Wisconsin Section
Mathematical Association of America
NEWSLETTER
Spring 2019

Representative's Report

By Clare Hemenway
UW-Stevens Point at Wausau

There have been many changes in the University of Wisconsin System in the last few years—the restructuring of the former UW Colleges as branch campuses and the implementation of the UW System Mathematics Initiative.

There have also been many recent changes in the MAA. In this newsletter, I would like to highlight the impact of the upcoming changes for MAA members when the MAA terminates its role in the shared management and programming of the Joint Mathematics Meetings after the 2021 meeting. This past semester, I have participated in two webinars with members of the MAA Board of Directors where we shared ideas on how to bring the mission of the MAA to members who may not be able to attend national meetings. While the MAA will still have a presence at JMM, the MAA intends to use those saved resources (money, personnel, and time) to provide different benefits to MAA members through investments in communities such as Sections, SIGMAAS, and an even more robust MathFest.

I assure you that the MAA is a good steward of your membership fees, and values your input on ways to make itself an important and relevant professional development resource for you. I am open to your suggestions. Please contact me at clare.hemenway@uwc.edu or tell me in person at the Wisconsin Section Meeting at Carthage College in Kenosha April 12-13.

Lastly, save the dates for MathFest July 31-August 3 in Cincinnati!

Table of Contents

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 2020 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

Chair's Report

By Irfan Ul-Haq, UW-Platteville

Greetings friends, colleagues and students! I hope that 2019 is off to a great start even though we have had a few unusually cold days this year. Well, maybe that is why we have a saying in our state "It's Wisconsin Weather."

The 87th Annual Spring meeting of the MAA-Wisconsin section will be held on April 12 and 13 at Carthage College. Many thanks go to Chair-Elect Kseniya Fuhrman and site coordinator Mark Snavely for organizing and hosting the meeting. Kseniya has put together an exciting line of speakers for the meeting, which includes Michael Dorff from Brigham Young University, Erica Flapan from Pomona College and Fredric Ancel from UW-Milwaukee. Abstracts are available elsewhere in this issue, and more information is available below, as well as at the meeting website.

Please consider participating in the meeting by volunteering to give a presentation of your own and/or sponsoring a talk by one of your students. Talks on mathematics, pedagogy, history, SOTL, and applications of mathematics are welcome and appreciated. Registration forms are available on-line.

One of the exciting events of the meeting is Face Off! It is a math game show in which teams of students from different campuses compete to answer Jeopardy-style questions. On Friday evening, there will be a banquet along with a brief awards ceremony.

As usual, we will hold our annual business meeting on Saturday morning. All are welcome at the business meeting. There we will vote on the location of next year's meeting and we will hold an election for a new Chair-Elect. At that time, Kirthi Premadasa, of UW–Platteville Baraboo Sauk County, will complete his term as Immediate Past Chair. Please join me in thanking Kirthi for his service on the Section's Executive Committee. I would like to welcome Wesley Hough from UW-Whitewater as the Co-Director of Section NExT-Wisconsin. The mission of the project is to support new and recent Ph.D.s in their roles as mathematics faculty members. In particular, the project fosters and enhances high-quality teaching and learning of undergraduate mathematics. Further information is available at the Section NExT-Wisconsin website.

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 is available at this link.

I would also like to recognize and thank the Executive Board of the MAA Wisconsin Section for their dedication and service. It has been an honor to chair such a distinguished group of professional mathematicians.

Student Activities Report

By Balamurugan Pandiyan, UW-Whitewater

In the upcoming Spring meeting at Carthage College, there will be various activities for students such as "Face Off, The Math Game Show", quiz contests, and poster readings. As usual, Face Off will be hosted by **Steve Szydlik** from UW-Oshkosh. The quiz contests and poster readings will be available in the student retreat room. Students will receive time during the meeting to answer four challenging problems for the contest. Additionally, there will be three posters on display in the student retreat room describing the brief story of mathematicians: Srinivasa Ramanujan, Leonhard Euler and Edward Norton Lorenz.

