Funding Opportunity: DOD Releases FOA for Vannevar Bush Faculty Fellowship

Lewis-Burke Associates LLC – June 20, 2019

The Department of Defense (DOD) released June 18 the fiscal year (FY) 2020 Vannevar Bush Faculty Fellowship (VBFF) funding opportunity announcement (FOA). The VBFF program is intended to attract and engage the best and brightest in academia to conduct a range of basic, unclassified research in areas of interest to DOD. DOD also utilizes the VBFF program to foster long-term relationships with outstanding academic researchers and increase the number of technical experts working on defense-related problems. DOD is particularly interested in ambitious “blue sky” research that will lead to revolutionary discoveries, new fields of research, or disruption of existing theories. The program solicitation was released by the Office of Naval Research (ONR) and is overseen by the Basic Research Office within the Office of the Under Secretary of Defense for Research & Engineering. DOD will host a webinar on July 10, 2019 to provide a program overview, grant application information, topic areas of interest, and answer general questions (more information regarding the webinar is below).

Proposals are invited in the following DOD basic research areas:

1. **Engineering Biology:** DOD is interested in this research because of potential applications to specialty materials and biological sensing to improve many warfighter capabilities. The solicitation explicitly calls for “innovative and fundamental, basic research that will enable engineering biology through the understanding and controlling of biochemical processes, with the eventual goal of facilitating the engineering of complex natural or synthetic biological systems. Multidisciplinary research, potentially combining theoretical, computational, developmental, systems, physical, biophysical, biochemical, physiological, and/or biomolecular approaches, are likely necessary to make biology a scalable top-down engineering discipline.”

2. **Quantum Information Science (QIS):** DOD requests research for QIS to gain the advantage that quantum phenomena offer to provide revolutionary capabilities improving our foundational understanding of quantum information and processes, physical frameworks to support quantum information, and using quantum physics for detection purposes.

3. **Cognitive Neuroscience:** DOD is interested in basic research that provide insights to the mechanisms of human cognitive skills. The studies can be “theoretical, computational, neuronal, and molecular basic neuroscience research to study the mechanisms of human cognitive skills. In addition, research in neural activity and brain functions for the development of brain-machine interfaces and cognitive processes and demands for warfighters are of interest. Further, DOD states that “revolutionary research is needed to elucidate brain functions, their relationships with neuron structure, network topologies, brain chemistry, towards creating novel approaches in artificial intelligence.”
4. **Novel Engineered Materials:** DOD is focused on research for the discovery of new engineering materials that enable “transformative functionalities” as well as controlling material behaviors under extreme environments. In particular, DOD is looking for research that focuses on exploitation of novel materials’ properties that could impact multiple technologies, engineered materials with behaviors not observed in naturally occurring materials, and materials that include dynamic behavior considerations.

5. **Applied Mathematics (theory and experiments) and Statistics:** DOD seeks mathematical breakthroughs to provide the foundations to address future DOD challenges such as modeling complex network systems, compressive sensing, encryption and authentication, artificial intelligence, deep learning, and constructive mathematics. DOD also states the critical need for “numerical simulation of complex and large-scale physical phenomena associated with natural environments or engineered systems.”

6. **Other fields of research with high potential:** Applicants can submit a research proposal that does not fit into one of the aforementioned categories; all proposals must support DOD research priorities and focus on basic, transformative science that provides new thinking about the phenomena being studied including “combustion at high speed, multi-scale physical processes, propulsion, shielding concepts, etc.”

All awardees will receive the title of VBFF fellow and will be introduced to DOD’s critical research needs through interactions with DOD science and technology leaders, visits to DOD labs, and invitations to technical workshops.

**Due Dates:** White papers are required and due by August 16, 2019 at 11:59 PM EDT. Applicants must register on the AcquTrak portal by August 14, 2019 at 11:59 PM EDT to submit a white paper. Full proposals will be by invitation only and are due January 17, 2020 at 11:59 PM EST.

**Total Funding and Award Size:** DOD anticipates that awards will be made in the form of grants to U.S. institutions of higher education at a maximum award of $3 million over five years. The solicitation does not indicate how many awards DOD intends to make and notes DOD may not allocate fellowships equally among the topics. In FY 2019, 10 awards were made – three for quantum, three for materials/manufacturing, two for cognitive neuroscience, one for physics and one for information/social networks.

**Eligibility and Limitations:** The competition is open to accredited U.S. institutions of higher education (universities) with doctoral degree-granting programs. The program seeks outstanding faculty, who are either a U.S. citizen or permanent resident, with tenure and full-time research staff with the skill, knowledge, and resources necessary to conduct the proposed research as the principal investigator (PI). PIs may submit only one application in response to this funding opportunity. There is no limit to the number of applications an institution may submit.

**Webinar:** The webinar will be held on July 10, 2019. The webinar can be accessed as follows:
- **WebEx Meeting**
  - Meeting Number: 734 968 495
  - Password: VBFF2019
  - [https://noblis.webex.com/noblis/j.php?MTID=m3b9d993630478d83e551385b020f4a90](https://noblis.webex.com/noblis/j.php?MTID=m3b9d993630478d83e551385b020f4a90)
Join by Video System
Dial: 734968495@noblis.webex.com, you can also dial 173.243.2.68 and enter the meeting number.

Join by Phone
1 (844) 740-1264 (Toll Free)
1 (415) 655-0003 (Toll)
Access Code: 734 968 495

Sources and Additional Background:
- The full solicitation can be found at [www.grants.gov](http://www.grants.gov) under solicitation number “N00014-19-S-F010.”
- DOD’s overview of the VBFF program can be found at [https://basicresearch.defense.gov/Programs/Vannevar-Bush-Faculty-Fellowship/](https://basicresearch.defense.gov/Programs/Vannevar-Bush-Faculty-Fellowship/).