

Math



Times

Department of Mathematics

Fall 2003

Distinguished Mathematical Research award recipients

Professors **Derek Robinson** and **Zhong-Jin Ruan** have been awarded 2003-2005 Distinguished Mathematical Research Awards. These awards, given by the department for the first time in Fall 2001, have a dual purpose. The first purpose is to recognize senior members of the faculty for their outstanding achievements and to provide them more time to focus on their research activities. The second purpose is to honor distinguished department faculty members of the past for their contributions to mathematics as a whole and to the Department of Mathematics at the University of Illinois in particular. Each year the awards are presented by the Executive Committee to at most two senior members of the department.

Derek Robinson's Distinguished Mathematical Research Award is given in memory of William W. Boone. Professor Robinson received his Ph.D. from Cambridge University in 1963. He was an Instructor at UIUC from 1963-65 and a Lecturer at the University of London from 1965-68. He has been a member of the UIUC Department of Mathematics faculty since 1968. His research area is the theory of groups, especially infinite soluble group theory and its connection with ring theory and homological algebra. He has also worked on algorithmic problems in group theory and received much encouragement from Professor William Boone. Professor Robinson is the author of four books and about 100 articles. He has been thesis advisor to nine Ph.D. students. He was a recipient of a Sir Edmund Whittaker Prize, an

continued on page 3

State Farm Foundation Professorship established

A grant of \$500,000 from the State Farm Companies Foundation has resulted in the establishment of the State Farm Companies Professorship in Actuarial Science at the University of Illinois. The grant is an endowment: the principal will remain intact, with income used to enhance the salary and provide other benefits to a person named State Farm Scholar or State Farm Professor. Such endowed positions are among the best ways for a university to attract and retain talented faculty, and honor both the recipient and the institution whose name they carry. The State Farm Companies Foundation's gift is a wonderful example of corporate citizenship, and we at Illinois are deeply grateful for it.

At a ceremony in the Illini Union on September 24, **Esther Portnoy** was formally named the first State Farm Scholar at UIUC. Attendants included Mindy Laub for State Farm, Dean Jesse Delia of the College of Liberal Arts and Science, campus Provost Richard Herman, and members of the Mathematics Department, as well as some of Professor Portnoy's family.

Professor Portnoy received her Ph.D. in mathematics from Stanford University in 1969. She joined the UIUC faculty in 1974 and has served as Director of the UIUC Actuarial Science Program since 1991. Her area of specialization is application of statistical methods to problems in actuarial science, especially graduation of mortality data and race/gender differences in mortality patterns.

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

Editor *Tori Corkery*
Asst. Editor *Cherri Davison*
Distribution *Lori Dick*

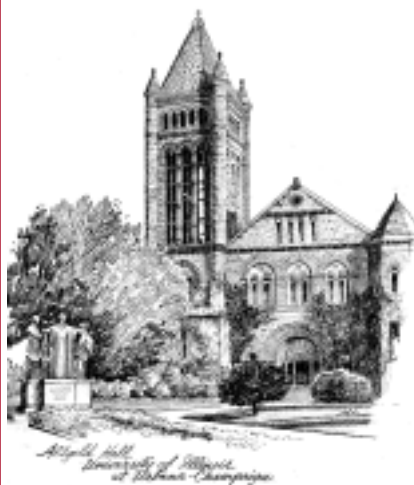
Address corrections and changes should be sent to:

Lori Dick
ldick@math.uiuc.edu
257 Altgeld Hall (MC-382)
1409 W. Green Street
Urbana, IL 61801

Joseph Rosenblatt, Chair
Department of Mathematics
Main Office
273 Altgeld Hall (MC-382)
1409 W. Green Street
Urbana, IL 61801

Telephone: 217-333-3350
Fax: 217-333-9576

office@math.uiuc.edu
www.math.uiuc.edu



From the Department Chair:

The fall term is here again. This year the season change was marked most notably by large numbers of wooly worms crossing the roads—some one way, some the other way. I have been told that this proves that there are at least two kinds of wooly worms. But does it mean that the winter will be a long and cold one?

This last year was a hard one in terms of budgets for our state and for our university. But you can see that despite this we have moved forward into this year with all the energy that we expect at Illinois. This fall we have three new regular faculty members and a number of new postdoctoral faculty members. We have several faculty visitors who are adding to our teaching and research activities. We have begun another fund raising drive in hopes of matching the one from last year that was very successful considering it was a first-time effort.

Let me highlight here just a few of the large number of departmental activities that have gone on this last summer or are going on this fall. We have begun the fourth year of NSF VIGRE grant funding with many people again involved in the mentoring groups that it sponsors. This past summer, two Research Experiences for Undergraduates (REUs) groups were organized: one led by Kim Whittlesey on geometric group theory and the other led by Robert Muncaster on evolutionary game theory. Also, this summer for the first time, a new aspect of the VIGRE program was started: REGS (Research Experiences for Graduate Students). REGS came out of discussions in the Graduate Affairs Committee last year, with Professor John D'Angelo chairing the committee and leading the development of REGS. In this component of the VIGRE program, first or second year graduate students work with faculty members on research projects that can lead to publishable results. This summer's REGS were exciting and successful. A forum will occur later in the fall that highlights the REGS.

