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Director of Graduate Studies

Prof. Zhuan Ye

Director of the AIC

Prof. Hamid Bellout

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Prof. Rama Lingham

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Chair's Corner



I have just completed my first year as Chair after taking over from Bill Blair, my friend and predecessor. It has been a very eventful year, with some happy and some sad events to relate.

Professor Ellen Hines retired in June of this year. Ellen has been involved with NIU throughout her career. She obtained her B.S. in 1970, her M.S. in 1989 and her Ed.D. in 1998, all at NIU. She taught as an instructor from 1989 to 1999 before continuing in the Department as an assistant professor in 1999. Ellen is an outstanding teacher at all levels. I particularly remember the graduate level course "Teaching at a Community College," which was a great success with students in the Mathematics Education track of the M.S. Ellen was an outstanding departmental citizen and a wise counsel. Linda Sons has written an appreciation of Ellen's research, which appears later in this newsletter.

Professor Peter Waterman retired in December of 2010. Peter came to NIU in 1984 after receiving his B.Sc. from Southampton University in 1977 and his Ph.D. from the University of Aberdeen in 1983. Prior to his arrival at NIU, Peter held visiting positions at Temple University in Philadelphia and at the University of Maryland. Peter has an international reputation for his work in Complex Analysis and, more particularly, Discrete Möbius Groups. Within the Department, Peter was possibly best known for his organization of the ICTM High School Contest. Peter ran the contest, with the help prominently of Cindy Stecher and Eric Behr, for many years. The fact that such a complicated operation ran as smoothly as it did is a testament to his powers of organization. During his career at NIU Peter took sabbatical leaves at the University of Michigan and at l'Institut des Hautes Études Scientifiques near Paris. Linda Sons has written an appreciation of Peter's research, which appears later in this newsletter.

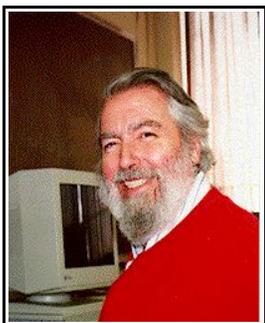
Professor Sudhir Gupta has retired from the Division of Statistics. Professor Rama Lingham, Director of the Division of Statistics, has written a piece on Sudhir's career, to appear below in this newsletter.

Professor Zhuan Ye has taken over as Graduate Director. I wish him every success in what I found to be a particularly rewarding job.

We will be joined in the Fall by two new faculty members: James Benson and Deepak Naidu. James Benson works in Biomathematics. He received his Ph.D. From the University of Missouri, Columbia, and comes to NIU from The National Institute of Standards and Technology in Washington, D.C. Professor Benson's interview talk was entitled "Modeling and Optimization in Cryobiology." Professor Benson's wife will also be working at NIU, in the Department of Biology.

The second newcomer, Deepak Naidu, works in Algebra, with a specialization in tensor categories and deformation theory of algebras. Professor Naidu received his Ph.D. from the University of New Hampshire, and comes to NIU from Texas A&M. Professor Naidu's interview talk was entitled "Drinfeld Centers of Graded Fusion Categories."

The Department lost an old friend in the past year with the death of John Selfridge. John came to NIU as Director of computing in 1971, back when Computer Science was still part of the Department. He served as Chair from 1972 to 1976 and from 1986 to 1990, retiring in 1991. In the interim, John served for eight years (1978-1986) as the Executive Editor of the Mathematical Reviews of the AMS, where he oversaw a large part of the organization's modernization. John's research was in number theory, often guided by computer work. Richard Blecksmith, John's friend and coauthor of many years, has contributed a piece to this newsletter recalling joint work with John and Paul Erdős.



The Department has had a bumper crop of graduates from our Ph.D. Program, eight, all of whom have found jobs. This is the largest number of graduates

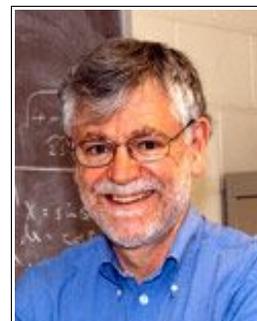
of the Program in a single year, and is a good way to mark the 25th anniversary of the starting of the Program.

This year has also seen the first graduates of the Department's new Master of Science in Teaching Program. This program was constituted in collaboration with the Rockford School District, and is funded by a large federal grant. The MST is a part-time program designed specifically for middle school teachers. Moving spirits behind the project are Professors Helen Khoury and Mary Shafer. Prof. Khoury gives an update on the Program in an article below.

