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TUFTS UPDATE – JULY 10, 2019

PREPARED BY LEWIS-BURKE ASSOCIATES LLC

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Introduction

This edition of the Tufts Washington Update for early July includes policy updates, 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 with any questions or comments related to the Update's content, for more information on updates and opportunities, or to add a new recipient to the distribution list.

Policy Updates

White House Releases Updated Strategic Plan for Artificial Intelligence R&D, Congress Develops Artificial Intelligence Legislation

On June 21, 2019, the Trump Administration released *The National Artificial Intelligence (AI) Research and Development Strategic Plan: 2019 Update*, a modified version of a similar plan originally released in 2016. The plan creates a framework for guiding federal AI R&D activities in accordance with the Administration's February 2019 executive order establishing the *American Artificial Intelligence Initiative*.

The document outlines AI R&D areas that industry is unlikely to address on its own and offers eight individual strategies for how the Federal Government can help to advance them. These strategies are:

1. Make long-term investments in AI research;
2. Develop effective methods for human-AI collaboration;
3. Understand and address the ethical, legal, and societal implications of AI;
4. Ensure the safety and security of AI systems;
5. Develop shared public datasets and environments for AI training and testing;
6. Measure and evaluate AI technologies through standards and benchmarks;
7. Better understand the national AI R&D workforce needs; and
8. Expand public-private partnerships to accelerate advances in AI.

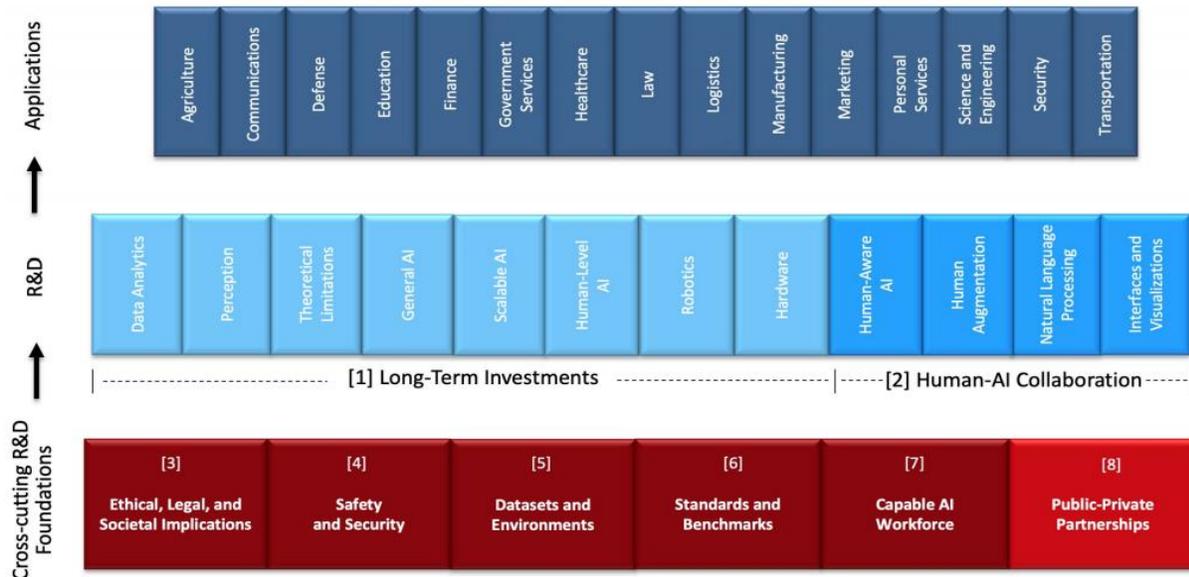
The first seven were identified in the original 2016 plan. This update reinforces the need to continue implementing the original seven strategies and provides information on actions undertaken by federal agencies in the last three years to implement those strategies. The eighth strategy was added to reflect the significant strides made by the commercial sector in AI capabilities and to encourage the exchange of ideas and practices between businesses and the Federal Government.

