
A f t e r m a t h

Degrees Awarded



This year, approximately 60 undergraduate math majors will receive a baccalaureate degree. A total of 18 Masters degrees will be awarded. Students receiving the Ph.D. in 2003-2004 are Bob Guy, Brynja Kohler, Denis Lukic, Greg Piepmeyer and Tom Robbins.

Comings and Goings

As matters stand at the time of this writing, next year we will have no new members on our regular faculty. Grisha Mikhalkin and Misha Kapovich resigned their positions. Mladen Bestvina and Domingo Toledo will be on sabbatical. Jim Carlson and Stew Ethier will be on leave. Hugo Rossi has retired and is now an Emeritus. Visitors in the professorial ranks will be Remingifus Leipus, Vincenzo Nesi, Michah Sageev, Janet Andersen, and Hsiang-Ping Huang.

Among our Assistant Professor Lecturers, Florian Enescu, Javier Fernandez, David Hartenstine, Evan Haskell, Pedro Mendez, Jesse Ratzkin, and Nancy Sundell are leaving us at the end of this year. New Assistant Professor Lecturers Alexander Aue, Marian Bocea, Suneal Chaudhary, Bo-Hae Im, Kyeong-Hun Kim, Laura Miller, Kim Montgomery, Francois van Heerden, Michael van Opstall, and Oana Veliche will join us in the Fall.

Personality!

Nancy DeMello, our senior accountant, has worked in academia most of her adult life. One of her first jobs was typing technical manuscripts for the "Indoor Environment Program" at Lawrence Berkeley Laboratory from 1986 - 1988. She then moved up to Executive Secretary at the Mathematical Sciences Research Institute from 1988 - 1993 where she met and worked

with (among many other distinguished mathematicians) our own Herb Clemens who offered her a position here at the U working for the Institute for the Theory and Application of Mathematics where she stayed until 1995. From 1995 - 1997 she worked as editorial assistant of the AMS Notices for Hugo Rossi and editorial assistant of the American Mathematical Monthly for Roger Horn. In the summer of 1997 she began the transition from editorial assistant to accountant here in the Math Department. Over the last few years she has "moonlighted" during the summers organizing the International Conference "Mathematics Education Around The World" for the Park City Mathematics Institute.



But enough about work... Nancy loves animals and children. With two horses, three dogs, a cat and three precocious boys, Casey (14), Marshall (3) and Garrett

(1) she certainly has her hands full. She works hard and plays hard. Bucking 80 pound bales of hay and shoveling horse...stuff (well, you know) are part of her daily routine. She's even been seen shingling a roof, pouring concrete, and laying hardwood floors. Luckily she has her 6'3", tall, dark, and handsome cowboy, carpenter, husband Jim to help out.

With only two feminine entities in the entire DeMello/Hewett household, Nancy and her adorable beagle mix (Princess Bubbles), it's not hard to figure out why the boys have adopted as their favorite catch phrase for her, "All Hail the Queen!"

For 10 years Nancy spent her weekends singing and playing sax, flute, piano and guitar for various bands in the San Francisco Bay Area. She has only recently started dabbling in music again securing her place in the semi-finals of "The Best Live Singer in Utah" contest only a few days ago. Good luck in the finals, Nancy!

Problem Solving Contest

This is the third year that the math department has participated in the national Problem Solving Competition. Monthly winners received books, and the overall winner, John Day, and the student representative who helped run the program on our campus, Mike Hofmann, will be attending the national finals of the Problem Solving Competition in Providence, RI, held in conjunction with MathFest this August. Good luck to both of them!

Calculus Challenge

The fifth annual Calculus Challenge for undergraduates was held Saturday, April 17. Fifteen students participated in this three hour exam which consisted of very challenging calculus problems. Joel Kramer took first place with a perfect score, Mike Hofmann took second place, Pejman Mahboubi took third place, and Nam Nguyen earned an honorable mention.

Students Honor Faculty



Kelly MacArthur has received the ASUU Student's Choice Award. Only eleven of these awards were given university-wide, chosen from over 150 student nominations.

Aaron Senior, who nominated Kelly, said, "She cared about my success. When I failed her class, I really felt awful. I believe she did as well. She told me to go again and not give up. I appreciate her having confidence in me and encouraging me toward success." Congratulations to Kelly on a job very well done!

