

DICKERSON BIOCHEMISTRY SEMINAR SERIES



Molecular Recognition: The Keys to Design of Biotools and

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Prof. Shana Stoddard

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Founding Director for the STEM Cohort Mentoring Program

My lab, the “Molecular Immunotherapeutics Research” (MIR) lab studies systems which are involved in cancers, neurological disorders, coronaviruses, and autoimmune diseases. Utilizing both computational and experimental methodologies work in the MIR lab explores the basic molecular details of structure and design and its implications on the development of biotools and therapeutics. Current work in the MIR lab involves investigation of structure/function relationships in the thrombospondin repeat (TSR) domain containing super family of proteins known to be heavily involved in binding interactions in the extracellular matrix (ECM) promoting functions such as angiogenesis, cell migration, and tissue remodeling. Development of both three-dimensional protein homology models and biotools to selectively target the TSR domains would advance our ability to evaluate both structure function relationships and how these proteins participate in molecular interactions that influence ECM organization. A second project the MIR lab is pursuing is development of optimization guidelines for drug development antiviral targeting coronaviruses. This talk will detail key findings that may contribute to the study of the TSR domain containing super family of proteins, design of biotools to target TSR domains to further study of ECM reorganization and the development of both small molecule and protein based therapeutic options for coronavirus antivirals. The advancements discussed will highlight new directions for understanding ECM reorganization and binding partner interactions, and key structural parameters for development of high affinity drug candidates for COVID-19 antiviral treatments.

Friday, March 3rd at 3:30pm
Mani L. Bhaumik Collaboratory,
Dongwon Yoo Seminar
& Conference Hall (Young Hall 4222)

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