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CEAS showcases engineering in Gagie School outreach

Students from Gagie School, a private Kalamazoo elementary and middle school, examined the world of engineering and applied sciences for four consecutive Friday mornings earlier this semester. CEAS faculty, administrators, and students from three CEAS departments and from career services offered each new group a taste of engineering. Based on their thank you notes, the students approved of the CEAS efforts.



Fred Sitkins describes the Sunseeker vehicle to the Gagie students

Dr. Tycho Fredericks Department of Industrial and Manufacturing Engineering (IME) faculty, and **Heather Highhouse**, CEAS career adviser, organized the community outreach program

Each Friday, students from two grade levels were welcomed by **Dr. Paul Engelmann**, IME chair. **Scot Conant**, CEAS outreach coordinator, then provided guided CEAS tours led by **Jennifer Soetaert**, outreach graduate assistant and **John Ihling**, student ambassador. **Fred Sitkins**, CEAS director of cooperative education, presented the Sunseeker.

Dr. Koorosh Naghshineh, MAE faculty, and **Kyle Myers**, a graduate student, started demos and hands-on activities in the Noise and Vibration lab by demonstrating a shaker table, which can simulate vibrations of vehicles, and the anechoic chamber, a heavily insulated room that absorbs sound into the walls. "The floor that simulated the back of a truck was really cool," a student said in a thank you note.

In the manufacturing lab directed by IME faculty **Dr. Tarun Gupta**, **Srinivas Ghattamaneni**, a graduate student, described the FIRST competition robotics and encouraged the students to interact with **RoboBronco**. "I really liked the robots," a student put in his note.

In the Parker Motion and Control Lab, **Dr. James Kamman**, MAE faculty, showed students the two hydraulic bicycles. "We discussed how the bikes functioned and compared them to the bikes they have



RoboBronco welcomes Gagie School students who examine how the robot "sees" them. **Srinivas Ghattamaneni** (facing camera on the left), an IME research assistant, encourages the Gagie students to interact with the robot.

at home," he said. "They were intrigued that the bikes had no chains and were curious about how the bikes were driven by hydraulic oil."

For the first/second grade and third/fourth grade visits, **Larry Ahleman**, **Lois Lemon** and **Matt Stoops** – faculty in the Department of Paper Engineering, Chemical Engineering, and Imaging (PCI) – provided hands-on experience. "We emphasized the idea of a template because screen printing uses templates or stencils so we can create images that are the same size and shape every time," Lemon said.



Lois Lemon set up a station so students could make a screen print.

One highlight of each visit was the various design challenges provided by Fredericks and **Dr. Steven Butt**, IME faculty, with the assistance of graduate students **Supreeta Amin**, **Fehime Utkan**, **Amanda Glick**, **Ilgin Acar**, and **Ashley Hovenkamp**.

Each week, various age-appropriate design challenges included the building of spaghetti towers, marble transport systems, and 30-second "junk" timers.

Conant is planning similar visits for other area elementary and middle school students. "We are thrilled to provide these exciting hands-on opportunities to area youth," he said. "Future Bronco engineers are sure to come from programs like this."

Send your thoughts or suggestions for future topics to the editor at jerrie.fiala@wmich.edu Thank you.