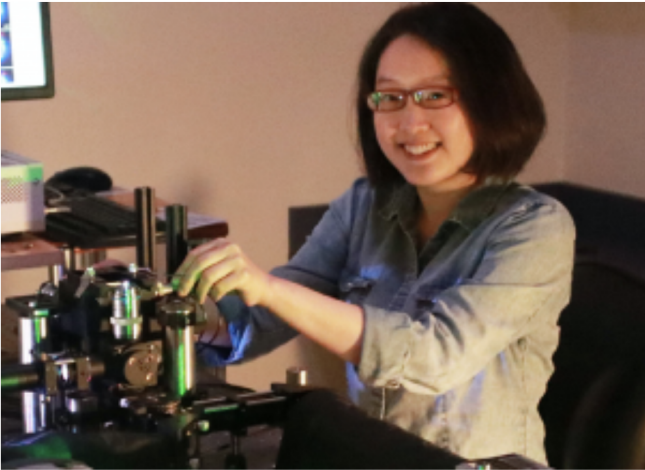


BIOENGINEERING & BIOMEDICAL ENGINEERING RESEARCH SEMINAR



SEEING IS BELIEVING: A SUPER-RESOLVED INSIGHT INTO THE PATHOGENESIS OF ZONOOSES

Dr. Qian (Vivian) Liu
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BSc (The Ocean University of China)
PhD (Washington State University)

Dr. Qian Liu (Vivian) started as a tenure-track Assistant Professor in the Institute of Parasitology at McGill University in August 2020. Her research focuses on understanding and tackling zoonoses using advanced imaging tools. She completed her PhD at Dr. Aguilar Carreno's lab in molecular virology (then at Washington State University, now at Cornell University) where she studied the entry mechanisms of Nipah virus. For her postdoctoral training, she joined Dr. Keng Chou's lab at the University of British Columbia to develop cutting-edge single-molecule imaging technology. She enjoys swimming and playing with her toddler and dog in parks when she is not working in the lab.

Zoonoses are infectious diseases that can be transmitted from animals to human. We have witnessed the devastated public health and socioeconomic impacts in COVID19. Given the increasing number of emerging viral zoonoses and ~0.5 million unknown mammalian viruses predicted in wildlife, it is urgent to study the pathogenesis of emerging viral zoonoses for pandemic preparedness. The development of super-resolution imaging has broken the diffraction limit of optical microscopy and allows the direct visualization of tiny biology structures (< 300 nm) in previously unattainable details. This technology has the potential to provide paradigm-shift knowledge in the mechanisms of viral infectious diseases and the identification of novel therapeutic targets. This talk focuses on how super-resolution microscopy has led to a previously unrecognized stochastic assembly model of a deadly Nipah virus.

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McGill

Department of **Biomedical Engineering**
Department of **Bioengineering**