Math Times

Department of Mathematics *Spring 2003*

From the Department Chair

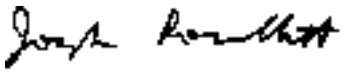
These are difficult times for education in most of our country. In Illinois, state funding for higher education is being significantly reduced. This has required us to make changes in how we teach some of our undergraduate classes. It also means a smaller entering class of graduate students and less hiring this year than in the past. So, while this is not the worst of times, it is certainly a challenging one in which to maintain and develop our academic enterprise.

On another level, these are good times. This year we hired two new tenure-track faculty members: Vadim Zharnitsky, an experienced applied mathematician with broad interests in differential equations and mathematical physics; and Yanyun Zhu, a new actuarial science faculty member who is an associate of the Society of Actuaries and is finishing her Ph.D. degree this spring at the University of Wisconsin. We are still working on an additional recruitment to support the actuarial science program. We have hired three new postdoctoral faculty members: Emre Alkan (number theory, University of Wisconsin), Christian Haesemeyer (topology, Northwestern University), and Eun Soo Lee (geometry, MIT).

Our graduate program is vigorous and active. The VIGRE program site visit from NSF went very well and we have been recommended for the final two years of funding of our five-year grant. We have received additional funds so that there will be 15 graduate fellowships in both years, some additional funds for supporting new postdoctoral faculty members, and a new program for research experiences for graduate students (REGs) for both years. We are particularly excited about the REGs funding since it is in concert with our participation in the Carnegie Initiative on the Doctorate (CID) to study the Ph.D. degree in many disciplines and to develop new ideas and forms that will enhance our Ph.D. program. Prof. John D'Angelo, who together with Prof. Phillip Griffith wrote our CID grant application, will be our representative to the CID in this next year. If you have ideas about how to enrich or improve the doctoral program that you would like to share with us, please get in touch with Prof. D'Angelo.

Our undergraduate program continues to develop well. The new Honors Program has gotten off to an excellent start and plans are in place for revising and adjusting this program next year. New ways to introduce computation into differential equations and linear algebra courses are being studied. We are now negotiating to have more space in the basement of Illini Hall to be used as a multipurpose resource center for undergraduate students with tutoring, group work areas, and computing equipment available on a walk-in basis.

So budget woes notwithstanding, in many ways these are good times. Our students and faculty members are actively engaged in the educational and research discovery. New grants to support education and research have come to the department. With a large increase in the level of national support for mathematics, especially from NSF, we hope to see support for both our research and educational outreach proposals continue to grow. New undergraduate and graduate students continue to be attracted to our programs. Memorable experiences occur in our classrooms and seminars daily and mathematics continues to offer us an infinite vista of enticing adventures.



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Editor *Tori Corkery*
Asst. Editor *Sara Nelson*
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

Logic and Mathematics: connections and interactions May 21–25, 2003

An international conference entitled "Logic and Mathematics: Connections and Interactions" is being organized by members of the Illinois Department of Mathematics. The conference will be held on the UIUC campus May 21-25, 2003. A distinguished group of mathematicians from around the world will give hour talks. Invited speakers include Alexandru Buium, Gregory Cherlin, Ovidiu Costin, Nigel Cutland, Andrei Gabrielov, Ehud Hrushovski, Alexander Kechris, Pascal Koiran, Francois Loeser, Ted Odell, Bjorn Poonen, Thomas Scanlon, Zlil Sela, Katrin Tent, Simon Thomas, Anatoly Vershik, Alex Wilkie, Martin Ziegler, and Boris Zilber.

The aim of the meeting is to bring together mathematicians with an interest in and sensitivity to applications of mathematical logic. The focus will be on connections between logic and areas of mathematics such as algebraic and analytic geometry (complex, real, p-adic, including topics like motivic integration and o-minimality), diophantine geometry, algebraic groups, algebraic theories of differential equations, geometric group theory, geometry of Banach spaces, stochastic analysis, Borel equivalence relations, and so on.

The organizers are Professors Lou van den Dries, C. Ward Henson, Anand Pillay,and Slawomir Solecki. More information, including the program for the meeting,can be found on the department's logic program webpage at http://www.math.uiuc.edu/ResearchAreas/logic/conference/.

Great Plains Operator Theory Symposium May 28–June 1, 2003

The Great Plains Operator Theory Symposium (GPOTS) was first held at the University of Kansas in 1981 and was originally planned as a Mid-Western (or Great Plains) conference in Operator Theory. The GPOTS has now developed into one of the major annual conferences in Operator Theory and Operator Algebras, gaining high international recognition.

