The Mathematical Association of America

Wisconsin Section

Newsletter

Spring 2013

Contents

Chair's Report

I hope that 2013 is off to a great start for you! On behalf of the Wisconsin Section, I get to start the year on a very positive note: It is my pleasure to congratulate Jonathan Kane, Secretary/Treasurer of the Wisconsin Section, who has received the MAA Certificate for Meritorious Service! Jon has served the Wisconsin Section faithfully in many roles, including a recent term as Section Governor, and I'm pleased to see his commitment honored by the national MAA.

I'm already looking forward to our 81st annual Spring Meeting, which is coming up on April 5-6. We thank UW-Marshfield/Wood County for inviting us to their campus, and especially Kavita Bhatia for taking the lead as a site organizer. Ken Jewell, our Chair-Elect, is putting together another excellent program, highlighted by presentations by invited speakers Diane Benjamin, of Edgewood College; Robert Devaney, of Boston University; and Walter Stromquist, the editor of Mathematics Magazine. Please consider taking part by contributing a talk of your own, and/or by encouraging your students to speak at the meeting. You can submit an abstract by clicking on "Speaker Registration Form" or "Student Speaker Registration Form" at http://sections.maa.org/wisconsin/meetings.shtml .

I especially encourage you to tell your students about Face Off, our section's very successful math game show. I love to watch Face Off every year, and it can't happen without the students! Thanks to Ken Price and Steve Szydlik, our Student Activities Coordinators, for their excellent work organizing Face Off and our other student programs.

At the Spring Meeting, on Saturday morning, we'll hold our annual business meeting. Among other things, we will hold the election of our new Chair-Elect. The nominating committee has selected Tom Drucker, of UW-Whitewater, as its nominee for this position. A short biography describing Tom's background will appear elsewhere this newsletter. I'm happy to thank Tom for his willingness to serve the Section in this role. At the same time, Clare Hemenway, of UW-Marathon County, will finish her term as Immediate Past Chair. Please join me in congratulating Clare, and thanking her for her years of service on the Section's Executive Board.

At the business meeting, we'll also want to discuss locations for future annual meetings. The Wisconsin Section has traditionally tried to alternate between locations in the eastern and western parts of the state. Recently, though, more schools in eastern Wisconsin have expressed interest in hosting the meetings. If your location is in the west, and you'd like to see future meetings scheduled closer to you, please do think about volunteering to host an upcoming meeting!

I'm also looking forward to the Spring Meeting because I'll have the chance to announce the winner of this year's Wisconsin Section Distinguished Teaching Award! It is not too soon to consider nominating a colleague for next year's award. The process is painless, and it is important for us to recognize the talent and dedication of the many excellent teachers in the Wisconsin Section. The nomination form can be found at http://sections.maa.org/wisconsin/award.shtml .

Finally, I'd like to thank you for the opportunity to serve as the Chair of the Wisconsin Section -- it has been very satisfying to work with the many talented Wisconsin mathematicians who give their time to the MAA. I'm particularly grateful to Ben Collins for encouraging me to get involved with the Section, and to the rest of the Executive Board, with whom it has been a pleasure to work. I hope that you, too, will consider volunteering to help with the work of the Section.

I look forward to seeing you at UW-Marshfield/Wood County in April!

James Swenson, Section Chair

Are You On-line?

Look for the Wisconsin Section on

- Facebook: http://on.fb.me/oRQZbs
- Twitter: http://twitter.com/MAAWisconsin

Governor's Report

This year the Joint Meetings were held in San Diego, California, January 9-12. As usual a Board of Governors meeting was held the day before the meetings started. The meeting began with a long discussion of the budget. Jim Daniel, Treasurer, and Rick Cleary, Associate Treasurer, furnished thoughtful, detailed answers to many probing questions. The questions revolved around the central question of whether it is prudent to expand the budget and invest in several new initiatives that may increase income or reduce costs in the long run, or whether it would be better instead to scale down MAA operations a little in order to live within our present means. Jim and Rick, by their thoughtful, knowledgeable, and detailed responses to the many questions, succeeded in winning over the Board pretty much completely to the view that we can make several major investments with a reasonable degree of confidence that, in aggregate, they will keep the MAA solvent and rebuild its reserve funds, even as the organization expands its operations. In the end, the ambitious budget proposed by the officers passed unanimously.

One of the new initiatives is setting up in-house fulfillment of book orders. That will use up a chunk of MAA reserve funds in 2013, but then, starting in 2014 or 2015, is projected to save the MAA around $200,000 per year. Steve Dunbar (math contests) and Michael Pearson (Executive Director) are beginning to put into motion plans to turn the AMC into a profit center. Currently about 375,000 high school students take part in MAA math contests each year. According to Steve and Michael, a half million students in two or three years is a reasonable goal. In his report, Steve listed a dozen or so recent steps that have been taken to enhance math contest participation and revenue. These steps include mutual support agreements with entities outside MAA, reductions in operating costs, and marketing, to math teachers, curricular materials showing connections between math contest problems and the Common Core State Standards. There will be opportunities for Colleges and Universities to help. Look for an article in Focus early in 2013 about having some colleges and universities serve as contest sites for students who do not attend schools that support the AMC contests.

