Research Funding Opportunities

**Organization:** ARMY Solicitation Name: Scalable, Adaptive, and Resilient Autonomy (SARA) W911NF-20-S-0005 Proposal Deadline: February 14, 2020

**Summary:** Future Army forces will need to conduct cross-domain maneuver (CDM) and at times, operate semi-independently, disbursed, and while communications and infrastructure such as Global Positioning System (GPS) are disrupted or denied. Robotics and Autonomous Systems (RAS) will play a key role in expanding the operational reach, situational awareness, and effectiveness of maneuver forces in CDM. The Combat Capabilities Development Command (CCDC) Army Research Laboratory (ARL) is focused on developing fundamental understanding and informing the art-of-the-possible for warfighter concepts through research to greatly improve air and ground based autonomous vehicle perception, learning, reasoning, communication, navigation, and physical capabilities to augment and increase the freedom of maneuver in complex and contested environments. The Scalable, Adaptive, and Resilient Autonomy (SARA) program is focused on developing and experimentally accelerating emerging research in autonomous mobility and maneuverability, scalable heterogeneous and collaborative behaviors, and human agent teaming to realize adaptive and resilient Intelligent Systems that can reason about the environment, work in distributed and collaborative heterogeneous teams, and make op-tempo decisions to enable Autonomous Maneuver in complex and contested environments. In order to achieve this vision, advancements are needed in following:

- Novel methods for all-terrain ground and aerial maneuver to interact with and move through complex environments.
- Methods for scalable and heterogeneous collaborative behaviors in support of collaborative air and ground manned-unmanned teaming operations.
- Techniques for improved perception, decision-making, and adaptive behaviors for fully autonomous maneuver in contested environments.
- Methods, metrics, and tools to facilitate, simulate, and enable testing and evaluation of emerging approaches for intelligent and autonomous systems under Army relevant constraints and environments.
- Experimental testbeds to develop and refine knowledge products to inform and transition technology to Army stakeholders.

**Link:** [https://www.grants.gov/web/grants/view-opportunity.html?oppId=323682](https://www.grants.gov/web/grants/view-opportunity.html?oppId=323682)
Organization: DOE Solicitation Name: Fiscal Year 2020 Advanced Vehicle Technologies Research Funding Opportunity Announcement DE-FOA-0002197
Summary: Vehicles move our national economy. Annually, vehicles transport 11 billion tons of freight – more than $35 billion worth of goods each day – and move people more than 3 trillion vehicle-miles. Growing our economy requires transportation, and transportation requires energy. The transportation sector accounts for about 30% of total U.S. energy needs and 70% of U.S. petroleum consumption. The average U.S. household spends nearly one-fifth of its total family expenditures on transportation, making it the most expensive spending category after housing.

There are also efficiency opportunities beyond vehicle components and systems. Advances in connectivity and automation have the potential to dramatically improve transportation system-level energy efficiency, energy productivity, and affordability. Leveraging high performance computing resources unique to the national laboratory system, VTO has developed robust modeling, simulation, and big data analytics capabilities, while research of advanced sensing and perception technologies, system controls, and other connected and automated technologies has advanced rapidly.

This FOA seeks research projects to address priorities in the following areas:
- advanced batteries and electrification in support of the recently-announced DOE Energy Storage Grand Challenge; advanced engine and fuel technologies, including technologies for off-road applications and alternative fueled engines; lightweight materials; new mobility technologies (energy efficient mobility systems); and alternative fuels technology demonstrations. Link: https://eere-exchange.energy.gov/

Summary: This FOA will provide funding to address BETO’s highest priority R&D areas. It includes Topic Areas from five BETO programs: Feedstock Supply and Logistics; Advanced Algal Systems; Conversion Technologies; Advanced Development and Optimization; and Strategic Analysis and Crosscutting Sustainability. Each Topic Area supports BETO’s objectives to reduce the minimum selling price of drop-in biofuels, lower the cost of biopower, and enable high-value products from biomass or waste resources.

Under this funding opportunity, BETO is interested in the following topic areas:
- Topic 1: Scale Up of Bench Applications (SCUBA)
- Topic 2: Waste to Energy Strategies for the Bioeconomy
- Topic 3: Algae Bioproducts and CO2 Direct-Air-Capture Efficiency (ABCDE)
- Topic 4: Bio-Restore: Biomass to Restore Natural Resources
- Topic 5: Efficient Wood Heaters
- Topic 6: Biopower and Products from Urban and Suburban Wastes: North American Multi-University Partnership for Research and Education
- Topic 7: Scalable CO2 Electrocatalysis
Link: https://eere-exchange.energy.gov/default.aspx