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OU student researcher tackles CAFE standards and effect on environment

With gas prices topping \$4, more fuel-efficient vehicles sound great to many people. But for one Oakland University researcher, better gas mileage means more frequent driving and, therefore, an increase in environmentally damaging emissions into the air.

OU senior Carlena Janiak recently completed research, via the School of Business Administration's Research Scholar program, to determine the effects of Corporate Average Fuel Economy (CAFE) standards on consumer usage and the environment.

Funded by a grant from Chrysler, Janiak worked with Ron Tracy, associate dean of the School of Business Administration, on the research.

New CAFE standards will come into effect in 2020, requiring that all vehicles achieve 35 miles per gallon (mpg) or more. Janiak's research indicates that this increase in fuel economy may further increase the damage to air quality as drivers take to the road in more fuel-efficient, yet emission-producing, cars.

"If people are getting better gas mileage, the cost of gas won't be as large of a deterrent to driving long distances, or an incentive to car pool and conserve," Janiak said. "The United States Environmental Protection Agency (EPA) states that motor vehicles account for 75 percent of the carbon monoxide emissions nationwide. They even go so far as to state that driving a motor vehicle is one of the worst things consumers can do to the environment.

"When gas prices are high, people find ways to conserve: they car pool or make less frequent, more efficient trips," she said.

Janiak researched data from each of the 50 states and Washington, D.C., as well as national organizations. She obtained data on vehicle miles traveled, miles of road, emissions and average gasoline prices, comparing information from 1998, when gasoline prices were the lowest on record, to the same information from 2001 (the most recent year statistics were available and also a year in which gas prices were volatile).

Janiak also took other variables into account, including average temperature, states that use reformulated gasoline (which produces fewer emissions), geographical factors such as mountainous states and the price of gasoline. She then created a computer model to analyze how the overall air quality was affected by emissions from motor vehicles in 1998 and 2001.

Through her research, Janiak found that increasing fuel economy through CAFE standards will also increase vehicle miles traveled and fuel emission, with an adverse effect on air quality.

She also determined several alternative options, such as a higher gas tax.

"Increasing the tax on gasoline would force consumers who choose to drive less fuel efficient vehicles to pay for the social costs of their own choice," she said. "Another option is changing the way emissions are regulated.

"Possibly the key to keeping [air quality] from degrading is to change the way we regulate emissions as we change the standards of fuel economy," she said. "This will likely happen if automakers in the U.S. can create a leaner fuel combustion process that will increase fuel efficiency and decrease exhaust emissions."

Janiak, who anticipates receiving her bachelor of arts degree in Business Economics in May 2009, has submitted her research for a Kapp Award presented by the Michigan Academy of Science, Arts and Letters. She also has presented her research at the Michigan Academy and at the 16th annual Meeting of Minds held at Oakland University in May.

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SUMMARY

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