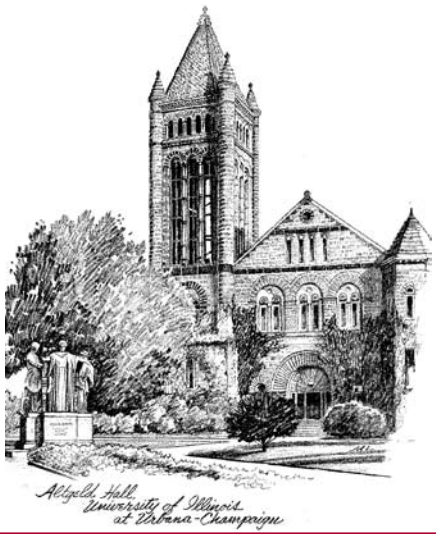
Math Times



Department of Mathematics *Fall 2006*

Letter from the Department Chair

It is a pleasure to write to you with greetings and good news about the Department of Mathematics. I was appointed as the new department chair on August 16. We have been slated for advancement and investment by the College of Liberal Arts and Sciences. Our new support will help us to attract talented faculty and to pursue excellence in all aspects of our mission. We will be vigorously pursuing strong faculty appointments at both the senior and junior levels. We are also implementing plans to give our faculty more dedicated research time. We are improving our instruction and course offerings, and would like to increase student scholarships and fellowships. Our facilities, including historic Altgeld Hall, are targeted for renovation. It is an exciting time for our department!

I took over as chair from Joseph Rosenblatt, who selflessly served as Interim Chair. I'd like to take this opportunity to thank him for his service. Being chair is a busy job, but it's been made easier for me by Joe's assistance with the transition. Former chair Daniel Grayson has also been an immense help to me, as have numerous other members of the faculty and staff. Thanks to all!

We have hired many new personnel this fall and I'd like to introduce them here. Sergiy Merenkov is a new Assistant Professor who comes to us from a postdoctoral position at Michigan. He specializes in the geometric theory of conformal and quasiconformal maps and is particularly interested in applications to geometric group theory and analysis on fractals. We have also hired two new postdocs. Tao Mei received his Ph.D. in 2006 from Texas A&M and works in functional analysis and harmonic analysis. Julien Melleray received his Ph.D. in 2005 from the University of Paris 6 and works on logic, functional analysis, and their interactions. Read more about these faculty on page 3.

We also have many new visiting faculty:

- Andrea Barreiro (Ph.D. New York University 2006)
- Ilgiz Kayumov (Ph.D. Kazan State University 1997, Assistant Professor, Faculty of Mech. and Math., Kazan State University)
- Maria Sabitova (Ph.D. University of Pennsylvania 2005)
- Sonja Stimac (Ph.D. University of Zagreb 2002, TA with Ph.D. on tenure track licensed to lecture with Graduate School of Economics and Business, University of Zagreb)
- Zoran Vondracek (Ph.D. University of Florida 1990, Professor at the Department of Mathematics, University of Zagreb).

In addition, Jing Li (Ph.D. University of California at Berkeley) has joined us as a new lecturer and Sue Purkayastha (M.Ed. in Math Education, University of Illinois) has arrived as a new instructor.

One of the more pleasant duties a department chair has is to advocate for and brag about the department. This is easy to do because of the many accomplishments of our faculty and students:

- Slawomir Solecki and Richard Sowers have been promoted to Full Professor, and Dirk Hundertmark, Ilya Kapovich, Rinat Kedem, and Charles Rezk have been promoted to Associate Professor with tenure.
- 66% of our faculty are Principal Investigators on external grants. This is our largest percentage in recent decades.
- Twenty faculty have received new NSF grants in the last year.

—continued on page 2

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If you would like to receive e-mail notification when a new issue is released, please send an e-mail to mathtimes@math.uiuc.edu. Hardcopies of the newsletter will be mailed upon request.

