

# The Math Log

## New GTA's Join the Department

Two new Graduate Teaching Assistants have joined the Mathematics Department this semester.

**Ryan Ellis** is from Williston, ND. He received his bachelor's degree from UND with majors in mathematics and economics. He recently returned from a semester in Norway. He enjoys hunting, fishing, and playing basketball.

**Jinho Jung** is from South Korea. He received a BA in mathematics from Southwest Minnesota State University before coming to UND. He is excited about starting as a graduate student, and he loves the snow!

## Three GTA's Graduate

**Colleen M. Kummet** will receive her master's degree at the end of Spring Semester. Colleen has written a master's thesis entitled "Bounded Sets in Locally Convex Spaces." Her adviser is Dr. Tom Gilsdorf, and her master's thesis committee includes Dr. Gilsdorf along with Dr. Richard Millspaugh and Dr. Michael Gregory. Colleen has accepted a position as a research analyst with the North Dakota Department of Human Services in Bismarck, ND.

**Steven Lancette** will graduate with a master's degree this summer. His independent study is entitled "Monte Carlo Methods for the Solution of Partial Differential Equations and Stochastic Differential Equations," and his advisers are Dr. John Collings and Dr. Tom Richards. Steve plans to start working on a master's degree in Industrial Design Technology here at UND this fall and then continue for a Ph.D. in Finance.

**Edwin Andong Ndum** will also graduate with a master's degree this summer. The title of his independent study report is "Mathematical Modelling of Epidemics." His adviser is Dr. John B. Collings. Edwin plans to continue his studies in statistics at Kansas State University, and he is also interested in getting a master's degree in finance or computational science.

## Tom Gilsdorf Recognized for Research

The research magazine "UND Discovery" has recognized Interim Mathematics Chair Dr. Tom Gilsdorf for his research accomplishments. The magazine states that since his arrival here in 1990, Tom "has been a role model of the well-rounded, versatile faculty member." It also briefly discusses some of Tom's research in theoretical mathematics as well as the history of mathematics. You can find UND Discovery and the coverage of Tom on the Web. Just go to

<http://www.und.edu/research/unddiscovery/issue2>

and click on the links to pages 6 and 7. We are delighted that UND Discovery has recognized someone from our department!

## The Math Log Now Available on the Web!

This issue of the Math Log as well as the Fall 2004 issue are now available on the World Wide Web. The Web versions of these issues include color photographs and colored graphics! To access the Web versions of these issues, go to

<http://www.und.nodak.edu/dept/math/mathlog>

If you would prefer to view the Math Log over the Web instead of on paper, we can notify you by e-mail every time a new issue of the Math Log becomes available. Instructions on the above Web page explain how to arrange for us to do this. If you wish to continue receiving the paper copy of the Math Log, you are, of course, most welcome to do so. If we don't hear from you, we will send you the next issue in paper form as usual!

## Where They Are, What Are They Up To?

**Carlton L. Bjerkaas** (BS 1970) has recently been named as a vice president at Science Applications International Corporation. He lives in O'Fallon, Illinois and is now the president of the local Rotary club.

**Yin Chang** (MS 2004) is working on a Ph.D. in statistics at Montana State University in Bozeman, Montana. She really likes MSU, but she says that she misses UND!

**Ethel (Johnson) Cram** (bachelor's degree, 1933 or 1934) is ninety-five years old and is currently living in an assisted living facility in Portland, Oregon. Her son Bob writes to us and says that Ethel has often spoken of her experiences here at UND. Ethel majored in mathematics and English. She taught high school math in North Dakota for three years before moving to Oregon.

**Duane Johnson** (MS 1956) writes to us from his home near Lafayette, Colorado. Duane was a contemporary of former Mathematics Chair and Professor Emeritus, Dr. Milton E. Winger, who was featured in the Fall 2004 issue of the Math Log. Duane has worked at Hamline University in St. Paul, Minnesota, at Dickinson State University, Southwest Texas University, and the University of Colorado. Duane has also worked in industry. His current work includes organic vegetable farming and tool sharpening.

**Matthew Kuzel** (BS 2002, mathematics and chemical engineering) lives in Clinton, Iowa. He is currently a process engineer for Archer Daniels Midland.

**Jerry Myhre** (PhB 1965) has retired from his job as a captain for United Airlines and is enjoying his retirement in Geneseo, Illinois.

