

Mid-Atlantic Bio

Successful Biotech Leaders Integrate Science, Biz Skills

By Donna Young**Washington Editor**

BETHESDA, Md. – Technical depth and leadership skills are hard to find in a single person, but both are essential for a biotech company to be successful, said Carol Lynch, senior scholar-in-residence and project director of professional master's programs at the Council of Graduate Schools in Washington.

While about 70 percent of medical product companies are founded by scientists, it's often difficult for those experts to step out of their comfort zone of the lab – where research is viewed as an honored profession – into the world of business, oftentimes perceived by researchers and others as “the devil's work,” said Lynn Johnson Langer, director of enterprise and regulatory affairs programs at Johns Hopkins University Center for Biotechnology Education.

“But cancer is never going to get cured in the lab alone,” she said, adding that someone must take those cures to commercialization.

To prepare those in the sciences for the real-world of business and entrepreneurship, new training programs are springing up throughout the U.S., such as professional science master's (PSM) degrees, which are now offered at more than 100 U.S. academic institutions.

Graduates of PSM programs provide superior return on investment, “because they come ready to hit the ground running,” Lynch said during a session at the Mid-Atlantic Bio conference in Bethesda, Md.

PSM degrees – programs aimed at combining technical competencies with work force skills, such as financial management, policymaking, legal and regulatory affairs, communications and marketing – are relatively new, with the concept first emerging about 1997, Lynch said, adding that those who complete such programs are called “science plus” leaders and employees.

Academic institutions generally work with industry sectors in creating coursework for PSM degrees, she noted.

Of the 218 PSM programs at 103 academic institutions in the U.S., 89 are in the biosciences, mostly focused in biotech and bioinformatics, Lynch said.

She noted that many PSM programs are clustered near

U.S. biotech hubs, with a few also outside the country, including a new biotechnology PSM at the University of Queensland in Australia.

Rana Khan, professor and director of the biotechnology program at the University of Maryland University College (UMUC), said her institution has five PSM programs, which she noted are designed for working professionals and offered online.

UMUC's interdisciplinary program is aimed at not only creating new entrepreneurs, but assisting early stage companies in reaching commercialization with their technologies, she said.

Part of the PSM coursework at UMUC is working with small companies on various projects, in which the students earn credits toward completing their degrees, with the companies essentially getting free help with business needs, such as market research, for which they do not have the internal personnel to handle the job, Khan explained.

For one such PSM student project, the company's CEO was so impressed with the student's report, that he had that student present it to the firm's investors, she said.

Another PSM student project uncovered existing patents on competing technology for one company, for which that firm was completely unaware, Khan said.

“That was a really huge thing for the company,” she said. “They were really grateful for that.”

An Michiels, CEO of Keygene Inc., a molecular genetics R&D company based in Rockville, Md., said a team of UMUC PSM students three years ago developed a business plan for her company, and a review last month revealed that Keygene has actually accomplished many of the students' proposals.

While students in the biotechnology PSM program each have a company mentor working with them throughout their coursework, that mentoring “goes both ways,” with mentors also gaining from the student's up-to-date knowledge and skills.

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Recognizing in the early 1990s that biotech was an “up and coming industry,” Johns Hopkins began developing one of the first-ever professional master’s degree programs focused on that area, Johnson Langer said.

The university also now has a joint MS in biotechnology-MBA degree program, which is designed for working professionals, with courses offered online, she added.

About five years ago, Johns Hopkins decided to develop a full master’s degree in bioscience regulatory affairs, which Johnson Langer said was only one of handful in the U.S. and was designed in consult with the FDA and industry.

She noted that many on the faculty include experts from biotech and pharma companies, such as Gaithersburg, Md.-based MedImmune, Rockville, Md.-based Human Genome

Science Inc. and Whitehouse Station, N.J.-based Merck & Co. Inc., in addition to several federal health officials from the FDA, the National Cancer Institute and the U.S. Army Medical Research Institute.

Two decades ago, said Mark Crowell, executive director and associate vice president for innovation partnerships and commercialization at the University of Virginia, the academic community took a lot of convincing that they needed to partner with industry and teach scientists how to be entrepreneurs.

But, he said, “there’s been an amazing sea change” since then.

Research faculty and graduate students now demand and expect such activities to be taking place, Crowell said. ■