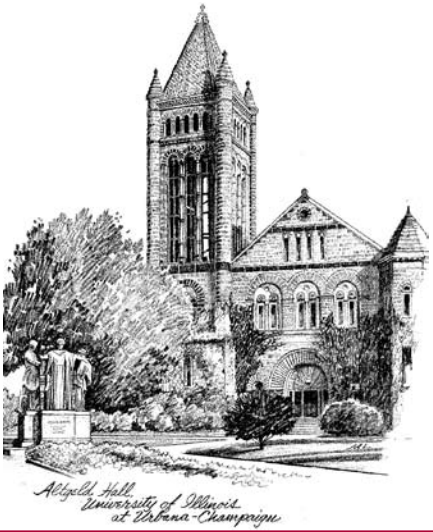
Math Times



Department of Mathematics, Fall 2009

$2 million MCTP grant enhances graduate program

Steve Bradlow and John D'Angelo have been awarded a five year ($2.2 million) grant from the National Science Foundation (NSF). As part of the NSF program Mentoring through Critical Transition Points, this grant will significantly enhance the research component of our graduate program.

One of the main aims of the grant is to engage students in early research experiences, called REGS, thereby facilitating the key transition from coursework to research.

The acronym REGS stands for Research Experiences for Graduate Students; the department has supported these summer experiences in recent years partly through the VIGRE grant and partly through other departmental funds. This MCTP grant will support an enhanced REGS program from 2009–2013, provide travel funds and fellowships for graduate students, and support active faculty participants.

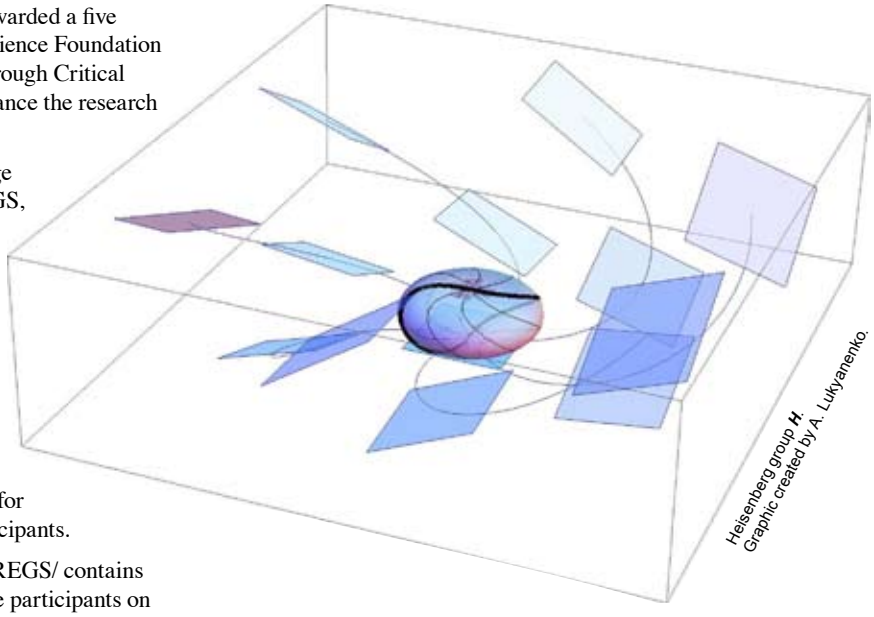
The web page http://www.math.illinois.edu/REGS/ contains detailed information and includes reports from the participants on their research. The program has two principal components:

1. Summer programs for graduate students including mini-courses and funding for individual or group research experiences. Entering students are eligible to participate before the fall semester begins.

2. Fellowships for up to two graduate students in their final year before graduation to support the completion of the thesis and the launching of the research career.

For the academic year 2009–2010, this grant is providing $25,000 dissertation completion fellowships to two graduate students, Jason Elliot (advisor Derek Robinson) and Kevin Milans (advisor Douglas West).

During summer 2009 the grant supported research projects for 35 graduate students. Douglas West led a large scale research experience and A. J. Hildebrand taught a mini-course.



Heisenberg group ***H***.
Graphic created by A. Lukyanenko.

Jeremy Tyson supervised a joint REGS program for Anton Lukyanenko, Noel DeJarnette, and Geoff Ehrman concerning sub-Riemannian geometry and the Heisenberg group ***H*** (pictured above). The space ***H*** models constrained motion: each point has certain horizontal directions (the planes in the picture) along which objects can move. The students showed that it is possible to find horizontal circular paths (thick curve) in ***H*** and to find horizontal spheres in higher-dimensional analogues of ***H***.

