

*Seminar Announcement*

**Friday, February 16<sup>th</sup>, 2018**

12:00 pm – 1:00 pm

Olin Engineering, Room 202

**Marquette University**

**Yagna Pathak, Ph.D.**

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*Abstract*

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***“Developing neuromodulation targets for psychiatric conditions  
using multimodal imaging”***

Psychiatric disorders affect one-sixth of the American population. Patients suffering from severe, and refractory versions of these conditions have limited therapeutic options. Neuromodulatory interventions (deep brain stimulation (DBS) or repetitive transcranial magnetic stimulation (rTMS)) are currently employed in treating these conditions, but are limited in their applications owing to the complexity of potential targets and involved circuitry. The purpose of the current study is to “identify and validate new targets for treatment development that underlie disease mechanisms” (NIMH Research Priorities).

We use multimodal imaging to achieve this goal; no modality is perfect and by combining one approach that can compensate for the limited spatial or temporal resolution of the other, we gain more information that allows us deeper understanding of the pathophysiology of the disorder we are studying. Specifically, we employ these integrative tools to 1) interrogate targets for Obsessive-Compulsive Disorder (OCD) using simultaneous fMRI and EEG, and 2) develop a closed-loop paradigm for Autism Spectrum Disorder (ASD) by integrating electrophysiological data and anatomical imaging.

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Parking is available in Structure 1 on 16<sup>th</sup> Street between Wisconsin Ave. and Wells Ave.