

This was printed from Boston Business Journal

# MIT, Georgia Tech robot targets brain cells' electrical activity

Boston Business Journal by Lori Valigra, MHT

Date: Monday, May 7, 2012, 8:29am EDT

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With much still unknown about the inner workings of the brain, researchers at the [Massachusetts Institute of Technology](#) (MIT) and the [Georgia Institute of Technology](#) have discovered an automated way to record electrical activity inside neurons in the living brain, hoping it will some day help lead to new treatments for disease.

While gaining such knowledge offers information such as patterns of electrical activity, the cell's shape, and even a profile of which genes are turned on at a given moment, tapping into those cells manually has been a painstaking and slow task for human researchers.

The researchers said they have shown that an experimental robotic arm guided by a cell-detecting computer algorithm can identify and record from neurons in the living mouse brain with better accuracy and speed than a human experimenter, according to the researchers, who described their study in the May 6 issue of the journal *Nature Methods*.

The researchers recently created a startup company, [Neuromatic Devices LLC](#), based in Atlanta, to commercialize the device, which it calls the AutoPatch 1500. It includes hardware and software to identify single neurons. The company was spun out of Georgia Tech's [Precision Biosystems Laboratory](#) in January, and is based on the patent pending technology for automated whole-cell patch clamp electrophysiology of neurons in vivo.

The researchers said their new automated process eliminates months of training and provides long-sought information about living cells' activities. Using their technique, it may be possible to classify the thousands of different types of cells in the brain, map how they connect to each other, and figure out how diseased cells differ from normal cells, they added.

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