Chair's Corner
By Kevin Zumbrun

I am happy to report that, despite the economic issues occurring nationwide, the IU Mathematics department has continued to advance on all fronts in faculty, graduate, and undergraduate realms. A welcome indicator of this general success is that the recently released NRC rankings of graduate departments ranked IU Mathematics 21st out of a field of the top 127 research I institutions[1] (top 16.5 %), up from 28-30 in the previous ranking.

Faculty research continues to attract attention. In the previous year, Assistant Professor Ciprian Demeter was awarded a prestigious Sloan Fellowship. College Professor Roger Temam was named in the inaugural group of SIAM Fellows. Mihai Ciucu and Russ Lyons spent semester-long invited research leaves at Cambridge and Microsoft Labs. This fall, Darrell Haile (Lady Davis Visiting Professorship) and Russ Lyons spent semester-long invited research leaves at Technion-Israel and Microsoft Labs.

For a particularly accessible example of Departmental research, see the fascinating post http://gilkalai.wordpress.com/2010/11/20/janos-pach-guth-and-katzs-solution-of-erdos-distinct-distances-problem/

IU's REU Program Shines After Four Decades

By Liz Smith

For over four decades, the Department of Mathematics at IU has offered experiences in mathematics research to students from all over the country. Each summer, with funding from the National Science Foundation, this program brings undergraduate students from institutions all across the country to Bloomington to participate one-on-one with faculty members. Students and faculty collaborate to perform research in a wide variety of topics, including linear algebra, numerical analysis, differential geometry, and logic. Also, during summer 2009, the inclusion of faculty from Chemistry and Biology provided a

different experience from students in decades past. Students not only have a broader array of mathematics related topics to explore, but also experience more one-on-one collaboration with faculty and participate in activities with their fellow students. In previous decades IU's REU program was much smaller (approximately four students) and it was a very individual experience for each student. In those years the program was limited to a small number of students and each student worked entirely independently. In recent years, partially due to funding from the NSF's Research Experience for Undergraduates grant, our

REU Participants Summer 2009. From left: Jacek Skryzalin, Zachary Norwood, Adam Abegg, Zachary Doenges, John Brown, Ari Nachison, Joseph Thurman, Ziva Meyer, Leah Wolberg, Chengcheng Yang, (not shown: Jamil Merali).

particularly broad array of opportunities for students. Over the decades the department's REU program has grown and evolved into a strong and exciting opportunity for undergraduates across the country.

Students attending the REU program at IU this past summer had quite a

program has expanded and added activities and events that contribute to a truly collaborative experience for participants. Students in the program tour the Swain Hall library, listen to faculty presentations, present their own "What's up talks", learn how to

use LaTeX, tour the Lilly Library's Slocum puzzle exhibit, see the Astronomy Department's summer film series, attend a picnic, and, of course, students prepare a final presentation for their fellow REU students and faculty explaining the research they've worked on during the summer.

Students also participate in the Indiana Undergraduate Research Conference, an all day conference hosted by IU which includes REU participants and faculty from other institutions across Indiana, including IUPUI, Valparaiso University, Goshen College, Wabash College, and Rose-Hulman Institute of Technology. Approximately 24 students from across the state attended this year. This annual conference is an important opportunity for students. As 2008 REU participant and current IU math major Carlo Angiuli explains, "it gave us a great chance to present our research, and see what other REUs were up to as well."

Of course REU participants can't spend all of their summer immersed in mathematics research and related activities. IU's REU faculty coordinator, Professor Kevin Pilgrim, commented that the 2009 group of eight men and three women formed a particularly tight community. They were housed in Ashton dorm during the summer program and often got together to socialize and eat meals together. Carlo also commented on the variety of activities he participated in during his 2008 experience because "working on mathematics entails a lot of thinking, so it's hard to schedule. I found it hard to spend too much time at once working on math, so I ended up cooking a lot in my spare time."

One aspect of the IU REU program that sets it apart from many other, similar, NSF funded REU programs across the country is the one to one faculty to student ratio. Professor

Pilgrim explains that "our one-on-one model allows for more diverse projects than other programs that have a group approach with fewer faculty mentors. This year we have a project in pure algebra and applied projects in Biology." IU's REU program has the advantage of not only excellent support and participation among math department faculty, but also the participation of faculty from other departments on campus. For example, our faculty mentors include Professor Peter Ortoleva, a distinguished faculty member from Chemistry and Professor Michael Lynch, a distinguished faculty member from Biology. The participation of these distinguished faculty from other departments, as well as Professor Matthew Hahn from Biology and several math department faculty members, has allowed IU to continue running a robust and exciting program.

