

OFFICERS OF THE DEPARTMENT

Chair

Prof. Bernard Harris

Assistant Chair

Prof. John Wolfskill

Director of Undergraduate Studies

Prof. Qingkai Kong

Director of Graduate Studies

Prof. Zhuan Ye

Director of the AIC

Prof. Hamid Bellout

Director of the Division of Statistics

Prof. Sanjib Basu

Coordinators of Teacher Certification

Bonnie Kersten

Renee Olsen

Systems Manager

Eric Behr

REACHING US

By mail:

Northern Illinois University
Department of Mathematical Sciences
Watson Hall 320
DeKalb, IL 60115

By FAX:

815-753-1112

By phone:

815-753-0566 (Math)
815-753-6714 (Statistics)

By email:

alumni@math.niu.edu

On the web:

www.math.niu.edu
www.math.niu.edu/StatDiv

On Facebook:

Northern Illinois University-Mathematical Sciences

Chair's Corner



One of the most interesting things from the past year was the response to the alumni survey that was mailed out to the recipients of the Newsletter. About three thousand surveys were mailed and, to date, about four hundred fifty responses have been received. The majority were received late last Fall and early in the Spring semester, but replies are still coming in. If you have misplaced yours and would like to take part, a copy of the survey is available at <http://www.math.niu.edu/alumni/> and replies are still being collected. The surveys make fascinating reading and I am struck by the interesting lives that the Department's alumni lead. Later in the Newsletter there is a summary of the survey results. In the coming months, I will look into ways to best use the information from the survey. One thing that seems to be clear is the need for career guidance for those students seeking non-teaching jobs. I heartily thank all those who were generous enough to fill out the survey.

During this past Spring, the death occurred of Chaitan Gupta at his home in Reno, Nevada. Dr. Gupta came to the Department in 1969 and left in 1993 to take up a position at the University of Nevada, Reno. Chaitan's wife, Sarita, also taught in the Department for many years.

In the Fall, the Department will be joined by Nathan Krislock as a new assistant professor. Dr. Krislock works in Numerical Optimization and obtained his Ph.D. from the University of Waterloo in 2010. Continuing the French theme, he was then a post-doctoral fellow at INRIA in Grenoble, France, and when he takes up his appointment at NIU, will have just completed a year of post-doctoral research at the University of British Columbia.

Professor Rama Lingham has stepped down as Director of the Division of Statistics after eight years in the position. One of his notable successes was the establishment of a program leading to a Mathematical Sciences degree in Actuarial Science. Professor Lingham will be succeeded as Director by Professor Sanjib Basu.

This summer sees the retirement of Joan and Dave Trushin, who have been instructors in the Department since 2001, and of Sue Altenburg, a staff secretary in the Division of Statistics.

The Department is also losing Lisa Grilli, who has been with us first, as a graduate student, then, as an instructor, since 2001. Lisa has lately been the coordinator of the Mathematics Emporium, which teaches College Algebra in a self-paced environment using MyMathLab. Lisa will take up an appointment at Harper College in the Fall.

The Department offered a summer camp for high school and middle school students this summer under the direction of Lance Vobornik. The camp is running as the newsletter goes to press, but details and pictures will be posted on the Department's website.

Another innovation is the Calculus Tutoring Center, which was instituted in the Spring. The Center is organized by Brian Veitch, and offers tutoring services to students in the calculus sequence. The Center has seen heavy use and is expected to ease students' passage through what, for many, are their first college courses.

We want to stay in touch with all of our graduates, so please write to me or to Kitty Holland, the newsletter's editor, 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

Field Experiences for the AIC

Five students in our Ph.D. program are working this summer in their field experiences for the Applications Involvement Component (AIC).

Erik Rodgers is doing his internship at United Technology Aerospace Systems (formerly Hamilton Sundstrand). **Ben Wallis** is doing his internship at Woodwards Governor. Both of these students are contributing their mathematical knowledge and expertise to the creation of computer simulations of components used in the aerospace industry. Such simulations are essential to the design and certification of these components.

