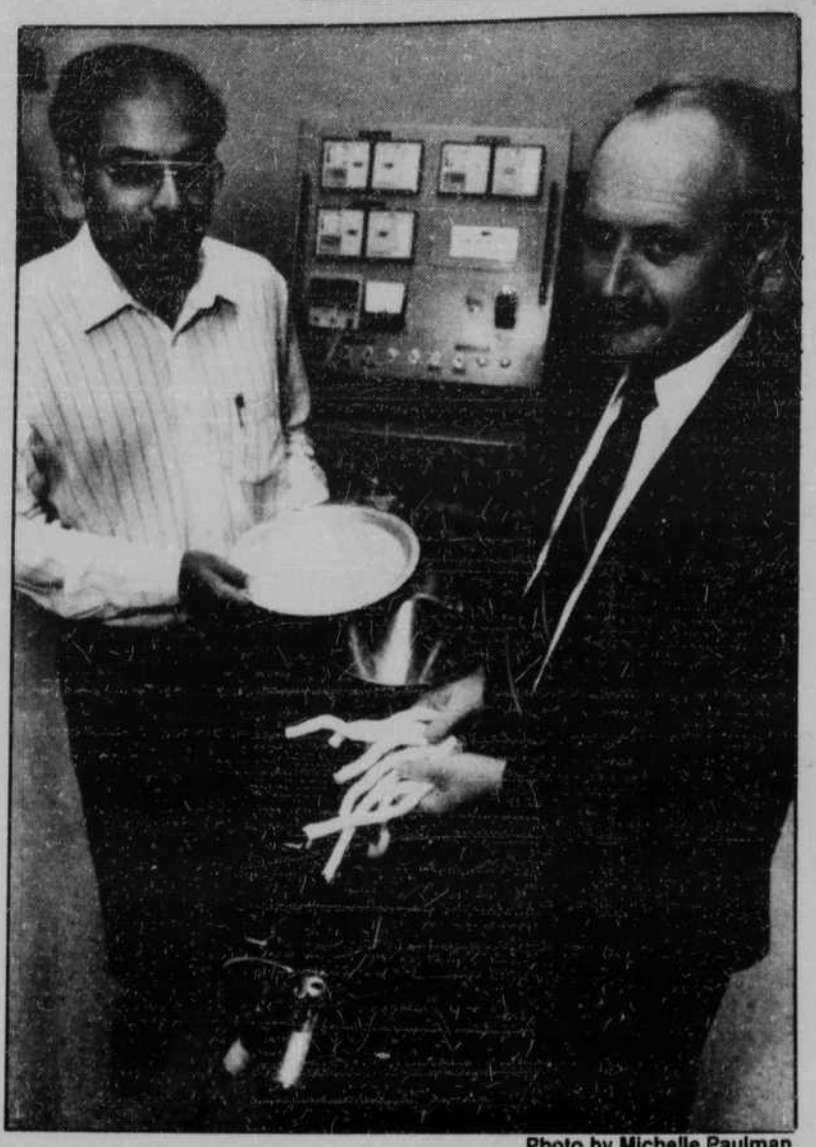


Photo by Michelle Paulman

Chinna Swamy (left) holds the "before" mixture of corn starch and plastic while Milford Hanna holds the "after" product, a foam plastic.

University researchers practice good business by getting patents

University researchers made a discovery a few years ago, but it wasn't in the lab.

They discovered that foreign competition was using their university research to market products — and making money from it.

Bill Splinter, University of Nebraska-Lincoln interim vice chancellor for research and dean of graduate studies, said the majority of research done at universities before 1985-86 was being published, but not patented.

So, foreign producers were beating United States' manufacturers to market, even though the discoveries were being made at American universities.

Then, about five years ago, federal research labs were allowed to patent their work, and universities quickly followed suit, Splinter said.

"It's just obvious good business," he said. "You just give away your idea if you don't have it covered (patented)."

But the road to getting protection from a patent is long.

"You don't just generate a patent overnight," Splinter said.

It takes two or three years of going "back and forth" between the researcher and the patent lawyer and from $5,000 to $10,000 to get a patent, said Henry Baumgarten, interim associate vice chancellor for research.

In 1986, three UNL researchers submitted disclosures to Splinter's office, no patents were filed, and one patent was issued that had been filed in an earlier year.

So far in 1990, 12 disclosures have been submitted, one patent has been filed, and three patents have been issued.

Disclosures are made by researchers to Splinter's office. They include what the idea was, the date that it was conceived, who was involved and any potential marketing ideas.

The research office then consults with a patent attorney or the patent committee made up of faculty members and experts to determine if a patent should be filed.

The NU Board of Regents must give final approval before a patent is filed, Splinter said.

But Baumgarten said patents are worth the time investment. Researchers have a better chance to get money for continued research, and the state benefits economically if a patented product ends up being marketed.

Splinter said the university also benefits from patents.

When a UNL researcher makes a discovery, the NU Board of Regents pays for the patent. Then, any royalties received from the work are split between the university, the researcher and the researcher's department, Splinter said.

In 1986, the university received $86,420 in royalties. To date in 1990, that figure has reached $106,420.