This year's event, the 23rd edition, will be held at the University of Illinois at Urbana-Champaign from May 28 to June 1. Organizers are Professors Florin Boca, Marius Junge, and Zhong-Jin Ruan. The emphasis will be on some active trends of research in the areas of C*-algebras, von Neumann algebras, operator spaces, free probability, non-commutative geometry and topology, and non-commutative harmonic analysis.

The main speakers will include W. Arveson (Berkeley), H. Bercovici (Bloomington), M. Dadarlat (Purdue), K. Dykema (Texas A&M), E. Effros (UCLA), G. Elliott (Toronto), E. Kirchberg (Berlin), P. Muhly (Iowa), G. Pisier (Texas A&M and Paris VI), M. Rordam (Odense), R. Smith (Texas A&M), M. Takesaki (UCLA), A. Van Daele (Leuven) and G. Yu (Vanderbilt). The program will also include a number of shorter invited and contributed talks.

Additional information on this event can be found at the conference website at http://www.math.uiuc.edu/gpots/.

Web of modularity, NSF-CBMS conference June 3–7, 2003

Professors Scott Ahlgren and Bruce Berndt received a grant from the National Science Foundation (NSF) through the Conference Board in the Mathematical Sciences (CBMS) to fund the NSF-CBMS regional research conference "The Web of Modularity" to be held at the University of Illinois from June 3-7, 2003. Five such awards were made nationwide this year. Since the NSF-CBMS series began in 1969, almost 300 such conferences have been held—this will be the first at the University of Illinois.

These conferences differ from standard meetings in several ways. Each five day meeting features a distinguished speaker who gives ten lectures in one sharply focused area of mathematical research; these main lectures are supplemented with lectures by other distinguished speakers.

The main speaker at the Illinois meeting will be Professor Ken Ono of the University of Wisconsin at Madison. Speakers at previous NSF-CBMS conferences include I. Kaplansky, A. Tarski, R. Penrose, H. Bass, W. Schmidt, W. Thurston, G. Andrews, B. Mandelbrot, and G. Shimura.

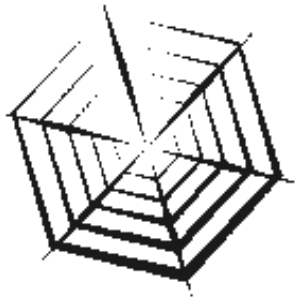
Professor Ono will give ten lectures centered around the diverse roles which modular forms play in various areas of mathematics related to number theory. The program will be filled out by five distinguished speakers from around the world: Jan Bruinier (Cologne), YoungJu Choie (Postech), Masanobu Kaneko (Kyushu), Winfried Kohnen (Heidelberg), and Ram Murty (Queen's). The conference will focus on a wide array of problems which can be addressed through the use of modular forms. These include, among others, problems from representation theory, partition theory, arithmetic geometry, the theory of *L*-functions, hypergeometric series, and combinatorics. Although these comprise a very broad array of topics in active areas of mathematical research, they share the feature that they can be understood using a unified set of techniques from the theory of modular forms.

The conference has attracted much attention; already well over $30,000 in support has been offered to participants (most of this support will go to graduate students and junior faculty members). It is expected that the meeting will attract well over 75 participants.

In keeping with the historical aims of the NSF-CBMS program, the goals of the conference are:

- To present an organized and motivated description of the important and diverse role which modular forms play in number theory and other areas of mathematics.
- To provide young mathematicians and newcomers to the field (particularly graduate students and post-docs) with an accessible account of important techniques, theorems, and open problems at the forefront of this area of research.
- To provide established researchers an opportunity to share their expertise and to interact with each other and with younger mathematicians.
- To strengthen regional ties among researchers working in areas connected to the themes of the meeting.
- To plan a scientific program which will lead to a published monograph of lasting importance to the wider mathematical community.

More information can be found at the conference website at http://www.math.uiuc.edu/cbms/.



Midwest Topology conference April 26, 2003

The Illinois Department of Mathematics hosted the Spring 2003 Midwest Topology Seminar on April 26, organized by Professors Matt Ando, Randy McCarthy, and Charles Rezk.