There is a new simplified dues structure. This is designed to be revenue neutral. Some of us will see our dues actually go down. Instead of over 100 different dues categories, there will now be only six, a welcome simplification. Last summer the Board approved the idea of expanding MAA publications. The officers have wasted no time on this and we now have an acquisitions editor, Steve Kennedy, of Carleton College.

There is a sense that the MAA ship is sailing into new waters with the promise of exciting discoveries and new opportunities for service. But whatever happens, it is certain that the ship will not sink.

Andy Matchett, Section Governor

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 2013 Wisconsin Section Distinguished Teaching Award are now being accepted. The nomination form and instructions are available on the MAA-Wisconsin web site at http://sections.maa.org/wisconsin/award.shtml

Contest Report

American Mathematics Competitions

The AMC 8 competition was held on November 13, 2012. A total of 1,390 Wisconsin students participated in the competition (down from 1,465 in 2011, 1,599 in 2010 and 1,477 in 2009). No students received a perfect score from Wisconsin. The average score for Wisconsin students was 9.85, compared with the national average score of 10.64. The gap has narrowed to .79 compared to 1.06 and 1.43 the two previous years.

The AMC 10 and 12 contests will be held on February 5 and 20, 2013. Data will be reported at the Spring Meeting.

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 6, 2012. There were 29 schools reporting scores this year for a total of 1,299 students. This is a significant decrease from 47 schools in 2011, 69 schools in 2010 and 81 schools in 2009. The difficulty level of the exam was slightly easier compared to 2011, (although the scores do not reflect this). The cutoff for the top 1% was a score of 79 out of 120 this year.

Congratulations to Brian Luo, a 10th grader from James Madison Memorial High School, who received a perfect score.

Dr. Michael Wodzak, from Viterbo University, directed the contest this year representing their second year as hosts. Many thanks to him, Viterbo University, and the test committee for all their hard work. If anyone would like to volunteer to help the test committee please send an email to mawodzak@viterbo.edu.

Laura Schmidt, Math Contest Coordinator

Student Activities

The Student Activities 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 UW-Marshfield on April 5-6. Faculty, please continue to encourage your students to attend.

The Wisconsin section meeting has a lot to offer student attendees. Whenever possible, we try to find low-cost housing options for students who wish to stay for both days. There will be numerous talks for and by students. There will be a “student retreat room” where students can enjoy snacks and meet with each other in a relaxed, friendly environment. The banquet cost for students will continue to be held at $5 per ticket.

The Wisconsin Mathematics Council’s Annual Green Lake Conference is scheduled for May 1-3, 2013. Anyone interested in any level of mathematics education in Wisconsin is encouraged to attend.

The fast-paced math game show "Face Off!" continues to be a popular student event in the section, and it will again return to the MAA section meeting this spring. With our “Slammer” buzzer system we can allow as many as ten teams to play. Students who have taken Calc I or above are eligible to compete for their department in teams of 2-4 players. 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.

We very much appreciate the enthusiasm that students bring to section events. Please let us know if you have ideas of ways to make the section more student-friendly. We're always looking for suggestions!

Ken Price and Steve Szydlik, Student Activities Coordinators

New for 2013

For the first time, registration for the spring meeting is available on-line, through the MAA-Wisconsin web site [http://sections.maa.org/wisconsin/]. You can register on-line and pay with a credit card (through PayPal) or submit a check to MAA-WI Treasurer Jonathan Kane. And, of course, you have the old fashioned option of registering by mail. See the registration form elsewhere in this issue.

Project NExT-Wisconsin

At the spring meeting of the MAA Wisconsin section, Project NExT-WI will have lunch on Saturday April 6 followed by a panel discussion for Project NExT-WI fellows. We have two exciting topics lined up for this year's panel discussion.

The first discussion will be led by Dr. Diane Benjamin and will be titled The "Scholarship of Teaching". This panel will explore various avenues for professional development that wed our roles as mathematician and educator. Topics for consideration may include: how to determinate a focus for professional development as a mathematics educator; identifying pathways for exploration; setting goals; and building a portfolio. Last, but by no means least, we consider the humble yet fundamental question: How can I become a better teacher?

Diane Benjamin teaches at Edgewood College in Madison Wisconsin, and previously taught at UW-Platteville. Diane's area of specialization within mathematics is abstract algebra; where she has a short but happy list of publications. Throughout her career, she has also worked, quite concertedly, to build second path of (evolving) expertise in the scholarship of teaching; where she has a growing list of publications and presentations

Our second discussion, which is titled "Surviving the tenure track", will be led by Dr. Julie Letellier of UW-Whitewater. Dr. Letellier is the chair of the math department at UW-Whitewater and is sure to bring a wealth of knowledge and experience to this discussion which will be timely and relevant to the new mathematics Assistant Professors in Wisconsin. Most tenure track faculty ask questions such as: How much is "enough"? What "counts" toward tenure? And what matters most? How do I balance research, teaching and service? How can I find out whether I am "on track" for tenure? And so on. This is the forum in which we will try to answer as many such questions as possible as well as any other questions that NeXT fellows may have.

