

Regional Initiatives

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▼ Japan's first biotechnology graduate school will open in April

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Private initiative intends to fuel the nation's biotech startup sector.

Japan's first biotechnology graduate school, the Nagahama Institute of Bioscience and Technology (NIBT), will open its doors in April 2003. Training some 200 students a year, the NIBT aims to reverse the shortfall in skilled life science technicians needed to make Japan's biotech sector competitive with that of the West.

According to the Biotechnology Strategy Council, a government committee set up during 2002 to examine the status of Japan's life science sector, Japan's biotechnology market is worth around ¥ 1,300 billion (\$11 billion)—far less than the biotech markets in either the United States (\$25 billion) or Europe (\$18.7 billion). For Japan to narrow these gaps, the council recommended in December a doubling of research spending and a strengthening of Japan's education and training in life sciences.

Indeed, Japan produces less than a sixth of the number of graduates in biological sciences that the United States does, and the shortage of qualified personnel could endanger Japan's ambitious plans for generating thousands of biotechnology startups. To address the issue, NIBT will offer a four-year training course in 'real world' biotechnology. Courses will be interdisciplinary, with one department teaching genetics, bioinformatics, and the molecular, environmental, and cell sciences.

NIBT was set up by the Kansai-Bunri-Gakuen (Kyoto), an organization that runs specialized training schools in the Kyoto area, but was conceived with help from the sake brewery Takara Shuzo (Kyoto) and the city government of Nagahama. The Kansai-Bunri-Gakuen also runs the Biotechnology College Kyoto, a two-year training college for laboratory technicians. Founded over a decade ago, the college is consistently oversubscribed and boasts employment for all of its 120 annual graduates.

Yasutsugu Shimonishi, NIBT's president and a former director of the Institute for Protein Research at Osaka University, says that institutes such as NIBT may have a more important mission to "fundamentally rethink what we teach our students....The leaders in research come mainly from large national universities, but those who support them are no less important." NIBT students will do brief internships—still unusual in Japan—at local biotechnology companies and will have teachers with industrial experience. The participation of Takara Bio (Otsu, Shiga Prefecture), the biotechnology subsidiary of the brewery, has been crucial to ensuring that NIBT's programs reflect industry needs. To build these connections, there are plans to build a "biotechnology park" around the institute, although attempts to generate such clusters around other research institutes in Japan have failed.

Until 1999, it was effectively illegal for Japanese academics to work for commercial enterprises, thereby stifling the genesis of entrepreneurial startups. The restrictions on intellectual property transfer to industry, combined with local venture-capital aversion to investing in high-risk research, further compounded the problems. Many of these problems have been alleviated¹, but cultural change is still needed. In Japan, some large consulting firms have now started to offer seminars in the fundamentals of management and finance to bioscientists with entrepreneurial ambitions.



Japan hopes to grow a workforce for its burgeoning biotechnology industry. ©Paul Barton/Corbis

From next April, the Ministry of Economy, Trade and Industry (METI) will offer \$5 million in aid to create dedicated courses for bioentrepreneurs. "The lack of skilled management in the biotechnology sector is still a major bottleneck in Japan," says one METI official. "Our goal is to change that."

References

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