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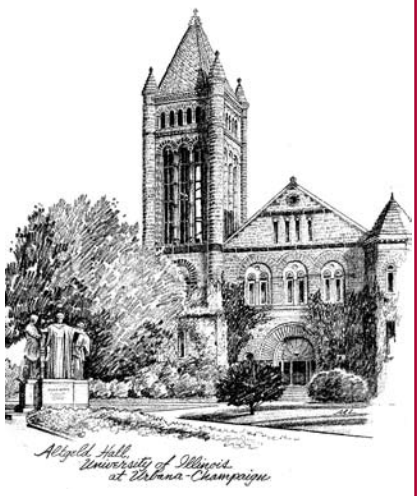


Department Chair letter, continued

- Associate Professor Robert Ghrist received a $7.98 million grant from DARPA for his research program entitled SToMP: Sensor Topology for Minimal Planning, the largest grant ever received by a member of our department.
- Our graduate students are engaging in research activities earlier through our REGS program (Research Experiences for Graduate Students) and our popular mini-courses.
- Eighteen students received Ph.D.'s last year and have been employed well.
- We have 798 undergraduate majors enrolled in our combined undergraduate degree programs. Our largest specialized major is Actuarial Science in which 275 students are enrolled.

The strength of our department originates in its people, and I have enjoyed getting better acquainted with faculty, staff, and students. I have had the pleasure of discussing departmental history with retired faculty and look forward to meeting more of our alumni, an important group of our stakeholders.

Whether you are on campus or reflecting back on your time at the Department of Mathematics at UIUC, I wish you a productive Fall semester as we work together to keep improving our department.

Sincerely,

Sheldon Katz
Department Chair

Mathematics alumni reception will be held in New Orleans

The Department of Mathematics will host an Alumni Reception at the annual meeting of the AMS and MAA. It will be held Saturday, January 6, 2007, from 5:45-7:15 p.m. in Balcony N in the New Orleans Marriott. Join us for hors d'oeuvres and cash bar. Everyone ever connected with the Department is encouraged to get together for conversation and to hear about mathematics at UIUC.

Give on-line

Today, more than ever, the Department of Mathematics relies on the financial support of its alumni and friends. And now we've made giving even easier with online giving! Visit the department's homepage at www.math.uiuc.edu and click the "Give Online" icon. A complete list of available funds with descriptions can be found there.

There are many different ways that you can support the department in its educational and research missions through student fellowships and scholarships, prizes and awards for students, support for the library, or funds for maintaining Altgeld Hall. Giving in support of these and other important missions truly makes a difference by promoting excellence in the UIUC Department of Mathematics.

Meet the faculty and staff

Sergiy Merenkov
Assistant Professor
Ph.D. 2003, Purdue University
Sergiy Merenkov came to the United States from the Ukraine in 1999 as a graduate student in Mathematics at Purdue University. He received his Ph.D. from there in 2003 under the direction of Alexandre Eremenko. After that Merenkov held a three-year postdoctoral position at the University of Michigan, where he mainly worked with Mario Bonk. His research is on geometric theory of conformal and quasiconformal maps with applications to areas such as geometric group theory and analysis on fractals. In his spare time Professor Merenkov likes reading, both literature and news, listening to NPR, and exercising, such as weight lifting.

Tao Mei
J.L. Doob Research Assistant Professor
Ph.D. 2006, Texas A & M
Tao Mei, a native of China, received his Ph.D. from Texas A&M under the supervision of Dr. Gilles Pisier in 2006. Before he came to the U.S. in 2003, he spent one year in Besancon, France as a visiting scholar. His current research area concerns both functional analysis and harmonic analysis, especially in generalizations of classical results from harmonic analysis to operator valued (matrix valued) functions and related subjects, such as noncommutative martingales. He was married this past August. Mei enjoys playing tennis and badminton, and he likes playing "Go" very much.

Julien Melleray
J.L. Doob Research Assistant Professor
Ph.D. 2005, University of Paris
Julien Melleray received his Ph.D. from the University of Paris in December 2005. His research interests are descriptive set theory, logic, functional analysis and their interactions. In the past few years, Melleray has mostly concerned himself with the study of the Urysohn universal space, a fascinating object that seemingly is at the "border" of these domains; its history is also fascinating, since it is the last mathematical work of Pavel Urysohn, who drowned while on a holiday in France a few weeks after his construction of this space, which was then almost forgotten for 60 years before again attracting the attention of mathematicians. Melleray enjoys spending time with his family (three brothers and a wonderful 1-year-old niece) in the southwest of France, and when he has some spare time, loves reading; he is especially fond of modern American crime fiction, and has recently developed an unavowable liking for (really) bad science fiction novels.