Another new event, also emerging from discussions in last year's Graduate Affairs Committee on the graduate program, is the Alumni Visiting Committee that comes to town in October. This year the committee consists of four past graduate students who are now faculty members at various universities. They will return to the department to meet with current graduate students and faculty members and to evaluate the department's graduate program. These people are Professors Jim Colliander (University of Toronto), Richard Hain (Duke University), Stuart Kurtz (University of Chicago), and Judy Walker (University of Nebraska). Professors Walker and Colliander will give talks in October, and Professors Hain and Kurtz will be returning to give talks later in the year. We expect to be able to make significant improvements in our graduate program with the input from these distinguished alumni.

Thus, it is with excitement and anticipation that we start this new academic year. We do not know yet if this year will be as hard financially as the last two. We do not know if all our plans will come to fruition as quickly as we hope. But we do know that the faculty and students in our department are actively engaged in the business of learning and creating mathematics. What greater joy can there be?!

Joseph Rosenblatt

Distinguished Mathematical Research award recipients, continued

Alexander von Humboldt Senior U.S. Scientist Award and a Beckman Award. Professor Robinson was an Associate at the Center for Advanced Study in Urbana in 1981-82 and 1992, and has held visiting positions at the University of Freiburg, the University of Padua, Notre Dame University, the National University of Singapore, the Swiss Federal Institute of Technology, Zurich, and Warwick University.



Derek Robinson

William Boone received his doctorate in mathematics from Princeton University in 1952. He taught at Princeton, Rutgers and the Catholic University of America before joining the UIUC Department of Mathematics faculty in 1958, where he served until his death in 1983. He held an Alexander von Humboldt Senior U.S. Scientist Award at the University of Bonn in 1978 and was a visiting professor at Oxford in 1972-73 and 1978-79. Professor Boone, who made many contributions to the field of mathematical logic, provided the first correct proof of the unsolvability of the word problem for finitely presented groups—one of the outstanding mathematical achievements of the 20th century.



Zhong-Jin Ruan

Zhong-Jin Ruan's Distinguished Mathematical Research Award is given in memory of Mahlon M. Day. Professor Ruan received his Ph.D. in mathematics from UCLA in 1987 and joined the UIUC Department of Mathematics in 1988. Professor Ruan is a founder of operator space theory. His research, in particular his joint book with Edward G. Effros on Operator Spaces has made fundamentally important contributions to this newly developed active research area in modern analysis. Professor Ruan has also made very important contributions to non-commutative harmonic analysis and locally compact quantum groups. Recently, he is more interested in the local theory of operator spaces and its applications to C^* -algebras, von Neumann algebras and non-commutative L_p -spaces. Professor Ruan has published about 40 research papers and has supervised four Ph.D. theses in operator spaces and Kac algebras at Illinois.

Mahlon M. Day received his Ph.D. in mathematics from Brown University in 1939. He was a member of the UIUC Department of Mathematics faculty from 1940 to 1983. He served as department head from 1958-1965 and was editor of the *Illinois Journal of Mathematics* from 1980-1986. Professor Day, widely known for his 1957 book *Normed Linear Spaces*, did pioneering work on geometrical properties of these spaces. He was a leading expert on the “roundness” of a normed space and its influence on other properties of the space. This work was fundamental to the rapid growth of the field. His retirement in 1983 was marked by a national conference on the geometry of normed spaces held at the University of Illinois. Professor Day died in 1992.

After Math Alumni News

In July, 2003, **Heng Huat Chan** of the National University of Singapore was presented with the Singapore Youth Award for 2003. Chan was recognized for his outstanding research, expertise in teaching, web-based courses in mathematics, lectures to students at junior colleges and high schools, and writing for a local mathematics journal aimed at students at secondary and junior college levels. In 1999, Chan won the Young Scientist Award conferred by the Singapore National Academy of Science. In 2001 Chan was awarded a Commonwealth Fellowship and visited the University of Sussex for six months. Chan received his Ph.D. in 1995 under the direction of Bruce Berndt.

Youn-Seo Choi has received the 13th Annual Research Award for the Best Paper from KOFST, the Korean Federation of Science and Technology. Each year, KOFST awards to a Korean mathematician a prize for the most outstanding paper published in the previous year. Choi won the award for his paper, "Tenth order mock theta functions in Ramanujan's lost notebook. IV," *Trans. Amer. Math. Soc.* 354:2 (2002) 705-733. Choi received his Ph.D. in 1999 under the direction of Bruce Berndt and was the first recipient of the Bateman Prize in Number Theory that is given by the UIUC Department of Mathematics.