We will try to finish by 3:00 pm.

Project NExT-WI also holds an annual Fall Workshop (during the last week of September or first week of October) at UW-Baraboo/Sauk County which is open to all current NExT-WI members. Further details are posted in time on the Project NExT-WI website (http://sections.maa.org/wisconsin/NExt/default.html) with updates to all the NExT-WI members.

NExT-WI is always looking for new members. There is no deadline to apply for the membership. One can apply any time during the academic year and the application forms can be downloaded from the NExT website.

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 kirthi.premadasa@uwc.edu

Kirthi Premadasa, Project NExT-Wisconsin

MAA Book Sales at the Spring Meeting

The MAA has instituted a new procedure for buying MAA books at section meetings. There will no longer be copies available for attendees to take away from the meeting. There will be sample copies available, and all orders will be done on-line. We will have a computer available to place orders, or orders can be placed on-line for approximately a two-week period right around the meeting.

Right around the time of the meeting, MAA departmental liaisons will be provided with a code that provides a 35% discount below the list price to meeting attendees. The code will also be available at the meeting, or by contacting Public Information Officer Ben Collins (collinbe<at>uwplatt<dot>edu).

The Wisconsin Section earns a small percentage of all sales made through the meeting. So if you are looking for an MAA book (and who isn't?), wait and order through the meeting. You get a discount, the section gets some money, and everyone is happy.

Nominee for Chair-Elect

Thomas Drucker, UW-Whitewater

Thomas Drucker is in his twelfth year as a Lecturer in the Department of Mathematical and Computer Sciences at the University of Wisconsin—Whitewater. During his time at Whitewater, he has been advisor to the Student Math Association and is currently advisor to the ΠΜΕ chapter there. In that capacity he has had a student speak at MathFest on undergraduate research they did together on Charles Dodgson. He has served as library liaison for the department and on search and colloquium committees. He was nominated as outstanding instructional academic staff member five years ago.

His major interests are in the history and philosophy of mathematics, and he has served as Bulletin Editor and Program Chair for the Canadian Society for the History and Philosophy of Mathematics. He edited *Perspectives on the History of Mathematical Logic* (published by Birkhäuser in 1991 and reprinted in 2008) and spoke at the Institut Henri Poincaré in Paris in 2007. He is currently Program Director of the Special Interest Group in Philosophy of Mathematics of the MAA (POMSIGMAA) and his most recent article (published in 2012) dealt with mathematics in the operas of Gilbert and Sullivan. His winning the College Bowl National Championship as a member of the University of Wisconsin team more than a quarter-century ago leads him to hope that Face-Off will remain a part of the many successful features of the meetings of the Wisconsin Section.

Get Involved

The Wisconsin Section has an ongoing need for volunteers to serve the three-year cycle of Chair-Elect, Chair, and Immediate Past Chair. 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.

If you would be willing to serve in this capacity in the future (or know someone who might) please send the name of the nominee to Section Chair James Swenson at swensonj@uwplatt.edu . Self nominations are encouraged. Section officers must be members of the MAA.

Spring Meeting

Information for the MAA Spring Meeting can be found at http://www.marshfield.uwc.edu/maa.html

Getting around UW-Marshfield/Wood County

Campus map: http://marshfield.uwc.edu/about/directions-maps/campusmaps.html

Most of the activities on Friday and Saturday will take place in the Aldo Leopold Science Building, the Commons and the Helen Connor Laird Theatre.

Directions to UW-Marshfield/Wood County

From the North on Hwy 97
Take Hwy. 97 (North Central Ave.) to 5th Street, turn right (west). Once on 5th Street, continue 20 blocks to campus.

From the Northwest on Hwy 13
Entering Marshfield on Hwy 13, turn right at the second stoplight on McMillan. Pass under railroad viaduct and make immediate left turn onto Lincoln Ave. (south). Continue on Lincoln to 5th Street (four-way stop). Turn right onto 5th. Campus is three blocks west on 5th.

From the South on Hwy 13
Take Hwy 13 (Roddis Ave., becomes S. Central Ave.) to 5th Street. Turn left (west) onto 5th Street and continue 20 blocks to campus.

From the East on Hwy 10
Take Hwy 10 to Hwy 13, turn right (north) onto Hwy 13. Follow instructions from the south (above).

From the West
Turn left onto Highway 13. Then follow instructions from the south (above).

Parking

Conference participants may park in the South Parking Lot which has an entrance from 5th Street and 7th Street or on the West Parking Lot with entrance from 5th street.

Lodging Information

Blocks of rooms have been reserved by the organizers for April 5th at two hotels under the group name MAA. All rooms are being held until March 15th.

