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Chair's Corner



This has been an eventful year in the life of the Department, with some happy, and one particularly sad event.

The sad event that I have to relate is the death of Eric Behr. An appreciation of Eric's life and work appears elsewhere in this newsletter, but it is appropriate here to record my gratitude for Eric's work with the Department's computer systems and for the many ways in which he played such a large role in the life of the Department. His work with the ICTM contest comes immediately to mind as does his help with the formatting of many PhD dissertations in the style required by the Graduate School, but there were many other ways in which Eric's kindness and readiness to help people will be sorely missed.

There have been a record number of retirements from the Department in the past year. These include: Kitty Holland, the editor of this newsletter, Richard Blecksmith, Yoopyo Hong, Alan Zollman, Betty Corn, Nancy Leifheit and Bala Hosmane. Appreciations of the careers of these people appear later in this newsletter, but they will all be missed. I am happy to report that several of these people are expected to teach in the Department after retirement. We have also lost Erika Cervantes from the Math Office. Erika leaves to become office manager at a dentist's practice in Aurora. I am sure that many former graduate students will remember Erika's help and humor in her position as secretary to the Graduate Director.

Amid the accounts of departures, I am happy to report the arrival of a new faculty member: Nathan Krislock joins the Department as an assistant professor who works in numerical optimization. Nathan, a native of Saskatchewan, joins us from a postdoctoral appointment at the University of British Columbia. He obtained his PhD from the University of Waterloo and had previously held a postdoctoral position in France. Nathan is accompanied by his wife, Misato.

Another arrival who joins us for a temporary appointment is Devrim Bilgili in the Division of Statistics. Devrim earned his PhD in the Department with Professor Nader Ebrahimi and is visiting for the year from his permanent position at the University of Central Florida.

Also in the Division, Professor Sanjib Basu has taken over as Director from Rama Lingham, who has completed eight years as Director. I wish Sanjib every success in his new position.

The Department had a booth in the University's STEMFEST event last October. This was very well received and the mathematical puzzles and brainteasers occupied hundreds of children of all ages to be one of the most popular booths of the whole event. I was very happy to meet alumni and their children. If you find yourself in DeKalb during the weekend of this year's festival, please stop by the booth to say hello. The exhibit was so successful that Dan Grubb and I took it on the road to a similar event at Fermilab this Spring.

Responses to the Department's alumni survey continue to trickle in. I gave a detailed account in last year's newsletter, but continue to be impressed by the experiences and success of our graduates.

We want to stay in touch with all of our graduates, so please write to me with news and views. The Department also has a Facebook page,

<http://www.facebook.com/pages/Northern-Illinois-University-Mathematical-Sciences/165834626819079>. Please check often and post information about your doings.

--- B. Harris

Our Newest PhDs

Kristen McCollough (August, 2013) wrote her dissertation, *An Application of Statistics in Nanotechnology*, under the direction of Professor Nader Ebrahimi. She now holds a position at Grand View University in Des Moines, Iowa.

Santu Gosh (August, 2013) wrote his dissertation, *Smoothed Bootstrap Percentile Ellipsoidal Confidence Region for Mean Vector*, under the direction of Professor Alan Polansky. He now holds a position at the School of Medicine, Wayne State University, Detroit, Michigan.

Chris Bailey (December, 2013) wrote his dissertation, *The MP Algorithm and Its Applications*, under the direction of Professor Yoopyo Hong. He now holds a position at the College of DuPage, Chicago, Illinois.

Rita Patel (December, 2013) wrote her dissertation, *Mixed methods analysis of calculus students' understanding of slope and derivative concept*, under the joint direction of Professors Ellen Hines and Alan Zollman. She now holds a position at the College of DuPage, Chicago, Illinois.

Jayleen Wangle (December, 2013) wrote her dissertation, *Calculus Student Understanding of Continuity*, under the direction of Professor Alan Zollman. She now holds a position at Bradley University, Peoria, Illinois.

Tom St. George (December, 2013) wrote his dissertation, *Nodal Solutions of Nonlinear Boundary Value Problems with Multipoint Boundary Conditions*, under the direction of Professor Qingkai

Kong. He holds a visiting assistant professor position at St. Olaf College, and will begin a new, tenure-track position this fall at Carroll University in Waukesha, Wisconsin.

