



# PHYSICS AND ASTRONOMY COLLOQUIUM

**Dr. Jo Bovy**

University of Toronto

## **“Stellar Streams and Fundamental Physics”**

### Abstract

Stellar tidal streams originating from disrupting globular clusters in the Milky Way’s halo hold enormous promise as probes of both the large-scale structure of the Milky Way halo’s density distribution and its small-scale structure. As such, the observed density, spatial, and kinematic structure of stellar streams can provide important new constraints on the interactions and small-scale structure of dark matter. I will discuss the simple gravitational dynamics of tidal-stream formation and evolution and how we can use it to build simple and fast models for tidal streams. I will show some examples of this machinery in fitting observed streams and what it tells us about the shape of the Milky Way’s halo. I will further present a fast perturbation theory for computing the effects of impacts between a stream and many small dark-matter subhalos and its application to existing and future data sets.

Wednesday, October 5, 2016

3:00 p.m.

Elliott Building

Room 167