Wisconsin Section
Mathematical Association of America
NEWSLETTER
Spring 2017

Governor's Report

By Mark Snavely, Carthage College

The 2017 Joint Meetings in Atlanta were filled with outstanding talks, enjoyable social events, and of course, countless connections made and renewed between mathematical colleagues. This meeting was special in that the members of the MAA approved the new governance structure and by-laws, the product of an amazing amount of time and energy. We believe that the effort was well worth its costs, and that the changes will put the MAA in a much better position to move forward. You can read a summary of the changes and what those changes mean on the redesigned MAA website.

The Board of Governors approved a transition recommendation designed to move the organization from our old governance structure to the newly approved structure. There were some concerns about the appearance that the Executive Committee picked its own members in the transitional period, but most people agreed that, in spite of some reservations, the transition recommendation was the most reasonable path forward, and the people chosen as temporary officers are outstanding individuals who will do an excellent job. The new Congress will have the opportunity to design how it will operate, including the election of a chair and officer-at-large, at its first meeting at MathFest 2017.

The MAA's Second Century Campaign exceeded the campaign's goal of 7.5 million dollars – well done! Thank you to all who contributed, and we hope that you will continue to support the MAA through your dues and charitable donations.

MAA's bid to host the International Mathematical Olympiad in 2021 was unanimously accepted! Of course, now we need to raise funds to host this event, and we are well-positioned to raise the necessary funds. The MAA is seeking corporate sponsors to help with such events, and has been pleased to learn that the business world seems eager to support the MAA.

Thank you for giving me the opportunity to serve the Wisconsin Section and the MAA as the last Governor of the Wisconsin Section. This spring you will elect a representative to the MAA Congress who will speak for the Wisconsin Section as the MAA moves into its second century, and have a voice in deciding how the Congress conducts business and influences the future initiatives of the MAA.

The Wisconsin Section Spring Meeting is at UW-Milwaukee on April 21-22, and I hope to see you there.

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Chair's Report

By Jennifer Szydlik, UW-Oshkosh

The 85th Annual Spring Meeting of the MAA–Wisconsin Section will be held on April 21 and 22, 2017 at the UW–Milwaukee campus. I would like to thank Chair-Elect **Kirthi Premadasa** and On-Site Coordinator **Gabriella Pinter** for their hard work in organizing this event. I invite *you* to join us in Milwaukee to give a presentation or to sponsor one of your students in giving a talk. Presentations featuring topics in pure mathematics, statistics, math education, history, SOTL, and applications of mathematics are all welcomed. Registration forms are elsewhere in this issue, and also available on-line at: http://sections.maa.org/wisconsin/meetings.shtml. Oh, and please organize a team of undergraduate students from your school to participate in our section's exciting math game show: *FaceOff!* Email **Steve Szydlik** (szydlik@uwosh.edu) with your team information or your questions about the game show.

This year our invited speakers include **Nigel Boston** and **M. Matchett Wood** both from UW–Madison and Section Visitor **Stephen Kennedy** from Carleton College. (Abstracts are available elsewhere in this issue.) Instead of a formal banquet, this year's meeting will feature a reception – complete with a variety of hot and cold appetizers and a cash bar – situated between the Friday afternoon plenary and *FaceOff!*. We will end Friday evening with a brief awards ceremony where we will announce the winner of the 2017 Wisconsin Section Distinguished Teaching Award, the winners of awards to local mathematics teachers, and the *FaceOff!* victors. We will adjourn for the day at 7:00 pm so that everyone can go to dinner at an array of excellent restaurants within walking distance of the campus.

Early Saturday morning (April 22) we hold our annual business meeting. There we will vote on the location of next year's meeting and hold an election for a new Chair-Elect. At that time, **Kavita Bhatia**, of UW–Marshfield/Wood County, will complete her term as Immediate Past Chair. Please join me in thanking Kavita for her years of service on the Section's Executive Committee. All are welcome at the business meeting.

It is not too soon to nominate a colleague for *next year's* Wisconsin Section Distinguished Teaching Award. The process is simple, and it is an opportunity to recognize the talented and dynamic teachers of our section. The nomination form can be found at http://sections.maa.org/wisconsin/award.shtml. Also, if you are looking for service opportunities, the MAA needs committee volunteers. You can find more information about that at http://www.maa.org/news/maa-committees-your-opportunity-to-g-i-ve-back-to-our-community.

Nominations for Chair-Elect

The Executive Committee of the MAA-Wisconsin Section seeks nominations for **Chair-Elect** for 2018 (and beyond). 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 recipient.

Send nominations to Section Chair Jen Szydlik at szydlik@uwosh.edu. Self-nominations are encouraged. Section officers must be members of the MAA.

