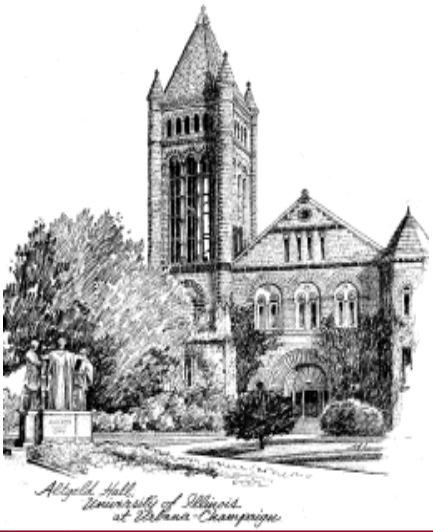
Math Times



Department of Mathematics *Spring 2004*

From the Department Chair

Another spring has come, together with all the changes that this special season brings. I have been the chair of our Department now for almost five years. I will be ending my term as chair by the end of the summer, as another person takes on this important administrative role. I am looking forward to next year when I will be able to spend more time on my research and will be back in the classroom.

But as one time in my life ends and another begins, I find myself surveying the past five years and thinking about what has transpired, and what it represents for the future of our Department. Let me give you an idea of what I see.

In fall 1999, we had a regular faculty size of 72 people and we had 5 Doob Research Assistant Professors. Over the last five years, including this year's hiring, I have led our department during the hiring of 27 new faculty members and 30 postdoctoral faculty members. We anticipate that in fall 2004, we will have 73 (or more) faculty members and over 15 postdoctoral faculty members (both Doob and NSF VIGRE Research Assistant Professors). During this five year period, when more than a third of the department's current regular faculty members have come as new faculty members to our University, we have also seen a fundamental shift in our faculty profile. Indeed, in fall 1999, the percentages of faculty by rank were 65% Professor, 18% Associate Professor, and 17% Assistant Professor. In fall 2004, we anticipate that the percentages will be 45% Professor, 19% Associate Professor, and 36% Assistant Professor.

These bare facts do not communicate the real dynamics of the changes in our Department. While this renewal has been going on, we received and put into place a vigorous, diverse, and comprehensive NSF VIGRE grant. This grant helped create new, exciting interactions among our regular faculty members, the postdoctoral faculty members, the graduate students, and the undergraduate students. We have also developed a much broader base of faculty members whose work brings them into collaborative relations with members of other departments on campus, most notably departments in the College of Engineering. There is much more to the story of growth and change in various areas of departmental life, too much to be included here.

The greatest challenges to our Department and our University lie ahead of us. While we continue to reinvent ourselves with the hiring of new faculty members and the growth of a vital postdoctoral program, we must remain stewards of our most cherished traditions. We must continue to provide high quality instruction to our undergraduate and graduate students. We must sustain the creative efforts that lead to outstanding mathematical research across the full spectrum of the mathematical sciences. We must focus on these basic activities with the same enthusiastic and collegial spirit that has been part of the heart of our Department for many years.

You should look at our Department's homepage at http://www.math.uiuc.edu, and read the statement there of what we do. It describes our current state, while it also shapes a vision of our future. Its continued execution will require the efforts and support of many people—people who are taking on many different roles in our joint enterprise. We need your help and support too! Can we count on you?

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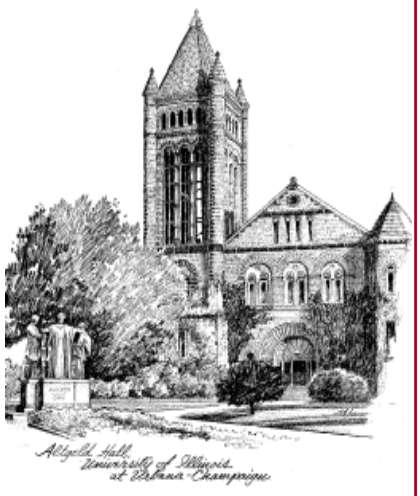

Achievements

Record turnout at 2003 Putnam Contest

A total of 3615 students from colleges and universities in the United States and Canada participated in the sixty-fourth annual William Lowell Putnam Competition, held December 6, 2003. The turnout was well above last year's number of 3349 participants and is the highest in the history of the Putnam. Locally, the contest was equally well attended, with 19 UIUC students participating, the highest number since the early 1980s.

