



## BIOEN 509 – DEPARTMENTAL SEMINAR SERIES

Thursday, May 12, 2011, 12:30-1:20 PM

Foege Bioengineering Building N130A

# Protein Analogous Micelles: Versatile, Modular Nanoparticles

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Peptides are functional modules of protein macromolecules that can be displayed apart from the whole protein to create biofunctional surfaces and interfaces, or can be re-assembled in new ways to create synthetic mimics of protein structures. Each of these routes are being employed to gain new insight into protein folding and to develop new, functional, biomolecular materials. Examples of work from our laboratory in this area using peptide-lipid conjugate molecules (peptide amphiphiles) will be discussed relating to multi-functional surfaces, DNA-binding peptide assemblies, and protein analogous micelles for cancer and cardiovascular therapeutics.

*Dr. Matthew Tirrell is Arnold and Barbara Silverman Professor and Chair of Bioengineering at UC Berkeley, with additional appointments in chemical engineering and materials science & engineering, and as a Faculty Scientist at the Lawrence Berkeley National Laboratory. Tirrell received a B.S. in Chemical Engineering at Northwestern University and a Ph.D. in 1977 in Polymer Science from the University of Massachusetts. From 1977 to 1999, he was on the faculty of Chemical Engineering and Materials Science at the University of Minnesota, where he served as department head from 1995 to 1999. Professor Tirrell completed ten years as Dean of Engineering at UC Santa Barbara on June 30, 2009. His research has been in polymer surface properties, adsorption, adhesion, surface treatment, friction, lubrication, biocompatibility and self-assembly. He has co-authored about 280 papers and one book and has supervised about 80 Ph.D. students. Professor Tirrell has been a Sloan and a Guggenheim Fellow, Camille and Henry Dreyfus Teacher-Scholar and has received the Allan P. Colburn, Charles Stine, William H. Walker and Professional Progress Awards from AIChE, and was the Institute Lecturer in 2001. He is a member of the National Academy of Engineering, the American Academy of Arts & Sciences and the Indian National Academy of Engineering, and is a Fellow of: the American Institute of Medical and Biological Engineers, the AAAS, and the APS.*



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