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# A Master's for Science Professionals Sweeps U.S. Schools

By JOSEPH ROSENBLOOM

BOSTON — A curiosity tucked away in a handful of university catalogs a decade ago, the professional science master's degree is emerging from the shadows at a number of college campuses.

The degree, which a few universities quietly pioneered in the mid-1990s, combines graduate studies in science or mathematics and business management courses. In 2008, 58 universities were offering the professional science master's degree, or P.S.M., according to the Council of Graduate Schools in Washington. By the start of this academic year, the number had nearly doubled to 103, and is set to climb further.

The number is certain to grow because the professional science master's degree is being adopted by at least six state university systems. In addition, in February, the first P.S.M. program in Europe was created at the Open University in Milton Keynes, northwest of London.

Advocates of the degree say it will become a fixture at many more universities because it promises to satisfy the work force requirements of increasingly technological economies in the United States and abroad.

"I think of it as a 21st-century degree," said David King, dean of graduate studies and research at the [State University of New York](#) in Oswego. "It's interdisciplinary. It's a hybrid, which I think is more agile. It's responsive to rapidly changing needs in terms of the job market."

Mr. King likens the growth of the P.S.M. to the emergence of the M.B.A. more than a century ago. He heads a systemwide consortium of 16 New York colleges and universities that introduced the P.S.M. on seven campuses in September. (The degree was already being offered at an eighth campus in the consortium, the [University of Buffalo](#).) He said he expected all 16 schools to offer the degree next year.

The professional science master's degree received an important imprimatur two years ago from a committee of the [National Research Council](#), which inquired into ways to enhance the master's

degree in the natural sciences.

Carol Lynch, director of the professional science master's program of the Council of Graduate Schools, estimates total P.S.M. enrollment around 5,000. That is a tiny fraction of the hundreds of thousands enrolled worldwide in M.B.A. programs, but Ms. Lynch said the degree "is on a huge trajectory, and we're just getting started."

Already, however, the subject matter of professional science master's curriculums differs widely (as does tuition, which ranges from a few thousand dollars a year to more than \$20,000). Studies in biotechnology and environmental science are in particular demand. Also required are business courses in subjects like project management and communications.

The degree typically involves two years of study, and there is no thesis requirement. But P.S.M. students must work with a "real world" company either in an internship or on a project.

Most enrolled students are Americans, many at large state schools, according to the Council of Graduate Schools.

But there is a large minority of international students pursuing a P.S.M. One of them, Aayush Pandey, 23, is studying biotechnology at [Northeastern University](#) in Boston. After earning an undergraduate degree in that subject last year at the Amity Institute of Biotechnology in New Delhi, he found that his options were limited to embarking on a doctorate program with a researcher's career in mind or working as a low-paid laboratory assistant for an Indian biotech company.

"I didn't want to do a research-oriented course," Mr. Pandey said. "I was more interested in industry." He thought that with a P.S.M. degree in biotechnology, he could stick to a field he liked and prepare for a management-level job. When he completes his degree, he will look for a job with a U.S. biotech company, aiming to save enough money in two to three years to repay his parents the \$36,000 that they lent him to cover his tuition.

Northeastern's biology-oriented P.S.M. classes have attracted international students, particularly from India. Of the 154 students who enrolled this autumn, 76 are from countries other than the United States, with 68 from India.

Northeastern has been increasing its P.S.M. offerings, having inaugurated a course in bioinformatics in 2001 and adding specialties in biotechnology, marine biology and regulatory science.

Murray Gibson, dean of Northeastern's College of Sciences, said the professional science master's degree provides a "potential source of revenue," deepens the school's partnerships with business

and links its professors and students to cutting-edge business research. "It goes two directions. We can service industry and know better what's going on outside the university," he said.

Among the companies that employ P.S.M. graduates of Northeastern is Regeneron Pharmaceuticals, a biotechnology company based in Tarrytown, New York. Several degree holders are working at Regeneron in program management or regulatory affairs, said Ross Grossman, the company's vice president for human resources. The value of the degree, he said, "is it enables you to put people in business roles who really understand science, which is critical to what we do."

Notably heeding such business demand is the [University of Maryland's](#) University College, where instruction in biotechnology, biodefense and other P.S.M. programs is entirely online. Enrollment — mostly of midcareer, part-time students — is up from 1,365 two years ago to 1,967 now, according to a university representative.

The trend has been fueled since 1997 by a total of \$22 million in grants to dozens of universities from the Alfred P. Sloan Foundation. And, starting in 2009, the [National Science Foundation](#) injected \$15 million in grants to help create the degree on U.S. campuses.

Also propelling the P.S.M. movement is the statewide introduction of programs by public university systems, under way in Arizona, California, Oregon, North Carolina, Florida and New York.

Policy makers in the six states are investing in P.S.M. expansion as the kind of work-force-development catalyst that they see as key to economic revival.

But some of the nation's most prestigious universities have not embraced the idea: None of the [Ivy League](#) schools have, though the program is on the drawing board at [Cornell University](#), which is a member of Mr. King's statewide consortium in New York.

Some faculty members at top universities that focus heavily on research are resisting. "Why should you bother me by introducing a new master's degree when I'm already busy with what I'm doing with the Ph.D.'s," they ask, according to Ms. Lynch, of the Council of Graduate Schools.

Nor has the idea caught on outside the United States, except at the Open University in Britain, the University of Queensland in Australia and the University of British Columbia in Canada.

Queensland, which has 100 students enrolled in its P.S.M. in biotechnology, caters mostly to international midcareer students from India, the Middle East and China on its Brisbane campus. "The cream of the crop go on to higher degrees or jobs in local industry," said Ross Barnard, Queensland's P.S.M. director.