The team contest was won by MIT, followed by Harvard, Duke, Caltech, and Harvey Mudd College. The UIUC Putnam team placed 55th. While the team rank is somewhat of a disappointment in light of last year's 13th rank, the overall performance of the local participants was nothing to be ashamed of. In particular, with four of its students (Wing Ko, Noah Prince, David Klempner and Maria Boca) earning a top 500 spot, the University of Illinois beat out all other Big Ten schools, including such academic powerhouses as Michigan (which landed three in the top 500).

The Putnam Contest, which Time Magazine called "the world's toughest math test", consists of 12 challenging math problems, to be solved over a period of 6 hours. Each problem is worth 10 points, for a maximal total score of 120. The difficulty of the contest is illustrated by the fact that only one of the 3615 participants in the 2003 Putnam achieved a score greater than 100; a score of 60, or 50% of the maximal score, was sufficient to place among the top 1%; and a score of 10 points, corresponding to a single problem solved correctly, was enough to place among the top 25% of all participants.

For more information visit the UIUC Math Contests webpage at http://www.math.uiuc.edu/contests.html.

Bruce Berndt named Mahler Lecturer

Bruce Berndt has been named Mahler Lecturer for 2005 by the Australian Mathematical Society. Berndt, who joined the mathematics faculty at Illinois in 1967, is an analytic number theorist with strong interests in q-series, continued fractions, partitions, elliptic functions, classical modular forms, special functions, and classical analysis. Since 1974, almost all of his research has been devoted to proving the claims left without proofs in three notebooks and a lost notebook by India's greatest mathematician, Srinivasa Ramanujan, who died in 1920.

The Mahler Lectureship is awarded every two years to a distinguished mathematician who preferably works in an area of mathematics associated with the work of Professor Kurt Mahler. It is usually expected that the Lecturer will speak at one of the main Society Conferences and visit as many universities as can be reasonably managed.

Professor Mahler was one of the leaders in Australian mathematics from his arrival in Australia in the 1960s, until his death in 1988. Money from a bequest in Professor Mahler's will to the Society was used to set up a visiting lectureship in his honor. Former lecturers include John Coates, Don Zagier, Michel Mendes France, Peter Hilton, John H. Conway, Robin Thomas, and Hendrik Lenstra.

WCNT Selfridge Prize awarded

At the 2003 West Coast Number Theory Conference (WCNT) **Matthew Boylan** and **Kevin O'Bryant** received the Selfridge Prize for Excellence in Mathematics Presentations. Boylan, a 2002-2005 VIGRE Research Assistant Professor in the department, received the prize for his presentation "Coefficients of half-integral weight modular forms modulo l^j." His research interests are in modular forms, algebraic number theory, elliptic curves, and partitions. Kevin O'Bryant received the prize for his presentation "Spectra of floor sequences." O'Bryant, currently an NSF postdoc at the University of California at San Diego, received his Ph.D. from Illinois in 2002 under the direction of Professor Ken Stolarsky.

Doshi and Ko win 2004 Undergrad Math Contest

The UIUC Undergraduate Math Contest is a math problems contest for undergraduates, held by the Department every year in the spring semester and modeled after the William L. Putnam Competition.

This year's contest took place April 17, 2004, and attracted twenty-five participants. **Vishal Doshi**, a sophomore in Mathematics and Electrical Engineering, and **Wing Ko**, a junior in Mathematics and Physics and the top local scorer in last year's Putnam Contest, tied for first place with 50 out of 60 possible points. Each will receive a $200 cash award.

For more information, including contest problems and solutions, and a listing of winners of past UIUC Undergraduate Math Contests, visit the UIUC Math Contests webpage http://www.math.uiuc.edu/contests.html.