On October 5, 2009, the department held a REGS day with presentations, awards and a pizza party. Three students (C. Appuhn, A. Lukyanenko, and M. Yancey) presented their work to first year graduate students, other REGS students, and faculty. Based on their REGS reports and presentations, first prize in the amount of $150 was awarded to Lukyanenko. Second place prizes worth $75 each were awarded to Appuhn and Yancey.

The department will soon announce detailed plans for summer 2010.

In this issue:

Math Times is published twice a year by the Department of Mathematics at the University of Illinois at Urbana-Champaign. *Math Times* is available via the web in pdf format at www.math.illinois.edu/mathtimes/.

Tori Corkery is the editor of *Math Times* assisted by Sara Nelson. Faculty photos on page 4 were taken by Hiram Paley.

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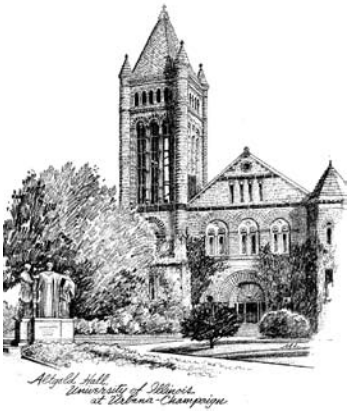

Record turnout at 2009 U of I Mock Putnam Exam

This year's U of I Mock Putnam Exam, which took place September 29, 2009, attracted 46 participants, more than twice last year's numbers, and likely an all-time record for local contests of this type.

The contest ended in a tie between **Yi-Wei Chan** and **Justin Kopinsky**, who each earned 51 out of 60 possible points. As the 2009 U of I Mock Putnam Champions, Chan and Kopinsky will each receive a $200 prize and will be recognized at the departmental awards ceremony next spring.

Kopinsky is a sophomore in Math/Computer Science and the winner of last year's U of I Mock Putnam Exam and this year's U of I Undergraduate Math Contest. Chan is a junior in Mathematics, who placed second in the U of I Undergraduate Math Contest.

The next highest scorers were **Richard Moy**, with 41 points, followed by **David Goldstein** and **Danyang Zhuo**, who earned 40 points each.

The U of I Mock Putnam Exam is a local version of the infamous Putnam Exam, known as the "world's toughest math test." It serves as a practice test for the Putnam Exam, and a key tool in the selection of the U of I Putnam Team. The Mock Putnam Exam has a long tradition going back several decades, but in the past these exams have been relatively low-key events. This is the second year that the exam has been offered in an upgraded format, with the winner receiving prize money and being recognized as "U of I Mock Putnam Champion." The event was widely publicized through mailing lists, posters, and advertisements placed in the Daily Illini. The added incentives and publicity obviously paid off, as the record participation indicates.

The U of I Mock Putnam Exam was organized by Professors A.J. Hildebrand, Jeremy Rouse, and Sujith Vijay. Contest problems and solutions are available at http://www.math.illinois.edu/~hildebr/putnam/problems/mock09.pdf.

Illinois math reception

The Department of Mathematics of the University of Illinois at Urbana-Champaign will host an Illinois Math Reception at the annual meeting of the AMS and MAA on Friday, January 15, 2010 from 5:30 p.m. to 7:30 p.m. in the Sierra H room at the San Francisco Marriott. Everyone ever connected with the department is encouraged to get together for conversation and to hear about mathematics at the University of Illinois.

From the department chair

Greetings to the alumni and friends of the Department of Mathematics! In this issue you can read about a variety of activities including our cover story about the new $2.2M NSF grant in support of our graduate program that was received by Professors John D'Angelo and Steven Bradlow. This award is already doing great things for our students and our department as a whole.

Your support of this program and other activities of the department helps us maintain excellence in our mathematics education and research missions. Not all students are eligible to receive federal funds; your contributions help ensure that all students can benefit from research experiences. In addition to the research experience fund listed on page 11, there are many other funds to which you can donate. You can give online at www.math.illinois.edu/gifts/.

It was great to see so many of you at the department's second annual homecoming event. How many faces do you recognize in the photos on page 7? If you didn't make it to homecoming this year, please keep in touch and tell us what you've been doing. 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

Alumna Profile: Ruth Shaff

By Jim Dey

When Ruth Shaff graduated as valedictorian from Monticello High School in 1940, she was hungry for a college education.