Project NExT-Wisconsin

By Eric Eager, UW-La Crosse

2017 Spring Panel Discussion

Project NExT-Wisconsin will have their spring panel discussion immediately following the second day of the 2017 MAA Wisconsin sectional meeting on April 22, 2017, at UW-Milwaukee. The spring panel will revolve around maneuvering one's way through the various stages of the promotion process. We are actively looking for panelists to serve in this capacity.

2016 Fall Conference

The Project NExT-Wisconsin fall conference was held on November 5-6th at the University of Wisconsin–Baraboo/Sauk County!. We were blessed to have two external presenters for the conference, **Robert F. Allen** of the University of Wisconsin–La Crosse, and **Aminul Huq** from the University of Minnesota–Rochester. The conference had two themes: Rigorous assessment of teaching innovation and mentoring of undergraduate research. We also had roughly five member presentations on Saturday evening of the conference, which was well attended and well received by all involved.

At the conclusion of the Fall Conference, **Holly Attenborough** (UW-Platteville) and **Matthew Corne** (UW-Stout) were nominated to replace me as director of Section NExT, and I endorse their candidacy wholeheartedly. The three of us will direct the 2017 Spring Panel, and the two of them will direct the 2017 Fall Conference.

Contests

By Laura Schmidt, UW-Stout

American Mathematics Competitions

The AMC 8 competition was held on November 15, 2016. A total of 552 Wisconsin students participated in the competition, a significant drop from previous years of about 959 and 1,300. One student received a perfect score from Wisconsin. Congratulations to J. Cai, an 8th grader from Velma Hamilton Middle School in Madison! The average score for Wisconsin students was 9.8, compared with the national U.S./Canada average score of 9.4. The gap between Wisconsin and US scores has narrowed in past years, and for the second year Wisconsin has outperformed the US average! This is a great trend for our Wisconsin students.

The AMC 10 and 12 contests will be held on February 7 and 15, 2017. Data will be reported at the Spring Meeting.

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 8, 2016. There were 45 schools reporting scores this year. Data will be reported at the Spring Meeting.

Dr. Jay Beder, from University of Wisconsin-Milwaukee, directed the contest this year for their fourth year as hosts. This year we updated to an electronic distribution of the exam and related materials. Many thanks to him, University of Wisconsin-Milwaukee, 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 beder@uwm.edu.

Host College/University Needed

Next year will be UW-Milwaukee's final year as host for the contest. We would first like to thank them for their efforts and dedication with outreach to the high schools of Wisconsin.

We are now looking for a new college/university to host the Wisconsin Math Contest for fall 2018. The duties include mailing an initial invitation letter to all high schools in the state, writing the test questions, processing registrations and emailing out an exam to participating schools, and selecting and mailing the prize books to each winning student. All files and online forms from past years will be provided to the new host to help with the transition. This is a great opportunity for a college/university to connect with 6-12 level secondary students. If you have questions or want more information, or are interested in hosting, please email Laura Schmidt at schmidtlaur@uwstout.edu. Thanks.

Candidate for Chair-Elect

Irfan Ul-Haq

Irfan Ul-Haq joined the faculty at UW-Platteville in 2005. Before coming to Platteville, he held positions at UW-Stout and Prairie View A&M University. He has served the MAA-Wisconsin section as a Director for Project NExT-WI. He is a past Wisconsin Teaching Fellow. His current interests lie in math education and student success in college. He is looking forward to serving again the MAA-Wisconsin as chair-elect, if elected.

Distinguished Teaching Award

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 2018 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

Spring Meeting

Program Highlights:

Stephen Kennedy, Carleton College, Senior Acquisitions Editor for MAA Books

Two Heads Are Better Than None

Every question in probability has seventeen plausible answers. The sixteen incorrect answers always occur to you before the correct one. In this talk a very simple question of probability–If I intend to flip a coin until I see two consecutive heads, when, if ever, should I expect to stop?–leads to a morass, a muddle and then one seeming miracle. We'll resolve the muddle and explain the miracle and, in true mathematical fashion, leave ourselves with a new unresolved puzzle.

Nigel Boston, UW-Madison

Unusual Applications of Algebra to Engineering

Algebra has of late found increasingly many applications to electrical engineering and computer science. I shall briefly describe what are now fairly standard applications to coding theory and cryptography (to ensure accurate and secure data transmission) and then move on to more recent applications to things like face recognition, recommender systems (such as Netflix), and optimization problems such as in robust control theory.

