



**TUFTS UPDATE – FEBRUARY 11, 2019**  
**PREPARED BY LEWIS-BURKE ASSOCIATES LLC**

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## **Introduction**

This edition of the Tufts Washington Update for early February includes agency updates and funding opportunities. Faculty, staff, and researchers are welcome to schedule calls with the Lewis-Burke Tufts team or meet with the team when they visit Washington, DC. Contact Amber Cassady, Lewis-Burke Associates LLC, at [amber@lewis-burke.com](mailto:amber@lewis-burke.com) with any questions or comments related to the Update's content or for more information on updates and opportunities.

## Agency Updates

### National Aeronautics and Space Administration Details Effects of Government Shutdown in Virtual Town Hall

The National Aeronautics and Space Administration (NASA) held a virtual town hall meeting on February 7 that highlighted the impact of the government shutdown on the agency and its research programs. Dr. Thomas Zurbuchen, Associate Administrator for NASA's Science Mission Directorate (SMD), impressed upon viewers that the shutdown is being felt across SMD. NASA is working hard to establish clear deadlines for affected programs and temporarily expediting timelines and modifying processes to reduce delays. NASA has requested help from the community through increased participation in proposal and grant reviews and is requesting help identifying mistakes or discrepancies in programs or notifications given processes are moving more quickly than usual.

Also of note, most proposal due dates have been shifted to no earlier than **March 29, 2019**. Dr. Zurbuchen encouraged investigators to contact relevant technical directors if projects were set to start in 2018 but still have not received funding, or to inquire about proposals reviewed prior to the shutdown. Impacts to specific existing and future NASA programs have been included below.

#### ***Impacts to Grant Programs***

- Draft Planetary Science Early Career Program: The comment period has been extended.
- FINESST: Proposals are now due March 11, 2019.
- NESSF: Renewal proposals are still due March 15, 2019.
- ROSES 2019: Release delayed until March 2019.
  - Some solicitations originally planned for ROSES 2019 will be included as amendments to ROSES 2018.

#### ***Impacts to Future Mission/Instrumentation Opportunities***

- Astrophysics Small Explorers and Mission of Opportunity 2019 AOs
  - Release date: March 2019
  - Due date: August 1, 2019
- Discovery 2019 AO
  - Release date: No later than April 1, 2019
  - Due date: July 1, 2019
- Earth Venture Continuity #1 AO
  - Pre-proposal Conference: Feb 28, 2019
  - Due date: July 26, 2019
- Earth Venture Missions #3 AO
  - Still on track for release in the late summer or early fall
- Heliophysics MedEx 2019 AO
  - Release date: July or August 2019
  - Due date: September 30, 2019

Lastly, Dr. Zurbuchen acknowledged the possibility of another government shutdown on February 15 and noted that NASA is doing everything it can to prepare for such a scenario.

*Additional Sources and Information:*

- A recording of the virtual town hall will be available at <https://science.nasa.gov/>.
- Dr. Zurbuchen's slides can be found at [https://smd-prod.s3.amazonaws.com/science-red/s3fs-public/atoms/files/Zurbuchen\\_Shutdown%20Webinar\\_02-07-2019\\_FINAL.pdf](https://smd-prod.s3.amazonaws.com/science-red/s3fs-public/atoms/files/Zurbuchen_Shutdown%20Webinar_02-07-2019_FINAL.pdf).

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## **Funding Opportunities**

### **Defense Advanced Research Projects Agency Biological Technologies Office Announces Proposers Day for Bioelectronics for Tissue Regeneration Program**

The Defense Advanced Research Projects Agency (DARPA) Biological Technologies Office (BTO) announced a Proposers Day for the Bioelectronics for Tissue Regeneration (BETR) [program](#). The BETR program seeks to develop a system that will facilitate communication between the body and a bioelectronic interface that will track and speed the healing process following an injury. DARPA ultimately aims to strengthen warfighter resiliency by shortening the injury recovery time before re-deployment. The Proposers Day will be held on **March 1, 2019** at the Executive Conference Center at 4075 Wilson Boulevard in Arlington, VA. Interested attendees may register [here](#) until **February 25, 2019** at **12:00 PM EST** or until the event reaches capacity. Proposers will also have an opportunity to give 3-minute “lightning” talks. Those interested must send presentations and profiles to [DARPA-SN-19-24@darpa.mil](mailto:DARPA-SN-19-24@darpa.mil) no later than **February 25, 2019** at **12:00 PM EST**.

