A Sharp New Focus on Job Skills

Postgraduate programs are getting a lot more practical. By Christopher J. Gearon

Back when he was mulling an advanced degree in microbiology, Kyle Mak of Thousand Oaks, Calif., got some advice from his older brother, who had preceded him on that path: Think really hard before investing 10 years of your life only to come out buried in debt. So Mak, 26, chose a more direct and less costly route. Last May, he earned a two-year professional science master's degree in bioscience from California's Keck Graduate Institute, part of the Claremont Colleges consortium. Then Mak hit the ground running—straight into a job as a supply chain manager at biotech giant Amgen, which manufactures medicines, making nearly $90,000.

The professional science master's, or PSM, got its start in 1997 as a way to better (and more rapidly) equip students with much-needed skills in the science, technology, engineering, and math (STEM) fields. A decade and a half later, nearly 300 PSM programs are offered by KGI and 128 other institutions, including Pennsylvania State University, Creighton University in Omaha, Neb., Cornell University in Ithaca, N.Y., and the University of Florida. The degree combines intensive study in science or math with courses in management, policy, or law and emphasizes writing, project management, and other industry-sought skills. Because internships and capstone projects guided by mentors in industry are a key part of the curriculum, companies "use these programs to screen prospective employees," notes James Sterling, KGI's vice president for academic affairs. "Students are getting great jobs with this."

Shorter and less of a drain

Tuition runs between $10,000 and $40,000 annually; with scholarships, Mak's two-year degree totaled $40,000, which he was able to manage without borrowing. Grads fetch salaries equivalent to what a master's in science would get, says Sterling, "but they are on a trajectory to leadership, and their salaries are increasing substantially and quickly."

The recent rise of the PSM degree reflects a new reality in postgraduate education: Recession-wary students have become significantly more pragmatic. With traditional programs still skewed toward producing future academics, prospective students aren't buying in as they once did; after years of growth, new enrollment in graduate programs dropped in 2011 for the second consecutive year.

"We're seeing people asking some very hard questions about value," says Debra Stewart, president of the Council of Graduate Schools. They are scrutinizing offer packages, calculating the debt levels they would have to assume, and weighing costs against potential earnings. And they "are looking for something different than in-depth scholarship," says Kathleen Scott Gibson, assistant dean of the graduate school and College of Arts and Sciences.
at Indiana's Valparaiso University. "They are looking for skills."

An advanced degree that delivers on that score is more important in many fields than ever. At one time, a grad degree was an "inconsequential afterthought to the B.A.," says Anthony Carnevale, director of Georgetown University's Center on Education and the Workforce. "Today, it's become the engine on the train." Between 2010 and 2020, about 2.6 million new and replacement jobs are expected to require an advanced degree. That's an increase of about 22 percent and 20 percent for jobs requiring a master's and doctorate, respectively.

The problem is, says Carnevale, that "there is a disconnect" between what graduate schools tend to produce—the next generation of academics, steeped in research and toiling largely in isolation—and what employers seek. In a December report, the American Chemical Society concluded that "current educational opportunities for graduate students, viewed on balance as a system, do not provide sufficient preparation for their careers after graduate school."

Yes, people with Ph.D. degrees can "provide leadership to drive scientific discovery, inspire inspiration, and solve challenges," says Ron Townsend, executive vice president of global laboratory operations for Battelle Memorial Institute, which manages several federal national laboratories and hires thousands of people with grad degrees. But they generally lack key people skills needed for immediate success on the job. "You're preparing to be a monk at a time when employers want people adept at collaboration, teamwork, and project management, and who know how to communicate and problem-solve," Carnevale says. To that wish list, Townsend would add the ability to explain technical topics to non-
techies and to think and act like an entrepreneur.

To be sure, professional schools in law, business, and education have made skill-building through field experience much more of a priority in recent years. Now, the rest of the ivory tower is awakening to the need. "The world is changing, and deans of graduate schools are looking at career development," says Patrick Osmer, dean of Ohio State University's graduate school. "Now the focus has to be on jobs, which is okay."

Engineering programs like those at Georgia Tech, the University of Cincinnati, and Massachusetts Institute of Technology, for example, are offering graduate students co-op and other experiential learning opportunities (story, Page 42). Short of getting a two-year M.B.A., many would-be business magnates are opting for a master's of entrepreneurship that's focused tightly on the ins and outs of launching a start-up and entails producing a real product and business plan.

Some 70 such programs are offered now, up from 25 in 2003-04, according to the business school accrediting body. The University of Michigan's new entrepreneurship curriculum, a joint venture between the business and engineering schools, should really boost his "potential for success," predicts Steven Sherman, 23, who entered the 12-month program with a bachelor's in chemical engineering and a master's in energy systems engineering. As part of his coursework, he's launching two businesses: a solar leasing outfit that takes high upfront costs out of residential solar energy and a firm selling a home energy monitor to cost-minded consumers.

Meanwhile, schools from State U. to the Ivy League are launching programs similar to the professional science master's in all sorts of other disciplines. "Professional master's programs are one of the fastest-growing areas of education," Osmer says. The hallmarks, as with the professional science master's programs, include strategically using professionals as adjunct faculty (as well as on-the-ground industry contacts), an emphasis on internships (often paid), and capstone projects. Because these tracks may be shorter than traditional programs, they often come with lower price tags.

