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## Proteomics researcher Mark Chance gets help to take technology from bench to bedside

September 11, 2009 by [Mary Vanac](#)

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Mark Chance

CLEVELAND, Ohio — Mark Chance learned to love science by hanging around the University of Pennsylvania laboratory of his uncle, [Britton Chance](#).

The elder Chance is a biophysicist who is well-known in scientific circles for his research that [uses infrared light to detect breast tumors](#) and hemorrhages deep within human tissue.

Mark Chance followed in his uncle's footsteps in some ways: He's also a biophysicist, and he applies his science to finding solutions for human disease. But the nephew's emphasis is on proteomics — the large-scale study of the structures and functions of proteins in humans that promise to lead to breakthroughs in areas like Alzheimers, heart problems and the detection of diseases at such an early stage it will be much easier to treat them.

On Thursday Mark Chance, a physiology and biophysics professor at [Case Western Reserve University School of Medicine](#), accepted a \$25,000 grant from the [Innovation Fund](#) of the Lorain County Community College Foundation. Chance plans to use the money to help his company, [NeoProteomics](#), commercialize his discovery of a protein marker that can warn diabetics of future kidney disease.

The grant helps NeoProteomics bridge the so-called Valley of Death: the time between research and development, and a move into the marketplace when companies often find it difficult to get funding.

Chance, who also is director of the [Case Center for Proteomics and Bioinformatics](#), belongs to a generation of academic researchers who believe their discoveries find their highest purpose in helping patients. He got interested in proteomics as the [Human Genome Project](#) wound to a close in 2003.

“I sort of watched from the outside from 2000 to 2003, and started getting involved about six years ago,” Chance said.

The Human Genome Project identified the thousands of genes in human DNA. [All human diseases have a genetic component](#), so the project was a catalyst for the multi-billion-dollar U.S. biotechnology industry, fostering the development of new medical applications, including diagnosing and predicting disease.

Chance wanted to use outcomes of the genome project to better understand the mechanisms of proteins in human cells so that he could better understand the underlying mechanisms of disease. “I saw the opportunity ... to develop new diagnostics” that could predict future disease, he said. So he went to officials

at [Albert Einstein College of Medicine of Yeshiva University](#) in Bronx, New York, where he was a professor and researcher.

He told officials there they should build a clinical proteomics center. But the timing wasn't right, officials told Chance.

Soon after, Ralph Horowitz, former dean of the medical school at Case, cast a nationwide net for researchers who could help the school — and Cleveland — grow by licensing their discoveries to companies that could take them to market, said [Krzysztof “Kris” Palczewski](#), professor and chair of the Case Department of Pharmacology.

In the early 2000s, Case and other research institutions in Northeast Ohio realized they weren't getting a good return on their research dollars, said Glen Gaughan, a CEO-in-residence at [BioEnterprise](#), the region's bioscience company developer. So the institutions staffed up their technology transfer and commercialization offices, and helped create non-profit developers like BioEnterprise, said Gaughan, a pharmaceutical company veteran.

At the time, Case already did a lot of proteomics work, but it was spread out all over campus, Palczewski said. “[Chance] came four years ago and quickly established one of the premier proteomics centers in the country,” he said. Chance and the 50 investigators at his proteomics center work for Palczewski's pharmacology lab and for other Case labs and centers.

“Today, the operation is run at a very high speed, a very high quality,” said Palczewski, who also counts Chance as a friend. “Hundreds of investigators are benefiting from that ... it allows us to have in our pocket proteomics services from one of the best places in the country.”

In the four years he's been in Cleveland, Chance has created dozens of research jobs and lured more than \$60 million in federal grants to the proteomics center. That doesn't count millions more dollars in grant money that Chance helped other Case researchers win.



Chance's company, NeoProteomics, is a result of his work at Case. Chance started the company in 2006 to commercialize the disease biomarkers he discovered. He sees himself as the bridge between the lab and the business, focusing on the functions of proteins.

“The hard part has been picking the right ones that look like they might have commercial potential,” Chance said. “A lot of the projects we do have tremendous basic science potential ... but most of them are too far away from commercialization.”

Chance and his NeoProteomics collaborators — no employees yet, but consultants and service providers — are focusing on three biomarker projects. Chance said two of the projects related to bone diseases are too immature to talk about. “The one on proteomics in urine has gone the most rapidly,” he said.

That project has identified a protein in the urine of diabetic patients that could predict their likelihood of developing kidney disease up to three years before they get it. About 100,000 Americans are diagnosed with

kidney failure each year, according to the [National Institutes of Health](#). Diabetes is the most common cause of kidney failure, [accounting for nearly 44 percent of new cases](#). But diabetics who are identified by the marker can be treated to forestall kidney failure, Chance said.

Chance has tested the marker in dozens of diabetic patients. He wants to use the Lorain Innovation Fund grant to test the marker in hundreds of patients, he said. If the tests show the marker is a valid measurement of patient risk, Chance hopes to commercialize the marker as a test kit used by hospitals and independent labs.

The Lorain money also will help refine NeoProteomics' business strategy, said John L. H. Schenkel Jr., president of the company. Schenkel, who is Chance's nephew and is working as a consultant to the company, sees his role as "forming the company's structure, developing its marketing plan, putting the business around the discoveries that have been made," he said. "We look at this as a way for us to get some relevant and timely information into the hands of patients and doctors, and try to find the quickest way to get that to the marketplace."

Chance handed over the CEO reins of NeoProteomics to Schenkel earlier this year so he could focus on his first love. "I've now changed my role to chief scientific officer," Chance said. "That's been helpful. I can focus my time on the creative scientific ideas that might be viable."

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