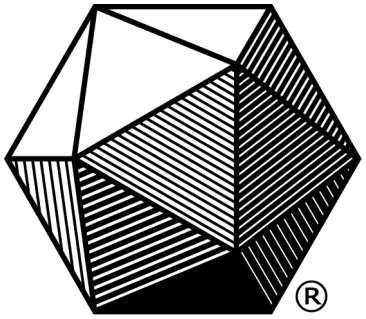
The Mathematical Association of America



Wisconsin Section

Newsletter

Fall 2008

Governor's Report

I was very proud to be elected Governor last spring and look forward to serving the Wisconsin Section in this capacity for the next three years. At MathFest in Madison at the end of July, I attended my first Board of Governors meeting and was impressed with the amount of work the body does for the MAA. The Governors have two main obligations. First, the Board of Governors is the policy making body for the MAA, and as such, has the ultimate responsibility to control the organizational structure and oversee the budget. Each of the governors serves on several committees where much of the work of the MAA takes place. I am already active on committees of the American Mathematics Competitions (AMC) and am looking for other areas to serve. The second task of a governor is to serve as liaison between the national organization and the section. In this capacity, I report to the section about the activities of the national organization, and I can also bring to the national organization ideas generated by the section. In particular, if you have an interest in getting involved with some of the MAA committees, I would be glad to discuss your ambitions with you and can recommended you for appropriate positions.

Martha Siegel has served the MAA as secretary for 12 years. Her term expires in January 2010, and the MAA seeks nominations to replace her. There is currently a link on the MAA home page describing the nomination process. This is just one of many features available at the MAA web site at http://www.maa.org/. If you have not yet checked it out, you might be interested in looking at the MAA reviews section for reviews of recently published books, the math classifieds where you can post both job advertisements and resumes, the meeting section where you can find information on recent and future MAA meetings, lists of MAA publications, the MAA committees, their membership and directives, and information about MAA sponsored contests. I attended a discussion of additional features that could be added to this web site. For example, wouldn't it be nice to have access to a repository of materials about various mathematics courses such as recent book reviews, sample syllabi, appropriate computer programs, videos, and so forth that could help you plan a course you have not taught recently? And, of course, do not forget about the Wisconsin Section web site at http://www.maa.org/wisconsin/.

The MAA is completing its third cycle of strategic planning. Reports are available for the first two cycles which made recommendations about the American Mathematics Competitions, Professional Development, Revenue, Membership, Students, and Governance. Four reports are now being completed for the third cycle of planning on the topics of Sections, Periodicals and Communications, Meetings, and STEM Issues. It is felt that time is now needed to implement the recommendations of these reports before beginning another round of strategic planning.

Finally, not related to my position as Governor of the Wisconsin Section, my wife, **Janet Mertz**, and I joined the MAA Study Tour that visited Peru in July. We certainly enjoyed our 12 day trip made particularly interesting by the group of other mathematicians traveling with us. Many of you may be interested in joining such a tour in the future, so I will give a talk about the experience at our next section meeting.

Jonathan Kane, UW-Whitewater

Call for Nominations

The Wisconsin Section Distinguished Teaching Award was established in 1991. It stands as a concrete statement that mathematicians at the college and universities in Wisconsin place high importance on teaching. The Wisconsin Section is proud of its growing list of award recipients. These men and women of mathematics who have been recognized for their excellent work as teachers represent the commitment to teaching that exists among mathematicians throughout the state.

Nominations for the 2009 Wisconsin Section Distinguished Teaching Award are now being accepted. The nomination form and instructions are available for downloading as a pdf file on the MAA web site at http://www.maa.org/awards/teachingawards.htm or contact Mark R. Snavely Mathematics Department, Carthage College, Kenosha, WI 53140. Nominations should be submitted so as to arrive by November 7, 2008.

Chair's Report

The 77-th Annual Spring Meeting of the Wisconsin Section will be April 24-25, 2009, at University of Wisconsin - La Crosse. This is our annual celebration of the mathematics and statistics with an opportunity for people to renew old friendships, make new acquaintances, and see what is going on in our profession across the state. **Robert Wilson**, Chair-elect, has exciting invited speakers tentatively in place. The meeting theme will be Mathematics Education, and contributed talks in that area are especially welcome. However, the theme is intended only to give added emphasis and will not detract from other areas of pure and applied mathematics and statistics. Contributed talks are welcome in all areas. The Oshkosh crew will once again organize a Face-Off competition in which students will compete in small teams, solving exquisitely fun math trivia problems. Look for details in the Spring Newsletter. There will also be a fun run on the La Crosse trail system. In short, there will be something for everyone, and "A splendid time is guaranteed for all."

That was a look at the near future. Now a look to the past is in order.

Our 76-th Annual Meeting was held April 25-26, 2008 at Madison Area Technical College. I want to take this opportunity to thank all those who made that meeting a success. Special thanks go to site coordinator **J. Sriskandarajah** and also to **Jim Moore** and **George Alexander**, and many other people at MATC. The invited speakers were **Colin Adams**, **Art Benjamin**, and **Richard Cleary**. In addition to giving an engaging talk on knot theory utilizing multiple personae, Colin gave an extra presentation to the MATC student mathematics club, sharing in an accessible way his deep insights in topology with that very fortunate group of students. Friday evening, after the banquet, Art Benjamin presented his Mathemagic Show to an audience of mathematicians, school teachers and students ranging from third grade to graduate school. In that diverse audience, all were enthralled and after the talk the elementary schoolers gleefully, and with Art's permission, descended upon his flip charts and made off with the pages for souvenirs, which Art then patiently autographed for each child. The Magic Show was in addition to a beautiful talk that Art presented on Saturday on trigonometric sums.

Richard Cleary, our MAA speaker at the meeting, gave a beautiful talk on Benford's law which dovetailed nicely with a panel discussion on statistics the next day run by **KLD Gunawardena**, whom I also thank. **Ken Price** and **Steve Szydlik**, UW-Oshkosh, ran the math competition Face-Off which was hugely popular. To Ken and Steve and to all those involved in that effort, a hearty thanks. Finally I want to thank presenters of contributed talks. Whether we are mainly teachers or mainly researchers, our job is the creation of knowledge, and the excellent array of contributed talks in all areas of mathematics and statistics served that purpose admirably.