Paul McCombs (May 2014) wrote his dissertation, *Analysis of Second Semester Calculus Students' Understanding of Series and Series Convergence*, under the direction of Professor Alan Zollman. He leaves us for a position at Rock Valley College, Rockford, Illinois.

Allen Montz (May 2014) wrote his dissertation, *Some Bipolar Viscous Fluid Flow Problems in Rigid and Compliant Domains*, under the joint direction of Professors Fred Bloom and Hamid Bellout. He leaves us for a position at Allstate Corporation, Northbrook, Illinois.

The 29th Annual NIU Math Contest

Experience seemed to be a strong factor in the 2014 Northern Illinois University Mathematics Contest, held on February 26, as the top two places went to returning participants who improved on their results from last year.

The \$100 first prize was won by **Taylor Brysiewicz**, a senior Mathematical Sciences (General Mathematics) major from Bartlett, while **Robert Marks**, a senior Mathematical Sciences major emphasizing Probability and Statistics, and a resident of Crystal Lake, took home \$75 for finishing second. Taylor and Marks placed second and third, respectively, in the 2013 Contest. There was a tie for third place in the 2014 competition between **Greg Sassi**, a sophomore Mechanical Engineering major from Island Lake, and **Daniel Trout**, a freshman Mathematical Sciences (Applied Mathematics) major from Batavia. Each of them

was awarded \$50. The winners were recognized at the Department of Mathematical Sciences' Awards Ceremony and Reception on April 13.

The annual Northern Illinois University Mathematics Contest has a format where freshmen and sophomores have a fair chance to compete with juniors and seniors. The underclassmen have fewer restrictions on their choice of problems to attempt. The contest is open to all full-time undergraduates at NIU. Each contestant turns in solutions to a choice of six out of eleven problems. Topics this year ranged from high school level algebra, number theory, and geometry problems, through calculus, linear algebra, and differential equations. Professors Harvey Blau, Deepak Naidu, and Gleb Sirotkin supervised the competition.

One of the elementary level problems was the following:

Let A, B, C, D be placed consecutively on a circle. Let W, X, Y , and Z be the midpoints of the arcs AB , BC , CD , and DA , respectively. Show that the chords WY and XZ are perpendicular.

Here is a more sophisticated calculus problem:

Prove that the sequence generated by iterating the sin function n times, and beginning at a value of 1 radian, converges as n goes to infinity.

For more information, contact
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New Middle Level Teaching and Learning Program

By January 2015 we will have a new Middle Level Teaching and Learning Program (MLTL), which will replace the current middle school endorsements for the Illinois State Board of Education licensing of teachers in grades 5-8. MLTL is a multi-college program leading to an initial or subsequent teaching license in Middle Grades education, as established and defined by the Illinois State Board of Education (ISBE). With this change, elementary licensing will be limited to grades K-5 and secondary licensing will be 9-12 grades.

At the National Mathematics Middle School Conference several years ago, our NIU program was recognized as the largest producer of middle grades mathematics endorsements at the undergraduate level in the US. The Mathematical Sciences Department successfully and consistently has produced middle grade mathematics teachers for over 20 years. Our graduates are the leaders in their schools, because of their strong mathematics content and mathematics pedagogy preparation. The majority of our past students were secondary mathematics majors, with a strong minority of elementary education majors, and the rest were post-grads and graduate school students getting Illinois Middle School Mathematics Endorsement. The new program, as mandated by the State, will be a separate degree in MLTC. For students wishing to become middle school mathematics teachers, the new program will require either a major content area in mathematics (32 hours) and a minor content area in science (24 hours), or a major in science and a minor area in mathematics. **Alan Zollman** has been working on the NIU MLTC planning committee on the design of the program for the past two years. We honor his commitment to this important endeavor.