Shaff knew where she wanted to go—the University of Illinois—but was uncertain about what to study.

"My favorite subjects in high school were mathematics and science. I was thinking about chemistry," she recalled.

An academic counselor steered her away from chemistry, suggesting that field was best pursued through an advanced degree. Shaff ended up in math and was glad that she did.

After graduating from the UI in December 1943, Shaff got a job at People's Energy in Chicago, where she enjoyed a 38-year career and "realized the value of the math training for analyzing data and applying it to real-life business situations."

She remains sold on the utility of a math degree.

"I think it helps you think logically. You're solving problems. They're kind of like puzzles, and I like puzzles," Shaff said.

She believes so strongly in math that she's made arrangements to fund a scholarship program through the UI's math department. Shaff and the late Genevie Andrews—a longtime friend, colleague and fellow UI graduate—agreed to donate their estates to create the Math Careers for Women Scholarship Fund in the UI's College of Liberal Arts and Sciences.

Their joint gift will support scholarships for undergraduates studying math or the combination of computer science and statistics. Their fund also will support graduate fellowships and provide support for academic programming in the math department.

Shaff, who lives in the Windsor of Savoy located just outside Champaign, said she "felt like I owed something" to the UI and and that she wanted to help needy students.

"I believe in education, and I have sympathy for people who don't have the money to go to school," said Shaff, who grew up in the Depression and saw her father lose the drug store he operated.

A part-time job at the UI library to help her pay monthly rent of $15 combined with a tuition waiver and a $50 scholarship for her good grades allowed Shaff to enroll in the UI, where she won plaudits as a math student. As a senior, Shaff taught remedial trigonometry to U.S. soldiers, and she was later offered a graduate assistantship if she would remain at the UI and teach.

But Shaff was eager to join the work force and earn a paycheck.

"I'd been eating baloney sandwiches for long enough," she said.

Ruth Shaff

Acting on a tip from the owner of a Campustown drug store, Shaff arranged an interview with People's Energy and was hired to work in the company's "rates and markets department," which, among other things, forecast energy consumption by the company's residential, commercial and industrial customers and estimated the gas supply necessary for peak demand periods.

Shaff spent 25 years there, achieving supervisor status before transferring to a new company department that was in the vanguard of social and commercial change—computers.

Shaff recalled that "it took me a year or more to learn the power of computer technology" and that "the group I led developed an online system for the service department that tied into an online billing system."

"It was state of the art at the time," Shaff said.

Having been on the ground floor of the computer revolution, Shaff is stunned by its continuing advances.

"Google just blows my mind. I keep trying to imagine the programming behind it," she said.

One other thing Shaff is amazed to see is the vast increase in opportunities for women. Shaff recalled that she was among just a few women studying math, and that most people assumed she planned to be a teacher. After graduating, she recalled being offered a job as a telephone operator and is pleased that today's women have so many opportunities.

"I think that's the way it should be," Shaff said.

Although long retired, Shaff said she remains enthusiastic about the many possibilities a math education opens. But she said she also advised students to "learn to write and learn to speak" because those skills complement academic performance.

"You can have the best idea in the world. But if you can't express it to someone else, it's going to die with you," Shaff said.

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

Department News

Professors Emeriti **Philippe Tondeur** and **Donald Burkholder** have been named 2009 Fellows in the Society for Industrial and Applied Mathematics (SIAM). Fellowship in SIAM is a high honor and is conferred on members distinguished for their outstanding contributions to the fields of applied mathematics and computational science. Read more about SIAM Fellows at www.siam.org/about/news-siam.php?id=1545

Nathan Dunfield gave an Invited Address at the 2009 Spring Southeastern Section Meeting of American Mathematical Society (AMS), April 4–5, 2009, at North Carolina State University, Raleigh, NC.

This past June, **Bruce Berndt** gave the First Annual Alladi Ramakrishnan Memorial Lecture in Chennai. With the help of Prime Minister Jawaharlal Nehru, Professor Alladi Ramakrishnan, a well-known physicist, founded the Institute of Mathematical Sciences, commonly known as MATSCIENCE, in Madras, now known as Chennai, in January 1962. Ramakrishnan was the Director of MATSCIENCE for 21 years and died in June, 2008 at the age of 84. An account of Berndt's lecture appeared in the June 13, 2009 edition of The Hindu (arguably India's leading newspaper).

