



## **Cornell University**

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

### **MATH 5080**

Mathematics for Secondary School Teachers

March 10, 2012

9:00 am – 2:30 pm

406 Malott Hall

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

**9:00-9:15**     **Introductions**

**9:15-11:00**   **You are so mean! What *mean* do you mean?!**

*Severin Drix (Ithaca High School) & Mircea Pitici (Cornell University)*

The most common means (arithmetic, geometric, harmonic, quadratic) are many centuries old and ubiquitous in mathematics, from elementary uses to more advanced applications. Here we will look at the means from several perspectives; we define the means and explore their connections with geometry, music, algebraic inequalities, equations—and even mention some unsolved problems involving the means.

**11:00-12:00**   **Helping Students see the Beauty in Mathematics**

*Lee Kaltman (DeWitt Middle School)*

We all love math—that's why we teach it. Unfortunately, our students don't always feel the same way. Over the past seven years Lee has taught sixth-grade mathematics in two distinctly different school districts. He will share specific strategies he has used with students who have a predisposition to disliking math.

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

**12:30-2:15**     **Mathematical Models: The Good, the Bad, and the Ugly**

*Alexander Vladimirovsky (Cornell University)*

Mathematical modeling provides a natural gateway into mathematics for students who might otherwise be uninterested in the subject. From a non-mathematician's point of view, models are useful only if they help to answer specific questions about the modeled ("real-world") systems. Thus, in designing models, it is crucial to be aware of their range of applicability and the modeling/simplification artifacts. In the second half of this session, Alex will present a gallery of models (e.g., severed nerves and motion of fingers; energy release in nuclear explosions; patterns in gas convection; flocking of birds; different methods of rounding and their effect on congressional elections; cell divisions and soap bubbles; pedestrian traffic and stability of bridges).

**RSVP to Mary Ann Huntley by Wednesday, March 7<sup>th</sup> if you plan to attend.**

**E-mail: [huntley@math.cornell.edu](mailto:huntley@math.cornell.edu)**

**Phone: (607) 255-5529**