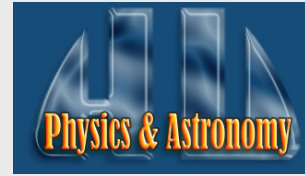


# Department of Physics and Astronomy

## Colloquium



**Dr. Rosemary Killen**

NASA Goddard Space Flight Center, Greenbelt, MD

**Date:** April 5, 2017

**Time:** 3:40 p.m. (**Refreshments** in **Rm. 103 @ 3:30 p.m.**)

**Place:** Rm. 103, Thirkield Hall, Howard University

**Host:** Prof. Prabhakar Misra

**Surface-Bounded Exospheres: What are they and why do we care?**

**Abstract:** An exosphere is a collisionless atmosphere that may extend from a denser atmosphere or from the surface of a planetary body. The source processes producing surface-bounded exospheres include interplanetary radiation, charged particles and interplanetary dust, meteoroids and asteroids that may impact the surfaces of planets and satellites. These gaseous envelopes may be bound or escaping. Exospheres that extend from atmospheres arise mainly due to Jeans escape (kinetic escape) and charge exchange with ionospheres. I will discuss the interaction of the interplanetary medium with the planets and the implications for long-term evolution of the surfaces. Exospheres from Mercury, the Moon and the satellites of the giant planets will be discussed.