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Wall Street Employers Shine To Financial Engineering Degrees

By Ron Alsop

Just a few years ago, the University of California at Berkeley found its master's degree in financial engineering a hard sell. Wall Street had cut back sharply on hiring, and many recruiters were still fixated on M.B.A. graduates.

"The doors were shut on us at the human-resource level on Wall Street," recalls Linda Kreitzman, executive director of the financial engineering program at Berkeley's Haas School of Business. "I had to go directly to managing directors to get our students placed after we started the program in 2001."

Now, the tables have turned, and it's often the banks and hedge funds that are calling on Ms. Kreitzman. "They have come to realize they really need students with strong skills in financial economics, math and computer modeling for more complex products like mortgage-and asset-backed securities and credit and equity derivatives," she says. This fall, all 58 financial engineering students seeking internships found spots at such companies as Citigroup, Lehman Brothers and Merrill Lynch. Their projects will include credit portfolio valuation, artificial intelligence trading models, and structured fixed-income products.

While the master's of business administration certainly remains in high demand, companies are increasingly interested in other graduate-level credentials, including Ph.D.s and master's degrees in specific business fields. Deutsche Bank, for example, has hired Ph.D. and master of finance graduates in Europe for some time and is now recruiting more in the U.S., as well. "We are continually looking for strong quantitative skills," says Kristina Peters, global head of graduate recruiting. With a master's degree in finance, "there tends to be more applied finance knowledge such as derivatives pricing."

Specialized master's programs have been proliferating lately -- everything from luxury-goods marketing to health-care management -- but the financial mathematics degree is especially hot. Carnegie Mellon University, for example, reports a 21% increase in applications for its computational finance master's so far this year, following a 48% jump last year.

Recruiters will soon have even more financial math whizzes to choose from. The University of California at Los Angeles, Rutgers University and the University of Minnesota are among colleges adding highly quantitative finance programs. At the Sloan School of Management at the Massachusetts Institute of Technology, a master's of finance is in the works, targeted at M.I.T. undergraduates in engineering, math and science. "Hedge funds are already recruiting M.I.T. undergraduates, but they would rather hire them with an additional year of finance," says Paul Osterman, deputy dean at the Sloan School.

Business schools, however, aren't the most common place to find such programs. Many mathematics departments offer the degrees, as do a few engineering schools. At Baruch College in New York, for instance, the financial engineering program is housed in the mathematics department, with courses taught by a mix of academics and professionals from the financial-services industry.

Financial mathematics programs serve as a sort of bridge between traditional business-school graduates and Ph.D. students. "Wall Street used to hire mostly Ph.D.s for their quantitative units, especially Ph.D.s in physics," says Steven Allen, deputy director of the financial mathematics master's program at New York University. "Now, they like our graduates who have more direct training in finance." Mr. Allen notes that America's finance programs "have been a great magnet for the best quantitative talent in the world, from such countries as India, France, China and Korea." Indeed, more than half of the students in quantitative finance programs are typically international.

Carnegie Mellon's master of computational finance degree, a pioneer in the field, is one of the most interdisciplinary. Offered in both New York and Pittsburgh, the program brings together four colleges -- mathematical sciences, statistics, the Heinz School of Public Policy and Management, and the Tepper School of Business, which administers it. Courses cover such topics as stochastic calculus, options and asset pricing, probability, and financial risk management.

Carnegie Mellon is also distinctive because M.B.A. students can earn the computational finance master's with just one extra semester of courses. "Our regular M.B.A. students are getting jealous of the dual degree graduates because recruiters want to interview them first," says Kenneth Dunn, dean of the Tepper School.

Josh Freeland, who will receive both degrees next August, already has accepted a full-time offer from his intern employer, Morgan Stanley. He decided to join the dual-degree program when he worked at a Boston investment firm and the pricing models seemed like "a black box" to him. "I wanted the quant skills to understand how the models work," he says, "but I also need the corporate finance, communication and strategic skills from an M.B.A."

Some M.B.A. and Ph.D. graduates are even returning to school for the advanced finance degrees. Matthew O'Hara earned a Ph.D. in mechanical engineering at Berkeley and worked in Silicon Valley as a research and design engineer. Then he returned to his alma mater to hone his quant skills and refocus on finance. "You can certainly get into a Wall Street firm with a Ph.D., but the financial engineering degree made me a lot more marketable," says Mr. O'Hara, who is now head of securitized credit research at Barclays Global Investors.