

JOSEPH F. FOSTER MEMORIAL CHEMICAL BIOLOGY AND BIOCHEMISTRY SEMINAR

**Monday, March 4, 2024
3:30 PM, BRWN 4102**

“Discovering New Enzyme Chemistry From Across The Tree of Life.”



JONATHAN CHEKAN
Assistant Professor of
Biochemistry
University of North Carolina
Greensboro

Abstract:

Natural products are a critical component of modern medicine and discovery of new molecules and pathways has the opportunity to positively impact human health. Moreover, the enzymes that produce these secondary metabolites often catalyze unprecedented reactions. To uncover new biosynthetic pathways and enzymes, we have combined both bioinformatic and biochemical methodologies to reveal multiple new classes of ribosomally synthesized and post-translationally modified peptide (RiPP) natural products from across the tree of life. In plants we have found a new family of copper-dependent enzymes responsible for side chain crosslinking of peptides, while in bacteria we have discovered an unusual di-domain enzyme that generates an unprecedented prenylated amino acid scaffold. Building upon the RiPP biosynthetic paradigm, we have also engineered new enzymes to specifically target peptide substrates and generate new derivatives.



Department of Chemistry