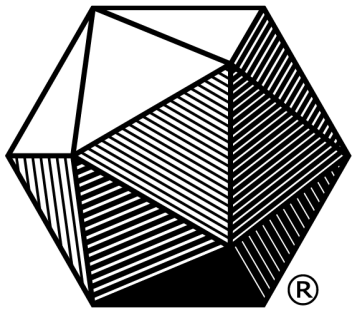
The Mathematical Association of America



Wisconsin Section

Newsletter

Fall 2009

Governor's Report

During the last year when virtually all investments lost value, and some investments were hit particularly hard, the MAA has benefitted from having made fairly conservative investments. Yes, some of its investments did lose value, but with a net worth of over $27 million ($17 million of that being the value of the headquarters buildings), the organization is still on sound footing. So in spite of the MAA operating at a deficit ($250,000 in 2008, $225,000 projected for 2009), the organization remains financially sound. All MAA members can view the organization's financial statements on-line at http://maa.org by following the MAA Financial Information link on the Organization tab.

The recent recession has reduced donations to the MAA as well as other income. Some of the planned PREP workshops were canceled due to low enrollment and others were run although under-enrolled. On the other hand, attendance at national meetings has been strong. The Joint Mathematics Meetings in Washington, DC in January 2009 had a record 6000 in attendance, and this summer's MathFest in Portland, OR also set an attendance record.

This spring the MAA elections were conducted almost exclusively on-line, and we were pleased with the turn out. The on-line voting greatly simplifies the election process, makes it easier for members to vote, and saves money. In the elections **Paul Zorn** was elected the new President-Elect, **Francis Edward Su** was elected First Vice-President, and **Douglas Ensley** was elected the Second Vice-President. The joke, of course, is that MAA is considering moving its headquarters to Minnesota since three Presidents in a row will have been from our western neighbor (**Joe Gallian** from UM-Duluth, **David Bressound** from Macalester in St. Paul, and Paul Zorn from St. Olaf in Northfield).

For several years the MAA has been conducting strategic planning by producing a sequence of reports about various aspects of the organization. At their August meeting the Board of Governors reviewed the final reports from the working group looking at Sections and the working group looking at STEM Issues. The report on Sections had several intriguing suggestions including the possibility of revising the current geographical boundaries between sections which seem to have been drawn more through historical evolution than through study of shared interests, population densities, and travel times. Other recommendations were for changes in the relationship between the national organization and the sections including improvements in the MAA's system of providing speakers for section meetings, helping sections recruit new members, and encouraging joint meetings with neighboring sections and other mathematics organizations. The STEM working group was charged with considering what changes could be made to improve how the MAA serves students of mathematics by improving curricula and to help attract more students to take mathematics courses. Their recommendations included publicizing the wealth of resources provided by the MAA that are already available to teachers. The report considers how to meet the threats of declining interest in mathematics courses, the decline of financial resources, and the difficult transition of students from high school to collegiate mathematics. The full strategic planning reports are available at http://www.maa.org/StrategicPlanning/.

The Board of Governors spent a great deal of time considering whether and how the MAA should offer electronic memberships. The Board of Governors decided that as soon as the MAA web site and member application forms can be configured to allow for electronic memberships, it would begin to offer a membership which would allow electronic access to the *American Mathematical Monthly*, the *Mathematics Magazine*, *The College Math Journal*, and *FOCUS*. The new memberships would sell for the same price as the current memberships taking the print version of the *American Mathematical Monthly* only. MAA members currently have access to electronic versions of issues of these magazines over three years old through JSTOR. The current plan is to convert all undergraduate and graduate student memberships to electronic memberships beginning in the fall of 2010.

Jonathan Kane, UW-Whitewater

Chair's Report

Our spring meeting of the Wisconsin Section of MAA will be Friday and Saturday, April 16 and 17, at UW-Oshkosh. Our chair-elect, Kristen Lampe of Carroll University, is putting together an exciting program. She has arranged for some outstanding speakers from outside Wisconsin but will also be scheduling talks by us, the members of the section! Please consider making a presentation. If what you are doing interests you, it will surely interest others in the section! See the calls for speakers in this newsletter. Talks are welcome on mathematics (and related areas) itself, and also on innovative teaching ideas, ways you ran a course more efficiently, etc! Also, plan to bring a team of students to take part in the annual Face-Off competition. Also, encourage students to give talks. In addition to talks by students, many of the other talks will be of interest to your students, so make sure your students know about the meeting and know they will be welcome. There will be a more detailed schedule of meeting activities in the spring newsletter. Please plan ahead and get your talk proposals in early so they can be included in that schedule!

The folks at UW-Lacrosse made us very welcome for our meeting last spring! Andy Matchett, working with Karry Auby and Bruce Riley, had things set up nicely for us, with lots of additional support from the UW-Lacrosse people in ways such as presiding over the many sessions we had going. Two invited speakers gave great talks relating both to mathematics itself and to how we teach: Dan Teague, who is on the faculty at North Carolina School of Science and Mathematics and a vice president of MAA, spoke Friday afternoon on "The High School to College Transition: A View From Below" and also, after the banquet, on "The Infamous Five Color Theorem". Joe Gallian, University of Minnesota at Duluth and just coming off his term as president of MAA, spoke Friday on "Research by Undergraduates is Hot!" and Saturday on "Using Groups and Graphs to Create Symmetry Patterns". There were almost 50 other presentations, including 16 by students, covering an enormous range of topics! I want to thank all who took part in any way! I hope to see you at the spring meeting in Oshkosh!

