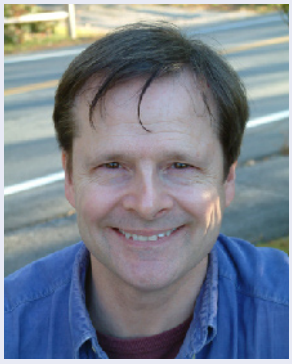
DEAN'S LECTURE SERIES

Weiss School of Natural Sciences

Title

Wednesday, January 17, 2007
4:00-5:00 pm
Keck Hall, Room 102

Reception immediately following in Keck 206.



Tim Cochran

RICE

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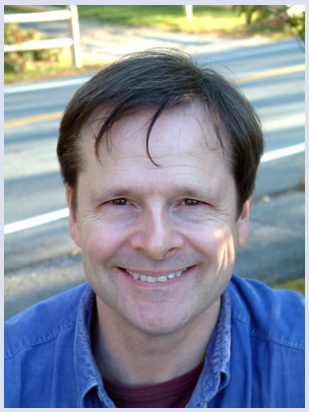

Untying Knots in 4-Dimensional Space

Tim Cochran, Ph.D.
Professor, Mathematics

ABSTRACT

Topology is the area of mathematics concerned with the "shape" of geometrical objects. Shape is very important in the study of networks, in the design of drugs, in satellite recognition, and in the mapping of human organs. Within Topology, Knot Theory is the study of knotted circles in 3-dimensional space. A mathematical knot can be obtained from a piece of rope by tying an ordinary knot into it and then fusing together the two free ends. In this talk I will introduce knot theory via an open problem first posed in the 1950's because of its relation to classifying 4-dimensional manifolds: "Which knots can be untied in 4-dimensional space?"

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