Alumni News:

Lacey appointed 2004 Guggenheim Fellow

Michael Lacey '87 has been appointed a 2004 Guggenheim Fellow. Lacey, a Professor at Georgia Institute of Technology, received his Ph.D. in 1987 from Illinois under the direction of Walter Philipp. His thesis topic was "Limit theorems in probability." Lacey was also awarded the Prix Salem in 1987 for joint work with Christoph Thiele.

Mathematics Research Experience Endowment Fund established

Thanks to the generosity of Barry Greenstein '75, the Department of Mathematics is able to offer individual research experiences to generations of students for many years to come. With his gift of $100,000, Barry established the Mathematics Research Experience Endowment Fund, which will support undergraduate and graduate students to work on independent research projects under the direction of a faculty member. Via these research experiences, students can gain valuable insight into the nature of mathematical research, while developing intellectual skills that will benefit them in their academic and professional careers.

Barry completed his B.S. in Computer Science at Illinois in 1975 and then pursued a doctoral degree in the Department of Mathematics. Although he did not complete the Ph.D. program, Barry still appreciates the guidance he was given by a number of faculty members, including Kenneth Stolarsky, with whom he worked on his Ph.D. research.

You can read more about Barry Greenstein and his interest in the Department of Mathematics in the spring issue of *LAS News*. We are grateful to Barry for his commitment to the Department and look forward to the exciting research this fund will help produce.

Achievements

Each spring, the department presents awards for outstanding achievement to staff, undergraduate students and graduate students. This year's award ceremony was held April 27th in Altgeld Hall.

Hamza Yesilyurt
Recipient of the **Bateman Prize in Number Theory** which is awarded to a graduate student in recognition of outstanding research in number theory. Hamza Yesilyurt is completing his doctorate this spring under Bruce Berndt. In his dissertation, Hamza proved four identities for mock theta functions from Ramanujan's lost notebook whose proofs had eluded researchers for several years. He also examined the periodicity of signs of general theta products, extending the work of several well-known mathematicians, and he developed new ideas in proving Ramanujan's famous identities for the Rogers-Ramanujan functions. Hamza has received the John Thompson Assistant Professorship, a three-year postdoctoral position awarded annually at the University of Florida.

Michael Bush
Received the **Irving Reiner Memorial Award** which is awarded to one or more graduate students in recognition of outstanding scholastic achievement in the field of algebra. Michael's work is on p-class towers, and more recently on Schur sigma-groups, subjects that combine number theory, group theory and algebra. His solution to an old problem of Harold Stark appeared in the *Journal of Number Theory*. He also simultaneously gave the first examples of p-class towers of derived length greater than two, answering a question of Benjamin and Snyder. Michael passed his Ph.D. exam in early April and this fall will start a three-year visiting assistant professorship at the University of Massachusetts, Amherst. His advisor is Professor Nigel Boston. Michael also received a Department TA Instructional Award this year.

Bogdan Petrenko
Awarded the **Hohn-Nash Award** which is given to a graduate student in recognition of outstanding scholarship and promise in applied mathematics. Bogdan works in many areas, including group theory, finite fields, and analytic number theory. He had three papers recently accepted, producing and counting counterexamples to some basic questions on primitive elements in finite fields and filling a gap in the exposition of a famous paper of Lenstra and Schoof. Bogdan passed his Ph.D. exam in April and next year will be a Postdoc at Texas A&M. His advisor is Professor Nigel Boston.

Noah Prince
Received the **H.R. Brahana Prize** which is awarded to a graduating senior in any discipline with a distinguished undergraduate career in mathematics. Noah came to the UIUC and quickly took graduate level courses. He has done several REUs working with Professors Douglas B. West and Alexandr Kostochka. Almost single-handedly he depleted the undergraduate travel fund by attending professional meetings and presenting his work. One of his professors writes,

Department TA Instructional Awards

Michael Bush, Colin Ferguson, Jennifer Paulhus, and L. Pedro Poitevin are the recipients of the Department TA Instructional Award for excellence in teaching. Bart Snapp received an Honorable Mention. The TA Instructional Award is given to one or more graduate students based on classroom observation, comments from students, and a written report by the nominees describing their teaching goals.