Bob Wilson, UW-Madison

Volunteer to Help the Section

The Wisconsin 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 Bob Wilson at wilson@math.wisc.edu. Self nominations are encouraged. Section officers must be members of the MAA.

Contest Report

American Mathematics Competitions

The AMC 8 competition was held on November 18, 2008. A total of 1571 Wisconsin students participated in the competition (down from 1976). There were two perfect scores from Wisconsin, by **Eric Johnson** of Bay View Middle School in Green Bay and **Amy Hua** of Velma Hamilton Middle School in Madison. The average score for Wisconsin students was 10.34, compared with the national average score of 10.83. This gap has been narrowing for several consecutive years. The next AMC 8 will be given November 17, 2009.

The AMC 10 and 12 contests were held on February 10 and 25, 2009. A total of 991 Wisconsin students took the AMC 10, and this number is similar to 996 in 2008 and up from 710 in 2007. A total of 1,554 took the AMC 12, and this number is down from 1,653 in 2008 and up from 1,462 in 2007. Thus, a total of 2,545 students took the AMC 10/12, one of the highest state totals in recent years. Of the Wisconsin students, 50 scored well enough to be invited to take the American Invitational Mathematics Examination (AIME). This number is lower than the 56 in 2008, 90 in 2007, and 269 in 2006. There was one perfect score from Wisconsin this year. The average score for Wisconsin students compared to the national average scores are in the following table:

	10A	10B	12A	12B
Wisconsin	64.7	60.7	63.8	63.6
National	70.4	74.4	68.0	71.7

Four Wisconsin students qualified for the United States Mathematical Olympiad:

Iris Xu of James Madison Memorial High School, **Peter Wear** of Madison West High School, **Kyle Stankowski** of Mosinee High School and **Daniel Mulder** of Maranatha Baptist Academy. The next AMC 10 and 12 will be given February 9 and 24, 2010.

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 4, 2008. There were 71 schools reporting scores this year for a total of 3,198 students. This continues the downward trend, as last year there were 81 schools reporting 3,464 scores. The exam was a bit less difficult than last year, but still more difficult than the writers would like, given the dearth of perfect scores. The cutoff for the top 1% was a score of 71 out of 120 and there were no perfect scores this year. The contest committee has also requested participating high schools to submit questions for future contests. The next exam will be given December 3, 2009.

Dr. **Laura Schmidt** has continued to head UW-Stout's efforts in running the competition. Many thanks to the UW-Stout faculty for coordinating these efforts and to the test committee for writing the contest.

The contest winners in combined state contest and AMC scores were **Michelle Yang** and **Sohil Shah** both from James Madison Memorial High School. Congratulations to Michelle and Sohil!

Laura Schmidt, UW-Stout

Project NExT-Wisconsin

Fall 2009 meeting of Project NExT-Wisconsin has been cancelled due to unforeseen circumstances. We will still hold our regular spring panel discussion at the 2010 MAA Spring meeting in Oshkosh, WI. The panel discussion will be on April 17, 2010 at noon.

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 accessible at http://www.uwplatt.edu/nextwi/).

Irfan Ul-Haq UW-Platteville

Student Activities

We look forward to another year of promoting undergraduate activities in Wisconsin. The number of student participants and quality of their contributions to state events continues to be impressive. We hope you will encourage some of your students to attend conferences and possibly give talks.

Please mark November 6-7, 2009 on your calendars for the next Pi Mu Epsilon Regional Undergraduate Math Conference at St. Norbert College. This year's featured speaker is **Dan Kalman** of American University. He will present engaging undergraduate-level talks on "The Mathematical Elephant" and "Provincial Polynomia: Uncommon Excursions for the Seasoned Visitor."

The date for the spring 2010 section meeting is April 16-17, 2010. This year's meeting will be held at the University of Wisconsin Oshkosh. The banquet cost for students will continue to be held at $5 per ticket. There will be low-cost housing options for students who wish to stay for both days. Thanks to the hard work of the organizers of the 2009 meeting, we were able to offer a student retreat room at UW-La Crosse and plan to do so again in 2010.

The Wisconsin Mathematics Council's Annual Green Lake Conference is scheduled for May 6-7, 2010. 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 both the Pi Mu Epsilon conference in November and also at the MAA 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. With our "Slammer" buzzer system we can allow as many as ten teams to play. Contact Ken (pricek@uwosh.edu) or Steve (szydliks@uwosh.edu) for details on the event or to register your team. More information is available on the web site at http://www.uwosh.edu/faculty_staff/szydliks/faceoff.htm. You can also view pictures from previous years on Facebook's fan page for "Face Off! the math game show."

Ken Price and Steve Szydlik, UW-Oshkosh

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 2010 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 6, 2009.

CALL FOR SPEAKERS

78th Annual Meeting of MAA Wisconsin Section, April 16 – 17, 2010

University of Wisconsin-Oshkosh

The Spring 2010 meeting of the Wisconsin Section of the MAA will be held at UW-Oshkosh on April 16 and 17. Talks of all kinds are welcome, particularly ones that are accessible to students, and we encourage talks by students.

