost sharing is prohibited.

**Letter of Intent:** Not Required

**Deadlines:** Proposals Accepted Anytime

Henceforth, investigators can submit proposals to the Program at any time. Proposals submitted to other program solicitations, such as CAREER or EAR Post-Doctoral Fellowships, should continue to meet their respective deadlines.

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**NASA**

**Grant Program: ROSES 2015: Planetary Data Archiving, Restoration, and Tools**

**Agency:** NNH15ZDA001N-PDART

**Research Opportunities in Space and Earth Sciences (ROSES) – 2015; NNH15ZDA001N**

**RFP Website:** [http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&sollId={19148EC8-0C4D-A31F-7F05-AF399BEF99A8}&path=open](http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&sollId={19148EC8-0C4D-A31F-7F05-AF399BEF99A8}&path=open)

**Brief Description:** ROSES-2015 is an omnibus NASA Research Announcement. It contains over 50 different proposal opportunities. In the "Announcement Documents" section above, the document 'Summary of Solicitation' describes the common requirements for all ROSES-2015 proposal opportunities; all proposers must satisfy the proposal requirements in the 'Summary of Solicitation'. The documents 'Table 2' contains the list of all proposal opportunities and their due dates. The document 'A.1 Earth Science Research Overview' describes research activities within the NASA science division that is managing the specific proposal opportunity on this page. The document 'A.36 Advancing Collaborative Connections for Earth System Science' describes the specific proposal opportunity on this page. All of these documents are kept up to date and incorporate amendments, clarifications, and corrections in a clearly identifiable manner.

Table 2: ROSES 2015 List:
http://nspires.nasaprs.com/external/viewrepositorydocument/cmdocumentid=442206/solicitationId=%7B4477FA89-FA98-1C5C-3676-C7AB00B6769%7D/viewSolicitationDocument=1/Table%202%202015%20amend3.html

This National Aeronautics and Space Administration (NASA) Research Announcement (NRA), entitled Research Opportunities in Space and Earth Sciences (ROSES)-2015, solicits basic and applied research in support of NASA's Science Mission Directorate (SMD). ROSES is an omnibus with many individual program elements, each with its own due dates and topics and all together these cover all aspects of basic and applied supporting research and technology in space and Earth sciences, including, but not limited to: theory, modeling, and analysis of SMD science data; aircraft, scientific balloon, sounding rocket, International Space Station (ISS), CubeSat and suborbital reusable launch vehicle investigations; development of experiment techniques suitable for future SMD space missions; development of concepts for future SMD space missions; development of advanced technologies relevant to SMD missions; development of techniques for and the laboratory analysis of both extraterrestrial samples returned by spacecraft, as well as terrestrial samples that support or otherwise help verify observations from SMD Earth system science missions; determination of atomic and composition parameters needed to analyze space data, as well as returned samples from the Earth or space; Earth surface observations and field campaigns that support SMD science missions; development of integrated Earth system models; development of systems for applying Earth science research data to societal needs; and development of applied information systems applicable to SMD objectives and data.

**Awards:** Awards range from under $100K per year for focused, limited efforts (e.g., data analysis) to more than $1M per year for extensive activities (e.g., development of science experiment hardware).

**Letter of Intent:** Step 1, NOI: May 15, 2015

**Deadline:** Full Proposal Deadline(s): Full Proposal Due: July 17, 2015

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**National Endowment for Humanities**

**Grant Program:** Research and Development Grants

**Agency:** National Endowment for Humanities

**RFP Website:** http://www.neh.gov/grants/preservation/research-and-development
**Brief Description:** The Research and Development program supports projects that address major challenges in preserving or providing access to humanities collections and resources. These challenges include the need to find better ways to preserve materials of critical importance to the nation's cultural heritage—from fragile artifacts and manuscripts to analog recordings and digital assets subject to technological obsolescence—and to develop advanced modes of organizing, searching, discovering, and using such materials. This program recognizes that finding solutions to complex problems often requires forming interdisciplinary project teams, bringing together participants with expertise in the humanities; in preservation; and in information, computer, and natural science. All projects must demonstrate how advances in preservation and access would benefit the cultural heritage community in supporting humanities research, teaching, or public programming.

