

ECO CAR

INNOVATION CHALLENGE

FACT SHEET

About the EcoCAR Innovation Challenge:

The EcoCAR Innovation Challenge (EcoCAR) is the latest U.S. Department of Energy Advanced Vehicle Technology Competition™ managed by Argonne National Laboratory. EcoCAR unites multiple automakers, including General Motors and Stellantis, with tech partner MathWorks.

The program challenges 20 university teams to apply cutting-edge engineering to real vehicles while developing the technical, leadership, and project management skills needed for careers in automotive engineering, transportation, and advanced manufacturing. Teams will be challenged over the four-year series to develop next-generation energy-efficient and intelligent mobility solutions and innovative products from concept to potential commercialization, utilizing emerging technologies, such as artificial intelligence for engineering tools, machine learning and quantum computing.

This series will involve a vehicle track sponsored by General Motors and a vehicle track sponsored by Stellantis. The tracks provide distinct engineering challenges and vehicle platforms that reflect choices in mobility offered to customers in North America.

In the General Motors Vehicle Track, teams will take on the challenge of transforming mobility by integrating advanced propulsion systems, pioneering automated vehicle technologies, and deploying wireless vehicle-to-everything (V2X) connectivity for seamless interaction with surrounding vehicles and infrastructure.

The Stellantis Vehicle Track will challenge teams to architect, design, and integrate a high voltage energy storage system and an electric drive unit into a Hybrid Electric Vehicle (HEV) platform enabling teams to explore various propulsion and battery system architectures. Teams will target optimizing their vehicle's overall efficiency and off-road capabilities by iteratively simulating various modifications, integrating new propulsion components, and designing / calibrating advanced controls algorithms.

A Product Innovation track will expose student participants to innovation methods and entrepreneurial frameworks as they develop innovative products, processes, or methodologies that directly support their vehicle development.

Kicking off in Fall 2026, selected teams will have four years to complete the technical objectives of the challenge following a vehicle development process (VDP) that mimics auto industry standard practices. Each university will receive funding, software, hardware, technical support, and mentoring from challenge sponsors to equip students to turn innovative ideas into successful solutions and build industry-aligned skillsets into a future-ready workforce equipped to accelerate North American innovation and ingenuity.

Mission:

To develop the next generation of industry-ready leaders through hands-on, interdisciplinary experiences that transform innovative ideas into real-world mobility solutions while building the skills needed to accelerate North American innovation and ingenuity.

Vision:

To shape the future of mobility by advancing real-world vehicle innovation and developing a future-ready workforce equipped to lead in a rapidly evolving transportation landscape.

About Advanced Vehicle Technology Competitions (AVTCs):

Established in 1988 by the U.S. Department of Energy and Argonne National Laboratory in partnership with North America's automotive industry, the Advanced Vehicle Technology Competitions™ (AVTCs) are multi-year collegiate engineering programs that serve as DOE's flagship workforce development program.

The AVTC program is North America's premier collegiate automotive engineering competition, providing an unparalleled, hands-on educational experience that has transformed the traditional classroom environment into a hub for automotive innovation. AVTCs provide a real-world training ground for the next generation of automotive engineers and industry leaders.

For over 38 years, AVTCs have embodied the spirit of American automotive ingenuity, with more than 32,000 students from 111 universities participating—many of whom have gone on to redefine the future of mobility.

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