#### *Additional Sources and Information:*

- More information is available in the special notice at [www.fbo.gov](http://www.fbo.gov) under solicitation number “DARPA-SN-19-24.”

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### **Defense Threat Reduction Agency Releases Three University Research Alliance Draft Solicitations**

The Department of Defense’s (DOD) Defense Threat Reduction Agency (DTRA) announced it will host a University Day on **March 22, 2019**, in Lorton, VA in conjunction with its release of three draft University Research Alliance (URA) broad agency announcements (BAAs) on February 6. DTRA achieves its mission of countering Weapons of Mass Destruction (WMD) through support for basic research and development, operational support to warfighters, and development of in-house capabilities to prevent and reduce threats against the United States.

The purpose of DTRA’s University Day is to foster networking and further discuss details of the three draft URA BAAs. Interested participants, both in-person or virtually, must register to [DTRA-URA-Program@mail.mil](mailto:DTRA-URA-Program@mail.mil) by **February 15, 2019**. Lewis-Burke Associates LLC encourages interested faculty to consider potential partners within their respective professional networks and to attend the University Day to gain additional insights regarding the BAAs and potential projects.

The draft solicitations will move a portion of the DTRA Basic Research Program to a University Research Alliance (URA) model, with each URA awarded as a Cooperative Agreement (CA) to an alliance of U.S.-based organizations led by a U.S. institution of higher education known as the Lead Research Organization (LRO), with a number of subawardees for individual research areas. Each alliance will be responsible for shaping and steering the URA in collaboration with DTRA. At this time, performance under the CA is not limited to individuals designated as U.S. persons; however, individual participation could be limited in the future based on DOD policy changes.

Existing basic research programs focused on current and emerging WMD threats and threat networks, ionizing radiation interaction with new materials, and material properties and associated mechanisms in various extreme environments will be realigned under the three new URAs. The Chemical/Biological Technologies Program will not be impacted or changed.

All anticipated solicitations will be conducted in two phases: Phase I is for pre-proposal submissions and Phase II is for invited proposals from Phase I. More details on the three draft BAAs are included below.

#### ***Adaptive Signature Discovery University Research Alliance***

The Adaptive Signature Discovery (ASD) URA seeks to enhance the prediction and discovery of emerging threats through the correlation of adaptive networks. ASD-URA's goal is to explore adaptive approaches to the "fusion of information" to learn about the intents of WMD and adversary capabilities.

ASD-URA intends to focus on three interrelated research areas (RAs):

- "RA1—Image correlation with context enhanced data fusion;
- RA2—Physical network response; and
- RA3—Social networks."

**Award Size and Performance Period:** The ASD-URA CA is anticipated to receive \$5 million for a three-year base period, with two options to extend the CA for two more years, resulting in the total potential performance period of seven years.

#### *Additional Sources and Information:*

- The full ASD-URA draft BAA is available at [www.grants.gov](http://www.grants.gov) under number "19-S-0002-ASD-URA."

#### ***Materials Science in Extreme Environments University Research Alliance***

The Materials Science in Extreme Environments (MSEE) URA, collectively known as MSEE-URA, seeks to advance knowledge in predictive modeling capability for "various material properties and mechanisms in non-equilibrium high pressure, high temperature, and high photon number regimes." MSEE-URA aims to increase knowledge of material classes and their related formation/decomposition mechanisms within WMD environments in order to control and exploit future material-WMD interactions. Specifically, MSEE-URA seeks proposals that focus on the interactions of materials in optical environments, extreme pressure, and temperature.

MSEE-URA intends for proposals to focus on the following RAs:

- "Material Properties and Failure;
- Materials Development and Manufacturing for Synergistic Effect;
- Chemistry in Extreme Environments; and
- Photon-Material Interactions."

**Award Size and Performance Period:** The MSEE-URA CA is anticipated to receive \$5 to \$7 million annually for a five-year base period, with two options to extend the CA for two more years, resulting in the total potential performance period of nine years.

*Additional Sources and Information:*

- The full MSEE-URA draft BAA is available at [www.grants.gov](http://www.grants.gov) under number “19-S-0003-MSEE-URA.”

***Interaction of Ionizing Radiations with Matter University Research Alliance***

The Interaction of Ionizing Radiation with Matter (IIRM) URA, collectively known as IIRM-URA, seeks to advance radiation detection, radiation hard devices and integration, and nuclear survivability and response to further understand material-radiation interaction. DTRA is searching for a fundamental understanding of the “interaction of ionizing radiation with various materials and devices” that are relevant to DOD.

