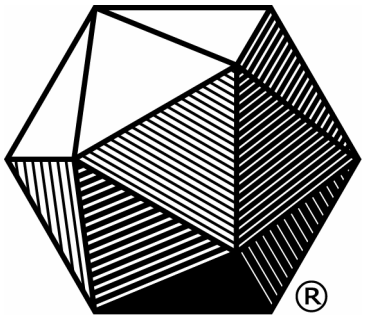
The Mathematical Association of America



Wisconsin Section

Newsletter

Spring 2007

Governor's Report

A couple of weeks before the joint meetings I needed to cancel my plans to travel to New Orleans. I regret not be able to attend the joint meetings, and in particular, the Board of Governors meeting. I made a weak attempt to find a past Wisconsin Section Governor to substitute, but was unsuccessful (given the short notice). I did, however, contact a couple of current governors who were able to summarize some of things discussed at the meeting.

I have been told that it was a good meeting and that the reports on the usual issues (financial, publications, AMC, membership, committees) were, for the most part, positive. Simply said, the MAA is in good shape. However, during the past couple of years, the leaders of the MAA have been investigating what more can be done. We are in the third and final cycle of strategic planning. Preliminary reports were given on issues studied in cycle II (AMC, Professional Development and Revenue) and it was decided that Meetings, Sections and STEM would be the three topics to undergo review in cycle III. I will include more information in my next report.

In addition, governors participated in breakout discussions during the January meeting. They were asked to discuss the MAA's vision, programs and services, publications, student chapters, and section and national meetings. Here is a brief summary of the notes I received. Many believed the MAA needs to do a better job of attracting and retaining graduate students. Questions about services for high school students were raised. Should we be reaching out to talented high school students? How do we reach future math leaders? How do we "get to" the parents of talented students? Should the MAA sponsor math enrichment programs for high school students? There was consensus on the popularity and value of *Math Horizons*. Many spoke to wanting student pages in *FOCUS*, a student insert periodically in *FOCUS*, or an e-newsletter so that students get the MAA news periodically. Whatever it is, it should contain highlights from national and section meetings, student chapters, and MAA Undergraduate Student Conferences. There was general agreement that the current model of student chapters is not working, and even some confusion as to what the definition of a student chapter is. The MAA has not taken full advantage of the possibilities offered by student chapters. Most believed that MathFest is an incredibly good experience for students. I look forward to being involved in future discussions on these topics and will keep you informed. Please feel free to contact me about any thoughts you have on these topics.

I fully intend on participating in the Board of Governors meetings at MathFest in San Jose, CA in August 2007 and at the joint meetings in San Diego, CA in January 2008. I hope to see you in Eau Claire this April.

John Koker, UW Oshkosh

Chair's Report

It's my pleasure and privilege to welcome you for MAA Wisconsin Section's 75th Annual Spring Conference to be held in UW- Eau Claire on April 20-21, 2007. This year also marks the 300th anniversary of the birth of Leonhard Euler (1707-1783). Please join us in celebrating the life and work of Euler. Already the celebrations are underway. MAA had an Euler short course, "Leonhard Euler: Looking back after 300 Years" at the Joint Meeting of the MAA-AMS, January 3-4, in New Orleans. The other special Euler events scheduled for this year include, but are not limited to:

- MAA PREP Workshop: "The Genius of Euler" at the MAA Carriage House, June 18-22, 2007.
- Euler Study Tour, July 1-14, 2007. The tour will include Euler's birth place, Basel, Switzerland and his work places in Berlin, Germany and St. Petersburg, Russia.
- Publication of the four volume MAA Tercentenary Euler Celebration.
- Madison Area Technical College, celebrated this event by a presentation "Life and Work of Leonhard Euler" on January 29, 2007 followed by a reception.

Chair – Elect Mohammad Ahmadi (UW-Whitewater) and the site coordinator Simei Tong (UW-EC) are collaborating with our Public Information Officer Benjamin Collins (UW-Platteville) in putting together an excellent conference for April 20 and 21. As of today (2/2/07), this two day event has twenty-two 25 minute presentations (including three presentations by out of state speakers), thirteen 50 minute presentations (including two invited addresses and a panel) and the popular math game show, "Face Off" for college students. Please encourage your students to give 25 minute presentations and nominate a colleague (or yourself) for the Wisconsin Section Distinguished Teaching Award.

I hope you enjoy reading the new section "Know Your Wisconsin Mathematician" in your newsletter. We will continue with this item. MAA-Wisconsin Section High School Contest Examination is going smoothly under the leadership of Laura Schmidt (UW-Stout). According to our new treasurer Mark Snavely (Carthage College), we are in good financial shape. I am very fortunate to work with this dedicated executive committee. I take this opportunity to congratulate them for their service to our mathematical community. I thank the members of the MAA-Wisconsin for their support and confidence. I look forward to seeing you all at the conference in UW – Eau Claire.

Don't forget that the 76th annual MAA(WI) will be held at Madison Area Technical College and I need your support. I will alert you all of the date when it is finalized at the business meeting. Please visit http://www.uwplatt.edu/maawisc/meet.html to get more information.

J. Sriskandarajah
Madison Area Technical College

Contest Report

American Mathematics Competitions

The AMC 8 competition was held on November 14, 2006. A total of 2107 Wisconsin students participated in the competition (down from 2760). For the first time in five years, two Wisconsin students had perfect scores: Suhas Kodali of Madison and Cutler Lewandowski of Wausaukee. The average score for Wisconsin students was 9.25, compared with the national average score of 10.14. This is a slightly narrower gap than last year.

The AMC 10 and 12 contests will be held on February 6 and 21, 2007. Data will be reported at the Spring Meeting.

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 7, 2006. There were 4085 high school students' scores reported from 85 schools. This year, there were 29 perfect scores reported. The cutoff score for the top 1% was 115 out of 120. More details will be available for the Spring 2007 meeting.

Dr. Laura Schmidt has reported a smooth transition of the contest from Edgewood College to UW-Stout, and thanks Dr. Steven Post for his assistance. Upon reflection, the contest appears to have been easier this year than last and the difficulty level will be modified accordingly next year. Many thanks to the UW-Stout faculty for coordinating these efforts.

Respectfully submitted, Kristen Lampe, Carroll College

Project NExT-Wisconsin

At the spring meeting of MAA Wisconsin section, Project NExT-WI will have lunch followed by a panel discussion on Saturday. The topic will be "Keeping Your Research Alive." The topic is selected as much of the new faculty (recent PhDs) find it difficult to keep up with their research while teaching 3 or more classes (9 or more credit hours) per semester. The panel will consist of faculties who have been successful in doing research while meeting their teaching obligations. This will give the participants a chance to learn from the experiences of the panel members and help answer some of their questions related to this issue.

Project NExT-WI also holds annual Fall Workshop (during last week of September or first week of October) in Menomonie, WI which is open to all current NExT-WI members. Further details are posted in time on the Project NExT-WI website (http://www.uwplatt.edu/nextwi/) along with updates to all the NExT-WI members.

Currently we have 29 active members in NExT-WI and we are always looking for new members. There is no deadline to apply for the membership. One can apply any time during the academic year.

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. You may also be eligible if you have more teaching experience, but are new to the Wisconsin Section. To apply, contact me at ulhaqi@uwplatt.edu.

