Grant Opportunity Alerts: Issue: ORD-GOA-2015-01

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1. Reminder on NSF Research Experience for Undergraduate (REU) Supplements: Contact your program officer at NSF ASAP.
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3. NSF Webinar on Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP): **Jan 22 2015, 1:00PM-2.30PM**
4. NIH-NIBIB Webinar on the development of novel POC technologies aimed at improving patient care in primary care settings and for primary care clinicians interested in adopting POC technologies for their practices: **January 14**, **12:30PM-1:30PM**
5. Grant Opportunities Alerts:
   Keywords and Areas Included in Funding Opportunities Alerts (see below)**:**
   NSF: Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP), Science of Learning: Collaborative Networks (SL-CN, STEM Education, ECR, Long Term Ecological Research (LTER), Nanotechnology Coordinated Infrastructure, Law and Social Sciences, STS, CISE-MPS Interdisciplinary Faculty Program in Quantum Information Science
   National Institute of Health: Drug Abuse Prevention, Cutting Edge Research, R01, R03, R21; Predictive Multiscale Models for Biomedical, Biological, Behavioral, Environmental and Clinical Research (U01); NIH Pathway to Independence Award

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Reminders:

Grant Program: Research Experience for Undergraduate Supplement
Agency: **National Science Foundation**
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&org=NSF
Brief Description: The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. This solicitation features two mechanisms for support of student research: (1) *REU Sites* are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Sites may be based in a single discipline or academic department or may offer interdisciplinary or multi-department research opportunities with a coherent intellectual theme. Proposals with an international

dimension are welcome. (2) *REU Supplements* may be included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.
More Information: **Grant Opportunity Alerts: Issue: ORD-GOA-2014-10**

Grant Program: NIH Identifies Additional Awardees Eligible for PA-12-149 "Research Supplements to Promote Diversity in Health-Related Research (Admin Supp)"
Agency: NIH Notice NOT-OD-15-029; PA 12-149
Website: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-029.html
Brief Description: The purpose of this Notice is to add several new activity codes to the list of eligible awards that may apply for supplements through PA-12-149 "Research Supplements to Promote Diversity in Health-Related Research".

These additional activity codes are: P2C, PM1, R21/R33, RM1, U2C, UG1, UH2/UH3, and UM2

Grant Program: NIH Identifies Additional Awardees Eligible for PA-12-150 "Research Supplements to Promote Re-Entry into Biomedical and Behavioral Research Careers (Admin Supp)"
Agency: NIH Notice NOT-OD-15-033; PA 12-150
Website: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-033.html
Brief Description: The purpose of this Notice is to add several new activity codes to the list of eligible awards that may apply for supplements through PA-12-150 "Research Supplements to Promote Re-Entry into Biomedical and Behavioral Research Careers".

These additional activity codes are: P2C, PM1, R21/R33, RM1, U2C, UG1, UH2/UH3, and UM2.

Webinars:

Event: Informational Webinar on NSF 15-531, Critical Resilient Infrastructure Systems and Processes (CRISP)
When: Jan 22 2015 1:00PM to 2:30PM
Registration Website:
http://www.nsf.gov/events/event_summ.jsp?cntn_id=133805&WT.mc_id=USNSF_1 3&WT.mc_ev=click
Brief Description: This Informational Webinar will provide an overview presentation and answers to questions on the National Science Foundation (NSF) program solicitation (NSF 15-531), Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP). See below more information on CRISP.