Bruce Reznick has been named a 2009–2010 Faculty Fellow of the LAS Teaching Academy. His research involves combinatorial problems with non-combinatorial objects such as polynomials, simplices and integer sequences. His teaching guide "Chalking It Up: Advice to a new TA" has been used in more than fifty graduate departments. He was a 2009 recipient of the LAS Dean's Teaching Excellence Award and the U of I Campus Award for Excellence in Undergraduate Teaching.

Reznick was also recently featured on a podcast at "Strong Connected Components: Conversations with Mathematicians" where he discussed which type of 4 is best, writing for the Putnam, and a connection between comedy writing and mathematics. You can listen to his podcast at http://sccmath.libsyn.com/.

Julian Palmore visited Hong Kong S.A.R. over the Labor Day weekend and again in October to see how the public health community there is dealing with swine flu (pandemic influenza H1N1 2009) and bird flu (avian influenza H5N1). Swine flu is found throughout Hong Kong and the current effort is to mitigate its effects. As a consequence of these efforts travelers with influenza-like illness (ILI) arriving by plane or boat are not placed in isolation or quarantined but if necessary are taken to a medical facility for treatment. Contacts of these travelers are no longer being tracked for public health reasons. The definition of ILI for medical purposes is a fever of greater than 100 degrees F and a cough or sore throat or both. Special measures to mitigate the flu in schools are a) students take their temperatures each day prior to attending, b) the classrooms are ventilated and sanitized daily, c) hand washing is made a habit and d) sick students DO NOT come to class. Palmore said, "I felt very protected from flu during the entire trip, especially in Hong Kong, where I travelled on buses and trains and took along a 5-day course of Tamiflu (just in case)."

Two new faculty join department

Vera Mikyoung Hur, Assistant Professor
Ph.D. 2006, Brown University

Vera Mikyoung Hur completed her Ph.D. in 2006 at Brown University in Providence, RI, under the direction of Walter Strauss. Since completing her Ph.D. she has been a C.L.E. Moore Instructor at MIT. Her research interests are in analysis (pure and applied) and partial differential equations. Currently, she focuses on surface water waves and free boundary problems arising in fluid mechanics, geophysics and materials sciences. She plays piano, violin and flute, and she reads classical Latin.

Isidora Milin, J.L. Doob Research Assistant Professor
Ph.D. 2008, Stanford University

Isidora Milin, originally from a small town on the border between Serbia, Croatia and Bosnia, completed her Ph.D. in 2008 at Stanford University, under the supervision of Yasha Eliashberg. Her thesis dealt with contact dynamics and groups of contactomorphisms. During the 2008–2009 school year, she was in Israel as a postdoctoral fellow at The School of Mathematical Sciences at Tel Aviv University. She is interested in symplectic and contact geometry, topology and dynamics, but also in improving (or at least not forgetting) what little Hebrew she has learned so far.

Grant funding received by faculty up from 2008

Since January 2009, the U of I Department of Mathematics has had 23 new grants funded, up from 17 during the same period in 2008. The National Science Foundation (NSF) received $2.3 billion through the American Recovery and Reinvestment Act (ARRA), over $2 billion of which has been earmarked for research and related activities. So far only $26 million has been paid out, but UI Mathematics has already been promised eight grants totaling $3,444,421. With the addition of ARRA funds to the NSF pool, we also saw larger awards; 17 of the 20 NSF grants received were funded at the requested level! For more information about ARRA funding, see www.recovery.gov/.

Faculty who were awarded grants from January 2009 through September 2009 are:

