

# Lectures on Pure and Applied Math



## Announcing

**A Seminar Presentation  
on December 4, 2014**

**at 3:00 pm in Maxcy 212**

**at The University of New Haven**

### **Dr. Nikodem Poplawski**

Department of Mathematics and Physics  
The University of New Haven

### **Title: Every Black Hole Contains a New Universe?**

#### **Abstract:**

The conservation law for the angular momentum of elementary particles in the presence of gravity requires that spacetime is endowed with a geometric structure called torsion. At extremely high densities, existing in black holes, torsion generates gravitational repulsion and prevents the formation of singularities. Consequently, the matter in a black hole undergoes a bounce and expands as a new, regular, closed, nearly flat, homogeneous, and isotropic universe on the other side of the black hole's event horizon. Every black hole is thus a one-way door to a new universe. Quantum particle production in such a universe can generate a period of exponential expansion which creates enormous amounts of matter in that universe. Accordingly, our Universe may have originated from the interior of a black hole existing in another universe. This scenario may also explain the matter-antimatter asymmetry and the arrow of time.

#### **Further Information**

For further information, please contact Angie Domschine at the Department of Mathematics, Office: Maxcy 204, 203-932-7250, [ADomschine@newhaven.edu](mailto:ADomschine@newhaven.edu).