M Matchett Wood, UW-Madison

From Primes to Particles

Prime numbers are the basic building blocks of the integers, and the study of primes and how they combine to form integers is one of the most foundational topics in mathematics. We explain recent breakthroughs in applying ideas from number theory and the study of how prime numbers combine to form integers to gain new understanding of symmetries in spaces of particles. If we pick a random integer, the probability that it is square-free is $\frac{6}{\pi^2}$. If we ask for the probability that two random integers are relatively prime, the answer is also $\frac{6}{\pi^2}$. Our work uses this coincidence to uncover surprising things about the topology of spaces of particles, which in fact we can prove, though we do not entirely understand the mechanism behind yet. This talk will present the ideas at a general conceptual level without technical details. This is joint work with Benson Farb and Jesse Wolfson.

Map

A UW-Milwaukee campus map can be found at http://uwm.edu/locations/.

Parking

See the parking map here:
http://uwm.edu/parking/parking-map/

The most convenient garage is the EMS Garage (Lot #23), which is $1.50 per hour. The next most convenient place to park is the Cunningham Lot (Lot #20), which is $1.00 per hour.

On Friday, participants may park on the east side of N Cramer St. There is two-hour meter parking (controlled by City of Milwaukee) from 8:00am-6:00pm. There is no parking on the west side of Cramer.

On Saturday, metered parking on the east side of Cramer is enforced from 8:00am-12:00pm, but there is ulimited free parking on the west side.

Lodging Information

Hampton Inn & Suites

176 W Wisconsin Ave, Milwaukee WI 53203
Phone: (414)271-4656
(20 rooms)
Reservations: Use group code SMERF.
Direct link to book rooms here.
Blocked until: April 7, 2017.
Rate: $109 per night + tax.
Complimentary hot breakfast buffet daily from 6am to 10am.
Free WiFi throughout the hotel.
Indoor swimming pool and Jacuzzi.
Fitness Center and complimentary access to Gold's Gym.
Parking:

- Valet parking $27 per car per night, which includes unlimited in/out privileges.

- Self-parking is also available at a fee of $14 per day; however, this option does not offer unlimited in/out privileges.

Fairfield Inn & Suites by Marriott Milwaukee Downtown

710 N. Old World Third Street, Milwaukee WI 53203
Phone: (414)224-8400
(20 rooms)
Reservations:
http://cwp.marriott.com/mkefd/maaspringmeetng
Mention MAA Wisconsin Spring Meeting.
Blocked until: March 21, 2017.
Rate: $ 117 per night + tax.
Complimentary breakfast.
Fitness Center.
Free Wi-Fi.
Parking: self-park $18 per night, valet-park: $21 per night

Knickerbocker on the Lake

1028 E Juneau Ave, Milwaukee, WI 53202
Phone: (414) 276-8500
(20 rooms)
Reservations: Mention MAA Conference participant.
Blocked until: April 1, 2017.
State Rate: $90.00 per night + tax.
No breakfast provided.
Parking: $18 per night.

Courtyard Milwaukee Downtown,

300 W. Michigan Street, Milwaukee, WI 53203,
Phone: (414)291-4122
(25 rooms)
Reservations: (800)228-9290; mention University of Wisconsin Milwaukee Room Block
Direct link to book rooms here.
Blocked till: April 7, 2017.
Rate: $110 per night +tax.
Complimentary breakfast. Parking: $24.

MAA Book Sales at the Spring Meeting

Support the Section and also get a great deal on books by ordering your MAA books through the spring meeting.

As in the past few years, around the time of the meeting, MAA members 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 Benjamin V.C. Collins (collinbe@uwplatt.edu).

The Wisconsin Section earns a small percentage of all sales made through the meeting.

Call for Speakers

85th Annual Meeting of MAA Wisconsin Section, April 21 – 22, 2017
UW-Milwaukee

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 1, 2017, to Kirthi Premadasa (kirthi.premadasa@uwc.edu). Talks received after March 1 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 1, 2017

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 have a whiteboard and/or blackboard, an opaque projector, and projector with a connection for a laptop computer. If you have other equipment needs, please describe them, and we will try to accommodate you.

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

Call for Student Speakers

85th Annual Meeting of MAA Wisconsin Section, April 21 – 22, 2017
UW-Milwaukee

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 1, 2017, to Kirthi Premadasa (kirthi.premadasa@uwc.edu). Talks received after March 1 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 1, 2017

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 have a whiteboard and/or blackboard, an opaque projector, and projector with a connection for a laptop computer. If you have other equipment needs, please describe them, and we will try to accommodate you.