While all the strategies are of likely interest to the academic community, this Lewis-Burke report highlights two in particular—fundamental research and the societal and ethical implications of AI. The updated strategic plan notes that much of the progress made since 2016 on the first strategy—making long-term research investments in AI research—has centered on narrowly focused AI applications, and that sustained investment in core areas relevant to AI would be required to realize general purpose AI. In particular, more capable, reliable, and explainable machine learning will necessitate additional research in “commonsense reasoning and problem solving, probabilistic reasoning, combinatorial optimization, knowledge representation, planning and scheduling, natural language processing, decision making, and human-machine interactions.” These research areas are consistent with investments being made across federal agencies, in particular the National Science Foundation (NSF), the Department of Energy (DOE), and the Department of Defense (DOD). The strategy also emphasizes the centrality of shared data and infrastructure to enabling such advances.

The updated strategy does not deviate significantly from the 2016 iteration on the topic of AI's impact on legal, societal, and ethical concerns. It specifically notes that the initial version was “prescient in identifying research themes in privacy, proving fairness, transparency, and accountability of AI systems by design; and designing architectures for ethical AI.” The 2019 iteration, however, does argue that additional R&D is necessary for developing AI systems that utilize technical means to address ethical, legal, and societal concerns. The academic research community is uniquely suited to spur progress in

this area given its ability to foster collaborations between different disciplines, such as law, the humanities, and computational science.

The figure below articulates the interplay between the strategies and AI application areas.



Source: *The National Artificial Intelligence Research and Development Strategic Plan: 2019 Update*

Legislative Landscape

While AI legislation is not currently a priority for Congress, there is growing interest in legislation that would grow R&D investments, coordinate research efforts across the federal government, ensure U.S. leadership and economic competitiveness, and help the federal government adopt AI tools to improve business operations. The release of the updated plan comes amid a rapidly shifting AI R&D landscape. AI systems of varying complexity and capability continue to permeate aspects of scientific inquiry, national security, and the economy. These changes are occurring against the backdrop of intensifying international competition around AI supremacy, with China in particular demonstrating clear ambition to be the dominant leader in AI by mid-century if not earlier. The aforementioned changes have jumpstarted a conversation among policymakers about the need for a long-term, comprehensive initiative focused specifically on R&D. This would be a contrast to the Administration’s executive order creating the *American Artificial Intelligence Initiative*, which calls for greater coordination and investment in AI research but does not actually call for additional funding or propose specific mechanisms.

Lawmakers in both the House and Senate are exploring different legislative approaches. Representative Dan Lipinski (D-IL) has introduced the *Growing Artificial Intelligence through Research Act (GRAIR Act)*, a bill modeled around the National Quantum Initiative Act. The GRAIR Act would entrust the Office of Science and Technology Policy (OSTP) with coordinating and overseeing a national AI R&D initiative and delineate specific functions to NSF, DOE, and National Institute of Standards and Technology (NIST). A companion bill with minor modifications entitled the *Artificial Intelligence Innovation Act (AIIA)* was introduced in the Senate by Senators Rob Portman (R-OH) and Martin Heinrich (D-NM), both of whom co-chair the recently established Senate AI Caucus. The House Committee on Science, Space, and

Technology has indicated its interest in focusing more on the societal and ethical aspects of AI, while the Senate Committee on Commerce, Science, and Transportation has not yet examined the issue in earnest.

Congress has also been proactive in its support of AI R&D in the national security space. The fiscal year (FY) 2019 *National Defense Authorization Act* (NDAA) authorized the creation of the Joint Artificial Intelligence Center (JAIC), an organization charged with fostering the development of new AI capabilities and their integration into the mission-critical functions of DOD. The FY 2019 NDAA also established an independent National Security Commission on AI to study and give recommendations on policies to advance AI R&D to meet U.S. defense and national security needs. The House FY 2020 NDAA would double the investment in AI R&D already made by JAIC, require DOD to develop an AI Education Strategy, and extend the aforementioned commission.

One other AI bill recently introduced is the *AI in Government Act of 2019*, which would endeavor to streamline government through the adoption of AI capabilities. The bill is not as research focused as the GrAIR Act or the AI sections of the NDAA mentioned above, but it would open other avenues of engagement for the academic community. The bill would create an AI Center of Excellence (COE) that would serve as a convening authority for individuals from the public, private, and academic sectors who would be charged with assisting the Federal Government in meeting the mandate of the bill. The bill would also establish an advisory board to assist the General Services Administration in its implementation of the recommendations of the COE. At least two of the members of this board would be from institutions of higher education.