- Steven Bradlow and John D'Angelo — NSF: MCTP: Research Experience for Graduate Students (see cover story in this issue).
- Lee DeVille — (through Geology) Energy Biosciences Institute: Distribution and diversity of metabolic processes in subsurface microbial communities integrated with reservoir environmental conditions and geological history; and (with Atmospheric Science and Mechanical Engineering) NSF: CMG: Coarse-graining and multiscale analysis of stochastic particle-resolved aerosol models.
- Burak Erdogan — NSF: Research in harmonic analysis and partial differential equations.
- Kevin Ford — NSF: The distribution of prime numbers and products of few primes.
- Zoltán Füredi — NSF: Extremal hypergraphs, code, designs, and combinatorial geometry.
- Sergei Ivanov — NSF: Presentations of groups by generators and defining relations.
- Marius Junge — NSF: Applications of operator algebra theory to certain problems in analysis.
- Ilia Kapovich — NSF: Geodesic currents on free groups and the outer space.
- Jiri Lebl — NSF: Singularities and complexity in CR geometry.
- Christopher Leininger — NSF: Geometry, topology and group theory of surfaces.
- Randy McCarthy and Karen Mortenson — U.S. Dept of Education, University of Illinois Mathematics GAANN Fellowship Project.
- Tao Mei — NSF: Noncommutative Hardy Spaces and Littlewood-Paley Theory.
- Joseph Miles — (through Education) NSF: Noyce: Preparing Excellence and Diversity in Secondary Mathematics Teachers for Illinois' High Needs Schools.
- Jeremy Rouse — NSF: The distribution of the Fourier coefficients of modular forms and arithmetic applications.
- Zhong-Jin Ruan — NSF: Operator spaces and locally compact quantum groups; and NSF: Wabash Seminar and Miniconference.
- Kathleen Smith — Illinois Board of Higher Ed: I-LLINI Partnerships Lifelong Learning in Illinois for 21st Century Teachers.
- Jeremy Tyson — NSF: Geometric analysis in Carnot groups.
- Nikolaos Tzirakis — NSF: Nonlinear dispersive PDE.
- Alexander Yong — NSF: Combinatorial and algebraic methods in Schubert geometry.
- Alexandru Zaharescu — NSF: Analytic methods in number theory.

McCarthy appointed director of graduate studies

This fall, Randy McCarthy was appointed as Director of Graduate Studies for the Department of Mathematics. McCarthy joined the department in 1994. He served as the department's Director of Undergraduate Studies from 2004–2007. McCarthy began advising undergraduates in 1997 and found he enjoyed the informal meetings with students outside the classroom. This, plus his desire to expand our program to offer students more of the positive experiences that helped shape his own interests in mathematics, led McCarthy to pursue the position as director of undergraduate studies. As Director of Graduate Studies he hopes to use his administrative experience to help students achieve their academic and professional goals.

McCarthy was a Beckman Associate in the University of Illinois Center for Advanced Study in 1998–1999 and received a Sloan Research Fellowship for 1996–1998. His research interests are in algebraic topology and algebraic K-theory. He received his Ph.D. from Cornell University in 1990.

Combinatorics faculty participate in IPAM program

During fall 2009 semester, the Institute for Pure and Applied Mathematics (IPAM) in Los Angeles, CA, is hosting a three-month program called "Combinatorics: Methods and Applications in Mathematics and Computer Science." This long-term program involves both senior and junior researchers from around the world and is intended as an opportunity for participants to learn new methods in modern combinatorics, to meet a diverse group of people, and to form new collaborations. The program includes both short workshops and long-term research activities.

Participants in the IPAM program from the Department of Mathematics at the University of Illinois include professors Jozsef Balogh, Zoltán Füredi, and Alexandr Kostochka as well as graduate students Lale Ozkahya and Wojciech Samotij; also Ida Kantor is spending about half of the semester there. The long-term participants are staying at UCLA between the workshops where they attend weekly seminars and enjoy a collaborative atmosphere with fellow participants. Long-term participants include professors, postdocs, and graduate students to promote the Institute's goal of bringing people together to form new collaborations. Many of the participants and organizers are from universities outside of the U.S. Some support has been provided for additional short-term participants to attend week-long workshops, and several University of Illinois students are taking advantage of this. Several additional students are attending short workshops associated with the program; these include Jane Butterfield, Kevin Milans, and Hehui Wu.

The combinatorics program at IPAM started in early September with a six-day series of tutorials. The program focuses specifically on Probabilistic Methods, Extremal Problems for Graphs and Set Systems, Ramsey Theory, Additive Number Theory, Combinatorial Geometry, and Discrete Harmonic Analysis; the tutorials touched on several of these areas. The program will continue October through December with four week-long workshops, each of which focuses more closely on a specific area.

Professor Balogh will speak during Workshop I: Probabilistic Techniques and Applications. His research interests include random combinatorics, random graphs, and sharp threshold functions. He is also interested in graph properties, extremal graph theory and hypergraphs, and in applications of combinatorics to information, coding theory, and cryptography—topics that will be addressed in Workshop III.