IIRM-URA has identified three RAs with corresponding funding levels and effort:

- “RA1—Materials (35%);
- RA2—Devices and Integration (20%); and
- RA3—Survivability and Response (20%).”

Of note, modeling and simulation is considered a cross-cutting research initiative (CCRI) that should receive 5-10% of funding.

**Award Size and Performance Period:** The IIRM-URA CA is anticipated to receive \$5 to \$6 million annually for a five-year base period, with two options to extend the CA for two more years, resulting in the total potential performance period of nine years.

*Additional Sources and Information:*

- The full IIRM-URA draft BAA is available at [www.grants.gov](http://www.grants.gov) under number “19-S-0004-IIRM-URA.”

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**Department of Energy Announces \$20 Million Funding Opportunity for Data Science in Chemistry and Materials Research**

On February 8, the Department of Energy’s (DOE) Basic Energy Sciences (BES) program released a new funding opportunity announcement (FOA) entitled *Data Science for Discovery in Chemical and Materials Sciences*. This FOA will provide a total of \$20 million to explore opportunities for fundamental advances in the understanding of basic physical and chemical behavior through data-driven approaches, applying artificial intelligence and machine learning to “fill knowledge gaps, correct erroneous predictions based on existing models, extract knowledge from noisy data, and ideally extrapolate beyond the range of available data sets.” This is the first funding opportunity from the Office of Science that is directly targeting artificial intelligence and machine learning applications. The agency looks to build off recent advances in other disciplines through the integration of data science with the overarching goal of accelerating fundamental discoveries in chemical and physical properties, behaviors, and physical

laws. Applicants are encouraged to review the DOE BES Basic Research Needs Workshop reports for additional information regarding the program's priority research directions.

Successful applications must address at least one of the following focus areas:

- "Reaction chemistry across multiple scales in complex environments important in geosciences, catalysis, biochemistry or electrochemistry;
- Synthesis science including nucleation, growth and restructuring of hybrid, hierarchical or other complex materials;
- Far from equilibrium phenomena where dynamics is fast, such as in transport and separation in complex systems;
- Behavior of properties and processes in extreme environments (e.g. radiation, corrosion, stress, pressure, temperature, electric and magnetic fields); and
- Discovery of quantum materials and/or their collective, coherent, and strong correlation phenomena."

**Eligibility:** Eligible applicants under this solicitation include universities, industry, National Laboratories, and non-profits.

**Deadlines:** The submission deadline for mandatory pre-applications is **March 8, 2019**. The submission deadline for full applications is **May 15, 2019**.

**Award Information:** It is anticipated that DOE will have \$6.7 million in FY 2019 to fund up to 15 Single Investigator or small group awards over three years, for a total of \$20 million. Individual awards will range from \$150,000 to \$500,000 annually over three years.

*Additional Sources and Information:*

- A press release announcing the opportunity is available at <https://www.energy.gov/articles/department-energy-provide-30-million-new-data-science-approaches-chemistry-and-materials>.
- The full FOA is available at [https://science.energy.gov/~media/grants/pdf/foas/2019/SC\\_FOA\\_0002082.pdf](https://science.energy.gov/~media/grants/pdf/foas/2019/SC_FOA_0002082.pdf).
- The DOE BES Basic Research Needs Workshop reports are available at <https://science.energy.gov/bes/community-resources/reports/>.

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### **Department of Energy Releases Notice of Intent for New Clean Energy Manufacturing Innovation Institute**

On February 6, the Department of Energy's (DOE) Advanced Manufacturing Office (AMO), housed within the Office of Energy Efficiency and Renewable Energy (EERE), released a Notice of Intent (NOI) to issue a funding opportunity announcement (FOA) for a new advanced manufacturing center entitled *Clean Energy Manufacturing Innovation Institute: Cybersecurity in Energy Efficient Manufacturing*. DOE will provide \$70 million to establish one new center, the agency's sixth, to identify and understand cybersecurity risks associated with more energy efficient manufacturing industries and develop new



cybersecurity technologies to address these evolving threats. DOE plans to release the FOA in March 2019.

In the fiscal year (FY) 2018 Energy and Water Appropriations bill, Congress gave the Department of Energy discretion in selecting a future research focus for a sixth DOE-funded manufacturing institute. Cybersecurity issues, and in particular addressing cyber vulnerabilities in automated systems and smart and digital manufacturing, are a top priority for Secretary of Energy Rick Perry, as well as key Members of Congress on the Senate Energy and Natural Resources and House Energy and Commerce Committees, which have oversight over DOE. This future Institute is intended to address some of these cybersecurity issues.