"The program allowed me to get in the kind of job I have now more quickly," says Meredith Aronson, 24, of the master's in professional studies in sports industry management she completed in December at Georgetown University after weighing similar offerings at New York University and Columbia. Aronson, of Arlington, Va., now works for the President's Council on Fitness, Sports & Nutrition's President's Challenge program; she started there as an intern while still in school. Georgetown's program is one of eight professional master's degrees introduced over the past six years within Georgetown's School of Continuing Studies (SCS). The 16-month curriculum exposed Aronson to adjunct faculty working for such organizations as the U.S. Olympic Committee, the State Department's SportsUnited program, the National Basketball Association, and the Washington Nationals baseball franchise. Coursework included sports marketing, ethics, and sports finance, and a capstone project on addressing obesity and physical inactivity in young people with school-based solutions.

"You've got 10 people who have worked in the industry who you can potentially use as references," says Walter Rankin, interim dean of Georgetown's SCS, whose other offerings include professional master's degrees in journalism, public relations, corporate communications, technology management, and real estate. Rankin notes that the $27,000 price tag is slightly more than half of the traditional Georgetown master's.

All of Valparaiso's master's programs take "a hands-on, practical approach," says Gibson. Valpo's 18-month master's in arts and entertainment administration, for example, is intended to provide artists or performers with marketing and business skills and people with a business background a foundation in the arts. Every program requires an internship or practicum. Most grad students get a grounding in career opportunities outside of academia, how to use an E-portfolio in the job search, and job-hunting etiquette.

Ph.D. candidates, too, are being given much more exposure to the real world. Keck Graduate Institute uses the professional science master's as a platform for candidates pursuing its Ph.D. in the applied life sciences, and offers a separate skills-focused postdoc professional master's degree. Some universities are infusing experiential learning into their Ph.D. programs. At the University of Tennessee-Knoxville, energy science and engineering Ph.D. student Melissa Allen, 46, is studying how to take global climate, weather, and air-quality data and model the impact on communities for planning purposes. At the same time, she is applying that knowledge as an intern at Oak Ridge National Laboratory, getting practice in collaboration, communication, project management, and delivering outcomes on budget. And whereas many Ph.D. students huddle only occasionally with a dissertation advisor, "I have four
mentors," she says. Engineering doctoral students at Purdue University get a shot at a program that supports them in coming up with a business plan and commercializing their research. The University of California-Davis offers science and engineering Ph.D. students and postdocs the option of coursework and a certificate in business development.

Beyond workplace skills, experts say, grad students need much better career guidance. A Council of Graduate Schools commission issued a report last April revealing that just one third of students felt they had entered grad school understanding their career options. Most end up relying on faculty for career advice, but faculty members typically are not well-versed in paths outside academia. The report recommended beefing up career counseling services; connecting students with alumni; and adding opportunities to engage with professionals in industry and government. The report was "a wake-up call" says Debashish Dutta, graduate college dean at the University of Illinois at Urbana-Champaign. "Universities need to prepare graduate students for the full spectrum of careers in the economy."

More help mapping the paths

Some universities are ahead of the curve. Michigan State, for example, has hired a career services officer specifically to assist graduate students with landing nonacademic positions—to help English doctoral students find spots in company communications departments, say, and historians get work in a preservation society. A robust "career services" website allows students to conduct job searches, perform career self-assessments, and build an E-portfolio. The school also brings industry scientists to campus for career chats. Meanwhile, Ph.D. candidates who do want to teach can take a yearlong prep course in the art of managing and inspiring a class. Princeton is stressing counseling focused on developing professional skills; connecting students to alumni; bringing employers to campus for panel discussions, networking, and job fairs; and workshops on résumé writing, job search strategies, negotiation, personal branding, and career transitions.

In another practical step, some schools are slashing the time to a Ph.D. Stanford University, for example, recently encouraged its humanities departments to make doctoral degrees achievable in five years. At the University of Colorado-Boulder, the Ph.D. program in English is being reworked to reduce the time to degree from as many as nine years to five. "Our goal is to move them through," says William Kasuin, chair of the English department. A new four-year German studies doctorate that Boulder plans to introduce will aim specifically at putting grads into global business, diplomacy, and arts jobs as well as education positions. "Germany is one of Colorado's largest international trading partners," says John Stevenson, dean of the graduate school. "This is fertile ground."

To a growing number of people seeking postgraduate education, the most practical route of all is not even a graduate degree. After getting laid off as a banker several years ago, Ian Karakas of Bradenton, Fla., sat for the Graduate Management Admission Test, but decided he "really didn't see the payoff" in getting an M.B.A. Karakas, 49, decided it would be a far better financial move to enroll in a 10-month $4,300 certificate program in medical coding and billing at Manatee Technical Institute. He now works at an orthopedic practice, making a third more than his previous pay, and next plans to get an associate's degree in health information management, where the average salary now runs about $65,000. "For the first time in my life, I feel like I have a decent career path," he says. Of the 1 million certificates awarded annually by community colleges and other career and technical training providers to recognize mastery of specific job skills, notes Carnevale, 15 percent go to people who have at least a bachelor's degree.

Instead of a Ph.D., Kyle Mak pursued a two-year professional bioscience master's at Keck Graduate Institute and immediately landed a job at Amgen.

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