

Funding Opportunity: DARPA DSO Releases FY 2022 Young Faculty Award

Lewis-Burke Associates LLC – October 1, 2021

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) released its research announcement (RA) for the fiscal (FY) 2022 Young Faculty Award (YFA) program. This program seeks to identify and support “rising stars in junior research positions” at higher education and non-profit institutions. DARPA especially hopes to engage with researchers who have no prior DARPA funding, to expose them to DARPA’s mission and critical DOD needs. The ultimate goal of the YFA program is to train the next generation of researchers in pressing national security issues to advance the capacity of DOD to address these issues.

DARPA is seeking “innovative research proposals” that address DARPA’s interests across all six of its offices: the Biological Technologies Office (BTO), Defense Sciences Office (DSO), Information Innovation Office (I2O), Microsystems Technology Office (MTO), Strategic Technology Office (STO), and Tactical Technology Office (TTO). Proposals should provide revolutionary ideas that promote advances in science, devices, or systems. DARPA is not interested in research that seeks to improve established practices. DARPA’s topic areas (TAs) of interest include:

1. Modulation of Brown Adipose Tissue for Arctic resilience
2. Engineered Cellular Symbiosis (ECS)
3. Hierarchical Control of Biomaterial Structure, Function, and Organization for Injury Repair
4. Metabolic Engineering Enabling Rare Chemistries
5. Strongly Correlated Material Systems and Sensors
6. Benchmarking Power Requirements for Electromagnetic Non-reciprocity
7. Autonomous Manufacturing and Repair for Austere Environments
8. Neuromorphic Metamaterials
9. Computational Theory of Information Control
10. Threat Modeling of the Influence Platform Ecosystem
11. Patch Process Leapfrogging
12. Computational Theory of Insecurity
13. Effective Assurance of 5G Technologies
14. Adaptive Conventions for Human-Machine Partnership
15. Embodied Physical Intelligence
16. Physics of Charge Trapping in Bulk Dielectrics
17. In-Situ Characterization of Additively Manufactured Materials in Complex Structures
18. Self-Assembled Transistor Fabrication to Support Manufacturing as a Technology Differentiator
19. Highly-reliable and Bandwidth-scalable Electrical Interconnects

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20. Intelligent Sensor Management for Undersea Environmental Characterization
21. Distributed Machine Learning over Non-Terrestrial Networks (NTNs)
22. Trust Architectures to Enable Space Infrastructure as a Service
23. Scaling Challenges in Metal Additive Manufacturing
24. Platform Design Optimization Leveraging Power Beaming
25. Integrated Perception Learning and Control for Autonomous Robots

Proposals to a TA should address the “national security challenges” of that topic outlined in its description (Section I.D.). The Section I.D. for each topic can be found in the full proposal.

In order to understand the kinds of capability advancements DARPA is interested in, proposers are highly encouraged to review DARPA’s mission statement and the descriptions of currently funded programs. By familiarizing themselves with DARPA’s current investments, researchers can better tailor their proposed research to the goals of their TA. Proposers are also encouraged to learn the “Heilmeier Catechism”, which DARPA program managers (PMs) use to evaluate proposals. More information on the “Heilmeier Catechism” can be found [here](#).

Award Information: DARPA anticipates granting multiple awards, each with a maximum of \$500,000 in funding for a base period of 24 months, with an optional 12-month period also funded at a maximum of \$500,000. In addition to funding, awardees will receive mentorship from a PM with experience in topics closely related to their proposed research area, who will act as their project manager.

Eligibility: By the full proposal deadline, proposers must be “current tenure-track assistant/associate professors, current tenured faculty within 3 years of their tenure date,” at a U.S. institution or hold an equivalent position at a non-profit research institution. Researchers at non-profit institutions must be within 12 years of receiving their Ph.D. All proposers must be employees of U.S. institutions. Previous recipients of a YFA award are not eligible to apply.

Submission Information: DARPA strongly encourages applicants to submit an “executive summary” that addresses the relevance of their proposed research to the program before submitting a full proposal, however this is not required. Executive summaries can be uploaded directly to [DARPA’s submission website](#). This program is targeted at single principal investigators (PIs), who can only submit one executive summary and full proposal per TA. Executive summaries are due by **November 4, 2021 at 4:00 PM ET** and full proposals are due by **January 25, 2022 at 4:00 ET** via electronic proposal submission to grants.gov [here](#). Registration information and submission instruction can be found [here](#). All inquiries should be emailed to YFA2022@darpa.mil by **January 18, 2021, at 4:00 PM ET**.

Additional Sources and Information:

- The full solicitation can be found at www.grants.gov under the solicitation “DARPA-RA-21-03” or on sam.gov [here](#).
- Additional information on the YFA, including information on previous awards, is available at <https://www.darpa.mil/work-with-us/for-universities/young-faculty-award>
- More information on DARPA, including the agency’s mission, is available at <https://www.darpa.mil/about-us/about-darpa>

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- More information on the “Heilmeier Catechism” is available at <https://www.darpa.mil/work-with-us/heilmeier-catechism>