

Message From the Chair

by Peter Trapa



As the academic year winds down, it's time to reflect on the successes of the past months and look forward to what's in store next.

The fantastic level of research activity continues to be a hallmark of the department. In addition to the many prizes awarded to our faculty (see sidebar), we now have two large NSF Research Training Grants (one in Geometry and Topology, the other in Math Biology) to help contribute to the vibrant community of graduate students and postdoctoral fellows in residence. Our levels of external grant support are at all-time highs, and we continue to attract top visitors from around the world.

As our enrollments have swelled in the past few years, we have responded by raising the level of teaching excellence in all of the courses we offer. By emphasizing attention to individual students, the success rates in our lower-divisional classes have increased substantially. Meanwhile, for our majors, we have expanded our Research Experience for Undergraduates (REU) program, giving an early taste of mathematical research to our best students.

We continue to reach into high schools through our successful programs for students, like the Math Circle and High School Summer Program, as well as those for teachers, like the Teachers' Circle. In collaboration with the College of Education, we've strengthened our commitment to the training of secondary math teacher, and we continue to work closely with Math for America Utah.

Looking forward, it will be a great pleasure to welcome back our former colleague, Herb Clemens, next year. Herb will bring his extraordinary energy to the department as a Professor of Mathematics, and will also take the reigns from Hugo Rossi as Associate Director of the Center for Science and Math Education. (Meanwhile, Hugo will ride into yet another mirage of a sunset.) Among his many roles, Herb will take over from Aaron Bertram as Director of Math for America Utah.

Jon Chaika will join us as Assistant Professor next year. Jon was hired in 2012, and spent last year completing his postdoc at Chicago. His expertise in ergodic theory will bring a new dimension to the department.

Tom Alberts accepted our offer as Assistant Professor this year. Tom is an expert in probability theory, particularly its deep connections with statistical mechanics. He will spend next year completing his postdoc at Caltech before arriving in Utah in 2014.

In addition to these outstanding additions, the hiring season is still very much in full swing at the time of writing. I hope to have more good news to share with you in the Fall!

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Faculty Distinctions

Many prizes were awarded to our faculty this year. Look below to remember and recognize their achievements

- **Christopher Hacon**
Named Simons Foundation Investigator
- **Graeme Milton**
Received 2012 Rolf Landauer Medal of the International Electrical Transport and Optical Properties of Inhomogeneous Materials (ETOPIM)
- **Ken Golden**
Gave the prestigious 2013 AMS Porter Lecture in January
- **Mladen Bestvina**
Received Distinguished Mentor Award

Also, a number of our faculty were named Fellows of the American Mathematical Society

- **Mladen Bestvina**
- **Ken Bromberg**
- **Paul Fife**
- **Ken Golden**
- **Christopher Hacon**
- **Dragan Milicic**
- **Paul Roberts**
- **Hugo Rossi**

Changes in the Main Office

By Aryn DeJulis

A number of staff changes have been made in our main offices in the past few weeks. In this issue we would like to introduce you (or in some cases re-introduce you) to the faces you'll see in the main office and their new positions.



Della Rae Riker
Executive Secretary

Della Rae is our new Executive Secretary, and she is the face you first see when you walk in the main office. She started in April, and she is now responsible for many of the administrative duties that keep our department running smoothly.

You might be thinking to yourself that she looks and sounds familiar, that is because Della Rae was with us in the Math Department from 2008-2011. In her time away from us Della Rae briefly moved to Tucson, but was happy to return to Utah where she has been temping at the University of Utah Hospital before coming back to our department.

Della Rae is originally from Calgary, Alberta in Canada, she moved to Utah when she was 18 to go to college. She has 2 kids, her son is about to graduate from the U and her daughter is a massage therapist. In her spare time Della Rae is a singer in 2 bands, which she loves to do with her daughter.

Della Rae is very happy to be back in the math department. She loves her job, everyone is super nice and it has been great to catch up. Welcome back, Della Rae!



Paula Tooman
Associate Accountant

Of course we already know Paula, but she has transitioned from our Executive Secretary, a position she held for 13 1/2 years, to Associate Accountant. She is now responsible for a number of accounts as well as travel reimbursements among her new duties.

Paula was born in Idaho on Mountain Home AFB - a self proclaimed military brat, she has lived all over the US, as well outside the country in the Philippines and Japan! When her father retired from the Air Force the family moved back to Utah, where her parents first met. Paula loves Utah because it's a great place to live and there's so much to do!