Maria Girardi has been promoted to the rank of full professor in the Department of Mathematics at the University of South Carolina. Girardi, who received her Ph.D. in 1990 from the University of Illinois, completed her dissertation "Dunford Pettis Operators on L_1 and the Complete Continuity Property" under the direction of Jerry Uhl. Her research interests are in functional analysis, with an emphasis on Banach space theory and its applications to other areas of analysis.

Math Times available on-line

The Math Times is available on-line in pdf format at www.math.uiuc.edu/mathtimes. If you would like to receive e-mail notification when a new issue is released, please send an e-mail to mathtimes@math.uiuc.edu. If you do not have access to the internet and would like to receive a hardcopy of the newsletter please send your complete mailing address to the main department office c/o Lori Dick at the address on page 2 of this newsletter.

New associate chair appointed

Robert Muncaster has been appointed Associate Chair of the Department of Mathematics. Professor Muncaster is an associate professor in both the Department of Mathematics and the Department of Political Science at UIUC. His specialization is applied mathematics, with current research interests split between theoretical mechanics and models of international conflict. In the former area he is interested in relaxation phenomena in physics and mechanics and its connection with invariant manifolds. In addition he is investigating the use of rod models for the study of DNA and other biological phenomena. Professor Muncaster's research in Political Science has focused on the development and study of models of international conflict, with work published in the *Journal of Conflict Resolution*, *Synthese*, and the *Journal of Theoretical Politics*. His recent work is concerned with models of inter-agent networks of friendship and enmity, and the impact of these networks on the progress of international disputes. In addition he is exploring ways in which evolutionary game theory, especially in the context of arms races, can be used in studying adaptive mechanisms exhibited by political systems.

Professor Muncaster received his Ph.D. in mechanical engineering in 1975 from The Johns Hopkins University. He was a post-doctoral fellow at Johns Hopkins from 1975-76 and a research associate at Heriot-Watt University in Edinburgh, Scotland from 1976-79, before joining the UIUC mathematics faculty in 1979.



Faculty News Notes

Matt Ando, **Marius Junge**, **Renming Song**, and **Alexandru Zaharescu** received promotions from Assistant to Associate Professor this year. **Alexandr Kostochka** received promotion to full Professor. Congratulations to these faculty.

In July **Steve Bradlow** gave one of the invited addresses at EuroConference VBAC 2003 in Porto, Portugal. This annual meeting of the Vector Bundles on Algebraic Curves (VBAC) group was dedicated this year to the memory of the well-known algebraic geometer Andrei Tyurin, who died at the end of last year. In addition to a commemorative address by Miles Reid (Warwick), the conference featured invited addresses by mathematicians from Europe, India and North America. Professor Bradlow spoke on “Augmented holomorphic bundles: theory and practice”. For more information on the meeting (including an obituary for Andrei Tyurin) go to <http://www.math.ist.utl.pt/~cfloren/VBAC2003.html>.

In June, **Peter Loeb** gave a colloquium talk at the University of Hawaii. He is helping to organize a special session on nonstandard analysis for the winter meeting of the AMS in Phoenix.

Richard Laugesen is on sabbatical in New Zealand for the academic year 2003-2004, where he holds an inaugural Maclaurin Fellowship from the New Zealand Institute of Mathematics and its Applications. He will speak on his wavelet-related research at most of the New Zealand universities.

This past summer, Professor **Aimo Hinkkanen** gave a series of lectures at the University of Helsinki in Finland. He gave talks at the Conference on Complex Analysis and Dynamical Systems in Nahariya, and at the Technion, Haifa, in Israel. He further visited Kyoto and Tokyo in

Japan, giving two talks at Kyoto University, a talk at the conference on Nevanlinna theory and Diophantine approximation at Tokyo University, and talks at the Tokyo Institute of Technology and at Keio University in Yokohama. Finally, he visited Chile, giving a talk at the III Workshop on Dynamical Systems held at the historical village of San Pedro de Atacama in northern Chile (featured in the August 2003 issue of National Geographic magazine as the driest place on Earth), and a talk at Pontificia Universidad Catolica de Chile in Santiago.

Julian Palmore attended two meetings this past June: one in Amherst, Massachusetts, on weapons of mass destruction, sponsored by PAWSS, and one at Vergennes Vermont on teaching strategic studies, sponsored by the Johns-Hopkins University School of Advanced International Studies. In July, he lectured at the 11th International Conference on Finite and Infinite Dimensional Complex Analysis held in Chiang Mai, Thailand. He is coadvisor to a Ph.D. student of Professor Niamsup at Chiang Mai University, who is supported by grant from the Royal Thai Government. In October Professor Palmore participated in a conference in Wilton Park, England, on chemical-biological weapons of mass destruction. He has written on “Ballistic missile defense and China” and is editing a December 2004 special edition of Defense & Security Analysis on weapons of mass destruction. His new course MATH 267/GLBL 267 on “Mathematical Issues in National Security” will be taught again in Spring 2004. He will also teach MATH 467 “Dynamical Systems” in Spring 2004. The course has drawn the attention of graduate physics and mathematics students. He is establishing a dynamical systems research group at UIUC.

