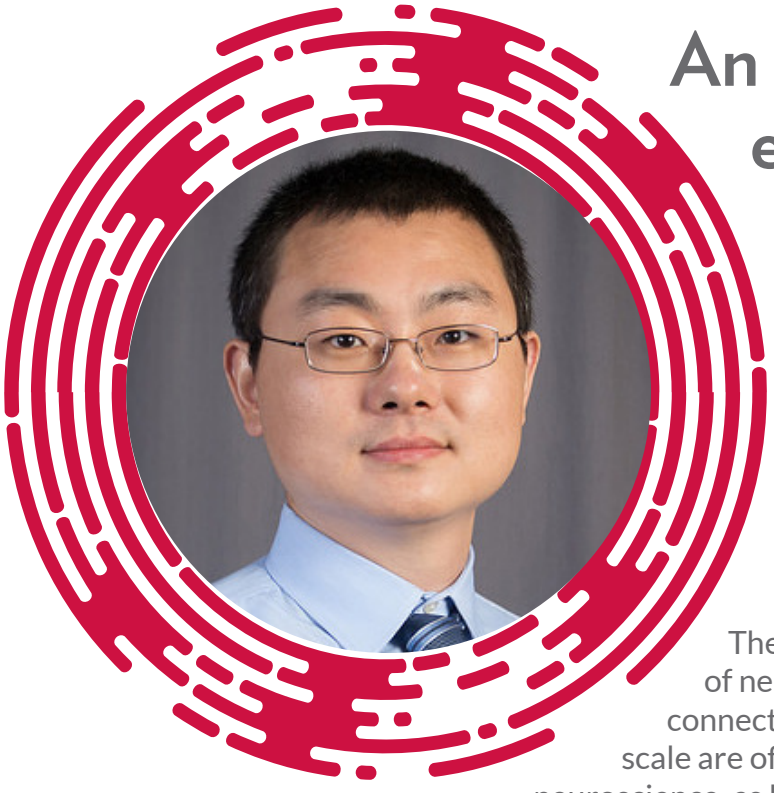
Department of
Biomedical Engineering
UNIVERSITY OF WISCONSIN-MADISON

Spring 2018 Seminar Series



An ultraflexible electrode platform for electrophysiological recording, mapping, & long-term tracking

Chong Xie, Ph.D.
Asst. Professor of Biomedical Engineering
University of Texas at Austin

The abilities to reliably record from a large ensemble of neurons in the brain, to map their functional connectivity and to track their activity over chronic time scale are of paramount importance to both basic and clinical neuroscience, as brain functions are realized by coordinated activation of neuronal populations. Implanted electrodes provide one of the primary neurotechniques by allowing for time-resolved acquisition from individual neurons. However, the recording stability and density of conventional neural electrodes pose major limitations on their scientific and clinical applications.

We recently demonstrated that ultraflexible, cellular-sized neural electrodes afford seamless integration with the brain tissue and reliable recording of individual neurons for several months. Building upon this strategy, we further demonstrate the potentials of scaling up this platform and monitoring neuronal clusters, as well as functional mapping and chronic tracking of the local circuitry over several months in behaving brains.

ABOUT the SPEAKER

Chong Xie is an assistant professor of the Department of Bioengineering at University of Texas at Austin.

Before joining UT Austin in 2014, he received his BS degree in Applied Physics from the University of Science and Technology of China, and Ph.D. degree in Materials Science and Engineering from Stanford University in 2011. He did his postdoctoral work at Harvard University.

Monday, March 19, 2018
12 PM in Tong Auditorium (1003 Engineering Centers)