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Biotech entrepreneur, educate thyself!

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In recent years, a number of universities have created graduate degrees in biotech and business. Although it's still too early to measure their value, it appears that they are already inspiring debate and some startup activity.

OrthoMimetics

Case study: Andrew Lynn, CMI graduate and OrthoMimetics CEO

A biotech startup created by graduate students recently made it to the finals of an entrepreneur contest in the UK. Cambridge-based OrthoMimetics competed in the finals of the East of England Development Agency's Running the Gauntlet competition. The prize was £1 million (US 1.8 million) in investment funding.

OrthoMimetics lost, but some see their progress in this contest as a win for advanced biotech degree programs. The company arose from a collaboration between students and faculty at the University of Cambridge and the Massachusetts Institute of Technology (MIT).

Dual-degree programs in biotech and business have been popping up around the world for the last few years (see Table 1), and the first students to enroll in them are graduating now. But will the rise in the business of biotech degrees translate into more startups? Some recent graduates who have started their own companies say these programs help, but are (naturally) quick to point out that entrepreneurs are born, not taught.

"Entrepreneurs just do it. They don't study," says Chad Walton, who received a master of biomedical technology (MBT) from the University of Calgary in Alberta, Canada. Curiously, Walton says that "six of the eight students in my class seemed more into the biotech" than the business. "It was just a stepping stone. They went on to med school."

> “Entrepreneurs just go and do it. They don't study.”

Walton, himself, chose to start two companies after graduating from the University of Calgary—ATK Technologies in Toronto, which imports and exports veterinary diagnostics, and Akamai Diagnostics in Hawaii, which makes tuberculosis diagnostic kits. It would appear, at the very least, that Walton expanded and refined his contact network while at the university.

The biotech and entrepreneurial experts *Bioentrepreneur* spoke to say that if these biotech programs are to be successful, they will need to prove that they can expand their students' industry and investment contacts. "If,

indeed, the networking aspect is there, and if someone has an advanced science degree, these programs could be quite helpful," says Greg Weinhoff, a partner at CHL Medical Partners, an early-stage healthcare venture capital firm in Stamford, Connecticut.

Calgary brings in industry experts each week to lunch with the students; Johns Hopkins in Baltimore, Maryland, fills the lecture schedule with influential guest speakers from industry; and CMI introduces students to lawyers and other industry experts who can help them set up their businesses.

Biotech degrees are also helpful because they give students—particularly those from a strictly scientific background—a sense of the key differences between joining a biotech company and starting one from scratch. Less clear is how effective these programs are at teaching entrepreneurial skills. Purists, after all, believe entrepreneurs come by their skills naturally.

"I can certainly see the need and use of [a dual-master's program]," says O. Prem Das, director of technology development at Harvard Medical School. "But I can't see them churning out entrepreneurs. The biotech space is complex and to my mind requires more training than a two-year master's program. Venture capitalists are not going to look at a kid and invest millions of dollars in him."

But Walton, who is 29, says it can happen. So far, he has secured $100,000 for Akamai. It's not much, but it's a start and will allow him to start pitching investors for real money with a measure of confidence and momentum.

> “It's very hard to come across people who really want to be multidisciplined because it's hard work.”

In all fairness to the universities offering these biotech degrees, there is only so much that can be done to prepare a student to build a startup. "Academia is a very different world than business," says Andrew Lynn, one of the Cambridge-MIT students who cofounded OrthoMimetics. But, the schools offering biotech degrees appear to be quick learners and have already made adjustments to bridge this gap. Because the dual degree programs are so small, graduate school associations don't have data on what most students are accomplishing with these hybrid degrees.

Program directors say admitting the right students—those interested in both the business side and the science side—is the key. Johns Hopkins' dual-degree program, for example, no longer accepts students right out of college. Applicants must have at least two years work experience, although that experience can be in any field, according to Lynn Johnson Langer, an associate program chair there.

"It's very hard to come across people who really want to be multidisciplined because it's hard work," says Gina Nicoletti, an associate professor of biotech at RMIT University in Melbourne, Australia. Her university's program started in 2001 after industry leaders and government reports called for better management skills among graduates, she says. "We keep being told, especially in government reports, that we lack management and commercialization skills to exploit our excellent science," she says.

Like most universities around the world, there is a dearth of graduates with the multidisciplinary skills needed to become successful in technology industries like biotech. Das says this is only part of the problem, however. Even a well-trained biotech grad can accomplish only so much in a culture that does not value entrepreneurship. This culture is missing in a great many countries around the world. Says Das, "If you don't have the entrepreneurial environment, academic training is not going to make a difference."

Web links

Websites referenced:

- CMI
- OrthoMimetics
- University of Calgary MBT/MBA program
- Johns Hopkins University MS/MBA

Table 1: Selected dual-degree master's programs in business and biotech

University	Location	Degree[a]	Year Started	No. of Students enrolled
Johns Hopkins	Baltimore, Maryland	MS/MBA	2000	60
University of Pennsylvania	Philadelphia	MB/MBA	2003	15
Macquarie University	New South Wales, Australia	MB/Master of Commerce in Business	2004	18
University of Calgary	Alberta, Canada	MBT/MBA	2004	3
University of Florida	Gainesville	MS/MBA	1993	1
RMIT University	Melbourne, Australia	MBB (Masters of Biotech/Business)	2001	45

[a]MB, MBT, Master of Biotechnology