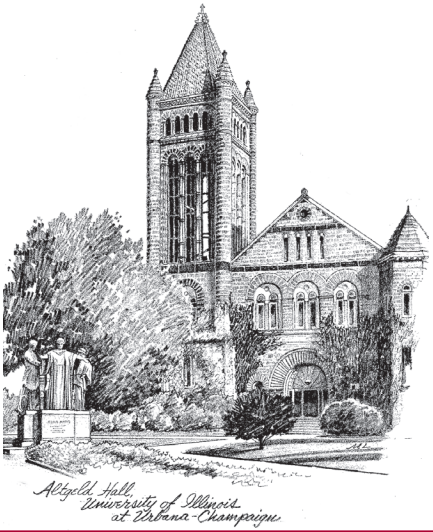
Math Times



Department of Mathematics, Spring 2010

New life for Altgeld, Illini Halls: planning begins

How should Altgeld and Illini Halls be renovated to a level consistent with a world-class mathematics department?

We will be assisted in answering that question by DeStefano Partners, a recently hired architectural and planning firm from Chicago, in a Feasibility Study that began in late April 2010. The task is enormous, encompassing two historic structures utilized by five campus units and thousands of individuals for a wide range of purposes.

The scope of the study includes:

- User needs related to space, technology, instruction, administration, research, and fostering collaboration. This assessment includes benchmarking against peer institutions.
- Evaluation of the physical condition of the buildings, including deferred maintenance issues, code compliance deficiencies, and space utilization.
- Historic attributes and possibilities for restoration, e.g. mosaic floors, murals, library dome skylight.
- Formulation of a facility development strategy in keeping with user goals, the Campus Strategic Plan, and the historic nature of the structures. Viable renovation options will be developed.
- Presentation of final recommendations, including recommended solutions, schematic layouts, the construction scope, phasing suggestions, and estimated construction costs.

Illini Hall. Photo by Tori Corkery.

Altgeld Hall; photo by Kalev Leetaru.

Phase I of the project began the week of April 26, when DeStefano Partners held stakeholder meetings. Initially, Mathematics and Statistics faculty, instructors, graduate students, and emeritus faculty were invited to attend open discussions with the architectural firm to address the future needs of these departments. Subsequent open sessions will be held with the administrative and technical staff of all the affected units. In addition, there will be focus groups to address particular aspects of the project.

The departmental website will keep you updated and provides a webform for you to submit your ideas throughout the process. Visit www.math.illinois.edu/Bourbaki/feasibility-study.html.

The final recommendations are due to the University in February, 2011. Then begins the work of gaining approval for the renovation project, raising sufficient funds, hiring an architectural firm, developing and approving construction plans, and then, finally, construction!

In this issue:

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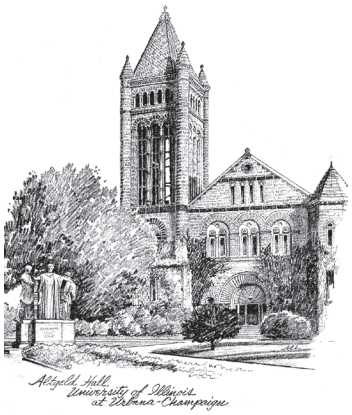

What you might not know about Altgeld, Illini Halls

- Illini Hall was built in 1907 as the University YMCA to house 88 male students.
- In 1919 Illini Hall became the new Student Union, the precursor of the 1941 Illini Union.
- By 1950 Illini Hall was the home of The Daily Illini, The Illio, a speech research program, and the Division of University Extension.
- By the late 1960's the northern section of Illini Hall was in a state of disrepair and campus planners recommended razing it and remodeling the southern section of the building. However, the building survived intact, and in 1978 the third floor was remodeled to house the offices of the Police Training Institute.
- Statistics and Mathematics were once one unit at the University of Illinois. In 1985 they split into two separate departments with faculty from both sharing the office space in Illini Hall. Today, the second and third floors of Illini Hall are office space for Mathematics, the first floor is occupied by the Department of Statistics, and the lower floor serves as classroom space and houses CITES offices.
- Altgeld Hall originally served as the University Library from its inauguration in 1897 until 1927.
- Altgeld Hall has undergone four major renovations since it was built. These renovations occurred in 1914, 1919, 1926, and 1956.
- The decorative band around the Math Library rotunda dome, added during the 1942 remodeling, contains the names of those who had served as the U.S. Chief Justice of the Supreme Court to that date beginning with John Jay in 1789 and ending with Harlan Fiske Stone who was appointed in 1941.
- The School of Law resided in the building from 1927 to 1955. The North entrance of the building still bears the title "Law Building."
- John Peter Altgeld, governor of Illinois from 1893–1897, influenced state university architecture in Illinois. In addition to Altgeld Hall here on the Urbana campus, there are two other Altgeld Halls in Illinois—one is located on the Northern Illinois University campus and the other on the Southern Illinois University campus. Two other campus buildings that were influenced by Governor Altgeld are Cook Hall on the Illinois State University campus and Old Main on the Eastern Illinois University campus.

From the department chair

Greetings to the alumni and friends of the Department of Mathematics! In this issue you can read about departmental happenings, including our cover story about the exciting plans now underway for the renovation and restoration of Altgeld and Illini Halls. Our buildings were not designed for the needs of a Department of Mathematics, and we now have a once in a lifetime opportunity to reconfigure our facilities to best serve the department, its programs, and its students.

In this issue, we also keep you connected with news about faculty and alumni, and updates on some of our academic programs and offerings. We are also proud to announce awards to students, faculty, and staff, funded by the generosity of our alumni and friends. You can give online to the Department of Mathematics at www.math.illinois.edu/gifts/.

I am very proud of our faculty, students, staff, alumni, and friends, who together make our math department a vital place. We have accomplished much individually and together. Thank you for your support of the Department of Mathematics!

Sheldon Katz

Chair, Department of Mathematics
University of Illinois at Urbana-Champaign

Alumnus Profile: John Seral

by Jim Dey

All it took was one high school field trip to an insurance company office for John Seral to decide that the correct career path for him to follow was in computers.

"I just thought it was so fascinating," recalled Seral, who got an up-close look as he watched business office employees convert paper records to those stored by computer.

From that point on, Seral said he knew that computer science and mathematics would be his principal fields of study, and he quickly decided the University of Illinois was the best place to do so.

Years later, Seral, now a vice president and Chief Information Officer for General Electric, said the plan he formed at such a young age worked out beautifully.

"If I had it to do over again, I'd do it the same way, " said the 51-year-old Seral, who now calls Atlanta, GA., home. He grew up in the Chicago area, graduating from Notre Dame High School in Niles in 1976. Seral spent his first two years at the UI-Chicago, where he completed his general education requirements while working part-time so he could pay tuition and afford a few luxuries.

"The priority at the time was to make some money and get an education," he recalls.

But Seral said his goal was to pursue a joint degree in math and computer science at the UI's Urbana-Champaign campus. He transferred downstate for his junior year, enrolling in a joint program in the College of Liberal Arts and Sciences.

Seral said he was "always good in math," thought computers were the wave of the future and believed that the two subjects went hand-in-hand.

"In terms of logical thinking, math absolutely complements computer science," he said. "It makes sense as a double-major. I can see why the UI combined the two fields."

Seral, who is married and has two sons, said he found computer science "very challenging" while the math "came easier to me." Though he said his career interest is in computers, Seral said he "hires math majors" for a variety of positions.

"If you chose math, it says something about you. You probably have problem-solving skills," he said. "I don't hire the math person because they know the theorems. I hire them because they know how to think."

Seral graduated in 1980 and worked briefly in information systems for the State of Illinois. He joined GE in 1982 and later picked up an MBA in marketing and finance from the Keller Graduate School in Chicago.

Since then, he's moved steadily up the corporate ladder. He remained in Chicago with GE Capital until 1994, when he moved to Cleveland to work as Chief Information Officer for GE Lighting. The next move was in 1997 to Pittsfield, MA, to fill the same role at GE Plastics.