Event: NIBIB Grant Solicitations from the Point-of-Care Technology Research
When: Jan 14 2015 12:30PM to 1:30PM
Registration Website: https://stoecklecenter.wufoo.com/forms/pointofcare-technology-webinar-series/
Brief Description: These webinars are designed to inform those interested in submitting projects for our NIBIB grant to develop novel POC technologies aimed at improving patient care in primary care settings and for primary care clinicians interested in adopting POC technologies for their practices.
January 14 (12:30-1:30 EST)
Questions and Answers: NIBIB Grant Solicitations from the Point-of-Care Technology Research Centers
• NIBIB Point-of-Care Technologies Research Network (Tiffani Lash, PhD; Program
        Director)
• Point-of-Care Technologies Research Centers: objectives, resources, and grant
        solicitation processes:
◦   CIMIT Point-of Care Technology Research Center in Primary Care (John
                Parrish, MD, Principal Investigator; Penny Carleton, Program Director
◦   Boston University, Center for Future Technologies in Cancer Care
                (Catherine Klapperich, PhD, Principal Investigator)
◦   Johns Hopkins University, Center for STD Point of Care Tests (Charlotte
                Gaydos, MPH, DrPH, Principal Investigator; Joany Jackman, PhD, Co-
                investigator)
• Questions and Answers
February 3 (12:30-1:30 EST)
"Point-of-Care Testing in Primary Care: Facilitators and Barriers to Adoption."
Kent Lewandrowski, MD, Associate Chief of Pathology, Director of Clinical Laboratories and Molecular Medicine, Massachusetts General Hospital; Professor of Pathology, Harvard Medical School; Editor-in-Chief, *Point of Care: The Journal of Near Patient Testing Technology*
March: TBD
ARCHIVES
The webinars are recorded, archived, and available here as podcasts.
• **October 30** *"A Day in the Life of a Primary Care Clinician"* J. Benjamin Crocker,
        MD; Medical Director, Ambulatory Practice of the Future at Mass General
        Hospital Webinar (watch slides on computer, and play audio at same time) >
        Webinar slides > Webinar audio (voice starts at 3:10)
• **November 18***"Point of Care Testing in Commercial Retail Clinics"* Nancy Gagliano,
        MD; Chief Medical Officer, MinuteClinic > Webinar slides
• **December 4***"Current and Future Use of Point-of-Care Tests in Primary Care: An
        International Survey in Australia, Belgium, The Netherlands, the UK, and the
        USA"* John Hickner, MD, MSc; Chair of Family Medicine, University of Illinois
        at Chicago School of Medicine > Webinar slides > Webinar audio

National Science Foundation

Grant Program: Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP)
Agency: NSF 15-531
RFP Website:
http://www.nsf.gov/pubs/2015/nsf15531/nsf15531.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
Brief Description: Critical infrastructures are the mainstay of our nation's economy, security and health. These infrastructures are interdependent. For example, the electrical power system depends on the delivery of fuels to power generating stations through transportation services, the production of those fuels depends in turn on the use of electrical power, and those fuels are needed by the transportation services.

The goals of the **Critical Resilient Interdependent Infrastructure Processes and Systems** (CRISP) solicitation are to: (1) foster an interdisciplinary research community of engineers, computer and computational scientists and social and behavioral scientists, that creates new approaches and engineering solutions for the design and operation of infrastructures as processes and services; (2) enhance the understanding and design of interdependent critical infrastructure systems (ICIs) and processes that provide essential goods and services despite disruptions and failures from any cause, natural, technological, or malicious; (3) create the knowledge for innovation in ICIs so that they safely, securely, and effectively expand the range of goods and services they enable; and (4) improve the effectiveness and efficiency with which they deliver existing goods and services.
More Information:
Please see **Grant Opportunity Alerts: Issue: ORD-GOA-2014-11**
Awards: Two categories of awards are anticipated for this solicitation: Type 1 and Type 2. The number of awards in each category will be dependent on the overall mix of proposals and the degree to which they meet the solicitation goals, Merit Review Criteria and Solicitation Specific Review Criteria. We anticipate up to approximately 15 Type 1 awards and up to approximately 10 Type 2 awards.
Anticipated Funding Amount: $20,000,000
Type 1 Awards: Projects will be of 3 years in duration with a maximum total budget of $500,000.
Type 2 Awards: Projects will be of 3-4 years in duration with a total budget ranging from $1 million to $2.5 million.
Letter of Intent: Not required
Deadline: Full Proposal Deadline(s): Full Proposal Due: March 20, 2015

