Sonia Kovalevsky
High School Mathematics Day

SKHS MATH DAY AT WCU 20 MARCH 2010
SCHEDULE OF EVENTS

8:30-9:30  Registration and breakfast ................................................... Lobby, Stillwell Building

9:30-9:40  Welcoming Remarks ................................................................. Niggli Theater, Stillwell Building
           Wendy Ford, Dean, College of Arts and Sciences

9:50-10:40  Workshop Session I
           H1N1 and Mathematics? Using Mathematics to Modeling the Spread of a Disease .........................Room 144, Stillwell Building
           Erin McNeelis, Western Carolina University

           Binary Numbers Card Trick and coding theory ....................Room 425, Stillwell Building
           Tuval Foguel, Western Carolina University

10:50-11:30  Career Panel................................................................. Room 425, Stillwell Building
            Natalie Almond, Research & Development, Uwharrie Capital Corp
            Amanda Collins, Smoky Mountain High School
            Ayse A. Sahin, Department of Mathematical Sciences, Depaul University
            April Stepp, Actuarial Assistant – International ESC, Assurant Solutions
            Sally Wahba, School of Computing, Clemson University

11:45-12:45  History of Math Poster Session†..........................Multipurpose Rooms A&B, University Center

1:00-2:00  Buffet Lunch†...............................................................Courtyard Dining Hall

2:20-3:20  Workshop Session II
           Developing Your Own Computer Animations .......................Room 434, Stillwell Building
           Sally Wahba, Clemson University and Andrew Dalton, Western Carolina University

           The Mathematics of a Dynamical Art:
           Creating Art with Geometer’s Sketchpad ............................Room 144, Stillwell Building
           Kate Best, Western Carolina University

3:30-4:20  Keynote Address .............................................................Room 425, Stillwell Building
           Ayse A. Sahin, Department of Mathematical Sciences, Depaul University

4:20-4:30  Closing Remarks .............................................................Room 425, Stillwell Building

† We will eat lunch with participants of the Smoky Mountain Undergraduate Research Conference on the History of Mathematics (SMURCHOM). We will also attend their poster presentation.
Abstracts of Workshops

**H1N1 and Mathematics? Using Mathematics to Modeling the Spread of a Disease**  
**Erin McNelis**, Western Carolina University

For this workshop, students will participate in a simulation of the spread of a contagious disease (just cups and dice, no added bacteria or germs involved), and we’ll collect data to see if we can identify trends. We’ll also determine how to represent the spread of the disease in terms of a mathematical system of equations, then implement these in Excel and compare them to the data from our simulations. Finally, we’ll discuss how our simulation and model could change to better represent other scenarios --what if you can get vaccinated? What if can you get sick more than once? What if it takes a long time to recover? How is this similar to the spread of a rumor?

**Binary Numbers Card Trick and Coding Theory**  
**Tuval Foguel**, Western Carolina University

We will learn a card trick based on binary numbers and use this trick as an introduction to coding.

**Developing Your Own Computer Animations**  
**Sally Wahba**, Clemson University and **Andrew Dalton**, Western Carolina University

In this session, we will teach you how to write programs to create your own animations. We will introduce you to basic programming concepts, similar to what you will learn as a computer scientist. Then you will apply these concepts to create your own animations. You can create an animated card, develop your own story, or even animate the letters in your name. Also, you can put your animation online for people all over the world to see. To do all this, we will use a software tool named Scratch. When the session is over, you can install Scratch at home and use it to create more animations or games.

**The Mathematics of a Dynamical Art: Creating Art with Geometer’s Sketchpad**  
**Kate Best**, Western Carolina University

Are you interested in creating artwork that is based on mathematical ideas? We’ll use dynamic geometry software to create virtual animated kaleidoscopes or animated string art. Participants will be able to burn a CD with their creations to take with them.
Thanks to the sponsors of the First Annual Sonia Kovalevsky High School Mathematics Day at WCU!

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
UNDERGRADUATE ADMISSIONS
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"Say what you know, do what you must, come what may"

- Sonia Kovalevsky (also known as Sofia Kovalevskaya 1850-1891)