Aftermath

Message From the Chair
by Peter Trapa

It's hard to imagine that Fall Break is just around the corner. Most of you have by now noticed the changes in the front office: we're delighted to have Jacque Green as our new Graduate Program Coordinator and Daniela Ciubotaru as our new Head Accountant. But our commitment to the department's intertwined missions – education and research – hasn't changed much at all. Our new placement and prerequisite policies have already positively impacted the quality of instruction we provide undergraduates; and our interaction with the Center for Science and Math Education holds similar promise, particularly for the training of future math teachers. At the same time, *all* of our research groups are building on already strong momentum and continue to raise the department's profile world-wide.

The excellent situation we now enjoy is possible because of the tireless efforts of Aaron Bertram for the last six years. (Thank you again, Aaron!) So my task is a relatively easy one: hold the course, keep fighting the good fights Aaron has engaged in, and continue exploring new opportunities and resources to increase our effectiveness as educators and researchers. That's what I intend to do.

Finally, one thing to keep on your calendar: we'll be hosting the AMS Western Sectional Meeting October 22-23. (Don't miss Graeme's invited address on the 22nd.) In the meantime, I wish you a relaxing and productive Fall Break.

Welcome!

We'd like to extend an enthusiastic welcome to those who are new in the department this year, and we hope that they are beginning to feel at home here.

Our new postdocs are Nicos Georgiou (probability theory), Steffen Marcus (algebraic geometry), Christopher Orum (probability theory and stochastic processes), Patrick Reynolds (group theory and generalizations), and Erik Sherwood (math biology). We'd also like to welcome Jie Wang who is visiting for the year and working with Aaron Bertram.

Our new graduate students are Nik Aksamit, Jason Albright, Vera Babenko, Patrick Bardsley, Andrew Egbert, Max Forlini, Thomas Goller, Marina Gresham, Radhika Gupta, Drew Johnson, Jie Ma, Kishalaya Saha, Kyle Steffen, Yuan Wang, Jonathan Watson, Keyvan Yaghmayi, Christopher Craft, William Caughey, Alan Watson, and Xinyu Zhou.

New Staff
by Mary Levine
Daniela Ciubotaru, Accountant

I know you're probably thinking, wait, don't I know Daniela? Hasn't she been working in the department? Why is she being spotlighted as someone who is new? To answer that question, yes, Daniela has worked in the department since January 2010 as the part time VIGRE program coordinator. Daniela is now working full time as the department accountant.

Daniela received a B.S. degree in Economics in 1998 from Babes-Bolyai University, Cluj-Napoca, Romania. She received an M.A. in Economics in 2005 from the State University of New York in Buffalo, New York.

Daniela is the wife of Dan Ciubotaru. She enjoys cooking and finds that painting for her family is very relaxing. She also loves being outdoors as often as possible. Daniela is very friendly and easy to work with. She is very organized and extremely conscientious of her work responsibilities. Daniela has strong analytical and problem solving skills. She doesn't complain and always has a smile or word of encouragement whenever needed. She never draws attention to herself and is willing to go above and beyond the

call of duty for everyone in the department.

Welcome Daniela, we are fortunate to have you as a member of our staff!

Jacque Green, Graduate Program Coordinator

Jacque received a B.A. degree in Art History from the University of Utah in December 2005. She has been working at the university since 2006 and moved to the math department from the Registrar's Office. Jacque served on the Petition for Consideration of Exception to Policy Committee while working in the registrar's office. I'm sure some of us may think we've heard every excuse there is for a student to drop a class from a their schedule, but I'll bet Jacque has heard every excuse imaginable after working on this committee.

Jacque has lived in Utah for most of her life and enjoys life in the beehive state. She loves watching baseball and her favorite team is the Philadelphia Phillies. She also loves to read all types of literature; some of her favorite authors are Richard Russo and Kurt Vonnegut.

Jacque is very quiet, but don't let that deceive you. She's very smart and extremely talented and has a quick wit about her. She's very organized and works extremely well under pressure.

