What do a machine that prevents migraine headaches, a magnet that helps detect breast cancer, a non-invasive test for carpal tunnel, and a device to prevent self-injurious behaviors all have in common? No, they are not machines of the future that eradicate disease and suffering, but real-life medical devices Wesley Lawson, Professor and Associate Chair for Undergraduate Education in the Department of Electrical & Computer Engineering, works on every day to improve the lives of patients. Lawson entered the field of electrical engineering to help people and has continued down that same path to get to where he is today: teaching undergraduates and creating devices to improve the future of medicine.

As a high school student, Lawson witnessed the oil crisis of 1973 and wanted to work to avoid future energy crises. Thinking engineering could lead to the solution, he decided to go into electrical engineering. However, life took its course and Lawson instead landed in high-power microwave sources. Collaborating with researchers from Stanford and MIT, he worked for 20 years in this field. “I never quite made it [to energy],” he says. “But I came close at times.”

But when Lawson got the opportunity to work on medical devices, he decided to switch his focus to those devices to make a difference in people’s lives. His recent work centers on several different medical projects conceived by inventor Dr. Robert Fischell, the namesake of the Fischell Department of Bioengineering. Lawson designs devices based on Fischell’s ideas.

The first device Lawson worked on aimed to cure migraine headaches. Fischell came to him with an idea for migraine sufferers who have “aura,” that is, hallucina