# Newsletter

**UMBC**
AN HONORS UNIVERSITY IN MARYLAND

## *Department of Mathematics and Statistics*

**1000 Hilltop Circle, Baltimore, MD 21250, 410-455-2412, www.math.umbc.edu**

**Volume 1, Issue 1, Fall 2006**, Editor: *Matthias K. Gobbert*

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## *Welcome by Department Chair Nagaraj K. Neerchal*

Welcome to the first issue of our department's newsletter! We are pleased to present this newsletter to you as a way of our keeping the campus community updated on the exciting new developments in our department. It will be published every semester in print as well as be available on our webpage. A PDF version will be emailed out to all our alumni. Please feel free to email your comments and any news you would like to share with fellow readers to **Dr. Matthias K. Gobbert** at gobbert@math.umbc.edu, who has graciously agreed to serve as the editor of the newsletter. We hope to hear from you!

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## *News from the Graduate Program by Graduate Director Muddappa S. Gowda*

Our vibrant graduate program currently has 39 full-time students and 31 part-time students. In 2006, we are on track to produce the largest number of Ph.D.s in our department's history with 5 graduating in May 2006 and 4 more expected in December 2006. Our congratulations to May 2006 graduates: Bogdan Gavrea (Adviser: Dr. Potra), Ionut Bebu (Dr. Rukhin), Li Cao (Dr. Mathew), Guohui Liu (Dr. Rosenberger), Yanping Wu (Dr. Mathew) and best wishes for the final push to the expected December 2006 graduates: Pranab Mitra (Dr. Sinha), Dan Wang (Drs. Bell and Potra), Ronny Vallejos (Rukhin), and Tetyana Vdovina (Dr. Minkoff). Congratulations also to our recent M.S. graduates James Syphard and Iris Chang.

Twelve new full-time graduate students joined our program. They are Matt Frazier (USA), Amanda Gassman (USA), Sean Griffith (USA), Erum Marfani (USA), Mark Tribett (USA), Gaurav Sharma (India), Hui Huang (China), Shi Li (China), Jia Liu (China), Dihua Xu (China), Shiming Yang (China) and Yushu Yang (China).

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## *News from the Undergraduate Program by UG Director Thomas Armstrong*

In 2005-2006 the Department's programs had a record number of graduates: 49 in Mathematics and 4 in Statistics, and additionally 21 students with a minor in Mathematics. Of those with a major in Mathematics, nine were dual majors (simultaneous degrees in Mathematics and another discipline) and four were double majors (with a primary major in another discipline).

Graduates went on to graduate study at several institutions including two to Duke, two to Stanford, and one each to Rutgers, Wisconsin, Indiana, UMCP (in Physics), University of California at San Diego (in Physics). Moreover, **David Dalrymple** who received a dual degree already last year went on to MIT (in Computer Science).

This semester's officers of Pi Mu Epsilon / Council of Majors are **Jared Bates** (Secretary), **Mike Atamas** (President), and **Caroline Smith** (Treasurer), shown (from left to right) here with **Dr. Tom Armstrong** at the pizza party that kicked off the semester on September 13, 2006; not pictured is **Daniel Moroz** (Vice President). Former UMBC graduate (B.S. and M.S.) **Doniell Fishkind** who received his Ph.D. at Johns Hopkins University and is currently on their faculty gave a talk to Pi Mu Epsilon and the Council of Majors on September 29, 2006 on *Applications of Combinatorics and Graph Theory to Medical Imaging Problems*.



## *Four New Faculty Join the Department*



**Andrei Draganescu** joined the department this Fall after completing a two-year postdoctoral appointment at Sandia National Laboratories in New Mexico. He graduated with a Ph.D. in Applied Mathematics at the University of Chicago in 2004 under the direction of Dr. Todd Dupont and Dr. Ridgway Scott. He is interested in numerical analysis, with current focus on multilevel algorithms for ill-posed problems, and numerical methods for molecular dynamics simulations.



**Junyong Park** worked with Dr. Jayanta K. Ghosh at Purdue University. He joined the Department this Fall, immediately after completing his Ph.D. in Statistics in August 2006. His research focuses on asymptotic theories, hypothesis testing and classification, especially in high-dimensional data.
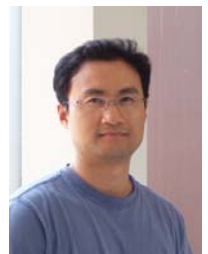


**Jinglai Shen** joined the department this Fall after completing his postdoctoral position in the Department of Mathematical Sciences at Rensselaer Polytechnic Institute. He earned his Ph.D. in Aerospace Engineering from the University of Michigan, Ann Arbor, in 2002, with a specialization in Dynamics and Control. His research interests include complementarity systems, hybrid systems, dynamic optimization, systems and control theory, geometric mechanics and variational integrators, with applications to operations research, robotics and engineering. His research has been in collaboration with Dr. Jong-Shi Pang at RPI and Dr. Anthony M. Bloch at the University of Michigan.
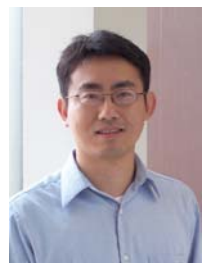


**Yoon Song** completed her B.A. in Mathematics at UMBC in 1997. She stayed with the department and worked with Dr. M. Seetharam Gowda on Optimization for her M.S. in 1999 and Ph.D. in 2002 in Applied Mathematics. After teaching many different Mathematics classes for the department on a part-time basis, she joined the department this Fall as a Lecturer.