I look forward to seeing you at the 2009 meeting in La Crosse!

Andy Matchett, UW-La Crosse

Contest Report

American Mathematics Competitions

The AMC 8 competition was held on November 13, 2007. A total of 1976 Wisconsin students participated in the competition (down from 2107). There was one perfect score from Wisconsin, by **Laura Xu** of Jefferson Middle School in Madison. The average score for Wisconsin students was 9.08, compared with the national average score of 9.87. The next AMC 8 will be given November 18, 2008.

The AMC 10 and 12 contests were held on February 12 and 27, 2008. A total of 996 Wisconsin students took the AMC 10, and this number is up from 710 in 2007 and 917 in 2006. A total of 1,653 took the AMC 12, and this number is up from 1462 in 2007 and 1,616 in 2006. Thus, a total of 2,649 students took the AMC 10/12, the highest state total in recent years. Of the Wisconsin students, 56 scored well enough to be invited to take the American Invitational

Mathematics Examination (AIME). This number is well below the 90 from 2007 and 269 in 2006. There were no perfect scores from Wisconsin this year.

Two Wisconsin students qualified for the United States Mathematical Olympiad: **Mengmeng Chen** of Ashland High School, Ashland and **Daniel Mulder** of Maranatha Baptist Academy, Watertown.

The next AMC 10 and 12 will be given February 10 and 25, 2009.

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 2008. Of the 88 schools who ordered the exam, only 81 reported their scores, for a total of 3,464 students. This continues the downward trend, as last year there were 85 schools reporting 4,085 scores. The exam was much more difficult this year than last year, and writers will aim for middle ground with next year's contest. The cutoff for the top 1% was a score of 83 out of 120 and there were no perfect scores this year.

Dr. **Laura Schmidt** has continued to head UW-Stout's efforts in running the competition. There was some discussion about changing the prize from a book to a gift certificate. Feeling that a gift certificate was too impersonal for this achievement, the decision was made to continue with a book as a prize. Many thanks to the UW-Stout faculty for coordinating these efforts.

The contest winners in combined state contest and AMC scores were **Peter Wear** and **Zef Rosnbrick**, both of Madison West High School. Congratulations to Peter and Zef!

MAA-Wisconsin Section Contest Coordinator

This year is the last year of my commitment for section contest coordinator. Laura Schmidt has agreed to take over as the next contest coordinator.

Kristen Lampe, Carroll University

Project NExT-Wisconsin

The Fall Meeting of Project NExT-Wisconsin was held on October 3 – October 5, 2008. The theme for this year's workshop was "Strengthening the Ties: Project NExT-WI Reunion". The alumni of Project NExT-WI and the current NExT-WI fellows were invited to attend the reunion. The schedule included talks and discussions on issues related to teaching. As usual, the workshop was held at Olde Towne in Menomonie, Wisconsin. Project NExT-WI will hold a discussion panel for Project NExT-WI fellows at the 2009 MAA Spring meeting in La Crosse, WI.

Project NExT-WI section had 4 new fellows. The current membership is holding at 25.

There is a list of fellows on NExT-WI web-page who are willing to give a talk suitable for the faculty or the general undergraduate audience. You may invite us to come for a math club, colloquium, or whatever.

Project NExT-Wisconsin is open to all full-time faculty members in mathematics departments in the Wisconsin Section who are within their first four years of undergraduate teaching in Wisconsin. You may also be eligible if you have more teaching experience, but are new to the Wisconsin Section. There is no membership fee to join Project NExT-WI. To apply, please contact me at ulhaqi@uwplatt.edu (application material is also assessable at http://www.uwplatt.edu/nextwi/).

Irfan Ul-Haq UW-Platteville

Student Activities

We hope you will encourage some of your students to attend conferences and possibly give talks. The quality and quantity of presentations continues to be impressive. The Pi Mu Epsilon Regional Undergraduate Math Conference is coming up soon, November 7 – 8, 2008 at St. Norbert College. This year's featured speaker is **Eve Torrence** from Randolph-Macon College. She will present engaging talks on "Modular Origami and the Dodecahedron" and "The Lost Art of Condensation."

The spring 2009 section meeting will be held at the University of Wisconsin-LaCrosse on April 24 and 25. Let your students know they can receive a complimentary one-year MAA membership simply by giving a talk at this meeting. Student presenters who are already MAA members can receive a free book instead. The banquet cost for students will continue to be held at $5 per ticket. We will try to find low-cost housing options for students who wish to stay for both days. Thanks to the hard work of the organizers of the 2008 meeting, we were able to offer a student retreat room at MATC, and plan to do so again in 2009.

The Wisconsin Mathematics Council's Annual Green Lake Conference is scheduled for May 7-8, 2009. Anyone interested in any level of mathematics education in Wisconsin is encouraged to attend.

The fast-paced math game show "Face Off!" will return at a number of conferences this year: for Middle School students at MATC in October 2008, at the Pi Mu Epsilon regional undergraduate conference at St. Norbert College in November and also at the MAA-Wisconsin section meeting in April. Students who have taken Calc I or above are eligible to compete for their department in teams of 2-4 players at either conference. You can expect questions to come from the broad realm of mathematics. And we do mean "broad"! Categories might include: Chances Are..., Log Jam, Name That Theorem, Off Limits, or Quick Trigger. Expect some serious fun! Contact Ken (pricek@uwosh.edu) or Steve (szydliks@uwosh.edu), or check the "Face Off" web site for more details at its new address below.

http://www.uwosh.edu/faculty_staff/szydliks/faceoff.htm

Ken Price and Steve Szydlik, UW-Oshkosh

Volunteer to Help the Section

The Wisconsin Section invites nominations for the position of Student Activities Coordinator. Duties of this position include promoting the involvement of students in activities of the Section, encouraging student presentations at the annual meetings, being a source of information for various student programs and other activities. This is a three-year, renewable position.