Grant Program: Science of Learning: Collaborative Networks (SL-CN)
Agency: NSF 15-532
RFP Website:
http://www.nsf.gov/pubs/2015/nsf15532/nsf15532.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
Brief Description: This solicitation launches the National Science Foundation's (NSF's) next phase of research in the Science of Learning (SL). The new SL Program is designed to capitalize on the momentum created by the Science of Learning Centers (SLC) Program to continue developing an integrated, interdisciplinary SL community. The goals of the SL Program are to: advance fundamental knowledge about learning through integrated research; connect the research to specific scientific, technological, educational, and workforce challenges; and enable research communities to capitalize on new opportunities and discoveries. The Program is designed to support projects that – due to the activities supported and their interdisciplinarity and integrative breadth – do not fit into existing NSF programs. This solicitation invites proposals for the creation of new research networks to address important questions in the SL. Networks will focus on:

- Advancing basic research through integrative, interdisciplinary perspectives and methodologies, through integration of theory and experiment, and across scales of analysis; and/or
- Translating findings from basic research on learning to applications to benefit society and further inform fundamental theories of learning.

Each network is expected to engage in both of the following activities:

- Partnership-building activities among the network participants to optimize scientific exchange for the co-design and execution of network goals; and

Collaborative, exploratory research to be conducted by the network participants.
Awards: Standard Awards: Up to $9.0 million is expected to be available in Fiscal Year (FY) 2015. Contingent on the availability of funds and receipt of competitive proposals, NSF expects to make 12 awards under this solicitation. Awards are expected to be up to three years in duration with a maximum award size of $750,000 total costs over the full duration of the project.
Letter of Intent: Required: February 6, 2015
Deadline: Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):
March 18, 2015

Grant Program: Long Term Ecological Research (LTER)
Agency: **National Science Foundation** PD-15-535
Directorate for Social, Behavioral & Economic Sciences
Directorate for Education & Human Resources
Directorate for Computer & Information Science & Engineering
Directorate for Engineering

RFP Website:

Brief Description: Learning is complex, and many investigators from multiple disciplinary perspectives conduct research on this topic. Advances in the integration and accumulation of this knowledge notwithstanding, key knowledge remains fragmented across and within disciplines. A deep and comprehensive understanding of learning requires integration across multiple perspectives and levels of analysis. NSF is uniquely positioned to lead efforts in this area, as the SL Program builds on and integrates knowledge relevant to learning gained by NSF investments in all of the scientific disciplines, education and engineering. The full ambition of this Program links the science, engineering and education efforts to achieve NSF's strategic goals to: 1) transform the frontiers of science and engineering, and 2) stimulate innovation and address societal needs through research and education.

The NSF Science of Learning Centers (SLC) Program launched in 2003 was designed to catalyze and elevate the scope, scale, and vigor of interdisciplinary research on learning. The cohort of Centers has served as the nucleus that attracted others to form a nascent, international community of established and junior investigators and practitioners poised to translate the knowledge gained from the basic science of learning into applications in education, robotics, national security, health, space exploration and other areas.

This solicitation is jointly issued and managed by four NSF directorates: Social, Behavioral & Economic Sciences (SBE); Education & Human Resources (EHR); Computer & Information Science & Engineering (CISE); and Engineering (ENG). Its goal is to foster the creation of new networks of investigators who will integrate scientific ideas across disciplines and professions to conduct novel, exploratory research that has the potential to provide transformative advances in our understanding of learning. The Program places high value on creativity, inventive uses of technology, integration of theoretical and empirical work, and innovative models of research that capture the multiple dimensions of learning.

This solicitation is designed to support projects that – due to the activities supported and their interdisciplinarity and integrative breadth – do not fit into existing NSF programs. Although the SL program construes learning broadly, including that of humans, other animals and machines, this SL-CN solicitation will support exploratory research in animals only if it is strongly tied to and will specifically inform learning in humans.

