The Reese T. Prosser Mathematics Lecture Series

Presents

Tales of the Dodecahedron:
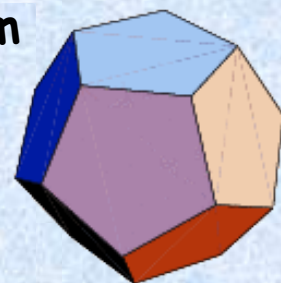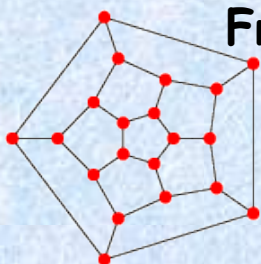## from Pythagoras through Plato to Poincaré

John Baez

University of California - Riverside

Friday, November 10, 2006 - 7:00 pm

Kemeny Hall – Room 008

(Free & open to the public)

The dodecahedron is a beautiful shape made of 12 regular pentagons. It doesn't occur in nature; it was invented by the Pythagoreans, and we first read of it in a text written by Plato. We shall see some of its many amazing properties: its relation to the Golden Ratio, its rotational symmetries - and best of all, how to use it to create a regular solid in 4 dimensions! Poincaré exploited this to invent a 3-dimensional space that disproved a conjecture he made. This led him to an improved version of his conjecture, which was recently proved by the reclusive Russian mathematician Grigori Perelman - who now stands to win a million dollars.

The Reese Prosser Memorial Lectures were inaugurated in 2002 by the Department of Mathematics at Dartmouth College to honor their long time colleague Reese Prosser. This lecture series, endowed by the late Nancy Prosser and her family, is intended to introduce the general public to mathematical research related to their daily lives.