



SoFlacs



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Virtual Section Meeting, Friday, September 8, 3:30 PM

Join by Zoom Meeting: <https://miami.zoom.us/j/99399317830>

Meeting ID: 993 9931 7830, Passcode: 2023

Biomimetic Hierarchical Structure in Synthetic Macromolecules

Dr. Abigail Knight

Department of Chemistry, University of North Carolina, Chapel Hill

Abstract: The remarkable functions of proteins, from refined binding profiles to efficient catalysis, are currently unrivaled by synthetic macromolecules due to complex hierarchical structure in natural systems. Inspired by this grand challenge, the Knight group is at the interface of chemical biology and polymer science, developing synthetic strategies to control hierarchical structure and high-throughput platforms to understand fundamental design principles underlying macromolecule conformation. These research efforts are motivated by the need for innovative strategies to address global health and environmental challenges, where our foundational work informs the de novo design and development of functional polymeric materials.



Biography: Abby began her independent career in the UNC Chemistry Department in 2018. She received a PhD in Chemistry from the University of California, Berkeley, working with Prof. Matthew Francis. Her PhD research focused on the development of a platform applying combinatorial libraries for the identification of selective metal ligands to address major challenges in water and environmental remediation and metal poisoning. As an Arnold O. Beckman Postdoctoral Fellow with Prof. Craig Hawker at the University of California, Santa Barbara, she designed smart nanomaterials with unique architectures and both biological and materials applications. These pursuits provided expertise in chemical biology and polymer science, supporting the Knight Research Group's mission to design synthetic nanomaterials that rival the capabilities of proteins. Her group has recently been recognized with an NSF CAREER award and ACS Academic Young Investigator Award Symposium.

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