The Research and Development program is now offering grants of up to $75,000 for planning and basic research (Tier I). The grants support planning and preliminary work for large-scale research and development projects, and stand-alone basic research projects (such as case studies, experiments, and the development of iterative tools). The program (formerly known as Preservation and Access Research and Development) continues as well to offer grants of up to $350,000 for advanced implementation (Tier II): the development of standards, practices, methodologies, or workflows for preserving and creating access to humanities collections; and applied research addressing preservation and access issues concerning humanities collections. Applicants for Tier II grants will need to provide a separate one- to two-page detailed plan for dissemination of project results.

Also, starting in 2016 the program will hold an annual project directors' meeting that will not only highlight the progress of NEH-funded projects, but also engage the range of issues related to the stewardship of humanities collections.

**Awards:** Variable

**Letter of Intent:** Not required

**Deadline:** Full Proposal Deadline(s): June 25, 2015 for Projects Beginning January 2016

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**US Army Research Laboratory/Department of Defense**

**Grant Program:** BASIC, APPLIED & ADVANCED SCIENTIFIC RESEARCH

**Agency:** US Army Research Lab, Defense Forensics and Biometrics Agency

**W911NF-13-R-0006**


**Brief Description:** The Department of Army’s Office of the Provost Marshall General (OPMG) recently established the Defense Forensics and Biometrics Agency (DFBA). This umbrella agency serves as the Executive Agent for Department of Defense (DoD) forensics and biometrics casework, research, and new capabilities development. The DFBA forensic and biometric capabilities assist DoD in combating networks that threaten warfighters by denying criminals and adversaries anonymity.

The Defense Forensics and Biometrics Agency is comprised of two operational entities:

- Defense Forensics Science Center (DFSC) (formerly the U.S. Army Criminal Investigation Laboratory (USACIL) located at the Ft. Gillem Enclave in Forest Park, GA)
- Biometrics Identity Management Activity (BIMA) (located in Clarksburg, WV)

DFSC provides forensic laboratory services to DoD military criminal investigative organizations (Air Force Office of Special Investigations, Naval Criminal Investigative Service,
and the Army Criminal Investigation Command) and other DoD customers. It is a full service forensic laboratory, providing state-of-the-art forensic examinations in the following disciplines:

- DNA/Serology
- Digital Evidence
- Drug Chemistry
- Firearms and Toolmarks
- Forensic Documents
- Latent Prints
- Trace Evidence

The DFSC has three primary objectives:

1. Analyze forensic evidence and casework and provide expert testimony
2. Provide expeditionary forensic services to U.S. military forces in active theaters of operation
3. Coordinate the execution of research projects to advance forensic capabilities

**Awards:** Variable

**Letter of Intent:** Not required

**Deadline:** Full Proposal Deadline(s): June 30, 2015

**Grant Program:** BASIC, APPLIED & ADVANCED SCIENTIFIC RESEARCH

**Agency:** US Army Research Lab

**W911NF-12-R-0011-03**


**Brief Description:** Research proposals are sought from educational institutions, nonprofit organizations, and commercial organizations for research in materials sciences; ballistics and aeromechanics sciences; information sciences; human sciences; survivability, lethality, and vulnerability analysis and assessment; chemistry; electronics; physics; environmental sciences; life sciences; mechanical sciences, mathematical sciences, computing sciences and network sciences. Proposals will be evaluated only if they are for scientific study and experimentation directed toward advancing the state of the art or increasing knowledge and understanding.

ARO has primary responsibility for ARL’s extramural basic research programs, with specific research interests as described in Part II.A.2. The ARL Directorates, while having primary responsibility for ARL’s in-house research programs, also manage select extramural basic research programs. The research interests of the Directorates are described in Part II.A.1. Although ARL Directorates will consider funding proposals for extramural research programs, they can fund only a modest number of proposals in a single fiscal year. It should be noted that the ARL Directorates are highly interested in performing research in collaboration with other scientists and engineers. So, in addition to funding select external research projects, the ARL Directorates also have a strong interest in performing joint research with other organizations in ARL’s core competency areas as described in this BAA. Collaboration is a central tenet of ARL’s new Open Campus Initiative. Information regarding the Open Campus Initiative can be found on the ARL website (a summary at: [http://www.arl.army.mil/www/default.cfm?page=2357](http://www.arl.army.mil/www/default.cfm?page=2357) and details regarding specific opportunities at: [http://www.arl.army.mil/www/pages/2357/ARL_Open_Campus_Opportunities.pdf](http://www.arl.army.mil/www/pages/2357/ARL_Open_Campus_Opportunities.pdf)).
Inquiries regarding funding and/or collaborations should be directed to the listed Technical Point of Contact (TPOC).

