



School of Mathematical Sciences

newsletter

V. 22, No. 2, May 2007

CONGRATULATIONS TO OUR GRADUATING CLASS OF 2007!

UNDERGRADUATE DEGREES

Computational Mathematics

Erik Davis
Matthew Denton
John Feustel
Benjamin Foster
Terry Fung Ching
Jonathan Ginsberg

Applied Statistics

Michael Bird
Michael Curry
Matthew Denham
Lukas Habegger
David Maloney
Nicolas Shayko

Mark Bonanomi
Patrick Curran
Joel Forman
Matthew Heman
Emma Hinke
Walter Hopkins
Kelly Horan
Devin Koestler

Applied Mathematics

Lindsay Latour
Tracy Lester
Yi-Hsian Lin
Tammy Lotta
Michael Margitus
Ruth Ostrander
Renee Reeves
Donald Reynolds

Renny Rodriguez
Zachary Rogers
Halyna Romanyuk
Rachel Santiago
Marc Shaben
Jonathan Stein
Debra Wilper
Hye Yon Yi

GRADUATE DEGREES

Christopher Kerbert
Rachel Marilley
Anne Marino

Applied Mathematics

Jeremy Nieman
Deana (Connell) Olles
Nathan Reff

Halyna Romanyuk
Benjamin Zindle
Hye Yon Yi

GRADUATION WITH DISTINCTION

in
MATHEMATICS or STATISTICS

For the second consecutive year, the School is awarding Graduation with Distinction honors to students who have pursued and presented independent research in the mathematics or statistics disciplines. Presentations are made in professional settings at School, Institute, regional or national conferences. Awardees will receive a medal for academic excellence and special recognition during the College of Science Commencement Ceremony on May 25th, 2007. Congratulations to the following members of our programs:

Joel Forman
Lukas Habegger

Walter Hopkins

Devin Koestler
Hye Yon Yi



It's a TA's Life

Ben Zindle, a 2002 SMAM graduate, returned to the SMS last year and is graduating later this month with his master's degree in applied mathematics. Prior to returning to RIT, Ben's previous teaching experiences piqued his interest in positions such as a mathematics lecturer. While pursuing his studies towards this goal, he has been a teaching assistant (TA) for the calculus course series. Ben takes a few moments from his hectic schedule and shares his TA experiences, insights and advice.

Ben has brought his dedication and insights to the calculus workshop table. Finding out how a student learns and then to take on the challenge of presenting ideas that can be tailored to a student's manner of learning is something in which Ben takes pride. He finds great satisfaction when he can adapt his teaching style to be consistent with a student's learning style and when things finally "click" for the student.

He will treat students as equals, and, as a TA, Ben feels that he acts as a positive presence between the student and professor. As such, he is in the position to allow a little more latitude—being less a "task master"—and provide somewhat of a relaxed learning environment with interjections of humor while encouraging students to address workshop problems together as a team.

Ben believes students should realize they do have all the tools to obtain the answers themselves and that is a powerful enabler. A slight nudge along the path toward logical thinking and then they can see that everything really did come from them! If you tell them too much, there will be only more questions and less assimilation.

Teaching has its rewards and one of the most gratifying for Ben is meeting students who have the self-motivation to succeed and who will go beyond the "bare bones" skill requirements in order to reach a new level of conceptualization. It is also gratifying to work with students who have a profound appreciation for the privilege of pursuing an education.

Ben offers future TAs some parting words of advice. First, grading is always a challenge. When confronted with jumbled work, the attention it can take to do the job properly can be like "going through a labyrinth with no map and no compass," but TAs must find their way and comment appropriately to encourage the learning process.

Second, develop a rapport with your professor so you will know what they need from you. Be over-prepared for workshops! You should aim to be ready to handle virtually any question that might arise with the material. However, there is no harm in saying, "let me think about your question and I will get back to you." Your students will have a hard time cultivating confidence in their abilities if they have no confidence in yours. Also, it helps them to see that from time to time everyone has to look something up.

The School and its students have appreciated Ben's contributions as a TA in the calculus workshops and wish him well as he proceeds on his career path.

