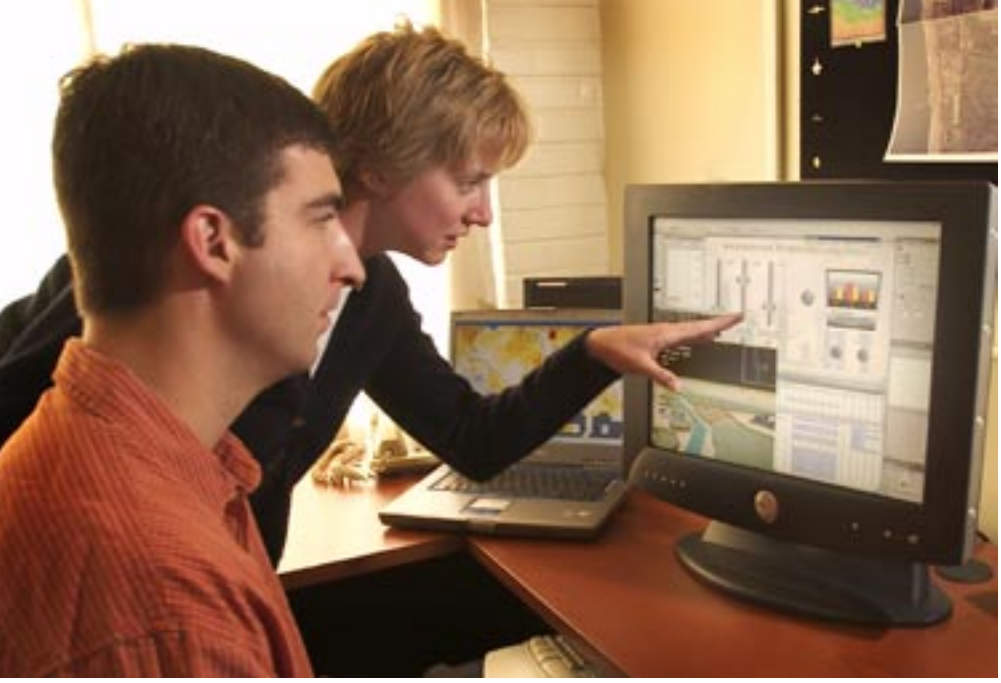

Where the Good Things *Grow*

Breakthroughs at the University's business incubator and research park create new solutions for technological, environmental, and economic problems

Above left: Recent Iowa computer science graduates Shayne Gelo and Kerri Price engineer software for research exhibits that their Oakdale Research Campus-based company, Digital Artefacts, is constructing for the National Academy of Sciences. Right: Louis Licht, chief executive officer of Ecolotree, links scientific research with entrepreneurship.

Opposite page: The Center for Biocatalysis and Bioprocessing is one of four UI labs at Oakdale. Biocatalysis is an environmentally friendly process that uses living catalysts such as enzymes and microorganisms to produce new synthetic compounds through chemical reactions. Biocatalysis research may revolutionize the production of everything from agrochemicals to nutritional products, pharmaceuticals, and other valuable chemicals normally derived from fossil fuels. "Biocatalysis is being practiced in enormous scale in Iowa in well-established industries, producing high-fructose corn syrups, lysine, monosodium glutamate, and other products obtained from corn," says John Rosazza, professor of pharmacy in the College of Pharmacy and director of the center. "Iowa is blessed with an abundance of renewable feed-stocks from which other value-added products can be produced by this technology."

Ask Joan Severson what she loves about her work, and you're likely to get an earful—an appropriate response from the president of a start-up company that, in only three years, has made a name for itself in the software industry.

"We're keeping busy," Severson says. "We've had more than 100 percent growth every year. We don't have a bank loan or an investor, so this growth is based on real work."

Severson and her colleagues work from a suite of nondescript offices in the Technology Innovation Center on The University of Iowa's Oakdale Research Campus in Coralville. Beyond their windows is a semi-wooded view of that part of the Iowa City area where, in the warm months, the Iowa countryside seems to burst with abundance—rolling green fields stretching beyond the edges of town, rows of corn and other crops rippling in the wind. For Severson, the place spills over with a kind of fertile thrill, an excitement that seems to match and accommodate her enthusiasm.

"This is a friendly place where everybody is trying to think differently," says Severson, a 1998 UI computer science graduate who helped found Digital Artefacts L.L.C.