Awards: Standard Awards

Letter of Intent: Required; **February 06, 2015**

Deadline: Full Proposal Deadline(s): March 18, 2015

Grant Program: EHR Core Research (ECR)
Fundamental Research in Science, Technology, Engineering and Mathematics (STEM) Education
Agency: NSF 15-509
RFP Website: http://www.nsf.gov/pubs/2015/nsf15509/nsf15509.htm
Brief Description: The EHR Core Research (ECR) program of fundamental research in STEM education provides funding in critical research areas that are essential, broad and enduring. EHR seeks proposals that will help synthesize, build and/or expand research foundations in the following focal areas: STEM learning, STEM learning environments, STEM workforce development, and broadening participation in STEM.
The ECR program is distinguished by its emphasis on the accumulation of robust evidence to inform efforts to (a) understand, (b) build theory to explain, and (c) suggest interventions (and innovations) to address persistent challenges in STEM interest, education, learning, and participation. The program supports advances in fundamental research on STEM learning and education by fostering efforts to develop foundational knowledge in STEM learning and learning contexts, both formal and informal, from childhood through adulthood, for all groups, and from the earliest developmental stages of life through participation in the workforce, resulting in increased public understanding of science and engineering. The ECR program will fund fundamental research on: human learning in STEM; learning in STEM learning environments, STEM workforce development, and research on broadening participation in STEM.
Awards: Standard Awards: Over $61 million available; Number of expected awards: 64
Letter of Intent: Required: Not Required
Deadline: Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):
February 03, 2015
September 10, 2015

Grant Program: National Nanotechnology Coordinated Infrastructure (NNCI)
Agency: NSF 15-519
Directorate for Engineering
Directorate for Mathematical & Physical Sciences
Directorate for Computer & Information Science & Engineering
Directorate for Biological Sciences
Directorate for Geosciences
Directorate for Social, Behavioral & Economic Sciences
Directorate for Education & Human Resources
Office of International and Integrative Activities
RFP Website: http://www.nsf.gov/pubs/2015/nsf15519/nsf15519.htm
Brief Description: Over the past decade of its authorized award life, the National Nanotechnology Infrastructure Network (NNIN) has enabled major discoveries, innovations, and contributions to education and commerce by providing

researchers from academia, small and large companies, and government with open access to university user facilities with leading-edge fabrication and characterization tools, instrumentation, and expertise within all disciplines of nanoscale science, engineering, and technology. The National Science Foundation is now moving forward with the new National Nanotechnology Coordinated Infrastructure (NNCI) as the successor to the NNIN.

This solicitation establishes a competition for individual university user facility sites positioned across the nation. A Coordinating Office will then be selected competitively at a later stage from among the selected sites to enhance their impact as a national infrastructure of user facility sites. The ultimate selection of user facility sites will include capabilities and instrumentation addressing current and anticipated future user needs across the broad areas of nanoscale science, engineering, and technology.

Awards: $500,000 to $2,000,000
Letter of Intent: Required: Required, February 2, 2015
Deadline: Full Proposal Deadline(s): April 3, 2015

Grant Program: Law & Social Sciences (LSS)
Agency: NSF 15-514
   Directorate for Social, Behavioral & Economic Sciences
   Division of Social and Economic Sciences
RFP Website: http://www.nsf.gov/pubs/2015/nsf15514/nsf15514.htm
Brief Description: The Law & Social Sciences Program considers proposals that address social scientific studies of law and law-like systems of rules. The Program is inherently interdisciplinary and multi-methodological. Successful proposals describe research that advances scientific theory and understanding of the connections between law or legal processes and human behavior. Social scientific studies of law often approach law as dynamic, made in multiple arenas, with the participation of multiple actors. Fields of study include many disciplines, and often address problems including though not limited to:
   • Crime, Violence and Punishment
   • Economic Issues
   • Governance
   • Legal Decision Making
   • Legal Mobilization and Conceptions of Justice
   • Litigation and the Legal Profession
LSS provides the following modes of support:
   • Standard Research Grants and Grants for Collaborative Research
   • Doctoral Dissertation Research Improvement Grants
   • Interdisciplinary Postdoctoral Fellowships
   • Workshop and Conference Awards
LSS also participates in a number of specialized funding opportunities through NSF's crosscutting and cross-directorate activities, including, for example:
   • Faculty Early Career Development (CAREER) Program

- Research Experiences for Undergraduates (REU)
- Research at Undergraduate Institutions (RUI)
- Grants for Rapid Response Research (RAPID)

Early-concept Grants for Exploratory Research (EAGER)
Awards: Standard Awards
Letter of Intent: Required: Not Required
Deadline: Full Proposal Deadline(s) February 04, 2015
Dissertation Research, Standard and Collaborative Research and Interdisciplinary Postdoctoral Fellowships
    August 03, 2015