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

Kristen Lampe, Department of Mathematics, 100 N. East Avenue, Waukesha, WI 53186
or (preferred) by email to klampe@carrollu.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: January 15, 2010

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: Power Point _____ Opaque Projector _____ Easel ____
Whiteboard _____ Other (Please describe in detail) _____

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-Oshkosh, April 16 – 17, 2010

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. If you wish to present a talk, please complete the form below and send by March 12, 2010, to:

Kristen Lampe, Department of Mathematics, 100 N. East Avenue, Waukesha, WI 53186
or (preferred) by email to klampe@carrollu.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 12, 2009

Name: _____ Year in School_____

Institution: _____

Address: _____ Phone: _____

_____ Email: _____

Faculty Sponsor: _____

Title of presentation: _____

Brief description of presentation_____

_____

_____

_____

Equipment needed: Power Point _____ Opaque Projector _____ Easel ____

Whiteboard _____ Other (Please describe in detail) _____

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

Know Your Wisconsin Mathematician

Interview with Professor Richard Brualdi, UW-Madison by J. Sriskandarajah, Madison Area Technical College.

Professor Brualdi retired after a very successful career at the UW - Madison (1965-2008). He has served on many editorial boards and has published four books and more than 200 papers. To learn more about Professor Brualdi, please visit his website: http://www.math.wisc.edu/~brualdi/

If you have any comments or suggestions to improve this section, please email Sri (jsriskandara@matcmadison.edu) . Thanks.

Let's start w/your boyhood. What impression did grade school make on you?

I grew up in a working class family living in a working class town in Connecticut.

In general I excelled at school (except in penmanship!). I was encouraged by my parents even though my mother stopped school at the 7th grade. My father worked in a factory but at some point went to night business school and earned an associate degree. He later started a business that my younger brother now runs. I believe I got my strong work ethic from my family. Even my grandmother, who emigrated from Italy and who never could read English very well, started a catering business for Italian weddings and such. My education through high school was nothing special; I did well in mathematics but there were no special programs or activities that I was aware of.

You went to the University of Connecticut as an undergraduate and Syracuse University as a graduate. What was the environment like?

UConn was the only school that I applied to; I was not very worldly at the time. The environment at UConn varied considerably with a very high dropout rate the first year. I was more or less an average student my first three semesters. After that I studied all the time and graduated "with high honors." I almost majored in bacteriology. At UConn I took just about every math course they offered. In my last semester, although I could have coasted, I took four math courses, including projective geometry which doesn't seem to be taught much anymore.

Syracuse was a wonderful place to be a graduate student in the 1960s. It had a good faculty and a large and good graduate student population. I was fortunate in that after two years there, Herb Ryser, then one of the top two or three combinatorialists at the time, came to Syracuse. My work with him has greatly influenced my mathematical career. Herb, who was from Milwaukee and got a PhD from Wisconsin, stayed at Syracuse only five years and then went to Caltech. He and I were starting to write a book together when he suddenly died. I went on to write the book and I included Herb as a coauthor. During the 1960s there were three Syracuse PhDs in the mathematics faculty in Madison.

Tell us something about your career in Madison.

After getting the PhD in 1964 from Syracuse, I spent one year at the National Bureau of Standards (then in Washington, DC, now called National Institute of Standards and Technology and located in Gaithersburg, MD). I had no duties whatsoever, and just did mathematics, some with Morris Newman. While there I applied to three (just three, more or less standard at the time) universities. I got offers from all three and chose Wisconsin because of people I had heard of who were there, like Hans Schneider, Richard Bruck, Henry Mann, all doing work on matrices and combinatorics. It was a great choice.

Wisconsin was and is a stimulating place with great colleagues and great traditions. I loved to teach, and I developed several new courses, one of which led to my book "Introductory Combinatorics", first published in 1977 and now in its fifth edition in 2009. My graduate students played the most important role in my mathematical life at Wisconsin. I have had 32 students who received PhDs, with 5 more now in the pipeline. I talked and worked with graduate students all the time. My best years at Wisconsin were the six years (1993-1999) I spent as chair.

I used to say, that from 1965 to 1993 I lived in the Mathematics Department. Starting in 1993 I lived in the University. I got to know and work with so many wonderful people then and afterwards, and to learn so much about the university. Someone once asked me why I liked being chair; my answer was that I liked being important and I liked being closely involved with the affairs of the Department, the College, and the University. Whether or not I was important, I certainly felt like I was. I enjoyed presiding over departmental functions.

I became an emeritus faculty member in 2008 after 42 ½ years on the faculty. But I am hardly retired. As I already said, I have five PhD students, I continue to do research and write (my fifth book was published just a few months ago), I continue to go to conferences, I am one of three editors-in-chief of the journal "Linear Algebra and its Applications", and one of eight editors-in-chief of the Electronic Journal of Combinatorics. Being an emeritus faculty member gives one a lot of flexibility in one's schedule. That I like.

You have travelled extensively. What are some of your favorite places?

The most spectacular place I have ever been to was Antarctica. It wasn't because of a conference there! The icebergs, penguins, and scenery in general are incredibly magnificent. I recommend it to everyone. But you can't go on the ship we had because that one is at the bottom of the Southern Ocean, it having sunk a couple of years ago on one of its excursions. Fortunately, there were other ships nearby that rescued everyone. I have been so privileged to go to conferences all over the world: Japan, Korea, Thailand, India, Israel, Greece, Chile, Brazil, Mexico, Greece, Italy, Hungary, France, Portugal, Spain, Canada, England, Germany, New Zealand, Czech Republic, and Iran. In fact, I am going to a conference in Tehran, Iran this coming May. In spite of the political differences on the governmental level, the Iranian people are some of the most friendly and hospitable people I know. My two previous trips to Iran have been very memorable. In 2010, I'll go back to Portugal and Italy, and then to Serbia for the first time.

