

FIU's prosthetic designed to deliver hand sensations to amputees

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Perhaps a prosthetic system designed at Florida International University will become the next miracle product for amputees. But even the most amazing technology needs a plan to market and sell it.

The technology, which restores sensations from the extremities, was developed over seven years in FIU's Adaptive Neural Systems laboratory through funding from the National Institutes of Health.

In 10 weeks, 10 unemployed or underemployed workers in **Broward County** came up with a business plan to take the device to market, once it receives Food and Drug Administration approval.

Ranu Jung, chair of FIU's biomedical engineering department and head of the lab that developed the technology, worked with a team at Broward's Startup Quest entrepreneurial training program.

The team, led by technology expert Terence Bentley and entrepreneur Kersten Holm, were the top winners in the spring Startup Quest class completed in May.

"There's nothing like this on the market," Jung said. She said the team recognized that once the prosthetic system receives FDA approval, it could be sold to a maker of prosthetics and would stand out in the market. The team's business plan also details potential upgrades to the system, such as adding sensitivity to heat, which could enhance the system in the marketplace.

Jung saw Startup Quest as an opportunity both for her lab and individuals trying to start their own businesses or land jobs.

"I was happy to participate because we are offering our community an opportunity to learn and take on the next step in their lives," she said.

With the device, hair-like wires are threaded into the nerves and linked to a stimulator that communicates information that the hand is open or closed, for example.

"The same technology can be modified for the elbow or foot," Jung said.

The sensor would have to be surgically implanted — similar to a pacemaker or cochlear implant — but "no wires would be coming out of the body," she said.

Jung plans to begin human clinical trials on the device as soon as the device receives FDA approval — she hopes within five years. She was inspired to do the research in response to the many soldiers who were coming home from war with injuries to their extremities.

FIU-based technology teams actually claimed the top two spots in Startup Quest's spring business plan competition. Second place went to LightScan Health Systems, which worked with FIU professor Anuradha Godavarty and her research on a hand-held breast cancer pre-screening device.

Startup Quest is a free, 10-week program that pairs experienced business mentors with unemployed and underemployed workers who have college degrees. The entrepreneurial training program is part of a \$12 million statewide grant from the U.S. Department of Labor to train people to become entrepreneurs and educate them about opportunities to commercialize technologies developed at Florida's public universities and federal laboratories.

Mason Jackson, president of CareerSource Broward, said 128 individuals of 390 who have completed the program since it began in 2013 indicated that they've started or plan to start businesses. A total of 235 participants have become employed, he said.

"I think it's a great success," he said.

CareerSource Broward is the only region that's been granted funding for a fifth class. But to continue the program, Jackson said CareerSource Broward is now looking at new avenues of funding.

The next introductory workshop to Startup Quest is scheduled for July 31 at the Global Event Center, 416 NE First St. in Fort Lauderdale. To learn about program requirements and to submit an application, go to startupquest.org/careersourcebroward/participants.

For more information on the program, contact Richard Hutchinson at RHutchinson@careersourcebroward.com.

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