Respectfully, Irfan Ul-haq Director, Project NExT-Wisconsin

Student Activities

The co-Coordinators, Ken Price and Steve Szydlik, are pleased to report on opportunities for Wisconsin's undergraduate math students. We especially look forward to this year's section meeting at the University of Wisconsin-Eau Claire on April 20-21. Please let students know they can receive a complimentary membership in the MAA by simply giving a talk at this meeting. The banquet cost for students will be held to $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 2006 meeting, we were able to offer a student retreat room at UW-Whitewater, and plan to do so again.

We are particularly grateful for all of the past support and interest in the fast-paced math game show "Face Off!" It will return to the MAA section meeting. Students who have taken Calc I or above are eligible to compete for their department in teams of 2-4 players. See below for details.

"Face Off!" was a part of Madison Area Technical College's fifth annual Math Fest, organized by the Wisconsin MAA chair, J. "Sri" Sriskandarajah, and the twenty-first annual Pi Mu Epsilon Regional Undergraduate Math Conference, organized by Rick Poss at St. Norbert College. John Koker, our MAA-Wisconsin governor, is usually the host, but our public information officer, Ben Collins, took a turn as host at MATC. Our secretary-treasurer, Mark Snavely, helped out with the scoring at the PME meeting.

The Wisconsin Mathematics Council's Annual Green Lake Conference is scheduled for May 3-4. Anyone interested in any level of mathematics education in Wisconsin is encouraged to attend.

We look forward to student participation in state events and hope you encourage some of your students to attend conferences and to give presentations. Please let us know if you have ideas of ways to make the section more student-friendly. We're always looking for suggestions!

Respectfully submitted by Ken Price and Steve Szydlik, UW-Oshkosh

Nominee for Chair-Elect

Andy Matchett, University of Wisconsin - La Crosse

Andy Matchett is in his 24-th year of teaching at UW-La Crosse. He has been active in the MAA as Secretary-Treasurer (1985-2006). He has been a member of both the MAA and AMS for over 20 years. He received his Ph.D. from University of Illinois and B.S. degree from University of Chicago.

Andy has published papers in matrix theory and integral group rings, but his research interests are eclectic and he has given talks on principal components, rainbows, dynamical systems, and curriculum reform.

Matchett's professional life has been devoted mainly to undergraduate teaching. His current research interests are in probability and statistics.

Euler – 300

Celebration of 300th Anniversary of Euler's Birth

75th Annual Meeting of MAA/Wisconsin Section, April 20 – 21, 2007

University of Wisconsin - Eau Claire

PRELIMINARY SCHEDULE

* Denotes talks appropriate for students.

Friday, April 20, 2007

PRECONFERENCE WORKSHOP

10:30 – 12:00 noon

Educational Resources – Mathematics Digital Library

Organizer: Erick Hofacker

For more information, see below. Space will be limited, so contact the organizer at erick.b.hofacker@uwrf.edu to register for the workshop.

Noon – 5 PM Registration

Noon – 5 PM Exhibits, MAA Book Sale, Math Lab

1:00 – 1:25* Andrew Grzadzielewski (Education Management Corporation, Pittsburgh, PA)

Two alternatives to the standard method of solving exponential equations

Taking the log of both sides is the standard way of solving exponential equations, but students often do not understand, appreciate, or remember the method. Two alternatives will be presented, either or both of which may be used in place of or in conjunction with the standard method. One involves rewriting the equation to equalize the bases, so that the equation can be solved by exponent comparison. The other involves "stretching" the graphs into lines by re-plotting the graphs on log paper, or by using technology to re-plot the equations if desired. Data will be presented that shows student retention of the method is superior to retention of the standard method, and also that student knowledge of the alternative methods transfers to other types of problems.

1:00 – 1:50 Walter M. Reid (UW- Eau Claire)
Distribution Analysis using PPC-Continued Fractions
This talk introducing the distribution analysis problem (DAP) will begin with a review of its predecessor, the frequency analysis problem (FAP). The DAP consists of finding an unknown distribution function on the closed interval $[-\pi, \pi]$ using sequences of real number readings $X_N(m)$, m = 0, 1, 2,...,N-1, N = 2I+1, for I in the natural numbers, obtained from a signal of superpositions of sinusoidal waves determined by the distribution function. The method of interpolation used in the DAP, called the Nm-process, is similar to the N-process, a time series method used in the FAP to determine the frequencies of the signal and their amplitudes. Both the Nm-process and the N-process employ the even approximants of positive Perron-Caratheodory continued fractions (PPC-fractions), determined by the $X_N(m)$ data. For the Nm-process it is shown that, the even approximants of the PPC-fraction converge to the Herglotz transform of the distribution function as N and m approach infinity.

The long-term goal is the treatment of general distribution functions. However, this first study is restricted to a differentiable distribution function having as derivative a bounded, even function on $[-\pi, \pi]$.

1:00 – 1:50* James Swenson (UW – Platteville)
How can computers rank football teams?
When an athletic competition has crowned a champion, we sometimes end up with the feeling that the "best team" didn't win. However, it's hard to distinguish the notions of "best team" and "champion." In many sports, various individuals and media outlets publish power rankings in an ongoing effort to identify the best teams. We shall study a few mathematical methods of ranking teams, and see how questions in multivariable calculus and linear algebra arise naturally.

1:00 – 1:50 Michael Wodzak (Viterbo University)
How the Irish Saved Graph Theory
The knotwork found in the Lindisfarne Gospels, the Book of Kells and other early Celtic Christian texts is so precise and so minute that one is drawn to conclude that it must be based on mathematical constructions and principals. I will show how I incorporate a unit on constructing these knots in my 100 level Math Survey course at Viterbo University, including such topics as tessellations and their duals, map coloring (with a sidetrack into the story of Little Red Riding Hood), and traversable graphs, which brings us back to the Seven Bridges of Konigsberg.

1:30 – 1:55* James S. Walker (UW- Eau Claire)
LeCRewTA--A synthesized approach to teaching mathematics
LeCRewTA stands for Lecture and Collaborative Review with Technological Assistance. It is a method that synthesizes the traditional lecture-based approach with more recent approaches based on collaborative learning and technological assistance. (Based on the dictum: "When faced with a dichotomy, look for a dialectic".) I will outline how I used LeCrewTA in teaching Calculus I, but it should apply to all mathematics courses.

1:30 – 1:55* Yongjun Yang (UW-Sheboygan)
Euler's totient theorem and its applications
In this talk we present some work by the great Euler in the number theory. We introduce Euler's totient function and the corresponding Euler's theorem. Then we give some interesting results in determining the digits of large numbers using this theorem. An elementary proof of the theorem is discussed as well.

2:00 – 2:25* Mu-Ling Chang (UW-Platteville)
How many zeros are in the end of the factorial 100! ?
Last year there was a student activity, "Face off", in the Wisconsin Section of the MAA meeting at Whitewater. During this activity a question was asked: How many zeros are in the end of 100!? In this talk, I will solve the problem, find a formula for the general case, and show an application on Number Theory.

2:00 – 2:25* Irfan Ul-haq (UW-Platteville)
Leslie Matrix
We show that Leslie Matrix can be used to address questions regarding long term behavior of the population.

