Department of Psychology
Tuesday, January 27th, 2015 Colloquium

A Novel Approach to Study Human Cognitive Processing: Detection of Neurochemical Changes in Real Time

Tuesday, January 27, 2015 2:00 – 3:00 p.m.
N219 Elliott Hall
Sponsored by the Department of Psychology

By localizing brain areas activated during task performance neuroimaging techniques (fMRI and PET) have made significant contribution to our understanding of the brain mechanisms that control human cognition and behavior. These techniques, however, do not provide reliable information regarding neurochemical changes associated with the brain processing. Lack of this information has significantly limited our understanding of human cognitive control. It has also limited our knowledge of the pathophysiology of psychiatric and neurological conditions. We have recently developed a dynamic molecular imaging technique to detect, map and measure task-induced changes in dopamine neurotransmission in the live human brain. In these experiments we exploit the competition between endogenously released neurotransmitter and specific receptor ligand for receptor occupancy. The technique expands the scope of neuroimaging research and allows investigation of an unexplored aspect of human cognition and behavior.

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