The Midwest Topology Seminar has been running since the 1960's, meeting three times a year. It has contributed to the sense of community among topologists in the region. This year's speakers were Daniel Biss (Chicago), Ernesto Lupercio (Wisconsin), Stephan Stolz (Notre Dame), and Mark Walker (Nebraska).

For further information, see the conference website at http://www.math.uiuc.edu/~mando/midwest/.

Illinois Journal of Mathematics implements new system of centralized electronic processing of papers

Now in its 47th year of operation, the Illinois Journal of Mathematics, which is headquartered at the UIUC Department of Mathematics, is among the leading institutional journals of mathematics. Following a successful overhaul of the production and distribution process two years ago, a similar overhaul of the editorial side of the Journal's operation was completed last year by implementing a sophisticated new system of centralized electronic processing of papers.

Under this system, nearly all transactions between authors, referees, editors, and the IJM office, are carried out electronically, using software to facilitate and largely automate routine chores such as record keeping and generating form letters. The system is inspired by one devised in the mid 1990s by Andrew Appel, a computer scientist at Princeton and the son of retired faculty member Ken Appel. The underlying software, however, consisting of about a dozen separate programs, was written from scratch.

The traditional processing of a paper submitted to a journal involves mailing of the manuscript back and forth between authors, editors, referees, and the journal's production office, a half dozen or more times. This process is very costly, both in terms of mailing costs and staff time needed to draft cover letters and to create and keep paper records at every stage of the process. Moreover, the multiple snail mailing of papers can add up to substantial delays in the processing of the paper, especially if some of the parties involved are located overseas.

Under the new system, the same process works as follows: If an electronic submission is received, the software automatically creates a database record of the paper based on the information contained in the submission, saves an electronic version of the paper into an appropriate directory for later retrieval, and forwards a copy of the submission to the Managing Editor, who then assigns one of the IJM editors to handle the paper. From this point onward the IJM Editorial Assistant, Debbie Broadrick, takes over and acts as intermediary between the author, the editor, and the referee, handling all necessary correspondence, using email whenever possible. This includes sending the paper (electronically) to the editor for instructions on handling the paper; sending the paper to a referee selected by the editor, following up with reminders as needed; receiving and acknowledging the referee's report and forwarding it to the editor for appropriate action; passing on the referee's report to the author; and informing the author of decisions made by the editor on acceptance or rejection of a paper. To facilitate this correspondence, programs are in place that generate form letters and ensure that all correspondence is saved into appropriate folders for easy retrieval and reliable record keeping.

As a result of these changes in the editorial processing of papers, the burden on editors has been significantly reduced and the processing of papers has become more streamlined and more timely. In addition, the centralized record keeping allows for easy data retrieval and automated generation of reports, such as lists of accepted papers.

The system has now been in place for nearly a year, and the feedback received has been very positive. Editors love the system as it eliminates the clerical chores that are usually associated with editorships and which are often reasons for potential editors to decline an offer of an editorship. Referees seem to be more responsive to email inquiries, and it now rarely happens that a referee does not respond at all to such an inquiry. Authors appreciate the speedier and more reliable processing of their papers that the system makes possible.

For a detailed description of the new system, see the webpage at http://www.math.uiuc.edu/~hildebr/ijmprocessing.html. For general information about the IJM, including full-text electronic access to articles published since 2001, visit the IJM website at http://www.math.uiuc.edu/ijm. To find out more about the history of the IJM, check out the permanent display in the Altgeld Hall Library, located in the back of the reading room, to the right of the circulation desk.

Math Times now on-line

The Math Times is now 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.

Faculty News Notes

Matt Ando was on leave in the Fall of 2002, supported by the Center for Advanced Study. He was a long-stay participant in the program "New Contexts for Stable Homotopy Theory" at the Newton Institute for Mathematical Sciences in Cambridge, England. He used the opportunity to learn what it is like to live in a 2 bedroom apartment with a family of four including a new baby. His advice to others tempted to try is, if possible, stay longer and rent a house.

In January 2003, **Robert M. Fossum** was invited to serve as doctoral defense opponent for the defense of Bjorn Johansson, Lund Institute of Technology, Center for Mathematical Sciences, Lund, Sweden. As the opponent, Fossum presented a lecture using the thesis titled "Computer Vision Using Rich Features, Geometry and Systems" as a basis. After presenting the results of the thesis, Fossum posed several questions to the candidate. Questions were then posed by members of the thesis jury and members of the audience. The jury voted to award Mr. Johansson his doctorate following the presentation. Chair of the thesis committee was Professor Jan-Olaf Eklundh from Stockholm. Other members were Professor Robert Forschheimer from Linkeping and Professor Jens Michael Carstensen from DTU, Denmark. In addition to participating in the thesis defense, Fossum gave lectures at the University of Copenhagen and Lund University on new results concerning the invariants of the additive group.