2:00 – 2:25* Bruce O'Neill (Milwaukee School of Engineering)
Inverse Eulerian Numbers
Binomial coefficients, all with positive signs, and binomial coefficients, with alternating signs, bear an interesting inverse relation to each other. So do Stirling Numbers of the First Kind (which alternate in sign) and Stirling Numbers of the second Kind (which are all positive). The triangle of Eulerian Numbers also has an inverse triangular array, which we develop and investigate.

2:00 – 2:50***** Simei Tong, Don Reynolds, Andrew Balas, Alex Smith (UW-Eau Claire)
Building the Capacity of a Department of Mathematics to Engage in the Scholarship of Teaching and Learning
During the 2005-06 academic year, the Department of Mathematics at the University of Wisconsin-Eau Claire, supported by a grant from the UW System, undertook three separate projects involving the scholarship of teaching and learning. One project sought an improved understanding of how to facilitate students' transition to abstract mathematics; a second project studied the implementation of cooperative learning methods in lower division classes; and a third project studied the implementation of a particular instructional technology across the curriculum and its effect on student learning. Four of the participants will report on this experience and the outcomes of these projects.

2:30 – 2:55***** Robert Kreczner (UW-Stevens Point)
Euler's Substitutions and Rational Points on Conics
In this presentation we will consider two problems apparently unrelated: One deals with integration of functions involving a square root of a quadratic expression by using the well-known Euler's substitutions. This approach is completely different from how this is usually taught in calculus courses. The second one is about solving quadratic equations over rational numbers. We will show that the underlying ideas and techniques are the same for these two problems, and when they are considered together, it becomes clear how Euler's substitutions might have been discovered. The talk is accessible to any student who is familiar with Calculus One. But calculus teachers will also have an opportunity to gain a different perspective at these two topics

2:30 – 2:55 James Peirce (UW - La Crosse)
Motion of a vortex line in an averaged velocity field
One approach taken to understanding turbulence is the development of asymptotic equations for the movement of thin tube-like filaments with intense vorticity. I will begin by reviewing known results on filament motion. The primary focus of the talk will be to discuss the dynamics of a vortex line immersed in a three-dimensional averaged fluid velocity field governed by the Lagrangian averaged Navier-Stokes(LANS-alpha) equations. The LANS-alpha equations are a set of equations designed to capture the large scale dynamics of the fluid motion by averaging, or filtering, motion at spatial scales smaller than a chosen parameter alpha. Preliminary results show that Lagrangian averaging replaces the core structure of the filament. Consequently, the relationship between the velocity and rotation of the fluid is no longer singular and the induced velocity at any point in the presence of a vortex line can be determined throughout the fluid domain. The main tools come from PDEs and asymptotic analysis. The talk will be appropriate for students who have taken a differential equations course.

3:00 – 3:25 Petre Ghenciu (UW-Stout)
300th birthday of Euler. Should we be lighting the candles?
This talk will focus on the progress that the mathematics community made in the last 300 years. Are there any ideas or techniques that we lost in the process? What can be done about this?

3:00 – 3:50* Panel Discussion
Robert Wilson (UW-Madison, Moderator), Gail Burrill (Michigan State University), Martha Siegel (Towson University, MAA Secretary), Michael Bleicher (Clark Atlanta University)

What mathematical habits of mind and ways of thinking should university graduates have when they leave as prospective teachers?

The Carnegie sponsored Teachers for a New Era has engaged 11 universities in reconsidering their teacher education programs, with one of the goals that of strengthening the connection between arts and sciences and the school of education. Postulating that this is a worthwhile goal, the panel will consider questions such as the following: What should prospective teachers know about mathematics when they leave your university? What sense of mathematics should they take from their university work into their K-12 classrooms? What should they be able to convey to their students about what mathematics is? Is the set of prescribed courses adequate or is there a list of important topics? Are the topics all of equal importance? Are the goals for prospective elementary teachers different from those for secondary teachers? The audience will be encouraged to add to the discussion.

3:00 – 3:50* David Harpster (UW-Stevens Point)
Archimedes: An Example of the Proof Process in Ancient Greece
The methods and proof process used by Archimedes to show that the volume of right cylinder, circumscribed about a sphere, is 3/2 that of the sphere will be outlined in this presentation.

3:00 – 3:50* Steve Deckelman (UW– Stout)
A Case Study in Disease Ecology: Mathematical Modeling of Avian Flu
Avian influenza or "bird flu" has recently been the subject of much media attention and public interest. Opinions on its potential to spawn a global pandemic have ranged from the alarmist to the cautiously skeptical. This talk will describe what bird flu is, the current state of the bird flu scare, assessment of the pandemic risk, and the question of how to mathematically model bird flu. Some computer simulations will also be presented. This talk will be of interest to both faculty and staff as well as students. Students who have taken differential equations will find this talk especially interesting.

3:30 – 3:55 Akhtar A. Khan (UW - Barron County)
Inverse problems for variational and quasi-variational inequalities with multivalued operators
Numerous physical models lead to variational and quasi-variational inequalities involving certain parameters describing physical properties. This talk will focus on the inverse problem of identifying these unknown parameters. The basic idea is to solve a minimization problem to obtain optimal coefficients. Several related issues will be discussed. Numerical results will be presented.

3:30 – 3:55 Ken Krause (UW - Fond du Lac)
Euler and Eau Claire
Let's celebrate Leonhard Euler's 300th birthday. Find out what it was like being a mathematician back then compared to now - 2007.

4:00 – 4:25* Todd Will (UW-La Crosse)
Interactive Graphics for Teaching Introductory Linear Algebra
We will explore a website for teaching introductory linear algebra. The site features interactive graphics for visualizing linear transformations, least squares solutions, and the singular value decomposition. The site can be used for classroom demonstrations or, when combined with on-line homework exercises, can be assigned as an outside activity.

4:00 – 4:25* Donald Crowe (UW-Madison, Retired Professor of Mathematics)
An unexpected discovery in the heart of Africa: the "duality" between p4g and pgg
Andreas Speiser was the first to suggest that the 17 plane crystallographic groups could be used for the study of real-world plane patterns. In his 1927 group theory book he described the invention of the p4g pattern by the ancient Egyptians as "a mathematical discovery of the first magnitude". He was wrong -- the pattern is an automatic product of over-under weaving -- but p4g in its various manifestations does have world-wide occurrence and importance. Examples will be shown, with special emphasis on two carved table tops from the Congo which reveal a kind of "duality" between the two patterns p4g and pgg

4:00 – 4:25 Stan Russell (Pima Community College-West)
What about a growth model with "end-of-life" behavior?
The exponential law of (unconstrained) growth describes well many natural phenomena, with the associated function exp(rt) and constant e fundamental entities in mathematics. The concept that "nothing grows forever" has led to the logistic equation of Verhulst, a model of constrained growth which itself has contributed greatly to mathematics (nonlinear dynamics and chaos theory). What about the concept that "nothing lasts forever"? This surely applies to many things in this world ranging from individual living beings to entire civilizations to the stars in the universe. Motivated by his experience in industry with empirically based fatigue laws, the author poses the question in the title of this talk, talks about a couple of his own (feeble) attempts and poses this challenge to his mathematical audience.