What is the best part/worst part of being a mathematician?

The best part is the discovery and proving process. The way I do research is to start thinking about something, formulate some questions, and see where they lead you. I let the problem lead me (possibly to quite different problems) rather than lead the problem. Once you are fixed on a question, a result you believe is true and within reach, it is difficult to let go. Another best part is meeting and collaborating with mathematicians from all over the world and the travel involved (see above).

The worst part? Well, I am not sure that there is a worst part. Of course, there is sometimes the frustration of not being able to come up with a proof even though you "know" it's true. We are a very privileged lot, doing what we love to do, teaching courses on topics we are interested in, and having job security through tenure. I always say that I haven't lived in the real world since I was a teenager.

You have served in so many math committees. Can you elaborate on your services to the mathematical community?

I was President of the International Linear Algebra Society (ILAS) , a great community of people. This was a rewarding and enjoyable job in planning conferences, overseeing an electronic journal, interacting with people, … . I have also served on the Editorial Boards Committee of the American Mathematical Society. I was involved with the two MAA Summer Fests held in Madison, most recently as chair of the committee to select invited speakers. I have served on many committees of the University; in particular, I chaired the implementation committees for the Quantitative Reasoning requirement and for the Freshman First Year Experience Program.

What other careers do you think you might have been good at?

I think I would have made a good secretary, since I am reasonably well-organized.

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, 60?

Of course, technology enables us to get lots of data to make and test conjectures. This was not so easily done when I started out. The invention of MatLab by Cleve Moler has had a profound effect on e.g. matrix theorists. But basically, I think and scratch with a pencil and paper. My favorite mathematical work on do these days is writing. I love to organize ideas and results and to present them in an organized and clear way. This passion contributed to my writing five books and numerous papers.

It is hard for most mathematician to explain what their subject is to non-specialists for some very obvious reasons, not the least of which is language., if you are outside the field. How would you describe, let say to a freshman or sophomore HS student, how a professional mathematician really does his/her subject?

Indeed, it is difficult. I could say that I study various patterns, some of which are motivated by real-world applications, others of which come out of my head, and may sometime in the future have an application. But it is not applications that motivate my work. Mathematics is a powerful language for expressing and studying ideas and figuring how they relate to other ideas.

What do you think makes a mathematician successful?

A lot of hard work, being curious, and motivation, along with the intellectual capacity to pursue that work.

What of your mathematical work do you like best?

I have worked on many topics in matrix theory, combinatorics, graph theory, coding theory, and matroid theory. I loved it all, and continue to do so. I never have worked on one particular topic for years and years but have gone wherever my curiosity leads me.

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

It's been quite a ride and it's not over yet. I was lucky enough to receive the Hans Schneider Prize for lifetime accomplishment from ILAS, and an Euler Medal from the Institute of Combinatorics and Applications, again for lifetime achievement. I received many years ago the Chancellor's Award for Excellence in Teaching, and an Outstanding Alumini Award from the Mathematics Department of UConn. A few years ago ILAS had a conference in my honor in Coimbra, Portugal. The best is the small conference my former graduate students organized in my honor in Madison. As I have said above, they have been the central part of my career here in Madison. I have had more than my share of honors, and I am humbled by them. The honor from the university that I most cherish is that of being awarded a Bascom Professorship.

I have enjoyed immensely working on the two journals mentioned above. It brings me in contact with so many wonderful mathematicians and one gets to see the great volume of mathematics being done.

What besides mathematics do you like to do?

I have been a runner for a long time now, and like to compete in races (like the Crazylegs Race, the Komen Race for the Cure, the Run for Literacy). I run about 3 miles or 5K four times a week to keep me in reasonable shape. I also like biking trips and cross-country skiing. I like music (especially opera), and we go to concerts often, as well as movies. We also belong to an enjoyable book club. I like to read. Right now I am taking an even Italian class in preparation for a bicycling trip in Sicily this September.

Campus News

Madison Area Technical College

submitted by J. Sriskandarajah

The MATC Math Club remains active. Lectures in Fall, 2009, include:

- Lecture # 86, Friday, September 18, 2009, 3:30 PM, Room 209 Professor Steve Deckelman, UW- Stout, *How To Prove The Impossible*

- Lecture # 87, Friday, October 9, 2009, 9:00 AM, Mitby Theater Professor John Coburn's *Humor. Activity, and Intrigue ... the Fun Side of Mathematics,* followed by our 9th Annual Middle School Math Competition at 10:30 AM, Mitby Theater: *It's a Team Sport The Competitive Side of Mathematics* jointly presented by the math faculties of MATC and the St. Louis CC, MO.

- Lecture # 88, Friday, October 23, 2009, 3:30 PM, Room 209 Professor Michael Saccucci, Director of Statistics and Quality Management, Consumer Union, *Statistics at Consumer Reports*.

- Lecture # 89, Friday, November 6, 2009, 3:30 PM, Room 209 Professor Tony Thomas, UW-Platteville, *Rational Imaginary Roots of Polynomials*.

