

Brain Mapping Center

SPECIAL SEMINAR

Sponsored by the UCLA Brain Mapping Center Faculty

The focus of these talks is on advancing the use of brain mapping methods in neuroscience with an emphasis on contemporary issues of neuroplasticity, neurodevelopment, and biomarker development in neuropsychiatric disease.

Hosted By: Shantanu Joshi, PhD, Neurology, UCLA

Special Seminar - Structural and Functional Anatomy of the Human Thalamus



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Post-Doctoral Fellow

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The human thalamus, in terms of its structural and functional anatomy, its connectivity patterns, the functioning of its circuitry, and its relationship to the cerebral cortex, still partly constitutes a terra incognita. Almost all information processing in the cortex strongly depends on thalamic interactions. Therefore, the knowledge of thalamic connections and interconnections is essential to understand cortical functions. Structural and functional changes in the thalamus play a prominent role in the functionally defined pathophysiology of psychiatric and neurodegenerative diseases. However, the internal structure of the thalamus is largely identified and delineated based on structural cytoarchitectonic postmortem atlases, which is in use for the localization of neuro- or radiosurgical interventions. As such, there is a need to understand the functional and structural subdivisions of the thalamus in vivo and provide a valid map for scientific and clinical studies. The objective of our research is to examine the subdivisions of the thalamus and determine its cortical connectivity pattern by using resting-state fMRI and diffusion imaging.

First, I will present the in-vivo parcellation of the human thalamus at 3T, 7T, and 9.4T, which is useful for the analysis and interpretation of imaging findings in the clinical neurosciences. Secondly, the structural and functional anatomy will be presented concerning its connectivity with cortical structures through correlation analysis and fiber tracking.

February 21, 2020 1:00pm - 2:00pm

**Brain Mapping Seminar Conference Room (221)
660 Charles E. Young Dr. South**

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