Julian Palmore lectured at The Citadel, Charleston SC, on Mathematical Issues in National Security on March 18, 2003. He was appointed to editorial boards for the journals Defense and Security Analysis, Central European Journal of Mathematics, and appointed associate editor of Military Operations Research.

He accepted an invitation to participate and speak in the Johns Hopkins University Center for Strategic Education Workshop on Teaching Strategic Studies, Basin Harbor VT (June 16-20, 2003). Palmore was also invited to lecture at the 11th International Conference on Finite and Infinite Dimensional Complex Analysis, Chiangmai, Thailand (July 27-31, 2003).

He served on the NSF/Oak Ridge Associated Universities Panel on Mathematical Sciences for the National Science Foundation Graduate Research Fellowship Program in Arlington VA, in February 2003. This was his second year of a three year term on the panel. He was appointed to the U.S. General Accounting Office Panel of Experts on Drinking Water Security (November 2003) and was chair of the AMS Menger Prize Committee and also Chair of the AMS panel of judges at the Intel International Science and Engineering Fair that is being held in Cleveland in May 2003. Professor Palmore also gave a talk at the AMS special session on holomorphic dynamics in Bloomington, Indiana, in April.

Derek Robinson visited the University of Valencia, Spain, for a week in March 2003. He gave a lecture entitled "Permutability properties of subnormal subgroups in finite groups." He also served as a member of the tribunal for a doctoral exam.

New faculty

Dirk Hundertmark joined the department as an assistant professor in January 2003. Hundertmark was born in Düsseldorf, Germany and grew up in Bavaria. He studied physics at the Friedrich Alexander Universität in Erlangen, Germany (Masters, 1992) and received his Ph.D. in mathematics from the Ruhr Universität Bochum, Germany, in November 1996.

After receiving his Ph.D., he visited the mathematics departments in Oslo, Norway and Regensburg, Germany (January 1997 to August 1997) for 4 months each. With the help of a grant from the Deutsche Forschungsgemeinschaft (DFG), he was able to go to the Physics Department at Princeton University for 2 years (September 1997-August 1999). Starting in September 1999, he was Taussky-Todd instructor at Caltech, Pasadena, for three years. For Fall 2002 semester he visited the Mittag-Leffler Institut in Djursholm, Sweden, during the special program "Partial Differential Equations and Spectral Theory." His research interests are in mathematical physics, especially analytic and probabilistic methods and problems motivated by quantum mechanics.

His personal interests include cooking, sailing, and building and flying remote controlled model airplanes.

Achievements

Each spring the department presents awards for outstanding achievement to undergraduate students, graduate students, and staff. This year's award ceremony was held April 29, 2003 in Altgeld Hall.

GRADUATE AWARDS

Bateman Prize in Number Theory

The fifth recipient of the Bateman Prize in Number Theory is **Song Heng Chan**. Chan is completing his second year of graduate studies at the University of Illinois under the direction of Professor Bruce Berndt. Chan has submitted seven papers for publications on sums of squares, cranks and dissections, and q-series. He is a graduate of the National University Singapore, where his undergraduate advisor was Professor Heng Huat Chan (no relation), who received his Ph.D. from the University of Illinois in 1994.

The Bateman Prize in Number Theory is awarded annually to honor Paul T. Bateman, a world renowned number theorist who served as Head of the Mathematics Department at Illinois for fifteen years, and is awarded in recognition of outstanding research in number theory.

Irving Reiner Memorial Award

The Reiner Prize is awarded to one or more graduate students in recognition of outstanding scholastic achievement in the field of algebra. This year the award was given to two students: **David Murphy** and **Amador Martin-Pizzaro.**

David has received university fellowship for the past several years. He is writing his thesis under the direction of William Haboush and Robert Fossum. He has joint work accepted for publication in the proceedings of the AMS and is now considered a real expert in topics on spherical varieties. In his paper, David solved several problems in the theory of moduli of principal G-bundles.