We want to stay in touch with all of our graduates, so please write to me, or to Kitty Holland, the Newsletter's new editor, and let us know how you are doing. (You will find contact information included in the Alumni Update Form at the end of the Newsletter. Also, please see our new Facebook page.) If you find yourself in DeKalb, please come see us. We would love to see you! --- *B. Harris*

* * *

Blau named Presidential Teaching Professor



Please join us in congratulating Professor Harvey Blau, who was named 2011 NIU Presidential Teaching Professor.

The NIU Presidential Teaching Professorships were established in 1991 to recognize and support faculty who excel in the practice of teaching. Recipients of this award have demonstrated over time their commitment to and success in the many activities associated with outstanding teaching. Up to three such professorships are granted each year, providing budgetary support and release time for the enhancement of their teaching skills. After four years as a Presidential Teaching Professor, each of these

eminent faculty members is designated a Distinguished Teaching Professor.

Those of you who have taken a course from Professor Blau in your time at NIU will know that he is deeply deserving of the honor, having set a standard of commitment, hard work and thoughtfulness in his teaching that we would all do well to emulate. It is well that hundreds of future mathematics teachers over time have had the opportunity to witness Professor Blau's devotion and fine technique in Math 353, Geometry, which course Professor Blau designed, wrote the textbook for, and has taught regularly for many years. We invite you to visit www.niu.edu/president/ptp/2011/blau.shtml for a piece on Professor Blau's educational philosophy.

The Department is proud to have called its own four previous Presidential Teaching Professors: Bill Blair (2004), John Beachy (1997), Linda Sons (1994) and Robert Wheeler (1991).

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Hines Retires



Ellen Hines' research investigations have focused on the learning of middle-school students and the development of middle school teachers. Here are some highlights of her work.

Professor Hines has been interested in learners' processes of generalization in their beginning algebraic experiences. To that end, she studied the use of dynamic physical models to introduce function concepts to eighth-graders, and in work with Aurora middle school teacher Jesse Bridges, studied middle school students' learning when using flex-o-grams to explore the functional relationship between the height of a parallelogram and its area.

Another facet of her work is represented by an article with Mary McMahon of North Central College

wherein implications for the preparation of teachers were sought by analyzing preservice teachers' interpretations of middle school students' strategies in proportional reasoning situations. In further collaboration with McMahon, Prof. Hines implemented an introduction to lesson study with preservice secondary mathematics teachers and observed that with a few adaptations this could be carried out by in-service teachers without requiring a large amount of time outside the regular school day.

In conjunction with Thomas Smith of NIU and Cornelius McKenna of Kishwaukee College, Professor Hines examined data from a large sample of eighth-grade students in the U.S. assessing how the frequency of group work activity in mathematics is connected with mathematics achievement and some measures of attitudes towards mathematics. They found that girls showed greater achievement benefits from group work than boys, and that increased levels of group work were associated with more positive attitudes towards mathematics.

Most recently, Professor Hines has joined with Professor Helen Khoury of NIU in professional development work associated with the Department of Education funded Project REAL. One activity of the project involved middle school teachers exploring, conjecturing about, and generalizing their understanding of the triangle inequality relationship, and then adapting the activity for use with their own students to observe understandings. These and other experiences have led Professors Hines and Khoury to propose a model for the emergence of a professional development school. --- *L. Sons*

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Waterman Retires



Professor Peter Waterman's research interests have been in complex analysis with a focus on Fuchsian groups and Möbius transformations in several dimensions. Here are some highlights of his work.

Let M denote the class of Möbius transformations of the extended complex plane. M is a group under the usual composition of functions. A subgroup G of M endowed with the discrete topology is Fuchsian when it has an invariant disc. It is convenient to transform the invariant disc to the upper half-plane $H^2 = \{x + iy : y > 0\}$, where, with the metric derived from the differential $ds = |dz|/\text{Im}(z)$, one has a model for the hyperbolic plane. Thus, a Fuchsian group may be regarded as a discrete group of isometries of the hyperbolic plane.

The algebraic group structure of M is facilitated by simple formulas involving matrix computations. In 1985, Professor Lars Ahlfors showed how a 2×2 -matrix with entries in a Clifford algebra could be used to describe a Möbius transformation of $R^n \cup \{\infty\}$. In an important paper in *Advances in Mathematics* (his most cited work), Professor Waterman gave a different development of Clifford matrices and discussed their relationship to hyperbolic isometries.