Carlo believes that the best part of the program "was the opportunity for independent investigation in math." He intends to apply to graduate programs after finishing at IU and he says "I found it very valuable to get my first taste of math research long before that. In addition, professors' lectures and other students' presentation exposed me to a lot of math not contained in the typical curriculum." Professor Pilgrim feels that working with students is the best part of the program. He was inspired by his own experiences as an undergraduate in IU's REU program with Professor Allan Edmonds in 1987 and 1988. He also believes that "the program makes a valuable contribution to the growth of our profession. We're helping to prepare leaders in quantitative fields and help students to become passionate about mathematics, and encourage their potential for growth." Professor Pilgrim said that the most challenging part of leading the program is recruiting faculty. However, "the fact that we consistently have so many faculty participating is indicative of how much the department likes this program."

One of the more impressive results of a summer spent researching math is getting a paper published. During the summer of 2008 Professor Chris Connell worked with undergraduate John Ullman, which resulted in a paper: "Ends of negatively curved surfaces in Euclidean space" which has been accepted for publication in Manuscripta Mathematica. We have seen many of our REU alumni go on to PhD programs in mathematics at other institutions and expect to see amazing accomplishments from our future REU alumni.

For more information on IU's REU program, please see: http://www.math.indiana.edu/reu/

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on Nets Katz' spectacular recent solution with Larry Guth of the 65-year old Erdós distance problem. More generally, you may enjoy browsing the collection of research interests and Mathematical Miscellany in the Mathematical Gallery section http://www.math.indiana.edu/ gallery of our newly renovated Departmental web pages.

The short-term and long-term research visitors programs developed with the help of the College continue to enliven departmental life. Last year's long-term visitors Yakov Varshavsky and Sergey Matveev continued the high level of distinction that has marked this program and this year's long-term visitors Julie Deserti and Semail Ulgen Yildirim bring equal vitality and strength to the department. The Distinguished Lecturer series has continued successfully with lectures from British Royal Society member Ben Green, number theory and combinatorics (see http://en.wikipedia.org/wiki/Ben J. Green) National Academy of Science member Rick Durrett on bio-probability http://en.wikipedia.org/wiki/Rick Durrett), Jiri Adamek, logic and category theory, and Jim Farrell, high-dimensional topology. The Local faculty and grad seminars/colloquia continue at a high pace of activity (9+ active weekly seminars, plus general colloquium).

Our Zorn postdoc program continues apace, with two of our 6 Zorns now having received NSF Fellowships. There was a great deal of activity in the past year centered about Roger Temam's Institute for Scientific Computing, with a semester-long visit by Mickhael Chekroun, and a number of short-term international visitors centered around the theme of stochastic PDE and fluid turbulence. French exchange students Arthur Bousquet and Dimitri Nicolas added to the theme of internationalization and participated in research projects at the Institute. Bousquet is now a full-time student pursuing a PhD.

Our graduate program currently numbers roughly 120 students and likewise continues to thrive. In 2008-2009, 16 students finished with a PhD of which 9 obtained academic positions. Michael Bateman, the 2008-2009 College Dissertation award winner, received a prestigious NSF postoc at UCLA; meanwhile, classmate Chun Yen

Shen received the 2009-2010 College Dissertation award. Graduate Toan Nguyen accepted a one-year research postdoc at Paris 6 followed by a prestigious three-year Praeger Assistantship at Brown. 2002 graduate alumni Greg Lyng and Jeffrey Humpherys were simultaneously awarded prestigious five-year NSF CAREER grants. In 2009-2010, 11 students finished with a PhD, many going on to academic positions. Andres Contreras, last year's co-winner (together with Peter Mester) of our newly inaugurated Departmental Best Dissertation Award, received a prestigious postdoctoral research position at outstanding department Paris 6 working under the direction of well-known expert Sylvia Serfaty.