To increase awareness among various students' activities, flyers will be distributed to the organizers and speakers. Please encourage your students to attend whether or not they are able to give talks. There will be three awards for the winners of the quiz contests!

Section NExT-Wisconsin

By Matthew Corne, UW-Stout, and Wesley Hough, UW-Whitewater

Section NExT-Wisconsin will have their spring panel discussion immediately following the second day of the 2019 MAA Wisconsin sectional meeting on April 13, 2019 at Carthage College. The spring panel will focus on nonstandard assessments. We are actively looking for panelists to serve in this capacity.

The Section NExT-Wisconsin Fall Conference was held on November 10-11th at the University of Wisconsin-Platteville Baraboo Sauk County. **Kevin Gannon** of Grand View University facilitated a fascinating interactive workshop on critical and inclusive pedagogy. Participants were introduced to the research supporting Inclusive Pedagogy, discussed how course design and classroom pedagogy fit into that paradigm, and learned some concrete strategies to inform inclusive teaching. In particular, we examined ways to improve intercultural teaching and discussed methods that can help to foster success for all of our students.

Also, we had six member presentations on Saturday afternoon spanning online course development (elementary statistics), SoTL (growth mindset in calculus and anonymous peer-review of assignments), and undergraduate research (voting pattern analysis via networks and digital image compression using artificial neural networks). The conference was well attended and well received by all involved.

On Sunday, we learned of (STE)M outreach activities used to aid in recruitment students, engaging current undergraduate students, and with recruitment and engagement of underrepresented populations in (STE)M.

Contests

By Laura Schmidt, UW-Stout

The AMC 8 competition was held on November 13, 2018. A total of 577 Wisconsin students participated in the competition, similar to the last few years' numbers of 549 and 552, and a significant drop from previous years of about 959 and 1,300. No students received a perfect score from Wisconsin. The average score for Wisconsin students was 9.08, compared with the national U.S. average score of 8.48. For the fourth year in a row 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 13, 2019. Data will be reported at the Spring Meeting.

The MAA-Wisconsin Section High School Contest Examination was given on Thursday, December 6th, 2018. There were 45 schools reporting scores this year for a total of 713 students. This is similar in the number of schools participating (50 and 44 schools in past two years), however less overall students (930 and 1,157 students in past two years). The cutoff for the top 1% was a score of 111 out of 120 this year. There were two perfect scores this year. The students with perfect scores were **A. Wang**, 11th grader, from Homestead High School; **A. Sahai**, 12th grader, from James Madison Memorial. Congratulations to the two of them!!

Welcome to our new hosts that began directing the contest for the fall of 2018: **Kevin Haertzen** and the University of Wisconsin – Platteville. Thank you for your willingness to host the contest.

Candidates for Chair-Elect

Kenneth Price is a Professor of Mathematics at the University of Wisconsin Oshkosh, where he has been teaching for twenty years. A longtime member of the MAA, Ken participated in the MAA's Project NExT Fellowship program from 2000-2001 and participated in five Project NExT-WI workshops, once as a presenter. Ken also served the Wisconsin section of the MAA on its executive committee for nine years as co-director of student activities with his departmental colleague Steve Szydlik.

Dr. Price's publications include results in noncommutative ring theory. His results inspired him to invent a paper and pencil puzzle called an Arrowgram. Arrowgrams have served as a mechanism for communicating aspects of abstract algebra research to non-mathematicians and undergraduates. The puzzles have also been the foundation of individual undergraduate research projects. Today his students create their own Arrowgrams as part of linear algebra and group theory classes. Price presented on Arrowgrams at the 2017 MAA meeting in Milwaukee, the 2013 MOVES Conference in New York City, and the 2012 Joint Math Meetings in Boston.