Wendy Harris
Director of Budget and Resource Planning
Wendy Harris joined the Department of Mathematics as the Director of Budget and Resource Planning in June. She has been on campus for 12 years, most recently in a similar position at Educational Psychology. Wendy has two Masters degrees, but fears the Ph.D. process, so don't expect any more. When off-campus, Wendy can be found working for the Champaign-Urbana Theatre Company (management and techie only; none of that on-stage stuff) or shopping for antiques and books. Born and raised in the Midwest, she has recently discovered the joy of overseas travel, so expect her to be gone a couple of weeks each year!

Faculty News

Robert Ghrist is the lead PI on a new DARPA program called "SToMP: Sensor Topology and Minimal Planning." Read more about this program on page 7. Professor Ghrist is serving on the steering committee for a new center in the Information Trust Institute (ITI) at Illinois. The new center is called "CAESAR: Center for Autonomous Engineering Systems and Robotics. Mark Spong, Department of Electrical and Computer Engineering, is the Director. The Center has a mixture of faculty from engineering, computer science and mathematics, and is geared to become a leading research center in robotics at Illinois. To read more about CAESAR, see the on-line article "Can robotic systems be trusted?" at http://www.engr.uiuc.edu/news/.

Joseph Rosenblatt is spending this year as a Program Officer at the National Science Foundation in the Division of Mathematical Sciences. He is part of the Analysis Program. His wife Dr. Gay Miller, from the Department of Pathobiology in the Veterinary College at UIUC, has an American Association for the Advancement of Science fellowship to work in Emergency Programs at Veterinary Services, one of the USDA's agencies.

Kenneth B. Stolarsky received the Lester R. Ford Award this past August. These awards are presented by the Mathematical Association of America for articles of expository excellence published in the *American Mathematical Monthly*. Stolarsky co-authored the paper "A Pascal-Type Triangle Characterizing Twin Primes" with Karl Dilcher of Dalhousie University (*Amer. Math. Monthly* 112:8 (2005) 673--681).

Julian Palmore participated in several meetings at Wilton Park, UK, on preparing for pandemics and participated in a meeting in October on the present day role of nuclear deterrence for the European Union. See the article "A minute with Julian Palmore" on-line at www.uiuc.edu/minutewith/julianpalmore.html. He participated in a conference at Remnin University in Beijing in June and wrote a paper on avian influenza and public policy. A paper on this topic was published in Defense & Security Analysis in June. In September he spoke at the Naval Postgraduate School in Monterey, CA, on the topic of WMD: Proliferation and Response.

Douglas B. West was the conference organizer for the SIAM Discrete Math Conference in Victoria, BC, June 25-28, with about 280 talks and 360 attendees.

Derek Robinson gave an invited lecture on September 8 at the Symposium on Group Theory held in honor of Professor J.C. Beidleman at the University of Kentucky in Lexington.

Professor Emeritus **Richard L. Bishop** received the Clarence Beckwith Distinguished Alumni Award from the Lake Michigan College Alumni Association. The award is given to alumni members who have accomplished significant success in their personal and professional endeavors. During his 40 years at Illinois he directed the Ph.D. studies of 5 students, co-authored two books and numerous papers. He retired from the University of Illinois in 1997.

Undergraduate activities

MATRIX math club activities

MATRIX (Mathematical Advancement Through Research and Idea eXchange) is ready for a new and exciting year! Stacey Millsap is the current president. This year MATRIX had an excellent turnout at Quad Day with over 200 people visiting the MATRIX booth.

Two guest speakers have presented lectures at MATRIX meetings thus far this Fall. The first guest speaker was Jeff Rade who discussed his experience at the Summer Institute in Biostatistics at Boston University. The second speaker was Dr. Bob Muncaster, UIUC Department of Mathematics, who talked about his research in Game Theory and Evolutionary Games. Several other professors are lined up to speak at MATRIX meetings this semester and members are looking forward to student-faculty pool night at the Union this coming month.

MATRIX is also attempting to put together a mini-math career fair this year to aid mathematics students in finding jobs and internships. Check the MATRIX website for activities and updates at http://www.uiuc.edu/ro/matrix.

