



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 a high-school math teacher in NYC, Tim created the top-selling SAT prep iPhone app. He used a simple algorithm to determine the exact sequence of flashcards shown to a student studying vocabulary words. This led him to a mathematical exploration of algorithms for optimal sequencing of flashcards in order to maximize student learning. Tim will present the novel but accessible mathematical research that grew out of this, and present a result that might be described non-mathematically as: “While not every child can learn, every child can cram.”

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**

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 Monday, April 16th if you plan to attend.

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