The notice acknowledges that looming cybersecurity threats have hindered the adoption of the automation and sensor technologies required to advance American competitiveness in energy efficient advanced manufacturing and calls on applicants to address these threats and catalyze the adoption of more efficient manufacturing technologies. Consistent with previous CEMI awards, the new center will engage universities, community colleges, industry and non-profit organizations to pursue cross-cutting, innovative solutions. The lead DOE national laboratories focused on cybersecurity issues include Pacific Northwest, Idaho, and Sandia.

**Award Information:** It is anticipated that DOE will provide \$70 million to establish one new center with an expected project period of five years. Congress has not extended DOE manufacturing institutes beyond their initial five-year award term. Consistent with other DOE manufacturing institutes, a minimum 20 percent cost share is required.

*Additional Sources and Information:*

- The full NOI is available at [http://www.lewis-burke.com/sites/default/files/doe\\_amo\\_cemi\\_noi.pdf](http://www.lewis-burke.com/sites/default/files/doe_amo_cemi_noi.pdf).

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### **Advanced Research Projects Agency-Energy Releases Funding Opportunity for Floating Offshore Wind Turbines**

The Department of Energy (DOE) Advanced Research Projects Agency-Energy (ARPA-E) recently released a \$28 million funding opportunity announcement (FOA) for the development of economically competitive floating offshore wind turbines (FOWT). These awards will be delivered through the Aerodynamics Turbines, Lighter and Afloat, with Nautical Technologies and Integrated Servo-Control (ATLANTIS) Program. The goal of this FOA is ultimately to create FOWTs that can better economically compete with wind turbines on land.

Areas of interest for this FOA include:

- New FOWT designs, especially those that significantly deviate from the traditional approach of a “stable” FOWT with an enormous floating platform;
- New and enhanced computer tools for control co-design (CCD) optimization; and
- Data from full and lab-scale experiments to validate the FOWT design and computer tools.

Applicants will be notified following review of the concept papers whether they are encouraged or discouraged from submitting a full application. This process is expected to take approximately 45 days.

This FOA aligns with the ATLANTIS Program's goals towards a multidisciplinary approach across engineering, aerodynamics, structural engineering, economics, and several other areas in disrupting current energy markets. ARPA-E recommends applicants submit proposals that engage with this multidisciplinary approach to applied research. ARPA-E will consider renewal of this FOA for an additional two years pending achievement and innovation during the initial phase of the award. Questions about the funding opportunity may be submitted to [ARPA-E-CO@hq.doe.gov](mailto:ARPA-E-CO@hq.doe.gov).

**Award Information:** ARPA-E anticipates making \$28 million available for a total of 10 awards. Individual award amounts may range between \$250,000 and \$10 million total over a performance period of two years.

**Eligibility:** Universities, for-profit entities, and non-profit organizations incorporated in the U.S. are eligible to apply for ATLANTIS funding as standalone applicants or as leads or members of project teams. Federally Funded Research and Development Centers (FFRDCs) and DOE National Laboratories are eligible to apply as leads or members of project teams but are restricted from submitting proposals as standalone applicants.

**Cost Share:** Cost-sharing of 20 percent is generally required but is waived for educational institutions and consortia comprised exclusively of educational institutions, domestic non-profit organizations, and FFRDCs. ARPA-E strongly encourages large businesses to provide more than the 20 percent cost share.

**Due Dates:**

- Deadline for Questions – **March 8, 2019**
- Deadline for Concept Papers – **March 18, 2019**
- Deadline for Full Proposals – **TBD**

*Additional Sources and Information:*

- The full funding opportunity can be found at <https://arpa-e-foa.energy.gov/#Foaldf22d5af9-3c00-4dc6-b1b2-53adf72d0841>.

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**Economic Development Administration Releases 2019 Regional Innovation Strategies Program**

On February 1, the U.S. Department of Commerce's Economic Development Administration (EDA) released a solicitation for the highly competitive 2019 Regional Innovation Strategies (RIS) program. The RIS program has been identified as a key component of EDA's Office of Innovation and Entrepreneurship's (OIE) mission to stimulate entrepreneurship and the translation of discoveries from the lab to the marketplace. The 2019 competition will again focus on two distinct funding opportunities: i6 Challenge grants and Seed Fund Support (SFS) grants.

