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Biotech pioneers putting R.I. on map

01:00 AM EST on Tuesday, December 15, 2009

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Chief scientific officer Dwaine Emerich holds a bottle of Cellarium, InCytu's vaccine for late-stage melanoma.

The Providence Journal / Kris Craig

Deep within a nondescript building in Lincoln, researchers are using a piece of Harvard-developed technology to create a tiny skin implant that has

shown it can help eliminate certain kinds of melanoma.

And the science world is taking notice.

The discovery by the company InCytu was written up in a major industry journal, sparking a flurry of national press. Part engineering, part immunology, the sponge-like embedded disk causes a natural reaction that trains the body's immune system to attack tumors.

The U.S. Food & Drug Administration is reviewing the findings for use in clinical trials, and InCytu CEO Alfred Vasconcellos is in talks with major companies on possible partnerships.

Theirs is the kind of breakthrough that biotechnology scientists in windowless labs all over Rhode Island work years to see happen.

"It's a little like becoming a musician," said Vasconcellos. "Everyone says 'Hey, did you hear that great new musician?' But what they don't know is that person has been playing in coffee shops for 5 or 10 years. It's a lot of hard work."

As political leaders herald biotechnology as the state's next big industry and its knowledge economic district as one to watch, most Rhode Islanders don't know much about the field, beyond fancy buzzwords and the long-range prospect of dollars and jobs.

The reality for the vast majority of these ventures is years of research and sweat, of frustrating dead ends and funding woes, tempered by the occasional "aha" moment, or announcements like the one Monday that Eli Lilly has identified Rhode Island as one of 70 biotechnology sites that it will keep an eye on to evaluate the therapeutic potential of work in labs here.

But just getting a research enterprise off the ground poses its own challenge.

It starts with a scientific idea, often developed in an academic lab. A researcher comes up with a concept that merits further study and the search for seed-funding begins. Typically, that early infusion of cash comes from a federal grant, or sometimes from the state. Each year, the Slater Technology Fund and the Economic Development Corporation's Science and Technology Advisory Council, taxpayer-backed pools of capital, dole out funds to a handful of ventures.

That money tends to cover setup costs in those cash-starved early days—the resources needed to rent office space, buy lab equipment and hire a small staff.

Even getting to that point can be hard, however. Most scientists don't have much experience in business, meaning they don't always know how to pitch their idea or where to look for capital.

Launched this spring, the Brown Center for Entrepreneurship and Innovation is attempting to bridge that gap, providing basic business workshops. "The challenge is to get people to the point where they can tell a compelling story to an investor about their work in hopes of getting funding," said Brendan McNally, the center's director.

Once that early money is in hand, "it can take two to four years or many more to get to the clinical-trials point," said Kathie Shields, director of the Tech

Collective, an industry group. “One of the challenges in those years is that you have to have seed money and [investor] money to carry you through those cycles. There can be steps forward and back, and that can be frustrating.”

Though full of headaches, those fledgling years can also be the most rewarding for a scientist because the primary focus is still academic, said Moses Goddard, a veteran Rhode Island researcher and entrepreneur, whose latest venture, CytoSolv, involves developing proteins that may speed the healing of skin wounds.

Even when a researcher makes a significant discovery, it can take time to recognize it for what it is.

Two years ago, Annie De Groot, who heads the research company EpiVax, set off for a conference, irritated that she’d hit a wall in her research on antibodies. A protein she was working with wasn’t eliciting an immune response. Those frustrations quickly led to a eureka moment: the lack of reaction had the potential to help with syndromes in which the body’s immune system turns on itself, such as arthritis.

“At the conference, we realized this is potentially a big discovery, so we came home and started synthesizing and testing,” De Groot recalls.

Two years later, EpiVax has announced an agreement with Swiss pharmaceutical company Roche. It is a small step in the marathon race to create a new miracle drug, and Roche is sure to enter into similar agreements with dozens of other researchers. But for De Groot, the deal’s undisclosed payout will mean unloading debt, hiring more scientists and having funding to continue research.

Like any high-profile partnership, it will also give a boost to Rhode Island’s entire biotechnology community.

The announcement this week from Eli Lilly about tracking research projects here offered a similar group boost. It’s a way for Lilly to find out what kind of research is taking place here and for local researchers to get feedback about the value of their ideas, while putting the Rhode Island name on the map. Other tracking sites include Harvard University, Princeton University and the University of Sydney.

Any time a major corporation takes an interest in Rhode Island’ biotechnology, it creates a sense of momentum for the entire industry, said Horan of the Slater fund. Individually, these are minor developments, but together they start to build a brand.

“It takes time,” he added. “The Silicon Valley and the Boston biotech hub didn’t get built overnight. It took decades. Here in Rhode Island it’s going to take time.”

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