Amador is an outstanding graduate student. He has received a university fellowship for each of the last two years. (It is extremely difficult for international students to get such support). He already has joint work with his advisor Anand Pillay, which has been submitted for publication in the *Journal of the London Mathematical Society*. His main research interest circles around algebraic curves over supersimple fields. In his thesis work Amador has successfully applied model-theoretic methods to algebra as well as techniques from hyper elliptic curves and moduli spaces.

Kuo-Tsai Chen Prize

The Kuo-Tsai Chen Prize has been awarded to **Xiaosheng Li**. Li is a sixth-year student studying the theory of quasiconformal mappings and discrete groups under the direction of Professor Aimo Hinkkanen. Li was awarded this prize for developing in his thesis a new method for studying geometric density properties of limit sets of Schottky-type quasiconformal groups. The approach is very general and unlike any previous method, allows the consideration of possibly non-simply connected domains, such as tori rather than only topological balls, in the definition of the groups.

The Chen Prize was established by the family and friends of Professor K.-T. Chen and is awarded in alternate years in recognition of outstanding achievement by a graduate student whose research interests lie in the area of the relationship between geometry and analysis or the relationship between algebra and analysis.

Hohn-Nash Award

This year the award is shared by two graduate students **Seog-Jin Kim** and **Eric Landquist.** Seog-Jin is completing his thesis under the direction of Professor Douglas B. West. His research has focused on graph coloring problems, an optimization problem with many applications in problems of scheduling and resource allocation. He is the coauthor of four papers submitted to international journals and was a speaker in an AMS special session on Extremal Combinatorics held in Bloomington in April 2003.

Eric Landquist is a second year student with interests in computer algebra, computational number theory, and cryptography. He is also a research assistant in a cryptography project supervised by Professors Iwan Duursma and Andreas Stein. Eric has made strong contributions on sieving methods regarding factoring and imaginary quadratic fields.

The Hohn-Nash Award was established by Gene Golub and named in honor of Professors F. Hohn (Mathematics) and J.P. Nash (Computer Science). It is given in recognition of outstanding scholarship and promise in applied mathematics.

Department TA Instructional Award

Four TA Instructional Awards were presented this year. The recipients are **Alison Champion, Micah James, John Maki**, and **Joseph Mileti**.

Alison Champion's advisor is Professor Nigel Boston and her research area is error-correcting codes, more specifically low-density parity check codes. Micah James is studying algebraic number theory with Professor Leon McCulloh. John Maki's advisor is Professor Robert Muncaster and his current research topic is mathematical models of DNA. Joe Mileti is studying computability theory with Professor Carl Jockusch.

A committee of faculty, graduate students, and undergraduate students determines the winners. Awards are based on classroom observation, comments from students, and a written report by the nominees describing their teaching goals.

UNDERGRADUATE AWARDS

H.R. Brahana Prize

David Dueber is this year's recipient of the Brahana Prize. He is a double major in math and chemical engineering, and has participated in the department's Research Experiences for Undergraduates (REU) program. He has received A's in all but one of his math courses, and earned an A as a junior in the graduate algebra course. He ranked 116th nationwide in the 63rd annual William Lowell Putnam Competition held in December 2002.

The Brahana Prize is awarded to a graduating senior in any discipline with a distinguished undergraduate career in mathematics. The fund was established to acknowledge the contributions of Professor H. Ray Brahana, a member of the mathematics faculty from 1920 to 1963, to the department and the university.

Greenwood and Trjitzinsky Prize in Undergraduate Mathematics

The Greenwood and Trjitzinsky prize is shared this year by **Ricardo Astudillo** and **Dusty Grundmeier**. Ricardo did a VIGRE REU with Professor A.J. Hildebrand on Thue-Morse sequences. In addition he has been the president of the mathematics club and an undergraduate TA in mathematics.

Dusty did a VIGRE REU with Professor John D'Angelo on polynomials invariant under a given action by a cyclic group. He also worked on an early version of the problem with Professor Bruce Reznick.

The Greenwood and Trjitzinsky Prize recognizes the best paper in mathematics written by an undergraduate.

Salma Wanna Memorial Award

Ben Lundell, a sophomore, received the Salma Wanna Award. He has been working this year with Dr. Christopher French on an REU involving knot theory and colorings of knots. He received an A+ and a "terrific" comment from his algebra instructor. On his own he arranged to meet a visitor to discuss her paper in knot theory.