- Lecture # 90, Friday, November 20, 2009, 3:30 PM, Room 209 Professor John A. Frohliger, St. Norbert College, *Pythagorean Triples: Where Do They Come From?*

- Lecture # 91, Friday, December 4, 2009, 3:30 PM, Room 209 Professor John Koker, UW-Oshkosh, Dean, College of Letters and Science, *Odd Pie Fights*.

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

Milwaukee School of Engineering

submitted by Karl David

Professor Emeritus **Peter Kuhfittig** recently published a paper in the journal General Relativity and Gravitation, vol. 41, no. 7, pp. 1485-1496 (2009). The title is "A single model of traversable wormholes supported by generalized phantom energy or Chaplygin gas." [See http://arxiv.org.abs/0904.3566.] Dr. Kuhfittig's latest collaboration with **F. Rahaman**, et al, of Jadavpur University in India is entitled "Thin-shell wormholes from regular charged black holes." A preprint can be viewed at http://arxiv.org/abs/0909.1071. For a recently completed follow-up study, entitled "Theoretical construction of Morris-Thorne wormholes compatible with quantum field theory," see http://arxiv.org/abs/0908.4233.

Ripon College

submitted by David W. Scott

The Department of Mathematics and Computer Science at Ripon College welcomes an addition to the department this year. **McKenzie Lamb** (interest: Differential Geometry) has joined the department on a tenure track appointment. He has his Ph.D. From the University of Arizona, but is familiar with Wisconsin, having received his undergraduate degree from Beloit College.

Also, on the suspicion that we may have neglected to include the announcement in an earlier newsletter, **Tim Hess** (Ph.D. Educational Psychology, UW-Madison; M.A. Mathematics, UW-Milwaukee; B.A. Mathematics, UW-Oshkosh) replaced **Norm Loomer** when he retired two years ago. Tim hit the ground running and has involved several students in his statistical consulting projects.

UW-Eau Claire

submitted by Simei Tong

Sherrie Serros, **Erick Hofacker** (UWRF) and **Kathryn Ernie** (UWRF) received a UWS Supporting the Growth Agenda Grant for "*Improved Paths from High School to College Mathematics through Teacher Development of Pedagogical Content Knowledge*."

Diane Masarik received a UWS grant for "*Building Connections across the K-12 Mathematics Curriculum through Lesson Study*".

"*A Generalized Linear and Piecewise-Linear Program*" by **Shyam Chadha** and **Veena Chadha** has appeared in International Journal of Optimization: Theory, Methods and Applications; vol. 1, no. 2, 2009.

Kaitlyn Hellenbrand, an undergraduate student, presented "*Polynomial Equations over Matrices*" at MathFest in Portland, Oregon, on her joint work with **Colleen Duffy**. Katie received an Outstanding Student Presentation Award. **Mitch Phillipson**, who just completed his undergraduate studies, presented

"*Avoiding Two Patterns of Length 3 in Sn Wreath Ck*" at the same conference. The work was part of a joint project with another undergraduate, **Tristan Williams**, and **Manda Riehl.**

Manda Riehl was a co-organizer of a Project NExT session "*Reflecting on Our Own Teaching*," at MathFest in Portland, OR.

Manda Riehl presented "*New pattern matching conditions for wreath products of the cyclic groups with symmetric groups*" at the 7th annual Permutation Patterns, in Florence Italy, July 2009, which was joint work with **Andrew Niedermaier**, **Jeff Remmel** and **Sergey Kitaev**. Undergraduate student **Tristan Williams** presented "*Enumeration of Wilf classes for paired patterns in Sn wreath Ck*" at the same conference. His talk was the result of a research project by **Mitch Phillipson, Tristan Williams**, and **Manda Riehl**.

Michael Penkava has worked extensively with undergraduate students on research projects. Two preprint papers are available online in the mathematical archives: *The moduli space of complex two dimensional associative algebras* and *The moduli space of $1|1$-dimensional complex associative algebras*. Coauthors are **Derek Bodin**, **Chris DeCleene**, **William Hager, Carolyn Otto**, **Mitch Phillipson, Ryan Steinbach,** and **Eric Weber**.

Nine faculty members and their undergraduate collaborators received funding from the Summer 2009 Faculty Research Experiences for Undergraduates Program: *Optimal Evacuation of a Major Hospital by Graph Theory and Simplex Method* by **Simei Tong**; *Analyzing Musical Rhythm* by **James Walker**; *Objective Quality Measurement in Image Compression* by **James Walker**; *Chaos and Equicontinuity* by **Don Reynolds**; *Polynomial Equations over Matrices* by **Colleen Duffy**; *Pattern Avoidance in Wreath Product Groups* by **Manda Riehl**; *Moduli Space of Associative Algebras* by **Michael Penkava**; *Duality in LFFP with MATLAB* by **Shyam Chadha** and **Veena Chadha**; and *Assessing Flow in MapleTA* by **Chris Hlas**.

SUREPAM, the National Science Foundation **REU** program at UWEC, completed its third year during summer 2009 under the direction of **Mohamed Elgindi**. Other faculty mentors were **Michael Howe, Simei Tong**, and **James Walker.** Thirteen mathematically talented students from seven different universities came to Eau Claire to enjoy the mathematics and beautiful weather and environment. The program concluded with a two-day summer workshop on *Analysis, Topology, and Applications*, led by professors **Michael Wallace Frazier,** University of Tennessee**, Amir H Assadi,** UW-Madison, **Jon Simon,** University of Iowa**,** and **William Sethares,** UW-Madison**.** Topics included Mathematics, Bio-Engineering, and Electrical Engineering and Computer Science. The conference included invited presentations by faculty from St. Thomas University, German University, and Cairo University; presentations by SUREPAM faculty and student participants; and undergraduate students from the University of Minnesota, Michigan State University, and University of Chicago. For further information, please visit: http://www.uwec.edu/surepam/

The Actuarial Science program has grown dramatically in recent years under the leadership of **Kris Presler**, with over 50 students currently in the major. Students have been very successful in professional competitions, and in securing actuarial internships and permanent employment throughout the country.

