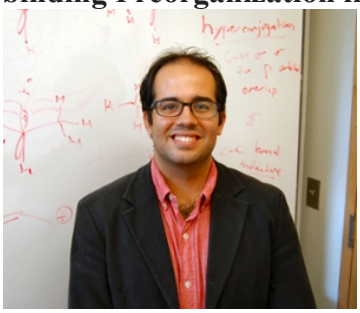
“The Origins of Receptor-binding Preorganization in a Human Neuropeptide”



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Abstract:

Here’s the abstract: “Small signaling peptides have been the inspiration for generations of drug design efforts, and among these the neuropeptides have historically featured prominently. This talk will present our group’s work in the NMR and biophysical characterization of human neuropeptides. At these typically smaller peptide lengths (less than 30 residues), solvation of sidechains is the dominant driving force for protein folding, often leading to environmentally-sensitive and/or irregular secondary structures. In the case of the neuropeptide galanin, nearly identical hydrophobic displays are retained across five distinct backbone configurations of its binding sequence in solution, in addition to recently reported structures of it bound to two of its receptor subtypes. Our group’s results are presented in the context of the relationship between a small peptide's sequence patterning, preferred structures, and ability to present a functional and, often, selective protein-binding epitope.”

Here are a couple links to our papers on the topic above; my talk is mostly focused on our galanin work. I wanted to make sure to have some time to explain NMR assignment, so I won’t really focus on the opioid peptide work, but I did link the paper in case you are interested:

Endomorphin-1: https://pubs.acs.org/doi/10.1021/acs.joc.9b01141

Galanin Fragments: https://pubs.acs.org/doi/full/10.1021/acs.biochem.2c00141

Galanin Full-length: https://www.sciencedirect.com/science/article/abs/pii/S0006291X22011512