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Autonomous Ambulance Concepts Designed by Creative Students

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CEDARVILLE, OHIO -- Five weeks into the current academic year, Cedarville University industrial and innovative design seniors have already wrapped up a transportation design project that could save lives.

For their most recent project in transportation design, the students examined a real-life problem seen by first responders across the nation--how can their response time be shortened so that more lives are saved? This project began with a concept developed by Tom Balliett, CFO, Co-founder and Instructor at the International Center for Creativity (ICC) in Columbus, Ohio. As a paramedic, Balliett was intrigued by a new project that the lieutenant governor of Iowa, Adam Gregg, recently proposed to lower emergency response times in rural areas. Described by Gregg as "Uber for EMS," Iowa is testing an app that crowdsources volunteers in rural areas.

"Uber not in the sense that we're transporting folks," said Gregg. "This is about locating and identifying a nearby trained first responder who can be the first person to respond and stabilize somebody until the ambulance comes."

Balliett took this innovation one step further with his theoretical project for the students in Cedarville University's industrial and innovative design program. He proposed that the students design a futuristic personal response vehicle for first responders that could withstand the roughest terrain and a more traditional autonomous vehicle to replace the traditional ambulance.

"We let students dream a little bit about solving a problem," said Balliett.

Students produced different concepts for each of the vehicles and then competed for the top designs. Once the top designs were chosen, students split into teams to create detailed design presentations following the model they were assigned.

These presentations included a clay model of the vehicle, virtual reality (VR) renderings of the design and 3D-printed design components. Students were expected to address both functional and aesthetic components in their design, resulting in a sophisticated and professional presentation. They are skilled in using innovative VR technology and artificial intelligence to ethically enhance their work.

As their final year at the ICC begins, seniors are using a variety of skills to execute ambitious projects. The ICC and Cedarville are committed to providing industrial design students with the best education and career preparation possible. Projects like this one give students applicable skills in a variety of areas. Balliett and the other instructors at the ICC teach students creative thinking, and technical skills as well as soft skills like teamwork and designing with empathy. "One other aspect of this course that makes it unique is that we utilize guest designers and lecturers in the classroom to create a rich student experience," said Balliett. "In addition to utilizing ICC staff like Jim Stevenson, Jacob Tesmer and Trayton

Ojala, we also bring industry experts like Italian automotive designer Boris Fabris, and Industrial Designer Brian Shane into the classroom to teach."

"Industrial design is all about empathy. It's not an expression of yourself; it's about how you can solve problems for other people," said Balliett. This project brings the idea of empathy into sharp focus as students learn more about not only what emergency responders provide for the community but what they need to be able to do.

Cedarville and the ICC partner to pull together all the pieces of the innovation cycle through business, mechanical engineering, art, and design with empathy and integrity at the core of it all. This project is just one of many examples of the passion of designers at the ICC and their vision for a more empathetic future.

Located in southwest Ohio, Cedarville University is an accredited, Christ-centered, Baptist institution with an enrollment of 5,456 undergraduate, graduate, and dual-enrolled high school students in more than 175 areas of study, including Bachelor of Arts in industrial and innovative design. Founded in 1887, Cedarville is one of the largest private universities in Ohio, recognized nationally for its authentic Christian community, rigorous academic programs, high graduation and retention rates, accredited professional and health science offerings, and the #4 national ranking by the Wall Street Journal for student engagement. For more information about the University, visit cedarville.edu.

Written By Olivia Stipe

Photo Captions

1- Students create clay models of their designs.

2- Students discussing concepts.

3. Tom Balliett teaching the Transportation Design course.

4. A prototype of the autonomous vehicle