MathCoUI continues work in local schools

The Mathematics Community Outreach at the University of Illinois (MathCoUI) is a student organization whose goal is to introduce, clarify, and make mathematics hands-on and enjoyable to students in middle and high schools. Going to various schools in the community, these students focus on topics that relate to the material teachers cover in each class.

This organization was started in the Fall of 2005 with the idea of working with middle school math classes. By the end of its first year, MathCoUI was already working at both the middle and high school levels. This year they will continue to work with the schools in the Champaign-Urbana community to promote mathematics in fun and interactive ways. Visit their website for more information at http://www.mste.uiuc.edu/projects/MathCoUI/.

News from the Graduate Program

Article by Steven Bradlow, Director of Graduate Studies

Recent Graduates: Eighteen graduate students successfully defended their Ph.D. theses last Spring or Summer. Of these, ten have accepted postdoctoral positions at research-active institutions, four have taken other positions in academics, and three have gone into industry. We proudly congratulate them all – and hope they will stay in touch with our Department! A comprehensive list (through May 2006) of previous Ph.D.'s can be found at http://www.math.uiuc.edu/GraduateProgram/phd_defense.html, and a list of jobs for previous graduates can be found at http://www.math.uiuc.edu/GraduateProgram/phd_grads_firstjobs.html.

New Students: This Fall's entering class has twenty-nine students, eighteen of whom are enrolled in the Ph.D. program. Roughly one third (11) of the students are from the USA. The rest come from nine different countries: China (5), Korea (3), Taiwan (3), Thailand (2), Brazil (1), Greece (1), India (1), and Vietnam (1).

Graduate Student Conference: This year's Midwest Number Theory Conference for Graduate Students was held here at the University of Illinois at Urbana-Champaign on October 28 and 29. This conference gives graduate students and recent Ph.D.s an opportunity to meet and give talks in a friendly, relaxed atmosphere. This is the fourth year for the conference, with the location alternating between the University of Illinois and the University of Wisconsin at Madison. The main organizer for this year's conference was fifth-year graduate student Tim Kilbourn. For more information, see http://dedekind.math.uiuc.edu/mntcg4/.

Alumni database: The Graduate Office database of alumni has close to 1100 entries and goes back to our first Ph.D. graduate in 1903. Our goal is to make this valuable resource as comprehensive and up-to-date as possible. A website has been set up with a convenient form for entering data. We invite all alumni to help us update our records by visiting the site at http://www.math.uiuc.edu/GraduateProgram/alumni_database.html. We welcome all comments or suggestions for improvements. These, as well as any questions you may have, can be sent to Karyn Turk [ksturk@math.uiuc.edu] or to Lori Dick [ldick@math.uiuc.edu].

IMU announces new logo

Article by John Sullivan, Adjunct Professor

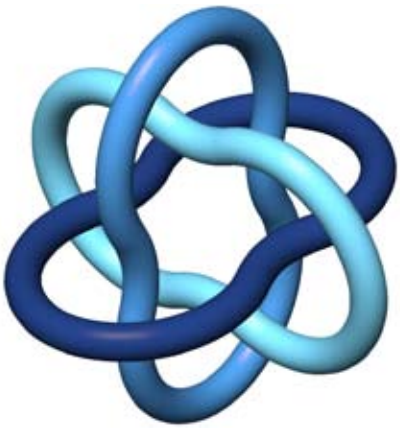
The International Mathematical Union (IMU) has adopted the new logo (below), as announced on August 22, 2006 at the opening ceremony of the International Congress of Mathematicians (ICM 2006) in Madrid. It was the winner of an international competition announced by the IMU in 2004.

The logo was designed by John Sullivan, Professor of Mathematical Visualization at the Technical University of Berlin (TU Berlin) and at the DFG Research Center MATHEON, and Adjunct Professor in the Department of Mathematics at the University of Illinois at Urbana-Champaign, with help from Prof. Nancy Wrinkle of Northeastern Illinois University.

The logo design is based on the Borromean rings, a famous topological link of three components. The rings have the surprising property that if any one component is removed, the other two can fall apart (while all three together remain linked). This so-called Brunnian property has led the rings to be used over many centuries in many cultures as a symbol of interconnectedness, or of strength in unity.