Michael Bush, who also received the Irving Reiner Award (see above), is in his sixth (and final) year here at Illinois. **Colin Ferguson**, in his fourth year in the department, is working with Derek Robinson. His research is focused on various chain conditions on subnormal subgroups. **Jennifer Paulhus** is a fourth-year graduate student working with Iwan Duursma. Her work is in Algebraic Number Theory, specifically studying curves over finite fields and number fields. She'll spend the summer working on her thesis. **Pedro Poitevin** is a member of the Logic group, and is currently investigating the model theory of Musielak-Orlicz spaces. In his sixth year at Illinois, his advisor is C. Ward Henson. He too will spend this summer in Champaign-Urbana, working enthusiastically on his dissertation. **Bart Snapp** is a third-year graduate student with research interests in Commutative Ring Theory. He will participate in a Summer REGS Program and plans to attend Summer mini-courses at the University of Chicago and the University of Utah.

"Noah Prince is a budding mathematician in undergraduate's clothing. He is passionately interested in mathematical research, and this is his primary interest and what he most wants to talk about." Noah was on the Illinois team that participated in the William Lowell Putnam Competition held this past December and received the second highest score of the Illinois team.

Edward Kung and Benjamin Lundell
Recipients of the **Greenwood and Trjitzinsky Prize in Undergraduate Mathematics** which recognizes the best paper in mathematics written by an undergraduate.

Edward is a physics major with a strong background in mathematics. He did an REU with Donald Yau, a 2002-2005 VIGRE postdoc, in the summer of 2003 on properties of real matrices associated to sign patterns. Professor Yau writes that, " This paper answers some central questions in Qualitative Matrix Theory."

Benjamin started in electrical engineering but switched to mathematics. He has an enviable record in both areas and did an REU with Christopher French, a 2001-2004 VIGRE postdoc, which formed the basis of his paper on knot theory.

Wing Ho Ko
Awarded the **Salma Wanna Memorial Award** which is given for exceptional performance in mathematics to the most outstanding continuing undergraduate student. Wing joined the mathematics honors sequence in the middle and quickly was recognized as the best student in the program. His homework and exams are not only correct but beautiful. One of his professors writes: "In addition to a clear and disciplined mind, he also has quite a good mathematical intuition and can think informally before plunging into details of an argument." Wing was the top-scoring student on the Illinois team that participated in the William Lowell Putnam Competition held this past December.

Melanie Flaherty
Received the **Major Award in Actuarial Science.** In addition to earning a 3.946 GPA, Melanie has been involved in numerous extracurricular activities, including the Women's Glee Club and the Illini 'N Motion Dance Troupe. She has also passed two actuarial exams, and will be working next year for a smaller consulting firm in Chicago.

Michael Munie
Received the **Major Award in Mathematics.** Michael is completing a double degree in mathematics and computer science. He has completed over 50 hours of credit by AP exams or proficiency credit while being regularly on the Dean's List and a Chancellor's Scholar.

Davina Lim
Received the **Major Award in Mathematics and Computer Science.** Davina was selected not only because she has the top GPA among Math/CS seniors but because she has taken several courses beyond the minimum required number of CS and math courses, including two semesters of senior project.

Lauren Baker
Received the **Major Award in Teaching of Mathematics.** Lauren started as a mechanical engineering major but transferred to mathematics. She will graduate with the highest grades of students in the teaching option and has frequently been on the Dean's list. One of her professors also praises her charming essay on Coxeter and her project on perspective—a three-layer drawing of her church—which used her engineering background.

Kay Daly
Awarded the **Outstanding Department Non-Academic Staff Award** which is given in recognition of outstanding staff contributions to the department and the university through leadership and work excellence. Kay is the Staff Secretary in the Department's Undergraduate Office where she assists the Director of Undergraduate Studies and the Freshman Academic Advisor in managing and overseeing the work flow of the office. "Her genuine concern for the undergraduates makes them aware that they have a friend to turn to in the university." says Graham Evans, Director of Undergraduate Studies. Other duties include managing and maintaining the department's computerized grading program and serving as coordinator of the Mathematics Commencement Ceremony. Kay first joined the department in 1990.

