

“All the v’s that’s fit to print”



Newsletter

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Outstanding Student Awards

During "end of year awards ceremonies" in May 2003, three mathematics students were honored for academic achievements during Academic Year 2002/2003.

Heather (Bryant) Haynes was named the Outstanding Mathematics Bachelor of Arts Student

Andy K. Kim was named the Outstanding Mathematics Bachelor of Science Student

Matthew Berdine was named the Outstanding Graduate Student in Mathematics.

Congratulations to Heather, Andy, and Matt for jobs well done!!

New and Returning Faculty

The department's newest full time faculty member is Dr. **Radu Cascaval**. Radu began his duties as assistant professor of mathematics during Fall 2003. A complete interview with Dr. Cascaval appears at the end of the Newsletter.

In addition to the arrival of Radu Cascaval, the department welcomed Dr. **James Henderson** as a new member. Jim joined the math department in January 2003 as Professor of Mathematics. Most of Jim's time is spent tending to his duties as the UCCS Vice Chancellor for Student Success. Jim's mathematics expertise is in geometric topology. He worked under one of the pioneers in that area, Prof. R.H. Bing, at the University of Texas, and completed his Ph.D. under Bing at the University of Wisconsin. From 1985 to January of 2003 Jim was professor of mathematics at Colorado College. He has published articles on the geometric structure

of polyhedra and infinite dimensional manifolds. Jim did manage to have a white board installed in his office in Main Hall, and has been tutoring some students in precalculus this fall. In the spring he'll coteach the Math 313: Intro to Linear Algebra course with another mathematician-turned-campus-leader, EAS college Dean **Jeremy Haefner**.

In addition to welcoming two new members, the department is happy to welcome back Professor **Rinaldo Schinazi**. Rinaldo spent the past two academic years (2001/2003) at the Université de Provence (Marseille, France). There are a dozen or so probabilists who are affiliated with that university, so he got to see the work of many first rate researchers. Rinaldo was reunited in Marseille with his friend and co-author Enrique Andjel, whom he has known since graduate school years in Brazil. He also started collaborating with Tom Mountford in Lausanne, as well as with some marine ecologists in Marseille. So, research wise, these two years have been rather exciting. In addition, Rinaldo was teaching courses at the university. The French educational system is somewhat different than the one used in the United States. In some ways it is very ambitious; for instance, Rinaldo got to teach several advanced classes in probability that had measure theory as prerequisite. Unfortunately, most students were not well prepared for that level of course. Rinaldo told the Newsletter: "Sometimes I felt that there was a large gap between the official expectations and the reality. There is a French expression for that: 'la folie des grandeurs'". However, before leaving he had a good experience

when three students wrote their senior thesis under him. Their ability and knowledge was quite impressive, and their work was comparable to a very good master's thesis. "This confirmed my impression that the French system works very well for top students, but perhaps not so well for the others". Even though these two years were interesting and energizing in many respects, for the whole family, Rinaldo feels quite happy to be back home. We are pleased to welcome him back!

In Memoriam

Professor Kenneth R. Rebman

We are deeply saddened by the passing of Professor **Ken Rebman**. Ken died on May 15, 2003, at the age of 62, after a courageously optimistic struggle with cancer. He is survived by his wife Beth, and his brother Ronald.

Ken began college as a clarinet major at Oberlin College in Ohio. He earned his AB as a double major in government and mathematics. He received his Ph.D. in mathematics at the University of Michigan in 1969.

Ken came to the UCCS in 1994 as the Vice Chancellor of Academic Affairs. He retired last year as Emeritus Professor of Mathematics. In 2000 he was named Teacher of the Year in the College of Engineering and Applied Science. In addition, he received an award for Outstanding Service to the University.

Ken had many interests outside of mathematics and the university. He was an avid collector and historian of early jazz. He made significant contribution to sport, especially in volleyball, where among other leadership positions he was Head of Delegation for the US Women's Volleyball team during their inaugural tour of China. In 1987 he received the Leader in Volleyball award from the NCVBA.

A loving husband, relative, and friend, Ken will be remembered for his humanity, generosity, wisdom, sense of humor, and sense of life. He will be sorely missed.

Around the Department

Bob Carlson continued in his role as department chairman through the past year. Despite the time required to chair the department, Bob is still actively involved in the research and teaching aspects of a faculty member. He is working on a text for the Modern Analysis course, and will teach Differential Equations via *MathOnline* during Spring 2004.

