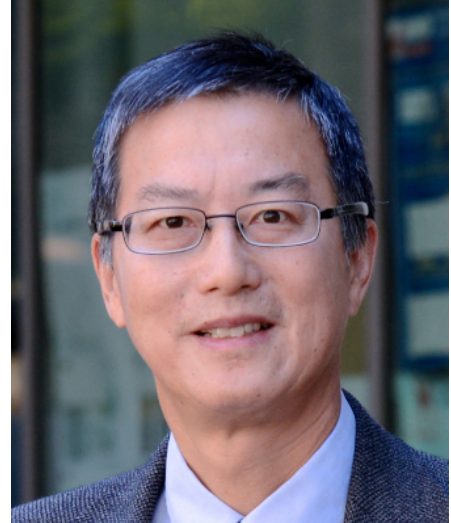# Xiaoping Hu, PhD

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MR Imaging of Brain Dynamics, Melanin and Iron

Abstract: In addition to providing exquisite details of brain anatomy, MRI is also used to map the function, connectivity, and other important features, such as melanin and iron contents, of the brain. In this talk, I will highlight our work on some of these aspects. The first will be on the study of brain dynamics with resting-state functional MRI. In this regard, I will describe how we can characterize the brain dynamics with a hidden Markov model, leading to spatiotemporal measures, and how to take advantage of the dynamic information in brain segmentation and subject identification. The second will be on the use of MRI to map brain melanin and iron and their application towards the development of early biomarkers for Parkinson's disease.