Time preference: Friday afternoon is Imperative ____ Preferred ____

Saturday morning is Imperative ____ Preferred ____

Either time is acceptable _____

REGISTRATION FORM

MAA Wisconsin Section Spring Meeting UW-Milwaukee

April 21-22, 2017 Preregistration Deadline: **April 1, 2017**

You can also register on-line at:
http://sections.maa.org/wisconsin/registration_form/

NAME(S)_____

Address_____

Main contact e-mail:_____

Institution (for your name badge)_____

Registration			
No.	Type	Price*	Total $
	MAA Member	$30	
	Retired MAA Member	$20	
	K-12 Teacher	$20	
	Student	FREE	
	Other	$40	
Registration Total:			

*Registration after pre-registration deadline of April 1 will be $40 for all except students, who will still be free.

This year, in lieu of a formal banquet, we are recommending participants take advantage of the many fine restaurants near the UW – Milwaukee campus, some an easy walking distance from the meeting site. A list of suggested restaurants will be provided. There will be a reception featuring a variety of hot and cold appetizers and a cash bar right after the afternoon plenary talk, followed by Face Off! and a short awards ceremony ending about 7 PM.

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

MAKE CHECKS PAYABLE TO: MAA - WISCONSIN SECTION

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

Know Your Wisconsin Mathematician

Interview with David Scott, Ripon College, by Benjamin V.C. Collins

Where did you grow up?
My father was a chemistry professor, and we moved quite a bit as he searched for the place that matched his desires. I was born in Berkeley, CA, but moved very soon to Amherst, MA, when he exchanged the University of California for Amherst College. That is where I started school. I then spent two years in Richmond, IN, while he was based at Earlham College working on a high school textbook project. But mostly I grew up in Ripon because he found what he wanted at Ripon College.

When did you decide that mathematics was what you wanted to do with your life?
That's difficult to say. I always enjoyed mathematics, but I liked lots of other things as well. In college, I took two and sometimes three math courses each semester after my first year, but I also studied a lot of foreign languages and could easily have ended up in linguistics, I think. If I were young now, I might be looking at cognitive science. I suppose really mathematics was my default setting, however, from middle school on, and I never moved away from it.

Are there any teachers who had influenced you to become a mathematician?
I had many math teachers who influenced me in a lot of ways, but I suspect that my sixth grade teacher and a high school teacher probably set me on the path. The sixth grade teacher gave us all the assignments for the year and set us free to work at our own speed. I finished sixth and seventh grade math in one year, did eighth grade math independently the next year, and walked over to the high school for algebra as an eighth grader. Partway through my geometry course the following year, my teacher let me go at my own pace, so I finished a couple more courses that year and took the Math 4 course as a sophomore. Being given the freedom to go at my own pace certainly strengthened my liking for mathematics, and the high school teacher also introduced me to the UW-Madison Math Talent Search. I really enjoyed working on the problems. At the college level, **John Greever** at Harvey Mudd College influenced me greatly with the modified Moore method approach he used in his topology course.

What was the influence of your family on your education?
Education was very important in my family, particularly the idea of a well-rounded education. As the fourth of seven children, I had lots of role models in addition to my parents. Both my parents were very active in the schools at all levels, and our wide ranging conversations at meals often drove my mother to fetch a dictionary or encyclopedia volume to support an argument or answer a question, sometimes to the disgust of my father who would have preferred less bustle while eating his meals. My oldest sibling knew he wanted to be a math professor from the age of three. He taught himself from University of Illinois materials and SMSG materials being developed in the 60's that my father procured for him, and was taking math at the college by the age of 14 or 15. So I had a very specific role model in mathematics education. However, like all of my siblings, he had lots of other interests, so there were many things going on in our house – but especially reading books.

Where did you go to undergraduate school?
I went to Pomona College, one of the Claremont Colleges. My brother had gone there because he wanted a small liberal arts college but needed more math courses than most colleges could supply, because he had started taking college courses so early. The ability to take courses at any of the Claremont Colleges offered him the small setting with lots of course opportunities. My oldest sister followed him, so the college went on my list of possible schools when it was my turn to find a place. In the end, I actually based my decision more on the chance to play soccer and go to the national tournament – a goal I achieved there – than on anything else. (Although a very good financial aid offer helped too.) I certainly took advantage of the opportunity to take classes away from Pomona – particularly at Harvey Mudd College and Claremont Graduate School.

And what about graduate school?

Once again, I followed my brother, this time to Madison, where he had been a **Mary Ellen Rudin** student. I had very much enjoyed **John Greever's** topology course at Harvey Mudd, as well as a second topology course I had taken at Claremont Graduate School and thought set theoretic topology would be good to pursue. In retrospect, it has often occurred to me that my path was too easy. I had received a fellowship that would pay for my senior year at Pomona as well as two years of any further study at any institution. In combination with a good record, that pretty much ensured I could go wherever I wanted. Instead of using that to my advantage and thinking deeply about the future, I really just took the path of least resistance. Although I enjoyed my graduate school experiences, I might have made different choices had I thought more deeply about my future.

