

# About the Instructors

**Dr. Daniel Crawford** is a University Distinguished Professor in the Department of Chemistry, and Director of the Molecular Sciences Software Institute (MolSSI) at Virginia Tech. His GlycoMIP research focuses on simulations of the spectroscopic properties of chiral molecules using advanced quantum chemical methods.

**Dr. Sanket Deshmukh** is Associate Professor in the Department of Chemical Engineering at Virginia Tech. His GlycoMIP research focuses on the development of multi-scale modeling integrated machine learning approaches to design and study glycomaterials and their complex architectures.

**Dr. Kevin Edgar** is a Professor of Biomaterials in the Department of Sustainable Biomaterials at Virginia Tech. His GlycoMIP work focuses on design, synthesis, and characterization of polysaccharide derivatives, and probing structure-property-performance relationships, towards important and demanding biomedical applications.

**Dr. Alan Esker** is a Professor and Department Chair in the Department of Chemistry at Virginia Tech. Dr. Esker specializes in the physical characterization of polymers and biopolymers at surfaces and interfaces.

**Dr. Brady Hall** is a Technical Manager of the GlycoMIP user facility. Dr. Hall specializes in the synthesis and characterization of glycomaterials with a prior focus towards the design and modification of synthetic glycopolymers.

**Dr. Richard Helm** is an Associate Professor in the Department of Biochemistry and Director of Core Services and Research Resources for the Fralin Life Sciences Institute at Virginia Tech. He is also the GlycoMIP Director of User Program and specializes in applying mass spectrometry tools in the fields of metabolomics and proteomics.

**Dr. Lakshmi Kumar Kunch**e is a postdoctoral associate in the Department of Chemical Engineering at Virginia Tech. His advisor is Professor Sanket Deshmukh. His GlycoMIP research focuses on investigating the tribological properties of polysaccharide-based lubricants. Additionally, he serves as a main developer of the *GlycoData* data-sharing platform for GlycoMIP.

**Dr. John Matson** is Professor and Associate Department Chair in the Department of Chemistry at Virginia Tech. His GlycoMIP research focuses on the synthesis of new polymers, including polysaccharide-containing block copolymers, and their incorporation into materials such as blends that include polysaccharides.

**Ms. Lauren Mills** is the Program Coordinator for GlycoMIP.

**Dr. Roberta Polak** is the Compliance Advisory Specialist assigned to the Fralin Life Sciences Institute (FLSI). She joined the Environmental Health and Safety Department at Virginia Tech in

January 2020. Her goal is to support cutting-edge research at the FLSI flagship buildings and ensure the safety of its research community. She works closely with researchers to ensure they can follow their scientific pursuits safely.

**Dr. Ryan Porell** is a Research Scientist and Technical Manager of the GlycoMIP user facility. Dr. Porell specializes in glycomaterial characterization with a prior focus in chemical glycobiology towards the design of immune-regulatory glycomaterials.

**Dr. Maren Roman** is an Associate Professor in the Department of Sustainable Biomaterials at Virginia Tech and is the Director of GlycoMIP. Her research focuses on the molecular properties and potential applications of carbohydrate-based materials.

**Dr. Michael Schulz** is an Assistant Professor in the Department of Chemistry at Virginia Tech. His GlycoMIP research focuses on designing and synthesizing glycopolymers and studying their interactions in solution and on surfaces.

**Dr. Narasimhamurthy Shanaiah** is an NMR Spectroscopist in the Department of Chemistry at Virginia Tech. Dr. Shanaiah specializes in providing NMR technical expertise to various research groups for the structural characterization of small molecules, carbohydrates, peptides, and proteins.

**Dr. Fangxi (Toby) Wang** is a Postdoctoral Associate in the Department of Chemical Engineering at Virginia Tech. His advisor is Prof. Sanket Deshmukh. His GlycoMIP research focuses on developing and applying machine-learning approaches to study the conformation of carbohydrates through atomistic and coarse-grained modeling at the nanoscale. Additionally, he serves as a main developer of the *GlycoData* data-sharing platform for GlycoMIP.

**Dr. Valerie Welborn** is Assistant Professor in the Department of Chemistry at Virginia Tech. Her research focuses on atomistic modeling of condensed phase systems with application to health and energy. More specifically, the Welborn group specializes in the development of physics-based methods to link structure to function in large and complex systems.