



## Cornell University

K-12 Education and Outreach, Mathematics Department

### **MATH 5080 – Mathematics for Secondary School Teachers**

February 27, 2016   ◆   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 – 10:25 am**   **On Coloring Points and Cutting Cakes**

We will consider games played by coloring points in geometric configurations in the plane and explore winning strategies for those games. We will then apply those strategies to the problem of fairly dividing a cake among several people.

**Speaker: Florian Frick (Mathematics Faculty, Cornell University)**

**10:35 – 11:45 am**   **On Catalan Numbers**

Catalan numbers are ubiquitous in combinatorics. We will define them and study several seemingly different objects that they count. Dyck paths and triangulations of polygons will make appearances, among others.

**Speaker: Karola Meszaros (Mathematics Faculty, Cornell University)**

**11:45 am – 12:15 pm**   **Lunch (provided)**

**12:15 – 2:25 pm**   **Conditional Probability: Puzzles, Paradoxes, and Applications**

We will examine the notion of conditional probability, which concerns the updating of odds in the face of new information. After discussing some famous problems involving conditional probability, we will review the fundamentals of the subject along with related topics such as Bayes' Theorem. No formal background in probability will be assumed.

**Speakers: Daniel Jerison & John Pike (Mathematics Faculty, Cornell University)**

**2:25 – 2:30 pm**   **Wrap-Up**

**RSVP by Tuesday, February 23, 2016**

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

**Questions? Contact Mary Ann Huntley** ([huntley@math.cornell.edu](mailto:huntley@math.cornell.edu))