Glen Harris and **Khulan Luvsandash** are working on projects sponsored by IMO (Intelligent Medical Objects), which provides computer tools and portals to health care providers. These students' skills and training as mathematicians allow them to use analytics to provide IMO with useful information in improving their products and users' experience.

Jason Schoenfelder is joining a research team at the NIU Department of Biology which aims to collect and analyze measurement data of fossil bones from museums of natural history. Performing shape analysis on these fossil bones and comparing the results to those of modern animals aids the team in deducing the lifestyle of the extinct animals whose fossilized bones are measured.

Our Newest Ph.D.s

Michael Decaro (August, 2012) wrote his dissertation, *Representations of mx^2+ny^2* , under the direction of Professor Richard Blecksmith. Dr. Decaro now holds a position at North Central College in Naperville, Illinois.

Arpita Chatterjee (August, 2012) wrote her dissertation, *Bayesian Inference of Mixed Effects Models for Sparse Binary Data*, under the direction of Professor Sanjib Basu. Dr. Chatterjee now holds a position at Georgia Southern University in Statesboro, Georgia.

Patrick Sugrue (May, 2013) wrote his dissertation, *Non-meromorphic Solutions to Differential Equations*, under the direction of Professor Zhuan Ye. Dr. Sugrue holds a position at Rock Valley College, in Rockford, Illinois.

Christine Leroux (May, 2013) wrote her dissertation *On Universal Localization of Non-Commutative Noetherian Rings*, under the direction of Professors John Beachy and Harvey Blau. Dr. Leroux has accepted a position at Orange County Community College, State University of New York.

Qian Dong (May, 2013) wrote her dissertation, *Modeling Dependence and Regression Analysis in Competing-Risk Cure Rate Models*, under the direction of Professor Sanjib Basu. Dr. Dong has accepted a position in Beijing, China.

Local Events

On Saturday, February 23, the Department hosted the **ICTM Regional High School Mathematics Contest**. This year's contest brought students and coaches from seventeen Illinois high schools to the NIU campus.

The **NIU Math Club** team finished in third place at the ISMAA Student Math Contest this year. The contest was held on Friday, April 5, during the Annual Meeting of the ISMAA at Roosevelt University in Chicago. Team members were **Javier Diaz, Robert Marks and Nelson Wu**.

For the nth year running, the Department's booth at **Stemfest** drew crowds. Hundreds of youngsters (and their parents and teachers!) were drawn in and entranced by the selection of puzzles and mathematical challenges offered at the table. Many returned again and again to reattack recalcitrant puzzles. Thanks go to Bernie Harris, Kitty Holland and a team of graduate and undergraduates for donating a Saturday to make this popular outreach event a success.

The 28th Annual NIU Math Contest

A freshman woman from China, and more immediately from Maple Grove, Minnesota, was

the first place winner of this year's Northern Illinois University Mathematics Contest. **Huri** (who uses only the one name) outscored a field of eight other contestants to capture the \$100 prize. Second place and \$75 went to **Taylor Brysiewicz**, a junior Mathematical Sciences (General Mathematics) major from Bartlett. (Taylor is participating in a summer REU program in algebraic geometry at the University of Wisconsin at Stout.) The \$50 third prize was taken by **Robert Marks**, a junior Mathematical Sciences major emphasizing Probability and Statistics, and a resident of Crystal Lake. The competition was held on April 2, and the winners were recognized at the Department of Mathematical Sciences' Awards Ceremony and Reception on April 21.

The 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 counting problems, through calculus, linear algebra, and differential equations. Professors Harvey Blau, James Benson, and Gleb Sirotkin supervised the competition.

Two of the elementary problems were the following:

1. *It's getting warmer and it's time to get some ice cream. An ice cream shop has 10 flavors of ice cream and 5 topping flavors. Your ice cream platter can contain up to 3 scoops of ice cream (not necessarily different flavors) and 1 to 3 different toppings poured over the whole dish. The order of items in the dish does not matter. How many unique platters are there?*

2. *Find all solutions x, y to*

$$\log(x-y) = (\log x) - (\log y).$$

*For more information, contact
Harvey Blau (815-753-6772) blau@math.niu.edu*



The Sixty-Third Annual ICTM Meeting

The ICTM Annual Meeting and Conference will be held this year on October 18-19, with a Pre-Conference on October 17, in Peoria, Illinois. The theme of this year's meeting is "Get to the Core." For full information on the meeting, go to www.ictm.org/annualmeeting.html.

