



An Invitation to UD Mathematics Alumni Day 2006

Dear Mathematics Alumni and Friends of
the Mathematics Department,

We cordially request your attendance at our first Mathematics Alumni Day reception on April 29, 2006 from 2:00 to 4:00 in Kirkbride 006. In our efforts to renew and strengthen our ties to alumni, we are hosting a casual reception with light refreshments. Student research posters will be on display. In addition to meeting with our faculty and students, we will be conducting tours of the Math Department's Modeling Experiment and Computation Laboratory, and our computer classrooms. Spouses and children are welcome. Every April, the Department of Mathematical Sciences celebrates Math Awareness Month by arranging a special lecture series around the central theme. The theme this year is "Internet Security." On April 28, the day before the reception, we will be hosting a special lecture entitled "Cloning Real-World Payment Tokens" by Daniel Bailey, Senior Research Scientist at RSA Laboratories. His lecture will be in Kirkbride 006 and will be accessible to the general public. There will be a reception afterward. For those traveling with children, University of Delaware Ag Day runs from 10:00 until 4:00 on the 29th at the Agriculture School on south campus. If you have children, this is a great opportunity to go for a hay ride, visit the petting zoo or play with a bees' nest (male bees only so there are no stingers).

Please RSVP by April 21 via phone to Michele Schwander at (302) 831-2653, or email to alumni@math.udel.edu. Please indicate the number of people attending and whether you plan to attend the reception, the Math Awareness Month lecture or both.

From the Editors

Dear Math Department Alumni,
Students and Friends,

It is our pleasure to distribute our second regular edition of *Reckonings* to our alumni. As in previous years, we are reporting on retirements, new hires and other significant news items in the department. In this issue, we are pleased to feature some of the work of our faculty and alumni. George Trimble, our featured alumni, provided some of his work on computer architecture. Profs. Braun and Sturm have contributed features on tear film modeling and population genetics. Prof. Schleiniger describes our recent success in creating interdisciplinary undergraduate programs

and describes our latest endeavor to create a new degree program combining mathematics and biology. The editors would like to thank all of the contributors including Rich Braun, Bob Gilbert, Philippe Guyenne, Peter Monk, Rodrigo Platte, Gilberto Schleiniger, Katy Sharpe, Cliff Sloyer and George Trimble. For a more complete picture of department activities, we hope you will take a look at our department web page (www.math.udel.edu) where you will find more information about the activities of our faculty and students.

Most importantly, this newsletter is also an invitation to come back and visit the department at our first Mathematics

Alumni Day on April 29. Many of you have opted to receive this newsletter in electronic form rather than the more expensive print version. If you are willing to accept future issues of the newsletter in electronic form, please send a note with your preferred email address to alumni@math.udel.edu. We look forward to staying in touch.

Yours truly,



Lou Rossi

Anja Sturm

Mr. *Jae Yong Lee*, a graduate student in the department of mathematics, unexpectedly died during the Spring semester 2005. He is missed by his friends, peers and mentors here in the department. He is survived by his wife Emily Jihyun Park who bequeathed his books to our department library.

Featured Graduate Student: Rodrigo Platte

Rodrigo Platte is originally from Brazil and obtained his Bachelor of Sciences in Mathematics from Universidade Federal do Rio Grande do Sul.

He also obtained a Master degree in Applied Mathematics from the same university. He arrived at the University of Delaware in August of 1999 and obtained his Ph.D. in August of 2005. He recently started a position as a Visiting Assistant Professor at Arizona State University.

During his second year at the University of Delaware, he had the opportunity to work in a research project in collaboration with The DuPont

Company. The project was under the supervision of Dr. Schleiniger and Dr. Nwankwo (Dupont) and focused on mathematical models for polymer characterization via piezoelectric sensors. Under the guidance of his Ph.D. adviser, Dr. Driscoll, he investigated several properties of radial basis function methods for PDEs and wrote a dissertation entitled "Accuracy and stability of global radial basis functions methods for the numerical solution of partial differential equations." Rodrigo says that graduate school was a great experience for him: "It was a real pleasure working with Dr. Driscoll, I've learned a lot more about research from him than just writing a thesis." The research results in his thesis have been published in three research papers. Lately, he has also had the opportunity to work with Dr. Rossi on an algorithm that may be used as part of Rossi's

code for fluid computations via particle methods.