Jacque says she likes working in the math department, and she enjoys interacting with the graduate students. Welcome Jacque, we are thrilled to have you as part of our staff!

Feltrinelli Prize

In November Christopher Hacon will be presented with the Antonio Feltrinelli Prize in Mathematics, Mechanics and Applications by Italy's Accademia Nazionale dei Lincei. The Antonio Feltrinelli prizes are Italy's highest scientific honors. Congratulations, Christopher!

Summer Programs
Workshop for Teachers
by Emina Alibegovic

This year's Teachers' Math Circle Workshop was held the last week of June and 17 teachers across the state participated. The topic was "Teaching through problems and integrated mathematics curriculum in Secondary I." As Utah is moving toward integrated curriculum in secondary education, this was a pertinent topic many were interested in. As in every year, we had several loyal teachers come back for the interesting mathematics problems that we serve every morning of the workshop. The problems this year connected and exposed teachers to some of the mathematics that is not traditionally taught in secondary schools and is new to the Common Core State Standards (CCSS). For instance, greater emphasis is placed on development of geometry through transformations, which is a novelty for many teachers. The problems we worked on connected transformations, complex numbers, functions, and recursively defined sequences. The teachers were engaged in the problems and saw direct applications for their classrooms.

The afternoons were spent in getting acquainted with the content of the Secondary Mathematics I course, thinking about its implementation and doing some planning. One of the desired consequences of implementing the CCSS is a shift in thinking required of students as they engage with the material. Teachers were planning activities that would reflect this shift. Specific products that came out of the workshop can be found at:
http://uuteacherscircles.wikispaces.com/Summer+11.

REU
by Kevin Wortman

A three week Research Experience for Undergraduates (REU) was held in our department in late June. We hosted about 20 undergraduates from around the country with the goal of exposing them to topics in mathematics

that most students aren't exposed to until their second or third year of graduate school. We hope that this will allow the participants to make a more informed decision about whether to pursue a career in math research. The topics that were presented are in the field of geometry and arithmetic groups: hyperbolic manifolds, buildings, Mostow rigidity, and discrete group actions on manifolds. Utah graduate students Morgan Cesa, Brendan Kelly, and Brian Mann helped with the instruction.

MathFest
by Michael May

The first event that I went too was Math Jeopardy. Although I wasn't a participant, I still enjoyed being a part of it and trying to answer the questions. Afterward I went to many talks that were being hosted about various topics. The talks were enjoyable and informative, although a few went over my head. I also attended a banquet hosted by the Pi Mu Epsilon honor society, which congratulated various members for their achievements.

The problem solving competition was fun, although difficult. The first problem took me 35 of the 50 total minutes, and afterward the person who made the test apologized for putting such a difficult first problem in the test. I was able to complete 3 of the 7 total, and placed 7th overall. All in all, it was extremely enjoyable.

High School Program
by Sarah Cobb

This year Rob Easton directed the Summer Math Program for High School students, assisted by graduate students Matt Housley and Sarah Cobb. High school students from the Salt Lake area as well as other parts of the country attended the program, studying topics like modular arithmetic, primality, and cryptography.

Faculty and graduate students presented colloquium talks about sea ice, game theory, Archimedes' cattle problem, and many other topics. Several of these talks spurred discussion among the students that lasted for several days.

The students in the program also participated in a computer lab, where they learned to use the language Python. They wrote programs to speed up a variety of mathematical calculations, from finding the greatest common divisor of a list of integers to taking large powers of numbers

in modular arithmetic. Though many of the students had never programmed before, they were sending each other encrypted messages using the RSA algorithm by the end of the three week program. Several of them enthusiastically ran their computers for hours or days seeking counterexamples to conjectures they had discussed.

The program concluded with a game of mathematical Jeopardy, with questions drawn from all the material of the program and fabulous prizes for the winners.

The program's participants were eager and talented. They quickly absorbed ideas that would have challenged much older students, and approached the problems they were given with cleverness and creativity.