

**Research Seminar Series**

**University of Nebraska-Lincoln**

**Department of Chemical and Biomolecular Engineering**

Microsystems for Shaping and Sensing Cellular Interactions

**Prof. Alexander Revzin**

*University of California, Davis, Biomedical Engineering*

**Thursday, September 22, 2016**

12:30 p.m. – 1:45 p.m.

Jorgensen Hall, Room 151

*\*Refreshments provided*

**Abstract**

Traditionally, cells are analyzed by collecting media for off-dish functional assays such as ELISA. Our lab has been interested in developing assays that may be miniaturized and placed at the site of small groups of cells for on-dish detection of cell function. In developing these assays or biosensors we strive to achieve local and continuous detection of molecules appearing in extracellular space. Three categories of biosensors for cell secreted molecules under development in our lab will be discussed: aptamer-based sensors for protein detection, peptide-based sensors for protease activity monitoring and enzyme-based biosensors for small metabolite analysis. Applications of these technologies for tissue injury modeling and disease diagnosis will be discussed.