



The Molecular Basis of Microtubule Structure and Dynamic Instability



Presented by: Dr. Gary J. Brouhard

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Dynamic instability is the signature behavior of microtubules. In cells and *in vitro*, a steadily growing microtubule can suddenly switch to shrinkage in an event known as a “catastrophe.” Our textbook-level descriptions of dynamic instability have recently been upended by crystal structures and biochemical experiments that discovered new structural transitions in tubulin. These transitions are clinically relevant: microtubules are also the target of chemotherapeutics known as microtubule-targeting agents (MTAs), whose mechanism of action is to modify these newly discovered structural transitions. Our recent work has included the characterization of a novel MTA, as well as comparison of dynamic instability from diverse eukaryotes. I will discuss my lab’s recent efforts to use our knowledge of dynamic instability to promote safer chemotherapeutics and rebuild our textbook-level descriptions of microtubule growth and catastrophe.

Hosts: Dr. Laurence Pelletier

Date: Friday, November 8th 2019

Time: 3:00 PM

Place: Medical Science Building (MSB)
4171