We mention also a variety of awards made to entering students, including College fellowships awarded to Vincent Martinez (continuing), Arthur Jeffries (previous year), Juan-Carlos Rojas (this year), current HKT and College fellowship holders Amanda Furness and Rebecca Scofield, and Women in Sciences Fellowship awardee Zisui Zhou. Graduate Fellowships and travel continue to be funded by the Hazel King-Thompson and Schober funds, and a new endowment donated by Charlotte and Jim Griffin, the benefactors who endowed our Boucher chair held by Vladimir Turaev. Our innovative JUMPSTART pre-class preparation program continues to attract top grad applicants and ease the entry of new students into our program. Faculty and graduate visitors alike are amazed by the vitality and breadth of our grad program.

Our undergraduate majors number 275, up from 224 in 2009, 177 in 2008, and 138 in 2007. Among these are 7 Wells Scholars, 13 Phi Beta Kappa members, new Rhodes Scholar Esther Uduehi, HHC Burnett/Masters Junior Scholar Mohammad Siddiq, two Goldwater Scholarship Math majors and two Goldwater Scholarship Math minors; see http://newsinfo.iu.edu/news/page/normal/13991.html This follows up the previous year's record of 9 Wells Scholars, 4 Phi Beta Kappa members, and Rhodes Scholar Mutsa Mutembwa. Mathematics alumnus Ben Londergan won the 2009-2010 outstanding alumnus award.

The Math Club continues to be quite active and a new Actuarial club (formed in the previous year) continues to meet. Our Putnam team (national Math. contest) placed

an impressive 27th and 34th in the nation in the previous two years; moreover, Freshman Miles Edwards ranked this year in the top 20 in individual performance (see http://newsinfo.iu.edu/news/page/normal/13885.html).

The Department is also active in a number of outreach programs, including our long-standing REU program for summer undergraduate research, and K-12 teacher education programs pursued with Math. Ed. in Green and Vigo counties, the Advance College Project for high school outreach, and a just-introduced online summer course, developed with the help of the OVPR and input of Math. Education, intended to serve distance students including working secondary school teachers pursuing a masters degree. Along with this online initiative, we mention also a new online tutorial series developed with the aid of OVPUE in anticipation of the General Education rollout next year, similar to the popular finite show for M118, but directed at Calculus, M119, and the development by Elizabeth Housworth of a new consumer math version of Finite Mathematics, diversifying our offerings in first-year Mathematical Modeling courses. Math was recognized last year with a Service award from Disability Services for Students acknowledging the extraordinary efforts of Chris Parks, Linda McKinley, and others to accommodate students with special needs.

Changes in personnel include the hiring of Zorn postdocs Liviu Ilinca and Margaret Doig, Assistant Professor Matthew Bainbridge, and Lecturers Palonivel Manoharan and Brian Marks, and the retirement of long-time faculty Bob Glassy and Grahame Bennett (mentioned elsewhere).

We note with sadness, finally, the deaths of long-time faculty and current Emeritus Professors Goro Azumaya and John Brothers. They will be missed.

[1]To extract a rank ordering, go to web site http://graduate-school.phds.org/rankings/ then to discipline of interest, then, under \ choose your priorities", give full weight 5 to \NRC regression-based quality score" and zero to all others.

2009 - 2010 awards
2009
Undergraduate Awards

These first-year students won awards and scholarships: Jacek Skryzalin (Thelma Abell Prize); John Brown (Marie S. Wilcox Scholarship).

These second-year students won awards and scholarships: Emma Vakili (Thelma Abell Prize); Angela Lubbers and Trenton Yoder (Ruth E. Gilliatt Memorial Scholarship); Zachary Doenges (Trula Sidwell Hardy Scholarship); Carlo Angiuli and Laura Goins (Marie S. Wilcox Scholarship).

These third-year students won awards and scholarships: Victor Rusu, Valkyrie Savage, Tyler Smith, and Bradford Winkelman (Cora B. Hennel Memorial Scholarship).

These fourth-year students won awards and scholarships: Tim Cobia, Jenna Goen, John Hardwick, and Arnon Jearkjirm (Thelma Abell Prize); Sarah Loos and Neil Shah (Marie S. Wilcox Scholarship); William Yu (Wilcox Scholarship and Ciprian Foias Prize); John Ullman (Wilcox Scholarship and Rainard Benton Robbins Prize).

Jeffrey Hajewski won the M118 Undergraduate Intern Award.