Grant Program: Science, Technology, and Society (STS)
Agency: NSF 15-506
    Directorate for Social, Behavioral & Economic Sciences
    Division of Social and Economic Sciences
RFP Website: http://www.nsf.gov/pubs/2015/nsf15506/nsf15506.htm
Brief Description: The Science, Technology, and Society (STS) program supports research that uses historical, philosophical, and social scientific methods to investigate the intellectual, material, and social facets of the scientific, technological, engineering and mathematical (STEM) disciplines. It encompasses a broad spectrum of STS topics including interdisciplinary studies of ethics, equity, governance, and policy issues that are closely related to STEM disciplines, including medical science. The program's review process is approximately six months. It includes appraisal of proposals by ad hoc reviewers selected for their expertise and by an advisory panel that meets twice a year. The deadlines for the submission of proposals are February 2nd for proposals to be funded as early as July, and August 3rd for proposals to be funded in or after January. There is one exception: Doctoral Dissertation Improvement Grant proposals will have only one deadline per year, August 3rd. The Program encourages potential investigators with questions as to whether their proposal fits the goals of the program to contact one of the program officers.
Awards: Standard Awards
Letter of Intent: Required: Not Required
Deadline: Full Proposal Deadline(s) February 02, 2015
August 03, 2015

Grant Program: CISE-MPS Interdisciplinary Faculty Program in Quantum Information Science
Agency: NSF 15-512
    Directorate for Mathematical & Physical Sciences
    Division of Physics
    Division of Mathematical Sciences
    Division of Materials Research
    Division of Chemistry

Directorate for Computer & Information Science & Engineering
Division of Computing and Communication Foundations

RFP Website: http://www.nsf.gov/pubs/2015/nsf15512/nsf15512.htm

Brief Description: The goal of the CISE-MPS Interdisciplinary Faculty Program in Quantum Information Science is to bring together QIS researchers and researchers from the CISE or MPS disciplines to:

- Address cross-disciplinary research questions in QIS that explore the power of quantum computation and its impact on other disciplines, investigate the use of advanced techniques from the MPS and CISE disciplines in QIS, advance knowledge on the fundamental limits of quantum computation and systems, and explore advances in physical realization of quantum systems, as well as
- Increase the number of US researchers who are actively working in QIS and enhance the training of the future generation of QIS scientists.

The program provides support for academic researchers with demonstrated potential or success in MPS or CISE research fields to actively engage in new interdisciplinary research with QIS scientists. Requests for support of visits to well-established host research groups and centers in Quantum Information Science are particularly welcome.

Awards: Standard Awards; Awards are limited in size to a maximum of $250,000

Letter of Intent: Required: Not Required

Deadline: Full Proposal Deadline(s) February 02, 2015 and
December 07, 2015

National Institutes of Health

Grant Program: Drug Abuse Prevention Intervention Research: R21, R01 and R03
Agency: NIH National Institute on Drug Abuse (NIDA)
R21: PA-15-080
R03: PA-15-081
R01: PA-15-082
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PA-15-080.html
http://grants.nih.gov/grants/guide/pa-files/PA-15-081.html
http://grants.nih.gov/grants/guide/pa-files/PA-15-082.html

Brief Description: This Funding Opportunity Announcement (FOA) encourages R21 grant applications for research that will employ rigorous scientific methods to test theoretically derived hypotheses to increase understanding of the science of drug use prevention within diverse populations and settings and across the lifespan. The FOA seeks applications that encompass investigations of cognitive, behavioral, and social processes as they relate to: 1) development of novel prevention approaches; 2) efficacy and effectiveness of prevention interventions or programs; 3) processes that optimize the selection, integration, implementation and sustainability of science-based prevention, including systems-level and health

economic factors; and 4) methodologies appropriate for studying complex aspects of prevention science.

Awards: Standard awards

Letter of Intent: Required: Not Required

Deadline: Full Proposal Deadline(s) [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. The first standard application due date for this FOA is June 16, 2015.