Retirements


E. Graham Evans, Jr.

E. Graham Evans, Jr., joined the UIUC Department of Mathematics in 1972. After receiving his Ph.D. from the University of Chicago in 1969 he held a position at UCLA 1969-70 and was a Moore Instructor at MIT from 1970-72. He served as editor of the *Illinois Journal of Mathematics* from 1990-94 and was the Managing Editor from 1994-98. He has been Director of Undergraduate Studies for the past four years.

His research is centered on commutative rings and the study of free resolutions of modules. He spent the early part of his research in a series of articles with David Eisenbud and wrote with several others while at Illinois—principally Phillip Griffith. In the mid 1970's he worked with Mike Stillman, while he was an undergraduate here, on a computer program to create free resolutions. This was substantially improved by Stillman, Bayer, Grayson, and others to become Macaulay 2. Four students have completed their Ph.D. under his direction.

Professor Evans received an Alfred P. Sloan Foundation Fellowship in 1975-76 that he spent at IHES in Paris. He received the Campus Award for Excellence in Advising Undergraduate Students in 2001 and the King Broadrick-Allen Award for Excellence in Honors Teaching from the Campus Honors Program in 2002. He will give the "Remarks to Graduates" at the department convocation ceremony to be held May 18, 2004.


Carl Jockusch

Carl Jockusch joined the UIUC Department of Mathematics in 1967 and became a full professor in 1975. He did his undergraduate work at Swarthmore College and received his BA with Highest Honors in 1963. He received his doctorate from M.I.T. in 1966 after writing a thesis in mathematical logic under the direction of Hartley Rogers. During 1966-67 he taught at Northeastern University in Boston and then came to Illinois to stay. He has taken sabbatical leaves at Berkeley, MSRI, and M.I.T. During 1982-83 he was a Visiting Senior Fellow at the University of Leeds. He held a visiting position at Duke University during the fall of 1973 and has had numerous one-month visiting appointments at the University of Chicago to do joint research with Robert Soare.

Jockusch's research interests center on computability theory, a field of mathematical logic devoted to the study of computable functions and to relative computability. In particular, he has studied interactions between computability theory and other areas such as combinatorics. He has written research papers with 37 coauthors and has an Erdös number of two via three UIUC mathematicians of Erdös number one—Paul Bateman, Zoltan Füredi, and the late Lee Rubel. He has been fortunate to have directed thirteen Ph.D. students, including one who is expected to finish this spring. He has held several posts in the Association for Symbolic Logic and is currently serving as the editor for Logic and Foundations of the Proceedings of the American Mathematical Society.

In his spare time (which he is looking forward to having more of) he enjoys tennis, classical music, the study of languages, and travel.


Gerald Janusz

Gerald Janusz joined the UIUC Department of Mathematics in 1968 and was promoted to full professor in 1974. He did his undergraduate work at Marquette University, graduate work at the University of Wisconsin and the University of Oregon, where he completed his dissertation in 1965 under the direction of Charles W. Curtis. He held postdoctoral positions at the Institute for Advanced Study and the University of Chicago. He spent a sabbatical year at Yale University and one semester working for the Construction Engineering Research Laboratory in Champaign.

Janusz focused his research in several different areas of algebra; his early interest in representation theory of finite groups led him to two significant works: the classification of indecomposable, characteristic *p*, representations of a finite group in the case where there are only a finite number of them; his interest in algebraic number theory led to the classification of the rational division algebras that can occur in the Wedderburn decomposition of a rational group algebra. His recent work is in the area of algebraic coding theory, especially in the construction of self-dual binary linear codes. He has supervised the thesis work of six students, with one more in progress.

Professor Janusz has been involved in the publication side of research throughout his career serving as Editor of Communications in Algebra, Contemporary Mathematics, and as Editor and Managing Editor of *Illinois Journal of Mathematics*. He served in Ann Arbor as Executive Editor of *Mathematical Reviews* from 1990-92, leaving that position to become chair of the Department of Mathematics at UIUC from 1992-1996.

Since 1996 he has actively pursued his interest in music, playing in several local jazz groups. Members of the Department have (perhaps unknowingly) heard him once a week as a volunteer player for the 12:50 p.m. Altgeld chimes concert.