In addition, the Section invites nominations for the position of Chair-Elect. This is a three-year position. The Chair-Elect organizes the spring meeting. The following year, the Chair-Elect becomes chair, and presides at each meeting of the Section and of the Executive Committee of the Section, as well as appointing committees and Executive Committee members as needed. The final year, the Immediate Past Chair continues to sit on the Executive Committee, and oversees the selection of the Distinguished Teaching award.

Send nominations to Section Chair Any Matchett at matchett.andr@uwlax.edu . Self nominations are encouraged. Section officers must be members of the MAA.

CALL FOR SPEAKERS

77th Annual Meeting of MAA Wisconsin Section, April 24 – 25, 2009

University of Wisconsin-La Crosse

The Spring, 2009, meeting of the Wisconsin Section of the MAA will be held at UW-La Crosse on April 24 and 25. Talks of all kinds are welcome, particularly ones that are accessible to students, and we encourage talks by students. We plan an emphasis on connections between pre-college and college-level mathematics teaching, so talks relating to how students make the transition to college, preparation students bring to college courses, our role in preparing pre-college math teachers, innovations in teaching that might relate to pre-college courses, etc., are specifically solicited!

If you wish to present a talk at the Spring Meeting, please send the information below to:

Bob Wilson, Department of Mathematics, 480 Lincoln Drive, UW-Madison, Madison, WI, 53706
or (preferred) by email to wilson@math.wisc.edu

An on-line version of this form is available at: http://www.uwplatt.edu/maawisc/speaker.html

Electronic submission of the information and abstract is preferred.

(There is a separate form below for student speakers.)

SPEAKER RESPONSE FORM – DUE: March 6, 2009

Name: _____

Position: _____

Institution: _____

Address: _____

Phone: _____ Email:_____

Title of talk: _____

Length of talk: 25 minutes _____ or 50 minutes _____

Abstract: _____

_____

Check here if your talk is appropriate for students: _____

Equipment needed: _____

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

CALL FOR STUDENT SPEAKERS

Student Mathematics Conference

University of Wisconsin-La Crosse, April 24 – 25, 2009

The Wisconsin Section of the MAA encourages undergraduate students who have done research in mathematics to give a 25-minute presentation about their work at the Spring Meeting. Each presenting student receives free meeting registration and a free one-year membership in MAA. If you wish to present a talk, please complete the form below and send by March 6, 2009, to:

Bob Wilson, Department of Mathematics, 480 Lincoln Drive, UW-Madison, Madison, WI, 53706
or (preferred) by email to wilson@math.wisc.edu

An on-line version of this form is available at: http://www.uwplatt.edu/maawisc/student.html

Electronic submission of the information and abstract is preferred.

STUDENT SPEAKER RESPONSE FORM – DUE: MARCH 6, 2009

Name: _____ Year in School_____

Institution: _____

Address: _____ Phone: _____

_____ Email: _____

Faculty Sponsor: _____

Title of presentation: _____

Brief description of presentation_____

_____

_____

_____

Equipment needed:_____

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

Know Your Wisconsin Mathematician

Interview with Professor Georgia Benkart, UW-Madison, by J. Sriskandarajah, Madison Area Technical College

This is our fifth interview for this section, and you are the first woman mathematician to be interviewed in this series. As an undergraduate and graduate student, were there a reasonable number of female students in your math classes?

In virtually all my mathematics classes, there were only one or two women.

During the my time as a graduate student at Yale, the entire graduate mathematics program had only four or five female students, and the undergraduate college at Yale was just in the process of becoming coed. Perhaps this sounds a little strange coming from a mathematician, but actual numbers are not so important. The atmosphere is the key, and I was fortunate to be surrounded by wonderful fellow students and encouraging professors who created a cooperative, supportive environment for learning mathematics.

The numbers of women studying mathematics have changed significantly. Nowadays over 40% of the mathematics majors are women, and about 28% of the Ph.D.s in mathematics are earned by women compared to the roughly 7% when I got my doctoral degree. The faces in mathematics classrooms are quite different now, but I hope that same spirit of cooperation and nurturing will always be present. In 2005, only 9% of the tenured mathematics faculty at four year colleges and universities were women. That is something that needs to change if the mathematical enterprise has a chance of continuing.

Let's start with your childhood. What impression did grade school make on you?

I always have loved science and mathematics and remember joining the science club as soon as I could.

Are there any teachers who had influenced you to become a mathematician?

The honors mathematics program at Ohio State University was the determining factor in my becoming a mathematics major. We were treated to small classes and excellent teachers who encouraged us to take graduate courses when they thought we could do well in them. Professors Joan and Jim Leitzel and Joe Ferrar stimulated my interest in abstract algebra with challenging courses, and I remember quite fondly a graduate p-adic analysis course I took when I was a junior from the famous number theorist Kurt Mahler.

As a graduate student, I took a course in Lie algebras from the group theorist Walter Feit. Even though there were experts in Lie theory on the faculty at Yale, he was teaching the course that term because he wanted to study the subject. So we all struggled to learn the topic together, and that is how I became interested in Lie algebras.

What town did you grow up in and how did you end up in UW-Madison?

I grew up in Youngstown, Ohio, and had never been in the state of Wisconsin before I accepted a two-year postdoctoral instructorship at UW-Madison. Somehow two years translated into a career at Madison.

Did your family influence your intellectual development in any particular directions? Tell me about growing up and becoming a mathematician?

My parents encouraged our educational activities but didn't try to influence the subjects we studied. I started out wanting to become a chemist but soon found I was allergic to most things in the lab including the work. My sister went in an entirely different direction and earned a Ph.D. in history.

You have received UW's highest prize award for distinguished teaching in 1987, and you were named the Polya Lecturer of the MAA in 2000. What is the best part of being a mathematician?

The two things that I have enjoyed most are the excitement of discovery and the people I have encountered along the way.

What is the worst part?

It is difficult to communicate to others, especially to non-mathematicians, what mathematics is and what it is we do. So many people have such negative impressions about the subject.

