New Master’s Designation Combines STEM and Professional Skills

Do you know what a PSM program is? If not—and if you hire scientists, engineers, or statisticians—you soon will, as more graduate programs earn the credential. In 1997, eight such programs existed; in 2013, more than 300 are available.

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“Companies don’t know they want people with this credential because they aren’t familiar with it,” said Kevin Railey, dean of the Graduate School at Buffalo State. “Once they understand it, they ask, ‘Where have you been?’”

The STEM disciplines—science, technology, engineering, and mathematics—are widely seen as the drivers of America’s 21st-century economy. However, it’s important for STEM practitioners to have appropriate professional skills, too. Students who graduate from a program with PSM affiliation have completed coursework in those skills, which include communication, leadership, and project management.

The Professional Science Master’s National Office recognizes eligible programs through an affiliation process.

The Great Lakes ecosystem science graduate program at SUNY Buffalo State just received its PSM affiliation. The program, housed in the Great Lakes Center, is the second master’s program at Buffalo State to receive the designation. The first was the professional applied and computational mathematics program, which was established in the Mathematics Department in 2010.

Receiving PSM affiliation requires three components: core coursework in certain STEM disciplines; a professional skills component; and a carefully structured internship that brings both skills together in a hands-on workplace experience. It’s crucial that the professional skills component is developed in consultation with an advisory board made up of leaders from organizations likely to hire graduates of the program.

From the beginning, the 35-credit-hour program was designed to meet PSM criteria. “More than half of a student’s credits must be in his or her discipline,” said Kelly Frothingham, associate professor and chair of Geography and Planning. “Courses in professional skills must make up at least another 20 percent.” Frothingham coordinates the Great Lakes ecosystem science program.

Communication skills are key, according to Sara Mochrie, a member of the program’s advisory board. Mochrie, a project manager with consulting firm Ecology and Environment, Inc., said, “In our industry, we need scientists and engineers who can explain issues to stakeholders in any given project. Stakeholders are not only scientists and government agencies, but also John Q. Public, who may be the neighbor down the street who is upset about a project.”
succeed in a competitive job market. “That’s the best thing about the program,” said Mochrie. “Buffalo State has been willing to listen to what employers need and to provide those skills to their students in niche classes and in coursework.”

Other advisory board members are professionals from organizations such as Buffalo Niagara Riverkeeper, the New York State Department of Environmental Conservation, and the U. S. Army Corps of Engineers.

“The professional science master’s designation is the fastest-growing type of graduate program in the country,” said Railey. “PSM programs are extremely appealing to students who know that, while earning their master’s, they will interact with academics and professionals in their field, and that they will intern in their industry. A high percentage of people coming out of these programs get jobs right away.”