Kudos

Professor **Biswa Nath Datta** has been honored by several publications dedicated to him: a special issue on *Inverse Problems in Science and Industry* of the journal *Numerical Linear Algebra with Applications*; a Springer monograph, *Numerical Linear Algebra in Signals, Systems and Control*; and a special issue of the the journal *Linear Algebra and its Applications*, this last "in recognition of his contributions to Linear Algebra, his enthusiasm for linear algebra and its applications, and his efforts over the years to bring together researchers in Linear Algebra with scientists and engineers, who work on applications for which linear algebra is essential". It was noted there that "Biswa Datta's enthusiasm for Linear Algebra and its applications has been a source of inspiration for many colleagues and students".

Professor Datta has also been elected University Fellow of Hong Kong Baptist University. The Fellows are selected in a world-wide competition. The Fellows of this year will be honored in a ceremony in Hong Kong in January.

On October 17th, Professor **Alan Zollman** will receive the Illinois Council of Teachers of Mathematics Max Beberman Mathematics Education Award. This is the highest teaching, service and research award given by the Council. Previous awardees from NIU were **Clarence Hardgrove** (1972), **Dale Jungst** (1985), and **Merlyn Behr** (1992).

Retirements

Richard Blecksmith came to NIU in 1984 following a PhD from the University of Arizona and a visiting position at the University of

Wisconsin, Green Bay. Professor Blecksmith is a number theorist of high repute and productivity. He was PhD advisor to Greg Manning and Geoff Apel. Professor Blecksmith has also been a popular and committed teacher over the decades, drawing students in with his infectious enthusiasm, his curiosity, and his gentle humor. (A glimpse of his presence in the Department is provided by his advocacy of a Bring Your Dog to Work Day.) Many of you will remember him through his long sponsorship of the NIU Math Club. Others will remember him as the lecturer for the Women in Calculus project, which offered a calculus section exclusively to women for several years and was marked with great success. Many more of you will remember fondly generous office hours spent in patient explanation, exploration of ideas and general discussion with graduates and undergraduates alike. Professor Blecksmith's popularity and effectiveness as a teacher was recognized in 2002 when he was honored with the University's Excellence in Undergraduate Teaching Award.

Though retired, Professor Blecksmith is expected to continue to teach in the Department on a part time basis.

Kitty Holland retired at the end of the Spring 2014 semester. Professor Holland came to NIU in the Fall of 1994 following her PhD in Model Theory at UIC and postdoctoral appointments at Carnegie Mellon and Simon Fraser Universities. Professor Holland is known for her passion and rigor in the teaching of the calculus sequence. Many of you will remember her as the toughest teacher you ever had. Others will remember her as the longtime conductor of ceremonies at the annual Award Ceremony, and in earlier years, the Commencement Brunch. It was her great joy every year to honor the achievements of the graduates, and to honor those whose support helped

make those achievements possible. Professor Holland steps down from chairmanship of the Award Committee and the ICTM Contest Committee, and from editorship of this newsletter. She will spend her retirement in her native Colorado.

Yoopyo Hong came to NIU in the Fall of 1985 after a PhD at the University of Maryland and collaborated with Biswa and Karabi Datta in his specialty of Linear Algebra. Professor Hong was dissertation adviser to Hyungkoo Park and co-adviser to Ran Lee and Mohan Thapa. In addition, he served on many dissertation defense committees.

Professor Hong will continue to teach in the Department on a part time basis.

Alan Zollman obtained his PhD from Indiana University and came to NIU from the University of Kentucky in 1993. He has been a bulwark of the undergraduate Mathematical Education program since his arrival. More recently, he has contributed to the Graduate Program in Mathematics Education as PhD advisor to Robert Cappetta, Jayleen Wangle and Paul McCombs, and as co-advisor to Rita Patel and Bharath Sriraman. Professor Zollman has been a dedicated teacher, and was the Department's recipient of the Excellence of Undergraduate Teaching Award in 2005. He worked for many years on outreach programs with the College of Engineering, and is very active in Mathematics Education at the national level, having served as President of the School Science and Mathematics Association. In this connection he is a frequent speaker at international conferences.

Professor Zollman is a man of great community spirit. Over the years, he has done much to integrate new faculty members into the Department by hosting NIU sports-related events and an annual Kentucky Derby party.

