Mental disorders arise from brain circuit dysfunctions, but most of our treatments target the whole brain rather than defined circuits. Deep brain stimulation (DBS) is a more circuit-directed approach that has done well in movement disorders, but has very mixed results in randomized clinical trials for mental illness. Part of the difficulty is that psychiatric DBS is delivered in a trial-and-error fashion, without clear evidence that it engages the target circuits. I will present results along two lines: developing better biomarkers to guide that target engagement, and designing new stimulation protocols that reliably produce circuit-level physiologic change. In biomarkers, we have identified ways in which DBS can augment top-down executive function and have linked those changes to cortical electrophysiology. In animals, we have demonstrated new stimulation techniques that change specific aspects of circuit connectivity, and one of those designs has now come full circle into a novel human clinical trial. Taken together, these offer the prospect of a new generation of rationally designed brain stimulation therapies.

Wednesday, October 24th, 2018
4:00 – 5:00pm

Chicago campus live talk location:
Wieboldt Hall Rm 421
*Reception to Follow*

Evanston campus videoconference location:
NUL 3764 Seminar Room

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