The 2019 solicitation notes the importance of the RIS program in catalyzing regional capacity-building and helping to “identify and align assets to help manufacturers innovate and succeed, support businesses’ export-related needs, attract foreign direct investment (FDI), and create and implement strategies that create jobs.” The solicitation also lists a series of examples of transformative sectors of potential interest, such as commercial space; artificial intelligence; robotics; telecommunications, including broadband; and bioscience. Each of these opportunities expands upon EDA’s efforts to bring regional stakeholders together through public-private partnerships focused on job creation, commercialization activities, and innovative research enterprises. The 2019 solicitation also emphasizes intellectual property (IP) protection and the development of domestically manufactured products.

Additional information on each of the funding opportunities is provided below.

### ***i6 Challenge***

Since 2010, the i6 Challenge has funded regional projects that support the establishment and scaling up of proof-of-concept programs (which focus on developing early-stage innovations) and commercialization programs (focused on later-stage innovations) that accelerate the commercialization of research and new ideas into viable companies. Successful i6 award recipients generally provide services that leverage local economic strengths to drive lasting cultures of innovation and entrepreneurship throughout their regions, including “technology advisement and market evaluation, business planning, mentorship, access to early-stage capital, and support for increasing innovative manufacturing” (a concept that was added in the 2018 solicitation). Applicants must demonstrate how regional strengths will be advanced and avoid duplication of existing or budgeted economic development efforts.

In addition to the longstanding RIS goals to promote innovation and entrepreneurship, the 2019 solicitation lists the development of the workforce of the future as one suggested output for i6 proposals. Suggested activities include assessing talent needs and developing solutions through workforce development programs to ensure entrepreneurs have access to the talent pipelines they need through enhanced public-private partnerships. This was a known priority for EDA program officers should the initiative continue to receive sufficient funding, and there will likely be at least one award granted to pipeline development projects through this competition.

### ***Seed Fund Support Grants***

SFS grants provide funding for the planning, formation, marketing, expansion, or launch of cluster-based seed capital funds. Support from SFS grants should focus on enhancing seed funds that provide financial backing for promising startups as they look to commercialize new technologies. The solicitation also emphasizes the importance of promoting the development of fund managers to ensure sustainability of the seed fund and encourage the establishment of new funds in the region. SFS grants cannot be used to directly support startups; rather, their purpose is to fund services to create or enhance seed funds.

**Cost-Sharing:** At the time of the submission, applicants must demonstrate a matching cost-share from a non-federal source. The applicant must provide proof that the matching share will be committed to the project for the project period, be available when needed, and not be conditioned in any way that “may preclude its use consistent with the requirements of EDA investment assistance.” Matching funds are subject to certain restrictions; for instance, matching funds must not be used to directly fund startups or

construction activities. The amount EDA grants cannot exceed 50 percent of the total cost of each project.

**Dates:** Applications are due April 4, 2019. Successful applicants should expect to receive grant award notification approximately 90-120 days from the closing date.

EDA anticipates hosting an informational webinar for prospective applicants. Lewis-Burke will continue to track this opportunity and follow-up once the webinar has been scheduled.

**Total Funding and Award Size:**

- i6 Challenge will allocate approximately \$16 million for grants funded at up to \$750,000 per individual award. Initial performance periods are expected to be three years.
- Seed Fund Support Grants will allocate approximately \$5 million for grants funded at up to \$300,000 per individual award. Initial performance periods are expected to be three years.

**Eligibility and Limitations:** States, Indian tribes, cities or other political subdivisions of a state, nonprofits, institutions of higher education, public-private partnerships, science or research parks, federal laboratories, economic development organizations, and consortia of the previously mentioned, are all eligible to apply. The 2019 RIS program is not restricted to applicants in economically distressed regions.

Entities that have completed the performance period for a previous i6 Challenge or SFS Grant are eligible to compete for either program the 2019 competition. However, entities that currently are or are planning on operating within the three-year performance period of a previously-awarded i6 Challenge grant at the time of the award of a grant under this solicitation are not eligible to apply for the 2019 i6 Challenge but may be eligible for an SFS award. Similarly, entities operating within the three-year performance period of a previously-awarded SFS grant at the time of the award of a grant under this solicitation are not eligible to apply for the 2019 SFS competition but may be eligible for the i6 Challenge.

*Additional Sources and Information:*

- The full announcement is available at <https://www.grants.gov/web/grants/view-opportunity.html?oppld=312519>.
- Additional information on the RIS program is available at <https://www.eda.gov/oie/ris/>.

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