Many in higher education have long sought to create a master’s degree that would do for the sciences what the M.B.A. did for business. Well, the search is over as a new Professional Master’s of Science degree takes root at OSU.

by Bob Demyan

Photos by Melinda Luktsch
Science and business can be odd bedfellows. It’s a symbiotic relationship: science drives innovation that creates new technologies; business brings those new technologies and innovations to the market and returns profits back to science for more research and innovation. It’s a nice circle. Or that’s the idea at least. Sometimes the distinct cultures of business and science don’t always mesh. Scientists are often most at home in the halls of academia which provides a safe haven for research and exploration. Business looks to the bottom line, to capital flow, market conditions, and the economic balancing act that can make or break a company. It can often seem like the two worlds are speaking in different languages. The bottom line though, is business and science can’t live without each other.

So how do people trained along the typical Ph.D. path typically fit into the business world? Not always easily and not always well. And there are other forces at work. Academia has produced an abundance of doctoral level researchers in recent years which has led to a glut of Ph.D.’s vying for a dearth of research positions in academia. The paradox? Well a closer look at the traditional nature of advanced science training helps provide some insight. Students pursuing Ph.D. programs set out on a tightly focused path—they don’t call it a discipline for nothing. Interdisciplinary exposure is not especially encouraged or desirable—depth of knowledge and discovery within the discipline are. The traditional aim has been to produce scholars and experts who will continually fill the ranks of academia and non-profit research institutions.

And therein lies the rub. With such intense emphasis on discipline and research, many Ph.D. programs, by their very nature, can’t provide the kinds of broad, interdisciplinary training that is so in demand in the business world. Such training just isn’t on the menu.

Another drawback from the vantage point of industry and business is that doctoral level programs typically keep students cloistered in academic settings for many years. The majority of Ph.D. students do not make their first foray into the job market until well into their 30’s. Business needs people now. Yes, many Ph.D.’s do find their way into industry, but by far and away, the biggest market for these people is still academia. In a very real sense, the system is set up to reproduce its own—academicians working within the free harbor of the university, pushing the frontiers of knowledge and discovery, producing more university researchers. As a result, business and industry, particularly in a newer area like the field of biotechnology, often go begging for qualified scientists with business and communication skills.

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in Applied Physics has been well received by the people he’s spoken with in industry. “We’re hearing from industry that this is the kind of person they’d like to see. Still, he says, the proof of the program’s success will be the kind of graduates it turns out. “People don’t want to hire a concept,” he said.

Like his colleagues, Warren believes in the fundamental logic behind Sloan’s approach if bringing industry representatives in on the program’s design. “Sloan recognizes the futility of a bunch of professors sitting around in a room on campus telling each other what industry needs,” he said. Warren says that his discussions with industry have always come back to a real interest in the cohort courses. “Our industry people said, ‘you guys are experts in curriculum and course design, that’s your thing.’ The thing we’re really interested in are these cohort courses,” said Warren. His students want that wider background as well. “My own Ph.D. students would come back to me after graduation and say, ‘Yeah, I’m doing great technically, but why didn’t you ever teach me how to run a meeting?’”

It’s a theme running through all the program areas. In the biotech area for instance, Giovannoni says that the industry needs real working scientists, but not necessarily someone who’s spent years in a Ph.D. and knows that a lot of the students he sees in molecular biology see their future in the biotech industry. As such, the traditional approach of pursuing a Ph.D. program on an extended timeline isn’t really to their advantage. “Having a student in a Ph.D. program who doesn’t want to be an academic scientist is probably not in anyone’s best interests,” said Giovannoni.

Bill Winner of the Professional Master’s Program in Environmental Sciences sees another aspect of all this. Many of the students who enroll in his program, he says, will actually come from industry. These people will already be working in some capacity in the profession, but could benefit from the interdisciplinary training of the new Professional Master’s program. “This program gives us an opportunity to allow people who are trained at some level in the environmental industry to come back to school and within a year, get a graduate degree that would allow them to take on new responsibilities,” said Winner. “In many cases, it will allow people to redefine themselves as career professionals in the environmental industry.”

Winner sees the program’s shorter time commitment as a powerful selling point for his program. “I think it’s a great design because it’s going to give people an opportunity to get a graduate degree without having to make the sacrifice of walking away from a job for a 2- to 3-year leave,” he said. In many cases, said Winner, employers might even pick up the tab for their employees to go through the program.
The Long View

Clearly, the Professional Master’s Degree in Science has enormous potential to transform both Oregon State University and impact Oregon’s economy. Kevin Ahern hopes it will help Oregon’s nascent biotech industry by giving biotech companies a new reason to locate in the state. “For biotech, if you look at the three states on the west coast, we’re the weakest of the three,” he said. “So one of our hopes is that this can forward. “Everyone knows about MBA’s and master’s programs in architecture, engineering and journalism,” said Ausubel. But, he noted, this kind of success hadn’t translated to the sciences.

Too often in the sciences, the master’s degree had been seen as some kind of halfway house between a bachelor’s and doctoral level degree. Many of the traditional master’s programs in the sciences were more like feeder programs for Ph.D. tracks and never really gained traction as standalone terminal degrees.

Sheila Tobias, currently the Sloan Foundation’s Outreach Coordinator for the Professional Science Master’s, found in her research that fewer than three percent of the master’s degrees awarded in the U.S. were in the sciences. As a result, science students seeking a track into industry or business often found themselves pursuing an M.B.A., hoping to supplement their science background with training in business. Unfortunately, many recruiters and industry leaders found this approach lacking as most M.B.A. programs, by necessity, had to skimp on the science and math so fundamental to today’s technology-driven business world. The Professional Science Master’s degree will change that scenario for good.

As with anything new, it will take some time for the program to grow and prove its merit. After all, the M.B.A. took almost 40 years to gain universal acceptance after its creation in 1908. But if the people behind the program at OSU are any indication, the future looks bright. “If this works the way we think it is going to work, there will be a lot more interaction between industry and these programs,” said Don Armstrong. “That sort of communication and contact is bound to build other sorts of ideas and opportunities.”

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