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Decoding Neuropsychiatric Symptoms Using the Human Brain Connectome

If we can identify the human brain circuits responsible for neuropsychiatric symptoms, we can target those circuits for symptom relief. I will show how a big-data resource termed the human brain connectome can be used to map symptoms to human brain circuits in ways not previously possible. The information provided by this approach is leading to improved brain stimulation therapies and novel therapeutic targets for patients with brain disease.

Biography

Michael Fox, MD, PhD, is an Associate Professor of Neurology at Harvard Medical School and Director of the Laboratory for Brain Network Imaging and Modulation. He is Co-Director of the Beth Israel Deep Brain Stimulation Program and Associate Director of the Berenson-Allen Center for Noninvasive Brain Stimulation.

Clinically, Dr. Fox specializes in the use of both invasive and noninvasive brain stimulation for the treatment of neurological and psychiatric disease. His practice includes deep brain stimulation for the treatment of Parkinson's Disease, essential tremor, and dystonia as well as transcranial magnetic stimulation for treatment of medication-refractory depression.

Dr. Fox's research focuses on the development of new and improved treatments for neuropsychiatric symptoms based on understanding brain circuits and the effects of brain stimulation. He developed techniques to identify the human brain circuits responsible for different neuropsychiatric symptoms, identifying new therapeutic targets and improving existing therapies. His papers have been cited over 25,000 times and he has won numerous awards for his work, including the inaugural Trailblazer Prize for Clinician Scientists, a single award given nationally for breakthroughs in translational research.