Although the Borromean rings are most often drawn as if made from three round circles, such a construction is mathematically impossible.

The IMU logo instead uses the tight shape of the Borromean rings, as would be obtained by tying them in rope pulled as tight as possible. Mathematically, this is the length-minimizing configuration of the link subject to the constraint that unit-diameter tubes around the three components stay disjoint. This problem and its solution are described in the paper "Criticality for the Gehring Link Problem" by J. Cantarella, J. Fu, R. Kusner, J. Sullivan, N. Wrinkle, to appear in *Geometry and Topology*, 2006, and available at arXiv.org/math/0402212.



Sullivan says the new logo "represents the interconnectedness not only of the various fields of mathematics, but also of the mathematical community around the world." Together with Charles Gunn of TU Berlin, he made a 5-minute computer-graphics video, "The Borromean Rings: a new logo for the IMU," for presentation at the ICM opening ceremony.

Business Office News

EXTERNAL grants received by Department of Mathematics Faculty since May 2006:

- Robert Ghrist, Sensor Topology and Minimal Planning, Defense Advanced Research Projects Agency (DARPA)
- Marius Junge, Quantum Probabilistic Methods in Operator Spaces and Applications, National Science Foundation
- Sankar Dutta, Intersection Multiplicity Canonical Element and Related Problems, National Security Agency
- Prabu Janakiraman, Best Norm Constants & Weak-type Inequalities, National Science Foundation
- Doug West, External Problems From Graph Decomposition, National Security Agency
- Jozsef Balogh and Zoltan Furedi, Extremal Graphs Hereditary and Random Structures, National Science Foundation
- Burak Erdogan, Research in Harmonic Analysis with Application to Geometric Measure Theory and PDE's, National Science Foundation
- Ward Henson, Model Theory for Metric Structures, National Science Foundation
- Ward Henson, Logic and Mathematics Conference, National Science Foundation
- Sheldon Katz, Some Problems in Algebraic Geometry with Connections to String Theory, National Science Foundation
- Christopher Leininger, Geometry and the Mapping Class Group, National Science Foundation
- Christian Rosendal, The Set Theory of Polish Groups, National Science Foundation
- Slawomir Solecki, Logic and Mathematics Conference, National Science Foundation
- Jozsef Balogh and Alexandr Kostochka, Extremal Combinatorics at Illinois (EXCILL), National Science Foundation
- Kevin Ford, Theory of L-Functions Prime Numbers and Divisors, National Science Foundation
- Jeremy Tyson, Conference Series in Geometric Analysis and Sub-Riemannian Geometry, National Science Foundation
- Ilia Kapovich, Geodesic Currents on Free Groups, National Science Foundation
- Richard Sowers, Noise Induced Transitions in Multiscale Systems, National Science Foundation
- Eugene Lerman, Symplectic Varieties, Orbifolds and Contact Homology of Toric Manifolds, National Science Foundation
- Robert Bauer, Conformal Invariance and Restriction in Multiple Connected Domains and Riemann Surfaces, National Science Foundation
- Jeremy Tyson, Nonsmooth Methods in Geometric Function Theory and Geometric Measure Theory on the Heisenberg Group, National Science Foundation

RESEARCH BOARD grants received:

- Sankar Dutta, Splitting in Module-finite Extensions
- Ward Henson, Model Theory for Metric Structures
- William Haboush, The Cohomology Ring of a Generalized Flag Variety
- Bruce Berndt, Finding Proofs of Entries in Ramanujan's Lost Notebook
- Alexandr Tumanov, Long-time Asymptotics of Viscous Shock Waves on the Line
- Sergiy Merenkov, Uniformization and Rigidity of Sierpinski Carpets

A webpage with grant funding opportunities has been created and is available at http://www.math.uiuc.edu/Bourbaki/Grants/grant_funding.html.

20 year service award

Sheldon Katz presents Lori Dick, an Administrative Aide and Assistant to the Director of Graduate Studies in the Department of Mathematics, with her 20 year service award. Lori started her University career with the Math Department on November 11, 1985, as a Secretary II in the main office. She decided it was a good place to be, and the rest is history. She has developed a great knowledge of department and university policy and is highly respected for this not just by us but also by those outside the department. Lori is unique in her knowledge and abilities and a superb ambassador for the Math Department.