New Graduate Award

In April 2009 the Muriel Adams Stahl Graduate Fellowship was awarded for the first time. This award was established in 2008 in memory of Muriel Adams Stahl by her family to support a graduate student in mathematics and encourage advanced study in Mathematics. Muriel Stahl earned her Master's degree in math from IU in 1934.

Graduate Awards

The following graduate students won awards and scholarships: Gung-Min Gie, Kate Kearney, Bongsuk Kwon, Joanna Leathers, Kevin Li, Le Mai Nguyen, David Powder, Giorgi Shonia, Rebecca Swanson, Matthias Youngs (David A. Rothrock Mathematics Fellowship Awards); Juanjuan Chai (Muriel Adams Stahl Graduate Fellowship); Francesco Di Plinio (Robert E. Weber Memorial Award); Chi Yu Lo, Elwadura Prabath Silva (James P. Williams Memorial Award); William Holmes, Zhenyu Li, Chun-Yen Shen (William B. Wilcox Mathematics Award); Ko-Shin Chen, Christina Felix, and Grace McAlexander (Hazel King Thompson Fellowship); Michelle E. Hackman (McNair Fellowship); Muhammed Alan, Peter Connor, Andres Contreras, Gung Min Gie, Prudence Heck, Jiho Kim, Justin Mazur, Rob O'Connell, Daniel Smith, Cristiana Tone, Tuyen Truong, John Williams (Glenn Schober Memorial Travel Awards); Francesco Di Plinio, Kyle Riggs (The College of Arts and Sciences Graduate fellowship); Michael Bateman (J. Steward and Dagmar K. Riley Graduate Fellowship); Vincent Martinez (University Graduate Scholar Fellowship); Jennifer Trueblood (Women in Science Fellowship); Le Mai Nguyen (Matias L. Ochoada Fellowship); Juanita Pinźon Caicedo (Office of Women's Affairs Fellowship); Michele Hackman, William Holmes, and Zhixu Su (College of Arts and Sciences Travel Award).

Faculty Awards

Roger Temam received the Rothrock Mathematics Faculty Teaching Award. Vinay Deodhar, Greg Peters, Bruce Solomon, and Alberto Torchinsky received the Indiana University Trustees' Teaching Award.

2010
Undergraduate Awards

These first-year students won awards and scholarships: Yiqing Zhang (Thelma Abell Prize); Philip Karl Thomas (Trula Sidwell Hardy Scholarship); Theodore Joseph Ofner (Marie S. Wilcox Scholarship); Miles Edwards (Wilcox Scholarship and Ciprian Foias Prize).

These second-year students won awards and scholarships: Robert Paul Lahre II and Frannie Elaine Richert (Thelma Abell Prize); John Raymond Brown II, Xiang Hui, Mark Edward O'Dell, and Jacek Nicholas Skryzalin (Marie S. Wilcox Scholarship).

These third-year students won awards

and scholarships: Angela Marie Lubbers, Emma Vakili, and Carlo E. Angiuli (Thelma Abell Prize); Zachary A. Doenges (Cora B. Hennel Memorial Scholarship); Christine Elaine Brugger (Marie S. Wilcox Scholarship).

These fourth-year students won awards and scholarships: James Michael Sullivan, and Simon Andrew Bortz (Cora B. Hennel Memorial Scholarship); Mutsawashe D. Mutembwa (Ruth E. Gilliatt Memorial Scholarship); Gideon Alon (Hennel Scholarship and Rainard Benton Robbins Prize).

These students were chosen as Noyce scholars: Dylan Phillip Hilderbrand, Suzanne Joy Perkett, and Joel Nathanial Thoreson.

Aditi Deodhar and Taikgun Song received the M118 Undergraduate Intern Award.