Let H^{n+1} be the upper half of Euclidean $(n+1)$ -space viewed as hyperbolic $(n+1)$ -space and $M(n)$ be the associated group of hyperbolic isometries. An element of $M(n)$ is elliptic if it has a fixed point in H^{n+1} , and a subgroup G of $M(n)$ is purely elliptic if all nontrivial elements of G are elliptic. Professor Waterman obtained the striking result that the elements of a purely elliptic subgroup of $M(n)$ have a common fixed point in H^{n+1} when $n=3$, but not when $n=4$. (The result was already known for $n=2$.)

Among important classes of Fuchsian groups are those known as the triangle groups. A group G of isometries of the hyperbolic plane is said to be of type (α, β, γ) if and only if G is generated by the reflections across the sides of some triangle with angles α, β and γ . Together with Professor Nicolaas H. Kuiper, Professor Waterman did extensive study of triangle group actions on hyperbolic 4-manifolds and lectured on these results in many places, nationally and internationally.

Most recently, Professor Waterman has carried out joint research with Professor Jane Gilman. He has also co-authored articles with C. Cao, P. Nicholls, S. Wolpert, A. Beardon, N. Wielenberg and C. Maclachlan. --- *L. Sons*

Gupta Retires

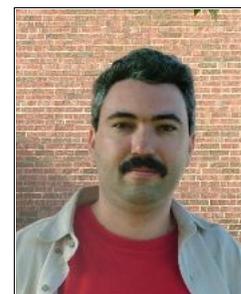


Professor Sudhir Gupta retired from NIU in June, 2011. He was a faculty member of the Department and the Division of Statistics during 1985-2011. He earned his B.S. and M.S. degrees respectively from Delhi University and the Indian Agricultural Research Institute. He received a Ph.D. from the University of Kent in the UK for his work in the area of Design of Experiments, a field in which he gained international recognition during his career at NIU. He has published well over 80 papers in professional journals. He served on the editorial boards of several journals devoted to statistics and related fields in various capacities, including chief editorship. In 2010, the American Statistical Association (ASA) bestowed upon him the honor of ASA Fellow.

As the Director of the Division of Statistics during 2001-2005, he began a curricular process which eventually resulted in launching the actuarial emphasis of the math major. The Department and the Division of Statistics wish him well in all his future endeavors. ---*R. Lingham*



Krishtal Promoted

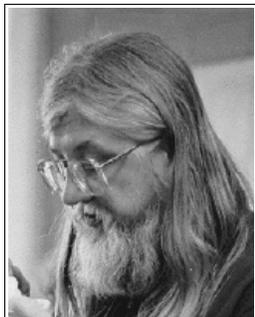


Congratulations go to Professor Ilya Krishtal, who becomes a tenured Associate Professor with the start of the 2011-2012 academic year. Professor Krishtal came to NIU in 2006 after receiving his Ph.D. in 2003 from Voronezh State University in Russia and completing a post-doctoral appointment at Washington University in St. Louis. He will be on

sabbatical leave for the coming year at Vanderbilt University.

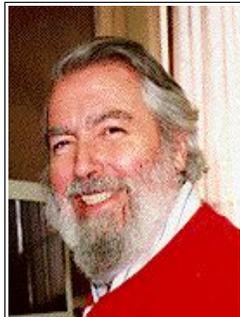
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Blecksmith



on

Selfridge



John Selfridge wrote over fifty papers in his lifetime. Over a dozen were with Paul Erdős; nearly as many with Richard Guy and John Brillhart. One of his early Erdős papers was aptly titled “The product of consecutive integers is never a power,” settling a 150-year old conjecture. Much of his early work with D.H. Lehmer, Emma Lehmer, John Brillhart, and Sam Wagstaff culminated in a book entitled *Factorizations of b^n , for $n=1,2,3,\dots,12$* . The book never made the New York Times List of Must Summer Reading, but it did have a huge impact on coding theory and computational number theory. This on-going work has been a source of interesting large numbers to factor for the past 30 years.

