



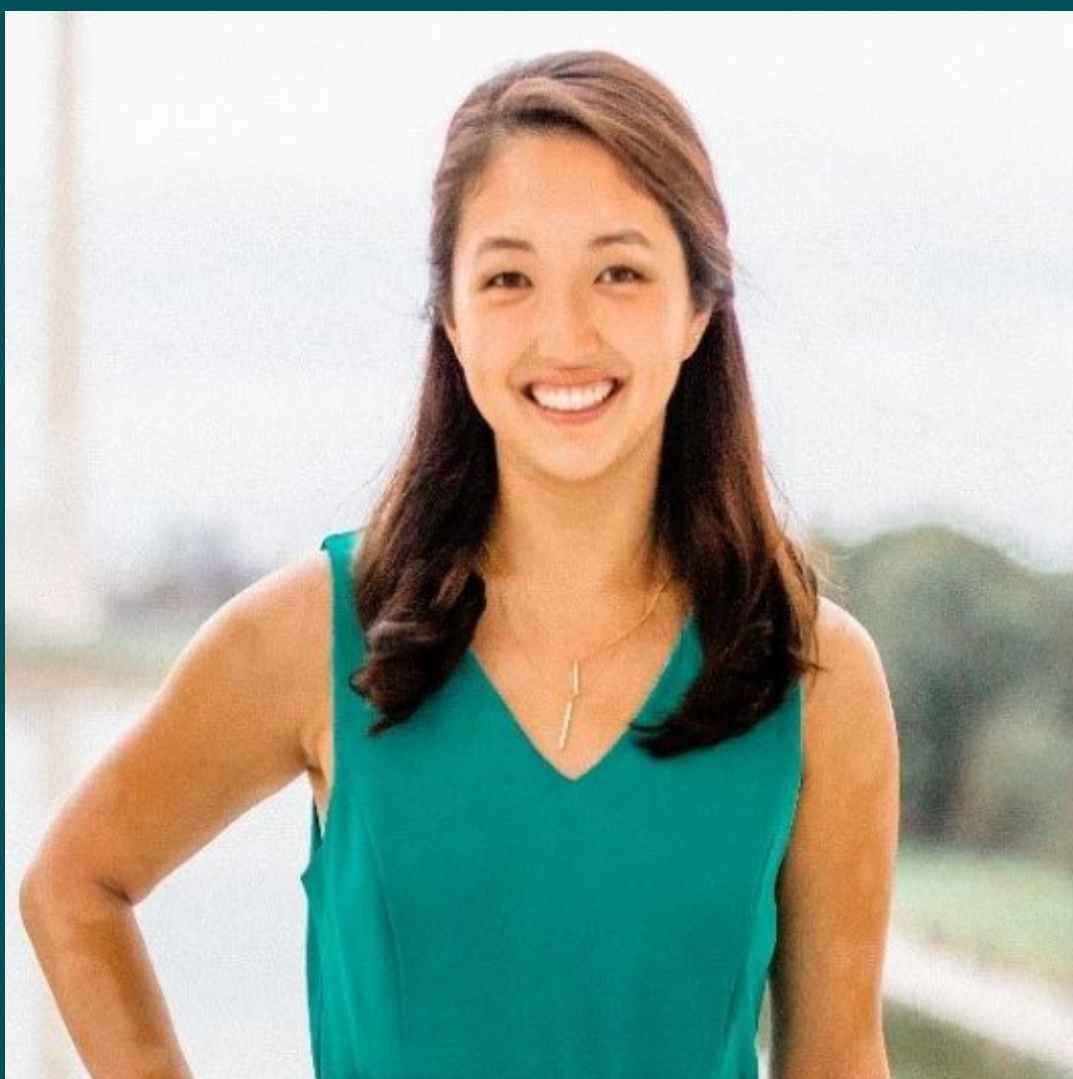
Chemical & Physical Sciences

UNIVERSITY OF TORONTO

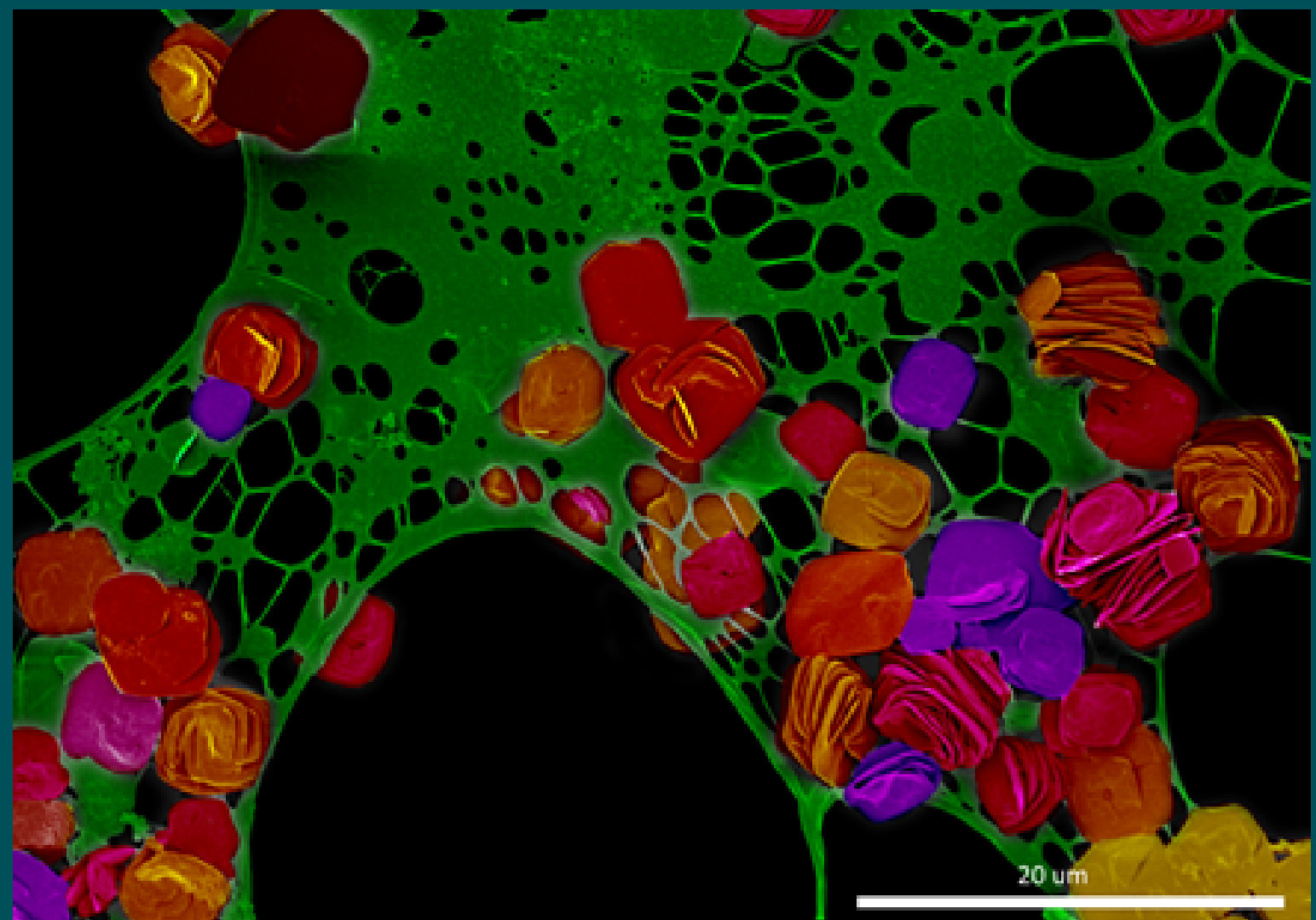
MISSISSAUGA

COLLOQUIUM SEMINAR SERIES

HOLDING OUT FOR A HERO: INNOVATING BIOANALYTICAL TECHNOLOGIES USING BIOINSPIRED NANOMATERIALS TO FIGHT THE BATTLE AGAINST DISEASES



Professor Alana Ogata
Department of Chemical and Physical Sciences,
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Bioanalytical methods that can provide accurate and early disease diagnoses are crucial to prevent the development of severe disease stages, enable treatments with high success rates, and reduce the economic burden of healthcare costs. The liquid biopsy is a promising non-invasive method for disease detection, where biological components in biofluids (i.e., blood, urine, or sweat) can indicate the medical state of patient and serve as disease biomarkers. Proteins are an important class of biomarkers that regulate many biological processes and are present in biofluids over a wide range of concentrations (sub picomolar to micromolar). Therefore, highly sensitive protein assays that can quantify protein biomarkers are key to advancing liquid-biopsy technologies to understand diseases and innovate diagnostic methods for early disease detection. Dr. Ogata will first describe a state-of-the-art platform for the detection proteins, called single-molecule arrays (SIMOA), and her previous research at the Brigham and Women's Hospital under Dr. David Walt on the development SIMOA assays for SARS-CoV-2 proteins and clinical applications in COVID-19 patients, pediatric patients, and vaccinated participants. She will also present an overview of the research program she is building at the University of Toronto. The Ogata lab will innovate bioanalytical technologies using bioinspired nanomaterials to pursue the long-term vision of solving key challenges in disease diagnostics. They aim to develop a range of bioanalytical technologies for protein quantification in biofluids, from complementary single-molecule assays to point-of-care biosensors, using strategically designed bioinspired nanomaterials. Dr. Ogata's career vision is to develop a diagnostic pipeline that enables innovation of diagnostic methods, specifically for early detection of gynecological diseases.

Colloquium Seminar Series

Wednesday, November 10, 2021

Join us on Zoom at 3:10pm

<https://utoronto.zoom.us/j/84409166490>