Sources and Additional Information:

- The *National Artificial Intelligence Research and Development Strategic Plan: 2019 Update* is available at <https://www.whitehouse.gov/wp-content/uploads/2019/06/National-AI-Research-and-Development-Strategic-Plan-2019-Update-June-2019.pdf>.
- The GrAIR Act is available at <https://www.congress.gov/bill/116th-congress/house-bill/2202?q=%7B%22search%22%3A%5B%22grair%22%5D%7D&s=1&r=1>.
- The AIIA is available at <https://www.congress.gov/bill/116th-congress/senate-bill/1558?q=%7B%22search%22%3A%5B%22artificial+intelligence+innovation+act%22%5D%7D&s=2&r=4>.
- The full FY 2019 NDAA conference report and bill language is available at <https://docs.house.gov/billsthisweek/20180723/CRPT-115hrpt863.pdf>.
- The House FY 2020 NDAA report is available at <https://docs.house.gov/meetings/AS/AS00/20190612/109540/BILLS-116HR2500ih.pdf>.
- The *AI in Government Act of 2019* is available at <https://www.congress.gov/bill/116th-congress/house-bill/2575?q=%7B%22search%22%3A%5B%22artificial+intelligence+innovation+act%22%5D%7D&s=2&r=1>.

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Agency Updates

FEMA Accepting Comments on Development of New Pre-Disaster Hazard Mitigation Program

The Federal Emergency Management Agency (FEMA) is accepting input as the agency develops their new Building Resilient Infrastructure and Communities (BRIC) program. BRIC would fund infrastructure to reduce costs and harmful impacts from natural disasters before they happen. This program is planned to replace the existing Pre-Disaster Mitigation (PDM) program and would prioritize resilient infrastructure, protection of critical lifelines, and building state and local mitigation capacity.

BRIC is being formed as a result of the Disaster Recovery Reform Act (DRRA) that was passed in October 2018; it will leverage funding from a six percent set aside of annual disaster response funding from the Disaster Relief Fund, thus providing a more reliable funding stream than annual congressional appropriations. This funding mechanism is likely to dramatically increase available federal financial support for disaster mitigation.

Though the BRIC program is still very much under development, FEMA is interested in shaping the new program to be more risk informed. For instance, the PDM program gives states a uniform base allocation of funding, but FEMA is exploring the possibility of using risk to influence the base allocations. FEMA looks to use BRIC to fund both traditional mitigation projects, like flood walls, as well as incentivize innovative infrastructure projects. The agency is also considering prioritizing risk in its forthcoming new competitive grant program that will be part of BRIC.

A public comment period is ongoing and closes **July 15**. Comments may be entered in an information sharing forum that is linked below or emailed to BUILDBRIC@fema.dhs.gov. A Request for Information is anticipated in late spring of 2020 to give feedback on the program details that FEMA proposes. FEMA encourages comments from a wide variety of stakeholders including academic organizations, non-profits, and officials from other federal agencies.

Sources and Additional Information:

- Information on the open comment period is available at <https://www.fema.gov/news-release/2019/05/22/fema-seeks-public-comment-new-pre-disaster-hazard-mitigation-grant-program>.
- The forum to post comments is available at <https://fema.ideascale.com/a/campaign-home/61112>.
- More information about BRIC is available at <https://www.fema.gov/drra-bric>.

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Funding Opportunities

U.S. Agency for International Development Announces Call for Partnership Concept Papers for New Partnerships Initiative

The U.S. Agency for International Development (USAID) announced a call for global partnership concept papers to work with local communities to foster increased self-reliance. The call is an addendum to the New Partnership Initiative's (NPI) Conflict-Prevention and Recovery Program Annual Program Statement (CPRP), which focuses on engaging partners at risk of or recovering from violent conflict. As previously reported by Lewis-Burke, NPI is a new USAID effort that focuses on engaging new and underutilized partners and incentivizing engagement with the private sector to diversify and expand partnerships.

Concept papers should address how organizations will engage partners and accelerate the transformation of a particular community's development. Papers should specifically address how to "prevent and mitigate conflicts that are community-focused, scalable, innovative" as well as the causes of conflict through social and behavioral change through one or more of the following themes:

1. "New Approaches and Partnerships in-line with USAID's NPI modalities
2. Inclusion, Social Cohesion, Dispute Resolution, Access to Resources
3. Monitoring and Evaluation
4. Early-Warning Capacity"

Papers that receive conditional acceptance will be invited for "co-creation," a way for applicants to work with USAID to address concerns or clarify statements before USAID requests a submission for a full application (if invited). More information on concept paper requirements and submission can be found in the full addendum.