One of my own papers with Selfridge and Erdős was titled “Cluster Primes.” The problem, simply stated, is: Do the primes ever appear as plentiful as they do at the beginning of the number line: 2, 3, 5, 7, etc.? Of course, this question requires a definition---which Erdős provided---of numbers that I thought to name “cluster primes.” (Erdős had been calling them “good primes.”) It turns out that out to infinity, cluster primes become increasingly rare, but not extinct (although no one knows how to prove this). I must say that working with mathematicians with the intuition of Paul Erdős and the algorithmic sense of John Selfridge was indeed a privilege for me. --- R. Blecksmith

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Kersten takes on new role



The Department welcomes Bonnie Kersten in her new role of Coordinator of Teacher Certification, taking over from Pat Reisdorf. Bonnie has previously worked as an instructor in the Department, joining us after a long and distinguished teaching career at DeKalb High School. We recognize and welcome her high teaching standards and excellent organization skills.

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Our Newest Ph.D.s

Matt Cardwell wrote his dissertation, *On the Value Distribution and Topology of Classes of Dirichlet L-functions*, under the direction of Professor Zhuan Ye. Dr. Cardwell has obtained a position at Intelligent Medical Objects, Inc., in Northbrook, IL.

Ujjwal Das wrote his dissertation, *MDL Procedure, Lasso Penalty and Their Statistical Risk for Type-I Censored Data* under the direction of Professor Nader Ebrahimi. Dr. Das has been appointed to a position in the Department of Public Health at the University of Massachusetts, Amherst, MA.

Joshua Eggenberger wrote his dissertation *Some Problems in the Spectral Theory of Separated Dirac Operators*, under the direction of Professor Bernard Harris. Dr. Eggenberger has obtained a position at Ashford University, IA.

Laura Kettner wrote her dissertation, *Variational Analysis of Vector Optimization Problems With Applications to Well-posedness*, under the direction of Professor Sien Deng. Dr. Kettner leaves us to work at Epic Systems Corporation in Verona, WI.

Suchitrita Sarkar wrote her dissertation, *Unified Competing Risks*, under the direction of Professor Sanjib Basu. Dr. Sarkar has obtained an appointment at Abbott Laboratories in Abbott Park, IL.

The 26th Annual NIU Math Contest

Olga Terlyga wrote her dissertation, *Analysis of One Dimensional Pulse Combustion*, under the direction of Professor Frederick Bloom. Dr. Terlyga leaves us for a position at Fermilab in Batavia, IL.

Xiaofei Wang wrote her dissertation, *Nodal Solutions of Nonlinear Boundary Value Problems with P-Laplacian*, under the direction of Professor Qingkai Kong. Dr. Wang has obtained a position at Allstate Insurance Company in Chicago, IL.

Yarong Yang wrote her dissertation, *Learning Bayesian Networks from Microarray Gene Expression Data*, under the direction of Professor Nader Ebrahimi. Dr. Yang is now a postdoctoral research fellow at the Engineering Research Support Organization at the University of California at Berkeley, CA.



Field Experiences for the AIC

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

Kristen McCullough is doing her internship at Argonne National Laboratory on the development of models for sensors made from networks of palladium nanowires.

Patrick Sugrue is interning at Intelligent Medical Objects Inc., where he will work on software which utilizes medical vocabulary.

Mahmoud Shehadeh is working on econometric modeling and pricing of reinsurance policies for the Arch Reinsurance Company.

Qian Dong is working with Dr. Hou from the Computer Science Department to study evolutionary changes in DNA. In particular, she is working with genomic sequence alignment and inversions.

Christine Leroux and **Chris Bailey** are interning at Ecor Group Consulting, where they will develop an app for fantasy football.



Two seniors and a freshman took the honors at this year's Northern Illinois University Mathematics Contest. The 26th running of the annual event was held on March 23. The winners were recognized at the Department of Mathematical Sciences Awards Ceremony and Reception on April 17.

Chi Zhang, a senior Computer Science and Mathematical Sciences major from Qingdao, China, won first place for the third year in a row, earning a prize of \$100.

Xiaoyang Bi, a senior Mathematical Sciences (Actuarial Science) major from Vernon Hills, took second place, earning a prize of \$75.

Taylor Brysiewicz, a freshman Mathematical Sciences major from Bartlett, finished third, earning a prize of \$50.

The NIU Mathematics Contest has a format allowing freshmen and sophomores to 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, geometry, and elementary number theory, through calculus, linear algebra, and differential equations. Professors Harvey Blau and Gleb Sirotkin supervised the competition, in which 12 students participated.

