

## MEMORANDUM

To: Prof. Truemper, CELT Chair  
Provost Austensen  
From: Prof. Dan Hart  
Date: August 14, 2000  
Subject: Caterpillar Excellence in Teaching Award Report

The Caterpillar Excellence in Teaching Award enabled me to chair a weeklong College of Engineering workshop this July. The objective of the workshop was to improve the freshman experience by adding a problem-solving and design activity to Exploring Engineering (GE 100). One goal of GE 100 is to engage students in exercises that develop problem-solving skills and teamwork. We have done this previously using weekly computer-based exercises. While we regard the course as successful, we have been searching for new ways to enhance the problem solving and teamwork aspects. Because several College of Engineering faculty had expressed an interest in incorporating a robotic-design project into the freshman course, this was the center point of the workshop.

The workshop was quite successful. The outcomes of the workshop include a new strategy for introducing problem solving to freshmen in the College of Engineering, faculty development in problem solving and design, and faculty development in robotic applications. We are excited about a structured problem-solving and design activity that will take place in the first two weeks in the GE 100 "recitation" sections of class this fall. The goal of the assignment is to engage students in a project requiring collaborative learning, problem-solving skills, and teamwork by having them solve a "design challenge." A draft is attached.

The challenge will be given to assigned teams during the first class, and the teams must demonstrate a working robot during the second GE 100 recitation. We believe that this new recitation activity will reinforce concepts discussed in the GE 100 problem solving lectures, will develop teamwork skills, will introduce students to computer programming concepts, and will improve student interest in engineering.

Other faculty who participated the in workshop were Profs. Doug Tougaw, Jack Steffen, Barbara Engerer, and Doug Schmucker. The Caterpillar funds were used to provide partial funding for the activity by purchasing laboratory hardware that will be used by students and faculty for the design activity.