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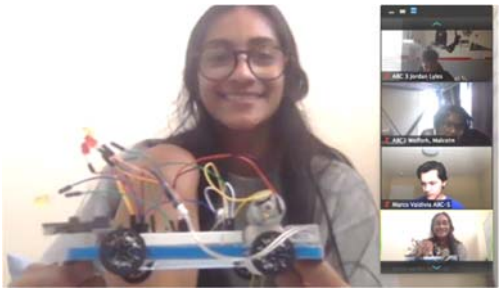
IN-MaC, Purdue University Minority Engineering Program partner to drive micro-kart design project for engineering academic boot camps

WEST LAFAYETTE, IN – Purdue University's Indiana Next Generation Manufacturing Competitiveness Center (IN-MaC) and Minority Engineering Program (MEP) have partnered to create a virtual engineering boot camps for 27 students from 12 states and three countries (U.S., Egypt, and Russia).

Since 1975, MEP has provided their Multi-ethnic Introduction to Engineering Academic Boot Camp simulation program for rising high school seniors and their Engineering Academic Boot Camp, launched in 2005, for admitted first-year engineering students. The camps highlight multiple aspects of Purdue's engineering programs and use design-based project learning.

"For many students, this program is their first exposure to engineering and applying an interdisciplinary approach to developing a design solution," said Tamara Markey, national replication director for Algebra by 7th Grade with MEP. "The camps provide students a view of college rigor, with an engineering design project, and exposure to fundamental design principles."



MITE participant Sonia Parikh displays upgrades to her cart during an online session.

This year's design project featured IN-MaC's desktop electric go-karts, known as micro-karts, and instruction from former Purdue Polytechnic engineering-technology professor, Dr. Scott Bartholomew. The course engaged students with basic mechanisms, electrical circuitry, and coding: the project culminated with a friendly competition to test speed and hill-climbing ability.

"This design project is a good way for students to have the experience of building a test go-kart and not only failing but overcoming those challenges. This process can help

develop a growth mindset to achieve success despite failure, which is critical in the design," said Dr. Bartholomew, "The project also builds confidence and helps to identify which parts of the process each student enjoys best, whether that is the design, coding, or building. Helping them to identify what they want to specialize in later in their careers."

"Our team was concerned that students would lose their collaborative spirit by going to a virtual platform, but students were just as successful," said Markey. "Many students were able to troubleshoot and work through different concepts independently and as teams. I was impressed with their tenacity and ability to work together to find workarounds."

ABC participant, Malcolm McClymont shows his addition of LED lights to his micro-kart.

Applications for MEP's 2021 Academic Boot Camps will be available in spring. To learn more, visit https://www.purdue.edu/mep/index.html.

IN-MaC offers a micro-kart curriculum for educators and students to integrate micro-karts in their classrooms seamlessly. To learn more about IN-MaC and the micro-kart curriculum, contact Sascha Harrell at smharrel@purdue.edu.

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About IN-MaC: IN-MaC provides programs and services to enhance the talents and capabilities of Indiana's present and future workforce by facilitating connections between educators and industry to catalyze the formation of near-term and long-term skills in a highly accessible manner across Indiana. IN-MaC supports a variety of STEM-type, skilled trades, degree (associates and undergraduate) and certificate programs.

IN-MaC leverages its resources, networks and partnerships with industry, local communities, educators and interested stakeholders to provide a variety of formal courses and informal activities that embolden pathways to meet the talent needs of the present and future manufacturing workforce.

About Purdue Minority Engineering Program: The Minority Engineering Program at Purdue University was initiated in 1974 as one of several initiatives to improve diversity and inclusion in the College of Engineering. Purdue's Minority Engineering Program is committed to engineering research and knowledge sharing with the international community through peer-reviewed publications and conference presentations.

Although we strive to attract students from historically under-represented groups, namely African American, Hispanic American, and Native American; our programs are open to all. MEP has been the key to Purdue's successful graduation of more than

2,700 engineering under-represented minority students to date. It is because of this success that other colleges and universities across the country have adopted Purdue's Minority Engineering Program model.