Here is the easiest problem from this year's contest:

It is spring, and there are 12 hours of daylight. A caterpillar climbs a vertical wall at a speed of 1 foot per hour during the day, and then sleeps for 12 hours of darkness, during which it slides downward at $\frac{1}{2}$ foot per hour. The wall is 48 feet high. How long will it take the caterpillar to reach the top of the wall?

A more difficult problem, although it only involves a knowledge of matrix multiplication from linear algebra, was the following:

Does there exist a 3-by-3 matrix with four positive entries and five zero entries that has some power with all positive entries? Prove your answer.

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

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ICTM Annual Meeting and Conference

Mark your calendars! The 62nd Annual Meeting and Conference of the Illinois Council of Teachers of Mathematics with the theme "Conversations on Teaching Mathematics" is to be held October 21-22, 2011 in Springfield, Illinois. The associated Leadership Conference is set for October 20 at the same location. For more details, go to

www.ictm.org/annualmeeting.html.

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ICTM Regional Math Contest

On Saturday, February 26, the Department hosted the ICTM Regional High School Mathematics Contest. This year, the contest brought to the NIU campus a record 360 mathematically talented high school students, together with 45 teachers and coaches from 15 high schools in northern Illinois.

This has been a transition year for the Contest. With the retirement of Peter Waterman, our longtime Contest Chair, organization of the annual event has moved to the hands of Professors Anders Linner and Kitty Holland. Faculty member Lisa Grilli has taken over management of the grading room from Emerita Cindy Stecher. (Many of you will remember from having been volunteer graders yourselves what a job that is!) We continue to depend on the volunteer spirit of faculty member Nancy Leifheit, who has been managing calculation of the awards for many years now, and of Systems Manager Eric Behr, without whose thoughtful technical support we could simply not manage. Our special thanks go to Peter Waterman and Cindy Stecher, both for handing over

to us a well-running machine, and for volunteering their time to help us through the transition year.

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STEMfest a Big Hit

On October 23, 2010 the Department of Mathematical Sciences was one of 13 academic departments which partnered with STEM Outreach to fill the arena and the multipurpose room of the Convocation Center with children of all ages and their parents. Bernie Harris and Ellen Hines, very ably assisted by shifts of graduate and undergraduate students, manned the Department's booth and demonstrated the delights of the Mathematics Education Lab. One spatial puzzle in particular defeated all comers for a whole day, including the Physics Department in the neighboring booth.

It was an excellent day out, full of laughter, and was greatly enjoyed by all of the participants. Who knows? It may have recruited some future math majors. --- B. Harris

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Exciting Career Developments

Janae DeBartolo (B.S. '08, M.S. '10) began work in August 2010 as a Scientific Associate in the Chemical and Materials Science Group at the Advanced Photon Source at Argonne National Laboratory. Janae graduated from NIU with a B.S. in Mathematics and Physics in 2008, continuing at NIU to earn an M.S. in Physics in 2010.

Lucas Harris (B.S. '03) is working as a postdoc in the Program in Atmospheric and Oceanic Sciences and the Geophysical Fluid Dynamics Laboratory at Princeton University. After earning his B.S. in Mathematics at NIU, Lucas went on to earn an M.S. in Applied Mathematics ('07) and a Ph.D. in Atmospheric Sciences ('10) from the University of Washington. Readers may wish to visit Lucas' webpage

<http://www.atmos.washington.edu/~lharris/>

for a description of his research interests and a link to the AOS at Princeton.



Helen Khoury

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Mary Shafer

The continuing Mathematics and Science Partnership (MSP) grant, Excellence in the Middle, under the direction of Drs. Helen Khoury and Mary Shafer of the Department of Mathematical Sciences, had its impact on the teaching and learning of mathematics at the middle school level in northern Illinois. This one-million dollar grant funded through the US Department of Education facilitated the development three years ago of a new approved master's degree program in the Department with a specialization in Middle School Mathematics Education. Certified elementary and secondary school mathematics teachers are enrolled in this master's degree program. A cohort of about 30 school teachers is supported by the Excellence in the Middle MSP in their master's degree program coursework. A first group of twenty teachers completed their Master of Science in Teaching in Middle School Mathematics Education from our department this year. The Excellence in the Middle grant hosted a celebration event in May 2011 at the Barsema Alumni and Visitor Center at NIU, during which the graduates showcased to their families, colleagues, and to the NIU community their exit capstone action research studies. A related NIU press release about the impact of Excellence in the Middle may be found at

<http://today.niu.edu/2011/05/11/masters-of-middle-school-math/>

or through a link on the Department's home webpage. Selected members of our graduating group of 20 teachers were also recognized through various departmental awards in Spring 2011. The NIU Graduate School continues to receive inquiries about our new master's degree program from school teachers and school districts in northern Illinois.

