Chapter Projects: Greater Interest in Government

Tau Bates Introduce Robotics to Kids

VERMONT BETA at Norwich University won a Greater Interest in Government grant for an innovative robotics project in 1999. The $750 received was spent towards purchasing three Mind-Storm® robotics kits, which were used in a number of different educational projects. Soon after buying the kits, the chapter members hosted a series of workshops for a regional Boy Scout group to attend and be qualified to receive their technology badges. This group of young kids was especially excited about the three robotics workshops, where for the first time they were introduced to the fundamentals of engineering problem solving where simple robots were used to demonstrate the concepts. The students were placed on different teams, and each team was assigned a kit, allowing everyone an equal opportunity to contribute to the team effort in designing, building, and programming a robot. In addition, all of the robots had to conform to the specifications and standards set by the Tau Bates. Our members enthusiastically helped all of the teams throughout the entire process and often stimulated their minds by giving them hints and asking critical questions in order to get them thinking about some of the crucial issues that engineers deal with everyday. At the end of the last session, a friendly competition was set up; all students were awarded prizes for their participation, and the winning team was awarded an additional certificate for its superb design.

In order to achieve what the grant was originally meant for, the Vermont Beta members managed to devise one of the biggest projects the chapter has ever done. During the spring of 2000, our chapter was approached by one of the teachers from Northfield Elementary School to see if our chapter would be willing to help provide a technology module for the 4th and 5th graders. Almost all of our members responded enthusiastically to this request and thought that it would be fun to undertake. After speaking with teachers interested in this project, we decided to coach three classes with about 20 students in each class. We also decided to use the robotics kits and prepare the lessons around robots and the art of robotics in this modern age.

The project lasted for six weeks; chapter members visited each of the three classes once a week for approximately three hours per visit. The project required extensive planning and coordination. The chapter was lucky to have the support of several engineering faculty members—all of whom are members of Tau Beta Pi. Professors Ronald A. Lessard, Robert W. Goodrich, and Gregory D. Wight and Chief Advisor Dennis J. Tyner devoted a substantial amount of their time and energy in

helping us plan each session, giving us positive feedback and accompanying us to the school and working with the elementary-school students.

The main objective of this project was to get the students excited about engineering and technology in general and to give them insight about what engineers do. We tried to make the sessions as much fun as possible by focusing the course around robotics and allowing the students to experiment with the Lego® robots. One problem statement given to the students was to design and implement a fire-fighting robot that would search every room in an unknown house, find and quench the fire, and save the victims. By the end of the course, the students had the necessary tools to look at the problem from different angles, to explore different possibilities for designing the mechanics as well as the software, and finally to build a simplified version of the robot. A model wooden house was constructed, and the students had a chance to test their robots and modify their designs as needed. During the last session, all three classes managed to get their robots to follow various algorithms and successfully find the hypothetical fire. Upon completion of the course, they were given certificates and congratulated. Also, the Mind-Storm® kits were donated to the school—they were originally provided so that the students could continue with their experiments and augment their understanding even further.

I believe that this project was a tremendous success for our chapter, university, and Tau Beta Pi as a whole, and we owe it mostly to the dedication and commitment of our student members and faculty. Future and current members of this chapter have already expressed their desire to continue and expand this project next year.

—**David B. Khatami,** President 1999-2000