Ohio is upgraded by $1 million grant

Foundation gives funds for business access to computer modeling

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Would more small businesses in Ohio develop innovative products if they had access to expensive computational modeling and simulation equipment and the skills to use it?

The National Science Foundation is betting $1 million on it.

A four-year grant will support a collaboration between the Ohio Supercomputer Center, the University of Akron, Ohio State University and the Ohio Learning Network to develop courses and resources.

The hope is that by offering training and an Internet portal to hardware and software that only large companies can afford, smaller companies will find ways to become more competitive in the world market.

"We can't compete on labor costs in the U.S., so we have to do things smarter, and this is one of the ways we can innovate," said Steve Gordon, senior director of education and client services at the Ohio Supercomputer Center in Columbus.

At UA, Gustavo Carri, associate professor of polymer science, will help write curriculum targeting the polymer industry, which is an early focus of the project.

The nonprofit PolymerOhio has agreed to help introduce the tools and educational opportunities to leaders of Ohio's 2,800 polymer firms.

Computational science is the use of computers to create mathematical models that solve scientific and engineering problems, as well as show visual outcomes.

Manufacturers can measure aspects of internal performance that can't be seen in operating prototypes. And products can be virtually tested before expensive prototypes need to be built.

A previous NSF grant has helped install undergraduate
minor programs in computational science. Students at nine schools, including Kent State University, can take the virtual course put on by the Ohio Supercomputer Center's Ralph Regula School of Computational Science.

The newest grant will advance the curriculum so students can earn certificates or associate degrees.

In addition to the undergraduate program, Carri will help develop long-distance learning course work for employees in the polymer industry.

And just as important as training the workers is giving them the tools to do the job, Carri said.

Companies will save on their research and development budget by using a fee-based Internet portal that gives them access to everything from modeling programs to networking

forums.

"We're making things as easy as possible for businesses to take advantage of it," Carri said. "We don't expect them to be masters, but they will have the knowledge to do what they need to do for their own research."

A 2004 survey by the Council on Competitiveness indicated that 97 percent of major companies could not function without high-performance computing and computational science.

The use of computational modeling and simulation has also been cited by the President's Information Technology Advisory Committee and the National Science Foundation as a key to continued U.S. leadership in science and engineering.

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