

Making connections

Research on people, computer interaction could lead to spin-offs

BY ADAM KRESS
akress@bizjournals.com

A new nonprofit research institute in east Mesa is aimed at bringing people and computers together, but it may well end up creating a number of high-tech businesses in the process.

The Cognitive Engineering Research Institute for Collaborative Innovation brings together Arizona State University East, Williams Gateway Airport, the Air Force Research Lab in Mesa and U.S. Positioning, a high-tech research and development company located near the airport.

CERI's mission is focused on research into problem solving in situations where humans and machines and/or computers are interacting intimately. While not designed for commercialization, the research conducted likely will lead to spin-out companies or licensing deals for the institute.

The husband-and-wife team of Steven Shope, president of U.S. Positioning, and Nancy Cooke, an ASU East professor of applied psychology, are co-founders of the institute, which just now is getting off the ground. There currently are about eight researchers at the institute.



JIM POULIN/THE BUSINESS JOURNAL

Steven Shope, president of U.S. Positioning and co-founder of the Cognitive Engineering Research Institute, stands in an ASU East lab that soon will move to the institute.

Thus far, CERI has been funded by a handful of U.S. government grants totaling about \$1 million, Shope said. The interior of a building in the Williams Gateway business district is being refurbished in order to house the institute.

Shope said the thinking behind the institute

was to bring research expertise in the airport area together under one umbrella.

"This will eventually include other players also," he said. "We are planning to talk to Boeing

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and a number of companies, universities and military entities. We hope to attract some of the biggest names in the world in this field."

Shope said this area of research is just emerging, but could become very popular in the future.

"This will be a hot area," he said. "It's sort of what artificial intelligence used to be ... how do computers and people make decisions together?"

The cognitive engineering framework of the institute is one in which human strengths and limitations are taken into account. The result is technology that fits the user, instead of the user struggling with hard-to-handle technology.

Shope said there are many military applications for this type of research, but as the global economy grows, it will have particu-

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Steven Shope
Cognitive Engineering Research Institute

lar value to businesses.

"There's a lot of potential interest from business," he said. "Large manufacturing companies are a good example. They have operations all over the world that have to work together."

Shope said the first main area of research will focus on "command and control" systems routinely used in the military. Uninhabited air vehicles, or drones, are a good

example.

They've been used by the U.S. military in Iraq to a limited degree, but many expect the drones to play an increasingly important part in the conflict and the future of the military. The drones are capable of flying in low visibility and high-risk areas where human eyes and manned weapons couldn't do the job.

Cooke said she will move her Cognitive Engineering Research of Team Tasks laboratory from nearby ASU East to the institute. She said the CERTT lab focuses on drones.

"We study team performance and team cognition by working with UAVs," she said. "We have a team of three flying a drone, and we study how they are doing with the goal of training them or designing better technology."

Shope said there is a lot of potential research in this area.

"This is really just the birth of them. But to

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control them you have to bring together people in multiple countries," Shope said.

Cooke said she has high hopes for what the institute can accomplish with drones.

"We can be a center of excellence in UAV and team technology," she said. "I hope eventually we can have a national and international reputation in cognitive research and teams tasks."

Some of research at the institute will be of a more theoretical nature, Shope said.

"There will be research into communication flow and how teams operate, and what happens when they break down. It will also look at how machines and computers can help."