Professors Füredi and Kostochka are confirmed speakers for Workshop III: Topics in Graphs and Hypergraphs. Professor Füredi's research interests include the theory of finite sets with applications to computer science as well as algebraic and probabilistic methods in Combinatorics. This workshop will focus specifically on several topics, including Ramsey theory, Turan-type questions, Szemeredi's Regularity Lemma, graph minors, and extremal set theory and its applications to information theory, as well as several other topics. Professor Kostochka is also interested in graph properties; his recent papers touch on graph packing, graph minors, extremal graphs, and the existence of fixed subgraphs.

For more information, visit www.ipam.ucla.edu/programs/cma2009/.

Flu season preparedness

The Department of Mathematics is taking steps to reduce the spread of flu while ensuring that it is possible for students to continue to learn. The University is advising students who are sick to avoid coming to class and if they have a fever greater than 100 degrees to go to the McKinley Health Center to be seen by a nurse or doctor.

Our department is allowing for student absences by encouraging faculty to be flexible and to provide makeup exams and help to educate students on ways they can avoid common sources of flu infection. Instructors are on the lookout for students in class who may be ill, especially those coughing frequently and sneezing.

As of the middle of September there were about eight hundred students on campus who had become ill with influenza-like-illness (ILI) defined by the CDC as a fever with temperature over 100 degrees and either a cough or sore throat or both. The CDC estimates that 97% of the flu currently circulating is the pandemic H1N1 and the rest is seasonal flu.

Things you can do to help slow the flu's spread!

- Wash your hands with soap and water or use alcohol-based hand sanitizers often.
- Cover your cough or sneeze.
- Do not go to school or work if you are sick with a fever greater than 100 deg F and have a cough or sore throat.
- Do not touch your mouth, nose or eyes with your hands.
- Take your temperature when you feel ill.

The Department of Mathematics now has their our own local source of high-potency fuel for theorems! Thanks to the coordinating efforts of Thomas Nevins and the generous contributions from faculty, staff and students, the department now has an espresso machine. It takes single-serving Lavazza Blue capsules and produces individual espresso drinks.

Homecoming 2009

The Department of Mathematics held their Homecoming 2009 party on the lawn out front of Altgeld Hall on a crisp fall day under sunny skies! There was a good turnout of alumni along with current faculty and students who enjoyed the catered buffet. Next year's homecoming event will be held on October 23, 2010, when Illinois takes on Indiana.

Alumni Zachary Herrmann and Paula DeAnda-Shah have volunteered to serve on the planning committee for next year's event. Details of next year's event will be posted on the department's website at www.math.illinois.edu/homecoming/.

Mathematics Library

The stacks in the Mathematics Library are unusual in their construction. Rather than the bookcases being supported by the floors, the floors in Altgeld Hall are supported by the bookcases. The entire bookstack is one three-dimensional steel frame structurally separate from the stone envelope that encloses it. The floors are made of glass because getting the maximum amount of light to bookshelves was a central problem for libraries before their total reliance on electric lighting. Even the treads on the stairs are made of glass.

As the famous mathematics librarian motto goes, "the library is the mathematician's laboratory."[1] In an era when journals and books are increasingly online, the Mathematics Library continues to be a busy place of study and research. According to the University Library's yearly statistical data on patron visits to departmental libraries, the University of Illinois at Urbana-Champaign Mathematics Library is consistently the sixth busiest library on campus. Library staff members know the mathematics faculty members who come in every day to look at new journal issues or peruse the New Books shelf, and graduate students are known to disappear into the Mathematics book stacks for long periods of time, emerging with a pile of books in hand and leaving piles of bound journals on the study carrels behind them. Teaching assistants use the Reading Room to work with undergraduates who also camp out there to work on homework, use the textbooks or past exams in the reserve collection, or dash in before or after class to check e-mail or print an assignment.

Not just mathematics students use the Library—it is a popular study place for non-mathematics students as well. Even during the summer semester, the number of patron visits to the Mathematics Library averages around 200 per day; the total number of yearly visits hovers around 100,000. With nine public computers, a scanner, U of I Wi-Fi, long study tables, and large windows that provide plenty of natural light, the Mathematics Library remains a valuable space for students and faculty.

