



# **Principal Investigator Candidate Seminar Series For Molecular, Cell and Systems Biology**

## **Dr. Hartland Jackson**

University of Zurich  
Zurich, Switzerland

### **Title:**

**The single cell pathology landscape of breast  
cancer: tumour cells and their  
microenvironments**

**Tuesday, January 8, 2019  
1:00 pm**

### **Location:**

**Mount Sinai Hospital  
Level 3 Conferences Rooms L3-201-202-203  
60 Murray Street, 3<sup>rd</sup> floor**

**Hosts: Dr. Anne-Claude Gingras & Dr. Daniel Schramek**

Dr. Jackson obtained his PhD in 2014 in the laboratory of Prof. Rama Khokha at the Princess Margaret Cancer Center where he studied the role of tissue inhibitors of metalloproteinases on tumorigenesis and stem and progenitor populations of the mammary gland, resulting in several publications, including a first author article in Nature Cell Biology (PMID:25706237). He then went to the group of Prof. Bernd Bodenmiller at the University of Zurich, where he contributed to the development and applications of imaging mass cytometry (IMC) for the phenotyping of cells in their native environment. In particular, he developed computational tools to identify significant cell-cell interactions using IMC (Nature Methods; PMID: 28932800). He then used these methods to create a comprehensive map of the breast cancer landscape that identified clinically-relevant ecosystems and novel patient subgroups with distinct clinical outcomes (manuscript under review). In work currently being prepared for publication, he has further expanded the approach to mapping the cellular ecosystems of the METABRIC cohort and to track the development of diverse tumor subtypes in mouse models, as well as contributing to the improvements of image analysis for IMC. His proposed research plans extend his postdoctoral work to further exploit the power of imaging mass cytometry to better understand the basis for the development of cancer, and also to develop high-dimension single cell pathology for precision medicine applications.