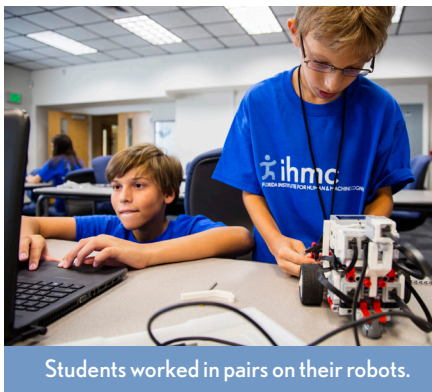


IHMC hosts summer robotics camp

A group of pre-teens huddled around a big sheet of plywood at IHMC in Ocala on day two of the Institute's Robotics Camp. Their challenge: to get the little motorized robot they'd programmed to clear an obstacle course based on several water bottles—which stood for trees in the “Orchard Challenge.”

The robot was simulating tree sprayers—which is a real activity for robots. The goal was for the robot to complete a full course through the “orchard” without knocking any of the “trees” down.



Students worked in pairs on their robots.

This summer marked Ocala's fifth robotics camp and Pensacola's first. At both locations, the one-week camps are designed to immerse kids in robotics. Jessica McCurdy, a camp volunteer and rising senior at Ocala's Vanguard High School, said that participating in the camp as a freshman was a “life-changing experience.”

“I was never interested in robotics or engineering before camp. It opened my eyes,” said McCurdy, who is the president of the robotics team at Vanguard.

She sees similar inspiration in other camp kids. “It's really nice because you can see big changes in the kids,” McCurdy said. “For some of them, their parents just make them come. It's nice that by the end of the week, they are really engaged.”

McCurdy, who wears a butterfly necklace—with a circuit board body—said that she wants to study bioengineering in college. She got the idea from one of the presentations at camp. She describes the field as “taking what mother nature gave us,” and creating designs based on that: for example, using water-resistant plants to design water-resistant clothing.

Students in Pensacola have had a similar program as those in Ocala, with one addition: tours of IHMC's robot lab, said Dr. Ursula Schwuttke, IHMC's director of educational outreach. Schwuttke is in charge of both the robotics camps as well as Science Saturdays.

Schwuttke said a primary goal of robotics camp is to introduce students to computers and robots in a way that is engaging and fun. Beyond just teaching kids to program and work with robots, the camp also imparts important lessons in problem solving, team-work, persistence, and overcoming obstacles. For example, during an activity sponsored by Lockheed Martin, the kids chose their own mini motorized car to race against the other teams' cars.

“This demonstration was set up to be deceptive and therefore thought-provoking,” Schwuttke said. “The car that looked the slowest only had two wheels, so it experienced the least amount of friction on the track. The cars averaged 30-50 miles an hour down the track, but some of the cars that looked fast were made with heavier materials and turned out to be at the slower end of the range.”

These surprising results demonstrate an important lesson about design principles, she added. “You can't successfully execute an engineering design without thinking hard about it and testing different approaches.”

Payton Lacy, an eight-grader at Osceola Middle School, whose favorite subject is



The water-bottle obstacle course in Ocala.

math, said she went from not knowing robotics even existed, to wanting a career in it afterwards. She learned that in programming a robot “the measurement for each movement has to be precise, or it will not run,” Lacy said.

Among the sponsors at both locations are Lockheed Martin, Best Buy, Career Source Florida, Renasant Bank, College of Central Florida, Cheney Brothers and FLATE. Local high school or middle school science teachers are facilitating the camps, which are based on curriculum and software from Carnegie Mellon University as well as The Lego Group.

“I love doing this,” said Greg Cruz, who has taught at the Ocala camp since it started. Cruz also teaches physics and runs the robotics club at Vanguard.

“The kids are having fun without even knowing that they are learning,” he said. “They learn how to plan, work together, and test what they've built. They run through the complete engineering process.” ✧



Students learn about the robot lab.