Companies pay royalties to the university for use of inventions, like a potting mixture for growing plants that was invented by Sotero Salac, associate professor of horticulture.

Salac received a patent for his alfalfa and wheat straw mixture in 1988.

The mixture adds biomass and micro organisms to the soil. Currently, a Nebraska company is trying to market Salac's invention, and the university will receive 3 percent of the royalties, Salac said.

Another researcher at the university who is in the early stages of marketing and patenting is Milford Hanna, professor of biological systems engineering and food science and technology, and director of the Industrial Agricultural Products Center.

Hanna and Chinna Swamy, assistant professor of biological systems engineering, have developed a foam plastic made of 60 percent corn starch, 20 percent polystyrene and other chemicals.

The plastic is like those used for packing or in fast food restaurants and in grocery stores to hold meat, Hanna said. Other foam plastics typically are 100 percent polystyrene, he said.

The two researchers applied for a patent about one year ago and now are negotiating with a corporation that wants to use the product, he said.

Hanna said the invention has advantages over other foam plastics. Because the invention is made with corn starch, he said, it could provide a large market for Nebraska corn growers.

Also, in an environment where microbes and oxygen are available, corn starch will break down faster than polystyrene, he said.

Fred Wagner, professor of biochemistry, and two other researchers have developed a process that measures mercury levels in water.

Wagner, Sheldon Schuster from the University of Florida, and Dwane Wylie, UNL associate professor of biological sciences, have applied for a patent for the process.

Their pocket-size kit detects mercury levels to 0.2 parts per billion in one tenth of a milliliter of water, Wagner said. The most common process used now is sensitive to only 2 parts per billion in 10 milliliters of water.

The three researchers also hope to develop a testing method for lead, he said. Currently, the researchers have patents pending on four processes.

But Splinter said patenting isn't always the way to protect researcher's work. Some research is sold as a trade secret.

A trade secret is sold to a manufacturer but not to any of its competitors.

Subramaniam Srikumaran, associate professor of immunology in the veterinary science department, has sold four cell lines as trade secrets.

The cell lines are developed in the lab to help study the interaction between host cells and disease causing organisms, Srikumaran said.

"The sale of these (cell lines) is just a byproduct of the work" that is done in the lab, he said.

Most recently, Srikumaran sold a cell line that can detect bovine herpesvirus 1 (BHV-1) within five to seven days of infection, he said. Before, detection took at least seven days.

BHV-1 is a disease in cattle that is commonly called "shipping fever" and costs the cattle industry more than $200 million annually, Srikumaran said.

The cell line was sold to a European company that has developed a diagnostic kit, and he said the university will receive 5 percent of the royalties from sales.

Splinter said trade secret and patenting activity at UNL has been accelerating, but isn't near the level of some universities such as the University of California at Berkeley.

He said his goal is to double the amount of grants by 1995 and develop Nebraska industries with the help of UNL research.

In an effort to reach those goals, the research and graduate studies office has been trying to match potential financing sources with researchers; sponsoring workshops to help researchers learn how to write grant proposals; and offering travel funding for researchers to meet with potential backers, Splinter said.

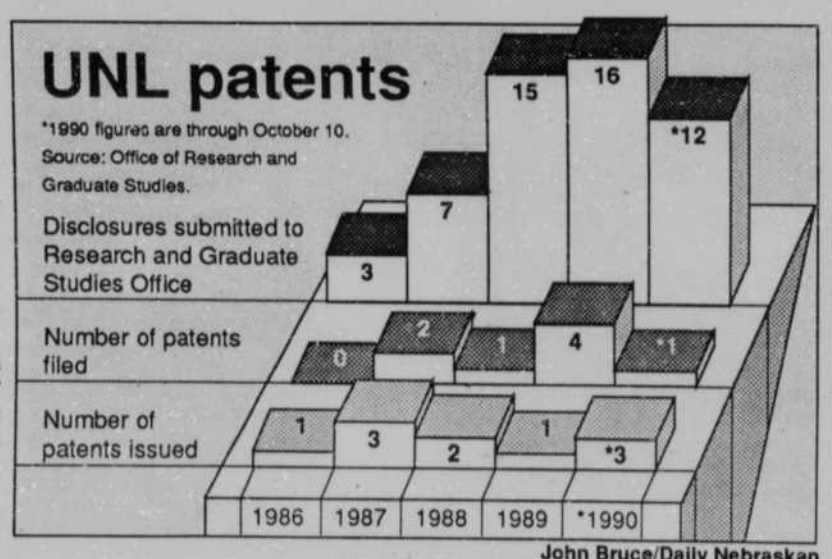
Currently, UNL's expenses to fulfill these goals exceed incoming royalties, he said. Most of the contracts were written just recently, and there usually is a two- or three-year time lag before any returns are seen, Splinter said.

But once the royalties do come in, he said, a major portion typically goes back into research at the university.

Splinter said that when the shift to patenting started, researchers finally had discovered "that the foreign competition could read just as well as we could."

Then, he said, they knew it was time to protect their property.

— Darcie Wiegert
Senior Editor



John Bruce/Daily Nebraskan