For four weeks during May and June, Professor **Jim Daly** was the guest of colleagues at the Department of Numerical Analysis at Elte University in Budapest, Hungary. Jim worked with Ferenc Schipp and Sandor Fridli (who visited Colorado Springs for AY 2001/2002) on a number of projects, including Marcinkiewicz multiplier theorems and wavelets on the dyadic field. At the end of his stay the group attended a conference at Lake Balaton in honor of the 60th birthday of William Wade (professor at the U. of Tennessee), where Jim gave a talk entitled "Translation Invariant Operators on Vilenkin Groups". (Unfortunately, the start of the conference coincided with the beginning of the heat wave in Europe. Conditions of 95 degrees, 90% humidity, and minimal air conditioning make one appreciate the weather of Colorado!) Back in the U.S., Jim had the good fortune to be involved with four grant proposals this year, three to the NSF and one to the Colorado Commission on Higher Education. Each of these involve K-12 education initiatives.

Sarbarish Chakravarty was awarded tenure and promotion to Associate Professor during June 2003. Congratulations! In addition, in July he was awarded a prestigious three year research grant from the National Science Foundation to continue his work in wave propagation and solitons. He was an invited speaker at a conference held last June at Loughborough University, England. He sponsored two visitors to the UCCS campus, Dr. Rod Halburd from Loughborough U., and Dr. Gino Biondini from Ohio State.

Professor **K.M. Rangaswamy** is on sabbatical leave during Fall 2003. He is doing joint research with professors at Baylor University (Texas), and at Charles University (Prague, Czech Republic). Ranga was also an invited speaker at a conference last summer in Lisbon. In addition, Ranga continued in his role as an Associate Editor of the journal *Communications in Algebra*. As has happened twice before, he again was the recipient of a CO-AMP grant, this time for more than \$20,000.

Greg Morrow collaborated with Yu Zhang on a paper concerning pivotal sites of a triangular lattice percolation model. The work is planned to be submitted this month. Greg continues studying Tai Chi at the Sin Lung Kwoon school in Denver, where he lives with his wife Marie and stepchildren Mackenzie and Quinn. This past August the family of four went on vacation to Newfoundland to visit Marie's many aunts and uncles. Strangely, it was like going home for Greg too. He liked the people, the

woods and water, seaside, and unfenced land. At what was supposed to be the end of the trip, they were all "stranded" in Newfoundland for a few days due to the eastern blackout. Luckily St. John's is a beautiful city with a lot of maritime history, so the four of them managed in a single hotel room for several days. Greg continues to organize the Math Colloquium in collaboration with Sarby Chakravarty.

Yu Zhang was able to prove an out-standing conjecture which physicists have been pondering for many years. Specifically, Yu was able to prove that the free energy in a certain type of system has a singularity at criticality for a percolation model in a triangular lattice. This result is part of a fifty page (!) paper which he has submitted to the journal *Annals of Probability*. He has given a number of talks about this work, most recently at Lehigh University in Pennsylvania.

Gene Abrams continued his joint research work with Professor P.N. Anh. Anh is a member of the Rényi Mathematical Institute of the Hungarian Academy of Sciences in Budapest. Anh visited Colorado Springs for the month of November 2002, and then returned for a weeklong visit in September 2003. Gene delivered the keynote address at the Mathematical Association of America Rocky Mountain Section Annual Meeting in April; the title of his presentation was "Teaching Mathematics: *Sharing Passions, Sharing Perspectives*". In June 2003 he was an invited speaker at the first joint AMS / RSME conference in Sevilla, Spain. In October he co-organized a special session in associative ring theory at the regional AMS meeting in Boulder. This session was created in part to honor Gene's Ph.D. advisor, Professor Frank Anderson, on the occasion of his retirement.

Keith Phillips continued writing some textbooks which have been in the works for awhile, including manuscripts in geometry, Fourier analysis, and complex variables. Keith did some significant traveling last year, including trips to Budapest (for a meeting on Harmonic Analysis and Dyadic groups), to the U.K., and to northern California. ("In California I did math, gave a talk, played with my three grandsons, and enjoyed the ocean and the forests.") He also participated in a meeting on wavelet theory, held in Boulder in June. Keith is on sabbatical at CU Boulder during Fall 2003, where he is working with other mathematicians in various aspects of image processing research.