2004 wall calendars

The department has 11x17” wall calendars for the year 2004 available for members, alumni, and friends of the department. Last year’s theme of mathematical places was very well received. This year’s theme is mathematical puzzles and games. If you would like a calendar please send your complete mailing address to mathtimes@math.uiuc.edu or to the main department office at the address on page 2 of this newsletter.

Meet the faculty new to the department in fall 2003



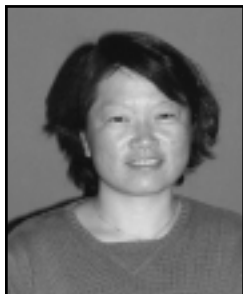
Rick Gorvett

Rick Gorvett re-joined the department this fall as an assistant professor of actuarial science and as Associate Director of the Actuarial Science Program. Rick has a Ph.D. in Finance from the University of Illinois, is a Fellow of the Casualty Actuarial Society, and has significant corporate and actuarial consulting experience. In addition to teaching actuarial courses, he has a secondary appointment in the Finance Department, and currently teaches financial risk management. His research areas include financial mathematics, actuarial risk theory and modeling, and dynamic financial analysis. Rick is married and has two children, a daughter age 3 and a son age 4 months.



Vadim Zharnitsky

Vadim Zharnitsky joined department as an assistant professor this fall. He received his Ph.D. from Rensselaer Polytechnic Institute in 1996. He held postdoctoral positions at Los Alamos National Lab and Brown University. He then worked at Bell Laboratories in the Center of Mathematics Research before coming to Illinois. His research interests are in applied dynamical systems and differential equations. Professor Zharnitsky has two children.



Judy Zhu

Yanyun (Judy) Zhu joined the department as an assistant professor of actuarial science. Born in P.R. of China, she earned her B.E. at Tsinghua University in 1991, her M.S. in Finance in 2001 and Ph.D in Actuarial Science, Risk Management and Insurance in 2003 at the University of Wisconsin-Madison. Professor Zhu has been an ASA since 2001 and is working toward an FSA designation. Research interests include actuarial science, individual and institutional investments, pension and social security, insurance underwriting, risk control and management. Her personal interests include playing tennis, swimming, and jogging. She enjoys classical music and is now learning to play the piano.



Emre Alkan

Emre Alkan, originally from Istanbul, Turkey, joined the department this fall as a J. L. Doob Research Assistant Professor. He received his Ph.D. from the University of Wisconsin at Madison in 2003. His research interests are analytic number theory and modular forms. Alkan's thesis title was "Multiplicative Number Theory with Applications to Modular Forms and Enumeration of Groups." In his free time he likes to read about geographical properties of different places on earth, ecology and astronomy.

Christian Haesemeyer joined the department as a J.L. Doob Research Assistant Professor. He grew up in Germany, where he received a Diploma in Mathematics from Bonn University in 1999. He then went on to work on his Ph.D. at Northwestern University, receiving it in 2003. His research interests are in algebraic K-theory and the connections of algebraic geometry and topology. When not doing mathematics, Christian enjoys reading just about anything and watching the Cubs finally win some games.



Christian Haesemeyer

Eun Soo Lee, born and raised in Seoul, Korea, came to the United States for graduate school and received her Ph. D. at Massachusetts Institute of Technology in 2003 under the direction of Tomasz Mrowka. Her thesis work was on the Khovanov invariant, which is an invariant of knots and links. Lee joined the department this fall as a VIGRE Research Assistant Professor. She is interested in clarifying Khovanov invariant for the moment, and has a general interest in geometric topology. Away from mathematics, she enjoys sewing and baking. *Funding for the VIGRE research assistant professor appointments comes from the VIGRE grant received by the department from the National Science Foundation.*

New cooperative research and degree program established

A cooperative research program, approved this fall, will foster collaborative activities between the UIUC Department of Mathematics and the Department of Mathematics at the University of Goettingen. This program will provide opportunities for exchange visits of faculty members and graduate students for various lengths of time from a week to a number of months. The faculty members coordinating these activities are Dr. Joseph Rosenblatt, Professor and Chair of the UIUC Department of Mathematics and Dr. Manfred Denker, Professor and Chair of the Institute of Mathematical Stochastics. They will codirect and coordinate this program.

The purpose of this program is to make possible and to institute the exchange of graduate students between the two universities on a continuing basis. The students

will participate in a Cooperative Master's Degree Exchange Program leading to the awarding of a Master's Degree in mathematics at each institution, after students complete non-overlapping degree requirements over a two-year period of study.