Simei Tong received university recognition for "*Excellence in Service-Learning as a Faculty Mentor*."

A substantial number of recent UWEC mathematics graduates are currently continuing their education in respected graduate schools around the country. These include: **Carolyn Otto** (Rice University), **Will Hagar**, **Darin Mohr** and **Garrett Jones** (Iowa), **Brandon Barrette** (UC-Davis), **Eric Weber** (Arizona State), **Yunyun Yang** (Louisiana State), **Mitch Phillipson** (Texas A&M), **Cheryl Masaki** (Kansas), **Brett Wingad** (Minnesota), **Amanda Potts** (Northwestern), and **Shantih Spanton** (Florida).

UW-Milwaukee

submitted by Jay H. Beder

After a long time away, **Peter Hinow** has come back to UWM, now as assistant professor. While a student of mathematics at the Dresden University of Technology in the late 1990's, he was encouraged by his teacher Rainer Picard (himself a former member of the Department) to spend a semester abroad at UWM.

After receiving his diploma in mathematics from Dresden University of Technology and a PhD from Vanderbilt University in Nashville, TN in 2007, Peter spent two years at the Institute for Mathematics and its Applications at the University of Minnesota. His interests are applied mathematics, mathematical biology and partial differential equations. He has published 10 papers and presented at numerous conferences in Canada, France, Poland, Switzerland, Turkey, New Zealand and the US.

Professor **Donald W. Solomon** retired May 17, 2009, after 43 years in the Department. He joined the Department immediately after receiving his Ph.D from Wayne State University, specializing in measure and integration, functional analysis and trigonometric series. He has published primarily in measure and integration, including Memoir of the AMS # 85 (1969). He has presented numerous invited colloquium talks, and was an invited speaker at the International Conference of Analysis at Vancouver, BC, in 1978.

As an early member of the Department, he was responsible for development of a number of graduate and undergraduate courses and for instituting the master's competency exams. Together with Ed Feller he developed the undergraduate major tracks that, in expanded form, are used today. He served as Associate and Assistant Chair of the Department for a combined total of 12 years, and served for many years as course coordinator for Calculus and for Intermediate Algebra. He has directed 8 Ph.D. theses and 6 Master's Theses.

Professor Solomon also served on every major UWM faculty standing committee, including 6 terms on the Faculty Senate, and was chair of most of the committees on which he served. On average, he served on over 12 committees per year. He was an active participant in the development and codification of the faculty governance policies and procedures at UWM.

Professor **Albert Milani** was awarded a Mercator Gastdozentur grant by the DFG (Deutsche Forschungs Gemeinschaft – the German Research Foundation) to do research and teaching at the Technische Universitaet Dresden, for the year 2010.

Professors **Kyle Swanson** and **Sergey Kravtsov** have been promoted, Swanson to full professor and **Kravtsov** to associate professor with tenure. Both are members of the Department's Atmospheric Science group.

Professor **Richard Stockbridge** has been elected Department Chair, succeeding Professor **Allen Bell**, who served for four years.

UW-Madison

submitted by Robert Wilson

We have three new tenure-track assistant professors: **David Anderson**, who works in probability, nonlinear dynamical systems, and numerical analysis, with applications to biology, was already here as a Van Vleck Assistant Professor (postdoc); **Laurentiu Maxim**, in algebraic topology and algebraic geometry, comes to us from the Courant Institute; **Samuel Stechmann**, who will arrive in 2010, works in fluid dynamics, PDE, and numerical methods, applied to atmospheric sciences, and will be coming from UCLA. There were three retirements: **Wayne Dickey** and **Bob Wilson** both retired from the faculty, and **Dee Frana** retired from her position which officially involved technical typing but grew to include lots more such as being an official photographer for the department.

Gautam Bharali, who received his PhD in 2002 with **Alex Nagel**, has been named by The Indian National Science Academy in New Delhi to receive the INSA medal for young scientists for 2009. Gautam is presently at the Indian Institute of Sciences in Bangalore.

The department was awarded a $1.6 million Research Training Group (RTG) grant from the National Science Foundation. Professors **Ken Ono** (PI) and **Jordan Ellenberg** (Co-PI) are the principal investigators on this grant which will support training in Number Theory and Algebraic Geometry. The RTG grants are part of the NSF initiative to enhance the mathematical sciences workforce in the 21st century and will fund numerous programs, as well as provide support for graduate students, undergraduates and postdocs.

Gloria Mari Beffa was awarded the Letters and Science Faculty Advising Award for 2007-2008. The award is granted to one Faculty advisor in the College of Letters and Science each year in recognition of outstanding performance and professionalism in advising L&S students.