- Holiday Inn Conference Ctr Marshfield: 750 South Central Avenue, Marshfield, WI 54449. Phone: 715 486-1500. The Holiday Inn® Hotel & Conference Center Marshfield is located just 1.5 miles from the campus. Lodging at the Holiday Inn® Hotel & Conference Center Marshfield offers guests access to amenities like free wireless Internet access in all rooms and a 24-hour Business Center with fax, print, copy and personal computer services. The rooms are available at the state rate of $70. To book rooms call the hotel directly. http://www.holidayinn.com/hotels/us/en/marshfield/mfiwi/hoteldetail
- Quality Inn (former Comfort inn) 114 Upham St., Marshfield, WI 54449. Phone: 715 387-8691. Business travelers will appreciate conveniences like **free high-speed Internet access** and access to **fax services.** There is a **meeting room** to accommodate most events and business functions. In addition to standard amenities, all rooms come with hair dryers, coffee makers, irons and ironing boards. Some rooms feature **microwaves** and **refrigerators.** Deluxe suites with **whirlpool bathtubs** are available. This is a **non-smoking hotel.** The rooms are available at the state rate of $70. To book rooms call the hotel directly. http://www.qualityinn.com/hotel-marshfield-wisconsin-WI400.
- Other lodging options can be found at the Marshfield Visitor's Bureau website http://visitmarshfieldwi.com/lodging/

Invited Talks

Diane Benjamin (Edgewood College)
Mathematics Knowledge for Teaching *(Middle / Secondary) – is there such a thing and, if so, what can it teach a mathematics professor?*

Abstract: Our role as teacher-educators, in training the next generation of middle/secondary mathematics teachers, offers distinct challenges and sometimes raises controversial questions. What mathematics content belongs in the preparation of future high school mathematics teachers? What understanding of and commitment to teaching that demonstrates integrity to the subject do we hope to instill? How do we prepare these future teachers – the most public of ambassadors for mathematics – to respond to their students in ways that are intellectually rich and engaging? Is there a customized Mathematics Knowledge for Teaching? This question will be examined (and stories told) through the lens of a 400-level undergraduate mathematics course with content that never rises above the 12th grade level. Colleagues, consider this is a call to join the conversation!

Bio: Diane Benjamin teaches at Edgewood College in Madison Wisconsin, and previously taught at UW-Platteville. Diane's area of specialization within mathematics is abstract algebra; where she has a short but happy list of publications. Throughout her career, she has also worked, quite concertedly, to build second path of (evolving) expertise in the scholarship of teaching; where she has a growing list of publications and presentations. Outside of her profession, her favorite things are tearing around with her best pal and grandson Keaton, knitting, and ripping up the back-roads of Ireland with her one-and-only – in any order.

Walter Stromquist (Swarthmore College)
The Mathematics of Three-Candidate Elections

Abstract: Some observers say that the race between Bush and Gore in 2000 was influenced by the votes Ralph Nader won in Florida, or that Bill Clinton's 1992 election was influenced by the candidacy of Ross Perot. Did Chileans overlook a consensus centrist candidate when they elected Salvador Allende in 1970? What can we learn from John Anderson, Joe Lieberman, Lisa Murkowski, Charlie Crist, John Edwards, Jean-Marie Le Pen, and Vicente Fox? Each of them was involved in a famous three-candidate election. The 2012 Republican primaries offered weekly examples, and in a way, so did Wisconsin's recall election.

Would we do better if we asked voters to rank all of the candidates? We would then have to decide how to count the votes. Several systems have been proposed, including instant runoffs, Borda counts, approval voting, and Eric Maskin's "true majority" rule (which picks "Condorcet winners" and which has trouble with "Condorcet cycles"). They all have their advocates, and some are in use in various countries or organizations.

We might want a system that respects the "No Spoilers" rule---formally, the property of "Independence of Irrelevant Alternatives" or "IIA." This says that if X would beat Y in a head-to-head race, then Y should not be the winner of an X-Y-Z race. It seems a simple enough requirement, but the Arrow Impossibility Theorem tells us, essentially, that no such system is possible.

We will review this theorem and its significance and give some real and hypothetical examples. Along the way we will discuss expressive voting (voting for Nader when one prefers Gore), strategic voting (voting for Gore when one prefers Nader), and the kinds of institutions that arise from various rules for vote counting.

Bio: Walter Stromquist is the Editor of Mathematics Magazine. After attending the University of Kansas and Harvard University, he worked first for the U.S. Treasury's Office of Tax Analysis. He then joined Daniel H. Wagner, Associates, a mathematical consulting firm, where his work included applications of mathematics to submarine search, financial risk management, and valuation of oil fields. He has continued this work as an independent consultant, and has published papers related map coloring, permutation patterns, fair division, and applied topics. He has taught most recently at Bryn Mawr College and Swarthmore College and in the AwesomeMath Summer Program. He has been active in the MAA and in the EPADEL Section.

Bob Devaney (Boston University)
The Fractal Geometry of the Mandelbrot Set

Abstract: In this lecture we describe several folk theorems concerning the Mandelbrot set. While this set is extremely complicated from a geometric point of view, we will show that, as long as you know how to add and how to count, you can understand this geometry completely. We will encounter many famous mathematical objects in the Mandelbrot set, like the Farey tree and the Fibonacci sequence. And we will find many soon-to-be-famous objects as well, like the "Devaney" sequence. There might even be a joke or two in the talk. This talk only supposes a knowledge of complex numbers and is accessible to undergraduates.

