

The Biological and Biomedical Joint Seminar Series

(Hosted by the departments of Molecular & Cellular Biology, Chemistry & Biochemistry, Cellular & Molecular Medicine, and Plant Sciences)

“Enzyme Polymerization as a Mechanism of Allosteric Control”

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Zoom Meeting:

<https://arizona.zoom.us/j/81160148750>

Password: MCBSeminar

Hosted By: Nancy Horton (MCB)



Many important regulatory enzymes in intermediate metabolism form large-scale filamentous polymers in cells and tissues. These supermolecular structures are critically important for regulating enzyme activity and maintaining cellular homeostasis, and their discovery has opened a new field focused on the physical organization of metabolic activity in the cellular context. Our lab has been working to understand the structural basis for metabolic filament assembly and the biochemical and physiological consequences of enzyme polymerization. Combining cryoEM and functional studies, we have shown that polymerization generally functions as a mechanism for allosteric control of enzyme activity. Here, I will present ongoing work with enzymes in de novo nucleotide biosynthesis, which illustrate how self-assembly into filaments can be used to tune activity.

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