The motor symptoms of Parkinson's disease result from abnormal patterns of activity in surviving nondopaminergic neurons of the basal ganglia following loss of dopaminergic cells in the substantia nigra. The most prominent component of abnormal activity is an exaggerated oscillation in the beta frequency range (10-30 Hz) in field potentials and neuronal firing patterns in humans with the disease and in animal models of Parkinsonism.

Following an introduction to Parkinson's disease, deep brain stimulation and pathologic oscillations by Dr. Jerrold Vitek, our panel will present a series of lectures that address 1) the causal role for exaggerated oscillations in Parkinson's disease; 2) experimental studies of the origin of normal and maladaptive basal ganglia oscillations; and 3) existing and potential treatments aimed at disrupting oscillatory activity associated with the disease symptoms.

(in order of appearance)

**Jerrold L. Vitek MD PhD**
McKnight Professor & Chair
University of Minnesota

Oscillatory activity in the basal ganglia:
Is it enough to explain Parkinson’s disease?

**Robert S. Turner PhD**
Professor of Neurobiology
University of Pittsburgh

Oscillations & deep brain stimulation

**Judith R. Walters PhD**
Senior Investigator
NINDS

Exploring the significance of exaggerated oscillatory local field potential activity in the Parkinsonian rat

**Marc Bevan PhD**
Professor in Physiology
Northwestern University

Maladaptive plasticity of the subthalamic nucleus in mouse models of Parkinson’s disease

**Charles J. Wilson PhD**
Ewing Halsell Chair
University of Texas San Antonio

How do oscillations engage brain networks?
Entrainment & synchrony in the basal ganglia