

January 29, 2015

*11:45 a.m. -
1:15 p.m.*

9th Floor

Room 901

Photonics Center

*8 Saint Mary's
Street*

*Lunch will be
served!*



Photonics Forum

Novel Imaging Techniques for the Rapid Capture and Visualisation of Haemorrhagic Fever Viruses

Dr. John Connor, Boston University

The recent Ebola outbreak in Western Africa has highlighted the deadly nature of haemorrhagic fever viruses. It has also highlighted shortcomings in our ability to identify and treat those infected with viruses like Ebola. A critical enabler of the spread of this virus in Sierra Leone, Guinea, and Liberia has been the absence of a diagnostic platform that allows disease assessment at the point of need. Gold-standard diagnostics like Polymerase Chain Reaction (PCR) are fantastically sensitive but are anchored to clinical laboratory environments that have high resource demands (electricity, training, cold-storage, logistics) that cannot be met in developing countries.

To address the need for point-of-care diagnostics in low-resource settings Dr. Connor's lab, together with other members of the Photonics Center, is collaboratively developing novel approaches for virus diagnosis. Their technology allows them to grab viruses out of a complex mixture such as blood or serum and identify it through its interaction with light. Their approach leads to an easy assay that will simplify the diagnostic process in low resource settings. Additionally, the technology provides a view of virus morphology not previously possible, offering new avenues for basic research into virus particle populations and dynamics.

Dr. John Connor is an Associate Professor of Microbiology at the Boston University School of Medicine and an investigator at the National Emerging Infectious Diseases Laboratory. He received a B.A in Chemistry from Swarthmore College in 1994, and a Ph.D. in Pharmacology in 1999 from Duke University. Following a postdoctoral fellowship with Douglas Lyles at Wake Forest University, John moved to Boston University to continue his studies of Ribonucleic Acid (RNA) viruses. His laboratory research focuses on viruses that are associated with high fatality diseases such as Ebola, Marburg and Lassa. Within this focus, his laboratory has participated in the collaborative development of new diagnostic platforms for detecting highly fatal pathogens at the point of need, the identification of anti-viral small molecules, and the characterization of early disease biomarkers.