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## Scientists see growth in degree



Robby Cosby, left, and Jacob Traverse work in a lab at Icoria in Research Triangle Park. Traverse is working on his professional science master's degree at N.C. State University.

By **TIM SIMMONS**, Staff Writer

*Staff Photo by Harry Lynch*

Tell people you've earned an MBA, and it's understood you mean a master of business administration.

Tell them you hold a PSM, and most people have no idea what you're talking about.

That's OK with Jacob Traverse. If his professional science master's degree is as useful as he expects, it won't be long before others see it as the MBA of the 21st century.

"I really didn't have much interest in the program when I first heard about it," said Traverse, a student at N.C. State University. "But I'm going to graduate in May, and I can see now that I'll have many options -- more than I would have had if I enrolled in a traditional master's degree program."

The goal of a PSM degree is to produce students with a broader set of skills than graduates of traditional master's programs. Instead of being viewed as a consolation prize for those who fail to earn doctorates, this master's degree is meant to guarantee that graduates have the experience and flexibility to handle a number of complex tasks.

Students who study biochemistry, for example, are expected not only to understand the science of their field but also how to put together business plans, work on teams and appreciate international trade laws that affect their industry.

"These are the skills that industry wants its employees to have right away," said Lisbeth Hamer, director of the microbial biotechnology program at NCSU. "Graduates from traditional graduate programs might eventually gain those skills, but they learn

them on the job and are often shellshocked that first year."

### **Room to grow**

NCSU is part of a fairly small group of schools that offer professional science master's degrees. Forty-five universities offer 97 programs nationwide, and NCSU is the only university that offers the degrees in North Carolina. In addition to microbial biotechnology, it also offers a degree in financial mathematics.

But UNC system leaders would like to see the programs offered throughout the state, said Gretchen Bataille, the system's senior vice president for academic affairs.

"Our campuses are clearly interested, and many had already started to fashion programs of their own before we started to put together a formal plan," Bataille said.

Campuses throughout the state, for example, are in various stages of mapping out what it would take

to offer professional master's of science degrees in fields such as applied biosciences, cryptography, materials sciences and information technology.

With the help of a \$45,000 grant from the Sloan Foundation of New York, UNC is putting together a plan that details the various interests throughout the system that would be addressed through the programs.

"In academia, we traditionally haven't gone to industry and asked, 'What do you want?' " said Scott Jenkins, who is working on the UNC system plan. "But ultimately, students are here to get the skills they need to get a job, and these programs are offering the skills they need today."

At least they are the skills that companies value among project managers, technical writers and others who quickly find themselves working in midlevel positions. Training for entry-level jobs --even in industries such as biotechnology -- is being handled by the state's community colleges.

The other end of the training spectrum, where students earn doctorates based on extensive knowledge of narrow fields, is also unaffected by the push toward PSM degrees.

"This is for students who know they want to get into an industry but aren't sure they want a doctorate," Jenkins said. "It provides graduates with more options and employers with better-trained employees."

### **Internships are key**

More options were precisely what Vijay Tanwar was looking for when he enrolled in the financial mathematics program at NCSU.

After Tanwar graduated from college in India, he started talking with a friend in the United States and searching the Internet for graduate programs.

The search brought him to NCSU, where he was particularly attracted by the promise of an internship as part of his training.

"The internship was a real plus --a requirement, really," Tanwar said. "I am interested in applied mathematics, so I wanted a program where I could actually apply what I learned."

Tanwar is completing his internship with Wachovia in Charlotte, where his work has included an analysis of the company's employee stock option pricing program. Being a part of the company's research team is giving him a chance not only to apply his understanding of math but also to learn about job expectations that can't be defined by equations and formulas.

That kind of experience is a key part of the program's success, said Jean-Pierre Fouque, director of the financial mathematics program at NCSU.

"We try to find opportunities for students besides Wall Street jobs," Fouque said. "The skills we teach are the skills that employers need in areas such as commodity markets, energy markets and pricing models. You must understand not only the mathematics involved but the industry you have selected."

## **Cachet to be determined**

Despite the enthusiasm of students and program directors, employers will ultimately decide if a PSM degree is valued in the same way as an MBA.

"In my previous job, I often had young adults ask me how to make the transition from the science side of the business to business development," said Michael Stocum, managing director of Personalized Medicine Partners in Research Triangle Park. "This program answers that question."

But Stocum agrees with those who say it could take a decade before graduates know for certain if a PSM degree carries any extra appeal.

After all, there was a time when no one knew what it meant to earn an MBA.

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