Grant Program: Cutting-Edge Basic Research Awards (CEBRA): R21
Agency: NIH National Institute on Drug Abuse (NIDA)
R21: PA-15-079
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-15-079.html
Brief Description: This Funding Opportunity Announcement (FOA) invites applications for Cutting-Edge Basic Research Awards (CEBRA) to foster highly innovative or conceptually creative research that advances our understanding of drug abuse and addiction and how to prevent and treat them. The CEBRA program was designed by NIDA to foster novel research approaches and represents the high priority placed by NIDA on identifying such research. NIDA currently supports a great deal of innovative biomedical research on drug addiction and related health problems such as pain, HIV/AIDS, and obesity. The CEBRA, however, is specifically designed to support research that is high-risk and potentially high-impact and that is underrepresented or not included in NIDA's current portfolio. It is not intended for incremental research or research extending ongoing programs. There is enormous potential for advances when knowledge is generated and combined in new and unexpected ways. Therefore, this announcement encourages applications from investigators with experience in drug abuse research who wish to explore new methods, techniques or conceptual frameworks to study basic questions in drug abuse and addiction. It also encourages applications from investigators with expertise in fields other than drug abuse who wish to establish innovative research programs in drug abuse and addiction or to develop new approaches, techniques or technologies that have the potential for high-impact applications in drug abuse and related research.

The R21 mechanism supports projects in the early, first stages of development where there are little or no preliminary data available, but which have a strong rationale and conceptual framework. The CEBRA R21 program is not intended for large-scale undertakings or to support or supplement ongoing research. Applications submitted under this mechanism should be exploratory and novel and describe projects distinct from those supported through the traditional R01 mechanism. The research proposed in a CEBRA application should break new ground or extend previous discoveries toward new directions or applications. For the CEBRA program, "basic research" is broadly inclusive. CEBRA applications will be considered for all Divisions of NIDA.

Special features of the CEBRA include:

- Focus on technical or conceptual innovation and impact.
- Review convened by NIDA.
- Expedited funding decision.

Awards: Standard awards
Letter of Intent: Required: Not Required
Deadline: Full Proposal Deadline(s) August 20, 2015; December 18, 2015; August 19, 2016; December 20, 2016; August 18, 2017; and December 20, 2017, by 5:00 PM local time of applicant organization.

Grant Program: Predictive Multiscale Models for Biomedical, Biological, Behavioral, Environmental and Clinical Research (U01)
Agency: National Institutes of Health (NIH) PA-15-085
The U.S. Army Research Office (ARO)
The Department of Energy (DOE)
U.S. Food and Drug Administration (FDA)
The National Aeronautics and Space Administration (NASA)
The National Science Foundation (NSF)
The Office of Naval Research (ONR)
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-15-079.html
Brief Description: Multiscale models can be designed to integrate diverse data, create testable hypotheses leading to new investigational studies, identify and share gaps in knowledge requiring further research, uncover biological mechanisms, or make predictions about clinical outcome or intervention effects. These models can draw on a variety of data sources including relevant physical, environmental, clinical and population data. Ultimately multiscale models and the information derived from their use will enable biomedical, biological, behavioral, environmental and clinical researchers to understand complex biological and behavioral systems in a manner not possible through traditional research methods. The ultimate goal of the models would be to make realistic scientific predictions to address problems and issues in the environment; in the human body (e.g., to prevent, diagnose and treat the diseases or aberrations in normal development, and/or to predict treatment outcomes); and among individuals, groups, and within populations. This FOA uses the U01 cooperative agreement activity code. Project outcomes, milestones and timeline for both scientific progress and participation within the MSM Consortium will be peer reviewed (as described in Section V) and established prior to funding, and must be met prior to funding of each subsequent budget period. The cooperative agreement activity code promotes participation in the MSM Consortium as a funded mandate. In the MSM Consortium plan, applicants are strongly encouraged to propose collaborative activities that contribute to the needs of the wider MSM community, involving community input for the MSM Consortium plan to succeed. Investigators funded from this FOA are expected to play an active role in the MSM Consortium, leading working groups, hosting webinars, and sharing data, models, expertise and other efforts to contribute to the greater multiscale modeling community as appropriate and consistent with achieving the goals of the

program (See Section IV.2 MSM Consortium Plan, and Section VI Cooperative Agreement Terms and Conditions of Award). Program staff from the IMAG award agency will have a significant, although not dominant, role in the planning and execution of the supported activities. In addition, IMAG program staff will promote the mission of the MSM Consortium, organize annual meetings, facilitate awardee participation in the Consortium activities, and have a significant role in the assessment of annual milestone performance.