The Salma Wanna Award was established in 1985 in memory of Salma Wanna who received her Ph.D. in 1976. It is given for exceptional performance in mathematics to the most outstanding continuing student. The prize committee consults with mathematics instructors and bases its decisions on instructor comments as well as outstanding success in course work.

Undergraduate Major Awards

In 1996 the Department of Mathematics established prizes in the four undergraduate majors. A student may be selected once in his/her undergraduate career for such a prize.

Betsy Jenkel received the Undergraduate Major Award in Actuarial Sciences. She has already passed three actuarial exams and has done excellent work in the classroom. She is a past president of the Actuarial Science Club.

David Smyth received the Undergraduate Major Award in Mathematics. He has a dazzling record of all A's including many graduate level math courses. He did outstanding work in his real analysis course. He has spent a semester in Budapest, and will go to Cambridge, England, for the Tripos next year on a Churchill Scholarship.

Matthew Marquissee received the Undergraduate Major Award in Mathematics and Computer Science. He has established an excellent record for himself with all A's in his math and CS courses.

Marina Gitlin received the Undergraduate Major Award in the Teaching of Mathematics. For the second year she has an appointment as an undergraduate TA and she conducts a recitation section of Math 120 at present. She has A's across the board including junior/senior courses in algebra and analysis.

Achievements

COLLEGE AND CAMPUS AWARDS

Richard Laugesen has been awarded the College of Liberal Arts and Sciences Dean's Award for Excellence in Undergraduate Teaching and the Campus Award for Excellence in Undergraduate Teaching. His commitment to teaching has had a huge impact on the quality of education he offers for both his students and for the department as a whole. Laugesen was involved in the development of the department's new mathematics honors program and was a key figure, along with Peter Brinkmann and Robert Jerrard, in designing the IODE project, a computer program that helps students visualize the solution to problems that are too complex to be solved directly. The IODE program is now used by many of the regular sections of Math 285. A former student says of Professor Laugesen, "His interest in the students' achievements, availability to students, and teaching style of guiding the thinking process make him a distinctive and valuable teacher."

Mark Anderson has been awarded the College of Liberal Arts and Sciences Award for Excellence in Undergraduate Teaching for Graduate Teaching Assistants. He also received Honorable Mention for the Campus Award for Excellence in Undergraduate Teaching. Anderson taught calculus and linear algebra with and without *Mathematica*, served as head TA for FIN 254 (a class of over 500 students), taught in the Merit Workshop, assisted in creating a summer research experience for undergraduates (REU) to study the work of John Nash, mentored incoming TA's, and judged oral competitions of the state high school math contest. Anderson uses many different techniques to keep students interested in learning math from arranging to visit the CAVE virtual environment at Beckman, assigning special web assignments, or passing out candy to "stimulate the anterior calculus lobe" before a test. A student writes: "I learned not only how to do mathematics but more importantly I had fun in the work I was doing."

Anderson received his Ph.D. in Mathematics in December 2002 under the direction of Robert Muncaster.

David Smyth receives Churchill Scholarship

David I. Smyth, a senior in mathematics and a native of Urbana, has won a Churchill Scholarship—one of eleven such awards in the nation this year—to study at Cambridge University, England, for Part III of the Mathematical Tripos, a classic preparation for a professional career in the mathematical sciences. According to the Churchill Foundation of the United States, David's proposed course of study is the "most sought-after program, and the competition for winning a scholarship for that program is especially intense." This is the second time in the span of three years that such a distinction has come to the UIUC Department of Mathematics; the earlier recipient of the same award for the same program, Brad Friedman, did extremely well in it and is now a graduate student at MIT.

Smyth will graduate this summer with a perfect GPA, both here and during summer courses at Notre Dame University and in Budapest, Hungary. Among previous honors he has won are a National Merit Scholarship in 1999; a Barry M. Goldwater Scholarship in 2002; and the Brahana Prize as the most outstanding undergraduate in mathematics in the same year. Last summer he participated in the Director's Summer Program at the NSA, a highly competitive summer research program for undergraduates, and had an outstandingly successful experience there.

Smyth has been an active participant in local problem contests, and as a member of the UIUC Putnam Contest team contributed to its remarkable success during the past two years—a 14th place among more than 300 colleges in the U.S. and Canada in 2001, and a 13th place in 2002.

