



UNH Tech Camp Inspires Innovation

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DURHAM, N.H. - CHEESE as an alternative energy source! Maybe, maybe not . . .

Projects such as CHEESE, the solar edition of the Stirling engine, wind turbine, solar radios, electrocardiogram (ECG) and pulse oximetry, electromyography (EMG) vs. joint angular position measurements, and autonomous robots are not your typical junior high and high school experiments. They were very much a part of the junior high and high school participation during the first annual UNH Tech Camp's Friday, August 8, 2008, closing program, which was held in Kingsbury Hall.

"The UNH Tech Camp is just one way that the college is trying to develop a stronger people pipeline for the technical industries of the state and the region," commented Robert Henry, associate dean for the College of Engineering and Physical Sciences. "There are so many great jobs available for students who enter majors in the STEM (science, technology, engineering and mathematics) areas. One problem is how does one make students and their parents aware of these great careers. Another is there are not many opportunities in New Hampshire for students to get hands-on experiences that are related to these careers. The two-week UNH Tech Camp tries to address both of these issues with hopes to expand in the near future."

Campers were grouped in teams of two or three and provided choices of robotics, alternative energy, or biomedical engineering projects. Under the guidance of UNH professors within each of these areas, teams were encouraged to be innovative with their projects. The solar radio, for instance, not only powered its team's radio, it powered a backup energy source by recharging batteries. Adding batteries to the mix added a level of complexity in that any wiring error would literally fry the radio.

For the CHEESE project, which used a camper's pet mice, the title was cleverly relevant. CHEESE turns out to be the acronym for Cheap Hydro Environmental Electric Solar Energy. In other words, pet mice to create alternative energy! Not too different from the concept of the Mouse Trap board game, where a maze of contraptions initiates reactions and actions, this year's Tech Campers' CHEESE project used a combination of live mice running on an exercise wheel, solar panels, and a water wheel to produce enough electricity to power a light bulb. When asked why they didn't just use the solar panel, Joanna He, a ninth grader from Madbury, responded, "That would be boring! My teammates (Kirsten Agla of Bedford and Caitlin Harper of Chester) and I wanted to explore other options."

Henry added, "It was a wonderful experience to have 27 middle and high school campers on campus. I was pleasantly surprised at the quality and sophistication of their projects. The campers did an excellent job combining the data, graphics and video into well thought-out

presentations and were able to answer some tough questions. I think it was an excellent experience for the campers, their parents, the counselors and UNH."

Through the generous support of forward-thinking local organizations and industries such as Business and Industry Association (BIA), NH's State Chamber of Commerce, College of Engineering and Physical Sciences, Computer Associates, Elbrys Networks, Florida Power and Light, Goss International, IXXAT, Liberty Mutual, National Semiconductor, Orbis Technologies, Inc., Osram Sylvania, UNH InterOperability Laboratory (UNH-IOL), University of New Hampshire, and Whelen Engineering Co. Inc., Tech Camp 2008 is now a reality and the high tech people pipeline has indeed been strengthened.

The Tech Camp program began as an offshoot of the UNH-IOL's annual summer internship for high school students. The UNH-IOL is a fully functioning technology testing facility that provides on-the-job training for UNH students aiming for careers in computer networking. The lab is marking its 20th anniversary this year with a celebration event planned for late September.

"The summer internships and now the Tech Camp program with CEPS represent an amazing sharing of resources and a fruitful extensions of our basic educational mission," said Erica Johnson, director of the UNH InterOperability Laboratory. "This is an important time to bring the benefits of our 'hands-on' technology training model to the wider educational and business communities of New Hampshire."

"Liberty Mutual Group is a proud sponsor of the University of New Hampshire Tech Camp program and InterOperability Laboratory which provides technology programs and opportunities for youth throughout New Hampshire," said Stuart McGuigan, senior vice president, chief information officer of Liberty Mutual Group. "At Liberty Mutual, we are committed to serving the communities where we live and work. Our growing relationship with the university community as well as its commitment to nurturing a stronger future workforce in New Hampshire makes UNH a natural partner and we are proud to support their ongoing technology development efforts."

-30-

Photograph available to download:

<http://www.ceps.unh.edu/images/TECHcheese.jpg>

Caption: Pictured left to right: Caitlin Harper of Chester, Joanna He of Madbury and Kirsten Agla of Bedford. This year's Tech Campers' CHEESE Project used a combination of live mice running on an exercise wheel, solar panels, and a water wheel to produce enough electricity to power a light bulb.

Credit: Courtesy photo