Bio: Robert Devaney is currently Professor of Mathematics at Boston University. He received his undergraduate degree from the College of the Holy Cross in 1969 and his PhD from the University of California at Berkeley in 1973 under the direction of Stephen Smale. He taught at Northwestern University and Tufts University before coming to Boston University in 1980. His main area of research is dynamical systems, primarily complex analytic dynamics, but also including more general ideas about chaotic dynamical systems. Lately, he has become intrigued with the incredibly rich topological aspects of dynamics, including such things as indecomposable continua, Sierpinski curves, and Cantor bouquets. He is President-elect of the MAA.

REGISTRATION FORM

MAA Wisconsin Section Spring Meeting UW-Marshfield

April 5-6, 2013 Preregistration Deadline: **March 15, 2013**

You can also register on-line using
http://sections.maa.org/wisconsin/maa_spring_selection_form/

NAME(S)_____

Address_____

Main contact e-mail:_____

Institution (for your name badge)_____

Registration				Banquet			
No.	Type	Price*	Total $	No.	Type	Price**	Total $
	MAA Member	$20			Regular	$20	
	Retired MAA Member	$10			Student	$5	
	K-12 Teacher	$10		Banquet Total:			
	Student	FREE		Please indicate any dietary restrictions (vegetarian, kosher, etc) and the number of each.			
	Other	$30					
Registration Total:							

*Registration at the meeting will be $25 for all except students, who will still be free.
**Regular banquet tickets will be $25 after the pre-registration deadline of Mar. 15. Student banquet tickets remain $5.

Total Enclosed:

For MAA Records, please indicate the number of the above registrants in each of the following categories:
_____ College or university faculty
_____ Business, industry, government
_____ High school teacher
_____ Undergraduate student
_____ Graduate student

Finally, please indicate the highest degree awarded by your *department*:

☐ Ph.D. ☐ Master's ☐Bachelor's ☐ Associate ☐ Not Applicable

MAKE CHECKS PAYABLE TO: MAA - WISCONSIN SECTION

PLEASE SUBMIT TO:
Jonathan Kane, Treasurer kanej@uww.edu
2814 Regent St.
Madison, WI 53705

CALL FOR SPEAKERS

Annual Meeting of MAA Wisconsin Section, April 5 – 6, 2013

University of Wisconsin – Marshfield

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, please complete the form below and send by March 2, 2013, to Ken Jewell (jewell@edgewood.edu). Talks received after March 2 will be considered only as time and space permit.

An on-line version of this form is available at:
http://sections.maa.org/wisconsin/meetings.shtml

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

Due date: March 2, 2013

Name: _____

Institution: _____

Phone: _____
Email:_____

Title of talk: _____

Length of talk: 25 minutes _____ or 50 minutes _____

Abstract: (Suggested length, 250 words or less.)

_____

_____

Check here if your talk is appropriate for undergraduate students: _____

All rooms are smart rooms. If you have a MAC you need to bring your own MAC display adapter for the VGA. We encourage you to bring your presentations on a flash drive.

Please check if you require:

Blackboard _____ Whiteboard _____ Document Camera _____

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

CALL FOR STUDENT SPEAKERS

Annual Meeting of MAA Wisconsin Section, April 5 – 6, 2013

University of Wisconsin – Marshfield

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 2, 2013, to Ken Jewell (jewell@edgewood.edu). Talks received after March 2 will be considered only as time and space permit.

An on-line version of this form is available at:
http://sections.maa.org/wisconsin/meetings.shtml

Due date: March 2, 2013

Primary Speaker:

Name(s): _____

Institution: _____

Address: _____ Phone: _____

_____ Email: _____

Second Speaker: (If more than two speakers, please include the appropriate information.)

Name(s): _____

Institution: _____

Address: _____ Phone: _____

_____ Email: _____

Faculty Sponsor: _____

Title of presentation: _____

Brief description of presentation: (Suggested length, 250 words or less.)

_____

_____ _____

_____

All rooms are smart rooms. If you have a MAC you need to bring your own MAC display adapter for the VGA. We encourage you to bring your presentations on a flash drive.

Please check if you require:

Blackboard _____ Whiteboard _____ Document Camera _____

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

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 "buzzes in" 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: http://www.uwosh.edu/faculty_staff/szydliks/faceoff.htm

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

Sample Questions:

The *Off Limits* category contained the following questions:

20 pts. What is $\lim_{x \to \pi/2} (\sin x) / x$?
40 pts. What is $\lim_{x \to 2} (x - 3) / (x - 2)$?
60 pts. What is $\lim_{x \to 0} |x| / x$?
80 pts. What is $\lim_{x \to 1} (2^x - 2) / (x - 1)$?

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?

How do we enter? Please contact one of the Face Off 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/faculty_staff/szydliks/faceoff.htm

Know Your Wisconsin Mathematician

Interview with Melanie Matchett Wood by Benjamin V.C. Collins

Where did you grow up?
I grew up in Indianapolis, Indiana.