Some time after the end of classes, he and his wife Sue will move to Ann Arbor to be near their family.


Lynn McLinden

Lynn McLinden joined the UIUC Department of Mathematics in August 1973, where he's been continuously except for leaves to the Universite Catholique de Louvain, Louvain-la-Neuve, Belgium, in 1977-78 and the Mathematics Research Center at the University of Wisconsin at Madison for the academic years 1983-84 and 1984-85. He received his AB in Mathematics from Princeton in 1965 and his Ph.D. in Mathematics from the University of Washington in 1971. Before joining the department in 1973 he was a Visiting Assistant Professor at the Mathematics Research Center, University of Wisconsin at Madison from 1971 to 1973.

Professor McLinden's research specialization is in Optimization Theory for nonlinear problems, Convex Analysis and other nonlinear analysis, and the notion of Duality in the foregoing. He has supervised 4 Ph.D. theses and 1 Masters thesis. He has served on nearly all the Department's committees at various points, and the Campus Senate.

In retirement Professor McLinden is looking forward to finding and exploring new topographical nonlinearities in nearby sylvan areas, aided by his wonderful dog Trig and sporadic groups of kindred souls who enjoy good conversastion, bad food, and campfires on Saturdays.

Retirements

Everett Dade

Everett Dade received his Ph.D. from Princeton in 1960. His early career was rather peripatetic, involving six years at Cal Tech, one year in England, one early year at UIUC, and three years at Strasbourg, France. He finally came to UIUC for good in 1971, and, except for one sabbatical year in Strasbourg, has remained here ever since.

Most of Professor Dade's research has been about finite groups and their representations. Of his 68 published papers at least 38 were in this area. The others were in ring theory or algebraic number theory. A few of these papers have been of more than passing interest. One, which appeared in two parts in the 1978 *Annal of Mathematics*, defined and studied "endo-permutation modules" over finite p-groups. This paper slowly attracted the attention of other mathematicians. The work of several of them, including Puig, Thevenaz, Bouc and Carlson, over many years has recently led to a complete classification of the groups formed by these modules.

Another influential paper appeared in the 1992 *Inventiones Mathematicae*. It conjectured a formula for the number of irreducible characters with a given defect in a block of a finite group G, in terms of the number of irreducible characters with the same defect in related blocks of certain subgroups of G. This formula extended earlier conjectures of McKay and Alperin, and has recently been extended by Isaacs, Navarro and Uno to take into account both the Galois action on characters and further conditions on character degrees. While no general proof of any of these conjectures has yet been found, it is possible to show that one very complicated form of each of them is true for all finite groups if it holds for all covering groups of all finite simple groups. Since those groups have been classified, there is some hope to prove these conjectures one simple group at a time. In any event, they have been verified in many cases by a number of different mathematicians, including a few of Dade's graduate students. But the simple groups of Lie type, which form the bulk of the finite simple groups, present obstacles which have yet to be overcome.

Twelve students, not all at UIUC, have received their Ph.D. under Professor Dade's supervision. Another one will finish this year. Their thesis topics have ranged from abstract ring theory (Joe Fisher, 1968) to the cohomology of finite groups (Nicola McClallen, 2000). But most were about representations or characters of finite groups.

Jean Paley

Jean Paley joined the UIUC Department of Mathematics in May 1999 as Assistant Chair, just as Joe Rosenblatt was assuming responsibilities as Department Chair. From 1991 to 1999, she was the Assistant to the Head in the Department of Political Science.

Jean has enjoyed her time with the department enormously. "There has never been a dull moment, and the faculty, staff, students, and visitors have been enormously delightful and entertaining."

Once retired, Jean will do lots of traveling, especially during the months of September through May. She looks forward to inviting her friends to late dinners on weeknights, having an occasional glass of wine at lunch, and playing in her garden any time she feels like it. In addition to meeting these daunting goals, she plans to write a series of tell-all academic murder mysteries in which chalk dust plays a central role.