**Awards:** Variable

**Letter of Intent:** Not required

**Deadline: Full Proposal Deadline(s):** This BAA is a continuously open announcement valid throughout the period from the date of issuance through 31 March 2017

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**National Institutes of Health**

**Grant Program:** Cancer Research Education Grants Program - Research Experiences (R25)

**RFP Website:**

**Brief Description:** The NIH Research Education Program (R25) supports research educational activities that complement other formal training programs in the mission areas of the NIH Institutes and Centers. The over-arching goals of the NIH R25 program are to: (1) complement and/or enhance the training of a workforce to meet the nation’s biomedical, behavioral and clinical research needs; (2) enhance the diversity of the biomedical, behavioral and clinical research workforce; (3) help recruit individuals with specific specialty or disciplinary backgrounds to research careers in biomedical, behavioral and clinical sciences; and (4) foster a better understanding of biomedical, behavioral and clinical research and its implications. All applications must provide a plan for the recruitment and participation of individuals from underrepresented backgrounds in the program. This requirement applies to participants and program faculty (preceptors/mentors). See, NIH Interest in Diversity, [NOT-OD-15-053](http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-053.html), and Diversity Recruitment Plan, under Section IV, below.

The over-arching goal of this NCI R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation’s biomedical, behavioral and clinical research needs. Applications are encouraged that propose innovative, state-of-the-art programs that address the cause, diagnosis, prevention, and treatment of cancer, rehabilitation from cancer, and the continuing care of cancer patients and the families of cancer patients, in accordance with the [overall mission of the NCI](http://www.cancer.gov). To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Research Experiences:** Proposed research experiences should involve an innovative approach to provide hands-on exposure to cancer research in a laboratory or a field setting for a full-time (40 hours per week) period of 10 to 15 weeks in order to stimulate the interest and advance the knowledge base of participants to consider further education and training for future careers as cancer researchers. The proposed
programs should provide research experiences and related training that are not available through formal NIH training mechanisms.

- **Curriculum or Methods Development:** Proposed curriculum or methods development activities should have high potential to improve biomedical, behavioral or clinical cancer research education, or involve the development of novel instructional approaches or computer-based tools for cancer research education. Whereas the proposed activities can provide a foundation for new courses or be integrated into the existing curricula in the grantee institution, it is expected that the curriculum or methods developed can be readily adaptable by the cancer research education community. Innovative and de novo projects that educate participants on the translational potential of recent advances in cancer research are encouraged. For PAR-15-150

- **Courses for Skills Development:** The proposed course for skills development should provide innovative, state-of-the-art, evidence-based cancer education that is derived from biomedical, behavioral and clinical cancer research findings. The duration of the course may not exceed 15 weeks per year. If multiple, non-contiguous time blocks are proposed for the course activities, the total length of the course may not exceed 15 weeks. The format of the course may involve a traditional in-person approach, online activities, or a hybrid of both approaches. PAR-15-151

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

**Awards:** Standard Awards

**Letter of Intent:** Not Required

**Full Proposal Deadline:** Standard Dates

**Grant Program:** AHRQ Small Research Grant Program (R03)

**Agency:** Agency for Healthcare Research and Quality (AHRQ)  NIH PAR-15-147


**Brief Description:** Small research (R03) grants provide flexibility for initiating studies which are generally for preliminary or short-term projects. These grants are non-renewable. Some examples of the types of projects that R03 research supports include:

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

The AHRQ small grant is a mechanism for supporting discrete, well-defined projects that realistically can be completed within two years (or less) within the budget constraints of the mechanism. Because the research strategy section of the application is limited to 6 pages, an R03 grant application may not contain the same level of detail as that found in an R01 application. Accordingly, appropriate justification for the proposed work can be provided through literature citations, data from other sources, or from investigator-generated data. Preliminary data are not required, particularly in applications proposing pilot or feasibility studies.
The Small Research Grant (R03) is an award made by AHRQ to an institution/organization to support a discrete health services research project. The R03 research strategy proposed by the applicant institution/organization must be related to the mission and research interests of AHRQ. Although the PD/PI writes the grant application and is responsible for conducting and supervising the research, the actual applicant is the research institution/organization.