Professor Zollman is expected to return to teach part-time in the Department after a year away --- and to continue buying season tickets to the NIU football games.

Balakrishna Hosmane retired from NIU in May, 2014. He completed both Bachelors and Masters degrees in Mathematics at Karnatak University (Dharwar) in India and earned a PhD in Statistics from the University of Kentucky. He joined the faculty of the Department of Mathematical Sciences in 1983, and has served on the faculty of the Statistics Division since 1986. He spent the 1989-90 academic year at Abbott (now AbbVie) Laboratories as a senior clinical statistician, and ever since has been a free-lance statistical consultant for several pharmaceutical companies including Abbott Labs, Novartis and Takeda. He also has served as the Director of the Statistical Consulting Services of the Statistics Division since. He established a niche as an applied statistician par excellence based on this extensive work at NIU and in the pharmaceutical industry as well as on over 40 of his research publications in several areas including categorical data analysis and biostatistics. Recognizing his significant contributions to the industry, the Food and Drug Administration (FDA) has appointed him as an expert reviewer. He currently serves as a QT expert on two Global Pharma Committees. He also served as a president of the American Statistical Association-North East Illinois chapter.

Professor Hosmane has placed numerous students of the M.S program of the Statistics Division, and the B.S, PhD programs of the Department of Mathematical Sciences, in summer internships, academic-year externships, and regular jobs as statisticians, of the industry. His industry guests have frequently given talks jointly sponsored by the Statistics Division and the AIC program of the

Department. Indeed, both the Division and the Department will deeply miss his services.

Betty Corn has been an instructor in the Department for twenty-nine years. She earned her B.S. in Mathematics, with teacher certification, from Eastern Illinois University in 1979, and her M.S. in Mathematics Education from NIU in 1986. She began work in the Department in 1985. Many of you will have had her as lecturer in Math 201, Foundations of Elementary School Mathematics. In parallel with this contribution to the Mathematics Education Program, Ms. Corn has been deeply involved with the CHANCE program, which provides services and support for specially admitted students, throughout her career here. She has continuously taught CHANCE courses, which requires not only regular classroom duties, but constant coordination with the CHANCE program administration. Several years ago, she took over as the Department's CHANCE Program Coordinator. Ms. Corn has earned the deep respect of the Program staff and students alike for her dedication and competence, and is much-loved for her kindness, sincerity and sunny disposition. At her retirement party, Ms. Corn expressed her gratitude for having had the opportunity to work so many years in a job she loved, in company with "the best" people. It must be said that it is we who owe such gratitude, for the experience of working alongside a woman of such beautiful spirit.

Ms. Corn walks into retirement with joyous plans of travel with her husband, and a renewed relationship with her first love, painting.

Nancy Leifheit leaves us after twenty-four years as an instructor in the Department. Ms. Leifheit graduated from NIU in 1987 with a BS in Mathematics Education, followed by an MS in

Mathematics Education in 1990. She began as an instructor in the Department that same year. In addition to teaching a range of college algebra courses, Ms. Leifheit has been a pillar of the Mathematics Education program. Many of you will remember her as your lecturer in Math 201, Foundations of Elementary School Mathematics, which she taught every semester. Others will remember her in her longstanding role as advisor to Mathematics Education majors and minors. She has been a right arm of the Coordinators of Teacher Certification in the Department and a long-time member of the demanding Teacher Education Committee.

Ms. Leifheit's other major contribution to the Department has been her decades-long support, in time and expertise, of the yearly Illinois Conference of Teachers of Mathematics (ICTM) Regional Math Contest. There, she did the work of three people, before, during and after the contest, preparing materials with efficiency, determining awards on contest day, and doing a great quantity of post-contest wrap-up.

Ms. Leifheit embodies the volunteer spirit. It is this department's and this university's great fortune to have been the beneficiaries of her generosity, her good cheer and her deep kindness. She will be greatly missed.

A Great Loss

Eric Behr, the Department's System Manager, passed away in late March of this year. He will be deeply missed by his sons Stefan and Peter, by his sister Barbara Cortzen, and by his brother Marek.