Rodrigo also enjoyed his teaching experience at UD. He emphasizes that he learned a lot from experienced professors as a teaching assistant and points out that the teaching opportunities offered by the department for those graduate students wishing to teach during the summer and winter are excellent. Thanks to his commitment and talent for teaching he received a university wide award for excellence in teaching as a teaching assistant.

Rodrigo would like to thank all faculty, staff, and graduate students at the Department of Mathematical sciences for their friendship and support: "I will cherish the many good memories I have had since we arrived in Newark."

From Young Turk to Old Guard: A Nifty Fifty

Professor Cliff Sloyer looks back on an impressive 50 years of teaching and research focused on Mathematics Education and Mathematical Modeling. He started teaching at Lehigh University as a graduate student in 1956. Of teaching his first class he remembers that many of the students were veterans of the Korean War whose background in Math was good but removed by several years. This led to him developing a new course designed for similar students to bring their mathematical skills “up to snuff.”

During the early 1960s, he was asked to develop graduate courses in Linear Algebra and Statistics for the scientists and engineers at the Western Electric Research Center in Princeton, which had formed a cooperative graduate program with Lehigh University where he was a full time Instructor at the time.

Cliff notes that this experience -unlike the previous textbook training- made him aware of mathematical modeling. Many of the students at the Center were involved in contracts with government agencies and would drop by his office to ask questions about certain mathematical problems they encountered in the models they were working on: “My office at the Center contained a desk, a conference table for 8-12 people, and a ‘real, working’ fireplace. Such luxuries have not been granted since that time.”

Upon receiving his Ph.D from Lehigh in 1964, Cliff Sloyer came to the University of Delaware and began pushing for more model building in the curriculum. Due to previous experience at Lehigh he was invited to work with secondary teachers in Connecticut at Wesleyan University during the summer of 1965 (this association

with Wesleyan continued until the mid 1980s) and subsequently as a liaison of UD’s Mathematics Department with John Brown (College of Education) and secondary teachers in the State of Delaware.

During the early 1970s, Cliff collaborated with Richard Crouse (College of Education) on the writing of a text for secondary teachers titled *Mathematical Questions from the Classroom* and with Willard Baxter (Dept. of Mathematics) on an undergraduate text titled *Calculus with Probability* for students in the life and management sciences. The latter text involved an increased focus on modeling.

In the 1970s and the 1980s the University of Delaware received numerous grants from the National Science Foundation for teacher education. Grants in the 70s provided for academic-year courses and workshops for secondary teachers to update their content knowledge, increase their knowledge of applications of mathematics and make them aware of technologies available. Portions on applications of mathematics were later published in a book titled *The Fantastiks of Mathematiks*. During the 1980s, relatively large NSF grants also supported several hundred talented secondary students in addition to about two dozen teachers to work on the teaching and learning of new and powerful topics in the applied mathematical sciences such as dynamic programming, information theory, cluster analysis, and pattern recognition.

In the latter part of the 1980s the National Council of Teachers of Mathematics developed “standards” for the teaching of mathematics at various levels. During the summers

of the early 1990s Cliff Sloyer was on the writing team at the Connecticut Business and Industry Association in Hartford which had received an NSF grant to test and evaluate materials for secondary students based on these standards. The texts, known as *MATH Connections*, were published in the late 1990s and became standard texts for secondary students at a number of sites across the country.

Cliff has enjoyed the opportunity to travel as part of his profession. He has been an invited speaker at various national and international conferences such as one in Germany and NCTM meetings throughout the United States. Partially as a result of a PR presentation in Denmark, the sixth International Conference on the Teaching of Mathematical Modeling and Applications was held at the University of Delaware in 1993. In addition to scholarly activities, Cliff served as Assistant Chairperson under Willard Baxter from 1969-1975, Acting Chairperson in 1978, and Associate Chairperson under Phil Broadbridge from 2002-2005.

Outside of mathematics, Cliff’s interests focused on music particularly of large jazz ensembles such as the Kenton band. In the 1960s he organized and directed the first jazz ensemble at Lehigh University known as the Jazz Moderns and then also the first jazz ensemble at the University of Delaware. Delaware now has two jazz ensembles directed by members of the Music Department.

Cliff would like to thank his colleagues, students, and especially his family for “making this a nifty fifty.”

To Our Generous Donors, Thank You!

The faculty and students of the Department of Mathematical Sciences would like to extend their gratitude to alumni who supported our students last year by designating our department when donating money to the University of Delaware. Your contributions help support students through a number of critical activities and programs. Among other things, your donations help support summer undergraduate research stipends, merit-based graduate and undergraduate fellowships, and facilities in the undergraduate lounge.

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