This exchange program aims to encourage and promote research and teaching in mathematics. For example, Professors Rosenblatt and Denker are using the program to help to develop a research group employing methods from ergodic theory, dynamical systems, probability theory and fractal geometry. This will encourage Ph.D. students to join the program and to obtain an overview of the analytical methods in these areas, methods which are in great demand in modern technology and science.

Department welcomes 43 new graduate students this fall

Forty-three new graduate students joined the department this fall from around the world coming from China (7), Czech Republic (1), Hong Kong (2), Korea (4), Romania (1), Taiwan (4), Thailand (1), Turkey (2), United Kingdom (1), USA (19), and Yugoslavia (1). This brings the total number of graduate students in the department to 203 (147 male, 56 female).

Eight of our incoming students were awarded fellowships. The new VIGRE Fellows are Laura Chasman (Cal Tech), Timothy Cobler (Cal State), David Lipsky (MIT), Jason McCullough (Michigan State) and Tony Se (Univ. College London). Ricardo Astudillo

(University of Illinois) was awarded a GAANN fellowship. New students receiving University Fellowships are international students Qi Liu (China University of Science & Tech) and Ali Yildiz (Middle East Tech University). Martha Teklu (University of Illinois) received a Graduate College Fellowship.

Twenty-three students were awarded Ph.D. degrees in May 2003, December 2002 and October 2002. At least eighteen found employment with ten of the eighteen receiving postdoctoral fellowships at prestigious institutions.

Research experiences for graduate students

During the Spring 2003 semester, the department's Graduate Affairs Committee, under the leadership of Professor John D'Angelo, developed a summer research program targeted towards first and second year graduate students in mathematics. The program was titled "Research Experience for Graduate Students" (REGS). The National Science Foundation agreed to finance the domestic portion of the project through a supplement to the department's VIGRE program. This funding helped to finance the REGS program this last summer and will

help to finance next summer's program. Twelve U.S. students and eight international students participated this past summer. In general, one or two students were paired with a faculty member who designed a project on which the students worked. The largest group (4) worked under the direction of Professor Dan Grayson on a general problem in algebraic K-theory. All four are co-authors on a paper that has been submitted for publication. In all it is expected that six to eight students will be co-authors of articles as a result of summer REGS.

CID study looks at doctoral education at American universities

The Carnegie Foundation for the Advancement of Teaching has begun a five-year study, the Carnegie Initiative on the Doctorate (CID), aimed at improving doctoral education at American universities. Physicist and former Provost George Walker from Indiana University was appointed to direct the CID. The Carnegie Foundation has selected 51 departments from six different disciplines to be partners in the CID, and 34 additional allied departments. The Department of Mathematics at Illinois is one of eight partner mathematics departments. The other mathematics departments are Michigan, Ohio State, Duke, Chicago, SUNY Stony Brook, Southern California, and Nebraska.

Representatives from the partner departments participated in a convening meeting at the Carnegie Foundation in July 2003. John D'Angelo (Professor) and David Murphy (graduate student) represented Illinois at this meeting. They made presentations about the graduate program and participated in 3 days of discussions. The eight mathematics departments will continue discussions

and hope to obtain funding for some bold initiatives to improve graduate programs in mathematics.

Three other units at UIUC are now involved in the CID: Educational Psychology, Neurosciences, and History. Representatives from these departments along with our department will soon meet with Provost Herman and Dean Wheeler of the Graduate College to discuss the CID. Both old and new ideas from faculty, students, and alumni are welcome. Send comments to John D'Angelo (jpda@math.uiuc.edu) or to cid@math.uiuc.edu.

The Carnegie Foundation was chartered by an act of Congress in 1906. Its distinguished history includes such diverse achievements as the creation of the Teachers Insurance and Annuity Association (TIAA), the Flexner Report on Medical Education, and the founding of the Educational Testing Service (ETS). The Foundation has long been a leader in efforts to provide federal support for education. Lee Shulman, President of the Carnegie Foundation, has written that the Foundation is "committed to the kinds of thinking that lead to responsible action where intelligence and integrity combine."

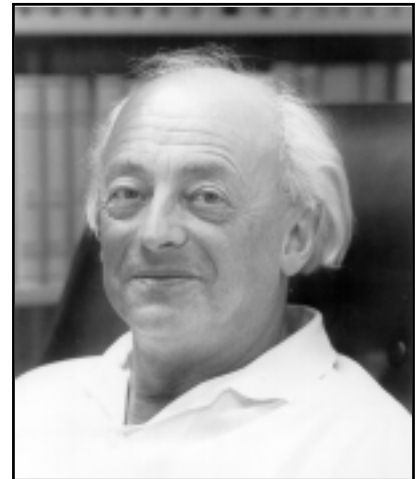
Illinois Journal of Mathematics publishes Baer Centenary Volume

The *Illinois Journal of Mathematics* is publishing a special volume to mark the centenary of the birth of Reinhold Baer (1902-1979), an influential figure in the development of algebra and geometry in the first half of the twentieth century and a founding editor of the *IJM*.