Kathrin Bringmann, a former post-doc in Madison who works in Number Theory, has been awarded the 2009 Alfred Krupp Research Prize. The board of curators of the Alfred Krupp von Bohlen und Halbach Foundation awards an annual prize to scientists of the younger generation working in the natural sciences and engineering. The aim of the prize is to improve the scope and research opportunities available to

professors of C3 rank by providing research and equipment funding to the tune of 1 million Euros. Kathrin, who has positions at both the University of Minnesota (Twin Cities) and the University of Cologne, is just the 2nd mathematician to ever win the prize.

Prof. **Fedor Nazarov** has been selected to give an invited lecture in the analysis section of the 2010 International Congress of Mathematicians (ICM) in 2010.

Richard Askey, **Carl deBoor**, **Seymour Parter** and **Paul Rabinowitz** have been named as SIAM Fellows.

Dilip Raghavan (PhD 2008 with advisors **Kunen** and **Kastermans**) received the Sacks Prize for best thesis in Logic. This is an international prize.

The Math Department has received a $100000 gift from the estate of **Richard Good**. Professor Good received his AB from Ashland College in Ohio, and his MA and PHD from our department in 1940 and 1945 (his Ph.D. advisor was **Richard Bruck**). He taught at the University of Maryland. His wife also was a Madison graduate who earned a master's and PhD degree from another department (not math).

Three Wisconsin REU students were awarded national prizes at the Joint Math Meetings largely for their work in the Wisconsin VIGRE REUs organized by Professor **Ken Ono**. **Aaron Pixton** (REU 2006) was awarded the 2009 AMS-MAA-SIAM Frank and Brennie Morgan Prize (http://www.ams.org/ams/press/morgan-2009.html), awarded for outstanding research by an undergraduate student. **Maria Monks** (REU 2008) was awarded the 2009 Alice T. Schafer Prize by the Association for Women in Mathematics (http://www.ams.org/ams/prizebooklet-2009.pdf), awarded for excellence in mathematics by an undergraduate woman. **Doris Dobi** (REU 2007) was awarded the runner-up prize in the competition. Ono will be running an REU in 2009 in Number Theory.

Paul Rabinowitz received an honorary degree from Complutense University in Madrid, Spain, in late January, 2009.

Six of our graduate students, **Samuel Eckels**, **Benjamin Ellison**, **Matthew Felton**, **Nikos Georgiou**, **Daniel McGinn** and **Christelle Vincent** were selected by the Campus-wide TA Award committee to receive 2008 Teaching Assistant awards. This award recognizes their high quality performance as teaching assistants and their impressive contributions to the educational mission of the University of Wisconsin-Madison. Each winner will receive a prize of $500. A reception and award ceremony in their honor will be held in February. Congratulations to Samuel, Benjamin, Matthew and Daniel!

Alex Nagel has been elected to fellowship in the American Association for the Advancement of Science (AAAS). He was honored for fundamental work on singular Radon transforms, oscillatory and singular integrals, the Carnot metric with applications to subelliptic estimates and several complex variables.

Yiming Long (PhD 87, Paul Rabinowitz), currently Professor and Director of the Chern Institute of Mathematics, Nankai University Tianjin, China, was recently elected a fellow of the Academy of Sciences for the Developing World (TWAS). According to the citation, "Long has made fundamental contributions to Hamiltonian dynamics. In particular, he is acknowledged for his iteration theory for symplectic matrix paths, and for his deep studies on periodic solution orbits of Hamiltonian systems. A member of the Chinese Academy of Science, he has received the 2004 TWAS Prize in Mathematics, the Natural Sciences Award (first class), the SS Chern Prize and the Qiushi Foundation Prize".

Leslie Smith, former chair of the Math Department, has been elected a fellow of the American Physical Society (APS) "for important and insightful contributions to the understanding of turbulence in engineering and geophysical flows through theory and numerical simulations". The APS's Division of Fluid Dynamics recommended the nomination, which was conferred at the APS council meeting in September 2008. No more than one half of one percent of APS members are fellows.

UW-Oshkosh

submitted by John Beam

We are happy to welcome two new tenure-track faculty members to our department this year, both in the area of mathematics education. **Amy Parrott** arrives from the University of Nebraska-Lincoln, where she recently completed her PhD in mathematics with a specialization in mathematical biology. **Jason Belnap** received his PhD in mathematics from the University of Arizona in 2005; he joins us in Oshkosh after teaching in the Department of Mathematics Education at Brigham-Young University.

We also welcome the dedicated teachers who have joined our academic staff: **Ju Youn Bae**, **Scott Domingos**, **Linda Krueger**, **Paul Schraufnagel**, and **Nathan Tauber**.

Two of our faculty members have earned sabbaticals this year. **Saadat Moussavi** is working on a numerical linear algebra text, and **Ken Price** is visiting Memorial University in St. Johns, Newfoundland, where he will attend a course on representations of algebras given by Professor Vlasta Dlab from Carleton University in Ottawa.

The department has been awarded a $300,000 two-year grant from the US Department of Education to develop a partnership between UW Oshkosh and seven Northeastern Wisconsin school districts. **Eric Kuennen** is the project director; he will be assisted by **Jen Szydlik**, **John Beam**, **Amy Parrott**, and **Jason Belnap**.

Jen Szydlik won the MAA Wisconsin Award for Distinguished Teaching this past spring. And for his outstanding service to the university, **Steve Szydlik** recently received the Chancellor Edward M. Penson Award.

UW-Platteville

submitted by Ben Collins

Kevin Haertzen has been granted tenure, and **Miyeon Kwon** and **Irfan Ul-Haq** have been promoted to Associate Professor. Congratulations to Kevin, Miyeon, and Irfan!

