

University receives grant for chronic pain research



Written by Bryan Bastible

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Thanks to a grant from Intel, university researchers are working on a new way for people to deal with chronic pain.

Neuronal signals transmitted between the center of a nerve and the brain cause pain.

Researchers are trying to inhibit chronic pain, associated with physical conditions like broken, bent or damaged nerves. If the nerves don't heal properly, the pain will continue.

The \$60,000 per year grant, renewable for up to three years, will be used to address this problem.

The researchers will set up a "communication network" between an implant in the patient's body like pacemakers, gastric stimulators between the stomach and esophagus and a wireless module that could be worn on a belt or hat. The communication signals record information from the implants and send control signals to the implant to change the setting.

Changing the setting will send electrical currents from the implant to neurons — the centers of nerves — and stop pain signals from reaching the brain. Then the patients feel no pain.

According to a recent press release from the College of Engineering, chronic pain is the most common reason individuals seek medical care. It costs Americans hundreds of billions of dollars plus the cost of lost productivity.

Psychology associate professor Yuan-Bo Peng said these costs are invisible but real. Psychology chair Robert Gatchel said the research will have a complementary impact his department.

"We have one of the largest cohorts of pain specialists here at UTA in the North Texas area," he said.

One of the researchers, electrical engineering professor J.C. Chiao, suffers from chronic neck pain. Because the surgery is extremely dangerous, he

lives with the constant pain.

“You cannot cure pain. We can inhibit pain,” he said. “We aim to build a complete module that can automatically optimize inhibition of chronic pain.”

He said researchers were concerned that patients could overstimulate themselves by putting the setting higher than needed, where they couldn't feel anything.

If patients had the tolerance settings too high, he could put his hand over a flame and not feel it at all. The researchers' new device lets the patients pick the dosage he wants, and then it would remember the setting, preventing overstimulation.

He said this research will advance the university's research and academic reputation. The university researchers will work with Intel researchers to develop more efficient wireless communication modules.

“We have verified our system in animals,” he said. “We are now building a more sophisticated system to optimize the pain inhibition.”

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