Professor Behr obtained his PhD in Ring Theory from the University of California at San Diego in 1985, under the direction of Lance Small. After

some years at Illinois State University, he came to us in 1993 to take on the job of computer systems administrator.

It is difficult fully to describe Professor Behr's role in the Department. He was System Administrator, yes, but he was also Fixer of Problems, Inventor of Elegant Solutions, and The Source of Knowledge About Everything. All who have spent any length of time in the Department know that the response to any perplexity over the last twenty years has been to "Ask Eric." He would do the research on a new operating system to install and run it for you; if you wished you could make the system do this, he would spend the weekend (or many weekends) writing code and come back nonchalantly with the object of your desires; if the answer to your question existed somewhere in the ether, he would find it.

Eric Behr was universally respected for his integrity, his intelligence and his service to the community. He was held in deep affection by those who knew him for his kindness, his generous friendship and his understanding of the things that matter in life. He will be sorely missed.

News From You

Taylor Brysiewicz (B.S. '14) is participating in a summer REU program in algebraic geometry at the University of Wisconsin at Stout.

John Diamantopoulos (PhD 1996) has been promoted to full professor of Mathematics at Northeastern State University, Tahlequah, Oklahoma.

Ross Phifer (BS '63, MS '69) shares this: "The Casualty Actuarial Society is having their 100th anniversary year. I was never a member, but spent

three years as an actuarial analyst in the 1970's, before moving into the reinsurance field.

The CAS has placed several of my speeches in their lobby with other historical documents as part of their centennial celebration. The speeches were at industry conventions promoting the incorporation of actuarial techniques in reinsurance, which because of the remoteness or infrequency of many claim events, lacks credibility. However when used properly they are quite powerful and better than the alternative.

I also was chairman of the very first actuarial study of damages from hurricane, tornado, flood, and quake in the USA. That study is also on display. This is a nice honor, particularly for someone who was not a member of this organization.

In the mid-1990's I authored a professional text, *Reinsurance Fundamentals*, published by John Wiley & Sons. There is a copy in the NIU library, probably dusty and in a back corner. The publication was announced in *Northern Now* back in the day."

The Sixty-Fourth Annual ICTM Meeting

The ICTM Annual Meeting and Pre-Conference will be held this year on October 17-18, with a Pre-Conference on October 17, in Tinley Park, Illinois. The theme of this year's meeting is "Unprecedented Changes: Remarkable Opportunities." For full information on the meeting, go to

www.ictm.org/annualmeeting.html.

**Alumni of
25 Years**



Congratulations on the 25th anniversary of the class of 1989. Here is a listing of the class and their current hometowns. If you can update any information, we would appreciate your help.