How did you end up at Ripon?

It was totally unplanned. After four years at Madison, I left without finishing. I had had significant surgery and was devoting time to rehab, but more importantly, although possibly related, I was also less sure about what I wanted to do. I went home to consider things, was asked to coach the Ripon College soccer team, and then had a chance to become an adjunct in the math department when **Norm Loomer** went on sabbatical. I was also teaching as an adjunct at UW-Fond du Lac and UW-Oshkosh. I really enjoyed teaching and had the chance to compare three rather different student populations. I was kept on at Ripon after Norm returned, and when he moved to Albion College one year later I replaced him, first temporarily and then on a tenure track contract.

What courses do you like to teach?

I get a great deal of enjoyment out of teaching almost anything, because I like seeing lights go on. Having said that, I particularly enjoy teaching topics from discrete mathematics of all sorts, and I like developing student ability to deal with abstraction and logical thinking. We have a mid-level geometry course that I particularly enjoy, and at the upper level, I like algebra and topology. But most students arrive at college with such a limited understanding of mathematics that discrete mathematics topics take them out of their comfort zones and open their eyes very quickly. I find I can make a lot of progress with many of them in such a setting. Of course at Ripon, with a small faculty, I often get to teach them repeatedly as they move through the major, and that is extremely rewarding. It is much easier to help them progress when you know their strengths and weaknesses well.

"I find that good students are less comfortable than they used to be with the idea that there might be problems on a problem set they won't manage to solve, and I need to spend a great deal of time trying to make them comfortable with that idea."

Over the years, did you find that teaching of mathematics changed?

I think mathematics teaching has moved in the direction of student-centered approaches with an emphasis on active learning. Inquiry based learning and the flipped classroom are approaches that are growing in popularity. Of course, the Moore method could be viewed as an ancestor, so topologists have been aware of such ideas for a long time. However, I would say that the teaching of mathematics in general has changed more than my own teaching has changed. I had the good fortune to have parents who were in many ways quite progressive pedagogically, and an older brother, a topologist, who was progressive as a mathematics teacher. So I had the benefit of hours of discussion of pedagogy as I was going through school (and I mean from grade school on) and getting into the profession. Then I ended up at a small college, where one can probably experiment more easily, working with colleagues who were interested in improving pedagogy. I have always been a believer in a focus on student learning and have continued to tweak my approaches to teaching with that in mind.

Changes in student behavior and student preparation have caused me to change some things, however. It is not that students are better prepared or more poorly prepared. I haven't seen much difference over the years in that regard. Some are well prepared in general and some are not. We don't get huge numbers of the really poorly

prepared at Ripon, so I have been dealing with a rather skewed sample. When I started, however, most students had seen set notation and understood basic ideas about sets, due to the fact that much of elementary school mathematics teaching was built on ideas about sets. Now I find that many of the best students are seeing these things for the first time, or claim to be. That does affect the way I approach things now; I am much more sensitive to the issue of prior knowledge. I also find that good students are less comfortable than they used to be with the idea that there might be problems on a problem set they won't manage to solve, and I need to spend a great deal of time trying to make them comfortable with that idea. Finally, more of them work longer hours to earn money – with good reason – and that needs to be taken into consideration.

"Try to get your students involved, but remember that you can neither force them to learn nor keep them from learning."

What do you think is the future of mathematics education?

I am reluctant to predict the future of most things; however, I suspect that the trend toward student-centered approaches will continue. Certainly, we are all pretty convinced that active learning is necessary; it's just a question of how to achieve active learning. I personally believe that the strength of the Core Curriculum lies in the practice standards, but that these ideas will be the most difficult for many teachers to work with. If they can, however, I think undergraduate mathematics education could change quite a bit. I am a firm believer in teaching students how to learn, and if they come better prepared in that regard, conceptual understanding will be easier to develop. Currently, mathematics is pretty widely viewed as procedural or algorithmic among non-mathematicians, and many students can survive through quite a few classes with little understanding of the core ideas. I hope we are going to come to grips with that increasingly in the future. I would like to see the proliferation of good quantitative reasoning courses in high schools; I think such approaches would help make mathematics a more functional part of the student experience and open the door to improved understanding and appreciation of mathematics.

How were you involved with the MAA over the years?

