

BIOEN 509 – DEPARTMENTAL SEMINAR SERIES

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Foege Bioengineering Building N130A

Glycomics at the Interface: Characterizing Carbohydrate-Modified Surfaces for Applications in Biosensing

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Spurred by the post-genomic revolution in biological research, glycomics - the comprehensive study of carbohydrates in biology - has undergone a rapid expansion, as researchers seek to unravel the many roles played by glycans in nature. This talk describes the application of biointerfacial engineering to design new tools for glycomics research. Techniques including surface modification via molecular self-assembly, characterization of glycosylated materials and an ultra-sensitive biosensing platform based on silicon nanophotonics will be discussed in the context of enabling glycomics research through molecular engineering and nanotechnology. These techniques are providing valuable insight into the design of a new generation of carbohydrate biosensors and glycan arrays.

Dr. Daniel M. Ratner trained in carbohydrate chemistry and microarray fabrication at the Massachusetts Institute of Technology with Professor Peter Seeberger, where he received his PhD in Synthetic Organic Chemistry. He subsequently joined the Section of Infectious Diseases at Boston Medical Center / Boston University as an NRSA Postdoctoral Fellow with the Training Program in Host-Pathogen Interactions. In September 2007 he became a member of the faculty of the University of Washington as an Assistant Professor in the Department of Bioengineering. The Ratner laboratory is developing new chemical and biophysical tools to probe carbohydrate-mediated interaction using SPR and silicon photonic biosensors.