AHRQ Mission and Research Areas of Interest:
The AHRQ mission is to produce evidence to make health care safer, higher quality, more accessible, equitable and affordable, and to work with HHS and other partners to make sure that the evidence is understood and used. Within this mission, AHRQ’s specific priority areas of focus are:

- Improve health care quality by accelerating implementation of Patient Centered Outcomes Research (PCOR)
- Make health care safer
- Increase accessibility by evaluating expansions of insurance coverage
- Improve health care affordability, efficiency and cost transparency

These areas, relevant to Small Research Grant (R03) applications submitted to AHRQ, are articulated at [http://www.ahrq.gov/funding/policies/foaguidance/index.html](http://www.ahrq.gov/funding/policies/foaguidance/index.html). Contacting an AHRQ staff member may help focus the research plan based on an understanding of the AHRQ mission and research priorities. AHRQ staff contacts can be found at [http://www.ahrq.gov/funding/priorities-contacts/contacts/index.html](http://www.ahrq.gov/funding/priorities-contacts/contacts/index.html).

Applicants are strongly encouraged to address health services research issues critical to AHRQ priority populations, including: individuals living in inner city and rural (including frontier) areas; low-income and minority groups; women, children, and the elderly; and individuals with special health care needs, including those with disabilities and those who need chronic or end-of-life health care.

**Awards:** The budget limit on small project grant applications is $100,000 total costs (i.e., direct costs plus Facilities and Administrative (F&A) costs) for the entire project period, regardless of the length of the proposed project period. Applications requesting more than $100,000 in total costs for the entire project period will not be reviewed.

**Letter of Intent:** Not Required

**Full Proposal Deadline:** Standard dates apply, by 5:00 PM local time of applicant organization. All types of non-AIDS 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.

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**Grant Program:** Genome Sequencing Program Coordinating Center (U24)

**Agency:** NIH RFA-HG-15-019


**Other Companion Funding Opportunities:**

- RFA-HG-15-001, UM1 Research Project with Complex Structure Cooperative Agreement
- RFA-HG-15-002, UM1 Research Project with Complex Structure Cooperative Agreement

**Brief Description:** With this FOA, NHGRI seeks to fund a GSP Coordinating Center (GSPCC) that will have two broad roles in coordinating the activities of the overall GSP, and in helping to ensure that their efforts are productive and provide useful outcomes for the scientific
community, and in general to enhance the potential for success of the program. The two roles are:

1. **Providing scientific leadership for specific cross-program scientific objectives that are expected products of the GSP program as a whole:**

   - In the context of the CCDG efforts, the GSPCC will lead a consensus analysis to address the question: "When is a common disease variant discovery study effectively complete?". As discussed in RFA-HG-015-001, this will inevitably require consideration of both scientific factors (e.g., statistical power, underlying disease architecture, study designs considerations, what can we learn from obtaining data from additional samples/populations; how far can such studies go in identifying) and practical factors (e.g., cost; technology platforms). NHGRI understands that it may not be possible to converge on a single answer. However, we do intend that the program will provide--at the least--an informed analysis, backed up by data, that defines the state of the art and the costs and benefits of adding additional data to a project in both quantitative and qualitative terms. This is an important outcome for many reasons, not least because there is currently wide interest in investing very significant resources over the next several decades on discovery and characterization of variants underlying inherited diseases, commensurate with their importance for public health.

   - The GSPCC will develop specifications for development of a set of common controls for common disease rare variant studies. Applicants should propose methods for developing a plan and facilitating consensus around the specifications for common controls. Availability of a well-characterized, widely applicable set of common controls would significantly reduce costs of many future study designs. As above, both scientific considerations (e.g., need to match or harmonize variant and phenotype data; need to match populations; sample numbers, power, etc.) and practical considerations (e.g., cost, sample availability) will arise. The full task of developing a set of common controls may be too large for this FOA; we therefore aim to begin by tasking the GSPCC with developing design considerations for a broadly generalizable control set, based on the projects that will be undertaken by the production centers. Because the GSP will be producing large volumes of data in the context of such studies, it represents a good context within which to develop specifications and general recommendations for such a control data set (although we expect that any such effort will consider all useful data whether it comes from within the GSP or not).

   - In the event that this analysis can be completed within the initial year or two of the program, NHGRI is open to the possibility that the goal can be advanced, from developing specifications for common controls, to developing the resource.

   - The GSPCC will be responsible for producing allele frequency data for the CMG program. Twice each year, the CMGs will provide genome sequence and associated data to the GSPCC in a standard format (likely BAM file). The GSPCC will be expected to calculate allele frequencies from the data. In addition, the CC and the CMGs are expected to work out a way to share and summarize associated phenotype information. Then the CC will be responsible for making the allele frequencies and associated high level phenotype information publically available.

