

Recovery Act

Autos to accelerators

Physicist Terry Grimm has a vision for Lansing, Michigan.

In a town haunted by the remains of fallen automobile plants, his company and others like it are hiring workers to put their car-manufacturing skills toward building particle accelerators.

"People question whether manufacturing is going to go away in this country," Grimm said. "That's not the case. There's enough high-tech industry that needs it. We need the same expertise that the auto industry required."

Fermilab used funds from the American Recovery and Reinvestment Act to hire Grimm's company, Niowave Inc., to build [superconducting radio-frequency cavities](#) in cooperation with Indiana-based Roark Welding & Engineering Co.

But these days, people use accelerators for [more than particle physics](#). Medical centers use accelerators to create radioisotopes or X-rays for cancer therapy. Electron beams from accelerators can sterilize medical equipment or food packaging. Industries use free-electron lasers to process and identify chemicals. The Navy is interested in using those lasers to defend ships.

"The technology is really taking off," Grimm said. "We can't keep up with everything with our current staff of 50. We're looking at expanding to an additional facility."

Niowave is collaborating with 10 companies in the area, most of them automotive parts suppliers that have expanded into the high-tech industry.

Leaders in these companies foresee a possible statewide move from "autos to accelerators," their proposed new catch phrase for Michigan industry.

"We think it's going to be a very big thing," Grimm said. "It's an opportunity to be the Silicon Valley for accelerator research."

A changing landscape

Michigan could use a bit of hope for its future. The [unemployment rate](#) for the state has been above 10 percent since November 2008, according to the Bureau of Labor Statistics. Manufacturing jobs [in Lansing](#) and [in the rest of the state](#) have decreased fairly steadily over the past 10 years.

Niowave's director of fabrication, Brian Deimling, remembers the heyday of the auto industry in Lansing, where he grew up. He spent decades working at Lansing Car Assembly, a General Motors automobile factory. He built tools such as the lifelike



Terry Grimm



Brian Deimling

robotic welders that car companies use in both final assembly and high-tech commercials.

The plant was one of three large factories located on one of the main drags through town. Bulldozers have since razed the site, sparing only a concrete stairway that now leads to nowhere.

"I still get a sick feeling when I drive by there," Deimling said. "I used to go up those stairs. Now they're all that's left."

GM began to cut trade jobs in Lansing in the early 1990s. Deimling started his job in 1978 with more than 300 coworkers and retired in 2006 with six.

But as the auto industry dwindled, Deimling knew there was a need for his skills elsewhere.

As a high school student, he had been recruited to work as a welder for the National Superconducting Cyclotron Laboratory at Michigan State University. He left for GM after two years because the laboratory had no apprenticeship program, but he remembers his days there fondly.

He was in the process of negotiating a return to the cyclotron laboratory when he committed to retire from GM. When the offer from the cyclotron lab fell through, a friend pointed out an article in the newspaper about Niowave, a new company a scientist had spun off from NSCL at Michigan State.

A new challenge

Deimling contacted Grimm, who hired him to set up the machine shop for the nascent company. At the time, Niowave had only four full-time employees.

Deimling's 28 years of experience at GM gave him the familiarity he needed to buy all of the necessary equipment at reduced costs. "Manufacturing has been on the decline in the U.S., so there's a lot of good used equipment on the market right now," he said.

Over the past four years, Deimling has helped Grimm build Niowave. Of the company's 50 employees, 10 came from the auto industry, and about 25 are fresh out of college. "We have the experienced people mentoring the younger workforce," Deimling said.

When asked how much of his experience from his years at GM he uses on his current job, Deimling replied, "I use it all."

And yet he's still learning. Deimling said that he felt most satisfied with his work at GM on the days his supervisor asked him to create a new tool or find a new way to complete a task. His job at Niowave keeps the challenges coming.

"I got what I asked for," he said. "Some days I walk out of here saying, 'What was I thinking?'" But it's a healthy kind of stress, and I enjoy it."

Employees at Niowave have seen a demand for innovation in accelerator technology that is too large for one company to handle alone. They believe their fellow Michigan residents are up for a new challenge, too.

-- *Kathryn Grim*