MAA Teaching Award



Anne Roberts has been awarded the Mathematical Association of America's Award for Distinguished University Teaching of Mathematics. Anne has been teaching mathematics for 28 years, and has taught everything from our basic Quantitative Literacy course (which she designed) to advanced theoretical courses in probability and statistics. To quote from her nomination, Anne "is a remarkably effective teacher and mentor because she combines high expectations of her students with care for their success, and deep knowledge of mathematics with creative ways of presenting it

in the classroom. She combines a serious and energetic professionalism with a warm and nurturing personality." It is wonderful that Anne has been recognized for a career of extraordinary teaching and mentoring.

Summer Minicourses

With support from a National Science Foundation VIGRE grant, this summer the math department will host two mini-courses.

The first mini-course, held May 10 - 21, will cover the synthetic geometry of the Weil-Petersson metric. The principal lecturer will be Jeff Brock of Brown University, with Bob Bell, Mladen Bestvina, Ken Bromberg and Dan Margalit giving introductory lectures. The last few years have seen many new results and broadening interest in the study of the Weil-Petersson metric on Teichmuller space and its metric completion. Improved estimates on the behavior of the metric near infinity have allowed for a deeper understanding of the behavior of geodesics than was previously available. The idea of the course will be to give an introduction containing enough background to understand current open problems in the field, and to provide a starting point for attacking these problems.

The second mini-course, held June 7 - 18, will focus on classical problems in commutative algebra. Speakers will include Sankar Dutta (University of Illinois at Urbana-Champaign), Florian Enescu, Ray Heitmann (University of Texas), Melvin Hochster (University of Michigan), Claudia Miller (Syracuse University), Paul Roberts, Sean Sather-Wagstaff (University of Illinois at Urbana-Champaign), and Sandra Spiroff. During the past 30 years, the homological conjectures and related questions have had a significant impact on the development of commutative algebra. These problems originated in the work of Serre, Auslander, Peskine, Szpiro, and others. In 1974, Mel Hochster gave an overview of these problems in a series of lectures providing answers to some of the questions and indicating further directions of research. Since then, important contributions were made by various experts and some of these conjectures have been solved. However, some of them still await answers. This area of research remains a rich one and is as influential today in the development of commutative algebra as it was decades ago.

REU Program Update

by Ken Golden

The Research Experience for Undergraduates (REU) program is an exciting opportunity for students to make money working directly with a faculty member on a mathematical research project. The funding for this program is provided by the National Science Foundation through our departmental VIGRE grant and supplemental REU grants. The student researchers have included freshmen through seniors, and represent a variety of majors, including Mathematics, Biology, Physics, Chemistry, Bioengineering, and Electrical and Computer Engineering. As such, project topics have ranged widely to cater to students' needs and interests. Some of the topics they have explored include representation theory, fractals, finance, Fourier analysis, topology, the visual cortex, sea ice, DNA genotyping, and electromagnetic wave propagation through random media.

Since the beginning of our currently funded program in summer 2001, many of our REU participants have gone on to graduate school in mathematics, at the U. as well as at other graduate and professional programs. Three of our REU participants, Michael Hofmann (prime numbers), Troy Finlayson (thermal transport through sea ice), and Amy Heaton (fluid transport through sea ice) will soon be submitting their works to scholarly journals for publication. A number of our REU participants have presented their work at national undergraduate research conferences, held at the U. and Ohio State, as well as locally at various venues at the U., and even at the Utah State Legislature. One of our REU students, Amy Heaton, has had the opportunity to present her work on Capitol Hill to representatives of the U.S. Congress and the White House, as well as to experts on sea ice in the Departments of Earth Sciences and Physics at Victoria University in New Zealand. Over the period from winter 2003 through spring 2004, five of our REU students will have journeyed to the Arctic to participate in field experiments in conjunction with their mathematical studies of sea ice. Many of the REU projects are interdisciplinary in nature and involve student activities in other academic units in addition to our department, such as the School of Computing and the Department of Pathology here at the U., and the Geophysical Institute at the University of Alaska, Fairbanks.

During the summers, some students continue on their individual REU projects as described above. Additionally, the department offers a summer group research program that lasts for six weeks. The participants in the summer REU programs spend the first few weeks learning the basic principles of a particular topic and then embark on individual research projects within that field. This summer, David Dobson and Ken Golden will be running an REU program on "Inverse Problems and Applications" from June 1 - July 9, 2004. A description of the program and past projects can be found at <http://www.math.utah.edu/vigre/reu/index.html>.

Upcoming Events

Friday, May 7 - University Commencement. The Math Department will be having a pre-con-convocation reception on the plaza.

Monday, May 17 - Summer courses begin.

Monday, May 30 - Memorial Day holiday.

Monday, July 4 - Independence Day holiday.

Monday, July 25 - Pioneer Day holiday (observed).



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www.math.utah.edu/newsletter

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