

EVANS/HALL  
LECTURE SERIES

*From boomerangs with strings to non-Euclidean tilings*

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**Abstract:** One day, a little French boy named Henri was playing in a field with his boomerang. He decided to try an experiment: “what would happen,” he thought, “if I tied a very long string to my boomerang and then held on to one end. When the boomerang comes back,” he wondered, “will I be able to pull the string back to me while holding on to both ends?” “Surely,” he thought, “as long as it doesn’t get ‘caught’ on something I can pull it back. But can it get caught on space itself?”

Little Henri Poincaré probably never owned a boomerang, but one can imagine he may have had similar thoughts: his conjecture that any space where such a mathematical string never gets caught must be the three-dimensional sphere mystified mathematicians for nearly a hundred years. That is until a reclusive Russian named Grisha Perelman quietly posted three preprints on a public web server that settled Poincaré’s question once and for all.

Perelman’s proof, a tour-de-force of three-dimensional geometry, presents as many new challenges as solutions. In this talk, I’ll attempt to untangle elements of the history and conclusion of this elusive conjecture, and where we go from here. Along the way, we’ll learn of non-Euclidean ‘Escheresque’ tilings, triangles whose interior angles don’t add up to 180 degrees, how our universe is really just a pair of multi-handled coffee cups. The talk will be aimed at undergraduates but should be understandable to a lay audience.

Tuesday, April 28, 2009, 4:00 pm  
Mathematics and Science Center: E208

Please join us in the atrium for food and festivities following the awards ceremony and talk

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