

Stewards of invention

CU's Technology Transfer Office helps ideas become companies

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Steven George's investigations and discoveries are typically small scale — in the nanometers to be exact.

About 10 years ago, the University of Colorado professor thought much bigger.

"I wanted my research to have an end-goal of a product," he said.

His surface chemistry studies joined with colleague Alan Weimer's particle processing research. The result is what Broomfield-based ALD NanoSolutions hopes to hit the marketplace with during the next 18 months.

Between start and finish sits the CU Technology Transfer Office — an entity that identifies, protects, patents and licenses these ideas and technologies to the business sector. Since 1994, more than 60 companies — including notable locals Replidyne Inc., Phiar Corp. and CDM Optics — were started based on CU inventions. It has licensed drugs that are in the process of clinical trials to biotechs such as Amgen Inc., GlobeImmune Inc. and Merck & Co. Inc.

"It's one thing to have an entrepreneurial business community," said David Allen, associate vice president for technology transfer. "It's another thing to know how to connect to it."

The births

What technology transfer is now goes back to the Bayh-Dole Act in the early 1980s. The law clarified the relationships and regulations involved with bringing research results to the public sphere. Universities, including CU, subsequently ramped up their efforts, Allen said.

However, it took a number of years for the ideas, experience and funding — and the relationships with the faculty — to develop and line up, he said.

"It wasn't terribly unified, which didn't make it particularly functional," he said.

In 2002, when Allen came on board, the Technology Transfer Office embarked on a strategic plan to mitigate the issues it faced. The plan included increasing the number of inventors, improving the licensing practices, clarifying intellectual property guidelines, adding professionals, such as attorneys and patent specialists, to the staff, and possessing more of a community presence.

Through this year, the center has had an increase in inventions, patent applications, licenses, revenue and startups. For fiscal 2005, the office garnered \$21.7 million in royalty revenue, up from the \$5.8 million during the prior year.

Nine companies launched in 2005, the same amount expected for this fiscal year.

The companies created out of the program — which total about 60 companies since 1994 — are a boon to the

local economy, Allen said.

"Almost all have stayed here in Colorado, and grown in Colorado," he said.

A good majority have stayed in Boulder and Broomfield counties as well. Some examples include the Louisville-based Replidyne, which recently filed for a public offering; Boulder optical technology company CDM Optics, which was acquired by OmniVision Technologies Inc. for \$30 million; Boulder-based Phiar, which develops high-capacity wireless technology and inked a partnership with Motorola; and Louisville-based pharmaceutical RxKinetix, which has a drug in the third phase of clinical development.

Five years after being founded by the inventors of the technology it is based on, Phiar has grown up. The company recently consolidated its scattered operations into one facility and brought on Bob Goodman, a 26-year high-tech veteran, as chief executive officer.

"It's very powerful to be able to say that the technology came out of CU," Goodman said. "That's almost a check on the report card for people who are doing due diligence."

Even after it spun off, ALD NanoSolutions has been able to benefit from its close ties with CU, said Karen Buechler, the company's president and chief technology officer, who co-founded the company with George and Weiman. George and Weiman continue teaching and researching at CU.

"I think the strengths of the relationship that we have to the university (are) the access to the ongoing development and the ongoing research that's going on here," Buechler said.

Companies such as RxKinetix have used the relationship as a springboard. Formed in 1998, RxKinetix gained exclusive licenses to a couple of different drug delivery technologies. During its beginnings, RxKinetix's development was helped by the interaction with the Technology Transfer Office and the CU faculty, said Joanna Money, vice president of corporate development for the business.

"The technologies are still an important part of our core competency," she wrote in an e-mail. "However, we have transitioned from being a drug delivery company more into a drug discovery company."

The company's drug, which fights a side effect of chemotherapy, is now in the third phase of a clinical trial.

The cycles

While it is the mission of CU BioServe Space Technologies to develop products through life-science research conducted in space environments, it started branching out a little bit a few years back. That's when it got involved with the Technology Transfer Office on invention disclosures and patenting.

"It's not our primary mission to patent technology within the center ... But it's important and it's a good thing for us to try to do," said Stefanie Countryman, business development manager for BioServe. "It's a way to try to diversify revenue in the center."

No patents have been granted yet for the BioServe center. A patent that was filed five years ago for an invention is still in the application process.

One of the ways the Technology Transfer Office discovers these technologies is through communication with faculty members such as Countryman. When a technology is identified, it has to pass three main criteria from the Technology Transfer Office: Is the invention patentable? Is it technologically feasible? Is it commercially feasible?

If the answers are "yes," it moves onto the point where other entities, such as the Boulder Innovation Center, become

involved.

The 1-year-old Boulder Innovation Center has become another cog in the transfer wheel.

Its job: Help in the refinement of the ideas and bring the business community to the table.

That community includes a collection of serial entrepreneurs, consultants, attorneys, accountants, venture capitalists and bankers, said Doug Collier, the center's executive director.

"The one problem with launching a business on a foundation of university technology is that the most important and critical element of an entrepreneurial venture is the entrepreneur," Collier said. "In tech transfer, there is no entrepreneur, it's just the inventor."

Collier's group assesses various aspects of the technology and partners with university groups, such as CU's law school and the Robert H. and Beverly A. Deming Center for Entrepreneurship, to develop business plans and identify market potential.

Last year, the Boulder Innovation Center took on about six technologies. Of that cluster, about half were determined not to be commercially ready. Out of those, one technology was put into the business planning class. The result was Locomotion Inc., a physical therapy device company.

The numerous steps in the screening and developmental processes of these startup companies, Allen said, strengthen the finished product.

"You can see the companies that come forth are more likely to be sustainable companies," he said.

What also comes forth is a boost for the university, he said, noting how the program creates a cycle of "Virtuous Research."

Grants fund research, which in turn produce intellectual property, publications and technologies. Those generate licensing revenue and an increased reputation that fuels more funding, he said.

The successes prove favorable for the university, said R.C. "Merc" Mercure, a CDM co-founder who also was a co-founder of Ball Aerospace & Technologies Corp.

"It kind of signals to the outside world that it's a rich source of innovation," he said.

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