Outstanding Department Non-Academic Staff Award

Lori Dick, Assistant to the Director of Graduate Studies in the department, received this year's Non-Academic Staff Award. Lori's career in the department began 18 years ago. Her job responsibilities have been steadily upgraded over this period and she has served as an assistant to the Director of Graduate Studies for more than a dozen years under four different directors. Amongst her many duties she manages the department timetable, processes more than 350 graduate applications each year, and organizes New Student Orientation Week. She recently completed the requirements for the Fast Track and Professional Supervisor Certificate.

The staff award recognizes outstanding staff contributions to the department and the university through leadership and work excellence. This is the fourth year that this award has been given.

Bateman Fellowship awarded

Michael Bush has received a Bateman Fellowship for 2003-2004. He is pursuing a Ph.D. in algebraic number theory under the direction of Nigel Boston. His work concerns the structure of unramified Galois groups and bounds on root discriminants. He solved an old question of Stark, work that will appear in the *Journal of Number Theory* and on which he has so far lectured at Michigan and in the Five Colleges Seminar at Amherst. The Bateman Fellowship is named for Emeritus Professor Paul Bateman who joined the UIUC Department of Mathematics in 1950. He served as department chair from 1965-1980.

UIUC Team places 13th in Putnam Competition

3349 students from 476 colleges and universities in the United States and Canada participated in the 63rd annual William Lowell Putnam Competition, held December 7, 2002. The team contest was won by Harvard, with Princeton and Duke taking second and third place. The UIUC Putnam team, consisting of **David Dueber**, **Geoffrey Levine**, and **David Smyth**, and coached by Professors Hildebrand and Zaharescu, placed an excellent 13th, the highest ranking of a UIUC Putnam Team since 1990. For more information visit the department's math contests webpage at http://www.math.uiuc.edu/contests.html.

Undergraduate Math Contest has record turnout

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

This year's contest took place April 12, 2003, and attracted twenty-six participants, a record turn-out in recent history. First Prize, a cash award of $200, went to **Dan Pozdol**, a sophomore in Computer Science, who earned 30 out of 60 possible points. In second and third place, and winners of a book prize, were **Maria Boca**, a student at University High School, with 26 points, and **Maro Aghazarian**, a junior in Nuclear Engineering, with 25 points.

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

"Mathematics reaches pinnacles as high as those attained by the imagination in its most daring reconnoiters."

—Kasner and Newman

A note of clarification...

In the list of funds on page 11 there are two different funds that support the Mathematics Library. Funds donated to the Mathematics Library Fund (#3032384) go to support the current operational needs of the library. Those donating to the Mathematics Library Endowment (#30372678) will see their contributions grow and have an impact over time. Additional questions about these, or other funds, should be directed to Robin Fossum, the Department of Mathematics representative at the University of Illinois Foundation (217-333-7344, fossum@uiuc.edu).

Paul Weichsel, department associate chair, retires in 2003

Paul M. Weichsel will retire from the Department of Mathematics in May 2003 after more than 40 years with the department. Professor Weichsel was born and raised in New York City and graduated from Stuyvesant High School in 1949. He attended the City College of New York (B.S. in Mathematics and Physics, 1953) and New York University (M.S. in Mathematics and Physics, 1954). From 1954 to 1956 he served in the United States Army, stationed mainly in Fort Huachucua, Arizona, a center for research in electronic warfare. From 1956 to 1960 he attended the California Institute of Technology, receiving his Ph.D. with a thesis in Varieties of Finite Groups. (Sophus Lie is his great-great-great-great grandfather.)

He joined the Mathematics Department of the University of Illinois at Urbana-Champaign in the Fall of 1960 and in 1961 he was awarded a NATO Postdoctoral Fellowship for study at Oxford with Graham Higman. In 1965 he was invited to spend a year at the Institute of Advanced Studies of the Australian National University in Canberra. He spent the two year period 1970 to 1972 in Israel, as a sabbatical visitor at the Hebrew University of Jerusalem and then as a Visiting Professor at Tel Aviv University. Much of his research during this period dealt with the classification of varieties generated by finite p-groups and with the study of critical and basic p-groups which are the natural indecomposable objects in this context.

In the middle seventies his research interests shifted to the Algebraic Theory of Graphs, in particular, Distance Transitive and Distance Regular graphs. In his latest work he studied embeddings of such graphs into hypercubes.

His interest in undergraduate mathematics education was expressed early on when he coauthored two texts in abstract algebra with Hiram Paley in the middle sixties. Ten years later he became associated with a high school curriculum project funded by the Sloan Foundation and directed by John Truxall of SUNY Stoney Brook, eventually becoming the Mathematics editor.

