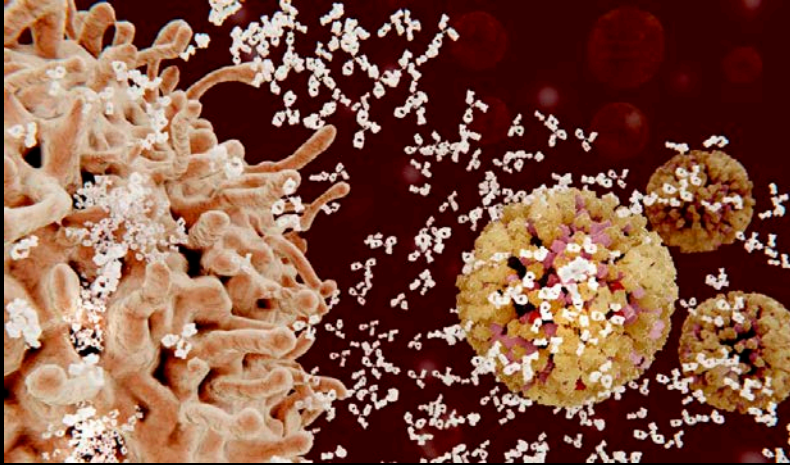


The Purdue Institute of Inflammation, Immunology and Infectious Disease

Presents:



THE LECTURE HALL SERIES

Thursday, November 29th, 2018 @ 7pm

Purdue University, Lynn 1136

(625 Harrison St. West Lafayette, IN 47906)

Featuring: A Paper-Based ELISA Card for Rapid Viral Detection

Guest Speaker: Kristin Byers, Graduate Student



Diagnosing an infection early to improve treatment and reduce its spread is a high priority global health goal. To identify a particular virus, we use the unique RNA strands to produce a tagged nucleic acid-based signal. Large laboratory equipment and lots of training is usually needed to successfully detect the virus. For a doctor to diagnose their patient at the hospital bedside, the viral detection method is miniaturized onto a paper test strip and read like a pregnancy test. Still, the method requires the doctor to complete multiple steps which can introduce error and false results. We are automating these steps by controlling the flow and reaction timing of multiple small-volume reagents on a complex paper card. My goal is to develop a device that can be easily modified to quickly detect many different causes of infectious diseases from a single nasal swab.

Background: After receiving her Bachelor's in Biological Engineering from UF in 2016, Kristin moved to Indiana to begin her PhD in Biomedical Engineering at Purdue. Now a 3rd year PhD student in Dr. Jackie Linnes's biosensors lab, Kristin studies novel ways to noninvasively and quickly detect infectious diseases. Her research and teaching has led her to multiple academic and industry collaborations seeking appropriate solutions to healthcare challenges. Outside of the lab she enjoys rock climbing, reading, and backpacking.

