

**“Systems Biology of Glycosylation:  
Examples from Cancer Biology,  
Inflammatory Disease and SARS-CoV-  
2 Infection”**

**Virtual Seminar  
Wednesday  
March 31, 2021  
3:00 pm**



**Sriram Neelamegham**  
Professor  
Chemical and Biological Engineering  
State University of New York - Buffalo

**Abstract**

Glycosylation is a common and complex post-translational modification that is orchestrated in all mammalian cells. Glycan structures thus formed either absolutely control or fine-tune various biological processes. These include the half-life of biologics in circulation, the rates of leukocyte-endothelial cell adhesion interaction during inflammation, tumorigenesis and the kinetics of cancer metastasis. The pattern of glycans formed on individual cells during normal health and disease depends on a family of ~350 genes that are together called the “glycogenes.” The enzymes produced by these glycogenes either add saccharides, clip-off terminal sugar units, or participate in the metabolic synthesis of building blocks required for glycosylation reactions. My presentation will describe novel molecular tools and complementary computational strategies to advance the study of glycosylation from a systems perspective. These represent key enabling technologies that provide new insight into the progress of diverse human diseases: cancer biology, human inflammatory disease, and viral infection mediated by SARS-CoV-2. The emerging knowledge suggests potential diagnostic strategies and therapeutic avenues to combat these ailments.

**Bio**

Sriram Neelamegham is a Professor of Chemical & Biological Engineering, Biomedical Engineering and Medicine at the State University of New York - Buffalo. He has contributed to studies that describe the molecular mechanisms by which leukocytes and platelets in blood, interact with other vascular cells to condition human inflammatory and thrombotic disorders. His laboratory also develops Systems Biology methods for the Glycosciences, with emphasis on glycoengineering technologies, and the integration of high-throughput experiments with computational models that describe the glycome. Prof. Neelamegham has published 120+ research manuscripts, book chapters, and patents. His awards include the 2015 SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, and the 2018 WNY American Chemical Society Schoellkopf medal. Prof. Neelamegham is an Elected Fellow of the American Institute of Biological and Medical Engineering, and the BioMedical Engineering Society. He currently leads the development of the Symbol Nomenclature for Glycans (SNFG) at the NCBI-glycans resource.

**Spring 2021 CBE Seminar Series**

