Funding Opportunity: DOD Releases Solicitation for Vannevar Bush Faculty Fellowship

Lewis-Burke Associates LLC – June 15, 2017

On June 15, the Department of Defense (DOD) released the fiscal year (FY) 2018 Vannevar Bush Faculty Fellowship (VBFF) funding opportunity. The VBFF program is intended to attract and engage the best and brightest in academia to conduct a range of basic research in areas of interest to DOD. 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 is overseen by the Basic Research Office within the Office of Assistant Secretary of Defense for Research and Engineering (ASD (R&E)), and is managed by the Office of Naval Research (ONR), who released the solicitation.

Proposals are invited in the following DOD basic research areas:

1. **Engineering Biology**: DOD is interested in this research because of potential applications to improve many warfighter capabilities. In particular, DOD seeks revolutionary basic research for engineering biology addressing specialty materials and biological sensing. The solicitation explicitly calls for “innovative and fundamental approaches to understanding biological process with the eventual goal of facilitating the engineering of biological systems to overcome the technical hurdles that currently prevent biology from being a scalable top-down engineering discipline.”

2. **Quantum Information Science (QIS)**: DOD wants research for quantum science to gain the advantage that quantum phenomena offer to provide revolutionary capabilities for “communications, sensing, metrology, imaging, computing and simulation.”

3. **Cognitive Neuroscience**: DOD is interested in basic research studies that provide insights to the mechanisms of human cognitive skills. The studies can be theoretical, computational, or experimental, as well as large scale models.

4. **Novel Engineered Materials**: DOD is focused on research for understanding and controlling material behaviors under extreme environments, during manufacturing as well as novel design capabilities to enable new structural function and capabilities.

5. **Manufacturing Science**: DOD is interested in “increasing knowledge, understanding, and manipulative capability associated with materials and materials systems with a focus on the practical control of useful physical, chemical, or mechanical properties.” Proposed efforts can address materials synthesis, processing, or design of materials systems at all length scales via modeling and simulation or with tools and instrumentation that enhance current fabrication and manufacturing processes.
6. **Applied Mathematics (theory and experiments) and Statistics:** DOD seeks mathematical breakthroughs to provide basic foundations to address DOD challenges such as machine learning, artificial intelligence, behaviors in sociotechnical networks, cybersecurity, encryption and compressive sensing.

7. **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.

The objectives of the VBFF program are to:
- Support scientific research that may lead to extraordinary outcomes.
- Educate and train outstanding student and post-doctoral researchers for the defense and national security workforce.
- Foster long-term relationships between outstanding university researchers and the DOD.
- Familiarize select university researchers and their students with DOD's current and future challenges.

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 (S&T) leaders, visits to DOD labs, and invites to technical workshops.

**Due Dates:** White Papers are required and are due by **August 16, 2017 at 11:59 PM EDT**. Applicants must register on the AcquTrak portal by **August 14, 2017 at 11:59 PM EDT** to submit a white paper. Full proposals will be by invitation only and are due **January 8, 2018 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 that DOD may not allocate fellowships equally among the topics. For FY 2017, 13 awards were made – six for materials, two for mathematics, two for neuroscience, two for fluid dynamics, and one for quantum.

**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 that an institution may submit.

**Sources and Additional Background:**
- The full solicitation can be found at: [http://www.grants.gov](http://www.grants.gov). Search for NSSEFF, N00014-17-S-F015.
- DOD’s overview of the VBFF program can be found at [http://www.acq.osd.mil/rd/basic_research/program_info/vbff.html](http://www.acq.osd.mil/rd/basic_research/program_info/vbff.html).