In 2002, he moved to Atlanta, where he has remained as Chief Information Officer first for GE Energy, then in 2006 for GE Energy, Aviation and Transportation and since 2008, GE Energy Infrastructure, which includes Power and Water products, Energy Services, and GE Oil & Gas businesses.

John Seral

Education: B.S. Math and Computer Science, 1980, University of Illinois at Urbana-Champaign; MBA, Keller Graduate School, Chicago

Career: Vice President and Chief Information Officer, GE Infrastructure

"I love Atlanta," Seral said, who also has maintained his affection for the UI.

He travels to campus in each September and April to interview UI students for "full-time hires and internships."

Looking back on his experience at the UI, Seral said he knew that computers would be the wave of the future "but I never could have predicted the magnitude and the speed" they would develop as a social and business tool.

Now Seral said he could be on the cusp of another social phenomenon—the growth of ecologically clean green energy.

In his current role at GE, Seral said he oversees a variety of clean energy business enterprises, including wind turbines, solar power, coal gasification and nuclear power. How fast those fields develop as viable business operations, he said, remains to be seen.

"It depends on energy policy. It depends on economics," he said. And that's not just here in the United States, but elsewhere.

"The U.S. is growing slow (on nuclear power plants), but the world is growing fast," Seral said.

Seral gratefully acknowledges that the UI played a big part in his professional development, describing the university as a "phenomenal place." But he said the UI also may play an important part of his family's future. His older son attends Marquette University in Milwaukee, but Seral's younger son, a high school senior, is thinking of following his dad to the UI.

"It's No. 1 on his list," he said.

Jim Dey is a columnist and editorial writer for The News-Gazette in Champaign, Il.

Awards

Department Awards

Each spring, the department presents awards for outstanding achievement to faculty, instructional and non-instructional staff, graduate students and undergraduate students. Funding for these awards comes from generous donations from alumni and friends of the department. For more information about these funds and how you can contribute, please visit www.math.illinois.edu/gifts/.

Faculty and Staff Awards

N. Tenney Peck Teaching Award in Mathematics

Lee DeVille has been awarded the 2009–2010 N. Tenney Peck Teaching Award in Mathematics. DeVille (Ph.D. 2001, Boston University) has been an assistant professor in the University of Illinois mathematics department since 2007. He has twice appeared on the List of Teachers Ranked as Excellent for teaching the undergraduate differential equations course. Recently, DeVille's research in mathematical biology inspired him to create a new graduate mathematics course entitled "Methods of Applied Mathematics". In that course and others, he brings the mathematics to life by showing its application to real-world problems from biology and physics.

The N. Tenney Peck Teaching Award in Mathematics is named for N. Tenney Peck, who joined the U of I Department of Mathematics in 1968 and remained on the faculty until his death in 1996. Peck was a pioneer in the field of functional analysis, specializing in non-locally convex spaces. He was also a dedicated teacher with an open door for students, and was active in curriculum development. The award is given to tenure-track faculty in the Department of Mathematics for exemplary teaching.

Distinguished Teaching Award in Mathematics for Tenured Faculty

The 2009–2010 Distinguished Teaching Award in Mathematics for Tenured Faculty was awarded to **Slawomir Solecki**. Solecki (Ph.D. 1995, Cal Tech) joined our department in 2001 and was promoted to Professor in 2006. His research specialty is descriptive set theory and its connections to topology, analysis, and combinatorics. He has supervised four completed Ph.D. theses, and currently advises three doctoral students. Solecki's commitment to education on a one-to-one level is further evidenced by his participation in Research Among Peers groups, and his leading of Research Experiences for Undergraduates. His classroom instruction at the graduate and advanced undergraduate level (especially Math 347, Math 432, and graduate courses in Logic) has been outstanding, and has led to three appearances on the List of Teachers Ranked as Excellent.

The Distinguished Teaching Award in Mathematics for Tenured Faculty was established by the Department of Mathematics in 2007. It is given to tenured faculty in the Department of Mathematics for exemplary teaching.

Distinguished Teaching Award in Mathematics for Non-Tenure-Track Faculty

Andrew Schultz (Ph.D. 2007, Stanford) is the winner of the 2009–2010 Distinguished Teaching Award in Mathematics for Non-Tenure-Track Faculty. Schultz, who holds a J.L. Doob Research Assistant Professorship, conducts research in field theory and its connections to number theory and K-theory. This research informs his teaching of linear algebra and number theory, where he is noted for consistently engaging students in the learning process. His impact in the classroom can be gauged from his seven appearances in five semesters on the List of Teachers Ranked as Excellent, including one appearance for a large lecture of calculus. Schultz also helps cultivate the next generation of mathematicians with his weekly tutoring of the Mathematics Olympiad team at Booker T. Washington Elementary School.

The Distinguished Teaching Award in Mathematics for Non-Tenure-Track Faculty was established by the Department of Mathematics in 2007. It is given to non-tenure-track faculty in the Department of Mathematics for exemplary teaching.

Exceptional Merit Award in Mathematics for Non-Instructional Staff

Debbie Broadrick has been awarded the 2010 Exceptional Merit Award in Mathematics for Non-Instructional Staff. Broadrick is the Assistant to the Editor-in-Chief of the Illinois Journal of Mathematics where she has worked for the past 15 years. She is in charge of journal operations, all financial transactions, and all journal communication is conducted through or initiated by Broadrick.

IJM Editor-in-Chief Phillip Griffith states, "Without Debbie's special energy, keen business sense and her ability to monitor the 'small details,' IJM could not maintain a first class operation in the very competitive climate of scientific publishing."

The Exceptional Merit Award in Mathematics for Non-Instructional Staff was established by the Department of Mathematics in 2009 and given for the first time in 2010. It is given to a non-instructional staff member in the Department of Mathematics who exhibits excellence in his or her work.

Undergraduate Awards

H. Roy Brahana Prize

Established in 1961, the Brahana Prize is the department's longest running and most prestigious undergraduate award. It is named after H. Roy Brahana, a distinguished member of the mathematics faculty at Illinois from 1920 to 1963. The prize recognizes the student with "the most exceptional undergraduate mathematics career." Many former Brahana Prize winners have moved on to illustrious careers, both within and outside of mathematics.

This year's Brahana Prize was awarded jointly to Yi-Wei Chan and Brent Nelson.

Yi-Wei Chan is a second year student in mathematics. Yi-Wei has taken on a phenomenal course load, completing all of the required course work in mathematics by the end of his third semester here, while earning a grade of A+ in nearly all of his courses—a feat all the more remarkable as the courses he took include the most challenging courses in the undergraduate curriculum. Yi-Wei has started taking graduate level classes, and plans to attend graduate school upon graduation in 2011 or 2012. In addition to his academic prowess, Yi-Wei has also made a splash on the math contest scene and is on track to becoming the most successful local contestant in recent history. After earning second place in the 2009 U of I Undergraduate Math Contest, the first local contest in which he participated, he tied for first place in the 2009 Mock Putnam Contest, then won the 2010 U of I Undergraduate Math Contest outright. In the 2009 Putnam Contest, a nationwide math contest for undergraduates, Yi-Wei placed 25th among 4,000 participants, the highest ranking of a local participant in the past two decades.

Brent Nelson is a senior in mathematics and a recipient of the Elizabeth R. Bennett Scholarship in 2008, and of the Emily Mann Peck Scholarship in 2009. Brent has taken on a most challenging course load while maintaining a perfect 4.0 math GPA. After completing the undergraduate course requirements, he entered his first graduate level course in Fall 2009, earning an A+, and he is currently taking three further graduate level courses.

Brent has been doing research with Professor Kenneth Stolarsky in number theory, and with Professor Bruce Reznick on binomial coefficients. Last summer, Brent participated in an REU program on mathematical modeling at California State University in Chico. Brent will be graduating in May 2010, and plans to attend graduate school this fall.

awards continue »»

Campus and College of LAS Award Recipients

LAS Dean's Award for Excellence in Undergraduate Teaching

Alexandru Zaharescu was awarded the 2009–2010 LAS Dean's Award for Excellence in Undergraduate Teaching. Zaharescu (Ph.D. 1995, Princeton) is a professor who joined the mathematics faculty at the University of Illinois in 2000.