Shannon Schumann continues in her role as the Director of the Mathematics Learning Center. Currently the MLC has several ongoing tutoring

programs: In addition to the drop-in tutoring it offers, the MLC continues to provide a computer lab for students' use and online tutoring in the evening hours. This year, the Center has added tutoring hours in the Housing Village; the hope is that this program will help freshman students, especially those in College Algebra. Past efforts to improve visibility among the student body are beginning to take off. With over 8500 visits to the Center, the MLC has seen an astonishing 53% increase in use over the year before – and this doesn't even include the online tutoring or computer lab visits that also continue to increase. Statistics continue to show that students who use the MLC are earning better course grades than students who don't.

Seung Son was busy in both the teaching and research arenas. In July 2003 he visited the University of Illinois at Urbana-Champaign to attend an NSF-CBMS Conference organized by Professors Scott Ahlgren and Bruce Berndt. This conference included mathematicians from throughout the United States, Europe, and the Far East. Seung has taught two different courses via the *MathOnline* system (Differential Equations in Spring 2003, Linear Algebra in Fall 2003), and will teach Number Theory via *MathOnline* in Spring 2004.

As of Fall 2003, **Shannon Michaux** is the Coordinator for Extended Studies for the College of Engineering and Applied Science. In this role she not only oversees the Extended Studies courses taught through the mathematics department (including MathOnline and CU Succeed), but also helps to oversee programs such as the newly instituted Project Lead the Way. She continues to teach in the mathematics department as well.

Congratulations to All 2002/2003 Graduates!

Here is the list of the Academic Year 2002/2003 graduates from each of the department's degree programs. An impressive list, to be sure!

B. A. Mathematics:

Tracy Alcaraz
Ricky Hancock
Heather (Bryant) Haynes
James Brandon Pelcher
Merida Richardson

B.S. Mathematics:

Carrie Bell
Christine Butcher
Charles Flores
Andy Kim
Jasmine Kubes

Kristopher Marcus
Jason North
Patrick Patton
Leslie Reed
Naomi Reyes
Matthew Rowberg
Matthew Smith

M. S. Applied Mathematics:

Matthew Berdine
Daniel D'Eramo
Stacy Lethbridge
Virginia Ramos
Nicholaus Sanford
Steve Yamiolkoski

Congratulations to all the AY 2002/2003
graduates from the Department of Mathematics!

**Newsletter Profile:
Dr. Radu Cascaval**



The department's newest member is Dr. **Radu Cascaval**. With Radu's arrival in August 2003 the department now boasts eleven full-time faculty members.

Radu was born, raised, and attended university in Iasi, Romania. He knew early on that he enjoyed doing mathematics, especially the "extracurricular, fun" stuff such as Mathematical Olympiads. Although some of his high school mathematics coursework was not his favorite, he knew he was hooked on math when he started taking university level courses.

Radu's enjoyment for and talent in mathematics led him to seek a Ph.D. He spent a year in graduate school at Louisiana State University and then followed his advisor from there to the University of

Memphis, where he completed his PhD work in 2000. Radu's thesis work focused on some mathematical models for nonlinear wave propagation with direct applications to blood flow in the human body.

Upon completion of his Ph.D. Dr. Cascaval took a three year postdoctoral position at the University of Missouri. While at Missouri he worked with a group whose mathematical focus included nonlinear optics (e.g., the transmission of data over optical fibers). Radu made significant contributions to the work of this group; many of the ideas that he had used in his blood flow models were applicable in the optics setting as well. Some of his work is being used by a group of researchers and engineers in Norway to help them design new technologies in fiber optics communication.

Professor Cascaval has given a number of talks about his research throughout the world. As it turns out, Radu was no stranger to the UCCS campus during his interview last spring; he gave a research talk at an NSF-sponsored conference here on the UCCS campus during summer 2001! In summer 2002 his travels were much more extensive, and included his delivering a talk at the International Congress of Mathematicians in Beijing, China. Just this month he gave a talk at the University of North Carolina and next June he will speak at an AIMS international conference on dynamical systems in Los Angeles.

Radu is married to Raluca; the two of them have known each other since high school. Raluca is an M.D. with specialization in internal medicine, working as a hospitalist at Penrose Hospital. Their daughter Andrea will celebrate her first birthday next month!

Radu is enjoying UCCS in particular and Colorado Springs in general. "It is very much an outdoor lifestyle here, which we like very much."

Please feel free to stop by and chat with our newest department member, Dr. Radu Cascaval! His office is EAS 279, and he can be reached via email at radu@math.uccs.edu.

Mini-advertisement: Handsome golf shirts and hats which sport the now-famous UCCS Department of Mathematics logo are available to complement all your fashion needs. Contact Joanie Stephens at 262-3311 to find out how to order this stylish apparel!