DARPA Grant: Sensor Topology and Minimal Planning

Article by Robert Ghrist, Associate Professor

"Imagine that you have thousands upon thousands of mobile video cameras and one of them catches something important. What do you do now? And, to make it interesting, let's assume that you don't have GPS, range finders, orientation sensors, or a compass. What now?"

Robert Ghrist and his colleagues are preparing to answer the "What now?" question through a research project called SToMP, short for "Sensor Topology & Minimal Planning." Funded by the Defense Advanced Research Projects Agency (DARPA), the $7.98 million project will cover three phases of development over four years.

The multi-year, interdisciplinary project, SToMP brings together experts from the University of Illinois, Bell Labs/ Lucent, Arizona State University, Rochester University, Carnegie-Mellon University, Melbourne University, the University of Pennsylvania, and the University of Chicago who will "develop and implement global topological tools to dramatically reduce the amount of sensing complexity needed to solve problems across a variety of Department of Defense applications involving sensor networks, autonomous systems, and configurable sensor platforms."

"This is very much a forward-thinking project," Ghrist added. "As technology for sensors progresses, we will be able to replace large, expensive 'global' sensors with swarms of small, cheap, 'local' sensors. One of the problems with such a system is how to integrate all that local data into a global picture on an environment, and how to manage the information overload," Ghrist explained.

To solve the problem, Ghrist and his colleagues have turned to a specific field of mathematics—topology. Founded in the early 20th Century, topology is the study of abstract spaces. "After a century's work, we have a lot of tools that have yet to cross over into the engineering world. This project is all about that technology transfer." The idea of turning mathematical theories into useful tools is part of the attraction researchers. According to Ghrist, SToMP has two features that are pretty unique.

"Number one is that it is a mathematics research project. The investment here is in theorems and algorithms, and a specific type of math—topology," he said. "DARPA usually funds more hardware-oriented projects, however, the agency is known for preparing for the impossible that will never-the-less come to pass." In its role as the central research and development organization for the Department of Defense, past DARPA initiatives include global positioning technology and computer connectivity which has since become the Internet.

The second feature of the SToMP project, according to Ghrist, is its emphasis on minimality. "The question is: 'What's the minimum amount of sensing needed to solve a problem?' Sometimes you can solve a problem with a fairly simple or weak system," he explained. "One way mathematics can assist is by showing that certain modalities are not vital, which makes miniaturization and deployment easier." "It won't be long until the sensor networks are everywhere," Ghrist remarked. "The abilities we have to fabricate sensors are growing at an exponential rate. Our goal is to have the math ready when the hardware is available."

In memoriam

Walter Philipp

Walter Philipp died July 19, 2006, while mountain climbing in his native Austria. He was born in Vienna, Austria in 1936. He is survived by his wife Ariane and four children. Professor Philipp received his Ph.D. in Mathematics and M.S. in Mathematics Education and Physics at the University of Vienna, 1960. He was an Assistant at the University of Vienna 1960-1963, 1965-1967; Habilitation 1967; and a Visiting Assistant Professor at the University of Montana, Missoula, 1963-64 and at the University of Illinois 1964-65. Since 1967 he was at the University of Illinois; Professor of Mathematics, 1973-2000; Professor of Statistics, 1988-2000; and Chair of the Department of Statistics, 1990-1995. He was an Associate member in the Center for Advanced Study, 1984-85. He became Professor Emeritus in May 2000 and Affiliate Professor at the Beckman Institute, University of Illinois, August 2000.

He was a Corresponding member of the Austrian Academy of Sciences; Associate Editor, Annals of Probability 1976-1981; and on the Advisory Board, Monatshefte für Mathematik, since 1994. He published more than 70 publications, including two monographs and gave more than 100 invited lectures given in the United States, Germany, Austria, Hungary, Soviet Union, England, Switzerland, and Canada. He was a Fellow, Institute of Mathematical Statistics, and an Elected member, International Statistical Institute.

Philipp was an avid climber, making many first and repeat climbs in the 1950s. The Philipp-Flamm route in the Dolomites, for which he was named one of the top 100 climbers of the century, was considered a rite of passage for many famous climbers.

