

The Makarewich lab investigates the molecular mechanisms driving cardiovascular disease with a focus on microproteins—small, overlooked proteins translated from short open reading frames (sORFs) hidden in noncoding regions of the genome. These unique proteins regulate critical biological processes, including calcium signaling, metabolism, stress response, and cell death. By combining innovative bioinformatics, in vitro, and in vivo approaches, we aim to uncover the functions of microproteins in cardiac biology and their roles in health and disease. Our long-term goal is to leverage these discoveries to develop targeted therapies for cardiovascular disease, translating fundamental insights into clinical applications.