

Neural Prosthesis Seminar

“The Promise of Local Field Potentials for Neuroscience and Neural Engineering”

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Biomedical Research Building • BRB 105

Case Western Reserve University



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Abstract:

The study of the brain is enjoying an era of growth with dramatic advances in our knowledge of the link between brain and behavior. Research is leading to a better scientific understanding of how the brain controls behavior and is opening up translational opportunities to engineer devices that replace lost brain function. Our understanding of brain mechanisms is largely based on the spiking activity of individual neurons. In this talk, I will argue that an exclusive focus on spiking activity hampers both basic neuroscience and neural engineering. I will develop a complementary approach involving local field potentials (LFPs), electrical potentials generated by populations of neurons. I propose that LFPs show promise in two specific areas. Local field potentials can improve our scientific understanding of how different brain areas communicate with each other during behavior and can accelerate the development of robust high-performance neural interfaces that replace lost brain function.

This seminar will not be webcast. For more information, please contact Cathy Naples at (216) 707-6490.