**David L. Roth** (BS 1980) received a PhD in psychology from the University of Kansas in 1986. He is now on the faculty in the Department of Biostatistics at the University of Alabama at Birmingham and has recently been promoted to the rank of full professor. He has fond memories of his classes here at UND, especially those taught by doctors Winger, Gregory, and Uherka.

**Alice Smith** is a former student of Mathematics Professor Emeritus Dr. Glenn Prigge. We have learned that Alice has received the Milken Family Foundation National Educator Award. According to the Grand Forks Herald newspaper, this award carries a prize of

\$25,000 and goes to only 100 people in the US.

**Lorie Steiger** (BS 1990) lives in Chester, New Hampshire. She earned her MBA degree from Syracuse University in 1992, and she currently teaches introductory statistics at Chester College of New England. Lorie is the town treasurer and a stay-at-home mom. Her husband is Robert Brown.

## News from Kamla Singh

Many of you may remember Dr. Kamla Singh. Kamla was a visiting professor here in the Mathematics Department during the late 1980s and early 1990s. Kamla and her husband Raj are now retired and living in India. Perhaps you are wondering how the recent tsunami in the Indian Ocean may have affected Kamla and her family. We have recently heard from Kamla, and she tells us that she and all of her family are safe. Oddly enough, however, Kamla's daughter Neeta had been planning to go on a vacation with her husband Yati on the Andaman and Nicobar islands in the Indian Ocean. These islands were in the direct path of the tsunami and suffered extensive damage. On December 26, the day of the disaster, the couple boarded a plane bound for Andaman and Nicobar. The flight was canceled before takeoff, however, and Neeta and Yati later learned the reason. If their trip had been just a few hours earlier, they might have been on the beach at the time of the wave. In fact, Neeta and Yati had planned to go to the islands a couple of days earlier, but by chance a friend in India had insisted that they stay with him for a couple of days! We are all happy for the safety of Neeta and Yati, and we wish them the very best! We also extend our sympathy and concern to those who were not so fortunate.



**Sophia Eloisa Gilsdorf** was born on at 11:14 P.M. on Monday, November 29, 2004. She weighed 9 pounds and 14 ounces and was 21 inches tall. Her parents are Tom and Elisa Gilsdorf. Congratulations to Tom and Elisa!

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## JUST MARRIED

**Edwin Ndim** and **Marceline Endah Ndim** were married on August 13, 2004 in Buea, Cameroon. Congratulations to Ed and Marceline! We wish you the very best!

## Department Hosts Annual Mathematics Track Meet

On February 21, 2005, the Mathematics Department hosted the annual Mathematics Track Meet. Students in grades seven through twelve from around the region came to compete for prizes and awards by taking a series of individual and team tests prepared by the faculty here in the Mathematics Department. The awards were as follows:

### Individual Awards:

7th grade: 1st place-Dawson Hahn, Schroeder; 2nd place-Ryan Melcer, South; 3rd place-Haley Halvorson, South.

8th grade: 1st place-Rachel Abbe, Schroeder; 2nd place-Nick Mathern, Park River; 3rd place-Ashley Doeden, Hillsboro.

9th grade: 1st place-Peter Abrahamson, Red River; 2nd place-Alan Oberg, GF Central; 3rd place-Ayman Ahmed, Red River.

10th grade: 1st place-Will Hall, Red River; 2nd place-Alexa Skjold, GF Central; 3rd place-Sam Zikmund, Park River.

11th grade: 1st place-Greg Brockman, Red River; 2nd place-Kerr Xu, GF Central; 3rd place-Eric Fiala, GF Central.

12th grade: 1st place-Lushen Wu, Red River; 2nd place-Mark Liepold, GF Central; 3rd place-Tom Hansen, GF Central.

### Top Individual Scorers:

7th/8th grade: Ben Sun, South; 9th/10th grade: Max Tkach, Red River; 11th/12th grade: Eric Huhtula, GF Central.

### Honorable Mentions:

7th grade: Dane Swecker, Hatton; Anna Lind, Valley; Courtney Rehovsky, Park River; Robbie Reinpold, Hillsboro; Nick Nybo, Thompson; Terra Rausch, Twinning.

8th grade: Seth Zygarlicke, Valley; Max Otto, Park River; Bill Breen, Hillsboro; Brett Dziwulski, Twinning; Daniel Halvorson, Thompson; Erik Lee, Hatton.

9th grade: Brian Nybo, Thompson; Maggie McLean, Hillsboro; Benjamin Strand, Hatton.