The business has roots in Severson's academic experience at The University of Iowa. When she enrolled in graduate school at Iowa, Severson wanted to find a way to keep doing the creative work that had intrigued her as an undergraduate research assistant. She found that classmate Shayne Gelo, a 2000 computer science graduate, and College of Liberal Arts and Sciences computer science professor James Cremer shared her creative instincts. Together, they formed Digital Artefacts in 1999.

"I didn't even need a line of credit when we started the company," says Severson, who had no prior business experience. "All the resources a small technology company could need for its infrastructure were built into the Technology Innovation Center, and we could just take advantage of them as we moved in. We had everything at our fingertips, from fax and copy machines to state-of-the-art computer equipment that we could rent on an as-needed basis."

Gelo, Severson, and Cremer employ six staff members in their offices at the University's Technology Innovation Center. They're specialists in biomedical and electrical engineering and computer science who, like Severson and Gelo, were looking for ways to do the creative work they love without having to leave the state. They have

projects under way in the new museum of the National Academy of Sciences in Washington, D.C, where they're creating animations and computer-based interactive displays for new exhibits.

"These guys are talented," says Tom Bauer, associate director of the Technology Innovation Center and Oakdale Research Park. "They are definitely off and running."

They are running one of the 16 tenant companies based in the Technology Innovation Center. Both the name of a building and a UI program on the Oakdale campus, the Technology Innovation Center works with fledgling entrepreneurs who use advanced technology.

"Our tenants are often new and small," Bauer says. "Our objective is to help them grow, develop useful products, and achieve their business goals."

Reaping the Rewards

University of Iowa researchers are not the only ones who benefit from working in the park. According to Bauer, the Technology Innovation Center is a business incubator that welcomes applications from new ventures using advanced technology, and the affiliated Oakdale Research Park appeals to growing research-and-development companies seeking a sustained relationship with the University. The San Diego-based Apovia, for instance, came to Oakdale Research Park for the chance to work closely with the Center for Biocatalysis and Bioprocessing, one of four UI laboratories at Oakdale. (The other three are the Center for Advanced Drug Development, the National Advanced Driving Simulator, and Oakdale Medical Research.)

The state is reaping many rewards for its investment in the Technology Innovation Center, research park, and Oakdale laboratories. They include job creation, wealth, building stronger communities and tax bases, and career opportunities for UI graduates who won't have to leave the state to seek good-paying jobs, according to Louis Licht, chief executive officer of a fast-growing environmental management company. The Oakdale campus is essential to emerging companies, small or large, that hope to stand a chance, Licht believes.

Licht, who received a doctorate in civil and environmental engineering at Iowa, owns the North Liberty-based Ecolotree, Inc., a company that had its start as a fledgling company in the Technology Innovation Center. His company's product: poplar trees.

"It's a simple, low-cost idea," Licht says. "The plants are natural biochemical reactors that work amazingly fast."

Licht learned about the reactor power of poplars during his studies as a UI assistant research scientist in the 1980s. He and Jerald Schnoor, professor of civil and environmental engineering in the College of Engineering, learned that dense stands of deeply planted hybrid poplar trees dramatically reduce toxins in soil. At the Technology Innovation Center, Licht developed the technology into an elegant solution to thorny environmental problems. The stands of trees detoxify herbicides. That makes them the perfect foil for runoffs from both city parking lots and farmers' fields. They also help stem soil erosion and provide wildlife habitats. And Licht thinks they could yield rich returns as Iowa's next cash crop.

"Almost anything can grow in Iowa's rich soil," says Licht, whose current projects include a harvest experiment of some 10,000 acres of poplars that could be grown for industrial use. "For too many years, Iowa's agricultural business has relied on corn and soybeans. It's time to think about new agricultural products. Poplar trees grow fast—as much as 15 feet from seedlings in two years—and with little care. They're a natural."

Licht believes that entrepreneurship and some scientific research can go hand-in-hand.

"With help from places like the Technology Innovation Center and Oakdale Research Park, entrepreneurs in new technologies can supply the basics that furnish many needs," he says.

His own company has reached a tipping point, Licht thinks. He and his colleagues from Ecolotree recently consulted with the Army Corps of Engineers about a landfill problem in Chicago and lent their expertise to an Indianapolis-based Fortune 50 business.

"It's taken 13 years to build our business," Licht says. "But there's no doubt about it: UI researchers and the Oakdale campus have been essential to our success. Without them, we wouldn't even be here talking about these ideas."

by Gary Kuhlmann