I want to talk about how you do mathematics and how you did it. Has it changed over the years? Did you do it differently at 30 than you did at 40, 50?

Mathematics is a rapidly changing field, and learning is really a lifetime process. The most successful mathematicians seem to be those who are willing and able to continue to learn. Probably the thought-processes remain pretty much the same throughout a career, but the actual problems one considers might be constantly evolving.

Technology plays a critical role in mathematics and what is your impression on that? Does it hurt the student in anyway?

Technology has expanded our capabilities immeasurably. With several clicks we can access information that used to take weeks to locate. An older colleague once told me about the days before Xerox machines when he would copy by hand an article that he needed in his research.

Technology has influenced how we approach some problems and has altered which problems we tackle. It has enabled us to collaborate with people we haven't even met. But we need to convey to students that they still need to think and create and not just push buttons.

Where do you think mathematics is going, and then closely allied to that, where do you think it should go?

The numbers of majors in what might be regarded as ivory tower subjects (such as philosophy, classics, and perhaps even mathematics) are declining while those in the more career-oriented majors of the health and biological sciences, business, and engineering are increasing. Mathematics plays an important role in these and other subjects (that's a message that should be communicated widely), and there will be a need to develop the relevant mathematics for these areas.

What do you think makes a mathematician successful?

Perseverance and perseverance and a healthy dose of enthusiasm for mathematics.

What of your mathematical work do you like best?

I have enjoyed working on the classification of simple Lie algebras of prime characteristic, on the classification of Lie algebras graded by finite root systems, and on combinatorial problems that arise in representation theory from considering commuting actions.

What have been some moments that have stood out for you in your career so far?

The times I have given invited addresses at the joint math meetings stand out but mostly for the sheer panic of speaking before such large audiences. Also mentoring graduate students and seeing them successfully complete their doctoral degrees has been one of the best aspects of the job.

I understand you have invented a new branch of Algebra called "down-up algebras." Can you elaborate on this in layman's language?

If a set of objects has a partial order where one object may be larger or smaller than another, or perhaps they are not related at all, then one can define an up operator that takes an object to the sum of the larger ones that lie directly over it and a down operator that takes an object to the sum of the smaller ones that lie immediately beneath it. Down-up algebras generalize the algebras generated by such operators. Often there is a beautiful combinatorics underlying the situation, and these operators can reveal much information about the combinatorics of the objects.

You have served as an editor of the Journal of Algebra since 1991. Are you continuing to serve in this capacity?

After almost 15 years as an editor of *Journal of Algebra*, I decided to resign from the board. About a year ago I joined the editorial board of a new journal, *Algebra and Number Theory*.

Who else in your family is good in mathematics?

My father was an engineer and was good in mathematics. My mother was a successful teacher at all levels from kindergarten through to college. She majored in English, biology, and education. My own career as a mathematics professor reflects their interests.

What is your advice to college students and new teachers?

Find something you enjoy and devote your energies to it, but don't be afraid to try new things. Challenge yourself.

Campus News

Alverno College

submitted by Susan Pustejovsky

Sister **Marie Elizabeth Pink**, longtime member of Alverno's Mathematics Department, retired in spring 2008. Sr. Pink chaired the department for many years, and taught both mathematics and computer science courses. She will be greatly missed.

We welcome our new faculty member, **Jim Factor**, who joined our department beginning fall 2008.

Beloit College

submitted by Ben Newton

The Math/CS Department at Beloit is enjoying its first semester in Beloit College's beautiful new, green-certified Center for the Sciences.

Darrah Chavey contributed photography and computer-generated designs to the History of Mathematics SIGMAA's Ethnomathematics poster, which was unveiled at the MAA MathFest in Madison.

Paul Campbell presented a paper at the Recreational Mathematics conference at Miami University on his course based on the CBS television show *Numb3rs*.

Carthage College

submitted by Mark Snavely

Dr. **Aaron Trautwein** received promotion to the rank of Professor of Mathematics.

At MathFest, Carthage graduate **Sara Jensen** ('08) won the Council on Undergraduate Research Award for the best undergraduate research presentation at the meeting. Her talk was entitled "An Alternate Proof of the Anti-Pasch Conjecture." Her research advisor was **Erlan Wheeler**.

Madison Area Technical College

submitted by J. Sriskandarajah

The MATC Math Club remains active. Lectures in Fall, 2008, include:

- **Friday October 10, 2008,** 9:00 am, Mitby Theater, The Professor Numbers Mathemagics Show (http://www.mathismagical.com) 10:30-noon, Mitby Theater, Third Annual Face Off
- **Lecture # 76, Wednesday, October 15, 2008**, 3:30 PM, Room 209, : Professor **Elgin Johnston**, Iowa State University
  Mass Points: Geometry by Physics
- **Lecture # 77, Friday, November 7, 2008**, 3:30 PM, Room 209, : Professor **John Coburn**, Mathematics Department, St. Louis Community College
  Mining the Cubic Equation for Mathematical Gems
- **Lecture # 78, Wednesday, December 3, 2008**, 3:30 PM, Room 209, : Professor **Benjamin Collins**, UW-Platteville
  Fibonacci Trees: A Dream Come True

Further information is available at **http://matcmadison.edu/studentlife/clubs/mathclub**

Marquette University

submitted by Karl Byleen

Doctoral work in the Department of Mathematics, Statistics and Computer Science has a new direction: Ph.D. and M.S. degrees will be offered in Computational Sciences. The new program builds on our existing collaborations with researchers in other departments and institutions in the Milwaukee area. Students will complete a core of courses in applied mathematics and computer science. Research topics may range across the computational aspects of a broad spectrum of disciplines. We invite inquiries and applications for admission!

The Department has welcomed three new Assistant Professors this fall: **Rong Ge**, who received a Ph.D. in computer science from Virginia Polytechnic Institute and State University in 2007; **Marta Magiera**, Ph.D. in mathematics education from Illinois Institute of Technology in 2008; and **Elaine Spiller**, Ph.D. in applied mathematics from Northwestern University in 2005. Elaine comes to Marquette from a postdoctoral fellowship at the Statistical and Applied Sciences Institute and Duke University, and is a Project NExT Fellow.

