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Innovative Programs in Engineering Education Recognized with National Award

Dr. Robert G. Quinn, Professor of Electrical and Computing Engineering at Drexel University in Philadelphia, Pennsylvania has been selected to receive the prestigious 1997 Boeing Outstanding Educator Award. As the winner, Dr. Quinn and the university will share a \$50,000 award.

The Boeing Outstanding Educator Award recognizes individual engineering educators or teams of educators who have made exceptional contributions to improving undergraduate engineering education. The contributions of these educators, which are often adopted by other schools, help to turn today's undergraduates into well-grounded and well-rounded engineers.

Competing individuals or teams are graded on improvements they have made to the educational process which enhance attributes of graduating engineering students. Each individual or team also has to provide evidence that their work has long-term, pervasive impact on engineering education and the extent to which educational improvements have become institutionalized.

Dr. Quinn was recognized for his efforts to design, develop and implement a program that has had significant salutary and widespread impact on undergraduate engineering education at Drexel.

In 1988, The National Science Foundation provided an unprecedented award of \$2.2 million to fund a proposal co-authored by Dr. Quinn, entitled, "An Enhanced Educational Experience for Engineering Students." The proposal called for the design, development and testing of a new engineering core curriculum which emphasized interdisciplinary scientific foundations: the role of experimentation; the role of the computer; superior communications skills; the importance of teamwork; vigorous life-long learning; and the role of design as the defining element in the practice of the engineering profession.

As director of the program, which became known as E4, Dr. Quinn transformed the proposal into reality. Dr. Quinn led a team of 65 faculty who created and tested a new core curriculum with 800 students. The resulting design dramatically reduced and streamlined the traditional engineering curriculum into four integrated and synchronized sequences. E4 Program students developed higher levels of experimental, computer, communications and teamwork skills than their counterparts in the traditional program. The students also had higher grade point averages and remarkably higher retention and graduation rates.

The positive results of the E4 Program sparked a curricular reform unparalleled in Drexel's history. All engineering departments began a revision of their entire curriculum using the program as a common core.

The success of the program led directly to a \$15 million grant from the National Science Foundation to form the Gateway Coalition, which includes 10 universities with a total of 16,000 undergraduate engineering students. This coalition has made the enhancement and extension of the E4 Program among the members the centerpiece of its activities.

Nationally, teams from 22 schools were nominated for the 1997 Boeing Outstanding Educator award. The field was narrowed to three finalists, with each visited by the judging team from Boeing for an in-depth examination of the work of each nominated person or team. Besides Drexel University, the other finalists were from the University of Colorado at Boulder and Arizona State University.

Of the \$50,000 total award, \$5,000 will be awarded to the winning individual and \$20,000 will be given as an

unrestricted grant to further that person's programs. An additional \$25,000 grant will be made to the engineering school for ongoing support of educational improvement. A formal presentation of the award is scheduled for May 30, 1997 at Drexel.

This is the third year Boeing has granted the Outstanding Educator Award. The 1996 recipient was a team of educators from the University of Maryland in College Park, Maryland and the 1995 award went to a team from the Rensselaer Polytechnic Institute in Troy, New York.

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