RUMA

Rutgers Undergraduate Mathematics Association

presents...

From Math to the Universe

A Lecture by Professor Charles Keeton

Dept. of Physics, Rutgers University

Abstract:

In the 1930s Einstein used his theory of relativity to predict that a star's gravity could act like a lens, bending light and creating multiple images of a more distant star. Today this "gravitational lensing" is used across astrophysics and cosmology to study galaxies, black holes, dark matter, and much more. The phenomenon provides a beautiful connection between astrophysics and mathematics. I will show examples of connections that involve catastrophe theory, complex analysis, the Poincare-Hopf index theorem, and stochastic processes. I will strive to explain how astrophysical applications both motivate and benefit from deep study of the mathematics of gravity and light.

Wednesday
March 4, 2020
Hill 525 at 6:00 pm

**Pizza and refreshments will be served*