Milwaukee School of Engineering

submitted by Karl David

Adjunct Associate Professor **AbdelNaser Al-Hasan** presented a talk at MathFest at the University of Wisconsin-Madison in July entitled "The Status of Mathematics in Palestine."

Professor Emeritus **Peter K.F. Kuhfittig** had his paper, "Viable models of traversable wormholes supported by small amounts of exotic matter," published in the International Journal of Pure and Applied Mathematics, Vol. 44, No. 3, pp. 467-482 [2008]. He also gave an invited lecture, entitled "On a time-dependent extra spatial dimension: a possible cause of the collapse," at the Fifth International Conference of Applied Mathematics and Computing in Plovdiv, Bulgaria in August.

Professor **Yvonne Yaz** presented two papers cowritten with **C.S. Jeong** and **E.E. Yaz** at the Seventeenth World Congress of the International Federation of Automatic Control in Seoul, South Korea in July, both published in the Proceedings of the Congress [2008]. The papers were entitled "State Feedback Controller Design for a Class of Nonlinear Systems with General Criteria" [pp. 14121-14124] and "Stochastically Resilient Design of Mixed H2 Dissipative Observers for Discrete-Time Nonlinear Systems" [pp. 9840-9845].

Saint Norbert College

submitted by Katherine Muhs

Teena Carroll is joining our faculty this year. She recently received her doctorate from Georgia Tech. She and her husband Dave welcomed their first child (Lucy) in April. Teena will begin teaching at SNC in January.

Bonnie Berken and **Katherine Muhs**, in conjunction with the Green Bay Public School district and the Wausaukee Public School District, were recently awarded a two-year $329,000 grant by the Wisconsin Department of Instruction for a NorthEast Wisconsin Mathematics Partnership. A total of 34 teachers, representing grades four through eight, from approximately 15 target public schools in the Green Bay and Wausaukee School Districts, will participate in this NEW Mathematics Partnership. The grant incorporates classroom observations and videotaping, a wiki space to connect teachers, and three graduate courses developed and taught by Berken and Muhs.

Rick Poss and **Terry Jo Leiterman** received $2000 from an NSF-RUMC grant to support the SNC Regional Pi Mu Epsilon Conference will be held November 7-8, 2008.

T.J. Leiterman received $1350 in instructional support for laboratory equipment for a fluid mechanics component in MATH 310 Differential Equations.

T.J. Leiterman gave two presentations at Mathfest:

- "Getting Your Hands Wet in a Differential Equations Course" in a special session titled, "Projects and Demonstrations that Enhance a Differential Equations Course."
- "The Ultimate Class Project … and No Grade!" in the general session on instructing the square wheeled bike project. A live video of the square wheel bike in motion can be found at the project's website: www.snc.edu/math/squarewheelbike.html.

Six SNC students also attended this year's Mathfest in Madison, WI. They were **Alicia Brinkman** ('10), **Samantha Goeben** ('10), **Kathleen Miller** ('10), **Ryan Pavlik** ('09), **Stephanie Schauer** ('10), and **Corey Vorland** ('10). All six students gave presentations and Alicia's presentation "How We Roll: The Theory and Construction of a Square-Wheel Bicycle" won a prize from the American Mathematical Society for being one of the best student talks at MathFest. This was the twenty-fourth consecutive year that SNC has sent student speakers to the summer meetings. No other college or university in the country can make that claim and only one school in the entire country had more student presentations than St. Norbert College!

T.J. Leiterman with collaborators **R.M. McLaughlin** and **R. Camassa** at UNC-CH published the article, "Trajectory and flow properties for a rod spinning in a viscous fluid. Part I: An exact solution" in the Journal of Fluid Mechanics. It will appear in the October 10, 2008 issue with a graphic from this paper on the cover. Part II is in preparation for the same journal. This work also led to a collaborative experimental paper in Physical Review E (2007) 76(1) titled, "Epicyclic orbits in a viscous fluid about a precessing rod: Theory and experiments on the micro- and macro-scales."

R. Poss and **T.J Leiterman** wrote the article, "Pi Mu Epsilon Student Presentations and Math Fest", for the Proceedings of the Conference on Promoting Undergraduate Research in Mathematics. The proceeding is edited by **Joe Gallian** and is available as a free text by the AMS.

St. Norbert College is now part of the Wisconsin Space Grant Consortium and **Leiterman** serves on the advisory council as the institutional representative.

SNC has started a Summer Undergraduate Research Program in mathematics. Two students were funded under the direction of **T.J. Leiterman** on a research project in mathematical ecology in Summer 2008. We are motivating alumni support for the program by through a special challenge. Funding for 2009 has been secured. More information can be found at www.snc.edu/math/researchprogram.html.

John Frohliger has resumed full time teaching in math. He is also co-director of the Natural Science PRIDE Scholarship Program (funded by the NSF), which is designed to encourage more students to major in math or computer science.

This is **Larry Thorsen's** last year as Director of the Honors Program. (He has been director for 23 years!) He will teach full time in math again starting in the fall of 2009.

This past year, **Bonnie Berken** and **Rick Poss** both enjoyed their first year of phased retirement. Both taught full time in the fall, and went to warmer climes for the winter. Both expect to continue that schedule this year.

UW-Eau Claire

submitted by Simei Tong

Dr. Shyam Chadha received the 2008 University of Wisconsin-Eau Claire Excellence in Scholarship Award for his 24-year record of sustained scholarship while at UW-Eau Claire. **Saul Gass**, professor emeritus of management science at the University of Maryland and former president of the Society of Operations Research, has described Chadha as a "leading researcher in the area of fractional programming and its extensions."

The UWEC Mathematics Faculty welcomes **Dr. Colleen Duffy** and **Dr. Amanda Riehl**.