He has taught at all levels of the mathematics curriculum, with particular success in the undergraduate Number Theory and Calculus I courses. When teaching smaller calculus classes he favors an active-learning approach in which students interact with each other and the professor during every class period. When teaching number theory he employs innovative techniques for making the theorems memorable, such as card tricks that are guaranteed to work—thanks to number theoretic insights. This fresh perspective on the subject is supported by the depth of his research in analytic number theory. Students appreciate Zaharescu's commitment to their education, and have given him an average rating of more than 4.5 on undergraduate student evaluations.

The LAS Dean's Award for Excellence in Undergraduate Teaching honors the college's best teachers for their sustained excellence in undergraduate teaching, positive impact on undergraduate student learning, and innovative approaches to undergraduate teaching.

Campus Award for Excellence in Off-Campus Teaching

Debra Woods has been awarded the Campus Award for Excellence in Off-Campus Teaching. Woods is the Director of NetMath and MathTeacherLink. Over the last 16 years, Woods' leadership has helped expand the NetMath program and bring about the overall growth of the off-campus instructional outreach of the Department of Mathematics. MathTeacherLink provides professional development courses for mathematics teachers.

The NetMath instructional model uses *Mathematica* for its software, and employs mentors to work with individual students. The NetMath instructional model enables students to learn at their own pace and accommodates individual learning styles. Woods is dedicated to student learning and is always seeking new and innovative ways to improve communication between students and mentors.

Woods is a member of the Office of the Provost's Distance Learning Advisory Committee, the LAS Online Advisory Committee, the eLearning Committee appointed by the Chancellor, and the Department of Mathematics Online Education Committee.

Awards

Most Outstanding Major Awards

Established in 1996, these departmental awards recognize outstanding undergraduate students in each of the four majors offered by the department. A student may be selected no more than once in his/her career for one of these awards.

Most Outstanding Major Award in Actuarial Science

Margaret Stoner and Pan Corlos Wong received the award for the most outstanding major in Actuarial Science.

Margaret Stoner is a major in Actuarial Science. She passed three professional actuarial exams, had internships with Bankers Life and Casualty Company in Summer 2008, and with BlueCross BlueShield of Illinois in Summer 2009. In addition, in Fall 2008 and Spring 2009, she worked as a research associate with Professor Rick Gorvett on the mathematics and economics of the housing market. Following her graduation in May 2010, she will take a full-time position as an Actuarial Technician with BlueCross BlueShield of Illinois.

Pan Corlos Wong has passed five professional actuarial exams, had an internship with AEGON USA, and did undergraduate research with Professor Gorvett on catastrophic modeling. Pan Corlos graduated last December with highest departmental distinction, earning a B.S. in Actuarial Science and Minors in Business and Computer Science, and has accepted a position as Associate Actuary with PricewaterhouseCoopers.

Most Outstanding Major Award in Mathematics

The award for the most outstanding major in mathematics was given jointly to Jennifer Berg and Stephen Theis.

Jennifer Berg is a senior in mathematics. In addition to strong academic credentials and a demanding course load that includes the Math Honors sequence and a graduate level course, Jennifer has an outstanding record of undergraduate research. Last summer she participated in an REU program at George Washington University. For the past two years she has been doing research in number theory under the direction of J.L. Doob Research Assistant Professor Andrew Schultz, and she gave a talk on this work at the 2010 Joint Mathematics Meetings in San Francisco. Jennifer will graduate in May 2010 and plans to attend graduate school this fall.

Stephen Theis has an impeccable academic record, with a perfect GPA and a grade of A+ in nearly all of his math courses. Stephen graduated in December 2009 with a B.S. in Mathematics, and plans to attend graduate school.

Most Outstanding Major Award in Mathematics and Computer Science

Justin Kopinsky, a Math/CS major, is among the most exceptional undergraduate students we have had in mathematics in the past few decades. He has taken on a most demanding course load in both mathematics and computer science, earning top grades in nearly all classes. In addition, Justin has proven to be a force on the math contest scene: he won the 2008 Mock Putnam Contest and the 2009 U of I Undergraduate Math Contest, tied with Yi-Wei Chan for first prize in the 2009 Mock Putnam Contest, and was the highest local scorer in the 2008 Putnam Contest. Justin has been similarly successful in programming contests, and is a member of a University of Illinois team that earlier this year participated in the World Finals of the International Collegiate Programming Contest in Harbin, China.

Most Outstanding Major Award in the Teaching of Mathematics

The award for most outstanding major in the Teaching of Mathematics was given to Kristine Galloway and Joseph Matuch.

Kristine Galloway is a senior in the Teaching of Mathematics. She has a near perfect GPA with grades of A+ in four math courses. Kristine plans to graduate in May 2011, and then get a job teaching mathematics at a high school in the Chicago area.

Joseph Matuch is a senior in the Teaching of Mathematics. He has a near perfect GPA and earned a grade of A+ in nearly all of his math classes. Following his graduation in May 2010, he plans to take a teaching job at a school of academic or economic need in the Chicago or Champaign-Urbana area.

Salma Wanna Memorial Award

The Salma Wanna Award honors the memory of Salma Wanna, who received her Ph.D. from the University of Illinois in 1976. It was established by her family after her untimely death in 1980 and is given for "exceptional performance in mathematics to the most outstanding continuing student."

Meng Guo was chosen as this year's recipient of the Salma Wanna Award. A native of China, Meng Guo entered the University of Illinois in Fall 2008, and in the short time she has been here turned in a most impressive academic performance. She has maintained a 4.0 GPA, earning a grade of A+ in nearly all of her math courses while taking on the demanding Math Honors sequence. She is currently working on an undergraduate research project under Professor Matthew Ando. In addition to her stellar academic credentials, Meng Guo is a rising star on the local math contest scene. A regular participant in the Putnam training sessions, she earned the third-highest score among the 26 local participants in the 2009 Putnam Competition.

Greenwood and Trjitzinsky Prize

The Greenwood and Trjitzinsky Prize recognizes an outstanding paper by an undergraduate. The prize is named after Waldemar J. Trjitzinsky, a Professor of Mathematics at Illinois from 1934 to 1969, and Marshall Greenwood, an amateur mathematician and friend and supporter of the Department of Mathematics at Illinois until his death in 1996.

Robert Walker was chosen as the recipient of this prize for his paper "On the relationship between the Bernoulli numbers and the classical Kummer congruences." Robert is a junior in mathematics with a minor in philosophy. The prize-winning paper is the result of research he did under the direction of Professors Matthew Ando and Bruce Reznick, while supported by a Ronald E. McNair Fellowship.

Like a sudden flash of lightning, the riddle was solved. I am unable to say what was the conducting thread that connected what I previously knew with what made my success possible.

—Carl Friedrich Gauss

Emily Mann Peck Scholarship

Established in 2002 in honor of Emily Mann Peck, a former mathematics faculty member and LAS Associate Dean, the Emily Mann Peck Scholarship recognizes a student in mathematics who, in addition to academic excellence, displays a well-rounded personality with eclectic interests and a passion for the arts.

This year's award went to **Jeffrey Mudrock**, a senior in the Teaching of Mathematics. Jeff has a 4.0 math GPA and is a past winner of the Most Outstanding Major in the Teaching of Mathematics award and the William Chandler Bagley Award of the College of Education. In addition to his stellar academic credentials, Jeff has a broad range of experience in undergraduate research. During the past three summers, Jeff participated in an REU program for future math educators at Illinois State University. Earlier this year, he completed a Senior Thesis under the direction of J.L. Doob Research Assistant Professor Jeremy Rouse on linear recurrence sequences. He is the co-author of two papers in graph theory that are under submission for publication, and he has given talks on his research at the 2009 and 2010 Joint Mathematics Meetings.

Jeff has a passion for teaching. He has tutored at the high school and college level, served as Guest Lecturer at his home town high school, and last fall was an Undergraduate Teaching Assistant for Math 125. After graduating in May 2010, he plans to become a mathematics educator.

