BIOCHEMISTRY SEMINAR

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"Machine learning strategies for natural product discovery and biosynthesis"

Abstract: Natural products play an important role in drug discovery. However, they are often discovered serendipitously and there is a lack of tools that enable prioritization of organisms that are likely to produce active and structurally novel compounds. In addition, natural products often need to be modified in order to be developed as therapeutics, but total synthesis of natural products is challenging. My lab aims to develop AI-guided genome mining techniques to enable the discovery of natural products with therapeutically-relevant bioactivities and the engineering of biosynthetic machinery to produce new natural product-like compounds. In this presentation, I will discuss my group's recent progress in these areas.

Bio: Allison Walker, Ph.D. completed her Bachelor's degree in chemistry at Brown University, working in the research lab of Professor Sarah Delaney. She then completed her PhD at Yale University in Professor Alanna Schepartz's lab. Allison then completed a postdoc at Harvard Medical School in Professor Jon Clardy's lab before starting her independent career. She is currently an Assistant Professor of Chemistry and Biological Sciences at Vanderbilt University. Her lab's research focuses on developing AI and other computational methods for natural product discovery, engineering of biosynthetic pathways, and design of peptide therapeutics and is currently supported by an R35 from the NIH and a Cottrell Scholar Award from RCSA.