- Dr. Duffy received her Ph.D. this summer from Rutgers. Her area of research is non-commutative algebra. A forthcoming paper titled *"Representations of Aut(A(Gamma)) acting on homogeneous components of A(Gamma) and A(Gamma) dual"* will appear in Advances in Applied Mathematics. She earned her B.A. in Mathematics and Spanish from the University of St. Thomas.
- Dr. Riehl received her Ph.D. this summer from the University of California at San Diego. Her area of research is algebraic and enumerative combinatorics. She presented a paper titled *"Permutations with k-regular descent patterns"* at the Permutation Patterns conference in Dunedin, New Zealand, this summer. She earned her B.Sc. in Mathematics from MIT.

Dr. Duffy and Dr. Riehl have both been accepted as Project NeXT Fellows.

A group of 10 talented students attended the NSF-funded **REU** program "**Summer Undergraduate Research Experience in Pure and Applied Mathematics**" at UW-Eau Claire. These students represented a wide variety of institutions: UW-Eau Claire, University of Maryland, Brown University, St. Olaf College, UW-Madison, State University of New York, University of Chicago, and Nazareth College, NY. In addition to concentrated mathematics research, the students enjoyed many of the recreational opportunities available in northern Wisconsin. Check out the link to read the details of the program.
http://www.uwec.edu/surepam/

On October 1st, 2008, the UW-Eau Claire team consisting of **Jessica Porath, Brent Haffenbredl, Mark Frie, Ali Redpath, Kevin Kropp,** and **James Hollman** (Faculty mentor **Kris Presler**) took second place at an Actuarial Case Competition sponsored by Travelers. Seven teams participated in this event (University of Minnesota, University of St. Thomas, Bentley College, Bryant University, SUNY-Stony Brook, University of Connecticut, and UW-Eau Claire).

On April 18, 2008 the faculty, staff and students of the UW-Eau Claire Department of Mathematics celebrated its 17th annual **Mathematics Retreat**. There were 44 mathematics talks given by students and some faculty. Check out the link to view the whole day's event.
http://www.uwec.edu/math/Retreats/index.htm

At the Annual UWEC Student Research Day last April, 10 research posters were from the Mathematics Department. Three of them received awards. **Jessica Porath** took 3rd place in Physical and Mathematical Sciences for "*Markov Chains and Student academic Progress*" (mentor **Don Reynolds**); **Jacqueline Christy** took 4th place in Physical and Mathematical Sciences for "*A New Method of*

Cryptography"(mentor **James S. Walker**; **Maggi Varsho** took 4th place in Business and Professional Studies, "*Factors Influencing Mathematics Performance and Attitudes*"(mentor **Susan Harrison**). Check out the link to see all ten posters. http://www.uwec.edu/math/Research/studentPosters.htm

News from some UWEC Math Students:

- **Eric D. Weber** received a prestigious **Goldwater Scholarship** (2008-2009) for his commitment to undergraduate research and to support his future graduate studies. Eric, along with **Mitch Phillipson** and **Christopher DeCleene**, conducted a research project under Dr. **Michael Penkava** that received a poster award at the 2008 Joint Mathematics Meeting. This summer Eric had the opportunity to conduct research in mathematics education at Arizona State University, working with some of the top researchers in the nation. In the process, he obtained valuable experience for his graduate studies which begin in the spring of 2009.

- **Mitch A. Phillipson** attended a workshop in *Analysis and Probability* at Texas A&M University supported by NSF during July 27-Aug 10, 2008. Then he went with Dr. **Simei Tong** and another student, **Emily Klungtvedt**, to a Summer School in *Fourier Analytic and Probabilistic Methods in Geometric Functional, Analysis and Convexity* held at Kent State University Aug 10-20, 2008. In Texas, he studied operator theory related to dynamics. In Ohio he studied analytic methods in convex geometry, a topic on which he has conducted research at UWEC.

- **Jessica Porath** and **Christopher DeCleene** were among the students in the Actuarial Sciences Emphasis who received internships last summer. Jessica had an internship at Allianz Life in Product Development, where she added numerous enhancements to their Excel spreadsheet illustrations for both fixed and variable annuities and life insurance products. Chris had an internship at Allstate Insurance Company in Northbrook IL to evaluate the price levels of several property insurance products.

- **James Hahn,** a 2007 graduate of the University of Wisconsin-Eau Claire in Spanish and Mathematics Education, has received a prestigious Fulbright English Teaching Assistantship for 2008-09. Hahn, who teaches Spanish in the Oshkosh Area School District, will teach English or another subject in English in a secondary school in the Madrid area of Spain. In addition to teaching 16-20 hours per week, he also will study the Spanish mathematics education system and how multiple intelligences are used within the classroom.

Former Department Chair **Dr. Andrew J. Balas**, age 63, passed away on Tuesday, March 19, 2008, after a yearlong battle with lymphoma. Andrew, a graduate of the University of Michigan who received his Ph. D. from the University of California-Berkeley, joined the University of Wisconsin-Eau Claire faculty in 1984 after holding a faculty position at Rutgers for four years. Andrew served as Department Chair from 2003 to 2007. Andrew had a deep interest in mathematics and mathematics education. He published research articles in the area of complex manifolds. The Department was deeply saddened by this great loss.

UW-La Crosse

submitted by Andrew Matchett

The UW-La Crosse Mathematics Department added a new faculty member this Fall. He is Dr. **Ted Wendt**, a new Ph.D. from University of Iowa. His specialty is modeling of physical systems.

Andy Belter, a Secondary Mathematics Education major, co-presented a talk at the 2008 MAA Mathfest Conference in Madison on August 2nd with Dr. **Jon Hasenbank** and Dr. **Jennifer Kosiak** (Mathematics Education). The talk was titled "The Impact of a Teaching for Understanding Experiment in 8-12th Grade Mathematics." The presentation discussed the results of a teaching experiment that was supported by a 2007-08 ESEA-WITQ professional development grant. For more information about the ongoing project, contact Dr. Hasenbank or Dr. Kosiak in the Mathematics Department.

