



# Colloquium Notice

## Sithara Wijeratne

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### *Self-Organization and Dynamics of Cellular Highways*

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Analogous to the role of highways in our macroscopic world, the cytoskeleton organizes the cellular cytoplasm. Micron-sized cytoskeletal polymers, such as microtubules, link distant cellular sites. Nanometer-sized motor proteins walk on complex multi-microtubule highway systems to drive intracellular transport and also remodel the "highway". I will present two different aspects of microtubule organization in my seminar. First, I present an unexpected discovery that nanometer-sized proteins separated by several microns on microtubules can sense and respond to each other. This challenges the long-held view of microtubules as a passive platform and reveals how the microtubule is like a wooden bridge rather than a concrete highway. Second, I present the development of an Atomic Force Microscopy assay that enables us to directly visualize the dynamic features of individual microtubules within complex microtubule arrays. This imaging modality bridges the resolution gap between light and electron microscopy to reveal new insights by which complex microtubule arrays can be remodeled by associated proteins.

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Monday

**March 13, 2023**

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326

This talk is accessible via [Zoom](#) or use

**meeting ID 829 2687 2594** and **passcode 866995** to join