4:00 – 4:25* Benjamin V. C. Collins (UW- Platteville)
A Marvelously Terrible Algorithm from Leonard Euler
Leonard Euler was unquestionably one of the greatest mathematical minds of all time. However, from the vantage point of the 20th century, many of his techniques seem to lack rigor. I will present an algorithm for solving polynomial equations that author Peter Flusser states is "based on nothing but wishful thinking." But, as with almost everything from the mind of Euler, it works!

4:00 – 4:25 Ki-Bong Nam (UW-Whitewater)
Some open problems on algebra and beyond
Recently, a lot of associative, Lie, and non-associative algebras are defined by many authors. We will introduce some of them and some results of them. We will list some open problems on the algebra and on some number theory.

4:30 – 5:25* Invited Address

Michael Bleicher (Clark Atlanta University, *Emeritus Professor of Mathematics, UW-Madison*)
From Euler to the Riemann Hypothesis
We begin with a discussion of Euclid's ingenious proof of the infinitude of the prime numbers, his approach to unique prime factorization, and the necessity of using addition to demonstrate this totally multiplicative property. Euler was the first to find an essentially different proof of the Prime Number Theorem. Euler's proof used geometric series and infinite suns and products. Various versions of the prime number theorem were conjectured by several mathematicians. Euler's ideas lead to the consideration of the Riemann Zeta Function and the use of complex analysis in number theory. The best results for the error term in the Prime Number Theorem. Better error terms follow automatically from larger zero-free regions in the critical strip.

5:30-6:30 Reception and cash bar

5:30-6:30 *"Face Off!" The Mathematics Game Show* Tamarack Room, Davis Center
Organized by Dr. Ken Price (*pricek@uwosh.edu*) and Dr. Steve Szydlik (*szydliks@uwosh.edu*)
For more information about "Face Off!", see below.

6:30 Banquet
Invited Address: Gail Burrill **(**Michigan State University)
The Mathematical Knowledge Needed for Teaching at the Secondary Level: What is the Role of mathematics departments?
Researchers are beginning to argue that in addition to knowing mathematics there is a kind of mathematical knowledge that is unique to teaching, just as there is mathematical knowledge that is useful to engineers. Knowing mathematics for teaching implies that teachers should have a broader knowledge of mathematics specific to their work, knowledge on which they can draw to make decisions about what they choose to teach, when and how. What are some examples of this knowledge and how do teachers acquire it? Mathematics departments can have a role in this task; one that should be carefully considered in terms of mathematics courses that prospective teachers take and how mathematicians can interact with mathematics education in productive ways. The session will explore what this means and discuss some possible options.

Saturday, April 21, 2007

8:00 – 10:00 Registration

8:00 AM – Noon Exhibits, MAA Book Sale Hibbard Humanities Hall (220)

8:00 – 8:50 Business meeting

9:00 – 9:25* Andrew Grzadzielewski (Education Management Corporation, Pittsburgh, PA)
Optimization Problems - An Alternative Pedagogical Technique with a spreadsheet.
When presenting optimization problems, we sometimes naively hope that our students will proceed directly to the function, and if they struggle why doing so, we may not be sure what to do. Using a spreadsheet to break down such problems may prove to help students understand the concept step by step

9:00 – 9:25 Tony Thomas (UW-Platteville)
Sum-Preserving Rearrangements of Infinite Series
It is well known that any rearrangement of an absolutely convergent series of real numbers converges to the same sum as the original series; however, the situation is quite different for conditionally convergent series. In fact, Riemann proved that any conditionally convergent series may be rearranged to converge to an arbitrary real number, or even diverge. In this talk we will discuss necessary and sufficient conditions for a specific rearrangement to preserve both the convergence and the sum of an arbitrary (conditionally) convergent series.

9:00 – 9:25 Xueqing Chen (UW-Whitewater)
Root Vectors, PBW and Canonical Bases of Ringel-Hall Algebras and Quantum Groups
Let $\mathbf{g} = \mathbf{g}(C)$ be the Kac-Moody Lie algebra associated to a Cartan matrix C and $\mathbf{U} = \mathbf{U}_v(\mathbf{g})$ its quantum group. A key feature in quantum groups is the presence of several natural bases (like the PBW-basis and the canonical basis). There are different approaches to the construction of the canonical basis: algebraic approach (Lusztig, Kashiwara, Beck-Chari-Pressley, Beck-Nakajima), geometric approach (Lusztig) and Ringel-Hall algebra approach (Ringel, Lin-Xiao-Zhang). In this talk, we will recall algebraic and Ringel-

Hall algebra approaches to a PBW basis and a canonical basis of **U** when C is finite or affine. Meanwhile, the root vectors in Ringel-Hall algebras will be discussed.

9:00 – 9:50* Norbert Kuenzi (UW– Oshkosh, Retired Professor of Mathematics)
Math Recreations--More Than Just Fun and Games
Many people find math recreations both intriguing and entertaining. However, math recreations can offer much more than entertainment. They provide us with a rich source of problems and examples which can be used to illustrate mathematical concepts and problem solving strategies. A few of my favorites will be presented.

9:00 – 9:50* Jeanne Foley (UW-Stout)
Incorporating on line assignments and peer tutoring into general education math classes: An update on the Math TLC approach
Many university mathematics departments have historically struggled with the challenge of preparing entering students for college level mathematics, and success in first-year math courses is a strong predictor of retention into the second year of college. At last year's meeting, we reported on the results produced in our Beginning Algebra (Math 010, MPT Level 0) and Intermediate Algebra (Math 110, MPT Level 1) courses since the UW-Stout Math Teaching and Learning Center was commissioned in Fall 2004 to combine online work with required daily classroom sessions and a new tutoring service. With five semesters now completed, combined failure and withdrawal rates continue to drop in both classes, with average F/W rates reduced by an average of 62% in Beginning Algebra and 42% for Intermediate Algebra compared to the previous four-year average. Nearly 95% of students are now completing all daily homework assignments, with scores averaging over 90%. Lecture attendance is also averaging above 90%, and we are logging 150-200 student visits each week to the Math TLC tutor lab which is staffed by course instructors and undergraduate peer tutors who are specially trained for working with students in these two courses. In the current academic year we have been adapting some of these practices (online assignments, course-targeted tutoring) to some of our higher-level general education math courses. We will report on the results of these new initiatives and share lessons learned and best practices. Participants in the session will also be given information about a new series of professional development workshops to be held at UW-Stout beginning in July of 2007 and supported by a 3-year U.S. Department of Education grant from the Fund for the Improvement of Post-Secondary Education. The 5-day workshops will allow attendees to prepare fully functional hybrid classroom/online courses for pilot sections of Beginning and Intermediate Algebra using the course structure and policies developed and refined over the past three years in the UW-Stout Math TLC program.

9:30 – 9:55* Linda Thompson (Carroll College)
Now and Then
Observations on how mathematics instruction has changed and how it has stayed the same over the past 100 years. These observations are based in part on material discovered in a set of old mathematics education textbooks that date back to the early 1900s.

10:00 – 10:25* Simei Tong (UW- Eau Claire)
Team based learning in calculus class
Abstract: This talk will present the results of student learning in calculus class with team activities: team presentations, team projects, and team quizzes. The talk hopes to promote a discussion of engaging and challenging both students and faculty in mordern mathematics education.