Was there a time in your life when you discovered that mathematics was what you wanted to do?
I started seriously thinking about a career in math academia when I was working on a research problem through the PRUV program as an undergraduate at Duke University. I was so delighted to make progress on the problem and understand new features of the mathematics that I felt like this is something that I would really want to do for a job.

I had previously done research at the University of Minnesota-Duluth REU where I had first learned what research math was like, but perhaps more importantly made a lot of connections with people on the academic path so I knew what I would need to do to become a mathematician.

Where did you go to undergraduate and graduate school?
I was an undergraduate at Duke, spent a year at the University of Cambridge doing Part III of the Mathematical Tripos (which is like a master's program), and then did my PhD at Princeton.

What was the influence of your family on your education?
My mom was a teacher and school administrator and instilled in me a love of learning. Thanks to that, I loved school and all different subjects. My mom also supported me in whatever I was interested in, so when I started doing a lot of math competitions in middle and high school, she was always encouraging in whatever I wanted to do but never directed or pushed my interests.

Are there any teachers who had influenced you to become a mathematician?
There were a lot of math teachers that were important in my development as a mathematician. Bob Fischer was the Indiana state coach for Mathcounts and the first person who gave me a lot of problems I didn't know how to solve. Joanne Black was a high school teacher that supported all of my preparation for Math Olympiads andhelped find solutions for me to keep learning mathematics after I had finished the high school classes.

You were the first female American to make the U.S. International Mathematical Olympiad team. Do you see yourself as a pioneer?
I have been excited to see many more young women participate in the U.S. Math Olympiad program at the highest levels since I was on the IMO team. In my experience, it is incredibly helpful to see other women doing mathematics as role models, inspiration, and just showing what is possible. I hope that I am sometimes providing that role model or inspiration to other women.

You surely could get a job almost anywhere. How did you decide to come to UW-Madison?
UW-Madison is a great department, especially in number theory and even more specifically in the topics I am interested in. The department is also a really friendly and supportive place. Madison is a wonderful place to live and to have a family. UW-Madison also turned out to be a great solution for my whole family. My husband is also an assistant professor here, and we have an arrangement with the department and the university where we each work part-time so that we can each stay at home part-time with our young children.

How does your research inform your teaching? How does your teaching inform your research? Do you find it difficult to strike a balance between the two?
It is definitely an ongoing challenge to strike a balance between teaching and research. The demands of teaching are so much more immediate (as are the payoffs of a job well done) than research that I find it helps to specifically schedule time when I will work on each.

What courses do you like to teach?
Last spring I taught an undergraduate research lab and that was a lot of fun. The students worked, mostly by writing programs to produce data, on trying to understand distributions of

points on curves over finite fields in various families. I learned so much from the experience and I think the students did as well!

Where do you think mathematics is going, and then closely allied to that, where do you think it should go?
There are many exciting developments in mathematics these days, but I have concerns about how results are written up and distributed. It seems that the focus on publishing new results that is a result of the tenure-granting and grant-awarding processes leads to a tremendous amount of new mathematics, at a rate much faster than most people can keep up with (even within their field) and relatively little work is done to streamline, improve, and communicate the most important and powerful results. The latter would be a very important contribution to the development of mathematics but our current system has little incentive for people to work in this direction.

What do you think is the best part of being a mathematician?
I love working on a problem that has an answer that I don't even know how to guess ahead of time and then finally figuring out the answer.

How would you describe what you do when you are talking to somebody outside of mathematics?
Here is a description I've given of some work I've done recently. Imagine we have a space and a lot of objects moving around in that space that are not allowed to crash into each other. A good example is a system of roads with cars on the roads. If we wish to describe all the possible ways that the objects can be in the space without crashing into each other, as there are more and more objects, intuitively things get more and more complicated. It is a lot easier not to get in a car accident if there are only a few cars on the road! However, I study certain ways of measuring the complexity of these systems in which it (surprisingly) does not get more and more complicated to describe the system as there are more objects.

What of your work do you like the best? What are you most proud of?
I really like my recent paper "Discriminants in the Grothendieck Ring," with Ravi Vakil (described just above for the non-expert). I think it is really fun how many different connections between algebraic geometry, topology, and number theory it raises and how many new interesting questions it leads to.

What would you say to young women who are interested in doing mathematics?
Wonderful! I always found that a network of other women doing mathematics was incredibly important to my staying happy and sane as a mathematician, so I encourage you to find such peers if you feel it will help you.

Who is a Wisconsin Mathematician that you would like to know? Send suggestions for the next KYWM to Ben Collins, collinbe@uwplatt.edu .

Campus News

Cardinal Stritch University *submitted by Carl Mueller*

Sr. Barbara Reynolds (together with her coauthor, **William E. Fenton**) had a new edition of their text *College Geometry Using The Geometer's Sketchpad (Version 5)* published in 2012.

Two of our students, **Marcie Weiss** and **Aubrey Warner**, participated in the Nebraska Conference for Undergraduate Women in Mathematics from January 25 - 27, 2013.

