

Cornell Mathematics Outreach
Saturday Workshops for Teachers
Math 508 - Teaching Secondary Mathematics
406 Malott Hall
October 14, 2006
9:00-2:30

8:45-9:00 Welcome (juice and bagels provided)

9:00-10:30 **Intersecting circles, colliding motorboats, and the “power” of a point**

Presenter: *Dave Bock, Cornell*

Sometimes we find there’s a simple idea that connects several apparently different relationships, and that insight can pave the way to clearer understanding and broader applications. Today we’ll explore patterns in intersecting circles and lines, encountering a great example of such a unifying idea – with implications for teaching circle geometry. (Bring weapons of math construction!)

10:30-12:00 **Mysteries from the depths of Pascal's triangle**

Presenter: *Alvaro Lozano-Robledo, Cornell*

At the tip of Pascal's Triangle is the number 1, and below 1 there is a collection of numbers arranged in a triangular pattern in such a way that an incredible amount of information can be extracted. Fibonacci numbers, polygonal numbers and fractals are among the many mysteries that hide in the depths of Pascal's triangle. Our exploration will include worksheets that can be adapted to various levels of K-12 mathematics.

12:00-12:30 Lunch (pizza provided)

12:30-2:30 **Geometry and Topology: From Polydrons to Poincare**

Presenter: *Bill Thurston, Cornell*

It has recently been in the news that one of the most famous problems in mathematics, the Poincare conjecture, has been proven by Grigory Perelman. The proof actually established that geometry is a powerful medium for explaining the possible ways that surfaces and space itself can be interconnected. We’ll explore this geometry and topology through activities using polydrons, paper, and scissors - but you needn’t bring anything but curiosity and imagination.

SIGN UP by Wed Oct 11 at deb37@cornell.edu, or call 255-5529