2007 Outstanding Undergraduate Scholars

Joel C. Forman

Joel is a native of Watertown, NY and is pursuing a double major in mechanical engineering and applied mathematics. He is a recipient of the RIT Presidential Scholarship and the Halbleib Memorial Scholarship. He completed his co-op experience at Polatin Corp. in New Hartford, NY and at Raymond Corp. in Greene, NY. Joel has volunteered for Heart Walk and the RIT Faculty Spring Egg Hunt. He presented at the 13th annual RIT Undergraduate Research Symposium. He received the Best Mathematical Modeling Project Award for his criteria for stability and phase plane analysis on the prevention of mass outbreak of AIDS. Joel plans on pursuing a MS degree in mechanical engineering, obtaining a Ph.D., and then working in the industry. His future plans include teaching.

Walter H. Hopkins

Walter is a native of Valkenburg, the Netherlands and is pursuing a BS degree in both physics and applied mathematics. He is a member of the RIT Honors Program, Sigma Pi Sigma, and a recipient of the RIT Presidential Scholarship, and Nathaniel Rochester Society Scholarship. Walter worked with granular materials in the laboratory of Dr. Franklin. He has served as a tutor in the Engineering Learning Center and the North Star Academy, where he has also served as peer adviser. Walter participated in two Research Experiences for Undergraduate (REU) summer programs; one at Fermilab dealing with improved detection of the top quark, the other at Cornell University engaged in analysis of radio data for the detection of galaxy clusters. In his free time, he enjoys playing intramural soccer and basketball.

Focus on Alumni



2006 RIT applied mathematics graduate **Ali Al-Raisi** is completing his first year as a Ph.D. graduate student in mathematics at the University of Rochester (UR).

Ali is a teaching assistant (TA) for one of the UR calculus classes. His duties as a UR TA are different than those at RIT. At RIT, the instructor and the TA are present at the workshop and the instructor decides what the TA will be grading - quizzes, worksheets, and/or homework assignments. But at UR, the TA delivers three recitations, giving a quiz (written by the TA) at the beginning of each recitation. The TA is not involved with grading homework assignments because homework is generated by Webwork and graded automatically when the students enter their answers online.

Ali compares the graduate classes at UR with the undergraduate classes at RIT as "much more work - more intense, much smaller, but with a nicer view." Graduate classes are usually held on the 11th floor in rooms overlooking the Genesee River. The graduate classes focus on topics that spotlight UR's strength: algebra, analysis, and topology.

In addition to class work and TA duties, Ali is preparing for the preliminary examination, which consists of three consecutive days of three hour exams. Ali must pass the exam by the end of his second year in order to choose a thesis advisor and proceed to his specialized research area.

SMS Research and Outreach Programs

As announced in the Fall Edition of the School of Mathematical Science (SMS) Newsletter, one of the School's newly created divisions is dedicated to Research and Outreach Programs (ROP). According to Assistant Head of ROP, **Dr. Bernard Brooks**, the School is well positioned for this next step in its evolution. Having a dedicated administrator foster initiatives such as the Center for Applied and Computational Mathematics and the Consortium for Mathematical Methods in Counterterrorism will advance activities related to faculty and student research and scholarship. Dr. Brooks explains, "Our faculty have always been conducting research. This will help to elevate their activities and to increase research performed by our students, making both more visible for RIT and the greater community."

In the past, students and faculty have conducted research through for-credit independent study and the recently formalized introductory and intermediate research courses. Faculty mentors have aided individual student researchers, preparing them for local poster sessions and conference presentations. However, this trend has changed in recent years. The number of students and faculty collaborating on research outside the confines of the classroom has increased dramatically during the last few years. And publications in professional journals and presentations at national conferences have, in turn, increased in numbers. Under the guidance of director of undergraduate research Dr. Darren Narayan, there has been a 200% increase in RIT student presentations at the annual Joint AMS-MAA-SIAM Meetings during the past five years. One of the goals for ROP is to increase this trend by linking faculty and student research interests. Students will learn from faculty by participating in collaborative research efforts. "This will be mainstream research with tangible output in the form of texts, articles and papers that add to the body of knowledge of mathematics and statistics," Dr. Brooks states.