10:00 – 10:25 Eric Kuennen (UW - Oshkosh)
Remedial Mathematics Placement
Placement has been identified as an important component of improving the effectiveness of remedial mathematics, but what factors should we look at when making the decision whether a student needs a developmental mathematics course? This talk will present results from a two-semester study at UW - Oshkosh which attempts to identify which factors ought to be included in the mathematics placement at the undergraduate level, and to assess how well current placement practices succeed in identifying students in need of remediation.

10:00 – 10:25* Robert Coffman (UW - River Falls)
Random Convex Triangles in a Circle
A problem on this year's Putnam Exam asks for the probability that four points chosen at random in the interior of a given circle form a convex quadrilateral. Here, we will outline one solution and give the broader historical context in which this problem lies.

10:00 – 10:50* James S. Walker (UW- Eau Claire)
Music: A time-frequency approach
Using mathematics we produce 2D images, "time-frequency portraits", of recorded music. Passages from Western classical music, Chinese folk music, Western popular music, bird songs, and experimental "fractal" music will be analyzed, processed, and synthesized using these time-frequency portraits. Some insight into the nature of musical perception and composition will be gained.

10:00 – 10:50* Matthew Bloss (UW- Eau Claire)
Using L. Dee Fink's Significant Learning Framework in a Modeling-Based College Algebra Course
Over the past few years I have been developing a course called Earth Algebra. This is generally a terminal course for students. The emphasis is on modeling and the environment. I have designed the course around Fink's six goals of significant learning: Foundational Knowledge, Application, Integration, Human Dimension, Caring, and Learning How to Learn. I will talk a bit about Fink's framework for significant learning and how teaching and learning happens in the course. I will share materials, techniques, and ideas, and I look forward to some dialogue with the attendees.

10:00 – 10:50* Robert Hoar, Becky Ledoc, Jenn Kosiak, and Helen Skala (UW-La Crosse), Sherrie Serros (UW-Eau Claire), Kathy Ernie and Erick Hofacker (UW-River Falls)
The PRAXIS WI Project
The PRAXIS Wisconsin Project is a multifaceted project involving faculty-student teams from around the System in the creation of web-based, flash-driven learning objects in math and science. The results are interesting and impressive. The presentation will include information about the Design Model, the Team Structures, the benefits to the faculty team leaders, the benefits to the student team members, and the benefits to the end-users. Examples of the project results will also be presented. This project will likely continue, and potential opportunities for getting involved will also be discussed.

10:30 – 10:55* Alex Lavrentiev (UW-Fox)
The Method of Intervals and Trigonometric Inequalities
The method of intervals is widely used to solve polynomial and rational inequalities. But it can also be very effective when applied to various other types of inequalities. I will talk about applying the method of intervals to solving some of the more complicated trigonometric inequalities. I will provide a number of examples.

11:00 – NOON Invited address
MAA Speaker, Martha Siegel (Towson University, MAA Secretary)
Applied Mathematics for Fun and Profit
I will describe some fascinating projects that illustrate what undergraduates can accomplish in tackling real-world problems. I hope to encourage colleges and universities to design an undergraduate research experience in applied mathematics. The problems are challenging, fun, and our clients really want the answers!

Pre-Conference Workshop:
Educational Resources – Mathematics Digital Library

Erick Hofacker

Over the past five years there has been tremendous growth in the field of digital resources which can be used within the mathematics classroom at the higher educational level. In order to use these resources, one must first seek out and find the resources. This can be accomplished by doing a Google search on a particular mathematical topic. Unfortunately Google will often times return numerous irrelevant resources that are not quite what the user had in mind when performing the search. Due to this rapid growth in resources, finding quality materials has become more challenging for the user. Thus MAA and NSF have recently supported the creation of digital libraries which are an organized point for a potential user to access and search for resources relevant to their needs. It is the hope of these projects that these libraries can provide users easier access to finding materials that may be of interest to them, rather than simply doing a Google search.

Last fall I was invited to partake in a two-day workshop which discussed three of these different digital libraries: MathDL, MathGateway, and NSDL. Each of these libraries provides links to numerous educational resources which can be used inside and outside of the mathematics classroom. Available resources include: virtual demos, historical information in mathematics, content information, projects, journal articles, research, virtual homework sets, and more.

This workshop should serve two purposes to its participants. One, it will disseminate and demonstrate to participants the types of resources that are available to them via electronic means. Secondly, it will discuss how to successfully use these libraries to find resources relevant to the participant's needs in a timely manner. The workshop should give everyone a small sampling of the mathematics teaching resources available on the web.

The workshop will be conducted within a computer lab so all participants will have access to performing their own searches and seeking out materials relevant to them. It is recommended that if you are an MAA member you should bring with your MAA membership number in order to fully access all features of all of the digital libraries. Materials and handouts will be available for participants to take back to their campus and share with colleagues.

Face Off, The Mathematics Game Show

What is it? Face Off is a mathematics quiz show with questions from the broad realm of mathematics. And we mean broad! Teams of 2-4 students representing their schools compete to answer these questions. Each team gets a sign with the face of a mathematician (For example, your team could play as Descartes, Gauss, Hilbert, Noether, or Newton.) A team holds up its sign to answer a question and earns points if its answer is correct. Teams can use a calculator, paper, and pencil. For more information, visit the Face Off website whose address is given below.

When is it? Friday, April 20, 5:30-6:30 pm., as part of the MAA-Wisconsin Section meeting

Where is it? Tamarack Room, Davies Center at the University of Wisconsin-Eau Claire

Sample Questions:

The *Off Limits* category contained the following questions.

20 pts. What is $\lim_{x\to \pi/2} \frac{\sin x}{x}$?

40 pts. What is $\lim_{x\to 2} \frac{x-3}{x-2}$?

60 pts. What is $\lim_{x\to 0} \frac{|x|}{x}$?

80 pts. What is $\lim_{x\to 1} \frac{2^x-2}{x-1}$?

The *Take a Number* category contained the following questions.
20 pts. How many pips are on a standard die?
40 pts. What prime number is both the sum of two primes and the difference of two primes?
60 pts. What two-digit number has a cube root equal to the square root of the sum of its digits?
80 pts. What is the smallest non-palindromic number whose square is a palindrome?

Please contact one of the organizers if you would like to enter a team. Any student who has taken or is enrolled in Calculus I is eligible to join a Face Off team representing their school. If a school doesn't have enough interested students, contact the organizers anyway – we can combine interested students to form hybrid teams. Space will be limited, so form a team soon and let us know of your interest!

