

A PITCH for Better Technical Communication Skills: TCoE Secures Grant to Launch New Initiative

To be competitive in today's economy, engineers need to have strong technical communication skills. However, many colleges are struggling to provide this extra training effectively and still meet the ever-growing demands of an engineering curriculum.

At the University of New Haven, a \$185,500, three-year grant from the Davis Educational Foundation in Maine will fund a new program to provide students with strong technical communication skills. The grant will allow the university to establish a PITCH (Project to Integrate Technical Communication Habits) initiative that began this fall and follows students through all four years of college in all engineering and computer science programs.

"The goal of this project is to emphasize professional communication skills across engineering disciplines," said Ronald Harichandran, dean of the Tagliatela College of Engineering at UNH. "Employers want engineering graduates to display the ability to clearly communicate; good communications skills will give our graduates an advantage in the marketplace."

Harichandran says the program must train student engineers about when to communicate as well as how. "Good written, oral and visual communication skills are essential attributes for today's engineering graduates."

Before joining UNH in August 2011, Harichandran set up a similar program at Michigan State University with David Adams, who is now a consultant to PITCH. At many engineering colleges, a common approach to teaching technical communication skills has been to require students to take separate courses in that area. That approach has proven expensive and not especially effective since it is divorced from engineering content and is too often a one-time experience. Based on the model developed at Michigan State, the communication skills training at TCoE will be woven into regular engineering courses. PITCH contains a number of features that refine and extend that model:

- ▶ PITCH faculty developed a comprehensive set of outcomes based on surveys of both engineering faculty and TCoE alumni and employers.
- ▶ Communication assignments are based on engineering content and design to have students achieve stated outcomes in a developmental progression throughout their programs.
- ▶ PITCH will leverage technology to provide students and faculty with supporting resources.

- ▶ Engineering faculty engaged with PITCH are being trained to develop and evaluate effective technical communication assignments. That step, along with using a consultant, avoids the need to hire instructors from outside engineering and will help make PITCH sustainable and cost-effective.

To help faculty incorporate teaching these skills into their classes, Adams trained an initial group of UNH's engineering professors and a staff member from the UNH Center for Learning Resources at an intensive three-day workshop this past summer. Since the fall semester began, students have begun learning the new skills in both core and advanced classes. Each student will have to add evidence of achievement in communication to his or her four-year portfolio. A random sample of those portfolios will be reviewed annually to ensure that the skills were actually learned.

Before settling on a set of core competencies, the college surveyed alumni, faculty and employers who often hire UNH graduates to determine which technical communication attributes, products and professional behaviors are essential. Data from the survey are being used to determine exactly what students must accomplish in their first two years, when they are taking core engineering courses, and during the remaining two years, when they are specializing in a particular engineering discipline.

"When employers are surveyed about what are the most important attributes that they desire in engineering graduates, we see the same response over and over—the ability to communicate," said Harichandran. "In addition to solid technical skills, engineers must have the ability to communicate technical content to clients, peers and the public, and they need to be able to do this in writing, verbally and using visuals."

Results from the surveys reinforced the notion that alumni and employers really do desire these skills from engineering graduates. More than 68% of those surveyed indicated that skill in technical communication played a "critical" role in hiring and promotion decisions, while another 29% marked those skills as "somewhat important." Furthermore, over 80% of those responding indicated that in their jobs they spend between 11 and 40 hours a week or more on the communication tasks: writing, reading, speaking and listening. A report of these survey results is posted on the PITCH Web site accessible from the college's home page.

Faculty members participating in PITCH are well aware of the need for such instruction. According to Dr. Amy Thompson, “For practicing system engineers, delivering a well-written requirements document, design specification, or testing and evaluation plan can be the difference between a successful development project or a project and product failure. PITCH grant activities will result in a new technical communication curriculum and assessment practices in SE 488: System Engineering Design Process. Those activities will help our students achieve



TCoE Advisory Board Reconstituted

Dean Ron Harichandran, with the assistance of Leslie Kerr, Senior Associate Director of Development, reconstituted the TCoE Advisory Board in fall 2012. After a careful search over several months, the following seven successful alumni and friends of the college were selected to serve on the board:





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