Ken also helped create "Face Off," a student-centered math game show played at conferences around Wisconsin, including the Wisconsin MAA meetings and the annual Pi Mu Epsilon undergraduate research conference at St. Norbert College. Face Off also was on the program of the 2017 IOWA MAA meeting at Loras College and was part of the social program at the 2012 MAA Mathfest in Madison.

Dr. Price currently serves as director of UW Oshkosh's general education program. In this role he supports instructors in developing high-impact practices for their classes. As a first-generation college graduate, he is particularly interested in providing access and tools for success to aspiring students. He resides in Neenah, Wisconsin with his wife.

Chunping Xie received his Ph.D. degree in Harmonic Analysis from the University of Alabama. He worked at Arkansas Tech University before he joined Milwaukee School of Engineering as Associate Professor in Mathematics Department in 2008. He has been a MAA member since 2001. He won the highest teaching award in MSOE – the Oscar Werwath Distinguished Teacher Award in 2017. He has 20 publications in peer reviewed national and international journals.

Spring Meeting

Program Highlights:

Erica Flapan, Editor in Chief of the Notices of the AMS
An Introduction to Spatial Graph Theory

Spatial graph theory developed in the early 1980's when topologists began using the tools of knot theory to study graphs embedded in 3-dimensional space. Later, this area came to be known as spatial graph theory to distinguish it from the study of abstract graphs. Much of the current work in spatial graph theory can trace its roots back either to the ground breaking results of John Conway and Cameron Gordon on intrinsic knotting and linking of graphs or to the topology of non-rigid molecules. This talk will present the history of spatial graph theory and survey some of the current trends in the field.

Michael Dorff, Brigham Young University, President of the MAA
How Mathematics is Making Hollywood Movies Better

What's your favorite movie? *Star Wars*? *Avatar*? *The Avengers*? *Frozen*? What do these and all the highest earning Hollywood movies since 2000 have in common? Mathematics! You probably didn't think about it while watching these movies, but math was used to help make them. In this presentation, we will discuss how math is being used to create better and more realistic movies. Along the way we will discuss some specific movies and the mathematics behind them. We will include examples from Disney's 2013 movie *Frozen* (how to use math to create realistic looking snow) to Pixar's 2004 movie *The Incredibles* (how to use math to make an animated character move faster). Come and join us and get a better appreciation of mathematics and movies.

Fredric Ancel, Emeritus Professor, University of Wisconsin – Milwaukee
Symmetry, Orbifolds, and the Alhambra Mosaics

The symmetry of a pattern is mathematically encoded by the pattern's symmetry group so that different types of symmetry correspond to non-isomorphic groups. Wallpaper patterns have only 17 non-isomorphic of symmetry groups (E. Fedorov, 1891). 3-dimensional crystals have 230 distinct symmetry groups, a fact of significance to the chemists who study them. A late 20th century proof that there are exactly 17 wallpaper groups due to W. Thurston and J. Conway and depending on the concept of orbifold will be discussed. Indeed, the orbifolds associated to wallpaper patterns correspond to integral solutions of the Generalized Riemann-Hurwitz Equation, of which there are only 17.

The 700-year-old mosaics in the Alhambra Palace in Granada, Spain are among the world's most beautiful wallpaper patterns. An international mathematical tempest-in-a-teapot arose on the eve of the 2006 International Congress of Mathematicians in Madrid concerning the issue of whether all 17 wallpaper groups appear among the Alhambra mosaics. We attempt to resolve this issue … inconclusively.

Meeting Website:

https://sites.google.com/carthage.edu/maawi2019/

Location

Carthage is in Kenosha, WI, 45 minutes south of Milwaukee and about an hour north of Chicago.

Address: 2001 Alford Park Dr., Kenosha, WI 53140

Conference events will be held in the David A. Straz Science Center (contributed talks) and the Todd Wehr Center (Friday evening activities and Saturday plenary). See here for a campus map. See here for more details on Carthage parking.