Award Funding: USAID anticipates up to \$50 million in available funds for multi-country programs. The funding performance period is expected to be three to five years.

Deadline: Concept papers are due on **July 31, 2019**.

Sources and Additional Information:

- The call for concept papers addendum can be found at https://www.lewis-burke.com/sites/default/files/aps_addendum_-_npi_cprp.pdf.
- Lewis-Burke's analysis of USAID's NPI launch can be found at https://www.lewis-burke.com/sites/default/files/agency_update_-_usaaid_releases_new_partnerships_initiative_npi.pdf.
- The CPRP Annual Program statement can be found at <https://www.grants.gov/web/grants/view-opportunity.html?oppld=315424>.
- More information on how to work with USAID can be found at <https://www.usaid.gov/work-usaid/how-to-work-with-usaid>.

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Department of Labor Announces Apprenticeships: Closing the Skills Gap Grant Program

The Department of Labor (DOL) Employment and Training Administration (ETA) recently released a funding opportunity announcement to support closing the skills gaps in the American workforce. The grant aims to expand and promote apprenticeships to sectors that do not traditionally utilize apprenticeships, promote the expansion of apprenticeships, and increase apprenticeship opportunities. The notice states that this grant program will award funds to “an apprenticeship partnership of public and private sector entities which together seek to develop and implement new apprenticeship models; or expand an existing apprenticeship program to a new industry sector or occupation, a new population, on a local/regional, statewide, or national scale.” This program aligns with priorities set forth in the Trump Administration’s 2017 Executive Order on Expanding Apprenticeship in America.^[1] This opportunity follows the 2018 “[Scaling Apprenticeship Through Sector-Based Strategies](#)” funding opportunity that awarded \$183.8 million to institutions of higher education.

Grant funds can be used to establish new apprenticeship programs, expand registered apprenticeship programs (RAPs), and provide supportive services for training apprentices, such as childcare and transportation. Grants must also address one of three geographic scopes: local/regional, statewide, or national.

Applicants must design their apprenticeship programs to target one of the following:

Option 1: Occupations in an H-1B industry: Applicants may choose to expand apprenticeships in an industry in which DOL has certified H-1B visas for occupations. Examples include, “information technology (IT) and IT-related industries, healthcare, advanced manufacturing.”

Option 2: H-1B Occupations: Applicants may choose to target specific H-1B occupations that fall outside of the identified H-1B industries listed above. If the target occupation is not within a designated H-1B industry, applicants must provide data showing the occupation is one for which a significant number of H-1B visas have been certified. DOL is particularly interested in expanding apprenticeships in cybersecurity and AI.

Apprenticeship programs must have the following characteristics:

1. Paid Work Component
2. Work-based Learning and Mentorship
3. Educational and Instructional Component
4. Industry-Recognized Credentials Earned
5. Safety, Supervision, and Equal Employment Opportunity

Additional information on qualifying activities is provided in the full solicitation linked below.

Total Funding and Award Size: DOL intends to make approximately 16 to 30 grants. The estimated range of awards is \$500,000 to \$6 million.

Cost Sharing: Applicants must secure matching funds in an amount equal to at least 45 percent of the total requested funds. Funds may be in the form of cash or in-kind contributions.

^[1] <https://www.whitehouse.gov/presidential-actions/3245/>

Eligible Entity: Grants will be awarded to an apprenticeship partnership of public and private sector entities. Eligible lead applicants include: a) an institution of higher education representing a consortium of institutions of higher education, or b) a state system of higher education, such as a community college system office or a single state higher educational board. Grants must also include representatives of the required partner entities which will form the “apprenticeship partnership,” which must include public and private sector entities.

Period of Performance: The period of performance is 48 months with an anticipated start date of February 1, 2020. This performance period includes all necessary implementation and startup activities. The notice states, “... grantees will begin enrolling apprentices no later than nine months after the date of grant award.”

Deadline: Applications will be accepted until **September 24, 2019 at 4:00pm EST.**

Sources and Additional Information:

- The notice of availability of funds and funding opportunity announcement is available at <https://www.grants.gov/web/grants/view-opportunity.html?oppld=317245>.