In the middle nineties he was a co-PI of the multi-campus Indicators Project, under the direction of Ken Travers, which attempted to identify some ways of assessing mathematics undergraduate programs. Some of the data that was collected for that project and which has the potential of shedding some light on assessment issues in our department currently resides in his crowded office giving some considerable anxiety to its next occupant. He hopes to begin dealing with that data as the first of his retirement projects.

His campus extracurricular activities have ranged from singing lead roles with the University of Illinois Opera group during the middle sixties, when it was under the direction of Ludwig Zirner, to the Presidency of the Union of Professional Employees from 1980 to 1988.

In 1993 he was appointed the Associate Chair of the Department and much to his own amazement has spent the last 10 years in this challenging and fulfilling position.

In memoriam

Cliff Allan Long passed away in August 2002 after a 7 year fight with multiple myeloma. Long attended the University of Illinois at Urbana-Champaign where he received his bachelor's degree, Master's degree, and finally his doctorate in mathematics under the direction of Pierce Ketchum. Long began teaching mathematics at Bowling Green State University (BGSU) in Ohio in 1959 and he taught there for the next 35 years. He witnessed the infancy of the computer at Illinois and followed it through its adolescence while at BGSU, guiding the integration of computers into everyday university life. He had a special interest in computer graphics, and the visualization of mathematical ideas.

He was active in the MAA and the Ohio section, serving in many leadership capacities. He was on the Board of Governors 1988-91, received the MAA Meritorious Service Award in 1994, was Chair of the MAA Ohio Section 1980-81, and Program Committee Chair 1978-79. He had a near perfect record of attendance at MAA meetings, even when he was well into his illness.

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, jrsnblt@math.uiuc.edu); **Robin Fossum**, the Department of Mathematics representative at the University of Illinois Foundation (217-333-7344, fossum@uiuc.edu); or **Carolyn Pribble**, LAS Development (217-333-7108, cpribble@uiuc.edu). We enthusiastically welcome your interest in the Department of Mathematics.

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Emily Mann Peck Scholarship in Mathematics established

Aaron Wittrig is the first recipient of the Emily Mann Peck Scholarship. Aaron is an outstanding mathematics student and is taking the new sequence of honors courses offered by the department. During Spring 2003 semester he participated in a VIGRE Teacher Training for Undergraduates (TTU) with Randy McCarthy teaching in a small group active learning format of Math 120, the first course calculus class. He is also an excellent cellist.

The Emily Mann Peck Scholarship in Mathematics, established in 2003 through the generous donations of Raymond and Lori Janevicius, is named for Emily Peck who was on the Department of Mathematics faculty from 1973-2002 when she retired. The scholarships are to be given to outstanding undergraduate students at the sophomore, junior or senior level majoring in mathematics in the Department of Mathematics at the University of Illinois.

While the award is given primarily for high academic achievement, special preference is reserved for students who demonstrate characteristics that have exemplified Dr. Peck's life and career: high personal standards of ethics and scholarship, passion for teaching, well-rounded eclectic interest in life, and a passion for the arts. In addition to demonstrating overall academic excellence, recipients should have excelled in Freshman Calculus, a course Dr. Peck taught so effectively.

Emily Peck retired from the University of Illinois in 2002 after almost 30 years of service. From 1973-1979 she split her time one-third as an Assistant Professor of Mathematics and two-thirds as Assistant Dean in the College of Liberal Arts and Sciences Student Academic Affairs Office where she was responsible for student advising and various college policy committees. From 1979-1986 she continued teaching each semester in the Department of Mathematics, but was full-time in LAS where she continued with additional policy committees such as curriculum committees, and policies for implementation of LAS general education requirements. In 1986, she transferred to the Office of the Dean in LAS doing full-time policy, budgeting, and costing work, and was promoted to Associate Dean of LAS in 1988. She continued teaching at least once each year as well as serving on a number of campus committees and task forces and college committees, and a number of curriculum projects in the Department of Mathematics.

Ray and Lori Janevicius live with their family in Oak Brook. After receiving his undergraduate degree in Chemistry from the U of I, Ray went on to earn an MD in clinical medicine from the University of Illinois Chicago. He now practices surgery in Elmhurst, Illinois, specializing in reconstructive surgery of the hand. This is the third scholarship the Janevicius family has established at UIUC. The other two are in Chemistry and Music.

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