

# JOINT ANALYTICAL & CHEM BIO SEMINAR

Date: Thursday, Feb. 7th

Time: 12:15 pm, 1315

**Prof. David Beebe**

University of Wisconsin-Madison  
Department of Biomedical Engineering

***Micro Scale Tools Enable Functional and  
Mechanistic Insights in Cancer***

The role of cell-cell communication in many aspects of cancer (initiation, progression, resistance) is becoming increasingly apparent. We have developed a number of simple tools to improve our ability to manipulate and probe the nature of these multi cellular interactions both in isolation and in the context of the tumor microenvironment. These include 2D & 3D compartmentalized culture platforms to explore paracrine signaling and matrix interactions as well as lumen-based organotypic models to understand structure/function relationships. In addition, we have developed tools to enable multianalyte extraction from small precious samples from patients. We are applying these tools to understand how cell-cell communication influences various aspects of cancer development in the context of the tumor ecosystem. Examples include the transition from DCIS to IDC in breast cancer, metastasis to bone in prostate cancer, angiogenesis in kidney cancer, hormone response in breast cancer and resistance to therapy in multiple myeloma.