Graduate Awards

The following graduate students won awards and scholarships: Andres Contreras (Joseph & Frances Morgan Swain Fellowship, Outstanding Thesis Award, and Glenn Schober Memorial Travel Award); Shida Wang (Robert E. Weber Memorial Award and College of Arts and Sciences Graduate Fellowship); Matthew Drury, Chun Yin Hui, and Honghu Liu (William B. Wilcox Mathematics Award); Prasit Bhattacharya, Anne Carter, Tristan Tager (James P. Williams Memorial Award); Blake Barker (James P. Williams Memorial Award and Glenn Schober Memorial Travel Award); Peter Mester (Outstanding Thesis Award); Francesco Di Plinio, William Holmes, Dwueng-Chwuan Jhwueng, LiHuei Liu, Corey Manack, Prabath Silva, Daniel Smith, Ihsan Topaloglu (Glenn Schober Memorial Travel Award); Daniel Lithio and Jonathan Poelhuis (Hazel King Thompson Fellowship); Chun-Yen Shen (Glenn Schober Memorial Travel Award and College of Arts and Sciences Dissertation Year Research Fellowship); Michele Coti Zelati (College of Arts and Sciences Graduate Fellowship); Brett Jefferson (Adam W. Herbert Graduate Fellowship); Jennifer Hill (University Graduate Scholar Fellowship);

Wah Kwan Ku and Cristiana Tone (College of Arts and Sciences Travel Award); Holly Attenborough, Juanjuan Chai, and Rebecca Swanson (Women in Science Program Travel Award).

Faculty Awards

Richard Bradley received the Rothrock Mathematics Faculty Teaching Award. Elizabeth Housworth, Kevin Pilgrim, and Matthias Weber won the IU Trustees' Teaching Award. William Orrick won the Departmental Lecturer Award.

2011
Undergraduate Awards

These first-year students won awards and scholarships: Paige Boyer (Thelma Abell Prize); Sidney Frank Fletcher and Jingyi Tian (Trula Sidwell Hardy Scholarship).

These second-year students won awards and scholarships: Theodore Joseph Ofner (Thelma Abell Prize); Lindsay Joan Martin (Ruth E. Gilliatt Memorial Scholarship); and Miles Dillon Edwards (Marie S. Wilcox Scholarship and Ciprian Foias Prize).

These third-year students won awards and scholarships: Frannie Elaine Richert and Mallory Morgan Smith (Thelma Abell Prize); John Raymond Brown II, Zachary Francis Hallberg, and Robert Paul Lahre II (Cora B. Hennel Memorial Scholarship); Chengyuan Luo and Christopher Adam Pease (Marie S. Wilcox Scholarship).

These fourth-year students won awards and scholarships: Christine Elaine Brugger (Cora B. Hennel Memorial Scholarship); Esther Oluchukwu Uduehi (Ruth E. Gilliatt Memorial Scholarship); Zachary A. Doenges (Hennel Scholarship); Matthew Nelson DeLeon, Christopher Michael Faesi, and Laura Frances Goins (Marie S. Wilcox Scholarship); and Carlo E. Angiuli (Rainard Benton Robbins Prize).

Tracy Kapicak, Robert Wildeman and Travis Wright won M118 Undergraduate Intern Awards.

Graduate Awards

The following graduate students won awards and scholarships: Jiwon Kim (Mu-riel Adams Stahl Graduate Fellowship); Siyuan Song (Robert E. Weber Memorial Award); Jonathan Poelhuis, Taylan Sengul, and Tuyen Truong (William B. Wilcox Mathematics Award); Alper Gur and Jacek Skryzalin (James P. Williams Memorial Award); Wah Kwan Ku (Outstanding Thesis Award); David Ai, Annie Carter, Juanjuan Chai, Jennifer-Anne Hill, Zhenyu Li, Matthew Mauntel, Nathan St. John, Ihsan Topaloglu (David A. Rothrock Associate Instructor Awards); Blake Barker, Turgay Bayraktar, Yu-Min Chung, Francesco Di Plinio, So Yeun Jung, Wah Kwan Ku, Robert Niichel, Prabath Silva, John Williams, Jinghua Yao, Mostafa Zamani Forooshani, and Ping Zhong (Glenn Schober Memorial Travel Awards); Chun Yin Hui, Rebecca Scofield, and Guanglu Zhu (Hazel King Thompson Fellowship); Amanda Furness and Eunhee Park (College of Arts and Sciences Graduate Fellowship); Jan-Li Lin (College of Arts and Sciences Dissertation Year Research Fellowship); Juan-Carlos Rojas (University Graduate Scholar Fellowship).

Faculty Awards

Jiri Dadok received the Rothrock Mathematics Faculty Teaching Award. fHari Bercovici, Ciprian Demeter, Greg Peters, and Peter Sternberg won the IU Trustees' Teaching Award. Tracy Whelan won the Departmental Lecturer Award.