I was aware of the MAA early on, but when I came to Ripon, everyone was involved, so it was just natural to become active. At that time it was quite usual to ask young faculty to serve as room monitors at the spring meeting, so that was my first official involvement beyond membership. Going to the spring meeting was a great way to meet people as well as a chance to listen to some interesting talks. Ripon faculty had served as section chairs in the past, and Ripon had hosted a meeting, so the idea of the MAA was always in the background. **Bob Fraga** came to Ripon shortly after I did, and he was very involved, serving as a particularly active section chair. Later, our department decided we would like to host the spring meeting when **Wayne Larson** retired from Ripon, and I took care of all of the local arrangements, so I got a crash course in what it takes. Then I was asked to stand for chair and eventually was elected and served my three years. I have since been asked to stand for governor a couple of times and have been willing, but the section has had some great alternatives and has chosen wisely. Then I led another push for Ripon to host just recently and took care of most of the arrangements again. I believe that the organization has done some very nice things over the years and provides a variety of tremendous resources. Involvement for me is a win-win. I get lots out of my involvement, and when the MAA can use my help I am happy to supply it, but I have lots of other things to keep me busy. I feel much the same way about my six terms on the Ripon School Board. When they don't want me I will have plenty of other things to do, but I like contributing.

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

That is a really difficult question to answer, and it is part of the dilemma I faced in graduate school. I have so many interests outside of mathematics. Much of what attracted me to mathematics and what I enjoy most is pitting myself against interesting problems and wrestling with them. However, I find lots of problems (including small ones that others know the answers to but I don't) interesting, and I can wrestle with problems in other arenas as well, getting

very much the same satisfaction and enjoyment. Still mathematics been good for me. It has contributed greatly to my ability to think logically; express myself clearly, precisely, and concisely; recognize analogous situations; and entertain hypotheticals without prejudice. Mathematics is not necessary for the development of any of these things, but for me it has been a great help. To be honest, however, my greatest satisfaction comes from teaching mathematics.

What was the worst part of teaching mathematics?

I can't think of anything that I would describe this way. There are challenges and frustrations associated with teaching anything. I am always amazed at teachers who don't change anything, because my students almost never do as well as I would like them to do. I am always thinking about what I could do to help them make more progress, and the term always ends too soon! Also, the fact that I see students repeatedly over four years makes it really clear how much they don't internalize. To be fair, it is also quite clear how far many of them have come. But perhaps my biggest frustration is the way grades continue to be the tail wagging the dog. Students too often think in terms of how to get a good grade rather than how to understand the material – and our culture encourages them.

What is your advice to new teachers?

Be patient and flexible, think about your students' lives outside of your classroom, and have a sense of humor. You shouldn't be afraid to admit that you don't know something, but you don't necessarily have to advertise it either. Try to get your students involved, but remember that you can neither force them to learn nor keep them from learning. They do the learning, so think about how to create an environment where they will learn. It should include prompt and accurate feedback. Finally, while content mastery cannot be ignored, it isn't necessarily the most important thing. Process, habits of thought, and communication are all examples of things that may affect students' lives much more in the long run.

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

I consider my work teaching, and I look at what I do in the context of contributing to the development of adults who can and will teach themselves – in many areas, not just mathematics – as they move through life. Living responsibly requires numeracy in its widest meaning, and I enjoy pushing against the widespread acceptance of innumeracy. I am proud of the small local gains I have made in that fight, students who left my classes with a changed feeling about mathematics or a better understanding of what mathematics is, and I am proud of the many students I have had who have gone on to succeed in mathematical studies or careers. I am happy that I have been pretty successful in maintaining high standards in my classes – which for many students translates into lower grades than they were hoping for – while getting students to understand why I teach the way I do. My daughter once said that she couldn't ask my wife for school help because she would be forced to get out her book and look through the relevant material to see if she could answer her own questions, and she couldn't ask me because I would just ask her questions back again. All she wanted was to finish her homework. My students often feel the same way, I suspect. "He makes us think," has been both a commendation and a criticism. But some students do come to appreciate what I am doing. One former student nominated me for a local teaching award saying that he hoped he would be able to teach others the same way. I don't know if he does, but he is himself the recipient of an MAA Section Teaching Award. If I had significant influence on his development in that regard, I am very proud of that, because I really believe that teaching is an extremely important but undervalued profession.

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

Beloit College

By Paul Campbell

Ranjan Roy's book *Elliptic and Modular Functions from Gauss to Dedekind to Hecke* was published in February by Cambridge University Press.

Lectures from **Darrah Chavey's** course "Cultural Approaches to Mathematics" are available on YouTube at https://www.youtube.com/user/chavey/videos.

Darrah Chavey and **Erin Munro** conducted research with five students last summer under the College's Science Summer Research Program, a program enlarged in part thanks to a grant from the Sherman Fairchild Foundation. Darrah's group focused on mathematical analysis of games from various cultures, while Erin's concentrated on mathematical neuroscience.

The 10th edition of *For All Practical Purposes: Mathematical Literacy in Today's World* has appeared, to which **Paul Campbell** contributed some chapters.

