“Systems glycobiology enabled by innovations in mass spectrometry and chemical biology”

Glycosylation is a dominant feature of extracellular phenotypes. Glycoproteins present distinct combinations of glycans and amino acids that create unique molecular surfaces to relay biological information in a language called the glycome. Despite evidence that the glycome orchestrates numerous aspects of cell surface biology, we lack a fundamental understanding of the glycosylation landscape across the proteome, largely because we do not have tools to capture the glycome at a systems level. Our group works to address this critical gap in current analytical technology to study glycome regulation across biological networks that govern health and disease.