Kirk Wienkes, **Jarod Hart**, and **Gus Borstad** competed in the COMAP Mathematical Contest in Modeling in February 2008. The UW-L team competed with over 500 institutions from around the world to construct a solution to a challenging real-world problem using mathematical modeling. The team spent over forty hours in a single weekend working to construct an algorithm for creating Sudoku puzzles of varying levels of difficulty. Their solution received a Meritorious ranking, which means that they were in the top 14% of those teams participating. For more information, go to http://www.uwlax.edu/mathematics/dept/Activities/COMAP/comap.htm

This fall, four of our 2007-2008 UW-L mathematics graduates are entering graduate school. **Mike Fitzpatrick** is currently attending the University of Iowa, **Jarod Hart** is at the University of Kansas, and **Sarah Rozner** is attending the University of Northern Colorado. **Lacy Bindl** is currently at the Illinois College of Optometry.

In the spring of 2008, two of our math students gave oral presentations at the National Conference on Undergraduate Research, NCUR. The conference was held at Salisbury University in Maryland. **Jarod Hart's** talk, Time-Frequency Analysis of Music, was based on research he did with Dr. **James Walker** during an REU at UW-Eau Claire and with work he did with Dr. **Susan Kelly**. **Sarah Rozner's** talk, Winifred Edgerton Merrill's Contributions to Mathematics and the Advancement of Women, was based on work she did with Dr. **Susan Kelly**.

UW-Madison

submitted by Robert Wilson

Our new chair is **Shi Jin**, as **Leslie Smith** completed her three-year term. Shi is also recipient of the 2007 Morningside Silver Medal, awarded at the Congress of Chinese Mathematicians. Leslie's term as chair saw the department developing in many ways. There were, for example, continued research success, development of new courses for pre-service elementary teachers and a new program for middle school teachers, and creation of a new program with special calculus sections meeting in classrooms in the dormitories.

Our former grad student and post-doc **Olga Holtz** is one of ten recipients of the European Math Society's 2008 prize: This prize is given every four years and is considered by many to be second only to the Fields prize.

The department has initiated the "Van Vleck Distinguished Research Prizes" for faculty. The 2007 awardees are **Sigurd Angenent**, **Shi Jin**, **Yong-Guen Oh**, and **Andreas Seeger**. The awards carry $20,000 per year for four years and are awarded for "past distinguished contributions to research, their record of service to the department, and ... high expectations for their future success in mathematics."

We have had several outstanding lectures in our Distinguished Lecture series, LAA lecture series, and Wolfgang Wasow Lecture series, as well as lectures reaching outside the department. This spring we had a marvelous lecture by **Jean-Pierre Bourguignon** as a university lecture, where he really did cover geometry from the ancient Greeks through Perelman's resolution of the Poincare Conjecture! **Jordan Ellenberg** has started a series of talks bringing in speakers related to math but cutting across department boundaries, titled "Math and ...". The first lecture in this series, jointly with the philosophy department, was by **Adam Elga** from Princeton, on "How to disagree about how to disagree." The second, jointly with the school of music, was by **Dmitri Tymoczko**, also from Princeton, both telling and showing with innovative software how harmony and chord structure relate to some advanced topological ideas.

Richard Brualdi with **Dragos Cvetkovic** has a new book coming out, *A Combinatorial Approach to Matrix Theory and its Applications* from CRC Press.

Jordan Ellenberg and grad students **Rob Rhoades** and **Ekin Ozman** took part in a MathFest panel on choosing the right graduate school.

Jordan Ellenberg was promoted to Associate Professor and **Mikhail Feldman**, **Xianghong Gong**, and **Tonghai Yang** were promoted to full Professor.

Peter Orlik retired in 2007, and **Richard Brualdi**, **Dietrich Uhlenbrock**, **Tom Kurtz**, and **Ken Kunen** retired in 2008. Continued turnover brings also brings new faces into the department: New faculty include **Fedor Nazarov**, **Jean-Luc Thiffeault**, and **Hsian-Hua Tseng** and Van Vleck postdocs **Amanda Folsom** and **Mustafa Kalafat**. You can see more about them at their own web pages, accessible from the "people" button from the department page http://www.math.wisc.edu.

Sadly we report the deaths of **John Harvey** in May, 2007; **Richard Meyer** in January, 2008; **Jacob Levin** in March, 2008, and **Dan Rider** in July, 2008.

Marty Isaacs was on leave last year and has completed a new group theory textbook, *Finite Group Theory*, based on his teaching of our graduate group theory course.

Ken Ono was also on leave in the fall, at the Institute for Advanced Study and the Max Planck Institute, continuing research on hypergeometric series and Maass forms.

Paul Terwilliger was on leave for the year at Kanazawa University in Japan, continuing his collaboration with **Tatsuro Ito** and **Kazumasa Nomura**.

We have approval now for a new Certificate in Mathematics program, for students in math-using majors who have so many other requirements that they cannot work in a full math major.

Our Mathematics, Engineering, and Science talent search is in its 47th year, awarding each year one or two scholarships worth $24,000 to outstanding high school students.

UW-Milwaukee *submitted by Jay H. Beder*

Assistant Professor **Runhuan Feng** joined the department in Fall 2008 after receiving his Ph.D. degree in Actuarial Science from the University of Waterloo. His current research interest is in ruin theory, credit risk modeling and epidemiological modeling in actuarial mathematics. Runhuan has also been interested in writing software programs on the internet in an effort to make available to non-professionals an actuary's tool kit for making investment decisions.

Associate Professor **Karen Brucks** has become Associate Dean for Natural Sciences in the College of Letters and Science.

UW-Oshkosh *submitted by John Beam*

This year we are happy to welcome two new faculty members, **Syed Kazmi** (research interests include numerical analysis and computational finance) and **David Penniston** (number theory and arithmetic geometry). This fall we begin two additional searches, both in the area of mathematics education. We were sorry to see **Carol Seaman** leave us this summer for North Carolina (she is now a professor at UNC Greensboro), so that she and her husband could be closer to their extended families. We will also miss **Asoka Ramanayake** this year, as she takes a leave of absence to work for the U.S. Census Bureau.