One of the major goals of the MSP grant, Excellence in the Middle, is to promote excellence in teaching mathematics at the middle school level along with promoting excellence in the learning of mathematics by middle school students. Making mathematics meaningful and enjoyable along with successful performance is a priority. The grant's evaluation data and analyses provide evidence of an increasing significant trend of impact the experiences of the program have had on mathematics teaching and learning by teacher participants and their middle school students. Research presentations about these results made this past year by Drs. Helen Khoury, Mary Shafer, and Bala Hosmane during national conferences, organized by the US Department of Education and the American Education Research Association (AERA), were very well-received.

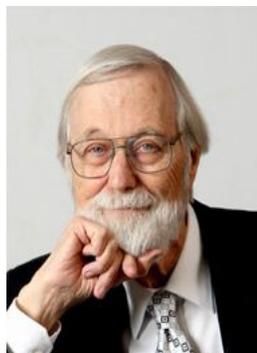
Current administrators, faculty and doctoral students in the Department have been engaged with our graduate students in the MSP grant in various support, evaluation, and/or teaching roles. These include: Dr. Harvey Blau, Dr. Richard Blecksmith, Dr. Ujjwal Das, Dr. Paul Dawkins, Mr. Santu Gosh, Ms. Lisa Grilli, Dr. Bernard Harris, Dr. Ellen Hines, Dr. Bala Hosmane, Dr. Helen Khoury, Ms. Abby Pearson, Ms. Pat Reisdorf, Dr. Mary Shafer, Ms. Jayleen Wangle, and Dr. Zhuan Ye. Funding for evaluation and graduate teaching aspects of this US Department of Education MSP grant is continuing through 2011-2012. --- *H. Khoury*

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Call for Essays

In-service and retired teachers, do you have insights to share? A story to tell? What would you wish to pass on to new teachers beginning their careers? We are looking for thoughtful essays on the experiences, philosophy and practice of teaching mathematics in the modern age, to be gathered into an edited collection available on our website. We hope this will provide the springboard for a lively online forum for in-service and future teachers. Please direct submissions, expressions of interest and questions to Prof. Kitty Holland at alumni@math.niu.edu. We'll be excited to hear from you.

2011 Abel Prize



The Norwegian Academy of Science and Letters has chosen one of the living legends of mathematics, John Willard Milnor of the Institute for Mathematical Sciences in the University of Stony Brook, U.S.A, for the award of its prestigious Abel Prize for the year 2011.

This was announced on Wednesday in Oslo by Norwegian Academy president Øyvind Østerud. Professor Milnor will receive the Prize from His Majesty King Harald at an award ceremony in Oslo on May 24, 2011. The award carries 6 million Norwegian Kroner (approx. €750,000 or \$1 m.)

The Prize is given in recognition of contributions of extraordinary depth and influence to mathematical sciences and has been awarded annually since 2003. The Prize is named after the great Norwegian mathematical genius, Niels Henrik Abel (1802-29), often compared with the Indian wizard Srinivasa Ramanujan, who died at a very young age of 26.

The past winners include such illustrious names as Jean-Pierre Serre (2003), Sir Michael Atiyah and Isadore M. Singer (2004), Peter D. Lax (2005), Lennart Carleson (2006), Srinivasa S. R. Varadhan (2007), John Griggs Thompson and Jacques Tits (2008), Mikhail Leonidovich Gromov (2009) and John Torrence Tate (2010).

The 2011 award is being given to Professor Milnor, as the citation notes, “for [his] pioneering discoveries in topology, geometry and algebra.” He has even made significant contributions in number theory. “All of Milnor's works,” the citation adds, “display marks of great research, profound insights, vivid imagination, and elements of supreme beauty.” His profound ideas and fundamental discoveries have shaped to a great extent the mathematical landscape since the mid-20th Century. Professor Milnor also has written tremendously influential

books, loved in particular by graduate students, which are widely regarded as models of fine mathematical writing. In addition, given his affable personality, he has been called the ‘Gentle Giant of Mathematics’.

