



Cornell University
K-12 Education and Outreach, Mathematics Department

MATH 5080
Mathematics for Secondary School Teachers

May 3, 2014

9:00 am – 2:30 pm (lunch provided)

406 Malott Hall

8:45 – 9:00 am **Bagels & Juice (provided)**

9:00 – 9:15 am **Introductions**

9:15 – 10:45 am **From Triangles to Circles and Back – Exploring Connections among Common Core Standards**

In this workshop, we will use the Common Core standards for mathematical practice to explore connections between the algebra and geometry content standards. We will investigate the algebraic relationship between the Pythagorean Theorem and right triangles with integer side lengths, and connect this algebraic viewpoint with geometry by investigating points on the unit circle. We will discuss how viewing this geometry is key to fully understanding the algebraic notions developed in the first part. Throughout the investigations, we will work with “nice” numbers in a natural way.

Speaker: David Brown (Ithaca College)

10:45 – 2:25 pm **The Geometry of Nearest Neighbors: Voronoi
(break for lunch) Diagrams and Mathematical Modeling**

We will explore the mathematics of Voronoi diagrams and their applications to problems in biology, issues of geographical fairness, and problems of optimization. Topics will range from simple studies of symmetry, through use of coordinate geometry, to open-ended research questions. Pedagogical approaches will include simple paper folding suitable for 6th-grade students as well as sophisticated explorations using computer programs for advanced high-school students. The workshop will include a mix of hands-on opportunities and more formal presentations and demonstrations.

Speaker: Paul Kehle (Hobart & William Smith Colleges)

2:25 – 2:30 pm **Closing**

RSVP by Thursday, April 24, 2014

Registration Form: <https://www.math.cornell.edu/m/Community/5080#form>

Questions? Contact Mary Ann Huntley

E-mail: huntley@math.cornell.edu