

Program highlights how to foster entrepreneurship in engineering, research community

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One lesson learned in North Carolina State University's Engineering Entrepreneurs Program (EEP): technical knowledge is not enough, if you want to be successful. NC State researchers are laying out lessons they've learned running one of the nation's first EEPs in a paper being published by *IEEE's Computer*, as part of a special issue focused on entrepreneurship.

One of the keys to the program's success at NC State is its focus on teamwork, [leadership](#) and presentation skills. The program stresses that engineering know-how isn't enough. "If you can't sell your ideas, they won't be successful – no matter how good the idea is," explains Dr. Tom Miller, McPherson Family Distinguished Professor of Engineering Entrepreneurship at NC State and co-author of the paper. And successful ideas are becoming increasingly important.

"There's rising recognition that the U.S. needs to do more in terms of innovation and entrepreneurship if we are going to be competitive in the 21st century," Miller says. "There are a growing number of engineering programs addressing this need, and ours was one of the first. That is why IEEE invited us to share our experiences in *Computer*."

Most importantly, the NC State EEP appears to be producing results. An internal study indicates that program alumni are 73 percent more likely to start a new company, when compared to engineering graduates who

don't participate in the program. The study also finds that program graduates are 23 percent more likely to have created new products and services.

Letting students get their hands dirty is a hallmark of the NC State program. "Our model is learning by doing," Miller says. "Our students basically form their own start-up companies. There are no exams. They are evaluated based on what they produce." And a lot of thought goes into what they produce.

The program is designed to take engineering students out of their comfort zone, forcing them to look at things from a business or marketing perspective. "Engineers understand the technical aspect of their work," Miller says. "We're helping them understand how to use that knowledge to produce products that people want. They're already problem solvers – we want them to be problem finders."

To that end, students have to determine what the market needs and what the customer wants – and come up with new products to meet those needs.

More information: The paper, "Educating the Engineering Entrepreneur of 2020 at NC State," will appear in the April issue of *IEEE's Computer*.

Provided by North Carolina State University

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