Reinhold Baer was a member of the UIUC Department of Mathematics from 1938 to 1955, when he returned to his native Germany to accept a Professorship at the University of Frankfurt. Baer had twenty Ph.D. students at Illinois, including such well-known names as R.A. Beaumont, P.F. Conrad, D.G. Higman and P. Dembowski.

The volume, edited by UIUC Professors Phillip Griffith and Derek Robinson, features 39 invited articles by prominent mathematicians in areas to which Baer has contributed. Also included is a slightly edited reprint of an obituary by K.W. Gruenberg, which was originally published in the *Bulletin of the London Mathematical Society* and gives an in-depth description of Baer's life and mathematical work.

The "Baer Centenary Volume" is being published both as a double journal issue (Spring/Summer 2003), and as a separate book that will soon be made available for purchase by individuals and libraries at a nominal cost. In addition, like all *IJM* articles, the papers in the Baer Volume are available electronically, in pdf and postscript formats, under the *IJM* website at <http://www.math.uiuc.edu/ijm/baer>.



In Memoriam

ROBERT GARDNER BARTLE (1927 – 2003)

Robert G. Bartle, distinguished mathematician, educator and author, died on September 18 at his home in Ann Arbor, Michigan, where he has resided since 1986. The cause of death was mantle cell lymphoma. He is survived by his wife of twenty-one years, Carolyn Bloemker Bartle, and his two sons from a previous marriage: James, who is General Counsel for the Kansas Department of Revenue, and John, an Associate Professor of Public Administration at the University of Nebraska in Omaha. There are five grandchildren.



Bob Bartle was born in Kansas City, Missouri, on November 20, 1927. He obtained his undergraduate education at Swarthmore College in Pennsylvania, graduating with Highest Honors and Phi Beta Kappa in 1947. He pursued graduate studies at the University of Chicago and was awarded the Ph.D. in Mathematics in 1951. His doctoral thesis was directed by Professor Lawrence Graves.

He spent the years 1951–1955 at Yale University, the first year as a postdoctoral fellow of the Atomic Energy Commission. He participated in a project that resulted in the 3-volume, 2592 page treatise *Linear Operators*, under the authorship of Nelson Dunford and Jacob Schwartz with elaborate notes and remarks written by William Bade and Robert Bartle. The volumes were published in 1958, 1963 and 1971. It is the standard reference in its field and was awarded the AMS Steele Prize in 1981.

In 1955, he joined the faculty at the University of Illinois at Urbana-Champaign. He was an outstanding teacher, pursued research in the theory of linear operators, real analysis and integration theory, and served on numerous committees. He was Acting Head of the Department of Mathematics in 1971 and Associate Head in 1979-1980. He traveled extensively and was a Visiting Professor at the University of California at Berkeley (1961-62), Cambridge University in England (1968-69), the Romanian Academy at the Institute of Mathematics in Bucharest (spring, 1974, and summer, 1980), Georgia Institute of Technology (1975-76), and Imperial College, University of London (fall, 1983). In addition, he lectured in over a dozen countries. He traveled to India to work on educational projects in 1968, 1970 and 1973.

Professor Bartle's strong interest in the writing and communicating of mathematics led to a distinguished career as editor and author. From his classroom teaching to his published books, he was noted for clarity and elegance of style. He directed the dissertations of fifteen doctoral students, all of whom learned to write as well as create mathematics. He served as managing editor of the *Illinois Journal of Mathematics* in the years 1964-69 and again in 1985-86. In 1976-78 he served as Executive Editor of *Mathematical Reviews*, with editorial offices in Ann Arbor, Michigan. He returned to that position in the years 1986-90. Professor Bartle retired from the University of Illinois in 1990 and accepted a teaching position at Eastern Michigan University in Ypsilanti where he remained active in teaching and writing for a number of years.

He wrote many scholarly papers in mathematics, but his exceptional talent for writing is most apparent in his books. His first book, *The Elements of Real Analysis*, was published in 1964 and the second edition in 1976. It was translated into Spanish, Portuguese and Arabic. *The Elements of Integration* was published in 1966. *Calculus*, coauthored with C. Ionescu Tulcea, appeared in 1968, followed by *Honors Calculus* in 1970. *Introduction to Real Analysis*, with coauthor Donald R. Sherbert, was first published in 1982, followed by a Spanish translation, and the third edition appeared in the year 2000. His 1996 award winning paper, *Return to the Riemann Integral*, appeared in the American Mathematical Monthly. His final book, *A Modern Theory of Integration*, is a 458-page treatment of the Henstock integral published in the Graduate Studies in Mathematics series by the AMS in 2001.

Along with his talents as a mathematician and writer, Bob Bartle was a warm and generous person with a marvelous sense of humor. He played the French horn and loved the singing and grandeur of opera. He was always happy to help a colleague, encourage a student, and give time to a friend. His family and his many friends around the world will miss him deeply.