   - The GSPCC will be asked to provide input into other cross-program activities that may arise, which will require scientific expertise. In general a successful GSPCC will work with GSP investigators and NHGRI staff to help ensure that the results are integrated, including helping to reconcile differences in analyses (for example, different variant call sets on the same data), or looking for ways to synergize across sample sets (e.g., being sequenced by multiple CCDG’s) with similar phenotypes. The GSPCC also will
contribute scientific expertise and leadership as needed to facilitate cross-study activities in areas such as policy compliance, harmonization of phenotype and exposure measures, and facilitating consensus with regard to implications of disease causality of identified variants. The GSPCC will be encouraged to identify other useful analyses that will cut across multiple grantees or programs that may add value to the GSP, for example data quality assessments or design of arrays.

The GSPCC will be responsible for providing scientific leadership and coordination for these activities, and the applicant is expected to request funds associated with investigator time (including time needed for collaboration) and analyses that may be required to accomplish the goals above. However, it is critical to note that these functions must be carried out in collaboration with other components of the GSP; in fact the other components will need to be actively enlisted because GSPCC funds are limited. The GSPCC is not necessarily required to include specific analytic expertise to carry out each one of the activities mentioned herein (with the exception of the allele frequency analysis for the CMG), but rather will need to understand the activities to the extent that they can help coordinate and facilitate specific expertise that exists within the program as a whole. Consistent with this, several of the cross-program goals above are also mentioned in the CCDG FOA and will also be included in any FOA for planned GSP-associated analysis centers. However, of all the GSP components, only the GSPCC is given leadership responsibility for accomplishing the cross-program goals listed above.

The GSPCC will not be responsible for analyses of individual projects undertaken by the CCDG and CMG.

It is important that applicants be aware that the GSP is intended to be highly collaborative both within and outside of the GSP program, and that scientific opportunities may arise that involve interactions with other large data-generating genomics programs, such as the Electronic Medical Records and Genomics Network (eMERGE http://www.genome.gov/27540473) or the Clinical Sequencing Exploratory Research Program (CSER http://www.genome.gov/27546194).

Because of the scientific roles discussed above, and the need to facilitate consensus among multiple groups, NHGRI believes that it is important that the GSPCC be independent of the CCDG and the CMG awardees. This will be reflected in the eligibility and funding criteria.

II. Providing coordination for administrative, logistical, and outreach activities:

- The GSPCC will work collaboratively with the GSP investigators, investigators in other relevant NHGRI programs as scientific opportunities arise, as well as with NHGRI staff to facilitate a comprehensive program of research to promote discovery of disease-related variants and elucidation of their potential causal role.
- The GSPCC will work with NHGRI program staff to track genome sequencing and analysis costs, production, data deposition, and project completion.
- The GSPCC will be a resource for logistics and communication among GSP program participants and collaborators, including scheduling conference calls, recording minutes and action items as needed, working with NHGRI staff to develop web resources for cross-program working groups (e.g., distributing and archiving working group documents) or projects as needed, planning program meetings and generating and distributing relevant documents, etc.
- The GSPCC will arrange and coordinate outreach activities for the GSP. This will include public web views of progress on project status (including phenotypes in the CMG pipeline), where to find project data, causal variant information, publication lists, Frequently Asked Questions, etc. The GSPCC will provide assistance in summarizing and communicating to the community general “lessons learned” about how to use
genome sequencing to find rare variants, and help with ensuring that project data are available to the wider community. This objective may also include help organizing community workshops (when appropriate) regarding data resources generated by the GSP, or regarding selection of new projects for the CCDG.

In accomplishing the objectives above, applicants should bear in mind that the GSPCC will need to work closely with other program awardees and with NHGRI program staff. In addition, a number of the individual projects undertaken by the GSP will involve outside collaborators. For example, many of the individual CCDG projects will entail collaborations with study investigators funded by other entities, including other NIH institutes. These collaborators may be embedded in consortia that are already established, and that have their own coordinating functions (for example, a community data portal). All GSP components, but especially the GSPCC will need to work flexibly with these consortia in order to make the most efficient use of NHGRI resources. As a consequence, the GSPCC may have a significant coordination role for some projects and activities, but will not be required as intensively for others. NHGRI Staff will work closely with the GSPCC to facilitate this.

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

**Letter of Intent:** April 29, 2015

**Full Proposal Deadline:** May 29, 2015, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on these dates. 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.