Madison College *submitted by J. Sriskandarajah*

- **Lecture # 121, Friday, January 25, 2013**, 3:30 PM, Room 209 Professor Jean-Luc Thiffeault of UW-Madison *"Making taffy with the Golden mean"*
- **Lecture # 122, Friday, Febuary 8, 2013**, 3:30 PM, Room 209 Professor Anders O. F. Hendrickson of St. Norbert College *"Multiplication without Numbers: A First Look at Groups"*
- **Lecture # 123, Friday, March 1, 2013**, 3:30 PM, Room 209 Professors Jennifer and Steve Szydlik, UW-Oshkosh *"Recalling the Recall: Statistical Sampling and the 2012 Petition Drive"*
- **Lecture # 124, Friday, March 15, 2013**, 3:30 PM, Room 209 Professor John Beam, UW-Oshkosh *"Probability Does Not Exist!"*
- **Lecture # 125, Friday, April 12, 2013**, 3:30 PM, Room 209 Professor Benedek Valko, UW-Madison*"Dominos and Determinants"*
- **Lecture # 126, Friday, April 26, 2013**, 3:30 PM, Room 209 Professor Benjamin V.C. Collins, UW-Platteville, *"The Mathematical Games of Martin Gardner"*

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

Milwaukee School of Engineering *submitted by Karl H. David*

The Mathematics Department of the Milwaukee School of Engineering, until now a service department to the degree-granting programs, will be inaugurating two new majors in 2013-14. The college approved majors in Actuarial Science and Operations Research. The majors were largely developed by Professor **Yvonne Yaz**. She spent the better part of two years of intensive research and development to produce them. We are obviously excited and full of anticipation!

The department also added a new full-time member to its roster this year. Assistant Professor **Anthony van Groningen** comes to us from UW-Barron County, where he was Assistant Professor and Associate Chair. He received his Ph.D. in 2007 from UW-Milwaukee. We are happy to have him on board and expect he will contribute substantially to the department … and the new majors!

St. Norbert College *submitted by Kathy Muhs*

At the Joint Meetings in San Diego, two summer research students of **Anders Hendrickson** won an Outstanding Presentation award for their poster "Atomisticity and coatomisticity of the supercharacter theory lattices of cyclic groups"

Last October, **Kevin Murphy** co-organized and co-ran a seven hour workshop for Wisconsin High School mathematics teachers. This was part one of a two part workshop focused on integrating mathematical modeling in the high school curriculum in accordance with the Common Core State Standards of Mathematics. The first workshop asked teachers to do some modeling of their own, look at samples of student work, and begin developing rubrics for modeling projects. Teachers were then expected to implement a couple modeling tasks in their classrooms and share the results to aid in the discussion for the second workshop in February.

UW-Eau Claire *submitted by Chris R. Ahrendt*

At the annual Joint Mathematics Meeting in San Diego, seven UW-Eau Claire students presented posters or gave contributed talks on topics that stemmed from five different student/faculty research collaborations. The following are the posters that were presented at the MAA Undergraduate Poster Session:

- **Andrew Boyd** presented "Moduli Spaces of 1|4-Dimensional Complex Associative Algebras," which was joint work with **Andrew Meinel, Minesh Sivaperumal** and faculty advisor **Michael Penkava,**
- **Cary Schneider** and **Wai Shan Chan** presented "Algebra associated to the Hasse graph of the n-cube," which was completed with faculty advisor **Colleen Duffy,**
- **Daniel Schilcher** and **Daniella Ciolino** presented "Introduction to D_8 x D_8 and its Subgroup Lattice," which was completed with faculty advisor **Dandrielle Lewis,** and
- **Kathryn Litzau** presented "Comparing the genus of tangle closures," which was completed with faculty advisor **Carolyn Otto.**

Noah Williams also gave a presentation in the AMS Session on Undergraduate Research in Combinatorics and Number Theory entitled "The Deletion-Insertion Model Applied to the Genome Rearrangement Problem." This work was completed as part of a student/faculty research collaboration with **Manda Riehl** and **Abra Brisbin**.

Several faculty members also gave presentations in contributed paper sessions:

- **Manda Riehl** presented "Distribution of distances under the Double Cut and Join model of genome rearrangement,"
- **Colleen Duffy** presented "Algebras associated to finite Coxeter groups," and
- **Abra Brisbin** presented "Model choice for gene pathway-based priors in Bayesian association studies" which was based on joint work with **Liewei Wang** (Mayo Clinic) and **Brooke Fridley** (University of Kansas Medical Center).

Alexa Syryczuk presented a poster on "Constructing 4-Dimensional Tops" at the Nebraska Conference for Undergraduate Women in Mathematics. This work was the result of a faculty/student collaboration with **Ursula Whitcher**.

At the Seven Rivers Undergraduate Research Symposium last November, three faculty/student projects were presented:

- **Wai Shan Chan** presented "Algebra associated to the Hasse graph of the n-cube," which was joint work with **Cary Schneider** and faculty advisor **Colleen Duffy** and won one of the Best Oral Presentation Awards,
- **Cary Schneider** presented "Design and Implementation of a Bidirectional DC-DC Converter," which was joint work with **Hanling Chen**, **Antony Rodriguez** and mentor **Aaron Cramer**—this work was completed as part of an REU at the University of Kentucky, and
- **Andrew Boyd**, **Andrew Meinel**, and **Minesh Sivaperumal** presented "Moduli Spaces of 1|4-Dimensional Complex Associative Algebras" which was joint work with faculty advisor **Michael Penkava**.