Lori D. Baker, Arlington Heights, IL

Sharon L. Beck, Maple Park, IL

David J. Bielanski, Belmont, MA

Jo A. Carr, Helena, MT

Arlene C. Clyburn, Laurel, MD

Michael W. Collins, Frankfort, IL

Janet K. Eden, Oregon, IL

Nancy K. Faber, Maple Park, IL

Arlene M. Fassola, Homer Glen, IL

Brett L. Fleming, Mesa, AZ

Patricia A. Galus, Glendale Heights, IL

James E. Goeth, La Crosse, WI

Jeri M. Hale, Park Ridge, IL

Claire E. Harding, Chicago, IL

Matthew H. Holm, Belleville, IL

Maureen M. Idasek, Lombard, IL

Joe Kearns, Saint Charles, IL

Rodney D. Kesting, Carpentersville, IL

Michael J. Kolassa, Irving, TX

Donna L. Kowalski, Mt Prospect, IL

Mark A. Lauden, Keller, TX

Theresa Lucek, Prescott Valley, AZ

Douglas D. Lundin, Castle Rock, CO

James M. Lyle, Seattle, WA

Wendy A. Malley, Oldsmar, FL

Deborah S. McNaughton, Apex, NC

Richard William Mele, Arlington Heights, IL

William D. Murvihill, Fremont, CA

Peggy K. Netols, McHenry, IL

Mike John Osborne, Caledonia, IL

Beverly J. Pfeiffer, Sullivan, OH

Neal J. Pleckham, Sycamore, IL

Mark K. Prickett, Yorkville, IL

Dennis M. Reddington, Algonquin, IL

Richard Larrabe Reese, Lombard, IL

Joseph David Rich, Northbrook, IL

David R. Robles, Orland Park, IL

Catherine Ann Santoro, Arlington Heights, IL

Angela K. Schroeder, Rochelle, IL

Kathleen Lynn Sima, McHenry, IL

James William Skaggs, Moline, IL

Jeffrey J. Sorbel, Wilmington, NC

William Fran Stoesser, Saint Louis, MO

Catherine A. Summers, Saint Charles, IL

Debra L. Surmin, Sugar Grove, IL

Wai Shing Tang, Naperville, IL

Diane S. Tielbur, Mount Prospect, IL

Marsha J. Watson, Lexington, KY

Sheryl L. Wills, Platteville, WI

Kevin Lee Wohrley, Mendota, IL

Carl F. Wrede, Mount Prospect, IL

Thomas B. Zych, Williston, VT

2014



Departmental Awards

The 36th annual Award ceremony was held on April 13, 2014, in the Holmes Student Center Skyroom. At the reception, Department Chair Bernard Harris and Director of Statistics Sanjib Basu presented the following awards and scholarships.

Incoming Freshman Scholarship:

Melissa Peisker

Clarence Ethel Hardgrove Scholarship

Jaclyn Marie Fowler Qijing Yu

Michael J. Krowka Scholarship

Deborah Abassah-Manu Nathan Stalle

Dorothy & Glenn Erickson Award

Ashley Cramer Ivan Ortiz

Gail Masters Gallagher Memorial Scholarship

Haley Dutmer Tori Letizia
 Alison Peisker Daniel Ponczek
 Matthew Ryan Jacob Shipley
 James Waterman

Dale G. Jungst Memorial Scholarship

Alec Krueger Dana Lebrecht
 Catherine Kowalski

Eugene W. Hellmich Mathematics Prize

Michael Lofthouse

Allstate Actuarial Scholarship

Andrew Kelliher
 Nivek Kelly

NIU Math Contest

Taylor Brysiewicz 1st Place
 Robert Marks 2nd Place
 Greg Sassi 3rd Place
 Daniel Trout 3rd Place

M.M. Wheeler Scholarship

Timothy Herman Jerril Jones II
 Michael Lofthouse Scott Parola
 Daniel Ponczek Allison Sherman

M.M. Wheeler Teaching Award

Abbey Cramer Megan Gallagly
 Kimberly Hay Kyle Kimball
 Courtney Voise

Donald R. Ostberg Award

Glenn Harris

Certificate of Teaching Excellence

Glenn Harris
 Tyler Mitchell

Outstanding Graduate Student Award

Tyler Mitchell Michael Mutersbaugh

Honorable Mention Undergraduates

Michael Gillespie Keenan Karich
 Kyle Kimball Zhincheng Lin

Honorable Mention Graduates

Rawiyah Muneer Alraddadi Brian Beyerl
 Saptarshi Chatterjee Walaa Ahmed Hamdi
 Qingbo Li Michael McCabe
 Joshua Meyer Erik Rodgers
 Xi Zhang

Certificate of Merit Undergraduates

Joseph Antonius Robert Barba
 Taylor Brysiewicz Adam Canzoneri
 Nicholas DeCaluwe Cody Folz
 Douglas Fry Tyler Hendry
 Douglas MacClure Robert Marks
 Marc Welc

Certificate of Merit Graduates

Christopher Benshoof Ming Wei Chang
 Jonathan Egen Ryan Ferguson
 Deanne Flannigan Teng Gao
 Qi Jiang Chenshuang Lu
 Elizabeth Meena Michael Mutersbaugh
 Scott Rexford Herman Schaumburg
 Daniel Wiederkehr

Norma K. Stelford Memorial Scholarship

Joseph Antonius
 Nicholas DeCaluwe
 Douglas Fry
 Douglas MacClure
 Marc Welc

Chair's Award

Taylor Brysiewicz

Director's Award

Yin Zhang

Dean's Award

Douglas Fry (Statistics)
 Douglas MacClure (Mathematics)