News From You

Dr. James Vicich (B.S. 1975, M.S. 1977), a professor at Scottsdale Community College, is the co-PI of a five year \$8.7 million NSF grant entitled "Arigana Mathematics Partnership," which is focused on improving mathematics education in grades 5 to 9.

Laura Hagen Jenkins (B.S. 1995) is married to Dave Jenkins, another NIU graduate, and is the mother of Sarah, 15 and Ben, 12. She teaches at Huntley High School and is the Math Team Coach.

David Spangler (B.S. 1971, M.S. Ed. 1973) has joined McGraw-Hill Education to help develop K-12 Math programs. He is also co-editor of the NCTM's *Mathematics Teaching in the Middle School*. David is the author of seven math books, including *Strategies for Teaching Fractions*, published by Corwin Press.

Jeanette Pinion (nee Horn) (B.S. 1993) wrote that after teaching high school for 4 ½ years, she went back to school full time while her husband Patrick (B.S. History 1998) attended Concordia Seminar in St. Louis. She received her M.A. in 2001 from SLU. Five months later the family's first child was born and had open heart surgery. Jeanette's daughter is now 10 years old and doing well with 6 year old

sibling. Jeanette has taught part time at Sauk Valley Community College. **Jill Horn**, Jeanette's sister, graduated with a M.S. degree from the department this year.

Diana Neal (B.S. 1967, M.S. 1979) retired in December of 2011 after a long career which focused on the education of the business user for computers. She sent the following account of the early days of Computer Science, then part of the Math Department:

"In the 1966 Northern Yearbook, Page 122, there is a photo of me and another major at the university's first computer, an IBM 1620. I could tell you numerous stories about the computer! At first it had no storage medium other than cards. Cards in, cards out, no hard disk whatsoever. To compile a Fortran program, you keypunched your program and then fed in the Fortran stage 1 compiler deck, followed by your program. This process produced an intermediate deck. You fed in the Fortran stage 2 compiler deck, followed by the intermediate compile step. This produced the compiled version of your program. You fed this into the card hopper along with the Fortran executable program and routines, and it would produce your output (also cards), which you could then print on a piece of unit record equipment. (Unit record means card.) If you had made a mistake, start over from the beginning. Programming was a more rigorous process in those days—you wanted to get it right the first time! The consoles of the computer all had toggle switches that you could use to step through your program and read at each step.

At the time there were only two computer courses offered by the entire university. One was the Fortran II programming class offered by the math department, and the other was some kind of introductory class offered by the business department. Those of us planning on trying to get a job in computer programming took both of them (even though the business department one was ridiculously easy) just so we would have something on our transcripts. I also had a student job working in the computer lab.

The thing that puzzles me about this (yearbook) picture is that I am wearing my wedding ring, and I wasn't married until October, 1967. So I have not figured out how it came to be in the 1966 yearbook or when it was taken, since I had graduated in January, 1967."

Alumni of 25 Years



Congratulations on the 25th anniversary of the class of 1988. Here is a listing of the class and their current hometowns. If you can update any information, we would appreciate your help.