10th grade: Emily Burkland, Thompson; Jake Luithle, Hillsboro; Daphne PanKratz, Hatton.

11th grade: Matt Leidholm, Hillsboro; Nick Paterka, Park River; Casey Wollangk, Hatton; Zach Kvidt, Thompson.

12th grade: Ben Antal, Park River; Chris Plante, Hillsboro; Caroline Burkland, Thompson; Jon Parsons, Hatton.

### Team Awards:

7th/8th grade:

1st place-South #1 (Matt Schober, Dhilhan Marasinghe, Ben Sun, Ryan Melcer); 2nd place-Schroeder Random (Rachel Abbe, Kristen Anderson, Dawson Hahn, Doug Richards); 3rd place-Park River Variables (Max Otto, Nick Mathern, Kelsey Blake, Courtney Rehovsky).

9th/10th grade:

1st place-Red River White (Will Hall, Derek Jones, Peter Abrahamson, John Erickson); 2nd place-Red River Texas Instrumentalists (Austin Winger, Sam Thompson, Max Tkach, Ayman Ahmed); 3rd place-GF Central Knights of Pythagoras (Alexa Skjold, Michelle Anderson, Sarah Harlow, Alan Oberg).

11th/12th grade:

1st place-Red River Pandas of the Apocalypse (Bryn Putbrese, Lushen Wu, Neil Bansal, Greg Brockman); 2nd place-GF Central Epsilon (Ronny Huang, Esther Walker, Eric Hutula, Kerr Xu); 3rd place-GF Central Gamma (Mark Liepold, Tom Hansen, Eric Fiala, Jed Hendrickson).

## Mathematics Education: A Discussion with Michele Iams

By Larry Peterson



Dr. Michele Iams

The work of a typical university professor includes many activities besides the traditional classroom teaching that comes to most people's minds when they think of university professors. I thought you might find it interesting to read about some of these activities, so I decided to pay a visit to Dr. Michele A. Iams. Michele is an Assistant Professor here in the Mathematics Department. Her area of interest is mathematics education. She received her Ph.D. degree in education from the University of North Dakota in 2002 and has been one of our mathematics education specialists since 2001. We discussed some of the things she does outside of the traditional classroom setting.

Michele currently serves as the president-elect of the North Dakota Council of Teachers of Mathematics (NDCTM). The NDCTM publishes articles and conducts meetings and activities related to the improvement of education from the kindergarten level through grade twelve (grades "K-12"). One of Michele's duties as president-elect is to organize the program at the upcoming meeting of the NDCTM in Jamestown, ND. Approximately 300 people will likely attend this meeting. And as president-elect, Michele will be the president for the academic year 2005-2006. Michele is also a member of the NCTM (the "National Council of Teachers of Mathematics").

For the past two years Michele has served as the editor of the NDCTM Journal. The NDCTM publishes this journal and provides it to its members, who number about 300. The journal comes out in the spring of each year and features articles related to K-12 education. Teachers and university students may submit articles to the journal, and the editor must decide which ones to include in each issue. In addition, the editor sends each article to two "referees." A referee is a person who reads an article prior to publication and verifies, as much

as possible, that the article is correct and is suitable for publication. Many journals in mathematics education as well as in pure and applied mathematics are refereed in this way. As of the Spring 2005 issue, Michele will pass her editor's duties on to Cheryl Halcrow, who joined our department as a mathematics education specialist last fall.

Michele is involved in scholarly research. She has recently worked on a joint project with four collaborators at Colorado State University-Pueblo, Illinois College, the University of Memphis, and the University of New Hampshire. The project involves courses for future elementary school teachers at these four universities and at UND. Michele and her collaborators asked their students to study a book comparing teaching in China with teaching in the US. The students then wrote papers discussing the book. Michele and her collaborators then wrote a joint article describing what they discovered from this exercise, which they have since submitted for publication to a refereed journal.

An article in the Fall 2004 issue of the Math Log briefly mentioned the US National Science Foundation. The NSF is an agency of the US government which awards research grant money to scientists and mathematicians across the United States. Many university professors apply for such grants. These grants may involve research in pure and applied science, including mathematics, as well as projects relating to education. Michele was a co-PI (co-principal investigator) for a recent NSF grant proposal entitled "Math-Science Partnership." Competition for NSF awards can be intense, and in this case the NSF did not fund the group's proposal. Nevertheless, the University looks favorably on proposal-writing activities, and Michele's involvement with the proposal deserves recognition. The proposal was a big one. It involved many people from the University of North Dakota, North Dakota State University, and Dickinson State University. The proposed budget of was over \$2.5 million. The plan was to hold summer "academies" for K-12 mathematics and science teachers from across North Dakota. Teachers would attend two-week summer schools dealing with the "content" of their disciplines as opposed to just the pedagogy.

