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The University has entered into major partnerships with Chrysler, the federal government and other auto industry leaders, to develop energy-efficient, high-performance electrified and lighter weight vehicles.

The $24-million partnership includes federal funding for several McMaster projects through Automotive Partnership Canada (APC).

APC is a five-year, $145-million initiative that supports research and development activities benefiting the Canadian automotive industry.

The Honourable Greg Rickford, Minister of State (Science and Technology), outlined the details Friday morning during a special event at the McMaster Automotive Resource Centre (MARC) located on Longwood Road.
The first project worth more than $18 million will see Chrysler Group invest $9.25 million in cash and in-kind contributions, with an additional $8.9 million from the Natural Sciences and Engineering Research Council of Canada (NSERC) and further funding from the university to develop the next generation of electrified powertrains and powertrain components.

A team of researchers led by Ali Emadi, Canada Excellence Research Chair for Hybrid Powertrain, will work with engineers from Chrysler Group’s Global Electrified Powertrain Group, McMaster faculty and dozens of undergraduate and graduate engineering students.

Much of their work will be done at MARC, a $26 million facility, which is one of a handful in the world located in an academic setting, where teams will be able to develop, design and test an electric or hybrid car.

“McMaster is truly excited by the opportunities this funding creates,” said McMaster President Patrick Deane. “It allows our researchers to focus on developing the automotive technology that will enable more sustainable, efficient, and safe travel, as well as promote greater economic stability.

“We are grateful for the investments of resources and trust from our partners, and we look forward to the creation of technological advances that will yield benefits for our community and for society at large.”

The partners will also use Chrysler Group laboratories and test vehicles.

“Legislative pressure and socioeconomic forces are compelling the auto industry to deliver unparalleled technological advancement at an unprecedented rate,” said Bob Lee, Chrysler Group Vice President and Head of Engine, Powertrain and Electrified Propulsion Systems Engineering. “This project harnesses the kind of intellectual capital and collaboration required to respond to such challenges. The result: superior technology developed from efficient new processes.”

“There is a fierce global competition to develop completely new, electrified vehicles that will deliver high performance and safety with the least possible environmental impact. The challenges are considerable, and this partnership, together with our existing resources, will give Canada an important advantage in that race,” says Ali Emadi, Canada Excellence Research Chair in Hybrid Powertrain and Director of MacAUTO.

“This integration of research, education, and industry co-operation forms an unprecedented, multi-disciplinary research and development program that gives McMaster, Chrysler, and our government and business partners the best chance to lead the way forward.”

In the second project, totaling $3.8 million, researchers—led by mechanical engineering professor Sumanth Shankar—will work to leverage the weight-saving properties of aluminum and magnesium alloys for vehicle production, which hold great promise to replace steel in car parts.

Chrysler is one of four industrial partners making in-kind contributions totaling $1.4 million coupled with an additional $2 million investment from NSERC. The remaining funds will come from CANMET, an agency of Natural Resources Canada the works with the energy industry, academia and environmental stakeholders on clean energy research and advanced technology development.

McMaster’s vice-president of research and international affairs, Mo Elbesatwi, says this investment is a testament to our talented researchers and emphasizes McMaster’s role as a growing automotive technology cluster.

“Our work has garnered the attention of both industry and governments alike. Our researchers are on the cutting edge of automotive advancements – not only on the technical side, but also from a social perspective.”

The third McMaster project is led by Pavlos Kanaroglou, a professor in the School of Geography & Earth Sciences. He and his team will consider the social costs and benefits of electric mobility in this country, enabling manufacturers to better design and market electric vehicles that respond to the needs and wants of Canadian consumers.

Valued at more than $2.4 million, with $1.8 million coming from the Social Sciences and Humanities Research Council, the project’s partners include Ford Motor Company of Canada, Burlington Hydro Inc., Electric Mobility Canada, the Canadian Automotive Association and the Ontario Ministry of Transportation.