***IJM* low-cost leader among math journals**

As described in articles in the Fall 2002 and Spring 2003 issues of *Math Times*, the *Illinois Journal of Mathematics* has undergone a major overhaul of its operation during the past several years, aimed at saving costs by streamlining the production and distribution process, while at the same time raising the technical and scientific quality of the journal.

These changes have led to drastically reduced production costs, a saving that has been passed on to subscribers. As a result, the *IJM* has become the low-cost leader among mainstream math journals, as shown by the most recent AMS Journal Price survey. Among all 263 print journals included in the survey, the *IJM* was ranked 5th lowest in terms of price per page, and lowest among “mainstream” mathematical journals (the only journals with a lower cost per page figure are two publications by the Institute of Mathematical Statistics, the *Notre Dame Journal of Formal Logic*, and *Demonstratio Mathematica*, a journal published by Warsaw University).

The price per page for the *IJM* is half that of the *Transactions of the American Mathematical Society*, one fourth that of the *Journal of the London Mathematical Society*, and one tenth that of some well-known commercial journals, such as *Inventiones Mathematicae*.

Other measures also put the *IJM* at or near the bottom of the price/value range. For instance, the annual subscription price for the *IJM* is second lowest among all print journals publishing more than 1000 pages per year (behind *Annals of Applied Probability*); and the *IJM* is one of only 28 out of 263 print journals whose cost per page has decreased over the past 8 years, and it has one of the highest rates of decrease among those journals.

The AMS Journal Price Survey is available at <http://www.ams.org/membership/journal-survey.html>, and in sorted form (by price per page) at http://www.mathematik.uni-bielefeld.de/~rehmann/BIB/AMS/Price_Per_Page.html. The latter site, created by Ulf Rehmann of Bielefeld University, also contains links to other sorted versions of the AMS Survey.

Although operating under the auspices of the University of Illinois, the *IJM* is supported entirely through subscription costs and receives no subsidies from the university or the Department of Mathematics. In fact, the *IJM* provides a significant benefit to the university in the form of exchange subscriptions to several hundred journals which the Mathematics Library receives at no cost.

By keeping its subscription costs low, the *IJM* has been able to avoid erosions in subscriptions that many higher priced publishers have experienced in recent years. As a result, the *IJM* is in excellent financial shape and one of the few units within the University of Illinois that are not suffering from the current economic down turn.

The table below shows the subscription prices of some well-known mathematics journals. Page and price figures are for the year 2001, the most recent year for which complete data are available.

Journal	Publisher	Pages/year	Price/year (US\$)	Price/page (US\$)
Illinois J. Math.	UIUC Dept. of Math.	1420	135	0.10
Indiana Univ. Math. J.	Indiana Univ. Math. Dept.	2177	225	0.10
Pacific J. Math.	Pacific J. Math.	2551	310	0.12
Ann. of Math.	Princeton Univ. Press	1606	235	0.14
Michigan Math. J.	Univ. Michigan Math. Dept.	620	120	0.19
Trans. Amer. Math. Soc.	Amer. Math. Soc.	5184	1251	0.24
Canad. J. Math.	Canad. Math. Soc.	1339	460	0.34
J. London Math. Soc.	London Math. Soc.	1536	700	0.45
Duke Math. J.	Duke Univ. Press	3040	1390	0.46
Compositio Math.	Kluwer	1807	1214	0.67
J. Reine Angew. Math.	Walter de Gruyter	2811	2295	0.82
Invent. Math.	Springer-Verlag	2628	2763	1.05
Comm. Pure Appl. Math.	Wiley	1520	1995	1.26

Department of Mathematics Contribution Form

There are many different ways that you can support the Department of Mathematics in its educational and research missions. One way to do this is by contributing to funds at the University of Illinois Foundation that are meant specifically for the Department of Mathematics. Below is a list that shows the variety of individual funds available. Some of these funds are unrestricted in use, while others provide support for the library, funds for maintaining Altgeld Hall, or funding for scholarships or fellowships for undergraduate or graduate students.

If you would like more information about a particular fund, please contact **Joseph Rosenblatt**, Chair, Department of Mathematics (217-333-3352, jrslbltt@math.uiuc.edu); **Robin Fossum**, the Department of Mathematics representative at the University of Illinois Foundation (217-333-7344, fossum@uiuc.edu); or **David Bruns**, LAS Development (217-333-7108, dbruns@uiuc.edu). We enthusiastically welcome your interest in the Department of Mathematics.