UW-Eau Claire

By Chris Ahrendt

At the annual Joint Mathematics Meeting in Atlanta this past January, *sixteen* UW-Eau Claire undergraduate students attended and presented posters or contributed talks on topics that stemmed from 7 different student/faculty research collaborations. The following are the posters that were presented at the MAA Undergraduate Poster Session:

Mitchell Paukner and Audrey Steinman presented "String duplication histories with no-breakpoint-reuse," which was completed with faculty advisor **Manda Riehl.**

Austin Holmes and Geoffrey Glover presented "Algebras associated with the Hasse graphs of polytopes," which was completed with faculty advisor **Colleen Duffy**.

Jonah Amundsen and Dawn Paukner presented "The Colorability of Rational Tangles and Their Closures," which was completed with faculty advisor **Carolyn Otto**.

Molly Petersen presented "The Effect of Doubling Operators on Colorability of Knots and Links," which was completed with faculty advisor **Carolyn Otto.**

Ryan Stodola, Rita Post, and Jingtai Liu presented "Permutation Statistics in the Hyperoctahedral Group," which was completed with faculty advisor **aBa Mbirika.**

Chris Magyar, Lucas Buchanan, Haotian Wu, and Ai Lie Ching presented "The Moduli Space of Non-Nilpotent Complex 2-3-dimensional Associative Algebras," which was completed with faculty advisor **Michael Penkava.**

Two UWEC undergraduates also gave a presentation:

Claire Arneson and Emily Gullerud presented in the MAA Session on Mathematics and the Arts. The presentation was titled, "Creating Symmetric Designs and Animations," and was completed with faculty advisor **James Walker.**

Several faculty members gave presentations in invited and contributed sessions at the JMM:

Simei Tong presented "Rotation and Symmetry in Mathematical Quilt Design."

Abra Brisbin presented "Reading vs. Doing: A Comparison of Methods of Teaching Problem-Solving in Introductory Statistics," which was joint work with **Erica Maranhao do Nascimento.**

aBa Mbirika presented "Lattice point visibility on straight and curved lines of sight," and "Coprime and prime labelings of ladder graphs and complete bipartite graphs," which was joint work with Adam Berliner (St. Olaf College), Nate Dean (Texas State University), Jonelle Hook (Mount St. Mary's University), Alison Marr (Southwestern University), and Cayla McBee (Providence College).

Carolyn Otto and Manda Riehl presented "Development and Implementation of a Research Methods Course."

UWEC hosted our first REU for the PUR grant last summer and will continue with the second (of three) this summer.

Two visiting assistant professors joined the department at the beginning of the 2016-17 academic year: **Fariba Khoshnasib-Zeinabad** and **Alan Von Herrmann**.

At the end of the spring semester, **Zhixin (Harriet) Yang** joined the department of Mathematical Sciences at Ball State University. **Rich Spindler** joined the Mathematics Department at SUNY-Plattsburg in New York. **Ursula Whitcher** is on a leave of absence and is working as an editor for *Mathematical Reviews,* a publication of the AMS. **Charles Serros and Sherrie Serros** moved to Milwaukee, and Sherrie is serving as the Department Chair for the Mathematics Department at Mount Mary University. Harriet joined the Mathematics Department in 2014; Ursula in 2011; Rich in 2010; Charles in 2009; and Sherrie in 2005.

Three professors emertii of the UW-Eau Claire mathematics department passed away this past year: **Walter "Doc" Reid** on May 10, 2016, who was with the department from 1981-2013; **Shyam Chadha** on October 22, 2016, who was with the department from 1984-2013 (and was very active in the Wisconsin MAA section!); and **John Johnson** on January 29, 2017, who was with the department from 1966-1995.

UW-Milwaukee

By Jay H. Beder

The Department of Mathematical Sciences is celebrating the 50th anniversary of its doctoral program–the first at UW-Milwaukee. On October 21-23 we held a Celebration of Mathematics, including a kick-off lecture by freelance geometer **Jeff Weeks** titled "The Shape of Space".
Visit http://uwm.edu/math/celebration/ for more on this event.

The Department will also host the annual MAA Wisconsin Section meeting this April 21-22. More information can be found in this newsletter or at http://sections.maa.org/wisconsin/meetings.shtml.

At 4:00 p.m. on March 28, **Béla Bollobás** will give the annual Marden Lecture in Mathematics. The title of his talk is "The Greatest Codebreaker and His Mathematics". Details will be posted at http://uwm.edu/math/ (follow the links to News and Events > Marden Lecture Series). Prof. Bollobás will also give a Departmental colloquium talk on "Modular Cellular Automata" the following day at 12:30 p.m. A faculty member at the University of Cambridge and the University of Memphis, he is internationally known for his work in functional analysis, combinatorics, graph theory and other areas. He earned an Erdős number of 1 while in high school.

