Start-up goes back to school

Biotech firm's strong ties with NU prove mutually enriching

By Jon Van
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Entrepreneur Joe Moskal believes that finding an effective treatment for an affliction such as memory loss is the first step toward building a successful biotech business.

Just as important is a good academic home, said the founder of Nyxis Neurotherapies Inc., a privately held firm affiliated with Northwestern University's bioengineering department.

But Moskal's affiliation with academia runs counter to how the process usually works, where professors who make discoveries usually start a company to commercialize them. In Moskal's case, he is bringing Nyxis to Northwestern, where he will teach and help other scientists with their research.

"Most academics who commercialize their work do what you might call 'science for business,'" said Moskal. "What I'm doing is more like 'business for science.'"

Nyxis' association with Northwestern illustrates the symbiotic relationship between academia and small tech companies. Even though Chicago isn't a major biotech center, the concentration of research universities here supports a vibrant biotech community.

"It is a mutually enriching arrangement," Moskal said. "Northwestern offers us the value of its reputation. We supply university researchers with biochips so they can do work they couldn't get at without our technology."

Moskal isn't new to academia. He has served on the faculty of the Albert Einstein College of Medicine and held various adjunct affiliations with Northwestern while founding and nurturing his company since the mid-1990s. But as his company's research has gotten closer to the market, he has tightened his Northwestern ties.

"This is unusual," said Lydia Villa-Komoroff, Northwestern vice president for research. "At Northwestern we're always thinking of ways to increase entrepreneurial activity for those who want to do that. Having Joe come on the faculty—he's an example of what it takes."

Moskal has developed a technology platform using monoclonal antibodies that can identify substances that work in the body to modify neurologic function. His company has developed synthetic chemicals that mimic natural peptides that are released in the brain and affect mood and behavior.

Tests in rabbits suggest that Nyxis chemicals can block nerve pain, enhance learning, slow memory loss and protect nerve tissue during strokes. The technology may also yield substances that can treat depression and other affective disorders, Moskal said.

"Our first tests will be of pain treatments," said Moskal. "That's easiest to test because it's pretty clear: if you feel pain or not. Testing whether your learning has improved is more subtle and difficult."

"Once a drug proves itself in human tests, Moskal hopes that will demonstrate the value of his pioneering approach to drug discovery, and Nyxis will receive offers from investors and potential partners."

In the meantime, the company's technology platform can advance academic work done by Northwestern researchers. Dr. John Disterhoft, a Northwestern physiologist who has collaborated with Moskal, said that the company's close ties with the university will help.

"There's a practical reason for this kind of relationship to develop," said Disterhoft. "The National Institutes of Health encourage this by providing grants especially for small-business collaborations with universities. That's an engine that drives our economy."

Another plus is that Nyxis' research fits well with topics of interest to academics.

"Joe and his colleagues are developing compounds that might affect learning," said Disterhoft. "We know a lot about learning and how to screen whether a compound is effective in that realm."

There is also tech transfer from the company to the university.

"Joe has a really cool robotic system for making chips that allows one to make microarrays," said Disterhoft. "Not many academic labs have access to that kind of technology."

An emeritus Northwestern professor, Max Epstein, said that he was among the first faculty members to form a start-up company nearly 20 years ago when the university opened a research park for start-ups.

"I started a business," said Epstein. "I lost money but it was a lot of fun. In the university you do a lot of research and never see anything come of it beyond a few papers you write for journals. Otherwise, it sits on the shelf. There's no great satisfaction than to see it go public, and the only way that will happen is to commercialize it."

"Like winning the pennant," Moskal said.

Moskal said that Chicago's place in the biotech world right now could be compared to an expansion team in sports.

"The big franchises are already established on the coasts, and we're like an expansion team," he said. "We're like the Arizona Diamondbacks. But if just one or two small biotech companies here hit it big, we'd be like winning the pennant. Suddenly Chicago biotech would get recognition. That's not the kind of thing anyone can plan or predict. But it could happen."