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

- | | |
|--|---|
| <input type="checkbox"/> Actuarial Science Fund (#3030225)
<input type="checkbox"/> Allstate Foundation Actuary (#3030342)
<input type="checkbox"/> Allstate Minority Actuary [§] (#3040110)
<input type="checkbox"/> Altgeld Hall Restoration (#3030316)
<input type="checkbox"/> Bateman Fellowship [†] (#3071248)
<input type="checkbox"/> Bateman Prize* (#3071254)
<input type="checkbox"/> Benzinger Memorial (#3071466)
<input type="checkbox"/> Bourgin Fellowship [†] (#3071526)
<input type="checkbox"/> Brahana and Math Instructor Award* (#3075500)
<input type="checkbox"/> Colleen Kilker Memorial Fund (#3033546)
<input type="checkbox"/> Kuo Tsai Chen Award* (#3071574)
<input type="checkbox"/> Coble Memorial Lectureship (#3075820)
<input type="checkbox"/> Cogdal Math Library (#3071546)
<input type="checkbox"/> Elizabeth R. Bennett [§] (#0062778)
<input type="checkbox"/> Goldberg Memorial Math Fund (#3031593)
<input type="checkbox"/> Greenwood and Trjitzinsky Prize* (#3041392) | <input type="checkbox"/> Healy Jr. Fund (#3072182)
<input type="checkbox"/> Hogan Scholarship [§] (#3072301)
<input type="checkbox"/> Hohn-Nash Scholarship [§] (#3072826)
<input type="checkbox"/> Mathematics Fellowships [†] (#3042439)
<input type="checkbox"/> Mathematics Library Fund (#3032384)
<input type="checkbox"/> Mathematics Library Endowment (#30372678)
<input type="checkbox"/> Mathematics Unrestricted Funds (#3032346)
<input type="checkbox"/> Nancy Anderson Library Endowment Fund (#3071042)
<input type="checkbox"/> Number Theory Fund (#3032964)
<input type="checkbox"/> Parker Memorial* (#3073141)
<input type="checkbox"/> Reiner Memorial Award* (#3073289)
<input type="checkbox"/> Scharck Student Aid [†] (#3073396)
<input type="checkbox"/> Suzuki Memorial (#3034081)
<input type="checkbox"/> Trjitzinsky Memorial Lectureship (#3073810)
<input type="checkbox"/> Jerry Uhl NetMath Fund [§] (#3043558)
<input type="checkbox"/> Barbara J. Waldemar [†] (#0062266) |
|--|---|

[†]support for fellowships [§]support for scholarships/student aid *support for prizes/awards

Name _____ Telephone _____

Street Address _____

City _____ State _____ Country _____ Zip Code _____

- Enclosed is my check for \$ _____ made payable to UIF/Department of Mathematics.
- I authorize the U of I Foundation to collect my gift of \$ _____ through the credit card checked.
- Visa MasterCard Discover American Express

Card Number _____ Exp. Date _____ Signature _____

This is a joint gift. Please also credit: _____

May we add your name to our published list of donors? yes no

Contributions should be sent to:
 The University of Illinois Foundation, Harker Hall, 1305 W. Green Street (MC-386), Urbana, IL 61801; (217) 333-0810.
 5M 5TJ

Training underway for Putnam contest

This fall, the UIUC Department of Mathematics is again offering informal training sessions for the William Lowell Putnam Competition. The sessions, organized by Professors A.J. Hildebrand, Denka Kutzorova, and Jeremy Tyson, include a systematic introduction to problem solving techniques and a series of practice contests.

The William Lowell Putnam Competition is a math problems contest for undergraduates in the U.S. and Canada, held annually on the first Saturday of December. The "Putnam", as it is usually called, is the best-known and the most prestigious contest of its kind. About 3000 students from 500 colleges participate in the Putnam each year.

The Putnam was featured in a recent article in *Time Magazine* (December 23, 2002), which dubbed it "the world's toughest math contest." The difficulty of the Putnam is evidenced by the fact that the median score typically hovers around 1 point out of 120 points and that a score of 60 points is usually enough to place among the top 2 percent. Perfect scores on the Putnam are extremely rare; the highest scores are usually around 100 points.

While the Putnam is an individual contest, it also has a team component: Each participating school can nominate a "Putnam team" of three students, whose ranks on the Putnam determine the school's team rank. The top ranking teams usually are those of elite schools like Harvard, MIT, or Princeton, and it is rare for a non-elite school to crack the top ten or even the top twenty. The average rank of the UIUC Putnam team during the past ten years was 37. However, the team has been steadily improving in recent years, culminating in a 14th place in 2001 and a 13th place in 2002. Last year's 13th place was the highest ranking of a UIUC team since 1990, and it placed our team first among Big Ten universities, third among public universities in the U.S. (behind Berkeley and Colorado State), and ahead of a number of elite schools, including the University of Chicago, Yale, and Cornell.

For more information about the Putnam contest and related activities, visit the UIUC Math Contests webpage, <http://www.math.uiuc.edu/contests.html>.

Department of Mathematics
University of Illinois at Urbana-Champaign
273 Altgeld Hall (MC-382)
1409 W. Green Street
Urbana, IL 61801