

Increasing AWAREness

When a half-dozen students from ME 589, EcoDesign and Manufacturing, and ME 450, the capstone design and manufacturing course, headed to an awards ceremony held at the National Academy of Sciences in May, little did they suspect that they would take center stage. The U-M team won the Environmental Protection Agency's P3 Award for sustainable design. The term 'P3' represents the three components of sustainability: people, prosperity and the planet.

The team won for its AWARE@home system, a user-friendly, inexpensive tool for households to monitor their consumption of electricity, water and natural gas wirelessly via a home computer.

After installing software on the computer, consumers enter the maximum amount they're willing to spend each month on utilities. When it becomes apparent to the AWARE@home system that this amount will likely be exceeded, the system triggers a pop-up window or e-mail notice.

Consumers can then make changes, including for example, using less water while washing dishes or turning their heat down a few degrees.

The system works using standard wireless 'WiFi' networks. If a home does not have a WiFi network already in place, an inexpensive USB antenna/transmitter is included with the system that is plugged in to the home computer.

The AWARE@home team poses with their display at the National Academy of Sciences.

AWARE@home is also compatible with new digital utility meters that are being sent to the field to eliminate the need for in-person readings. Once marketed, the system will likely be of interest to property managers and consumers wanting to control their monthly expenses.

In addition to students from the two ME courses, other participants included students from Civil and Environmental Engineering, Electrical Engineering and Computer Science, and the Ross School of Business.

Sixty-five teams from around the country competed for \$10,000 grants to research and develop their projects during the 2004/2005 academic year. On May 16, 2005, all P3 grant recipients set up a display featuring their project on the National Mall in Washington, D.C. The National Academies convened a panel of judges — unidentified to participants and who mingled among the crowds asking questions of each group — to evaluate the

projects and recommend award winners to the EPA, which made the final decision.

As for the students' reactions upon receiving the award, "It was a blur, a shock," said Assistant Professor Steven Skerlos, the faculty advisor to the project. "They went there with lots of pride and confidence, and they knew it was a great project, but they didn't go in expecting to win."

AWARE@home has been covered widely in the media and is currently being prepared for testing in consumers' homes.

"AWARE@home has a real chance. The software is easy and attractive; the hardware is robust. The system is getting closer to becoming a market reality."