Elizabeth R. Bennett Scholarship

The Elizabeth R. Bennett Scholarship, established in 1972, is the Department's "junior" award. It is usually given to students at the sophomore or junior level and serves as a gateway to "senior" awards such as the Most Outstanding Major Award or the Brahana Prize. Many recipients of those latter awards started out by earning the Bennett Scholarship.

This year's recipients of the Elizabeth R. Bennett Scholarship are David Dosher, Sakulbuth Ekvittayaniphon, Lauren Onderisin, and Yi Zeng.

David Dosher is a sophomore with junior standing in Actuarial Science. David has a 4.0 math GPA and passed two professional actuarial exams. He is a research intern at the State Farm Research Center. This summer he will be working as an intern with Zurich Financial Services.

Sakulbuth Ekvittayaniphon is a junior in mathematics, who has maintained a 4.0 math GPA while taking on a demanding course load. Sakulbuth has also proven himself to be a formidable problem solver, earning third place in the 2008 U of I Mock Putnam Exam and the fourth-highest score among local participants in the 2009 Putnam Contest.

Lauren Onderisin is a junior in actuarial science. Lauren has a 4.0 math GPA, has passed two professional actuarial exams, and is currently working as an undergraduate research associate under Professor Rick Gorvett. She will be doing an internship with Hewitt Associates this summer and plans to graduate in May 2011.

Yi Zeng is a major in mathematics. He has a near perfect GPA, and earned a grade of A+ in eight of his math classes. For the past semester he has been doing undergraduate research in stochastic neural networks under the direction of Assistant Professor Lee DeVille.

Dr. Lois M. Lackner Mathematics Scholarship

The Lois M. Lackner Mathematics Scholarship was established in 2007 through a generous gift by Dr. Lois Lackner, a University of Illinois alumna with degrees in the teaching of mathematics and in education. **Sarah Stef** was chosen as the fourth recipient of this scholarship. Sarah is a sophomore in mathematics. She has a near perfect GPA and made the Dean's List in Spring 2009. Outside the classroom, she has tutored at Urbana High School for the past year, she is involved in a Christian campus ministry and is an active member of Stratford House. The daughter of Romanian immigrants, Sarah cherishes her Eastern European heritage and pays frequent visits to Romania.

2009 U of I Undergraduate Math Contest

Twenty-seven students participated in this year's U of I Undergraduate Math Contest, which was held March 6, 2010.

Yi-Wei Chan improved on his second place performance last year by winning the contest outright with a perfect score of 60 points and earning the $300 top prize. Chan was followed by **Sakulbuth Ekvittayaniphon** and **Justin Kopinsky,** who tied for second place with 55 points each, good for $200 each. In fourth place with 35 points each were Kiaran Dave, David Goldstein, and Danyang Zhuo.

The U of I Undergraduate Math Contest is a locally organized contest, offered in the spring of each year. It is modeled after the Putnam Exam, a nationwide math contest for undergraduates that has been called the "world's toughest math test" and which takes place in December of each year. The U of I Undergraduate Math Contest, along with a similar contest in the fall, the U of I Mock Putnam Exam, is part of an extensive Putnam training program at the U of I, organized by Professors A.J. Hildebrand, Jeremy Rouse, and Sujith Vijay. Contest problems and solutions are available online at www.math.illinois.edu/contests.html.

Jeffrey Wang wins state and national competitions

Jeffrey Wang, a junior at Auburn High School in Rockford, Illinois, who is enrolled in Department of Mathematics NetMath online courses, was selected to present his paper on "A Spatial Approach to Epidemic Dynamics Using Stochastic Cellular Automata with a Case Study of Novel H1N1 in Illinois" in Washington D.C. at the Young Epidemiology Scholars research paper competition. He won a $20,000 scholarship as the 3rd place National Finalist.

During the same week, Jeffrey won first place at the World Youth in Science and Engineering (WYSE) state competition in computer science and 2nd place for physics. Jeffrey was also accepted into the Research Science Institute (RSI) program at MIT. This is arguably one of the most difficult internships for high school students to be accepted to; this year they took 45 U.S. students from thousands of applicants.

Jeffrey is one of the most amazing young students who have gone through the NetMath program, having completed four university level math courses, two at the 400 level, while also competing in state and national competitions.

awards continue »»

Awards

Graduate Awards

Bateman Prize in Number Theory

Michael Dewar and Dimitrios Koukoulopoulos are the co-recipients of the 2009 Bateman Prize in Number Theory. The award is given annually to an outstanding graduate student working in number theory, and is generously funded by former Department Head Paul Bateman and his wife, Felice.

Dimitrios Koukoulopoulos received his undergraduate degree from the Aristotle University of Thessaloniki, Greece, and spent four years of graduate studies at Illinois, writing a dissertation under the direction of Professor Kevin Ford. His research involves difficult problems about factorizations of integers, mixing combinatorial, probabilistic and analytic techniques. In particular, he has determined precisely, for any k, the number of distinct integers which can be written as the product of k integers each less than N. He has two long papers (35 and 48 pages, respectively) accepted for publication. After graduation this year, Dimitrios will begin a CRM-ISM Postdoctoral Fellowship in Montreal.

Michael Dewar has recently defended his thesis, entitled "Congruences in modular, Jacobi, Siegel, and mock modular forms with applications" which he completed under the direction of Professor Scott Ahlgren. In the thesis, which is comprised of five research papers, Michael has proved general theorems which go a long way towards our understanding of these phenomena. The general theorems have applications to the arithmetic properties of a wide class of combinatorial and number-theoretic functions. After graduation, Michael will hold a Coleman Postdoctoral position at Queens University, as well as an NSERC Postdoctoral position.

Irving Reiner Memorial Award

Patrick Reynolds has been awarded the Irving Reiner Memorial Award that is named after Professor Irving Reiner (1924–1986), a long-time member of the University of Illinois Department of Mathematics and a leader in the field of integral representation theory. The award is given in recognition of outstanding scholastic achievement in the field of algebra.

Patrick is originally from Camden, Arkansas. He graduated from the University of Arkansas in 2004 with a B.Sc. in Physics and a B.Sc. in Mathematics. Patrick is currently working on his Ph.D. thesis under the direction of Professor Ilya Kapovich. Patrick's research is in the area of Geometric Group Theory, particularly the study of algebraic, geometric and dynamical properties of automorphisms of free groups and of the Culler-Vogtman Outer Space.

As a part of his thesis research, Patrick solved a difficult open problem about the dynamics of injective endomorphisms of free groups. His proof combined advanced measure-theoretic and algebraic methods, particularly subgroup separability of free groups. He also obtained significant structural results about the properties of algebraic laminations on free groups.

2009 Putnam a success for Illinois participants

For Illinois the 2009 Putnam Competition was, by any measure, a huge success. A total of 26 local students participated, the largest number in recorded history. The results were equally impressive, with the top local student placing 25th overall, an unprecedented number of eleven students placing among the top 500 overall, and the U of I Putnam Team placing 18th among the more than five hundred colleges and universities fielding a Putnam team, its highest rank since 2002.

A total of 4,036 students from 546 colleges in the U.S. and Canada participated in the 70th annual William Lowell Putnam Competition, held in December 2009. The team contest was won by MIT, followed by Harvard, Caltech, Stanford, and Princeton. These five institutions also accounted for 19 of the top 25 spots in the individual competition.

Participating in his first Putnam, Yi-Wei Chan turned in a stand-out performance, earning 70 points out of 120 and placing 25th out of the over 4,000 participants nationwide, the highest rank of a local Putnam participant in two decades. Yi-Wei's performance is all the more remarkable as he is one of only six of the top 25 Putnam contestants that are not from the Putnam powerhouses Harvard, MIT, Princeton, Caltech, and Stanford, and one of only three that are from public universities.

The depth of the performance turned in by local participants is equally impressive. In addition to Yi-Wei Chan, ten other local participants placed in the top 500. The next highest local scorers were Yongzuan Wu (38 points, 179th) and Meng Guo (36 points, 205th). Also making the top 500 list with scores between 28 and 31 points were Kiaran Dave, Sakulbuth Ekvittayaniphon, Jiayi Guo, Justin Kopinsky, Brent Nelson, Michael Nasti, Changhua Zhu, and Danyang Zhuo.