Professor Milnor was born on February 20, 1931, in New Jersey, and did his undergraduate work at Princeton University. When he was barely 18 he proved what is known as Fary-Milnor theorem in knot theory. He did his doctoral work under Ralph Fox in knot groups and after completing his doctorate he continued to work at Princeton.

His most celebrated single result is his proof in 1956 of the existence of 7-dimensional spheres with non-standard differential structure. A one-sphere is a circle and a 2-sphere is the sphere that one is familiar with in 3-dimensions. An n -sphere is the mathematical abstraction of this idea in higher dimensions. Milnor termed spheres with non-standard differential structures ‘exotic spheres’.

Later with Michel Kervaire, a French mathematician, he showed that the 7-sphere has 28 differential structures.

Numerous mathematical concepts, results and conjectures are named after Professor Milnor—besides Milnor exotic spheres, Milnor fibration, Milnor number, Milnor map, and many more. More recently Milnor has turned his attention to the study of dynamical systems in low dimensions to which the Milnor-Thurston kneading theory is an important contribution.

Major awards: Professor Milnor has received all the major awards in Mathematics: He was awarded the Fields Medal in 1962, the Wolf Prize in 1989 and is the only person to have won all the three Steele Prizes of the American Mathematical Society (AMS) in 1982, 2004 and early this year for seminal contribution to research, for mathematical exposition and for lifetime achievement respectively. He also received the U.S. National Medal of Science in 1967.

(Write-up courtesy of www.ams.org)

Alumni of 25 Years



Congratulations on the 25th anniversary of the class of 1986. Here is a listing of the class of 1986 and their current hometowns. If you can update some of the information, we would appreciate your help.

Mr. Atkins, Dana, Gurnee, IL
Ms. Barrett, Jennifer, Chardon, OH
Mr. Bell, Scott, Lombard, IL
Mrs. Bender, Laura, Crystal Lake, IL
Mr. Biscan, Michael, Lombard, IL
Mrs. Bromann, Jan, Medford, OR
Mr. Campbell, Marc, Schaumburg, IL
Ms. Christensen, Kimberly, Shawnee Mission, KS
Ms. Cihak, Andrea, Vestal, NY
Mrs. Cong-Huyen, Phuong-Yung, DeKalb, IL
Mrs. Corn, Betty, Sycamore, IL
Mr. Davies, Gerald, Rockford, IL
Mr. Davis, Douglas, Oswego, IL
Mr. Donaldson, Jay, Freeport, IL
Ms. Dudzik, Suzanne, Streamwood, IL
Mrs. Engbrecht, Beth, South Elgin, IL
Ms. Flemming, Janet, Palos Hills, IL
Mr. Gilmore, Scott, St. Charles, IL
Mr. Goold, Stephen, Rochester, MN
Mrs. Hellgren, Mary, Waterloo, IA
Mr. Hensley, Jeffrey, Bartlett, IL
Mr. Hickey, Robert, Shabbona, IL
Mr. Hogan, Sean, Plano, TX
Ms. Hoy, Tracey, Wauconda, IL
Ms. Hruska, Karen, Wayne, IL
Ms. Hsi, Jean, Rancho Cucamonga, CA
Mr. Iskrzycki, Joseph, Bolingbrook, IL
Ms. Keil, Andrea, Marengo, IL
Mrs. Kelly, Diana, Libertyville, IL
Ms. Kietzmann, Gina, Hanover Park, IL