Joan and Bob Everitt and Professor Roger Temam, with his wife Claudette Temam

Math Club Update

The Math club had a very busy schedule in the last two years, with almost one talk every week. This was largely due to a very energetic organizer Sarah Loos. The talks covered a wide range of pure an applied Mathematics, Physics and Bio-Chemistry. Most of the talks attracted around 7-10 students. You could tell that students ap-preciated the talks by the number of questions they asked.

Four or five of the meetings of the Math Club were dedicated to the preparation for Putnam and for the state competition from Indiana. We went over all sorts of problems with them and practiced team

Michael Larson with the Math Club

work. One of the IU teams ranked second in the state competition, the best ranking in recent years.

In 2009, the torch of the math club presidency was passed from Sarah Loos to Carlo Angiuli. The math club, as usual, has been hearing talks on a nearly weekly basis. They have heard from Nets Katz on the solution to the Joints problem, from Michael Larsen on finite projective planes, from Matvei Libine on quaternionic analysis, and from John Challifour on black holes, among others.

In the end, the Math Club proved to be an activity which benefited not only the students, but also us, the faculty that supervised it.

http://www.indiana.edu/~mathclub/

New 5 Year Math BS/MSED Program

The College of Arts and Sciences and Department of Mathematics, in cooperation with the IU School of Education, have approved a new five year Bachelor of Science in Mathematics and Master of Science in Secondary Education combined program. This program is designed to encourage students to pursue a rigorous course of study in Mathematics while earning a teaching certification and preparing to teach high school math.

BS/MSED Program

Bachelor of Science students in mathematics can choose to pursue either a theoretical math track primarily intended for students planning on graduate study in math, or an applied math track intended for students planning on graduate study in another field or a career in business or industry. However, with this new five year program, these students expand their options to a career in education as well.

With an expected shortfall of math teachers in Indiana, and the country as a whole, this program serves both IU students and Indiana school districts.

You can read more about this exciting new program at http://newsinfo.iu.edu/news/page/normal/10307.html [Link]. A similar program has also been approved for Chemistry and Physics.

Undergraduate News

Four IU Goldwater Scholars in 2010 all study math: IU had a record four undergraduates who won the prestigious Barry M. Goldwater Scholarship in 2010. Remarkably, all four students study math! Both Carlo Angiuli and Christopher Faesi are math majors, while Erika Anderson and Jennifer Kulow plan to earn math minors.

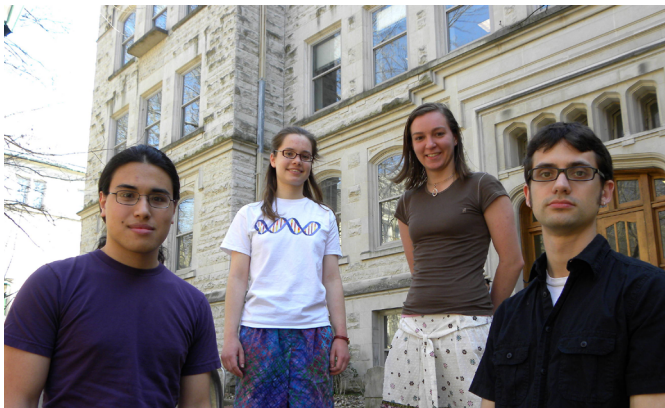For more information see: http://newsinfo.iu.edu/news/page/normal/13991.html

Photo by Jocelyn Bowie
Carlo Angiuli, Erika Anderson, Jennifer Kulow, and Christopher Faesi

Two math majors named Rhodes Scholar two years in a row: Mutsa Mutembwa, a May 2010 IU graduate in math and economics, was named a 2010 Rhodes Scholar, representing her native country Zimbabwe. Mutsa also played defender on IU's field hockey team and was nominated for NCAA 2010 Woman of the Year. Mutsa entered Oxford in fall 2010 to study financial economics with the goal of one day returning to Zimbabwe to help her native country through numerous efforts, including creating microfinance initiatives. Esther Uduehi , a May 2011 IU graduate in math and chemistry, was named a 2011 Rhodes Scholar, one of 32 Americans selected for the award. Esther will begin at Oxford this fall and plans to pursue a career in medicinal chemistry research.

