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By Appointment Only

Education:

M.D., SUNY Syracuse

College of Medicine

Research Area:

[Behavioral and Systems
Neuroscience](#)

Secondary Research Area:

[Cognitive Neuroscience](#)

Laboratory:

[D'Esposito Cognitive
Neuroscience Lab](#)

Research Interests:

Working memory and frontal lobe function, functional MRI, cognitive neuroscience



Research Description

Our research focuses on investigating the neural bases of high-level cognitive processes such as working memory and executive control. These aims are achieved through several different experimental approaches and methodologies. First, we employ a neuroimaging method called functional MRI (fMRI) to identify the neuroanatomical substrates and temporal dynamics of various cognitive processes in normal human subjects. A key focus has been the cognitive functions supported by prefrontal cortex. Second, we have been investigating the role of the dopaminergic system in working memory and frontal lobe function. This aim is achieved with pharmacological studies during which direct dopaminergic agonists are administered to normal human subjects, as well as patients with frontal lobe lesions, to determine the effect of dopamine on cognition. Third, we perform behavioral studies in patient populations with frontal lobe dysfunction (e.g. stroke, head injury, Parkinson's disease) in order to further understand the mechanisms that underlie working memory. Finally, we are interested in understanding the physiological bases of normal human aging, and the effects of normal aging on prefrontal function.



Selected Publications



Teaching

Department of Psychology

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