Michele has been involved in some more local projects as well. At Red River High School here in Grand Forks, she recently served on the school's North Central Accreditation (NCA) math committee. This committee, which also included teachers from Red River High School, developed the mathematics goals and the process for evaluating the school's progress toward these goals.

Some of Michele's activities come under the heading of "professional development." During the 2001-2002 year, Michele participated in the Alice T. Clark Scholars Mentoring Program. This is a program here at UND for first-year faculty which typically includes twenty or more new faculty members from across the entire university. The group holds monthly meetings which typically feature a guest speaker who discusses some particular academic or professional issue with the group. In addition, each participant has a designated faculty "mentor" from among the regular UND faculty.

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This year Michele is serving as the official mentor to a current Alice Clark participant from the Department of Teaching and Learning.

Michele was a "Project NExT" Fellow during the 2003-2004 academic year. Project NExT is a program for new and recent Ph.D. graduates in mathematics and is sponsored by the Mathematical Association of America (MAA). The name stands for "New Experiences in Teaching," and the program is intended to help its participants deal with issues relating to teaching, research, and service. As a participant in the program, Michele attended "Math Fest" meetings in Boulder, Colorado and Providence, Rhode Island in the summers of 2003 and 2004, as well as the 2004 joint annual meetings of the various national mathematics organizations (such as the MAA and the American Mathematical Society). The joint meetings took place in Phoenix, Arizona in January of 2004. It was through the Project NExT fellowship that Michele met the collaborators in the research project which I mentioned above.

Michele, has visited classes at Lake Agassiz Elementary School here in Grand Forks. These visits help Michele keep up-to-date on what is happening in real K-12 classrooms, and the professional contacts that she develops from them may eventually lead to further outreach opportunities for Michele.

As you can see, Michele's work and activities extend well beyond the usual routine of day-to-day classroom teaching. But even things more directly related to her own classes often involve much more than simply preparing lessons and going to class. In one of her classes she recently had her students put on a "family math night" at the local elementary school. Michele had her

students organize appropriate activities for the elementary school children and their parents at the family math night.

Departments in UND's College of Education and Human Development are responsible for most of the K-12 teacher training courses here at UND. The Mathematics Department does offer a few such courses, however, and we will soon offer another one. A senior-level secondary math education "methods" course in the Teaching and Learning Department will soon be turned over to the Mathematics Department. One consequence of the change is that Michele will be responsible for the supervision of several student teachers in high schools in Grand Forks.

Michele has advised two master's degree students, and has served on the thesis committees of two doctoral students in the College of Education and Human Development and several master's students in the College of Nursing.

As you can see, Michele is a very busy person. In addition to her professional duties, she also has a family. Michele's husband is Dr. Joel Iiams, who is the Associate Chair of the Mathematics Department here. The two have been married for twelve years and have two children. Family and work keep both of them very busy indeed!

As for the art of teaching as a whole, I asked Michele what types of people should consider a career in K-12 teaching. She says that one needs to have a passion for teaching as well as a balance between academic and interpersonal skills. Perhaps you or someone you know fits this description. Maybe a career in teaching is the right choice!

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## The Pseudo-Sum

By Larry Peterson



As the old saying goes, some things change and some things stay the same. As usual, we had another cold winter! In January, temperatures dipped below minus 30 degrees Fahrenheit. Yes, we have had some snow this winter. In fact, as I write this on March 17, there is

still snow on the ground, and a few days ago I saw some young people ice skating on an outdoor rink! People still play hockey here. In fact, in late December several teams from Europe and North America came to Grand Forks and the Grand Forks area to compete in the World Junior Hockey Tournament. In the setting of this winter wonderland, the Mathematics Department carries on as usual. If you walk down the hall here on the third floor of Witmer Hall on a typical day, you will see the usual scene: classes in session and students busily working in the Mathematics Learning Center and sometimes in the hallway.