Ken Price was inducted into Sigma Xi, the Scientific Research Society; among his recent publications is the paper "A Domain Test for Lie Color Algebras" in the Journal of Algebra and its Applications 7(1), 81-90. **Jen Szydlik** is a 2008-2009 Wisconsin Teaching Scholar. **John Beam** received tenure and promotion to Associate Professor.

UW-Platteville *submitted by Ben Collins*

The department welcomes two new tenure-track faculty members and two new teaching academic staff.

Dave Conway graduated from the University of Wisconsin-Platteville in 1974 with a degree in mathematics education. He taught mathematics at Southwestern High School in Hazel Green for 34 years. His recent retirement from teaching doesn't seem to have stuck.

Chris Frayer is originally from Chelsea Michigan. He completed his undergraduate degree at Grand Valley State University in 2003. Chris recently received his PhD from the University of Kentucky where he worked in the area of mathematical physics.

Leonida Ljumanovic was born and grew up in Croatia, and lived for 5 years in Serbia. She has lived in Iowa for the last eight years, and graduated from the University of Iowa in August. Her research area is Mathematical Logic.

Kimberly J. Sargent received her bachelor of Math/Computer Science from Central College in Pella, Iowa, in 1992. She worked for nine years teaching middle and high school math. She is married to Steve Sargent and has three children, Alex, age 9, Aiden, age 7, and Madelyn, age 4. Kim and her family moved to Platteville in Dec. 2007.

After six years of outstanding leadership, **Sheryl Wills** has stepped down as chair to return to the relative peace of full-time teaching. **Julie McDonald** took over as chair in August. Welcome, Julie, and good luck!

Congratulations to **Barb Barnet**, **Ben Collins**, **Tim Deis**, and **Jason Thrun** for promotion to Professor, and to **Kevin Haertzen** for promotion to Associate Professor.

UW-Stout *submitted by Steve Deckelman*

The Mathematics, Statistics and Computer Science Department was recently informed it is the recipient of this year's Regents Teaching Excellence Award. **Nelu Ghenciu** and **Laura Schmidt** have been promoted to Associate Professor. Laura has also been named a 2008-2009 Wisconsin Teaching Fellow.

The department continues to host the Wisconsin MAA High School Math Contest. The department also hired two new computer science tenure track faculty, Dr. **Wan Bae** and Dr. **Amitava Karmaker**. Dr. **Diane Christie** is serving as Interim Associate Dean in the College of Science, Technology, Engineering

and Mathematics and Dr. **Joy Becker** is serving as Interim Program Director for Applied Mathematics and Computer Science. Emeritus Professor **John Hunt** is teaching for the department part time this year.

Dr. **Dennis Mikkelson** and Dr. **Radi Teleb** each have yearlong sabbaticals.

Dr. **Mingshen Wu** is leading a delegation to China consisting of our Provost Dr. **Julie Furst-Bowe** and director of research, **Susan Foxwell**.

Dr. **Matt Horak** is the recipient of a Center for Undergraduate Research in Mathematics grant and will be working on a project in group theory and graph theory with undergraduate students. Dr. **WinstonYang** (PhD UW Madison Computer Science) is teaching for us this year as well.

UW-Whitewater

submitted by Mohammad Ahmadi

Julie Letellier is our new department chair. Julie gave three presentations; two at the MAA Wisconsin Section in Madison in April and one at the Chicago Lesson Study Conference in May 2008. **Bennette Harris**, former department chair, is on sabbatical leave this semester.

We welcomed two new faculty members this Fall: **Charles (Zhengnan) Shi** who received his PhD in Computer Science from the Clemson University, and **Lopamudra Mukherjee** who completed a Ph.D. in Computer Science and Engineering at SUNY at Buffalo.

In April over 7000 students world-wide participated in the Purple Comet*!* Math Meet sponsored by UWW and University of Texas at Dallas at http://purplecomet.org.

The paper "Cross-Cultural Analysis of Students with Exceptional Talent in Mathematical Problem Solving" by **Titu Andreescu**, **Joseph A. Gallian**, **Jonathan M. Kane**, and **Janet E. Mertz** will appear in the November issue of the Notices of the AMS (published in early October). **Janet Mertz** and **Jonathan Kane** went on the MAA Study Tour in Peru July 7 – 19.

Thomas Drucker spoke in June at the annual meeting of the Canadian Society for the History and Philosophy of Mathematics in Vancouver on 'Leibniz and Robinson on Infinitesimals'. **Drucker** also spoke in August at MathFest in Madison on 'Leibniz and Turing on the Limits of Computing'.

Ki-Bong Nam presented two papers: "*Notes on Non-associative Algebras which contains the Matrix Ring*," at ICART 2008, Bangkok, May 28-30, 2008, http://www.math.sc.chula.ac.th/~icart2008\\, and "*Notes on Special type Lie algebra*" as an invited speaker at the international Conference "Group Theory and Related Topics," Xuzhou Nornal Univ., April 20-25, 2008. Ki-Bong published the following papers:

1. Xueqing Chen, Jeong-Sig Lee, and Ki-Bong Nam, "*Notes on (Z^2n)-graded algebras*", International Journal of Algebra, Vol. 2, 2008, No. 12, pp 555 - 562.

2. Jongwoo Lee and Ki-bong Nam, "*Non-Associative Algebras containing the Matrix Ring*", Linear Algebra and its Applications Volume 429, Issue 1, 1 July 2008, pp. 72-78.

Executive Committee 2008 – 2009

Governor	Jonathan Kane UW-Oshkosh	(262) 472-5002	kanej@uww.edu
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Student Activities	Ken Price UW-Oshkosh	(920) 424-1057	pricek@uwosh.edu
	Steve Szydlik UW-Oshkosh	(920) 424-7346	szydliks@uwosh.edu
MAA Representative to the Wisconsin Math Council	James Marty Wisconsin Department of Public Instruction	(262) 970-3679	james.marty@dpi.state.wi.us
Project NExT Director	Irfan Ul-Haq UW-Platteville	(608) 342-1938	ulhaqi@uwplatt.edu
Public Information Officer	Benjamin Collins UW-Platteville	(608) 342-1746	collinbe@uwplatt.edu