Face Off Organizers:

Dr. Ken Price (*pricek@uwosh.edu*, (920)424-1057),
Dr. Steve Szydlik (*szydliks@uwosh.edu*, (920)424-7346),
http://www.uwosh.edu/departments/mathematics/mathclub/faceoff.htm

REGISTRATION FORM

For Spring Meeting at UW-Eau Claire, April 20-21, 2007

Preregistration Deadline: **April 13, 2007**

To preregister for the meeting and/or to order tickets for the Friday evening banquet, complete the form below and send it, with your check, to

Mark Snavely, Treasurer (262) 551-5714

Mathematics Department

Carthage College snavely@carthage.edu

Kenosha, WI 53140

NAME(S)_____

ADDRESS_____

_____

Banquet Ticket(s) _____ @ $17.00 [$20 after April 13] $_____

Student Banquet Ticket(s) _____ @ $5.00 [$20 after April 13] $_____

Meeting Registration Fee(s)

MAA member(s) [$20.00 at the meeting] _____@$15 $_____

Retired MAA Member(s) _____@$10 $_____

High School Teacher(s) _____@$10 $_____

Student(s) [MAA members and non-members] _____@free $_____

Other(s) [$20.00 at the meeting] _____@ $17 $_____

TOTAL ENCLOSED $_____

MAKE CHECKS PAYABLE TO: MAA - WISCONSIN SECTION

Euler – 300

Celebration of Leonhard Euler's 300th Birthday

75th Annual Meeting of MAA/Wisconsin Section, April 20 – 21, 2007

University of Wisconsin - Eau Claire

CALL FOR SPEAKERS

The Wisconsin Section of the MAA will hold its 2007 Spring Meeting at UW-Eau Claire on April 20-21, 2007. The year 2007 marks the 300th birthday of Euler and we anticipate to have a great meeting in Eau Claire. Please consider giving a talk about your work in mathematics, an issue concerned with mathematics education, or pedagogy of mathematics. Talks related to the work of Euler are especially welcome. Please encourage your mathematics students to attend the meeting and to give a presentation. There is a student speaker form below.

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

Mohammad H. Ahmadi, Department of Mathematical and Computer Sciences, UW-Whitewater, WI 53190

Phone: (262) 472 – 5175 FAX: (262) 472 – 1372 email: ahmadim@uww.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.

SPEAKER RESPONSE FORM – DUE: MARCH 9, 2007

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 afternoon is imperative ____ Preferred ____

Either time is acceptable _____

Student Mathematics Conference

University of Wisconsin - Eau Claire, April 20 – 21, 2007

CALL FOR STUDENT SPEAKERS

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 student speaker receives free registration at the meeting and free one year MAA membership. If you wish to present a talk, please send the completed form below or an email equivalent by March 16, 2007 to:

Mohammad H. Ahmadi, Department of Mathematical and Computer Sciences, UW-Whitewater, WI 53190

Phone: (262) 472 – 5175 FAX: (262) 472 – 1372 email: ahmadim@uww.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 16, 2007

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 afternoon is imperative ____ Preferred ____

Either time is acceptable _____

Directions to Hibbard Hall at UW-Eau Claire

From the South or East, approaching on I-94W:

Driving west on I-94 take exit 70, the first Eau Claire exit onto U.S. 53. Take exit 87 onto Clairemont Ave. (U.S. 12). Turn left onto Clairemont Avenue heading west.

(1) Your next exit will be to the left so get or stay in the left most lane. There may be construction on Clairemont Avenue. After about 2 miles turn left onto Patton Street. Turn immediately right onto Lexington Blvd, then immediately right onto State Street and proceed under Clairemont Avenue and down the State Street hill.

(2) You can now see Hibbard Hall to the left. It is an eight story red brick building. Immediately after the first stop light on the left is the Hibbard Hall Parking lot, this will be available for parking on Saturday but not on Friday. On Friday proceed past the Hibbard Hall parking lot and turn left at the next stop light. Drive across the bridge over the Chippewa River and past the first stop light. Turn right at the next street (second street) and park in the Water Street lot on your right.

(3) To walk to Hibbard Hall from the Water street parking lot, cross Water street at the cross walk and walk across the footbridge over the Chippewa river and turn left and walk to the eight story red brick building (Hibbard Hall) and follow signs to registration.

From the South, approaching on Wisconsin 93 (alternate route from the East on I-94 take exit 68 onto Wisconsin 93):

After you cross I-94 at exit 68 proceed to the first stop light and turn left onto Golf Road. Drive about 2 miles until you come to a stop sign (you will pass through two stop lights in the first half mile). Turn right at the stop sign. You are now on State Street, drive about 1.5 miles (you will go through one stop sign) and follow instructions (2) and (3) above.

From the West, approaching on I-94E:

Driving east on I-94 take exit 65, the second Eau Claire exit. Turn right on Wisconsin 37 and drive about one half mile to the first stop light and turn right onto Hamilton Avenue. Drive 1.7 miles to State Street. This will be at the third stop sign. Turn left onto State Street and in about one half mile you will pass under Clairemont Avenue and down the State Street hill then follow instructions (2) and (3) above.

From the North or East, approaching on U.S. 53S:

Take exit 87 onto Clairemont Avenue (U.S. 12). Turn right onto Clairemont Avenue heading west. Then follow instruction (1) (2) and (3) above.

Lodging Information

A total of 90 rooms are blocked at the Plaza and the Quality Inn. .

At the Plaza call 715-834-3181 or 800-482-7829 to reserve, mention the group number 5408. Rooms are $62.00 for single and $82.00 for double. Deadline March 27.

At the Quality Inn, call 715-834-6611 and mention "Wisconsin MAA Group Block". Room rates are $58.00 single queen, $62.00 two beds (doubles or queens). Deadline March 27.

Other area hotels on the in-state lodging list (a group of rooms are not held):

- Exel Inn 715-834-3193
- Americinn 715-874-4900
- Ramada 715-835-6121
- Country Inn & Suites 715-832-7289
- Best Western Trail Lodge 715-838-9989

Parking

Friday, April 20th: Attendees of the conference should park across the river in either the Water Street or Haas Fine Arts parking lots. All other lots will be subject to tickets.

Saturday, April 21st: The permit and meter lots on lower campus are not enforced so parking will not be an issue. Please note that the meters in front of the Thomas and Putnam Hall are enforced as well as loading zones, 15 minute zones, no parking zones and handicap spaces.

Know Your Wisconsin Mathematician

Interview with **Prof. Phil Straffin** by J. Sriskandarajah

What impression did grade school have on you mathematically? Was that where you became interested in mathematics?

I don't remember being very interested in elementary school mathematics, but I was good at it. My fifth grade teacher taught mathematics by having us do worksheets in a workbook. She was not happy when I brought her the workbook in the third week with all the worksheets for the year done. Poor Miss Patton had no idea what to do.

I felt the same way about mathematics in high school. I was much more interested, for instance, in Russian literature. I had no idea that a mathematics problem could be so hard and interesting that you could stay up late at night to solve it, but I spent many late nights discussing Dostoevsky.

What town did you grow up in?

I grew up in an unincorporated area of Westchester County, New York, which we used to describe as "across the tracks from Scarsdale." My high school—Edgemont—was small but good: of the 97 people in my senior class, 94 went to college. Claire Newman, who taught me calculus, had a Ph.D. in mathematics and was active in the NCTM.

And your undergraduate school was Harvard , M.A from Cambridge and Ph.D from UC-Berkeley, very impressive, Please elaborate on these experiences.

At Harvard it was assumed—or at least I thought it was assumed—that if you were good in mathematics you would take the graduate sequences in real and complex analysis in your junior and senior years, which I dutifully did. And I took courses from some wonderful mathematicians: Oscar Zariski, Lynn Loomis, John Tate, David Mumford. I learned that mathematics was hard and deep, but I still didn't have a sense that it was beautiful or exciting.