The eleven local participants placing in the top 500 this year is the largest such number in the past few decades, and it may be an all-time record for Illinois. It also places the U of I in elite company: The U of I's 11 top 500 participants is the highest number among public institutions in the U.S., matched only by Michigan (11), but well ahead of Berkeley (6) and elite private institutions such as the University of Chicago (8), Yale (7), and Columbia (6).

The Putnam contest, which has been called by Time Magazine the "World's Toughest Math Test", consists of 12 challenging problems, to be solved over 6 hours. Each problem is graded on a 0–10 point scale, for a maximal total score of 120 points. An indication of the difficulty of the contest is the fact that a score of 60 out of 120 points was enough to place in the top 1 percent of all participants; 30 points was enough to place in the top 10 percent; and 10 points (corresponding to a single problem correctly solved) guaranteed a place among the top third of all participants.

The U of I has an extensive Putnam training program, including weekly training sessions and informal practice contests in the fall, two local contests with a prize purse, the U of I Mock Putnam Exam, held in the fall of each year, and the U of I Undergraduate Math Contest, held in the spring, and a U of I Putnam Newsletter. These activities are organized by Professors A.J. Hildebrand, Jeremy Rouse, and Sujith Vijay.

Brahana TA Instructional Award

This year's Brahana TA Instructional Award was awarded to Thomas Cooney and Jane Butterfield.

The Brahana TA Instructional Award was established in 2005 with funding from the H. Roy Brahana Fund. It is presented to graduate teaching assistants for exemplary teaching. A committee of faculty and students determines the winners based on classroom observation, comments from students, and a written report by the nominees describing their teaching goals.

Thomas Cooney is a graduate student working in operator algebras under the direction of Professor Zhong-Jin Ruan. Next year he will have a postdoctoral position at the Universidad Complutense de Madrid. He enjoyed the opportunity to teach a wide range of courses and formats at the University of Illinois, especially Math 119 (Ideas in Geometry) and in the Merit Program.

Jane Butterfield is a fourth-year graduate student working with Professor József Balogh in extremal graph theory. She is a graduate of the University of Puget Sound in Tacoma, Washington. She has always been interested in teaching, and was an undergraduate tutor before coming to Illinois. Working in the Merit Program has given her a chance to learn new teaching methods, which have been useful in her standard recitation sections as well.

Department TA Instructional Award

This year's recipients of the Department TA Instructional Award are Timothy D. LeSaulnier and Paul Wenger. This award was established in 1979 and is awarded to graduate teaching assistants for exemplary teaching.

Timothy D. LeSaulnier is a fifth-year graduate student working with Professor Douglas B. West in combinatorics. He has enjoyed teaching classes ranging from large lectures to merit-style discussions.

Paul Wenger is a sixth-year graduate student working with Professor Douglas B. West in graph theory. He enjoys teaching in the Merit Program and the opportunity to interact with students. He looks forward to many more years of teaching.

Bateman Fellowship in Number Theory

Atul Dixit is the recipient of the Bateman Fellowship for the 2010–2011 academic year. A native of Dombivli, India (near Mumbai), he is currently a fourth-year graduate student in number theory at the University of Illinois, after receiving a Master's Degree from Texas Tech University. His thesis research, under the direction of Professor Bruce Berndt, consists of two topics: transformation formulas involving integrals of the Riemann zeta function, and Ramanujan's cubic theory of theta functions. So far, Atul has four papers published, three additional papers accepted, and one further paper submitted. Atul is a singer of semi-classical Indian music. He sings and plays the tabla for the Anubhooti Band, a group of six graduate students from various U of I departments.

The Lois M. Lackner Mathematics Fellowship

Ida Kantor and Jane Butterfield are the recipients of the Lois M. Lackner Mathematics Fellowship that was established through a generous gift by U of I mathematics alumna Dr. Lois Lackner.

Ida Kantor, who received the fellowship for the 2009–2010 academic year, will graduate in 2010. She has published a paper (joint with J. Nesetril) in the SIAM *Journal on Discrete Mathematics* concerning graph homomorphisms. Another paper (joint with B. Sinaimeri, A. Monti and Z. Füredi) concerning extremal problems on permutations was recently accepted for publication also in the SIAM *Journal on Discrete Mathematics*. This past year, Ida, with the help of her advisor Professor Zoltán Füredi, has been working to extend her research area in combinatorics to apply probabilistic and geometric methods. Recently she prepared two manuscripts on graph representations and list colorings, both of which are central topics of combinatorics. She is currently visiting Renyi Institute of Mathematics of the Hungarian Academy of Sciences and will return to Charles University as a postdoctoral researcher in the fall.

Jane Butterfield will receive the fellowship for the 2010–2011 academic year. Jane, who also received the Brahana TA Instructional Award this year, is a fourth-year graduate student working with Professor József Balogh in extremal graph theory.

REGS Dissertation Completion Fellowships

Dusty Grundmeier and Patrick Reynolds have been awarded 2010–2011 REGS Dissertation Completion Fellowships. These fellowships are funded by the National Science Foundation through the departmental MCTP grant. The grant supports the completion of the Ph.D. thesis and the launching of the research career.

Dusty Grundmeier is a student of John D'Angelo. Grundmeier works in the field of several complex variables. His primary interests concern Cauchy-Riemann (CR) geometry, group-invariant CR mappings, and connections with representation theory. He has presented his research at the Park City Math Institute and at an AMS Special session. Several of the results from his thesis will appear in "Signature Pairs for Group-Invariant Hermitian Polynomials." This paper is posted on the Arxiv and will appear in the *International Journal of Mathematics*. In addition to completing his thesis, he is currently working with postdoctoral fellow Jiri Lebl relating the ranks of Hermitian polynomials to rigidity results in CR Geometry. Grundmeier will be participating in a workshop at the American Institute of Mathematics in September 2010.

Patrick Reynolds is a student of Ilya Kapovich, working in the area of geometric group theory. He has received Trjitzinsky and Hogan Fellowships from our department and this year was awarded the Irving Reiner Memorial Award for outstanding research in algebra. This year he gave two talks on his research in the Séminaire Teichmüller, Université Aix-Marseille III, Marseille, France, as well as invited talks at the Université Paul Sabatier, Toulouse, France and at Ohio State University. He recently posted a paper on the Arxiv electronic preprint archive ["On Indecomposable Trees in the Boundary of Outer Space", 2010, arXiv:1002.3141].

News

Faculty news

Professor Emeritus Philippe Tondeur has been named an AAAS Fellow by the American Association for the Advancement of Science. Election as a fellow is a high honor bestowed upon members by their peers because of their efforts to advance science or its applications that are deemed scientifically or socially distinguished. Tondeur served as Chair of the Department of Mathematics at Illinois from 1996–1999 and then as Director of the Division of Mathematical Sciences at the National Science Foundation from 1999–2002.

Professor Slawomir Solecki has been awarded the Scientific Prize by the Mathematical Institute of the Polish Academy of Sciences. The Scientific Prize, established in 2009, is awarded once a year for outstanding scientific achievements in mathematics to a person who is a Polish citizen or is a legal resident of Poland, and who is not yet 45 years old. Solecki (Ph.D. 1995, Cal Tech) joined the department in 2001 and was promoted to Professor in 2006. His research specialty is descriptive set theory and its connections to topology, analysis, and combinatorics.

Professor Marius Junge has been appointed as a 2010–2011 Associate in the Center for Advanced Study. Junge will participate in a one semester workshop in Sweden focused on quantum information theory. In quantum information theory, quantum mechanics is used to submit information faster or more efficiently than via classical tools. Junge hopes to discover more connections between operator algebras and quantum information theory. Operator spaces is a subfield of operator algebras and has a particularly strong representation in the Department of Mathematics here at Illinois.

