

FACULTY OF MATHEMATICS PUBLIC LECTURES

March 9, 2015
Free Admission



From Pythagoras to Einstein: The Geometry of Space and Time

6:00 p.m. - 7:00 p.m.
Earth Sciences Museum
EIT 1015

Pythagoras was an ancient Greek who was not only a mathematician, but also a religious cult leader. He and his followers believed that the key to unlocking the mysteries of the universe was hidden somewhere inside mathematics and geometry. Crazy, right? Well, it turns out he was right. Thousands of years later, based on the work of the mathematicians Gauss and Riemann, Einstein discovered a hidden geometry of the universe. Starting with the Rule of Pythagoras for right triangles, we'll survey the ideas which led to Einstein's historic discovery and how it relates to black holes, the Big Bang, and the unification of space and time.

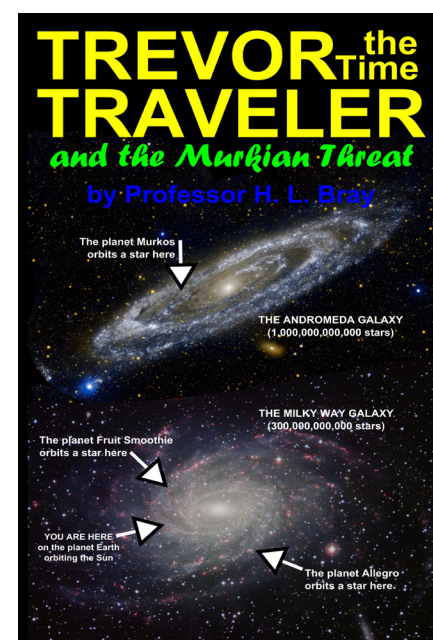
The Science behind "Trevor the Time Traveler"

7:15 p.m. - 8:00 p.m.
Earth Sciences Museum
EIT 1015

Is time travel possible? Are there other universes? Does life exist on other planets? What is Einstein's Theory of Relativity? How do you count in base 7, and why would anyone do this? These are some of the serious questions which relate to the speaker's science fiction book "Trevor the Time Traveler" about Trevor and his sister Farrah. We'll also hand out free "Golden Thank You's" - the official currency of the Milky Way galaxy - which is based on the Fibonacci sequence.

Note: You do not need to have read "Trevor the Time Traveler" to enjoy this lecture. Copies of the book may be purchased at the event. The author will sign copies of the book.

Target audience: Ages 8 - 18 and up.



The speaker:

Professor Bray uses differential geometry to study black holes, dark matter, and the curvature of space and time. He is known for his 1999 proof of the Riemannian Penrose conjecture for any number of black holes as well as many other results in geometry and general relativity. More recently he has used geometry to propose a model of dark matter.

Professor Bray has been an NSF postdoc at Harvard University, an associate professor at MIT, and at Columbia University. He is currently a full professor of mathematics and physics at Duke University. He is married and is the father of three boys and two girls.