## *New Initiative: CIRC Exposes Graduate Students to Interdisciplinary Research*

The Center for Interdisciplinary Research and Consulting, or CIRC for short, is an initiative of our department to make our wide-ranging expertise both in Mathematics and in Statistics available to the campus and the community at large. Since the beginning of this year, CIRC has employed two Research Assistants (RAs). The RAs for Spring 2006, **Aaptha Murthy** (Math) and **Justin Newcomer** (Stat), are shown here meeting with the CIRC Directors **Nagaraj K. Neerchal** and **Matthias K. Gobbert** in the departmental meeting room MP 422. The RAs for Fall 2006 are **Alen Agheksanterian** (Math) and **Justin Newcomer** (Stat).

Besides its consulting work on a variety of projects, CIRC conducts weekly hands-on software workshops and walk-in clinics in an instructional computer lab. These efforts are supported by a $10,000 grant from UMBC's Office for Information Technology. For a complete list of products and services, including a schedule of workshops and clinics, please visit www.umbc.edu/circ.



## *Special Event: The Finite Element Circus at UMBC in Spring 2006*

The Finite Element Circus is a national conference series with over 30 years of tradition that brings together researchers on this numerical method for partial differential equations. For the first time since 1995, our department hosted it at UMBC, on Friday, March 31 and Saturday, April 01, 2006. More than 50 participants attended the sessions in Room 120 in the Biological Sciences building and lunch in the Skylight Room of The Commons, generously supported by the College of Natural and Mathematical Sciences. For more information and photos, check out www.math.umbc.edu/~gobbert/fecircus.

## *Kudos*

- **Susan E. Minkoff** and **John Zweck** were promoted to Associate Professors with tenure over the summer. Congratulations on reaching this important milestone in their careers!

- **Sue Minkoff** and **John Zweck** received funding to work on a project entitled "Computational Modeling of Quartz-Enhanced Photoacoustic Spectroscopy Sensors" which is joint with Electrical Engineering at UMBC and Physics at Rice University. The project is part of the NSF-funded Engineering Research Center entitled MIRTHE (Mid-InfraRed Technologies for Health and the Environment). MIRTHE is a partnership headquartered at Princeton University that includes UMBC, City College of New York, Johns Hopkins, Rice, and Texas A&M and which aims to develop optical trace gas sensing systems.

- A paper by **Xioming Li, Michael Messner, and Bimal Sinha,** published in the *Calcutta Statistical Association Bulletin* received the P.K. Nandi award as the best applied paper published in the journal in the year 2005.

- The Ph.D. thesis of **Taeryon Choi** (photo)**,** who joined the department last year, was a finalist in the annual L. J. Savage competition for the best thesis in Bayesian theory and methods. He secured the runner-up position in the competition with an honorable mention for Outstanding Doctoral Dissertation in the year 2005. **Dr. Choi** was invited to give a presentation at the *Valencia/ISBA Eighth World Meeting on Bayesian Statistics*, in Benidorm (Spain) in June 2006.

- The National Science Foundation (NSF) awarded research grants to **Arthur O. Pittenger**, **Muruhan Rathinam**, and **Andrew Rukhin**. Additionally, **Kathleen Hoffman** was successful in securing sabbatical support through NSF's Immersion Program in Biology. Other grant support includes support from the Oak Ridge Institute for Science and Education for **Bimal Sinha**, sabbatical support from the National Security Agency for **Art Pittenger**, and a grant to support travel by junior researchers for the conference in honor of **Dr. Thomas I. Seidman**, *Advances in Control of Partial Differential Equations*, on October 28-29, 2006, awarded to **Kathleen Hoffman** and **Matthias K. Gobbert**.

- **Jacob Kogan** (photo) published one edited book, *Grouping Multidimensional Data: Recent Advances in Clustering*, with Charles Nicholas and Marc Teboulle, with Springer-Verlag in 2006, and has a second, authored book, *Introduction to Clustering Large and High-Dimensional Data*, in press at Cambridge University Press, to appear in 2007.

- Represented by **Dr. Nagaraj K. Neerchal**, the department is a partner in the IGERT grant from the National Science Foundation, received by the Center for Urban Environment Research and Education (CUERE) (www.umbc.edu/cuere/igert).

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## *Message from the Editor* *by Matthias K. Gobbert*

I also take the opportunity to welcome you to this new newsletter and hope that you find its information useful. As you will have noticed, this newsletter is missing one thing: a proper name! So, let's throw it out there and find one by suggestions from the readership. Please e-mail me your suggestion at gobbert@math.umbc.edu. The winning entry (or entries if several submit the same suggestion) will win one $30 gift certificate to the UMBC Bookstore, courtesy of the department.

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