Ms. Georgene Abbott, Olympia WA
Mr. Peter Alberts, Batavia, IL
Ms. Suzanne Alexa, Joliet, IL
Ms. Elvessa Aragon-Logan, Apex, NC
Ms. Kristin Marie Berg, Lake in The Hills, IL
Mr. Thomas Bleker, Lombard, IL
Dr. John Boardman, Franklin, IN
Mr. Patrick Brennan, Cortland, IL
Ms. Karin Brudenell, Los Altos, CA
Mr. Keith Chmelar, Bellevue, WA
Mrs. Bernadette Chvoy, Palatine, IL
Ms. Mary Coleman, DeKalb, IL
Ms. Rachael Corp, Cresthill, IL
Mr. Steven Donaldson, Chicago, IL
Mr. Garry Ebel, Round Lake, IL
Mrs. Susan Ellett, Hampshire, IL
Mr. Patrick Evers, Rochelle, IL
Mr. Dale Falk, Arlington Heights, IL
Mrs. Theresa Fitch, Winfield, IL
Mrs. Rhoda Fox, Cherry Valley, IL
Mr. Bradley Frey, Crystal Lake, IL
Ms. Kathleen Gavin, Oak Lawn, IL
Mrs. Dyanne Gendron, Fort Collins, CO
Mr. Jon Gingrich, Sugar Grove, IL
Ms. Crystal Grizzell, Parker, CO
Mr. Richard Guthrie, Crystal Lake, IL
Ms. Elizabeth Hajek, Wheaton, IL
Mr. David Jacobson, Sugar Land, TX
Mrs. Susan Klein, Palatine, IL
Ms. Tracey Kozubowski, Burbank, IL
Mrs. Lynn Kuhlrow, Buffalo Grove, IL
Mr. Thomas Labno, Palatine, IL
Mr. Gregory Lapp, Orland Park, IL
Mrs. Nancy McLain, Lake Zurich, IL
Mrs. Carolyn Meingast, Rockford, IL
Mr. John Mertes, South Elgin, IL
Mrs. Maria Moberg, South Elgin, IL
Mr. Kurt Muehleis, Elmhurst, IL
Mr. Robert Murphy, Crystal Lake, IL

Mr. William Murvihill, Fremont, CA
Mr. Tuan Nguyen, El Dorado Hills, CA
Mr. Ning Yu-ming, Hartsdale, NY
Mr. Michael O'Donnell, Seattle, WA
Mr. Vince Perozzi, Aurora, IL
Ms. Mary Polaczek, Tinley Park, IL
Mr. Scott Rawlings, Elmhurst, IL
Mrs. Melissa Recka, Bolingbrook, IL
Mrs. Penny Rincavage, Westminster, MD
Mr. John Saldoval, East Peoria, IL
Mr. Cedric Smith, Chicago, IL
Mr. Brian Spears, Algonquin, IL
Mrs. Katheryn Tanner, Island Lake, IL
Mr. Jeffery Thompson, Warrenville, IL
Ms. Bichthuy Tran, Lisle, IL
Mrs. DeAnn Walkner, Crystal Lake, IL
Dr. Rongdong Wang, Kingsville, TX
Mrs. Kristen Wengert, Kenosha, WI
Mrs. Michelle Whitney, Bellevue, WA
Mr. Henry Winsor, Palo Alto, CA
Mr. Bin-long Zhang, New York, NY

Alumni Survey Results

Why did you choose to come to NIU? Almost all of the respondents who graduated with a B.S. degree used the word “location” in their response. Many went on to say that they had a friend or relative who came to NIU. Another frequent response involved advice from a high school guidance counselor. Interestingly, many B.S. graduates spoke of the good reputation of the teacher education program and included a phrase, “I thought that I wanted to teach but I changed my mind...”

Respondents who graduated with the M.S. in Mathematics Education were mostly serving teachers who were attracted by the mathematics content of our program. Graduates of the M.S. Statistics program all referred to location and proximity to Chicago. They, like Ph.D. graduates, spoke of the availability of teaching assistantships. Some Ph.D. respondents also were attracted by the AIC program.

Why did you choose to be a math major or get a graduate degree in math? There were a number of interesting stories but by far the most common response was some variant of “I was good at math and I liked it.” Recipients of graduate degrees spoke of some aspect of career advancement, but a liking of the subject was retained in almost all of the responses.

What degree did you obtain? The mix of degrees was a good reflection of the degrees awarded over the years.

What emphasis or track is your degree? This applied mostly to B.S. graduates. Roughly 60% of the degrees awarded are in Mathematics Education and 20% are in Statistics. These proportions have been constant for many years and were reflected in the responses.

What year did you graduate? The earliest respondent received a B.S. degree in 1946 and the latest a degree in 2012.

What was the first math course that you took at NIU? Most of the B.S. graduates began with calculus and most of the recipients of graduate degrees began with Analysis, Math 430. Recipients of the M.S. degree in Statistics usually took a 400 level Statistics course.