Assistant Professor Christopher Leininger has been named as a 2010–2011 Helen Corley Petit Scholar by Ruth Watkins, Dean of the College of LAS, effective July 1, 2010. The endowment that funds this position was created to develop scholarship and teaching of early career faculty members in the College. Dean Watkins cites Dr. Leininger's extraordinary record in bestowing this honor upon him. Chris received his Ph.D. in 2002 from the University of Texas at Austin. Before coming to the U of I, he was an NSF Postdoctoral Fellow at Barnard College and Columbia University in New York. In 2007–2008 Chris was a Beckman Fellow in the U of I Center for Advanced Study and in 2008 he was a Professeur Invité at the Université Paul Cézanne in Marseille, France. His research focuses on problems in low-dimensional topology, geometry and group theory, specifically the interplay between these areas.

Associate Professor Rick Gorvett, Director of the Actuarial Science Program and the State Farm Companies Scholar in Actuarial Science, recently earned two additional professional designations: Chartered Enterprise Risk Analyst (CERA), and Associate in the Society of Actuaries (ASA). The CERA is a new, worldwide designation related to enterprise risk management, an area in which Professor Gorvett has practiced, taught (both university and online courses), and done research. Professor Gorvett is also a Fellow of the Casualty Actuarial Society, and a Member of the American Academy of Actuaries.

Professor Bruce Reznick gave an Invited Address entitled "The secret lives of polynomial identities" at the AMS 2010 Spring Southeastern Sectional Meeting held in Lexington, Kentucky. He also presented a lecture "What Does '>' Really Mean?" at the Bay Area Mathematics Adventures (BAMA) at San Jose State University this past January.

Professor Julian Palmore participated in a meeting at Wilton Park, U.K. in December 2009 on nuclear non-proliferation and the NPT (nuclear non-proliferation treaty). In February and again in May, Palmore met with Dr. Thomas Tsang of the Center for Health Protection, Department of Health, Hong Kong, to discuss events in Hong Kong and China regarding avian flu and pandemic flu H1N1. This June he will participate in the conference on Nuclear Salience in Decline at Wilton Park, U.K.

Alumni News

Kevin McCurley, a research scientist at Google since 2005, was recently featured in the MAA Distinguished Lecture Series. In his lecture "Modeling Similarity in the Age of Data," McCurley described some of the mathematics that goes into generating good search results and gave insights into the more difficult task of coming up with "similar" results. McCurley received his Ph.D. from Illinois in 1981 under the direction of Paul Bateman.

Isaac Goldbring is a recipient of the 2009 Sacks Prize awarded by the Association for Symbolic Logic for his Ph.D. thesis entitled "Nonstandard Methods in Lie Theory." Goldbring received his Ph.D. in 2009 from the University of Illinois at Urbana-Champaign, under the supervision of Lou van den Dries. Goldbring is now a Hedrick Assistant Professor in the Mathematics Department at UCLA. The Sacks Prizes Committee noted that in Goldbring's thesis he applies model theory to a fundamental problem from topological group theory and that the main result replaces an incorrect proof in a widely cited paper from 1957 using totally new ideas.

Paul Halmos (Ph.D., 1938) is remembered in the article "What I Learned from Paul Halmos" by Peter Ross in the latest issue of MAA *Focus* (pp 4–6). Halmos majored in mathematics and philosophy at the University of Illinois. After receiving his bachelor's degree, he stayed at Illinois to pursue graduate studies, and he earned his Ph.D. in mathematics in 1938 under the direction of Joseph Doob. Halmos is a famed mathematician, master expositor, author of several influential books, and originator of the "Halmos symbol" (the end-of-proof box). He died on October 2, 2006 in Los Gatos, California. He was the author of more than a dozen books and was acknowledged for his expository skill, both in writing and speaking. Halmos' writing had worldwide impact. His book "Finite-dimensional vector spaces" was studied by an entire generation of aspiring mathematicians. In 1979 he was the invited lecturer for the department's Trjitzinsky Memorial Lectures. 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).

Post-AP calculus course developed to better prepare students

Math Department professors Scott Ahlgren, Matthew Ando, Richard Laugesen, and Jeremy Tyson have been cooperating for several years with faculty from the College of Engineering (notably Doug Beck, Jennifer Bernhard, Harry Dankowicz, and Arif Masud) to develop and to teach calculus courses which better prepare first-year College of Engineering students for courses and careers in science and engineering.

Approximately 400 students each year enter the College of Engineering with high scores on one of the AP calculus exams. Traditionally, the next step for these students would be multi-variable calculus. However, advisors in the College of Engineering observed over the years that many of these students struggled both with the material in multivariable calculus and with applications of single-variable calculus to engineering problems.

To address this situation, Math Department and College of Engineering Faculty have developed a "Post-AP Calculus" course. This intensive course covers the standard first-year calculus sequence in one semester. The standard recitation sections are replaced with twice-weekly active learning sections. In these sections, which are led by trained TAs from math and engineering, students work in groups on worksheets which illustrate applications of calculus to problems in science and engineering. Math faculty give the lectures, Math and Engineering faculty collaborate to write the worksheets, and Engineering faculty visit the sections to assist and advise the TAs. The same group of faculty has begun to assemble a first-semester calculus course based on active-learning application-driven worksheets aimed at students who matriculate with less exposure to calculus.

Blended-course design increases student success

This past year, two courses were redesigned by Alison Ahlgren to improve student success. College Algebra (Math 012) and Finite Mathematics (Math 124) were both taught with a blended course format this year. In a blended course half the material is delivered in class and half is delivered online. The redesigned courses did result in increased student success and learning, while also reducing course costs to the department.

NetMath program continues to expand course offerings

The International Mathematica User Conference was held October 21st through October 24th this year in Champaign, Illinois. The conference started off with the first ever Wolfram Alpha Homework Day. The day featured interviews with scientists, inventors, educators and actor/education advocate Richard Dreyfuss. Debra Woods was invited to sit on a panel of educators at Homework Day to discuss the use of Technology in the Classroom. The panel was very well received.

At the conference, Debra Woods and NetMath student Jeffrey Wang presented a session on NetMath Student projects. Jeffrey was the star of the show. Jeffrey's main presentation was entitled "Inverting the SIR Model to Study Origins of Novel H1N1. The wide spread of Novel H1N1 provides an invaluable lesson for data analysis and modeling of a pandemic. A study based on analyzing case and mortality numbers using the SIR, or Kermack-McKendrick, model to provide an estimate of how long an outbreak has lasted in a population was discussed. The presentation used map images and geographic data from Wolfram Alpha.

The NetMath program continues to expand to include more courses with ambitions of developing complete online degree programs. Through NetMath funding, the department has hired an eLearning Specialist to assist faculty and staff in incorporating electronic technologies into their teaching.

In memoriam

Mary-Elizabeth Hamstrom, 1927–2009

by John E. Wetzel

Mary-Elizabeth Hamstrom, 82, a prominent member of the Department for 38 years from September, 1961 to May, 1999, died unexpectedly but peacefully Wednesday morning, December 2, 2009, after several years of declining health.

A commemoration of her life and accomplishments was held in Altgeld Hall on the University of Illinois campus in Urbana on Sunday afternoon, January 31, 2010.

Born in Pittsburgh, PA on May 24, 1927, Mary-Elizabeth was the eldest of three daughters of Edward Hamstrom and Mabel Kerr Hamstrom. Her sisters survive, as do three nephews, and two grand-nieces and two grand-nephews. Professor Hamstrom's first name was the hyphenated "Mary-Elizabeth," which she frequently abbreviated to "M-E." She objected quite strongly to being called "Mary."

Mary-Elizabeth decided very early to study mathematics. After graduating from Germantown High School in Philadelphia, she enrolled at the University of Pennsylvania and completed her AB degree in June of 1948, with a major in mathematics. She seemed predestined to pursue graduate work with Robert Lee Moore at the University of Texas in Austin. One of her teachers at Germantown High School was Anna Mullikin, who had earned a Ph.D. as a student of R.L. Moore at Texas in 1922 before deciding on a career as a high school mathematics teacher. Moore had been a member of the Penn faculty from 1911 to 1920, and his first Ph.D. student, John R. Kline, remained at Penn after completing his Ph.D. in 1916. M-E worked for a time as an undergraduate student assistant to Kline, who was then head of the Penn Mathematics Department and long-time Secretary of the American Mathematical Society. Moore had taken a position at the University of Texas at Austin when he left Penn, and Kline encouraged M-E to pursue graduate work with Moore at Austin.