And yet here on the campus, as in the world all around us, many things are changing. Some of the changes may seem quite remarkable to those of us who are over the age of forty! Computers are changing the way we do things at UND's Chester Fritz Library. If it has been several years since you last visited the Chester Fritz Library (or if you have never seen it!), you might be

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surprised by what you could find there today. There are still plenty of books, but there are also computer labs right in the main library. Students and faculty are using the Internet along with books to investigate research topics. The library has a wireless network. Students can check out a laptop computer and connect to the Internet without plugging any cables into the computer. The library is adding document scanners, so students can scan pictures and documents and use the digital images in class presentations. Many scholarly journals are now available on-line via the World Wide Web. Instead of going over to the library to look for an article, one can sometimes print off a copy from one's computer at the office. Library users can also use the Web to access various on-line databases. One such database is called "Math Sci Net," which allows users to search for reviews of published scholarly articles in mathematics and read them from the computer screen. A few days ago I watched a demonstration of "ARTstor," which allows one to use the computer to view a wide variety of works of art taken from various art museums around the world. Currently about 300,000 works of art are available on ARTstor. Perhaps this might be of interest to students in the Mathematics Department's "History of Mathematics" course! Many of the library services I have described are available anywhere on the campus, including in our offices. Since most of you are off campus, you may be unable to use all of the library's on-line services. But if you are curious, you still might want to check out the Chester Fritz Library Web site, at <http://www.library.und.edu>.

Other less obvious changes are occurring in the way we do administrative work here on the campus. For the past twenty-five years or so UND has used the "CICS" computer program to handle most of its financial and academic records. Right now, however, we are in the process of converting to a new software system originally developed by the PeopleSoft corporation. The conversion to PeopleSoft is generating a lot of discussion around the university, so I thought I would tell you a little bit about it. The new software system is part of a larger project, called "ConnectND," which is intended to connect the computer systems of the North Dakota University System and the North Dakota state government. You might think that a conversion to something like the PeopleSoft system would only impact a few bureaucrats in the Registrar's Office and the Accounting Services Department. In fact, the change is affecting people throughout the university. Department secretaries and other office workers often use their computers to look up student records and check financial transactions. The way they do this is changing. With the new system as opposed to the old one, the layout of the computer screens is different, and information is put in different places. Different pieces of information that used to be on the same form are sometimes on different forms. Some things that one could do with the old computer system are simply no

longer possible. To complicate matters, the old system has not completely disappeared yet, so people have to work with both the old and the new systems. Also, technical glitches, or "bugs," have appeared in the PeopleSoft system.

One of the upshots of all this is that many people around the campus have had to spend a considerable amount of time learning how to use the new system. So far Lona (the secretary here in the Mathematics Department, in case you did not already know!) is the person in our department who has been the most affected by the PeopleSoft system, and she is doing a very good job at learning how to use it. But next fall the rest of us will have to learn how to use PeopleSoft in order to turn in our grade reports. Teachers currently report final student grades by using a pencil to fill in circles (or "bubbles") on a pre-printed grade reporting sheet. This fall, however, we will all have to enter the grades directly into the computer. Lona will have to teach us how to do this!

The library and the PeopleSoft system are, of course, not the only examples of how we have changed the way we do business. When I taught my first class as a GTA fifteen years ago, I made handwritten exams and had them copied for my students. Now our offices have computers, and we use computerized typesetting programs to prepare quizzes and exams. We have computer spreadsheet programs to compute our students' grades. Some of us occasionally do computer demonstrations in class or send students down to the Mathematics Computer Lab to do computerized exercises.

As a reminder of how things have changed over the years, I think of a piece of mail that I recently received from Bob Cram. Bob is the son of Ethel Cram, who graduated from UND in the 1930s and is currently living in Oregon. The campus must have been very different when Ethel was here. And yet after all these years, Ethel remains in contact with our department! Some things change, and some things stay the same!

Have a nice summer, and keep us posted on your activities!



## THANK YOU !!

As of publication time, the following persons are responsible for monetary gifts to the UND Alumni Association specifically designated for the improvement of the Department of Mathematics:

Brian Beaudrie	Dr. Lee E. Christianson	Donovan A. Torbenson	Dr. Gail S. Nelson	Rodney C. Kjellberg
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Shell Companies Foundation Inc. (matches Forrest J. Bjerkaas)

Science Applications International (matches Col. Carlton L. Bjerkaas (ret))

### Ronald C. and Ann C. Bzoch Scholarship

Peter A. Willyard

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*Your generosity is gratefully acknowledged and sincerely appreciated.*

Your teachers and friends are wondering what you are doing! Help us to satisfy their curiosity. (Photos are also welcome!)

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