The collection

The mathematics collection is ranked as one of the top five in the country. Currently housing over 100,000 volumes and about 800 serials, the Mathematics Library is noted worldwide for its outstanding research collections. It contains the most comprehensive collection of Russian mathematical works as well as one of the finest journal collections in terms of length of run and international coverage. The monograph collection is superb. As a national Mathematics Document Delivery Center, the Mathematics Library attempts to acquire all monographs reviewed in Mathematical Reviews (from 1940 to date).

In 1870, the University Library contained 68 mathematical and astronomical books. In 1906, the Mathematics Departmental Library opened in the Natural History Building. A complete set of *Crelle's Journal* was the first major addition to the library. Today, the Mathematics Library owns Volume 1 (1826) though Volume 626 (2009) of this journal.

Gift/exchange program

The Mathematics Library's Gift/Exchange Program has played a key role in building the Library's collection of less well-known foreign journals, particularly from Eastern Europe and Asia. This program allows the Library to receive foreign mathematics journals published by other universities for free or in exchange for issues of the *Illinois Journal of Mathematics*, and its success is due primarily to the cooperation of members of the University of Illinois mathematics

faculty. Faculty members attend international conferences and bring back journals that they donate to the Library or make contacts with whom they help the Library to set up an exchange agreement. International mathematicians who come to Illinois as visiting scholars, visiting faculty, or permanent faculty also often collaborate with the Library to set up an exchange with their home or parent institution. Nancy Anderson, Mathematics Librarian Emerita, additionally played a vital role in building the Library's Gift/Exchange Program; during her tenure at the Mathematics Library, she was an officer in the International Federation of Library Associations, and she made many contacts there that are still sending materials to the Library under her name, ten years after her retirement. The success of the Gift/Exchange Program is due to the active participation of mathematics faculty and to Nancy Anderson's dedication to diversifying the collection.

Library funding

Building up the mathematics collection has been the work of many people and different sources of funding. During the Depression faculty members accepted salary cutbacks so that the library could continue to subscribe to needed journals.[2] In the 1950s a large bequest to the Mathematics Library was used to purchase rare mathematics volumes, including a 1579 edition of the first Italian text bearing the title Algebra (Bombelli, 1572).[2]

The size and variety of the Math Library collection is also due to the many interests of the mathematics faculty and their active involvement in the Library's collection development. Faculty members often donate copies of books they have been sent or acquired at a conference or symposium.

Faculty set up journal exchanges with other institutions, communicate with Library staff about journals the Library needs to have, and provide feedback on new materials, such as electronic books.

Mathematics is far from a static field and in order to stay current, the library must continue to purchase new books and journals. With new advances in applied mathematics and the interdisciplinary nature of mathematics today, continuing to provide the resources mathematicians need remains a challenge.

Many funds have been established by generous donors. If you would like to make a gift to the Mathematics Library, go online to www.math.illinois.edu/gifts/ or contact the Department of Mathematics.

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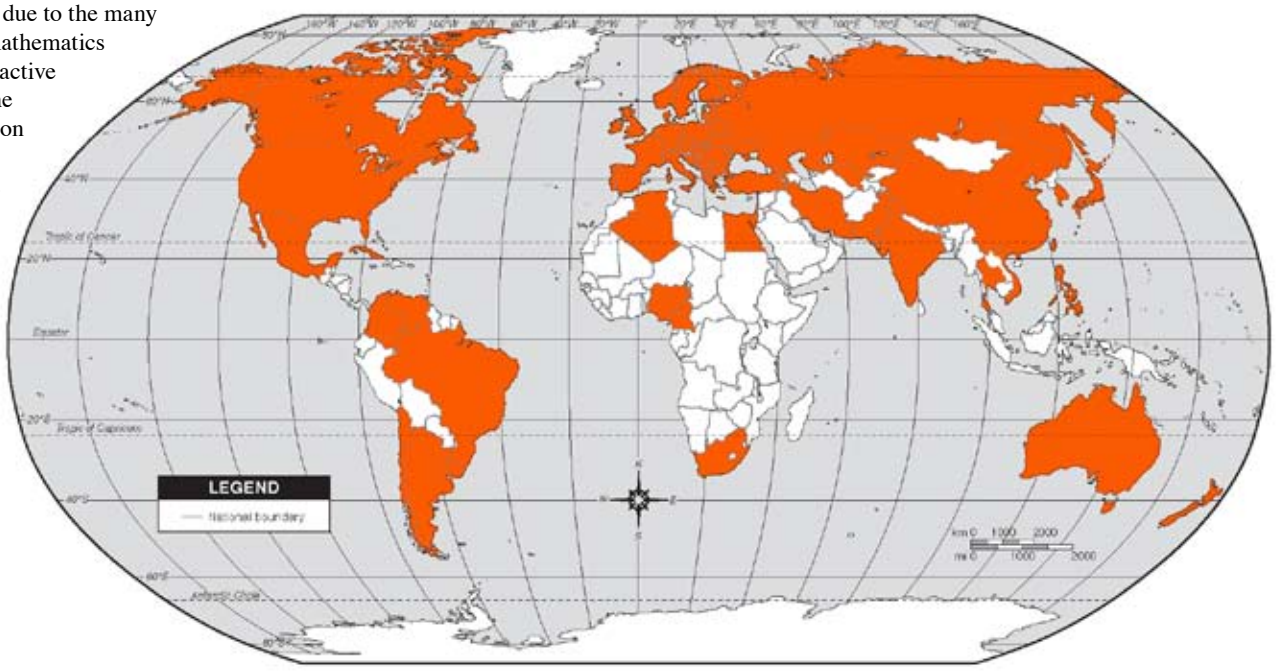
1 J. Sutherland Frame, "Department Libraries," in *Buildings and Facilities for the Mathematical Sciences*, Conference Board of the Mathematical Sciences, Washington, D.C., 1963, 79–80.