What is your occupation? I should have added the question, “If retired, what was your last occupation?” The variety of responses was astonishing. I can’t list them all, but have tried to put them into broad categories.

<i>Teacher / School Administrator</i>	<i>Risk Analyst</i>
<i>IT Manager / Consultant</i>	<i>Actuary</i>
<i>Systems Analyst</i>	<i>Biostatistician</i>
<i>Reliability Engineer</i>	<i>College Professor</i>
<i>Insurance Underwriter</i>	<i>Physician</i>
<i>Real Estate Director</i>	<i>Data Analyst</i>
<i>Information Security Officer</i>	<i>Systems Engineer</i>
<i>Admin. Service Coordinator</i>	<i>Statistician</i>
<i>Postal Service Executive</i>	<i>Navy Officer</i>
<i>Construction Manager</i>	<i>Project Manager</i>
<i>Financial Services Worker</i>	<i>Gentleman Farmer</i>
<i>Health Care Administrator</i>	<i>Musician</i>
<i>Human Resource Manager</i>	<i>Meteorologist</i>
<i>Sales Manager</i>	<i>Airline Pilot</i>
<i>Market Analyst</i>	<i>Attorney</i>

<i>Media Research Director</i>	<i>Seamstress</i>
<i>Hotelier</i>	<i>Bank Manager</i>
<i>Dog Groomer</i>	<i>Dentist</i>
<i>Artist</i>	

Teacher/School Administrator was the most frequent response, followed by careers in some aspect of financial or insurance services.

Is your occupation related to your degree? The responses were in line with the occupations in the last question.

What parts of your degree program are most valuable in your present occupation? Respondents who taught, or had taught, in schools, colleges and universities tended to either mention specific courses or say that the whole program was valuable. The same was true of recipients of the M.S. degree in Statistics. Graduates who do not work in mathematical or statistics fields spoke about skills is critical thinking or abstract reasoning.

What job did you do immediately after graduation? The list here is more varied than the list of occupations. A couple of main themes emerged: People who went into teaching often took up a position in teaching and stayed in the profession, sometimes in the same school, for a long time. A significant minority of teachers left the profession after about ten years to work in a completely different field. Respondents who worked in financial services often said something like “to my surprise I was employed in ... and this led to where I made my career”. In other words, a job that was seen as temporary led to a specialist long term employment.

Was there a single course, project or interaction with a faculty member that you particularly remember? There were a small number of horror stories here; happily, they concerned faculty members who are no longer in the Department. Many respondents related an incident with a faculty member that had a profound effect on their lives. Drs. Blair and Sons and Ms. Stecher appeared frequently in their stories as, from an earlier time, did Drs. Christiano and Hellmich.

Were professors approachable? In modern times the answer was almost uniformly “yes”, but responses going back to the '60s, '70s and '80s were more mixed.

Do you feel that your degree represents good value? The almost universal answer was “yes”.

Can you name something that would have increased the value of your degree to you? The most frequent answer was “no”, but there were a couple of interesting suggestions that either have been acted on or provide ideas for future developments: Many of the earlier graduates of the Statistics major suggested that more use be made of packages like SAS. This has been incorporated into a course, STAT 473, taken by seniors, and the Ph.D. program has been changed to include a Statistics course which is required of all Ph.D. students.

Some graduates of the teacher education track offered the opinion that contacts with serving teachers and superintendents would be beneficial. A program of seminars was started by Ms. Stecher and has been continued by Ms. Kersten and Ms. Olsen. This includes mock job interviews.

Possibly the most frequent suggestion concerned career counseling for careers that did not involve teaching. In light of the astonishing diversity of careers that alumni have followed, this seems like an excellent idea. If any alumni would be willing to give a talk to graduating seniors, I would very much like to hear from them: harris@math.niu.edu

Another suggestion concerned academic advising to expedite students' progress. Mandatory advising has existed for some time for graduate students and for students in the Mathematics Education track. The Department will look into extending it for all students.

Would you have liked to undertake an internship? About 25% of respondents said “yes”, but the most frequent response was, “I did --- it was called student teaching”. The next most frequent answer was something like, “I didn't have the resources at the time, but looking back it would have been a good idea”. An internship is, of course, required for the Ph.D. program and these graduates mostly regarded it positively, some very positively.

