

Daniel Carder

Director, Center for Alternative Fuels, Engines and Emissions

University Innovation Corporation

Department of Mechanical and Aerospace Engineering

Benjamin M. Statler College of Engineering and Mineral Resources

West Virginia University

Daniel Carder, 46, is the director of West Virginia University's Center for Alternative Fuels, Engines and Emissions (CAFEE), a position he has held since 2011. He is the fifth director since the center's founding in 1989.

As director, Carder is responsible for the development and growth of CAFEE, its faculty, staff and students through promotion of CAFEE capabilities, expansion of its resources and cultivation of new research collaboration.

For more than 20 years, Carder has specialized in the measurement and control of heavy-duty mobile source exhaust emissions and alternative fuels research. His interests have included design and development of exhaust emissions control systems, particulate matter measurement and characterization, as well as in-use emissions measurement.

Carder's research has spanned most of the transportation sector, including light-, medium- and heavy-duty vehicles; on-highway transportation; transit buses; locomotives and marine vessels. His diesel engine research endeavors have covered on- and off-highway transportation, mining applications, and portable/stationary applications of both conventional and hybrid design.

In the late 1990s, Carder was an integral part of the WVU team that worked with six heavy-duty diesel engine manufacturers on a historic settlement with the United States Environmental Protection Agency to conduct real-world pollution research and upgrade existing engines in order to lower emissions. As a result, the team pioneered in-use emissions testing with the development of the world's first mobile emissions measurement system.

In 2013, Carder led the WVU research team that was the first in the world to conduct on-road testing of diesel emissions from light-duty vehicles in the U.S. The team discovered elevated levels of oxides of nitrogen, or NO_x, emissions from Volkswagen diesel vehicles, leading to sweeping changes in the industry and the way regulators test emissions from diesel vehicles.

Carder is currently collaborating with CAFEE researchers on leading edge technology. AirCom is a WVU-developed micro-portable emissions measurement system for air inventory and air quality modeling research small enough to fit on a vehicle's tailpipe.

Among other accolades, *Time* magazine named Carder to the 2016 TIME 100, the publication's annual list of the 100 most influential people in the world. He was also named a 2015 *Automotive News* All Star. The CAFEE team was named the inaugural Disruptors of the Year at CNET's Roadshow Shift Awards at the 2016 North American International Auto Show.

A Parkersburg, W.Va., native, Carder earned both a bachelor's and master's degree in mechanical engineering from WVU. He is currently completing his Ph.D. in mechanical engineering from WVU.

Carder is a member of the Emission Measurement & Testing Committee (EMTC) that includes the EPA, CARB, and the Truck and Engine Manufacturers Association (EMA).