The UWP Mathematics Department has been awarded one of the 18 UW System Growth Agenda grants. The *Growth Agenda for Wisconsin* is the System's plan to help the state of Wisconsin and its citizens thrive in the innovation economy of the 21st-century by developing the state's human potential, creating new Wisconsin jobs, and helping strengthen communities. As the number of students entering UWP increases, we are seeing growing numbers that score poorly on their math placement tests (and quite often end up needing remediation in order to move forward towards the degree). The motivation behind this grant work is promoting effective teaching and learning in mathematics through partnerships between UWP faculty and local high school educators.

By collaborating with the high school math teachers of southwestern Wisconsin, we are looking for strategies that would help students' transition from high school to college, both for students strong in math and those who are much weaker. In the process, we hope to address the seeming disconnect between the mathematical experiences and expectations of entering freshman, compared with the priorities and expectations of a university mathematics department. Success would be demonstrated by increasing pass rates of students in their first year math courses, with the belief that this would lead to increased university retention rates.

In May 2009, **Kellie Knox** received an Innovation of the Year Nomination in recognition of the "Establishment of the UW-P Algebra Skills Center." Staffed by instructors and peer mentors, the ASC provides quality support services for students taking remedial mathematics courses.

Dawson Trine is receiving Emeriti Honoree recognition from the College of Engineering, Mathematics, and Science Alumni Chapter. Dr. Trine was chair of the department from 1972-1984 and was interim chair in 1989. Dr. Trine and his wife, Marie, have established the "Dawson and Marie Trine Family Endowed Scholarship in Mathematics." What makes this scholarship uniquely welcome is that it may be applied toward tuition during a recipient's sophomore year. Most of the other scholarships in the department go to entering freshmen or upper classmen.

Ben Collins received UWP's 2009 Faculty Award for Teaching Excellence.

UW-Stout

submitted by Steve Deckelman

The department welcomes **Seth Dutter** as a new assistant professor. Seth received his PhD from UC Berkeley under **Paul Vojta** in number theory and algebraic geometry. **Tim Zick** and **Duane Poeschel** have been hired on year long academic staff positions. **Jeanne Foley** received tenure while **Chris Bendel** and **Diane Christie** were promoted to full professor.

As part of the UW-System Growth Agenda, **Joy Becker**, **Chris Bendel** and **Nelu Ghenciu** received a UW-System grant to work with Menomonie High School teachers on lesson study with the goal of improving student performance in college mathematics.

Alex Basyrov organized a workshop on WebWork that brought **Michael Gage** of the University of Rochester to campus.

Joy Becker received grant funding through a continuation of our UW System Lesson Study Leaders grant, which is a collaboration between four UW institutions and the UW Colleges.

Dennis **Mikkelson** and **Radi Teleb** are back from full year sabbaticals and **John Hunt** is filling in for **Laura Schmidt**, who is on maternity leave.

Dr. **Jeffrey Anderson** has been hired as the new permanent dean of the STEM College. Dr. Anderson is a mathematician formerly at Winona State University.

UW-Whitewater

submitted by Mohammad Ahmadi

We welcomed **Angela Harris** a new faculty member. **Angela** received her M.S. in Mathematics from University of South Alabama in 2003, and PhD in Graph Theory from the University of Colorado Denver in May 2009.

Julie Letellier became the Chair of the UW Mathematics Placement Test Committee on July 1, 2009. Julie, along with **Fe Evangelista**, **Thomas Karthausser**, **Lori Grady**, **Peter Lampe**, **Geetha Samaranayake**, **Joan Stamm**, and **Ruth Whitmore** are members of the Academic Transformation Program which will be examining ways in which our developmental and proficiency mathematics courses can be better aligned.

Jonathan Kane attended MathFest in Portland in August 2009, and taught for a week at the AwesomeMath Summer Camp in Dallas, in July 2009

Thomas Drucker organized the general session on history of mathematics at the annual summer meeting of the Canadian Mathematical Society in St. John's, Newfoundland, in June 2009.

Xueqing Chen published his joint paper "Quivers and Representations" with Tomas Pospichal, and Ki-Bong Nam in Hand-book of Algebra, Vol. 6, 507-561, 2009, edited by M. Hazewinkel.

Ki-Bong Nam was on sabbatical leave in spring 2009. Ki-Bong has taught Abstract Algebra and Linear Algebra as a visiting professor at Hanyang University, Seoul, Mar 1 -Aug. 26, 09. Nam published the following joint papers:

[1] Seul Hee Choi, Jongwoo Lee, and Ki-Bong Nam, "Algebra Versus Its Anti-Symmetric Algebra", Algebra Colloquium, Volume 16 (2009), Number 4, 661-668.
[2] Hong Goo Park, Jeongsig Lee, Seul Hee Choi, Xueqing Chen, and Ki-Bong Nam *Automorphism Groups of some Algebras*, Volume 52, Number 2, 2009, 2, Science in China. Series A, 2009.
[3] Jongwoo Lee, Seul Hee Choi, and Ki-Bong Nam, "Non-associative algebras with n-exponential functions", Algebra Colloquium, 16:1 (2009) 85-94.

Ki-Bong also presented papers at the following conferences:

1) "Math Colloquium", United States and Korean Conference (UKC 2009).
2) Presented and chaired an algebra section at the Asian Mathematics Conference, Kuala Lumpur (2009).

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