Lodging Information

Wyndham Garden Kenosha Harborside

- Located in downtown Kenosha, 2.4 miles from campus
- Group rate (MAA Wisconsin): $99 (single) or $109 (double)
- Call 262-658-3281 to make a reservation by March 12.

Country Inn and Suites Kenosha

- Located near Interstate 94 Hwy 50 exit, 10.5 miles southeast of campus
- Group rate (MAA Wisconsin): $104 (double)
- Call 262-857-3680 to make a reservation by March 12.

Doubletree Racine

- Located in downtown Racine, 8.7 miles north of campus
- Carthage College rate: $119 (standard) or $129 (marina view),
- Call 262-632-7777, if necessary mention rate code P03, client ID 3068737.

Economy options:

- Days Inn, Country Inn & Suites, and Quality Inn
- Located near Interstate 94 Hwy 20 exit, 14 miles northeast of campus

Call for Speakers

87th Annual Meeting of MAA Wisconsin Section, April 12-13, 2018
Carthage College

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, 2019, to MAAWIMeeting2019@msoe.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, 2019

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 a 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

87th Annual Meeting of MAA Wisconsin Section, April 12-13, 2019
Carthage College

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. If you wish to present a talk, please complete the form below and send by March 1, 2019, to MAAWIMeeting2019@msoe.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, 2019

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 a 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

87th Annual Meeting of MAA Wisconsin Section, April 12-13, 2019
Carthage College

Preregistration Deadline: **March 22, 2019**

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

NAME(S)_____

Address_____

Main contact e-mail:_____

Institution (for your name badge)_____

Registration				Banquet			
No.	Type	Price*	Total $	No.	Type	Price**	Total $
	MAA Member	$30			Regular	$20	
	Retired MAA Member	$20			Student	$5	
	K-12 Teacher	$20		Banquet Total:			
	Student	FREE		Please indicate any dietary restrictions (vegetarian, kosher, etc) and the number of each.			
	Other	$40					
Registration Total:							

*Registration after pre-registration deadline of March 221891. will be $40 for all except students, who will still be free.

**Regular banquet tickets will be $25 after the pre-registration deadline of March 22. 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

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 Fe Evangelista, UW-Whitewater, by Benjamin V.C. Collins

Where did you grow up?
Quezon City, Philippines.

When did you decide that you wanted to spend your life doing mathematics?
Not until after I earned my undergraduate degree. My earliest math memory was doing worksheets with exercises like ___ + 4 = 6, and realizing that you could find the answer by subtraction. That discovery made such an impression on me that I knew very early on that whatever I do will involve mathematics. But I chose to be a chemistry major in college, because I thought that in the Philippines, a chemistry degree would give me better career options. I eventually realized that I hated laboratory work, and I only liked the theoretical side of chemistry, which is primarily mathematics and physics. So even though I graduated with a chemistry major, I decided to go with what I love, and did my master's and PhD in mathematics.

When preparing for any class, I ask myself several questions: What do my students know? How can I connect what they know to the day's lesson? How can they demonstrate their understanding?

Where did you go to undergraduate school?
Ateneo University, a Jesuit university in the Philippines.

What about graduate school?
University of Minnesota for my master's degree and University of Illinois at Chicago for PhD.

What was the influence of your family on your education?
Both my parents were professionals – mom was a medical doctor, and dad was an engineer – so there was always an expectation that I would go to college. The choice of major and future career was left up to me.

Are there any teachers who had influenced you to become a mathematician?
I went to a high school for math and science – what you would perhaps call a magnet school in the U.S. – so I had excellent teachers in mathematics. In college, Dr. Jose Marasigan and Fr. Ben Nebres were dedicated educators who inspired me to consider a career in higher education. My thesis adviser, Dr. T.E.S. Raghavan, provided support and encouragement, and never doubted my abilities, even at times when I felt I was floundering in my dissertation.