—continued on page 8

In memoriam, continued

James Hunter Morris

James Hunter Morris of Carbondale, Illinois passed away in an automobile accident on September 16th. James graduated from UIUC with distinction in Mathematics. He was a second year law student at Cornell at the time of the accident and served as an associate editor of the *Cornell Journal of Law and Public Policy.*

While at UIUC, James worked as a lead class assistant in the Calculus&*Mathematica* program. Professor Jerry Uhl remembers that "James established himself as a leader in the class and helped others students with their math and with the computer. By the end of the semester, he became hooked on math and went on to be an outstanding math major, excelling in computer-based and conventional math courses." Most of the students James worked with remember his bright sense of humor and quick wit. To many of his friends, he was known as Coconut.

The James Hunter Morris Memorial Scholarship fund, designated for general student aid through the Vice Chancellor for Student Affairs' office, has been established through the University of Illinois Foundation.

Paul Halmos

Paul Halmos, famed mathematician, master expositor, author of several influential books, and originator of the "Halmos symbol" (the end-of-proof box), died on October 2, 2006 in Los Gatos, California. He was the author of more than a dozen books, many of them familiar to mathematicians around the world, and was acknowledged for his expository skill, both in writing and speaking. He received many awards during his lifetime, including the AMS Steele Prize (1983, for his many graduate texts) and the MAA Gung and Hu Award (2000, for distinguished service to mathematics).

Born on March 3, 1916, in Budapest, Hungary, Halmos emigrated with his father, a physician, to Chicago, where he attended high school. He graduated from high school at age 15, then entered the University of Illinois, majoring in mathematics and philosophy. After receiving his bachelor's degree, he stayed at Illinois to pursue graduate studies, and he earned his Ph.D. in 1938 under Joseph Doob.

While at Illinois, Halmos came to know many of the luminaries whose photos grace the halls of Altgeld Hall and whose names are attached to prizes and lecture series, and he spent part of that period living in Illini Hall, which at the time was a dormitory. Halmos describes his life at Illinois, in his own inimitable style, in his autobiography, "I want to be a mathematician" (Springer-Verlag, New York, 1985). Professor A.J. Hildebrand has prepared a webpage with excerpts from the book at http://www.math.uiuc.edu/~hildebr/halmosquotes.html.

André Dabrowski

André Dabrowski died October 7. He received his Ph.D. from the University of Illinois in 1982. Dabrowski then joined the faculty at the University of Calgary where he remained until 1985. From then on he was on the faculty at the University of Ottawa. At the time of his death Dabrowski was Dean of Science at the University of Ottawa.

Marianne Ruth Freundlich Smith

Freundlich Smith passed away at home in Berkeley, California on July 15. She was born in Karlsruhe, Germany and in 1934 fled to the United States with her parents and sister. She grew up in Queens, NY and attended Queens College. Freundlich Smith received her Ph.D. in 1947 at the University of Illinois. That same year, she moved to Berkeley, where she taught mathematics at the University of California, but when the loyalty oath became an issue, she refused to sign and quit teaching. Freundlich Smith later became a professor at California State College at Hayward (now California State University, Hayward), where she taught for 25 years. A description of her coming to understand analysis is in her article "Eventually" in the May 1998 Notices of the AMS.

Paul F. Conrad

Conrad passed away on June 25 at the age of 84. Conrad received his degrees from the University of Illinois, culminating in his Ph.D. in 1951 under the direction of Reinhold Baer. He made significant contributions to the field of ordered algebraic structures. He taught at Tulane University from 1951 until 1970 when he accepted a professorship at the University of Kansas. He was a Fulbright lecturer at the University of Ceylon during 1956-57 and a NSF senior postdoctoral fellow at the Australian National University during 1964-65. In 1981, he was appointed the first Henry J. Bischoff Professor of Mathematics at the University of Kansas, and he retired in 1992.

Donald Higman

Higman died February 13. He received his Ph.D. in 1952 from the University of Illinois Urbana-Champaign under the direction of Reinhold Baer and taught at the University of Michigan for many years. He and Charles Sims produced the sporadic group of order 44,352,000, now known as HS, the Higman-Sims group. He was 77 at the time of his death.