PLUG IN TO

The University of Michigan–Ann Arbor, University of Michigan–Dearborn, and Kettering University will collaborate in the implementation of this program.

The goals of the programs are to prepare graduates in electrical power/ generation, delivery, conversion, and control both at the grid level and the vehicular level.

The in-depth interdisciplinary education and training will begin with the introduction of some of the academic courses in 2010 and evolve over three years. The entire program includes the development of new courses, laboratories, and educational materials. One of the laboratories will be remotely accessible through cyber-connected modular equipment.

UNIVERSITY OF MICHIGAN

DEARBORN

KETTERING UNIVERSITY

The multiple outcomes made possible by this grant will include

- Laying the foundation for educating our next generation of engineers and workers who will lead the evolution of greener vehicles
- Creating industrially relevant engineering jobs
- Supporting the transition to green manufacturing
- Developing an outreach program in electrified transportation to transform the workforce in Michigan

NEW ELECTRIC DRIVE VEHICLE COURSES

$2.5 Million Advanced Electric Drive Vehicle Education Program Grant to Spark Development of New Courses and Regional Outreach

Graduate Education
(available on campus and via distance learning)
- Electrified Vehicles (UM–AA), Winter 2010
- Modeling and Control of Batteries (UM–AA), Winter 2010
- Green Energy Manufacturing (UM–AA), Winter 2010
- Plug-in Vehicle Infrastructure (UM–AA), Winter 2010

Undergraduate Education
- Integrated Hybrid Electric System (I-HES) Laboratory (UM–AA), Fall 2011
- Automotive Power Electronics Laboratory (UM-AA), Fall 2010
- Fuel Cell Vehicles and Hydrogen Infrastructure (UM-AA), Fall 2010
- Electric Machines and Hybrid Drives (UM–D), Winter 2010
- Vehicular Power Systems and Loads (UM–D), Winter 2010
- Green Mobility Laboratory (Kettering), Fall 2010 and associated courses

Professional Education
(Professional short courses will be available face-to-face and via distance learning.) Examples of potential courses include:
- Power Electronics System Integration
- Electrified Vehicle Semiconductor Power Devices and Heat Transfer
- Modeling and Control of Batteries
- HEV and PHEV System Integration and Design

Pre-College Education (K-12)
- Junior/Senior Physics (a sequence of eight lessons to introduce PEV material with one being taught every four weeks throughout the school year)
- Freshman/sophomore courses (identification of opportunities to include PEV-related examples in existing curricula)
- “Know Your Auto” Classes (hands-on learning modules that provide an interactive presentation of PEV technology)
- Week-long summer camp experience for students who have completed their junior year
- Development of an education kit to let children explore the fundamentals of transportation electrification while playing.

Consumer Education
- Saturday morning seminar series on green mobility
- Development and dissemination of nuggets of knowledge designed for consumer education and awareness

Building A Better Future for Michigan Through Collaboration, Education, and Research

U.S. Department of Energy

State of Michigan Department of Energy, Labor, and Economic Growth

Michigan Academy of Green Mobility

Industrial Stakeholders