



**Cornell University**

**K-12 Education and Outreach, Mathematics Department**

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**MATH 5080**

**Mathematics for Secondary School Teachers**

March 8, 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**    **The Geometry of Curved Spaces**

How does classical geometry change when the underlying surface is curved instead of flat? What is the curvature of a surface and how can it be measured? What geometric rules govern the shape of soap film? This talk will address these questions and present an overview of some of the classical theorems of differential geometry.

**Speaker: Justin Moore (Cornell University)**

**10:45 am – 12:15 pm**   **Enumerative Combinatorics**

We will discuss four approaches to enumeration: 1) explicit formulas, 2) recurrence relations, 3) generating functions, and 4) asymptotic formulas. We'll see how to use these approaches on specific examples.

**Speaker: Karola Meszaros (Cornell University)**

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

**12:45 – 2:25 pm**    **RSA Encryption: Clever Mathematics Opens Up Web Commerce**

In 1977, Ron Rivest, Adi Shamir, and Len Adleman came up with an amazing way to encrypt messages or other data. You use their discovery every time you buy something online! In this talk we will briefly discuss some history of encryption schemes, and then describe the RSA encryption method and the mathematics behind it, which is not so advanced, just very clever. We will also discuss some interesting methods that have been used to try to “break” the code.

**Speaker: Michael Stillman (Cornell University)**

**2:25 – 2:30 pm**      **Closing**

**RSVP by Thursday, February 27, 2014**

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

**Questions? Contact Mary Ann Huntley**

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