How did you end up at UW-Whitewater?
My first tenure-track job was at the University of Wisconsin – Marathon in Wausau. I loved it there, but at that time, my husband was working in Madison and coming home only weekends. This was fine for a while, but became very difficult once our second child was born. Fortunately, a position opened up at UW-Whitewater, and I was hired in 1999.

What courses do you like to teach?
The Introduction to Analysis course is one of my favorites. The level of abstraction and rigor, together with writing proofs, is new for many students. I enjoy the challenge in developing material and activities that will motivate them to engage with the subject matter, and I'm learning all the time. Also, some of my best students are used to getting A's in math. This is the first course where they struggle and question their ability to be math majors. So, we have these interesting conversations about persistence and growth mindset, as well as what they would like to get out of their education. (Hint: it is not a perfect GPA.)

The Math for Elementary Teachers courses count as my favorite, because what I learned from those courses influenced how I now approach teaching any course. In the beginning, I was always astounded at what students do not know (for example, that ¾ can be thought of as 3 x ¼), but eventually, I took those instances as opportunities for me to become a better teacher. So now, when preparing for any class, I ask myself several questions: What do my students know? How can I connect what they know to the day's lesson? How can they demonstrate their understanding?

Over the years, did you find that teaching of mathematics changed?
I think that there has been a slight shift from a teacher-centered format to one that is more student-centered. I think more and more instructors are incorporating class activities together with a lecture, and experimenting with different assessment methods. Technology has impacted course delivery, with mathematics courses being offered in different formats (online or hybrid, flipped classroom), and with tools such as adaptive learning and online homework systems. Technology has also affected what mathematics is taught with some traditional topics de-emphasized because of the availability of calculators and graphical devices. There is definitely a move away from the College algebra pathway, and increased enrollment in courses such as Quantitative Reasoning and Statistics for general education and pre-professional programs.

Learn to say "no" to demands on your time, but also be aware that sometimes saying "yes," might open up a whole new direction for you.

How do you see the teaching of mathematics changing in the future?
I have some observations, but no answers. As part of the Math Initiative on our campus, we have been discussing what quantitative skills students need for life and careers. Responses from other departments point to skills that are taught in middle school, such as percents and proportional reasoning, topics that we do not think is college level mathematics. Already, the statistics pathways option to College Algebra reflects what employers and professional programs want, and mathematicians are generally not equipped to teach statistics well. We claim to develop our students' critical thinking and problem-solving skills but among non-mathematicians, even in STEM departments, there is some skepticism whether we are doing so. Some people have proposed that instead of mathematics, courses in data science and coding can provide authentic experiences in problem-solving, critical thinking and communication of quantitative results. I think these trends will impact mathematics education, but I do not know exactly how teaching will evolve.

How were you involved with the MAA over the years?
I was in the first group of Project NExT fellows and was a Project NExT mentor. I try to attend the annual MAA Wisconsin section meeting, and have given talks.

What do you think is the best part of being a mathematician?
To be able to live in the mathematical world - to be able to speak the language, and engage with beautiful, elegant, and useful ideas.

What is the worst part of teaching mathematics?
Assessment and grading. I am not satisfied with the way I assess my students and assign grades. If I want my students to demonstrate their ability to transfer their knowledge to new situations, then they need time to think, make mistakes, verify their solutions, etc., which cannot be done in a 50-minute or 75-minute class period. Also, our workload limits us to types of assessments which can be easily graded. I wonder whether I am encouraging rote memorization, and increasing student anxiety because of the time constraint. I've given some take home exams in upper level classes, but the reality is that sharing solutions (which is not allowed) is a problem.

How do you describe what you do when you are talking to somebody outside of mathematics?
I tell them about ideas that turned me on to mathematics such as infinite series and how the sum of an infinite number of numbers is not necessarily infinite, and then how it can be used to solve problems.

