



## Department of Chemical Engineering Distinguished Seminar Speaker



### Jon R. Parquette

Professor,  
Chemistry & Biochemistry  
The Ohio State University

Host: Hicham Fenniri  
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### “The Self-Assembly of Functional Nanostructures”

Wednesday, Feb 11  
312 EII Hall  
11:45 a.m. – 1:00 p.m.

*Refreshments will be  
served*

**ABSTRACT** The self-assembly of small molecules into one-dimensional nanostructures offers many potential opportunities for the development of new materials with functions ranging from targeted drug delivery and tissue engineering to optoelectronics and sensing. In order to realize the potential for nanoscale self-assembly to contribute to these applications, it is important to control the size, shape, and internal/external surface structure of the nanostructures in a predictable and versatile manner. Most applications require the assembly or co-integration of functional co-factors that may include specific drugs, chromophores or imaging agents for biomedical applications. Thus, the self-assembly process must not only be controllable with regard to nanostructure, it must be capable of integrating these functional components. We have developed several versatile strategies that permit functional chromophores to be assembled into one-dimensional

nanostructures, such as nanotubes, based on  $\beta$ -sheet aggregation and/or amphiphilic association in water. This lecture will discuss our recent efforts to program molecules to assemble into structures in that size regime.

**BIOGRAPHY** Jon R. Parquette received a B.S degree in chemistry from the University of California, Berkeley in 1988, and his Ph.D. in 1994 from Stanford University working with Barry M. Trost. At Stanford, he was an American Chemical Society, Division of Organic Chemistry Fellow. After completing postdoctoral work at Caltech in 1996, working with Peter Dervan as an American Cancer Society Postdoctoral Fellow, he became a faculty member at The Ohio State University. His research is currently supported by a National Science Foundation CAREER AWARD (1999).