Examples of specific challenges include, but are not limited to, those listed below:

- Next-generation multiscale models that integrate between different scientific fields (e.g. cardiovascular and neuroscience) and predict integrated functions
- Higher level models and modeling approaches that integrate multiple physiological (and possibly psychological) systems in order to better understand the human response (e.g. to extended space flight, and other unique environments)
- Novel methods to fuse data-rich and data-poor scales to enable predictive modeling
- Novel methods to fuse biological and/or behavioral processes and mechanisms to model outcomes as a result of various interventions
- Reproducible and reusable multiscale models that will be integrated and adopted into model-poor fields (e.g. tissue engineering, regenerative medicine, drug and gene delivery, preventive interventions)
- Multiscale models strongly coupled with standardized protocols for model-driven data collection
- Implementing virtual clinical trials with multiscale models to predict outcomes
- Problem-driven multiscale models that require high performance computing (see below for available advanced computational resources)
- Model predictions that drive a community of experimentalists towards systematic testing and validation
- Predictive multiscale models that strongly incorporate uncertainty quantification
- Mechanistic multiscale models that bridge to the population level to capture more clinical and biological realism for the population
- Models that generate testable hypotheses regarding the biological underpinnings of behavioral and social phenomena and processes at the individual and population level
- Models that describe mechanisms through which "outside-the-skin" factors, such as behavioral stressors, social bonding, parenting behavior, etc., can lead to "inside-the-skin" changes, such as in gene expression, the microbiome, or other factors that affect health or behavior
- Models that provide innovative characterizations of interactions between individual-level behaviors, cognition, or affective processes and group-, market-, or population-level outcomes
- Models to explore underlying mechanisms of individual-, community-, or population-level preventive or therapeutic interventions

- Novel computational modeling approaches for big data that account for simultaneous sources of data on multiple scales; from biological and physiological measures, to social and psychological variables, and to environmental or contextual or societal level factors
- Multiscale models that characterize the implications of individual-level risks for collective outcomes, or the implications of systemic risks for individual behaviors and outcomes
- Predictive multiscale models to improve clinical workflow, standard operating procedures, patient-specific modeling for diagnosis and therapy planning

Awards: Projects are limited to below $500,000 direct costs per year. Budgets are expected to range from $200,000 to $400,000 in Total Direct Costs each year, reflecting the actual needs of the proposed project.

NASA may consider funding projects in the range of $150,000 in direct costs per year, for up to three years.

Letter of Intent: Required: Not Required

Deadline: Full Proposal Deadline(s) March 9, 2015; May 29, 2015; September 29, 2015; January 29, 2016; May 30, 2016; September 29, 2016; January 30, 2017; May 29, 2017; September 29, 2017 (Applicants interested in DOE funding may wish to use the September due dates, see Section IV.6, 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.

Grant Program: NIH Pathway to Independence Award (Parent K99/R00)
Agency: National Institutes of Health (NIH) PA-15-083
K99/R00 Career Transition Award/Research Transition Award
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PA-15-083.html
Brief Description: The objective of the NIH Pathway to Independence Award (K99/R00) is to help outstanding postdoctoral researchers complete needed, mentored training and transition in a timely manner to independent, tenure-track or equivalent faculty positions. The K99/R00 award is intended to foster the development of a creative, independent research program that will be competitive for subsequent independent funding and that will help advance the mission of the NIH. Applicants must have no more than 4 years of postdoctoral research experience at the time of the initial or the subsequent resubmission or revision application. The K99/R00 award is intended for individuals who require at least 12 months of mentored research training and career development (K99 phase) before transitioning to the R00 award phase of the program. Consequently, the strongest applicants will require, and will propose, a well-conceived plan for 1–2 years of substantive mentored research training and career development that will help them become competitive candidates for tenure-track faculty positions and prepare them to launch robust, independent research programs. *An individual who cannot provide a compelling rationale for at least one year of additional mentored research training at the time of award is not a strong candidate for this award.*

Awards: Standard awards
Letter of Intent: Required: Not Required
Deadline: Full Proposal Deadline(s) [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.