At Cambridge I had the great good fortune to have Ray Lickorish as my pure maths tutor and DeWitt Sumners as a fellow Marshall scholar. I learned what topology was, and I became fascinated by knot theory. (I also learned to play Sprouts from a graduate student named John Conway who hung around in the maths common room.) I decided I wanted to write a thesis in knot theory, and I went to Berkeley because John Stallings was there. Alas, when I arrived, Stallings told me that he was now interested in combinatorial group theory. I wrote my thesis under Emery Thomas in algebraic topology, but I missed the concreteness of knots.

Berkeley did two other things for me. It gave me a chance, during a mass Vietnam War protest, to put a flower in the barrel of a tank—surely a rare and valuable experience. And it gave me two chances to teach, that scary activity of standing in front of a class of students for an hour trying to say things which might be useful to them. The first was as a T.A. for Leon Henkin's pioneering course on mathematics for elementary school teachers. (One of the other T.A.'s, and our chief builder of geometric models, was a very smart graduate student named Bill Thurston.) The second was teaching abstract mathematics by the Socratic method to elementary school children in Oakland with project SEED in its first years. I learned that teaching was not only possible, but could be exciting.

How did you end up at Beloit College?

In my last year at Berkeley the campus was surrounded by Oakland police while helicopters sprayed tear gas. The ROTC building, the draft board and the university main gate—all within a

block of our apartment—were bombed. Finally a fire bomb burned the building next door, and Judy and I ran out into the street carrying some strategic clothes and my thesis. We decided that it was time to leave. April 1970 was late in the first year of the Ph.D. job crunch, and there were just two jobs available on the west coast, so I applied to some small schools in the quiet Midwest. Beloit had a last minute opening, and I was very impressed with its interdisciplinary program. It seemed like a good place to go for a few years. Of course, I ended up liking it so much that I have stayed for 36 years.

When were you and Judy married?

Judy and I were married just before we went to Berkeley in 1967.

And how about your son?

Ethan was born at the end of my first year at Beloit. Judy and I had been very active working for a progressive Congressional candidate who won. Ethan was born nine months after election night.

Did your expectations for the students change ability-wise or activity-wise over the years?

I think my students would tell you that I've always had them do a lot of work. Surely doing mathematics is the only way to learn it, and I've also wanted my students to do projects in which they learn mathematics on their own, organize it, and present it clearly to me and to their peers. I taught Beloit's first "cooperative Moore method" courses in the late 70's, and developed our Mathematical Modeling course in which student teams work on real problems and write and present consulting reports.

However, I have cheered for and followed—and perhaps help lead through the ACM/GLCA Calculus Reform Project—the trend toward more activity-based and cooperative learning of mathematics. Although I like to lecture and may still do it for part of a class, I have students working in groups in almost every class. I enjoy circulating to help, and the feeling of clearing up problems quickly and reinforcing good problem solving techniques. In all my classes for the past five years I've allowed students, if they wish, to turn in problem sets in pairs. I've found that doing that works very well for many students.

As for your own professional career, what areas of mathematics did you study?

My thesis was in algebraic topology, systematizing the construction of secondary twisted cohomology operations, and my first paper was about new algebraic identities in the Steenrod algebra. Teaching in Beloit's interdisciplinary atmosphere broadened my mathematical interests considerably. For instance, I was inspired by a Chautauqua course from Bill Lucas and a sabbatical term working with him and other game theorists in the Department of Operations Research at Cornell University, to create an interdisciplinary course in Game Theory. This led to joint work with Steve Brams and other political scientists, twenty papers on voting theory, mathematical political science and game theory, and my MAA book *Game Theory and Strategy*.

Also in the 1970's I was inspired by Li and Yorke's paper "Period Three Implies Chaos" to find a graph theoretic proof of a generalization of Li and Yorke's result, which we in the West later learned had been proved in 1964 by Sharkovsky. This interest led to a sophomore level course on in chaotic dynamical systems at Beloit, and work on the structure of the Mandelbrot set on a sabbatical with Bob Devaney at Boston University.

In the 1990's Darrah Chavey created a course on ethnomathematics at Beloit, and he and I, and students in their course projects, have developed a great deal of material for this course. It has also led to half a dozen research papers.

Finally, with the collaboration of Bob Messer at Albion College, the material I have taught at Beloit for many years in a "hands-on" geometric topology course is now available from the MAA in *Topology Now!* (2006). Our hope is that this will show students some of the ideas which first got me excited about mathematics at Cambridge.

How long were you department chair?

I was Chair from 1980 to 1990. My first initiative was to formalize Beloit's computer science offerings into a track in mathematics and computer science, and change the department name to Mathematics and Computer Science.

What does your wife think of mathematics?

Judy is an English professor and a poet. She likes to hear me talk about mathematics, but more for the sound of the language than the mathematics. Since she's listened to so much mathematics, she writes pretty good mathematical doggerel. When we got married and went to Berkeley she presented me with a celebratory ode which began "He held the torus high, from Cambridge to the West…"

How about your family, your son? Did any of them show any promise in mathematics?

Ethan has an MA in Computer Science from Stanford and writes parsers which turn the print versions of science and medical journals into web versions. As an undergraduate CS major he took a fair amount of mathematics, but he never was seriously attracted to it. I remember Ethan's best friend Chris, now a mathematics professor at Williams, trying to explain why abstract algebra is beautiful, and Ethan not quite believing it.

What are your hobbies, rock climbing….

Well, I'm not really a rock climber, but I am a pretty good non-technical mountaineer. Colorado has 54 peaks over 14000 feet, and I've climbed 40 of them, and more than 100 other Colorado mountains. I've hiked 5000 miles since beginning to split my time between Beloit and Colorado in 2002. Being out in high, wild, beautiful places makes me feel completely alive.

I also like choral singing, classical music and curling up with a good book on rainy days.

What do you think is the best part of mathematics and being a mathematician?

As a mathematics teacher, the best part is the people you get to work with. Beloit has been a wonderful place to have a career: eager students (as well as a few less eager ones), wonderful colleagues, a supportive administration.

As a mathematician, the best part the ideas you get to spend your time thinking about. Are there other areas where you can get so engrossed in a problem that when you look up it's several hours later (and maybe students are standing at the door telling you you're late for class)? Or wake up at night with a Eureka moment (and have your spouse turn over in bed muttering, "Oh, it's just mathematical excitement…") And I've also been lucky enough to be able to follow my interests as they evolved into new areas.

How about the worst part?

Grading! I've always believed that to learn mathematics students need to turn in work and get feedback from me every week, and that they need to write. At three classes per semester, that's a lot of student papers

What of your work do you like the best? What are you most proud of?

Well, I certainly love teaching, and I'm proud of the first Wisconsin Section Teaching Award and of the Haimo Award. But I also love writing, though I find it hard work. In each area of mathematics I've worked in, I've tried to write something I could be really pleased with. In game theory, I'm most proud of the game theory book; in political science, a 1984 Mathematics Magazine paper on parliamentary coalitions with Bernie Grofman, which won an Allendoerfer prize; in ethnomathematics, Mathematics Magazine papers on the Maori game Mu Torere in 1995, and Chinese mathematician Liu Hui in 1998; in topology, the new Topology book.

Campus News

Madison Area Technical College *submitted by J. Sriskandarajah*

Spring Math Club Events:
Jan. 29, 3:30 PM, Room 209
Monthly Presentation # 58, Professor **Ranjan Roy**, Beloit College
Leonhard Euler's 300th Birth Anniversary, Let's Celebrate!

