

8-10-2021

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FOR IMMEDIATE RELEASE
August 10, 2021

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"Shark" Wins Virtual Supermileage Competition

CEDARVILLE, OHIO -- A team of Cedarville University engineering students captured first place in the 2021 SAE Supermileage Competition, the second consecutive year they've claimed the top prize.

Michigan Tech University, Northern Illinois University, Brigham Young University-Idaho and the University of British Columbia followed Cedarville University in the top five.

"In this competition, students design and fabricate an aerodynamic body with a low-friction rolling chassis and power the car with a highly modified Briggs and Stratton gasoline engine to improve fuel economy. They develop an efficient 'burn and coast' driving strategy with computer simulation to get the highest mileage," explained [Dr. Larry Zavodney](#), team advisor and senior professor of mechanical engineering at Cedarville.

The competition usually includes a written report, an oral design report and a race to measure fuel consumption. Because of COVID-19 protocols, the race was canceled and the oral report was given remotely.

Josiah Hirschler, a junior civil engineering student from Chillicothe, Ohio, led work on "Karcharias," Cedarville's supermileage vehicle. Karcharias is Greek for shark, referencing the vehicle's sleek design.

Hirschler and Brianna Ice, a senior mechanical engineering student and overall team leader from Dover, Ohio, spearheaded the written report. Preparing and delivering the oral report were Hirschler, who worked on body modifications; senior mechanical engineering student Michael Winter of Marion, Ohio, who drove Karcharias in 2019 and presented its frame, braking and steering; junior computer engineering student Madeline Charvolotti of New Hartford, Connecticut, who oversaw the computer and electrical groups; junior mechanical engineering student Lukas Knoerr of Golden, Colorado, who led engine design; and freshman mechanical engineering student Sarah Kepner of Mount Pleasant, Michigan, who worked on kinematic linkages allowing the driver to enter and exit through the front canopy and computer simulations showing that mileage over 4,000 mpg is possible.

This was the team's second first-place finish this year. "Sting," Cedarville's other prototype car, won first place in technical innovation at the Shell Eco-Marathon Americas Off-Track Awards with a hydraulic braking system designed by senior mechanical engineering student Micah Zell.

Located in southwest Ohio, Cedarville University is an accredited, Christ-centered, Baptist institution with an enrollment of 4,550 undergraduate, graduate, and online students in more than 150 areas of study. Founded in 1887, Cedarville is one of the largest private universities in Ohio, recognized nationally for its authentic Christian community, rigorous academic programs, including the [Bachelor of Science in Mechanical Engineering program](#), strong graduation and

retention rates, accredited professional and health science offerings and high student engagement ranking. For more information about the University, visit cedarville.edu.

Written by Bryson Durst