



**Western University**  
**Department of Physics and Astronomy**

## **PHYSICS & ASTRONOMY COLLOQUIUM**

**Date:**        **Thursday, 12 September 2019**  
**Time:**        **1:30 p.m.**  
**Location:**    **Physics & Astronomy Seminar Room 100**

### **Dr. Althea Moorhead**

NASA, Meteoroid Environment Office  
Marshall Space Flight Center

### ***“Modeling the meteoroid environment as seen by spacecraft”***

#### **ABSTRACT**

Meteoroids pose the largest risk to spacecraft outside of Earth orbit. Millimeter-sized meteoroids make up the bulk of this risk; however, in-situ detections of millimeter impactors are vanishingly rare. We therefore rely heavily on in-atmosphere meteor observations to constrain our models of potentially hazardous meteoroids. This talk will introduce two key models produced by NASA's Meteoroid Environment Office: the Meteoroid Engineering Model (MEM), which describes the sporadic or background component of the environment, and our annual meteor shower forecasts, which predict the increase in flux spacecraft may see due to meteor showers. I will describe each model, present recent improvements, and highlight how meteor research conducted at the University of Western Ontario feeds into these models.

**HOST:**    P. G. Brown

***COFFEE + light snacks will be available in the Atrium, 2nd floor, at 1:15 p.m.***