During her senior year, having been accepted for graduate study in mathematics at Texas and awarded a scholarship, M-E wrote to Moore at Texas to inquire what she should study during the approaching summer to prepare for her forthcoming graduate work. Moore's surprising response lamented the fact that she had already taken an undergraduate course in real variables that included some point-set topology of the plane and urged her not to read anything more in the field of her proposed coursework. His letter,[1] in which he described in careful detail what is now called the Moore (or Texas) method of instruction, is of considerable importance in the history of mathematics education.[2]

Mary-Elizabeth completed her Ph.D. in 1952 with Moore as her advisor. Her dissertation was entitled, "Concerning webs in the plane." According to Parker,[3] she was also "strongly influenced" by another Moore student, F. Burton Jones, who had completed his Ph.D. with Moore in 1935 and was on the Texas faculty.

M-E took a position at Goucher College in Baltimore, at that time a college for women. She was an Assistant Professor 1952–1957, spent the academic year 1956–1957 at the Institute for Advanced Study at Princeton, and then returned to Goucher as an Associate Professor. When an undergraduate at Penn she had known Paul Bateman, who was then a Penn graduate student completing his Ph.D. with Hans Rademacher. She encountered Bateman again when they were both at the Institute for Advanced Study, at which time he had encouraged her to leave Goucher and come to Illinois. When offered a position by Mahlon Day in 1961, she accepted Illinois' offer.

She was promoted to Professor in 1966, one of just four female full professors in the entire College of Liberal Arts and Sciences at that time. She held various visiting appointments over the years, including Penn in 1954, the University of North Carolina in 1959, and the University of Warwick in England in 1969. An authority on point-set and geometric topology with special interest in spaces of homeomorphisms of manifolds, she authored or coauthored at least 24 research articles in leading professional journals during the years from 1950 to 1980, her period of greatest creative activity. She was an excellent teacher and a supportive and concerned advisor, and she served as a role model for many women mathematics graduate students. She supervised nine Ph.D. dissertations at Illinois, the most recent in 1999. She retired in May of 1999 but remained an active and valued member of the Department after her retirement.

Lawrence Boxer, who completed his Ph.D. with M-E in 1976 and is now Professor of Computer and Information Science at Niagara University, wrote in part about her as follows:

> *Her distinction as a scholar and teacher are well known, but I will always remember Professor Hamstrom's quiet guidance and kindness. I [proved] some theorems under Professor Hamstrom's supervision, and she encouraged me to persevere. My dissertation was based on work by B. J. Ball and a colleague, and as I was finishing the dissertation, Professor Hamstrom encouraged me to apply for a visiting position at the University of Georgia, where Professor Ball was located. I didn't know at the time that Professors Hamstrom and Ball were long-time friends. The year I spent at Georgia would have a great deal of influence on my subsequent research.*

Ivan Reilly, M-E's 1970 Ph.D. student and now Professor of Mathematics at the University of Auckland, sent a summary of his experiences with M-E. Here is an abridgement of his remarks:

> *I arrived in Urbana from New Zealand in 1966, and it was my good fortune to take the first course in topology that fall from Professor Hamstrom. I enjoyed it so much that in each of the succeeding three semesters I took a course in topology with her.*
>
> *Early in my third semester at Illinois, I decided that I would like her as my doctoral supervisor. Her direct, no-nonsense approach suited me well. She was a first-class supervisor. With her guidance I produced a good thesis. Her supervision was crucial to my successful studies at Urbana, and to having a very satisfying subsequent career as a teaching/research mathematician at the University of Auckland.*

And Mary Ellen Rudin, a Moore student who was already completing her 1949 Ph.D. when M-E arrived at Texas, wrote in part:

All of our lives, in spite of minimal contact, Mary-Elizabeth and I have had a friendship based on mutual understanding. We were both very unconventional women in all sorts of ways. We were both serious mathematicians. And R. L. Moore almost simultaneously was our major professor for our PhDs. When we entered the mathematical community, there were few other women. While we were students, Moore, who felt using other peoples mathematical ideas was immoral, effectively prevented his two women students from contact, either social or mathematical. Later, when Mary-Elizabeth's mathematical interests and knowledge became much broader, I cheered her on; and when mine turned to set theory she did the same for me. Mary-Elizabeth was the precise, helpful, referee of several of my papers. … She was a wonderful friend and wonderful mathematician and really interesting gal.

Mary-Elizabeth spent each summer at her summer home in Woods Hole, MA. Sally Hauck, a neighbor in Woods Hole, wrote:

Woods Hole, MA and M-E Hamstrom are synonymous in my mind. She was a fixture every summer. You could count on seeing her car at the post office every morning, with a dog peering over the steering wheel. At 3 P.M. she could be found at Nobska Beach every day—on the beach in nice weather, in her car doing math problems in the rain. I became very fond of her over many years. She could always be counted on to say what she thought in few words, but you clearly knew what she thought. I will miss her a lot—it just won't be the same without her.

An active runner, swimmer, and biker until slowed by failing health, M-E was an avid supporter of Illini sports, especially basketball. She enjoyed classical music and modern dance, and she endowed a travel grant in the Department of Dance to enable advanced graduate dance students to attend conferences and festivals. She was a defender of progressive causes and of women's rights and a generous supporter of the Department of Mathematics and the Mathematics Library. She loved dogs, and in her early years was active in the "companion dog" training program. More recently she could frequently be seen walking her dog on Nobska Beach at Woods Hole or in her neighborhood in Urbana.

Her ashes have been returned to Vineyard Sound near Nobska Beach, where she spent many happy summers swimming and frolicking with her dogs. A lovely, gentle lady, she will be greatly missed by her colleagues and her many friends and neighbors.

Memorials in her memory may be made to the Mathematics Partnership Fund of the Department of Mathematics at the University of Illinois or to the Champaign County Humane Society.

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[1] Robert L. Moore, *Letter to Miss Hamstrom*, published in *A Century of Mathematics*, American Mathematical Society, Providence, RI (1996) 295–300.

[2] David E. Zitarelli, "The origin and early impact of the Moore method," *Amer. Math. Monthly* 111 (2004) 465–486.

[3] John Parker, *R. L. Moore, Mathematician & Teacher,* Educational Advancement Foundation, Austin, TX and Mathematical Association of America, Washington, D. C., 2005.

Heinrich Lotz, 1934–2010

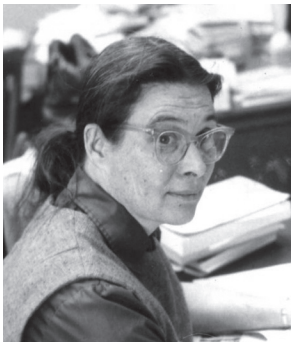
Heinrich Philipp Lotz, retired Professor of Mathematics at the University of Illinois, passed away Friday, March 19, 2010, in Urbana after a brief illness at age 75.

Professor Lotz's research interests were in functional analysis, especially in the structure of Banach spaces, Banach lattices and the spectral theory of positive operators on these spaces. Lotz directed the research of seven Ph.D. students at Illinois. He earned his doctorate at the University of Tübingen under the direction of Professor Helmut H. Schaefer in 1967 and joined the U of I Mathematics Department in 1969.

Lotz was born in Ehringshausen, Germany, on April 7, 1934. He is survived by a brother, Martin, of Ehringshausen; two sisters, Anna of Frankfurt and Ursula of Breitenberg; as well as several nieces and nephews.

Funeral services were held in Evangelische Kirche in Ehringshausen where he was baptized and confirmed.

Frances M. Day, 1922–2010



Frances "Franky" (née Morfoot) Day was born January 5, 1922, in Alton, Illinois and died February 20, 2010. She is survived by 5 children and several grandchildren.