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Institute of Museum and Library Releases National Leadership Grants for Libraries

The Institute of Museum and Library Services (IMLS) recently released its fiscal year (FY) 2020 funding opportunity announcement (FOA) for National Leadership Grants for Libraries (NLG-L). NLG-L supports projects that advance theory and practice to improve the quality of library and archive services, including new tools, research findings, and models, among other practices. Proposals should address one of three project categories: 1) Lifelong Learning 2) Community Catalysts 3) National Digital Infrastructures and Initiatives. Interested applicants can participate in a pre-application webinar on **July 15, 2019 at 3:00pm EST.**

Total Funding and Award Size: Grants range from \$100,000 to \$150,000 depending on the type of grant.

Deadline: Applicants must submit preliminary proposals by **September 17, 2019**, and full proposals will be due on **March 23, 2020.**

Sources and Additional Information:

- The solicitation can be found at <http://imls-stage.cgsrvr.com/grants/available/national-leadership-grants-libraries>.
- The webinar can be accessed at <http://imls-stage.cgsrvr.com/webinars>.

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Office of Naval Research Releases Special Notice on Artificial Intelligence/Machine Learning Enabled Capabilities

On June 25, the Office of Naval Research (ONR) released a special notice for research to support artificial intelligence/machine learning (AI/ML) enabled capabilities for naval operations. The notice was released under ONR's long-range broad agency announcement (BAA). The Navy ultimately seeks to develop AI systems that can assist in decision making to support mission planning, re-planning and execution of naval missions, including AI-enabled capabilities for command & control, logistics, intelligence, and training. This special notice is only focused on applications of developed AI/ML methods. Research pertaining to new AI/ML techniques is not of interest to this special notice, though it may be supported under a future opportunity on the Science of AI.

The special notice lists a number of research topics of interest under the following categories:

- Analysis of Factors Affecting Possible Courses of Action (COA)
- Enemy Course of Action (ECOA) Development
- COA/ ECOA Assessment and Comparison
- Intelligence Estimation
- Logistics Estimation
- Communication/ Deception
- Planning and Tasking
- Provide for Coordination
- Underlying Support Services
- AI Enablers

A comprehensive list of research topics can be found in the special notice.

Due Dates: White papers are strongly encouraged, but not required, and should be submitted via email to Martin.Kruger1@navy.mil no later than **July 15, 2019**. Full proposals should be submitted under the full long-range BAA through www.grants.gov, under solicitation number "N00014-19-S-B001," no later than **September 6, 2019**.

Total Funding and Award Size: ONR anticipates funding five to 15 individual awards ranging from \$1 million to \$3 million per year, with a performance period of two to four years. ONR does not estimate a total amount of funding under this special notice.

Eligibility and Limitations: ONR will accept proposals from organizations representing academia, industry, and the research community. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MI) are encouraged to submit proposals. Federally Funded Research and Development Centers (FFRDCs) and individuals are not eligible to apply.

Sources and Additional Information:

- The full ONR BAA can be found at www.grants.gov under solicitation number "N00014-19-S-B001."
- The Special Notice can be found at www.grants.gov under solicitation number "N00014-19-S-SN07."

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Office of Naval Research Releases Special Notice on the Science of Artificial Intelligence

The Office of Naval Research (ONR) released a special notice on June 28 to solicit basic and applied research proposals for new artificial intelligence (AI)-based techniques to advance future naval applications. The overall science and technology (S&T) efforts will fall within the Technology Readiness Level (TRL) range of 1-5, which covers basic research to prototyping and experimentation.

ONR is specifically seeking AI research proposals in eight fundamental and/or applied research topics:

1. AI for Predictive Maintenance
2. Rapid Learning of Task Procedures
3. Scalable Verification and Validation Tools for Artificial Intelligence in the Naval Domain
4. Brain-Inspired Deep Learning with Spiking Neurons
5. Brain-based computation
6. Explainable AI Systems
7. Mission-focused AI
8. Predictive Adaptations to Support Human Performance and Injury Prevention

Due Dates: White papers are not required but strongly encouraged and are due on **August 15, 2019 no later than 2:00pm EST**. Full proposals are due on **October 15, 2019 no later than 2:00pm EST**.

Award Information: Decisions are anticipated to be made by **November 2, 2019** and awards are anticipated to begin on **March 1, 2020**.

Sources and Additional Background:

- The full solicitation can be found at www.grants.gov under solicitation number “N00014-19-S-SN08.”

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