Sherrie Serros, along with **Kathryn Ernie** (UW-River Falls) and **Erick Hofacker** (UW-River Falls) have received a two-year Wisconsin Department of Public Instruction grant to provide professional development for middle school and high school math teachers in Western Wisconsin. Currently there are 39 teachers and thirteen school districts participating in the program.

UW-Eau Claire will be hosting the Fall 2014 Sectional meeting of the American Mathematical Society.

Three faculty members in the department will be retiring at the end of this academic year: **Bob Andersen**, **Susan Harrison**, and **Carl Schoen**.

UW-Milwaukee *submitted by Jay H. Beder*

Xianwei Van Harpen joined the Department of Mathematical Sciences in January. Before then she had been an Assistant Professor in mathematics education at Illinois State University. She received her Ph.D. at Illinois State University in 2009, and has published on mathematics education in the East Asian countries and the United States.

The Department hosted the AMC 10A competition February 5. Nine students took the test.

UW-Oshkosh *submitted by John Beam*

Two of our students, **John Dewitt** and **Shannon Fehrenbach**, participated in the undergraduate research poster session of the Joint Mathematics Meetings in San Diego. John presented "Good Gradings of Tournament Directed Graphs and a Mathematical Puzzle," which describes some results he completed with **Ken Price**. Shannon presented "Realizable sets of omitted cycle lengths in Hamiltonian graphs," on her research from an REU at UNC-Asheville, under the direction of **Patrick Bahls**; she will also be giving a presentation this April at the National Conference on Undergraduate Research in LaCrosse.

Faculty members **K. L. D. Gunawardena**, **Kandasamy Muthuvel**, **Amy Parrott**, **Ken Price**, **Jen Szydlik**, and **Steve Szydlik** also gave presentations at the Joint Meetings.

Faculty members **Zoubir Benzaid**, **K. L. D. Gunawardena**, **Kandasamy Muthuvel**, and **Steve Winters** have written a text that we are using in our Finite Mathematics for Business course.

UW-Platteville *submitted by Benjamin V.C. Collins*

Chad Vidden attended the Joint Meetings in San Diego, where he gave a talk entitled "Where Galerkin, Hilbert, and Wilf Intersect: An Application of the Snake Oil Method for Combinatorial Sums to Finite Element Method Analysis" and co-organized a panel session on organizing math competitions entitled "Coaching Problem Solving Groups and Math Competition Teams". In addition, Chad participated in Project NeXT activities and judged student posters in the undergraduate poster session.

The Title IIA grant “Designing and Using Value-Added Measurements to Increase Teacher Capacity and Student Mathematical Proficiency” has been funded for a third year under the Wisconsin ESEA Improving Teacher Quality (WEITQ) Program. The project, under the direction of **Jodean Grunow**, **Karen Stinson**, and **Julia McDonald**, is supporting thirty-eight southwestern Wisconsin teachers to do action research in their classrooms.

Jodean Grunow, **Jason Thrun**, and math methods student **Patrick Wengelewski** had an article “Engaging Students: Look What Can Happen!” published in the Fall 2012 issue of *Wisconsin Teacher of Mathematics* magazine.

Thirty UW-Platteville students in the course Teaching Mathematics and Science in Early Childhood and Elementary Settings led a Family Mathematics night this fall in Dodgeville Elementary School. The course is taught by **Jodean Grunow** from the mathematics department and **Leigh Monhardt** from the School of Education.

In early February, the department staged its first math modeling contest under the able direction of **Leonida Ljumanovic**. Four teams of UW-Platteville students competed, with the team of **Matthew Jones**, **Zen Abbey**, and **Neel Patel** taking the top prize for both presentation and written summary.

UW-Stout *submitted by Steve Deckelman*

Keith Wojciechowski, **Matt Horak**, **Seth Dutter**, **Nelu Ghenciu**, **Greg Bard**, **Laura Schmidt** along with student **David McKlveen** attended the Joint Meetings in San Diego.

The department is looking forward to its first class in our new masters program in Applied and Industrial Mathematics this fall. **Nelu Ghenciu** has been named it's Program Director.

UW-Whitewater *submitted by Mohammad Ahmadi*

Xueqing Chen is on sabbatical leave for the spring 2013 pursuing his research at the Tsinghua University in Beijing.

Thomas Drucker organized an MAA contributed paper Session on Philosophy of Mathematics for AMS/MAA joint meeting in San Diego. He gave two talks, one on ‘The Influence of Geometry on Philosophy’, and the other on the History of Geometry and Its Applications.

Bala (**Balamurugan**) **Pandiyan** received a Women & Science Program Summer 2013 grant from the “Inclusion of Student-Centered Pedagogies in STEM courses” program for new STEM educators. Congratulations to Bala for receiving one of the two grants awarded throughout the UW System.

Executive Committee 2012 – 2013

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