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Revamp Camp connects kids, software engineering

By Lora Hine

From a robotic dog that barks and walks to an automatic cheese slicer, projects designed and built by middle school students at a Cornell-sponsored camp bolstered the students' passion for computer programming and electronics engineering.

Revamp Camp, Aug. 19-23, was co-sponsored by XRaise, the outreach program of the Cornell Laboratory for Accelerator-Based Sciences and Education, and Ithaca Generator, a community of inventors and engineers.

A total of eight projects, which included an automated cat water bowl and and a doorbell with customized music, were some of the fruits of the weeklong camp. All the projects used Arduino Uno, an open source, programmable microcontroller development board that allows prototyping of circuits with such inputs and outputs as distance and temperature sensors, LEDs and motors.

Provided

A student adds colorful wings to a motorized four-wheel car, one of the Revamp Camp projects.

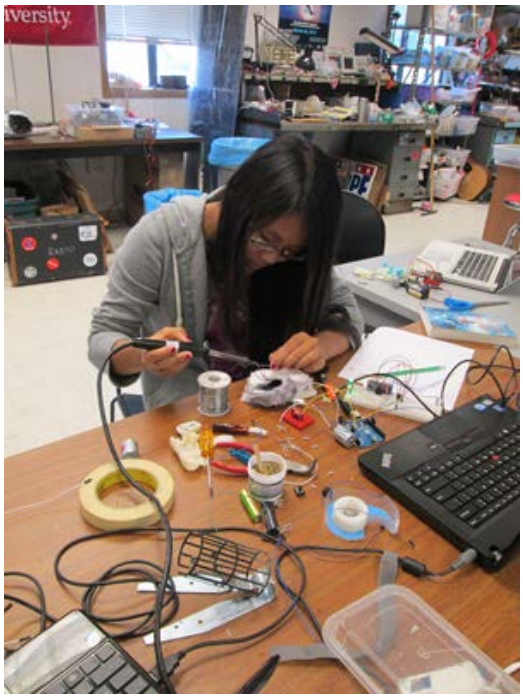
Beyond programming, the camp also got students up and moving: blowing soap bubbles in DeWitt Park, riding motorized bicycles and flying a remote-controlled airplane.

Research support specialists Eric Edwards, Mike Cook and Bill Miller also gave campers a behind-the-scenes tour of Cornell facilities, including Cornell High Energy Synchrotron Source experimental hutches. The students also visited associate professor Hod Lipson's Creative Machines Lab.

Chris Westling, data analyst at Mann Library and a member of Ithaca Generator, provided technical support during Revamp Camp.

"Having kids program Arduinos is a great way to develop problem-solving skills," Westling said. "It is really frustrating when software doesn't 'just work.' Sometimes the best way to fix software is the same way we fix hardware, take it apart and tinker with it. You need a whole new set of tools and some idea of how to use them, but more often than not you learn something."

Lora Hine is director of educational programs at CLASSE.



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A camper solders wires from her toy dog to a motor connected to a microcontroller, allowing the dog to move when a sensor is activated.

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