Mutsa Mutembwa
Photo by
Mike Dickbernd/IU Athletics.

Esther Uduehi

Math majors in the news: Recent math graduate Yun William Yu was named a 2009 Marshall Scholar, in addition to winning the Barry M. Goldwater Scholarship in 2008. William's current plans include studying computational biology at the University of Cambridge and biomedical physical chemistry at Imperial College London. Miles Edwards, a sophomore this year studying music and math at IU, placed among the top 20 nationally in the notoriously difficult and prestigious William Lowell Putnam Mathematics Competition. Recent IU math graduate Sarah Loos was the single graduate student nationally to be appointed in 2010 to the board of the prestigious Anita Borg Institute.

IU team wins 2010 and 2011 ICMC: The IU team, which competes each year in the Indiana Collegiate

Mathematics Competition, has won first place in the competition two years running. The 2010 team, sponsored by Professor Ciprian Demeter, consisted of Miles Dillon Edwards, Carlo Angiuli, and John Brown. That was IU's first ICMC win since 1995. The 2011 team consisted of John Brown, Kevin Carlson, and Miles Dillon Edwards. For a complete listing of winners, please see: http://www.rose-hulman.edu/~rickert/Competition/ICMC/winners.html
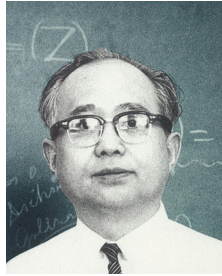
IU math students form Actuary club: Actuary is an increasingly popular career path for undergraduates studying math, and it's not surprising. The Wall Street Journal ranked actuary as number one on their best jobs 2010 list, based on a study from careercast.com. Also, mathematician appeared as number six, and statistician as number eight. Although IU Bloomington does not offer an Actuarial Studies major, like rival Purdue, we do still boast an impressive number of high achieving math majors successfully passing exams and planning to pursue a career as an actuary. In the past year these students have been organizing themselves, arranging meetings, sharing study materials, and studying together for exams. This new Actuary club is still in its first stages and will certainly rely on student enthusiasm and motivation, but it's already off to an excellent start with the help of faculty advisor, Professor Russ Lyons and new club president, Lindsay Thomas.

Faculty Notes

Retired faculty member Goro Azumaya died on July 8, 2010 at the age of 90. He was a member of the IU Department of Mathematics from 1968 to his retirement in 1990. He received his doctorate from Nagoya University in 1949. His advisor was Iyanaga. After his retirement Goro and his wife continued to live in Bloomington until about a year ago when they returned to Japan. They have a son, Hidehiko, who lives in Pennsylvania.

Retired faculty member John E. Brothers, 73, died peacefully on November 15, 2010 following a lengthy illness at Charlton Memorial Hospital with his wife by his side. He earned his doctorate in mathematics at Brown University in 1964. He resided in Virginia until 1966. He relocated to Bloomington, Indiana in 1967 where he was Professor of Mathematics at Indiana University for 40 years. He also served as the faculty liaison for Habitat for Humanity, editor of Indiana University Mathematics Journal as well as a member of several other professional organizations.

Departmental Leaders --- Kevin Zumbrun took over as Chair of the Department in 2009 as Jim Davis stepped down. Chris Connell took over for Kent Orr as Director of Undergraduate Studies in 2010. Ji-Ping Sha continues as Director of Graduate Studies.

Professor Michael Larsen was awarded the 2011 IU Distinguished Professorship.

Professor Nets Katz solved one of combinatorial geometry's most challenging problems, the Erdós Distinct Distances problem

New postdoctoral fellows:
Deepam Patel
Zubin Gautam
Mat Johnson
Margaret Doig (Topology)
Liviu Ilinca (Combinatorics)

New assistant professor:
Matthew Bainbridge (Geometry and Dynamics of Teichmueller spaces)

New lecturers:
Brian Marks
Palanivel Mano Manoharan

Retirees
Grahame Bennett

Grahame Bennett was born in Newcastle, England, on January 23, 1945. He received his B.S. from the University of Newcastle in 1966, and then went on to the University of Cambridge, where he received his Ph.D. under D. H. J. Garling in 1970.

He spent the 1969–1970 academic year at Lehigh University, at the invitation of A. (Tommy) Wilansky. While at Lehigh, Tommy told Grahame about the 12 problems he was currently trying to solve. Grahame solved all of them!

