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Imaging Function and Connectivity in the Human Brain with High Magnetic Fields: Spanning Scales from Cortical Columns to Whole Brain

October 24, 2018 | 3:00 - 4:00 p.m. (reception to follow)
Beckman Institute Auditorium



Kamil Ugurbil, PhD
University of Minnesota

Bridging and spanning the multiple scales of organization is an essential but daunting task necessary for understanding brain function and ultimately dysfunction. Our ability to map human brain function and connectivity is transforming with recent changes, including rapid developments in instrumentation for radio frequency (RF) transmission and signal detection, a push to achieve higher magnetic fields (currently at 10.5T for human imaging) despite challenges of imaging at the correspondingly high RF frequencies, and a plethora of novel imaging acquisition techniques that increase spatiotemporal sampling.

These developments, complemented by other non-MR imaging methods, hold promise that it will be feasible in the near future to integrate information from the single synapse level to whole brain networks that define behavior.

This lecture is held in partnership with the Beckman Institute, Carle Illinois College of Medicine, Center for Brain Plasticity, and Neuroscience Program at the University of Illinois, and with Carle Health System