Mr. Kinast, Brian, Dundee, IL
Mr. Koester, Robert, Happy Valley, OR
Ms. Kolker Teresa, Hlliard, OH
Mr. Lamaster, Patrick, Houston, TX
Mrs. Laurence, Lynn, Minocqua, WI
Mrs. Lehnert, Sharon, Schererville, IN
Mr. Lents, Daniel, Bloomingdale, IL
Ms. Leow, Sor, South Windsor, CT
Mrs. Lindquist, Beatrix, Hebron, IL
Ms. McEnery-Kraft, Mary, Oak Park, IL
Ms. McGovern, Julie, Palos Heights, IL
Mrs. Mehlhop, Linda, Algonquin, IL
Mr. Mendralla, Thomas, Carol Stream, IL
Ms. Miller Catherine, Bartlett, IL
Mr. Moeller, Douglas, Elgin, IL
Mr. Nakagorni, Tetsuro, Federal Way, WA
Ms. Neely, Holly, High Ridge, MO
Mrs. Penkala, Leslie, Naperville, IL
Mr. Petersen, Ramon, Carpentersville, IL
Ms. Pozzi, Barbara, Tucson, AZ
Dr. Quingley, Michael, Santa Rosa, CA
Ms. Rames, Kristine, Naperville, IL
Mrs. Robison, Uta, Collinsville, IL
Dr. Rosenbloom, Elaine, Chicago, IL
Mr. Ryan, Timothy, Palatine, IL
Mr. Rybak, Bradley, Hebron, IN
Mrs. Scanlan, Rosanne, Arlington, IL
Mr. Schafer, Walter, Watkinsville, GA
Ms. Schultz, Maryann, Palos Hills, IL
Mr. Serio, August, West Chicago, IL
Mrs. Shim, Mimi, Paramus, NJ
Mr. Song, Cheng, Tucson, AZ
Mrs. Stefanelli, Kathleen, Elkhorn, WI
Ms. Straumann, Janet, Naperville, IL
Mrs. Swanson, Sharon, Woodridge, IL
Mr. Thornquist, Brad, Rockford, IL
Mr. Von Behren, Michael, Brandon, FL
Mrs. Werbach, Kristine, Aurora, IL
Mr. Wojciechowski, Andrew, Belvidere, IL
Mr. Yanek, Don, Chicago, IL

2011 Departmental Awards

The 32nd annual Awards Ceremony was held on April 17, 2011, in the Holmes Student Center Skyroom. At the reception, Department Chair Bernard Harris presented the following awards and scholarships.

Dean's Award:

Xiaoyang Bi Ashley Case

Chair's Award:

Heather Hayes Brock Hutchinson

Director's Award:

Kristopher Huffman

Stelford Prize:

Elizabeth Gibble Travis Shepherd
Joseph Patti Chi Zhang
Michael Roedema

M. M. Wheeler Scholarship:

Michael Kilchenman Scott Schmale
Bethany Miller Nicholas Straka
Kyle Plate Renata Zabawa

M. M. Wheeler Teaching Award:

Brock Hutchinson Jai Sharma
David Mertogul Alison Vos
Marjean Pobuda

M. M. Wheeler Teaching Award, Honorable Mention:

Tyler Ellena Melissa Lipa

D. R. Ostberg Award:

Tyler Mitchell

Clarence Ethel Hardgrove Scholarship:

Haley Dutmer Asia Hopkins
Douglas Fry

Allstate Actuarial Scholarship:

John Shoaf Catherine Stacy

Michael J. Krowka Scholarship:

Grant Heurlin

Dale G. Jungst Memorial Scholarship:

Brian English Christopher Thunder

Outstanding Graduate Student Award:

Rebecca Bonk Min Wang

Merlyn J. Behr Award in Mathematics Education:

Rebecca Bonk Rita Patel
Jennifer Meinke William Thorndike, Jr.

Gail Masters Gallagher Memorial Scholarship:

Rachel Bardell Michael Mascitti
Nathanael Kozinski

Dorothy and Glenn Erickson Scholarship:

Nicholas Straka

Certificate of Teaching Excellence:

Arpita Chatterjee David Kettlestrings

Undergraduate Certificate of Merit:

Maricille Bertrand Marjean Pobuda
Xiaoyang Bi Erik Rodgers
Christopher Crowley Michael Roedema
David DeMuro Travis Shepherd
Elizabeth Gibble Randi Wargo
Heather Hayes Cara Wyrostek
Brock Hutchinson Chi Zhang
Joseph Patti

Graduate Certificate of Merit:

Matthew Cardwell Jennifer Meinke
Michael Decaro Abigail Pearson
Alexander Garivaltis Suchitrita Sarkar
Jean Hojnacki Jinglan Sun
Qi Jiang William Thorndike, Jr.
Laura Kettner Yarong Yang
Yu Li

Undergraduate Honorable Mention:

Anthony Baldocchi Bradley Fischer
David Bierowka Dylan Rambow
Ashley Case Meghann Urewicz
Tabitha Duncan

Graduate Honorable Mention:

Ronald Hobson Scott Schmale
Sharon Keena Hao Shen
Danyel Larsen James Sheridan
Tianyu Li Amanda Shuga
Lloyd Roberts

NIU Math Contest:

Chi Zhang (1st place)
Xiaoyang Bi (2nd place)
Taylor Brysiewicz (3rd place)