

# Seminar

9:45 a.m. Thursday, Dec. 8

331 Smith Hall

Elizabeth “Beth” Landis, Ph.D.

Post Doctoral Fellow  
Harvard University

*Molecular Monolayers as Functional Interfaces  
for Hybrid Nanoscale Systems*



## Abstract

Vertically Aligned Carbon Nanofibers (VACNFs) are forms of nanoscale carbon with a surface composed of a high amount of edge plane graphite. The high electron transfer rates associated with edge plane graphite suggest that VACNFs should have high reactivity. We have developed two methods for covalently binding redox active molecules to the VACNF surface using photochemistry and click chemistry. The click chemistry binding method creates a highly stable linkage that has been studied using a variety of electrochemical techniques to investigate the electron transfer mechanism on the nanoscale surface. Studies of covalent binding on the VACNF surface indicate that both the binding density and electron transfer mechanism can be correlated with the molecular surface structure. These results demonstrate that the VACNFs are a promising scaffold for nanoscale devices.

Host: Professors Christopher Cramer and David Blank  
Refreshments will be served prior to the seminar.