Ric Ancel retired last May after 30 years in the Department, and has been instrumental in building a widely respected Geometric Topology research group. He has co-organized NSF-funded Workshops in Geometric Topology since 1991. In addition to producing 34 research publications and four PhDs, he has been involved in mathematics education, developing a geometry course for elementary education majors and co-developing a transition course to proofs in mathematics. He will be giving the third "Science Bag" talk on mathematics this spring. He earned his doctorate from UW-Madison under **James Cannon**. He was promoted to Full Professor in 1996.

Jugal Ghorai graduated from the Indian Statistical Institute in 1969 with a MS in Biostatistics, and received his PhD in Statistics from Purdue University in 1977 under Herman Rubin. He joined the Department that year as a lecturer, rising to Full Professor in 1995. He has published numerous refereed papers and supervised 11 PhDs (some jointly with others). In addition, he has regularly run the Statistics seminar and served as Statistical Consultant for the Department. Together with colleague **Gerhard Dikta** he developed a dual MS degree program with the University of Applied Science in Aachen, Germany. This will facilitate the exchange of bright US and German students which, he hopes, will bring a new perspective on learning in a multicultural society.

Eric Key came to UWM after earning his doctorate from Cornell under **Harry Kesten**. While his main research interest is probability theory, he has published widely in a variety of areas. He led the development of the Department's Actuarial Science major and some developmental mathematics courses, and was a Senior Scientist on the NSF-funded Milwaukee Mathematics Partnership (MMP), a collaboration of UWM, MATC (Milwaukee) and MPS designed to further mathematics teaching and learning in Milwaukee. Eric supervised four PhD students, and became a Full Professor in 2005.

Finally, the Department hosted the Wisconsin Section's High School Math Contest on December 8. Forty-five schools participated. More information can be found in this newsletter.

UW-Oshkosh

By John Beam

Hosien Moghadam will present a talk at the Forty-Eighth Southeastern International Conference on Combinatorics, Graph Theory and Computing, to be held March 6-10, 2017, at Florida Atlantic University in Boca Raton FL. He has recently published a paper, "Isoperimetric Problems and Compression", in *Congressus Numerantium 221, 225-232.*

UW-Platteville

By Benjamin V.C. Collins

Leonida Ljumanovic received the Excellence in Teaching award from the College of Engineering, Mathematics, and Science, in recognition of her effective and innovative teaching. She is known for her exemplary instruction, availability, and genuine concern for all students. Congratulations, Leonida!

Tim Deis and **Jodean Grunow**, along with **Will Hoyer**, Interim Director of the Office of Research and Sponsored Programs, have received notice from the University of Wisconsin System Office of Academic Programs, Educational Innovation, and Governance that their ESEA Title II Higher Education Professional Development Program Grant has been funded for a third year.

Mu-Ling Chang's joint paper with **Cristi Chang** from Lakeland University, on "Evaluation of Pi by Nested Radicals" was published in the December 2016 issue of Mathematics Magazine.

On April 1, 2016, the Mathematics Department organized the fourth UW-Platteville Mathematical Modeling Contest. The students with the best overall presentation and the best summary were **Matthew Cauwels** and **Anna Torgerson**. Students in the second placed team were **Christopher Goodenough**, **Landon Gauthier**, and **Andrew Groleau**. We are planning to organize the fifth contest this spring as well.

UW-Stout

By Steve Deckelman

Mingshen Wu has retired after 30 productive years in the department.

Student **Stephanie Neas** presented at the Joint Meetings in Atlanta. Her faculty mentor **Seth Dutter** along with **Laura Schmidt**, **Greg Bard**, **Andrei Ghenciu**, **Chris Bendel** and **Steve Deckelman** also attended. Laura and Greg also gave talks.

Alex Basyrov has taken a leave of absence to retrain in actuarial science.

The department is excited to celebrate the 50th anniversary of the Applied Mathematics and Computer Science Program this summer.

MAA-Wisconsin Executive Committee

Governor	Mark Snavely, Carthage College
Chair	Jennifer Szydlik, UW-Oshkosh
Secretary-Treasurer	Jonathan Kane, UW-Madison
Chair-Elect	Kirthi Premadasa, UW-Baraboo/Sauk County
Immediate Past Chair	Kavita Bhatia, UW-Marshfield/Wood County
Math Contest Coordinator	Laura Schmidt, UW-Stout
MAA Representative to the Wisconsin Math Council	Wendy Meyer, Edgerton High School
Project NExT Co-Directors	Holly Attenborough, UW-Platteville Matthew Corne, UW-Stout
Public Information Officer	Benjamin Collins, UW-Platteville