

Sigma Xi Distinguished Lecture

Co-sponsored by the departments of animal sciences and industry, biochemistry and molecular biophysics, chemistry, and chemical engineering

Can your iPhone tell you what's in your food?

Nanosensors for rapid detection of food pathogens

by

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March 29, 2016

4:00 p.m.

Fiedler Auditorium (DUF 1107)

Reception to follow.



Abstract

Rapid and accurate detection of food and waterborne pathogens is important because millions of people suffer from food poisoning every year, resulting in hospitalization and death. The Center for Disease Control has estimated that 48 million people suffer from food-borne pathogens every year, leading approximately to 128,000 hospitalizations and 3,000 deaths. Pathogen contamination can lead to a variety of serious illnesses and is often the reason behind recalls of consumer products. Current methods of pathogen detection are time consuming,

expensive and often require specialized training. We have developed nano-structured sensor/membranes with capabilities for rapid, ultrasensitive, and highly selective detection of *E. coli* and other pathogens. Our low-cost biosensor relies on the high affinity of mannose for the FimH lectin of *E. coli* type 1 pili. This talk will explore how the pattern of lines on our nano-structured membranes could be analyzed visually and with mobile phones, to indicate positive results for the presence of pathogens in food and water samples.



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