

The Professional Science Master's: The MBA for Science

Author: Musante, Susan

Source: BioScience, 59(4) : 285

Published By: American Institute of Biological Sciences

URL: <https://doi.org/10.1525/bio.2009.59.4.5>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

The Professional Science Master's: The MBA for Science

SUSAN MUSANTE

When Jay Duffner decided to go to graduate school to advance his career in biotechnology, he chose Northeastern University's Professional Science Master's (PSM) program rather than a traditional master's or PhD track. He recognized the benefits of earning an advanced degree from a well-known institution, which would provide him with real-world practical experiences that he could immediately apply in the workplace. The PSM program's internship requirement opened the door to a unique opportunity at his current job. "It gave me an excuse to ask for a project that was outside of my area of expertise and that of the company's, too," says Duffner. After securing the support of his company to purchase the necessary equipment, he took the lead on a new research project, one that he continues to direct even after his graduation from Northeastern's program.

Duffner is one of a growing number of graduate students embracing the PSM as an alternative, not a stepping-stone, to a PhD. These highly specialized programs require credit hours in a specific scientific discipline as well as in business courses such as intellectual property rights, ethics, or business management, and an internship or other significant hands-on experience. The biotechnology, bioinformatics, and marine biology PSMs at Northeastern grew from real-world needs and were developed in cooperation with industry, explains Graham Jones, who oversees Northeastern's PSM programs. Communication between industry representatives and academia does not end once a PSM is established. Northeastern is continuously working with its advisory council and looking for ways to improve its existing programs and develop new ones as gaps in the marketplace are identified. "For example," illustrates Jones, "I'm right now looking at developing a PSM in regulatory science which will involve the cooperation of the FDA [US Food and Drug Administration], academia, and industry."

Oregon State University (OSU) PSM programs are similarly agile and responsive, says Ursula Bechert, director of OSU's off-campus programs. She says that OSU recently hosted a workshop with representatives from different industries and government agencies, such as the Oregon Department of Fish and Wildlife, to talk about new PSM program development opportunities. OSU currently has PSM programs in environmental sciences, applied physics, biotechnology, and applied systematics in botany, and it is considering adding programs in alternative energies, fisheries and wildlife, chemistry, and bioinformatics. A PSM program is a wonderful way to package interdisciplinary coursework in emerging fields, like alternative energies, she says; "OSU faculty, students, and industry leaders in the area are very excited about the possibility of a PSM in that field."

"Students are drawn to OSU's PSM programs for two reasons," Bechert says: "because they like the emerging fields and interdisciplinary nature of the programs, and because they understand the value of the professional curriculum." Students enter an OSU program knowing exactly what they want out of it. Working professionals know that earning a PSM and gaining critical new skills can advance their careers, Bechert says. The connections that students make during their internships are very valuable, and roughly one-third of all PSM internships at OSU translate into full-time jobs.

PSMs are gaining momentum across the nation. But Bechert, a founding member and current president-elect of the National Professional Science Master's Association (NPSMA, <http://npsma.org>), cautions the community to be watchful of "PSM-like" programs. Students can easily identify PSM programs that are recognized by the Council of Graduate Schools by visiting the Professional Science Master's Web site (www.sciencemasters.com), which was initially

developed with support from the Alfred P. Sloan Foundation.

Another founding member of NPSMA is Jung Choi, director of the bioinformatics PSM program at Georgia Tech. Choi was a member of the National Research Council's Committee on Enhancing the Master's Degree in the Natural Sciences, which produced the report *Science Professionals: Master's Education for a Competitive World*, published in May 2008. It states: "The master's-trained segment of the science workforce is pivotal: strengthened master's education in the natural sciences will prepare professionals who bring scientific knowledge and also the ability to anticipate, adapt, learn, and lead where and when needed in industry, government, and nonprofits." The report, available online (www.nap.edu/catalog.php?record_id=12064), recommends that more institutions develop PSMs and that existing programs continue to grow to meet growing demands from the marketplace.

Choi admits there is a lingering perception that a master's degree is the "drop-out" option, but he is hopeful that "the report can help people in the natural sciences really rethink the value of the master's degree and think of the PSM as an alternative terminal degree." Choi emphasizes that the goal of PSMs in general is not to replace the more traditional degrees but is instead an option for those interested in non-academic careers in the biological sciences. "There are a large number of students looking for science careers, and there is a strong need for them in industry," adds Choi. "The PSM program allows us to enlarge the pipeline."

Susan Musante (e-mail: smusante@aibs.org) is the education programs manager at AIBS.

doi:10.1525/bio.2009.59.4.5