Grahame came to Indiana University in the fall of 1970 as a Vaclav Hlavaty Research Assistant Professor. He was promoted to associate professor in 1975 and then to full professor in 1979.

During the academic years 1977–1979 he was the recipient of a prestigious Sloan Fellowship, and he spent 1977–1978 at the University of British Columbia. From 1972 to 1997 he was awarded several NSF grants.

His early research interests involved sequence spaces. When he resumed his research activity, he turned to the study of inequalities, and has proved a number of very deep and beautiful results, including the solution of a long-standing conjecture of Littlewood.

His research is just one facet of his talent. He has also been a quality teacher here at Indiana. In 1997 he was given the Teaching Excellence Recognition Award. Grahame has taught a wide variety of undergraduate and graduate courses, and has produced two Ph.D. students.

He has also done his share of departmental service. He has been both director of undergraduate studies and colloquium chairman. He served on the following committees: honors division committee, salaries, recruitment, Red Carpet Day, undergraduate policy, the Putnam exam, the real variables qualifying exam, and the foreign language committee (of which he has been a mainstay in recent years). He started two activities important to the department today: he was the first math coordinator of the Advance College Project, and he was the creator of the first math awards ceremony.

At the university level he has served as a University Division counselor, on the Canterbury committee of the Office of Overseas Study, on both the university and College promotions committees, and as a reader for the Wells Scholarship Program. He is also a member of the editorial board of two journals on inequalities, and has refereed and reviewed many research papers.

It has been a pleasure having Grahame as a colleague for these many years. Although we have never published any joint papers, we have spent many hours together discussing the mathematics each of us is working on.

~Billy E. Rhoades

Robert T Glassey

Bob Glassey was born in Long Branch, New Jersey, in 1946. He received his A.B. from Franklin and Marshall College in 1968, graduating Magna Cum Laude with Honors. He received his PhD from Brown University in 1972 under the direction of Walter Strauss. Immediately after graduation, Bob joined Indiana University as an Assistant Professor in 1972, where he remained as a central figure in the department and the Applied Mathematics/Partial Differential Equations group for the following 37 years, from 1972-2009. Bob was promoted to Associate Professor in 1979 and to Full Professor in 1981. He served as Director of Graduate Studies from 1984-1986 and Chairman of the department from 1995-1998. He has served as an Associated Editor of the I.U. Mathematics Journal for many years, and served as chief editor during 2004-2005 and 2006-2008. He was a mainstay of the qualifying exam and Language exam committees for many years.

Likewise, Bob has been a central figure in his field of nonlinear partial differential equations (PDE). Bob has published over 60 papers, highly cited in the field. His book on The Cauchy problem in kinetic theory (1996), is a widely-read source on kinetic equations, as is his book on scientific computing, Numerical computation using C. Computer Science and Scientific Computing (1993). One of his most influential works, On the blowing-up of solutions to the Cauchy Problem for nonlinear Schroedinger equations (1977), introduced ideas that have been adapted countless times to prove blowup of solutions for other types of equations. Cited over 100 times, this contains what is still one of only a few other methods for proving blowup, or finite lifespan, of solutions. Bob's contributions to the difficult field of kinetic equations are too many to recount individually, but of similar impact.

Bob has held numerous visiting positions, at University of Munich (1975), Stanford (1977-1978), Brown (Fall 1982), and University of Wisconsin Mathematical Research Center (Spring 1983). An excellent expositor, he has always been a sought-after speaker in his field, attending numerous national and international conferences. He was awarded a Sloan Fellowship in 1982 and an Alexander von Humboldt Fellowship in 1975, and received continuous research support from the National Science Foundation for 35 years.

Bob is well-known as a tough but clear and entertaining instructor who has been beloved by several generations of students, as indicated by a prestigious Trustees teaching award in 2006 and a Rothrock teaching award in 2007. He has guided 9 students to PhDs, 7 of whom are now professors of Mathematics themselves, and, counting their students, has 17 academic descendants. Bob has a love of music, which he has passed on to his son Tom and daughter Molly, and for many years was an avid racquetball player in the departmental pool. We hope that he will continue in his retirement to grace our department with his intelligence, wit, and humor.

~Kevin Zumbrun