

FIU

Biomedical Engineering

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Lecture Series Seminar

**Coulometry at Oxidase-Modified Microelectrodes for Membrane
Cholesterol Analysis**

Prof. James Burgess

Department of Chemistry, Case Western Reserve University

1:00 PM-2:00 PM, October 22th, 2010

Location: EC 2300

Abstract: This seminar will include work aimed at an in vivo membrane cholesterol assay as a diagnostic in Cystic Fibrosis (CF). Comparisons of CF and WT cells and CF and WT mouse nasal tissue indicate an increase in plasma membrane cholesterol for the CF disease state. An analog double potential step coulometric scheme is developed to avoid base-line drift in detection of hydrogen peroxide generated by the electrode-immobilized enzyme.



Dr. Burgess did his Ph.D. work in the area of direct protein electrochemistry with Fred Hawkrige at Virginia Commonwealth University (1997). He continued work in electrochemistry and surface science as postdoc with Marc Porter at Iowa State University. He joined the faculty in the Chemistry Department at Case Western Reserve University in 2000 and was promoted to associate professor in 2006. His independent research program has largely centered on the modification of electrode surfaces with biological structures for sensing and fundamental studies.