2 "The Magnificent Mathematics Collections," *Friendscript*, Vol. 2, No. 4, Winter 1980–81.

This article was made possible with the help of the Mathematics Library staff: Tim Cole, Margaret Lewis, Becky Burner, Megan Hayes, and Norah Mazel; and Mathematics Librarian Emerita Nancy Anderson.



The Mathematics Library takes great pride in the large, diverse collection of mathematics journals available to support faculty and student research. Currently, the Math Library subscribes to more than 800 print and electronic journals from 70 different countries around the world (highlighted in orange above).

Honor Roll of Donors

July 1, 2008 – June 30, 2009

We honor those who have given so generously to the Department of Mathematics to strengthen and enhance excellence in mathematics at Illinois.*

The Honor Roll of Donors is not published online for security reasons. If you would like a hardcopy of this issue that does contain the Honor Roll of Donors, please contact the editor (see page 2 for contact information).

Department of Mathematics Giving Form

Today, more than ever, the Department of Mathematics relies on the generosity of its alumni and friends. Join us in ensuring a brilliant future by supporting the department in its educational and research missions.

☐ **Yes! I believe in the importance of excellence in mathematics and wish to show my support!**

$_____ **Mathematics Partnership Fund** (#332346)
Your gift to the partnership fund will have the widest impact as it supports a range of activities including student awards and travel, distinguished lecturers, the recruitment of excellent faculty, and alumni events.

$_____ **Actuarial Science Fund** (#330225)
Support Actuarial Science through scholarships, fellowships, graderships, and faculty support.

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

$_____ **Mathematics Research Experience Endowment Fund** (#772913)
Support research experiences for undergraduate students (REUs) and graduate students (REGS).

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Math Times

Department of Mathematics
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The annual meeting of the Society for Scholarly Publishing was held on May 27–29, 2009, in Baltimore, MD, and was attended by Debbie Broadrick, Assistant Editor of the *Illinois Journal of Mathematics* (IJM). Talks were given on a variety of topics relevant to publishing, including copyright and licensing agreements, managing electronic content, relationships between publishers and academic libraries, and new publishing models on the horizon.

The keynote address was given by Adam Bly, founder and Editor-in-Chief of *Seed* magazine, Chairman of Seed Media Group, and occasional consultant to Barack Obama on matters of the transformative power of science in today's world.

Relating Mr. Bly's talk to scholarly publishing, we find (based on the survey, "State of Science Report," 2008, Seed Media Group) that:

- science is not a closed system (65% of scientists cite literature as having an influence on their science);
- global collaboration is fundamental (over 60% of researchers are actively involved in at least one collaboration);
- peer-review still matters (77% of researchers agree that peer-review remains essential to scientific progress);
- scientists want unimpeded and centralized access to information (84% of researchers believe scientific papers should be freely available to other scientists and the public).

These important issues continue to be addressed at IJM through the use of a centralized editorial process, facilitating communication between editors, authors, and referees around the world, electronic submissions and processing of papers, reducing delay in published research, high standards for peer-review of papers, and a policy of open-access of full-text electronic content through our partnership with Project Euclid.