Feb 21, 3:30 PM, Room 209
Monthly Presentation # 59, Professor **Elgin Johnston**, Iowa State University
Wine Bottles and Pizza Sharing

Mar. 2, 3:30 PM, Room 209
Monthly Presentation # 60, Professor **Clint Sprott**, UW Madison Physics Dept.
A Fractal View of the World

Apr. 26, 3:30 PM, Room 321
Monthly Presentation #61, Professor **Jane Tanner**, SUNY Onondaga Community College
Do You Do Sudoku?

Apr. 27, 9:00 – 12:00 am, Mitby Theater
Monthly Presentation # 62, Professor **Laura Taalman**, James Madison University
Sudoku: Questions, Variations, and Research
Professor **Jonathan Kane**, UW-W & MATC Math Faculty present:
Who Wants to be a Sudoku Master?

May 4, 3:30 PM, Room 209
Monthly Presentation # 63, Professor **Norbert Kuenzi**, UW Oshkosh
Some(Sum) Numerical Curiosities for 2007

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

Milwaukee School of Engineering *submitted by Karl David*

Professor Emeritus Peter **K.F. Kuhfittig** has had his paper, "Seeking exactly solvable models of traversable wormholes supported by phantom energy," published in Classical and Quantum Gravity, Volume 23 [2006], pp. 5853-60.

UW-Eau Claire

submitted by Simei Tong

"The Department of Mathematics at UW Eau Claire has had a tremendously successful year," as the chair, Dr. **Andrew Balas**, wrote in the newsletter for alumni of UWEC.

Dr. **Mohamed Elgindi** and Dr. **Michael Howe** received a $269,740 National Science Foundation grant, "Research Experiences for Undergraduates," (REU) in pure and applied mathematics. The program will start in the summer of 2007. The "Excellence in Science, Technology, Engineering, and Mathematics" scholarship program has been funded. This program is a continuation and expansion of the "Excellence in Mathematics and Computer Science Scholarship Program". It will provide $5,000-$10,000 a year to qualified students majoring in mathematics or certain sciences. A Department faculty member received a grant from UW System to promote diversity and gender equity in mathematics within the UW System. Last, but not least, during the 2005-06 academic year the Department initiated a Scholarship of Teaching and Learning (SoTL) project that involved 14 Department faculty members. The program was so successful that it has expanded to a UW System initiative involving faculty from eight campuses. Preliminary results of the project will be presented at the Wisconsin 2007 MAA meeting.

The Department of Mathematics is saddened by the sudden death of a dear colleague, Dr. **Eberth Alarcon**, 40, who succumbed to Leukemia. We miss him very much.

Three faculty members retired from the Department, Dr. **Robert Langer**, Dr. **Jo Ingle** and Mr. **Stanley Ediger**. Three new faculty members joined the Department: Dr. **Sherrie Serros**, Ph.D. in Mathematics; Dr. **Christopher Hlas**, Ph.D. in Mathematics Education; and **Jessica Kraker**, (almost) Ph.D. in Statistics.

UW-Milwaukee

submitted by Jay H. Beder

The 2007 Marden Lecture in Mathematics will be given by **David Keyes**, Fu Foundation Professor of Applied Mathematics in the Department of Applied Physics and Applied Mathematics at Columbia University. The talk, entitled "Scientific Discovery through Advanced Computing," will be given on April 27. Details about the event will be posted at http://www.uwm.edu/Dept/Math/Events/Marden/mardenlect.html as they become available.

The UWM Alumni Association has given Professor **Jon Kahl** this year's "Teaching Excellence" award. A monetary award was presented to him at the Association's Annual Awards Program in December, and a plaque will be presented to him at its Annual Awards Program and Reception on May 19. In addition to his outstanding teaching at UWM, he has been engaged in public education about atmospheric science, including a series of books for children (http://www.uwm.edu/~kahl/Books/).

The Department mourns the loss of Professor **Mark Teply**, who died on November 10, 2006, after a 2 ½-year-long struggle with cancer. He joined the Department as full professor in 1985 after 17 years at the University of Florida, and until his illness had served for many years as the Department's graduate coordinator. In that capacity he secured Dept. of Education GAANN grants for the support of the Department's graduate students starting in 1990, and continuing to the present day.

Mark became Editor-in-Chief of *Communications in Algebra* in 2000, and served for many years on the editorial boards of *Communications in Algebra*, the *Kyungpook Math. Journal*, and two monograph series published by Dekker. He had directed 10 Ph.D.'s in addition to one in progress. A number of these are on the faculty of various UW System mathematics departments. Mark authored 70 refereed papers in addition to a number of monographs and book chapters. He had many collaborators, and gave numerous invited talks in the US and around the world.

Mark's specialization was in rings and modules, particularly torsion theory and Krull dimension. He received all his degrees from the University of Nebraska, receiving his Ph.D. in 1968. He is mourned by his wife Nancy and four children.

UW-Whitewater

submitted by Mohammad Ahmadi

The Department is conducting a search to fill two tenured-track positions in statistics and mathematics education

Jonathan Kane gave a talk at the joint meetings in New Orleans entitled "Sudoku Studio." His son **Daniel** won the Morgan Prize.

The Purple Comet Math Meet http://purplecomet.org will take place April 16 – 20, 2007 which is run by our department.

Fe Evangelista, **Julie letellier**, **Thomas McFarland**, **Geetha Samaranayake**, and **Joan Stamm** received a grant for a Lesson Study Grant for Finite Mathematics.

Ki-Bong Nam published the following papers.

1. Ki-Bong Nam, "Algebras on Localizations of a Stable Algebra I", Vol. 4, No.3, JAADS, 123-127, 2006.
2. Woo Jeon, Ki-Suk Lee, and Ki-Bong Nam, "Algebras on Localizations of a Stable Algebra II", Vol. 4, No.3, JAADS, 157-163, 2006.
3. Woo Jeon and Ki-Bong Nam, "Generalized Contact Lie Algebras of Cartan Type", Vol. 4, No.3, JAADS, 165-175, 2006.

Martin Engert, long time member of the Wisconsin Section, passed away on January 15, 2007. Martin did his undergraduate work at Carlton College and completed his Ph.D. at Stanford University in 1965. Martin was a prominent member of the Mathematics Department at the University of Wisconsin – Whitewater from 1969 through his retirement in 1996. He was instrumental in introducing computer science courses to the Whitewater campus and played a central roll in the establishment of their Management Computer Systems Program.

Wisconsin Lutheran College *submitted by Mel Friske*

Two of our mathematics faculty were presenters at the annual AMS/MAA meetings in New Orleans:

Dave Gebhard presented a paper entitled "Building Communication Skills—a Gradual Process" for the MAA session on "Getting Students to Write and Discuss Mathematics."

Kristi Meyer presented a paper entitled "Eliminating Eve's Eavesdropping (or How to Stop a Snoop)" for the special session on "Universal Algebra and Order." She also organized a panel discussion for Project NExT entitled "Making and Sustaining Research Connections as a Faculty Member in a Small Department."

Dave Schulz (computer science) filed 6 patent applications during 2006. The first 5 were all related to building and testing TTS (text-to-speech) computer voices. The most recent is entitled "Method for Pronouncing Non-Arabic Names Written in Arabic Script".

Executive Committee 2006 – 2007

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