Joseph Rotman

Joseph Rotman did his undergraduate and graduate work at the University of Chicago, where he received his doctorate in 1959 with a thesis in Abelian groups written under the direction of Irving Kaplansky. At Chicago, he was an assistant to M.H. Stone for one semester. He was a research associate (the equivalent of a post-doc then) here in 1959 -61, assistant professor 1961-63, associate professor 1963-68, and professor from 1968. He has held positions at Queen Mary College, University of London, 1965-66 and 1985-86; Aarhus, Denmark, summer, 1970; Hebrew University, Jerusalem, 1970; University of Padua, Italy, 1972; Technion, Haifa and Hebrew University, Jerusalem 1978-79 (Lady Davis Professor); Tel Aviv University, 1982; Bar-Ilan University, Israel, 1983; Annual Lecturer of South African Math Society, 1985; and Oxford University, 1990. Rotman was algebra editor of Proceedings of the AMS for the years 1970 and 1971, and he was managing editor for the years 1972 and 1973.

Rotman's mathematics has been divided into two parts. His research interests are in algebra, involving abelian groups, modules, homological algebra, and combinatorics. One of his early papers computed the Grothendieck group of the category of torsion-free abelian groups of finite rank; he classified countably-generated modules of finite torsion-free rank over discrete valuation rings; he determined which abstract abelian groups can be singular cohomology groups (with integral coefficients) of topological spaces; he gave a homological characterization of locally compact paracompact Hausdorff spaces; he investigated finite projective planes and found, as a byproduct, that one can regard finite graphs as quadratic forms over the field with two elements; he then used graphs to produce simple Lie algebras in characteristic 2.

The second aspect of his mathematics involves the writing of advanced texts. Rotman's books are used at major universities worldwide, and some have been translated into Greek and Japanese. These books are: The Theory of Groups, with editions published in 1965, 1973, 1984, 1995; Homological Algebra, 1970, 1979; Algebraic Topology, 1988; Galois Theory, 1990, 1998; Journey into Mathematics, 1998; Abstract Algebra, 1996, 2000; and Advanced Modern Algebra, 2002.

Four students have completed dissertations under Rotman's direction, with a fifth student not yet finished.

Rotman's immediate mathematical plans are to continue writing and to study finite graphs from the viewpoint of quadratic forms. He looks forward to the absence of grading papers and to his non-membership on committees.


Esther Portnoy

Esther Portnoy received her Ph.D. in 1969 from Stanford University. She taught for several years at Lowell State College (now Lowell University) in Massachusetts. In 1974 she and her husband moved to Urbana, and she served as a visiting lecturer in the Department of Mathematics.

In 1981 she was hired as an assistant professor for the Actuarial Science Program, and in 1983 became a Fellow of the Society of Actuaries. She was promoted to Associate Professor in 1986, and in 1996 was recognized by LAS as Outstanding Undergraduate Adviser. In 2003 she was named State Farm Companies Foundation Scholar, a position that recognizes State Farm's $500,000 endowment for the Actuarial Program.

Faculty News

Two department faculty have received appointments in the UIUC Center for Advanced Study (CAS). **Ilya Kapovich** has been appointed as a 2004-05 Beckman Fellow for his research in Genericity in Group Theory. **Alexandru Zaharescu** was appointed an Associate in CAS for his research in Billiards and Farey Fractions.

Peter Loeb helped organize and was a speaker at the special session on nonstandard analysis at the Winter Meeting of the American Mathematics Society meeting in Phoenix.With the support of the Department and the Campus Teaching Advancement Board, Peter Loeb also attended the special session on integration at the AMS April meeting in Los Angeles. He gave a talk on applications of his work with Juergen Bliedtner to the teaching of our graduate real-analysis course. In particular, he showed how to considerably simplify and shorten the treatment of material students find quite difficult on differentiation and absolute continuity. Also at that meeting he was enlisted as an associate editor of a new journal on integration theory.

Derek Robinson spent the month of March at the University of Naples with a research grant from the Istituto di Alta Matematica. He was a main speaker at the conference on group theory held on the island of Ischia at the beginning of April.

Aimo Hinkkanen attended the Function Theory Conference at the Mathematics Research Institute in Oberwolfach, Germany, in February 2004, and gave a talk on the complex dynamics of transcendental entire functions.