Paula has been married for 12 years. She has 2 kids, her daughter is 22 and her son is 18, and she couldn't be prouder of them both. She also has 5 grandkids. Of course, we cannot leave out her much-adored-dog, Dexter.

In her "copious" amounts of freetime she likes to spend time with her family. She's a lover of fast cars and always wanted to be a race car driver, well accountant is close enough!



Gail Howick
Office Assistant

Gail started working in the math department in February. She is working part time as an office assistant and Grant coordinator. She keeps busy distributing mail; preparing travel reimbursements, payments requests, and campus orders; and handling the necessary tracking, reports, and other paperwork for the students associated with the RTG Grant.

Gail and her husband are both originally from Utah, but have been living in Silverton, Idaho for the past 8 years running a publishing company - WindRiver Publishing. It is a family corporation and she still edits for them. She and her husband are both U of U graduates, as are their 6 children (3 boys and 3 girls). They currently have 11 grandchildren.

Most of her sparetime is filled with editing, but she also enjoys reading. She and her husband intend to remodel their home in Ogden, so her time will be consumed by that shortly.

Gail is enjoying the people within our department. She states they have been incredibly kind and patient while she learns to work with Grants. Welcome, Gail!

Undergraduate Events

Undergraduate Problem Solving Contest

By Aryn DeJulis

This year's contest was made possible through the efforts of our Undergraduate representative, Isabelle Scott, and her faculty support, Mladen Bestvina. Isabelle, with Mladen's support, selected 5 challenging problems throughout the year, graded the submissions, and selected the winners for each problem. For her efforts, she will be attending MathFest 2013 with our winner.



Boya Li was named the winner of this year's Undergraduate Problem Solving Contest. As the winner, and along with Isabelle, Boya will receive an invitation and all-expense-paid trip to MathFest 2013 in Hartford, CT, to be held July 31 - August 3 hosted by the Mathematical Association of

America. There they will have the opportunity to participate in the national problem solving contest.

Congratulations Boya and best of luck to you and Isabelle at MathFest!

Polynomials for Non-Dummies

By Aaron Bertram

This Spring, nine undergraduates participated in my REU Math 4800 course on polynomials. We met for three hours each Wednesday evening, discussing several different topics illustrating some of the subtle properties of polynomials in several (as opposed to one) variables. We explored the mysteries of the projective plane, seeing projective transformations as the ultimate generalization of linear transformations of the plane. We talked about singularities and Hilbert's 16th problem for non-singular plane curves. We spent some time on conics, including integer vs rational solutions to Pell's equation, and a lot more time on cubic curves. We did enough of Bezout's theorem to obtain slick proofs of Pascal's theorem and the associativity of the group law on an elliptic curve, and we finished with a discussion of symmetric polynomials, discriminants and Schur polynomials. In addition to working out weekly challenge problems, several of which we never completely solved, students presented a 5-10 page paper and 10 minute presentation, further exploring one or more of the topics from the course.

Pi Mu Epsilon



This year the National Mathematics Honor Society of Pi Mu Epsilon Utah Alpha Chapter is excited to welcome 9 new members to our organization. These students are selected as exceptional math majors with excellent academic performance in our undergraduate programs. Congratulations:

- Keyton Clayson
- Carli Edwards
- Laurel Hales
- Ariel Herbert-Voss
- Kyle Hiroyasu
- Leslie Lamb
- Kaitlyn Nordin
- Georgy Yancey
- Caobin Zhou

Graduate Student Awards

Two of our graduate students have been awarded and recognized by the University of Utah Graduate School

- **Brendan Kelly**
University Teaching Assistantship Award
- **Gregory Rice**
2013-14 Graduate Research Fellowship



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If you have an idea or article to submit contact one of the editors:

Aryn DeJulis, dejulis@math.utah.edu
Nat Smale, smale@math.utah.edu

Graduation

This year approximately 60 undergraduate mathematics majors will receive a baccalaureate degree. 7 students will receive a Masters degree in Mathematics, 4 will receive the Master of Statistics degree, and 29 will receive Masters in Mathematics - Teaching. Students receiving the Ph.D. in 2012-2013 are: Aaron Wood and Geoffrey Hunter.

Congratulations to all our graduates!