MATH 5080
Mathematics for Secondary School Teachers

March 7, 2015
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**

10:45 – 2:25 pm **Make Me a Match**
(break for lunch @ 11:45) *Speaker: Paul Kehle (Hobart & William Smith Colleges)*

We will explore the topic of matchings and of stable matchings in particular. The mathematics of matching belongs to the fields of applied mathematics and operations research and is ideally suited for breathing substantive and engaging meaning into the Common Core standards relating to modeling, problem solving, statistics, and in particular the mathematical practices such as constructing viable arguments and critiquing the reasoning of others. We will spend most of our time understanding the mathematics behind the National Resident Match Program, the fascinating process through which medical students are matched with hospitals for their residencies. The basic ideas involved are accessible to middle-school students and yet provide a foundation for problems of current interest to research mathematicians. Depending on the level of the students, the topic can be adapted to emphasize mathematics drawn from making, reading, and interpreting matrices, simple algorithmic thinking and basic descriptive statistics, sophisticated work with the discrete mathematics of partially ordered sets, more subtle algorithmic thinking and programming, and the invention of new measures of fairness. Many of the topics and ideas could be introduced in middle school, expanded upon in early high-school grades, and revisited with increased sophistication in a senior year capstone project. As we will see there is a match for everyone, literally and metaphorically through a mix of formal presentation, discussion, and hands-on explorations.

2:25 – 2:30 pm **Closing**

RSVP by Thursday, February 26, 2015
Registration Form: https://www.math.cornell.edu/m/Community/5080#form

Questions? Contact Mary Ann Huntley
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