



Cornell University
K-12 Education and Outreach, Mathematics Department

MATH 5080

Mathematics for Secondary School Teachers

April 21, 2012

9:00 am – 2:30 pm

406 Malott Hall

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

9:00-9:15 **Introductions**

9:15-10:45 **Education of a Model Student**

Tim Novikoff (Cornell University)

While working as a PhD student in applied math at Cornell, former high-school math teacher Tim Novikoff created a popular flashcard-based iPhone app for studying vocabulary words. For the app he devised a simple algorithm to determine the exact sequence of flashcards shown to the user. Pondering the algorithm led him to ask novel questions about constructing mathematical sequences that satisfy certain constraints. Tim will present the accessible results of the mathematical investigation, including some puzzle-like mathematical questions that came out of it.

11:00-12:30 **Look in Your Experiences for the Meanings of Mathematics**

David Henderson (Cornell University)

David believes that the meaning of everything in mathematics comes from our human experiences; and, thus, we should look to our experiences to find meanings of mathematics. School textbooks and state standards still routinely provide definitions that block students' access to meanings; e.g., a popular high school geometry text defines "rotation" as "the product of two reflections over intersecting lines." In this talk, David will provide other examples and discuss how the experiences of mathematicians are needed to help school mathematics change its definitions and rules to bring out meanings, especially meanings that translate well to higher mathematics and various applications.

12:30-1:00 **Lunch** (provided)

1:00-2:30 **Surfing the Data Deluge**

Math Awareness Month Public Lecture—228 Malott Hall

Paul Velleman (Cornell University)

Drowning in data?! Come hear Paul Velleman, author of popular high-school textbooks and software packages for statistics, talk about how to stay on top of the data deluge.

RSVP to Mary Ann Huntley by 2 pm Friday, April 13th if you plan to attend.

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