John Sullivan spent this past August and September as a Research Professor at Mathematical Sciences Research Institute (MSRI), participating in their two programs in geometry. He gave an MSRI/Evans Lecture there in March. He also participated for the first time in the 14th International Snow Sculpture Championship in Breckenridge, Colorado, held in January 2004. Sullivan was part of "Team Minnesota" who received a special award for "Most Ambitious Piece" for their entry named "Turning a Snowball Inside Out" which was a depiction of a Morin surface. More about this event, including photos of the snow sculptures, can be found on the web at http://torus.math.uiuc.edu/jms/Snow/.

Julian Palmore gave a colloquium at the University of Science and Technology in Hong Kong, China, this past November and in December he participated in two conferences in the UK: a Delphi exercise at Lancaster University on terrorists threats, means and targets and a Wilton Park conference on nuclear nonproliferation and the NPT. He edited the December 2003 special edition of *Defense and Security Analysis* on U.S. - China relations. In February he served for the third year on the mathematical sciences panel for the NSF Graduate Research Fellowship Program. In March Palmore participated in a Wilton Park conference on Chemical and Biological Terrorism. In April he gave two lectures at Franklin and Marshall in Lancaster, PA. The topics were dynamical systems research and national security issues.

In memoriam

Adrian Iordache, a fourth-year doctoral student in the department, died in a mountain climbing accident February 5, 2004, after falling from Mount Cook, New Zealand's highest peak, where he was making a two-man assault on the 12,349-foot peak.

Adrian had been in New Zealand since August 2003 continuing his research with his advisor, Richard Laugesen, who is on sabbatical at the University of Canterbury in New Zealand. Adrian had passed all his exams, and was working on a thesis topic "Minimizing the expected area of a triangle chosen randomly according to the groundstate." According to Phillip Griffith, Director of Graduate Studies, "Adrian was one of the top students in the department and is remembered as shy, unpretentious and brilliant."

He made many friends in New Zealand, and of course left many more behind in Champaign-Urbana and his home country of Romania. Memorial services were held in Champaign-Urbana and New Zealand, and the funeral in Romania.

Department of Mathematics Contribution Form

There are many different ways that you can support the Department of Mathematics in its educational and research missions. One way to do this is by contributing to funds at the University of Illinois Foundation that are meant specifically for the Department of Mathematics. Below is a list that shows the variety of individual funds available. Some of these funds are unrestricted in use, while others provide support for the library, funds for maintaining Altgeld Hall, or funding for scholarships or fellowships for undergraduate or graduate students. If you would like more information about a particular fund, please contact David Bruns, LAS Development (217-333-7108, dbruns@uiuc.edu). We enthusiastically welcome your interest in the Department of Mathematics.

I want to support the Department of Mathematics with a gift of $_____ to the fund(s) checked:

- ❑ Actuarial Science Fund (#330225)
- ❑ Allstate Foundation Actuary (#330342)
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5M 5TJ April 2004

Bateman Fellowship awarded to Chan

Professor Emeritus Paul Bateman (center) with Song Heng Chan (right) and Hamza Yesilyurt (left) who was awarded the Bateman Prize in Number Theory.

The third recipient of the Bateman Fellowship in Number Theory is **Song Heng Chan**, who is completing his third year as a graduate student at Illinois. Last year, Chan was the recipient of the fifth Bateman Prize in Number Theory, given annually to a graduate student for superior research in number theory. Chan's research in number theory has been in *q*-series, in particular, in cranks (a statistic in the theory of partitions), Lambert series, and mock theta functions. While at Illinois, Chan has authored or coauthored eight papers (1 published, 5 accepted, and 2 submitted). While an undergraduate at the National University of Singapore, he was a student of Heng Huat Chan (no relation), who obtained his Ph.D.at Illinois in 1995 and who directed him to Illinois to study under his former advisor, Bruce Berndt.

The Bateman Fellowship is named for Emeritus Professor Paul Bateman who joined the UIUC Department of Mathematics in 1950. Bateman served as department chair from 1965-1980.

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