Frances Day received her B.A. from Bryn Mawr College in 1943 and her Master's degree in mathematics from the University of Michigan in 1944. She was an instructor in the Department of Mathematics at the University of Illinois at Urbana-Champaign from January 1965 until her retirement in 1983. Frances Day taught a variety of courses including precalculus, elementary real analysis, differential equations for engineering students, and courses required for students majoring in elementary education. She was a conscientious and dedicated teacher who never tired of helping students. She would always find a way of explaining abstract concepts to students who were struggling with new ideas.

Frances served as an Alderwoman for the City of Urbana from September, 1973 to May, 1975. She was married to Mahlon Day, a faculty member in the department who served as Head of the Department from 1958–1965 and as editor of the *Illinois Journal of Mathematics* from 1980–1986. Mahlon Day died in 1992.

Conferences

Illinois Number Theory Conference to honor Harold Diamond

One of the longest running conference series in the region, the Illinois Number Theory Conference has been held nearly every year since the 1970s. Since in the 1990s the U of I has served as the primary host of this conference. This year's edition of the conference was held on the Urbana campus on May 21–22, 2010, and marked the seventieth birthday of Harold Diamond, one of the driving forces behind this conference series.

Harold Diamond joined the Mathematics Department in 1967 and became a full professor in 1972. He retired in 2002, but remains involved in the Illinois number theory group. Diamond's research interests are in analytic number theory and related topics in analysis. He is well known for his long-running collaboration with Professor Heini Halberstam on the distribution of prime numbers and sieve theory. He enjoys mathematical problems, served as problems editor for the *American Mathematical Monthly* for several years, and for more than two decades was involved in organizing practice contests and training sessions for participants in the Putnam competition.

The conference featured a plenary talk by Carl Pomerance of Dartmouth College, and about two dozen contributed talks. A.J. Hildebrand was the local organizer for this year's number theory conference.

Conference on Complex Analysis honors David Drasin and Linda Sons

The Department of Mathematics hosted a Conference on Complex Analysis on May 21–23, 2010. Supported by funds from the NSF and IMA, the conference honored the contributions to complex analysis of David Drasin of Purdue University and Linda Sons of Northern Illinois University. The conference featured eight plenary talks as well as thirty-nine talks in three parallel sessions.

The plenary speakers were Albert Baernstein of Washington University, Alex Eremenko of Purdue University, David Hamilton of the University of Maryland, Walter Hayman of Imperial College London, Ilpo Laine of the University of Eastern Finland, John Lewis of the University of Kentucky, Allen Weitsman of Purdue University, and Jang-Mei Wu of the University of Illinois.

In addition to forty-seven speakers, approximately an equal number of additional participants attended the conference, among them a significant number of graduate students and postdoctoral fellows. The local organizing committee members were Joseph Miles and Aimo Hinkkanen.

The areas of emphasis of the conference were value distribution, classical and p-harmonic potential theory, normal families, complex differential equations, and symmetrization methods.

Wall-crossing in Mathematics and Physics

The Department of Mathematics hosted a workshop on Wall-crossing in Mathematics and Physics on May 24–28, 2010. The focus was on the interplay between the analogous notions of stability in algebraic geometry and quiver representation theory, and the notion of stability of elementary particles in physics. The meeting is supported by the National Science Foundation.

Enumerative invariants of Calabi-Yau threefolds have played a central role in the interplay between these areas in recent years. More recently, Kontsevich-Soibelman and Joyce-Song have pioneered new "wall-crossing" techniques that describe the precise relationships between the various flavors of such invariants.

The workshop had two components: short courses introducing participants to wall-crossing phenomena for Calabi-Yau threefolds and quivers, accessible to graduate students and other researchers new to the field, and plenary talks by leading experts from around the world about new developments in the field. The short courses were led by Emanuel Diaconescu and Markus Reineke.

Plenary talks were given by Kai Behrend, University of British Columbia; Jim Bryan, University of British Columbia; Sergei Gukov, University of California at Santa Barbara; Davesh Maulik, MIT; Andy Neitzke, University of Texas; Alexei Oblomkov, University of Massachusetts-Amherst; Rahul Pandharipande, Princeton University; Vivek Shende, Princeton University; Jacopo Stoppa, University of Cambridge; Balázs Szendrői, University of Oxford; and Yukinobu Toda, University of Tokyo.

The local organizing committee members were Sheldon Katz and Thomas Nevins.

Logic and Mathematics 2010 to be held on Urbana campus in September

The conference Logic and Mathematics 2010 will take place September 4–5, 2010, in Altgeld Hall. It is the fourth in a series, and will be focused on descriptive set theory and model theory and their connections to other parts of mathematics. The organizers are Professors C. Ward Henson and Slawomir Solecki of the U of I Department of Mathematics.

Invited speakers include Itai Ben Yaacov (Lyon), Pandelis Dodos (Athens), Valentin Ferenczi (Sao Paolo), Matt Foreman (UC Irvine), Vladimir Pestov (Ottawa), Tom Scanlon (UC Berkeley), Asger Tornquist (Vienna), Todor Tsankov (Paris) and Vladimir Uspenskiy (Ohio University).

Some travel support is available; the application deadline is July 4. Discounted hotel reservations may be made at the Illini Union; the cutoff date is August 3. More information, including details of how to apply for travel awards and how to make hotel reservations, is available at the meeting website: http://www.math.illinois.edu/Logic2010/.

Department of Mathematics Giving Form

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Support Actuarial Science through scholarships, fellowships, graderships, and faculty support.

$_____ **Mathematics Excellence Fund** (#775705)
Create endowed scholarships, endowed fellowships, endowed professorships, and endowed chairs.

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Fall 2010 homecoming party

Mark your calendars for the Department of Mathematics homecoming party to be held Saturday, October 23, 2010 immediately following the football game from 2:30 to 4 p.m. Look for our tent in front of Altgeld Hall.

This year's event will be planned by a committee of alumni including Zachary Herrmann, Paula DeAnda-Shah, Maryjoy Heieman and Alicia Wojcik.

The Illinois football team will host Indiana State University at Memorial Stadium. Additional details will be posted on the department's website at www.math.illinois.edu/homecoming/.

We look forward to seeing many of our alumni this fall!

We want to hear from you!

Math Times links our alumni together—some 7800 members strong! We'd like to hear what has happened to you since your graduation and what you've accomplished so far. These stories will provide inspiration for our current and future students. We hope to use these stories in future publications.

Send your story to mathtimes@math.uiuc.edu.

Math Times

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Many faculty making Illinois Journal of Mathematics a success

by Phillip Griffith, Editor-in-Chief

As many in the Department of Mathematics already know, the *Illinois Journal of Mathematics* was conceived in 1957 by an esteemed group of department faculty that included Reinhold Baer and Joseph Doob. The mission of IJM is to publish high quality manuscripts across the mathematics research spectrum. In addition, IJM should be emblematic of the day-to-day research activity and noteworthy achievements of University of Illinois faculty.

IJM's current editorial board includes five U of I faculty: Steven Bradlow, Phillip Griffith, William Haboush, Marius Junge and Richard Sowers. In order for IJM to maintain a profile of excellence it is imperative that department members participate on occasion in the editorial/referring process. As Editor and Chief I would like to send a "thank you" to the more than 25 faculty members who have willingly given their time and expertise. Special thanks go to retirees Earl Berkson and Robert Kaufman and current faculty John D'Angelo, A.J. Hildebrand and Lou van den Dries for numerous special consultations, and also faculty members Robert Bauer, Ilya Kapovich and Renming Song who have provided special editorial duties.

Please also join me in congratulating Debbie Broadrick who was the recipient of the 2010 Exceptional Merit Award in Mathematics for Non-Instructional Staff given by the Department of Mathematics. Debbie has been the Assistant to the Editor-in-Chief of IJM for the past 15 years. Because of her special energy she makes it possible for IJM to maintain a first class operation. She was also instrumental in redesigning the IJM website this past spring. Visit IJM's new website at http://ijm.math.illinois.edu/.