Initiatives of the ROP division will generate opportunities for conferences, consulting and industrial research projects in addition to grant funded activities. The SMS has recently established the Center for Computational Relativity and Gravitation, which is directed by world-renown researchers Drs. Manuela Campanelli and Carlos Lousto. RIT will be the host site for the 4th Annual Mathematical Methods in Counterterrorism Conference September 20-22, 2007. The conference has been collaboratively organized by members of the Consortium for Mathematical Methods in Counterterrorism and will feature Gordon Woo, from Risk Management Solutions in London, as the keynote speaker. The conference addresses such issues as the maximization of efficiencies in data mining and cargo container search screening. Dr. Brooks was enthusiastic about opportunities for public participation in ROP initiatives and suggested that those interested in participating in research, establishing industrial research projects or co-ops or attending events visit the center's websites at <http://www.acm.rit.edu/> or <http://www.cmmc.rit.edu/> for more information.

Dr. Brooks holds his Ph.D. in applied mathematics from Guelph University, specializing in evolutionary game theory. He recently was awarded tenure and promoted to associate professor.

Assistant Head for Mathematics Programs

Dr. Carl Lutzer came to RIT in 2000 and is now serving in the School of Mathematical Sciences' newly created position of Assistant Head for Mathematics Programs. Dr. Lutzer describes his responsibilities as ever changing. Initially, he was not exactly sure of what he would be doing, but now he describes his position, a job which he has held for nine months, as having three main parts.

First, advise and support the School Head, Dr. Sophia Maggelakis. The School keeps growing, in both the number of faculty and students, and has become too large to be effectively managed by the smaller administrative team that had been in place in previous years. Associated with the increasing number of faculty and students comes a growing number of issues and challenges that must be addressed daily. When needed, Dr. Lutzer is able to meet with a prospective student or fill in for Dr. Maggelakis at meetings when she is not available.

Second, Dr. Lutzer serves as the Calculus Coordinator for all of the calculus course sequences. Responsibilities as the Calculus Coordinator are heavier at the beginning and at the end of each quarter. The beginning of the quarter requires meetings with the calculus instructors and placements of students into appropriate classes. Responsibilities at the end of the quarter entail preparation for final exams which include problems and concerns in dealing with the common core portion of the exams.

Finally, Dr. Lutzer serves as a point of contact for students and faculty outside the School. As other programs across campus modify their course requirements, this may impact the number of students who will enroll in mathematics courses. By reaching out and communicating with colleagues across campus, Dr. Lutzer is able to gather data important to planning future growth strategies to meet the needs of our ever growing and increasingly diverse student population.

Faculty News—Tenure and Promotions

Drs. **William Basener, Bernard Brooks and Michael Radin** were awarded tenure and promoted to associate professors. They have each embraced the RIT community and shown their strong commitment to teaching, service and research. We congratulate them for their achievements and their contributions to RIT's School of Mathematical Sciences.

Professor **David Crystal** recently authored the slide shows that are provided as resource material to the adopters of the 3rd edition of the [Introduction to Statistics & Data Analysis](#) by Peck, Olson & Devore.

Alumni: *Please Stay in Touch*

We are interested in hearing from you! Feel free to drop us a line to give us an update of your preferred mailing address and phone number, any career changes you've made and your "extra curricular" activities. Please let us know if you have e-mail, too. As the new edition of the newsletter becomes available on our web site, we'll send you an e-mail about it. Almost two-thirds of our readers enjoy accessing the web version rather than receiving a paper copy! Simply e-mail Shelly Cicero at msc1511@rit.edu with your update. Best wishes...

Calling for Co-ops

Does your company need additional employees during the summer months or for special projects that may take 10 to 20 weeks to complete? That is exactly what our majors who are co-oping can do. Whether it is a single or double block co-op (10 or 20 weeks respectively), hiring a mathematics or statistics major can be a win-win situation. Your company's work will be accomplished by a qualified, skilled employee and our majors will receive real-world experience—something for their resumes as well as to assist in paying for their education. If you would like additional information, e-mail Director of Student Services Tiffany Schwanger at tdpsma@rit.edu.

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