Would you have taken part in a study abroad program? The majority response was “no”, often with reasons such as funding, time or other constraints. Many alumni had done military service and were concentrating on getting their degree. Another fairly frequent response was “yes, provided it did not increase the cost or time to the degree”.

Do you think that the time it took you to get the degree was reasonable? Almost universally the answer was “yes”. Very few people took more than four years and the average time for people entering the B.S. program and beginning with calculus was around three years. Many people made heavy use of summer school. The response from people who earned graduate degrees was similar.

Of what professional achievement are you most proud? I can't possibly summarize the response here beyond saying that the Department's alumni have amassed an extraordinary catalog of achievements.

What else would you like to be known? This too is impossible to summarize. The only common feature was the fact that the Department's alumni lead extremely interesting lives.

**2013
Departmental
Awards**



The 35th annual Award Ceremony was held on April 21, 2013, in the Holmes Student Center Skyroom. At the reception, Department Chair Bernard Harris and Director of Statistics Rama Lingham presented the following awards and scholarships.

Incoming Freshman Scholarship:

James Waterman

Joseph C. and Marion E. Huber Memorial Scholarship

Joseph Savala

Clarence Ethel Hardgrove Scholarship

Jaclyn Fowler Dana Ann Lebrecht
Clayton Peterson

Michael J. Krowka Scholarship

Dana Ann Lebrecht Nathan Stalle
Brian Theis

Dorothy & Glenn Erickson Award

Ethan Franklin Michael Gillespie
Dana Ann Lebrecht Courtney Voise

Gail Masters Gallagher Memorial Scholarship

Haley Dutmer Andrew Kelliher
Zhicheng Lin Timothy Meister
Alison Peisker James Waterman

Allstate Actuarial Scholarship

Cody Folz Keenan Karich

Carol Feltz Scholarship

Rachael Bardell

Dale G. Jungst Memorial Scholarship

Alec Krueger Tori Letizia
Daniel Ponczek

NIU Math Contest

Huri 1st Place
Taylor Brysiewicz 2nd Place
Robert Marks 3rd Place

M.M. Wheeler Scholarship

Robert Cyr Michael Gillespie
Kyle Kimball Dylan Rambow

M.M. Wheeler Teaching Award

Elaine Dhamer Katharine Latta
Jacqueline McGinn Allison McGlaughlin
Eric Moore

Merlyn Behr Research Award

Paul McCombs Jaclyn Murawska
Jayleen Wangle

Donald R. Ostberg Award

Qi Jiang

Certificate of Teaching Excellence

Caroline Kettlestrings Allen Montz

Outstanding Graduate Student Award

Angela Antonou Jonathan Kugel

Honorable Mention

Undergraduates

Brittany Dammeier Benjamin Epperson
Kevin McCarty Laura McKinney
Eric Moore Sean Pikosz
David Squires Anthony Twohill
Joshua Yednock

Honorable Mention Graduates

David Burke Daniel Creamer
Qian Dong Kevin Fink
Malia Larson Brad Moss
Thomas St. George
Casie Schmitt Jason Schoenfelder
Mahmoud Shehadeh Cheng Xiang

Certificate of Merit Undergraduates

Rachael Bardel Jessica Chester
Rachael Jackso Emily Petrus
Scott Rexford ohn Shoaf
Daniel Swart Nelson Wu

Certificate of Merit Graduates

Stacey Butler Shreya Chakraborty
Wei Chen Santu Ghosh
Glenn Harris Caroline Kettlestrings
Nicole Listerfelt Paul McCombs
Kristin McCullough Arnab Maity
Adam Maple Richard Marcum
Tyler Mitchell Allen Montz
Carlo Ordonez Hao Shen
Benjamin Wallis Andrew Wang
Yunzi Zhang

Norma K. Stelford Memorial Scholarship

Rachael Bardell

Chair's Award

Jessica Chester

Director's Award

Nicholas Syring

Dean's Award

Rachael Bardell (Stats)
Nelson Wu (Math)