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**Wednesday, August 30, 2023**

**9:30 – 10:20am, MJIS 1001 or via zoom**

Students registered for the seminar are expected to attend in-person.

[**https://purdue-edu.zoom.us/j/9302687285?pwd=MUF1WDludmxQMzYwdkVUNWFWakhNQT09**](https://purdue-edu.zoom.us/j/9302687285?pwd=MUF1WDludmxQMzYwdkVUNWFWakhNQT09)

**“**Imaging Brain’s Waste Clearance Pathways**”**



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***Abstract:*** Devoid of lymphatic vessels, how does the brain tissue clear its waste? This mystery has puzzled scientists for centuries. About a decade ago, in 2012, a Danish neuroscientist unraveled the mystery, unveiling the Glymphatic system – a specialized fluid pathway of the brain that efficiently removes brain’s waste proteins without the need for any dedicated transporter protein. Instead, this pathway relies on a network of fluid-filled tunnels called the paravascular space, functioning as a plumbing system to flush away waste, particularly active during sleep. This groundbreaking discovery sparked a wave of interest in Neuroscience, prompting deeper investigations into its mechanisms, due to its potential implications in neurodegenerative diseases like Alzheimer’s, characterized by the buildup of waste protein. However, a significant challenge remains due to the limited availability of non-invasive imaging techniques for studying this system within the human brain.

***Biography***: Dr. Qiuting Wen (pronouned chiu-ting) obtained her Ph.D from UCSF-UC Berkeley Joint PhD Program in Bioengineering, where she conducted her research in brain tumor imaging and developed a keen interest in MRI. After graduation, she moved to Indiana University to continue her research as a postdoc with a focus on advanced diffusion MRI. She is the developer of dynamic Diffusion-Weighting Imaging (dynDWI) for measuring the paravascular cerebrospinal fluid (pCSF) dynamics - a key component of the brain's waste clearance function (glymphatic system).  Her current research is applying dynDWI to understand dysfunctional pCSF clearance in aging, Alzheimer's disease, and other neurodegenerative/cerebrovascular diseases.

~ *BME Host: Yunjie Tong* ~