Targeting therapy for inflammatory conditions, we have pursued peptide-based approaches featuring modulation of the interleukin-1 and cluster of differentiation 36 receptors (IL-1R and CD36). Peptides and analogs that bind these receptors at remote sites away from the native ligand binding site and serve as allosteric modulators have been developed in our laboratory and shown to cause pathway specific biased signaling leading to functional selectivity [1,2]. Synthetic methods have been conceived for assembling constrained aza-, lactam and aza-lactam analogs of such peptides to probe relevant turn geometry and relationships between structure and biological activity [1-4]. The synthesis, conformational analysis and biomedical application of the peptide mimic modulators will be described in a presentation focused on the application of organic chemistry to study peptide conformation and biological activity.

References