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# Department of Chemistry

## Seminar

9:45 a.m. Thursday, March 22 • 331 Smith Hall



### Michael Best

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#### *Chemical Approaches to the Investigation of Protein-Membrane Binding Interactions Using Synthetic Lipid Probes*

Research interests involve the design and synthesis of molecules that can be implemented for studies or applications pertaining to biological systems. One aspect of this involves the study of cell-surface recognition events.

Website: <http://www.chem.utk.edu/faculty/best.html>

#### Abstract

Signaling lipids present in cell membranes act as important regulators of biological processes and have been implicated in the onset of numerous diseases. A common role of these lipids is the recruitment of proteins to the cell membrane surface through binding events that generally regulate protein function and localization. While understanding these interactions at the molecular level is of great interest, such efforts are hindered by the complexity of the membrane environment in which binding occurs. Toward this end, chemical strategies will be presented by which protein–membrane recognition events can be efficiently characterized. First, the design and synthesis of lipid probes corresponding to signaling lipids including diacylglycerol, phosphatidic acid and the phosphoinositides will be described. Next, the application of these probes for elucidating binding details will be presented, including the development of multi-format microarray analysis for investigating protein–lipid recognition in different contexts, and bifunctional probes that allow for collective labeling of target receptors in cell extracts, including those associated with disease.

Host: Professor Mark Distefano  
Refreshments will be served prior to the seminar.