What of your work do you like the best? What are you most proud of?
Working with and mentoring students. As math department chair, one of my priorities was to create an environment so that our math majors feel that they are connected to the department. I would frequently chat with students in the hallways and in the tutoring center. Our dedicated faculty and staff worked tirelessly with students, mentoring students in projects and competitions, providing academic support, and advising the Student Math Association. We saw an increase in

student participation, such as attending and presenting at the MAA-WI section meetings.

I am also proud of the way our department seriously thought of our contribution to the general education program and what we could do to promote student success.

What is your advice to college students and new teachers? To new faculty -- I will pass on what Joe Gallian (UM – Duluth) said as he welcomed the first group of Project NExT fellows. He told us to "find your niche." Find what you are interested in and think of how you will leverage that to contribute to your department. And I will add that you have to strategize on where to put your efforts and when, because you have to fulfill requirements in teaching, research, and service. Learn to say "no" to demands on your time, but also be aware that sometimes saying "yes," might open up a whole new direction for you.

To college students -- Do not fear failure. If you don't stretch yourself, and go out of your comfort zone, you will never know your strengths and your limitations.

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

By Sr. Barbara Reyolds

The Mathematics and Computer Science Department is currently engaged in a search for a full-time faculty person in Computer Science, beginning in August 2019. The position involves teaching computer science courses, engaging students, advising majors and minors, engaging in scholarship, and serving on university committees. The successful candidate will be will be dynamic, engaging, and demonstrate a commitment to teaching excellence in an undergraduate, liberal arts program. This position involves teaching a broad range of both lower and upper division courses in computer science, including introductory courses in web design and digital media. More information is available at www.stritch.edu/Employment/ .

Suzanne Caulfield continues to serve as Chair of Mathematics and Computer Science.

Sr. Barbara Reynolds has returned from her recent sabbatical. This semester she is teaching Applied Statistics, and the capstone Seminar for CS majors.

Joseph Elliot continues to teach Computer Science courses for the Department.

Mika Moteki continues to teach a broad range of 100-level courses, and coordinates the developmental level courses.

Carl Mueller serves as Associate Dean of the College of Arts and Sciences. In this capacity he is able to teach about one Mathematics course a year.

Carroll University

By Kristen A. Lampe

Thomas E. St. George presented a paper that was coauthored with **Qingkai Kong** of Northern Illinois University at the Joint Mathematics Meetings in Baltimore, MD, during the AMS Special Session on Advances and Applications in Integral and Differential Equations. His talk was entitled, "Linear Sturm-Liouville Problems with Riemann-Stieltjes Integral Boundary Conditions."

Student **Alec Wendland** presented a poster during the Student Poster Session at the Joint Mathematics Meetings in Baltimore, MD, entitled, "Numerical Solutions to Nonlinear Boundary Value Problems Using Bernstein Polynomial Reproducing Kernel Method." His research was done during Carroll University's PioScholar's research program in the Summer of 2018 with mentor **Thomas E. St. George**.

Milwaukee School of Engineering

By Chunping Xie

Yvonne Yaz, Professor and Program Director of Actuarial Science Program, and three Junior Actuarial Science students: **Amanda Mickelson**, **Alec McClintoc** and **Matthew McMaster,** will attend Pinnacle U event

in Bloomington, Illinois on March, 2019. Amanda, Alec and Matt will present their research project titled: "Gambling and Sports: A Fresh Take on Insurance".

Pinnacle University is a program where actuarial analysts employed by Pinnacle Actuarial Resources, Inc. pair up with students from universities to make presentations on topics of actuarial interest to a room full of insurance professionals. The presentations are then followed up with a discussion by a panel of seasoned actuaries with an aim towards exploring the topics a bit more thorough and providing constructive feedback.

UW-Eau Claire

By aBa Mbirika

In January 2019, we sent 13 research students (11 from UWEC and 2 from UW-Milwaukee who did summer research here at UWEC) and 8 of our faculty to present and attend the Joint Mathematics Meeting in Baltimore, Maryland. Two student research groups had posters that received Outstanding Poster recognition: **Dandrielle Lewis'** students **Maggie Reardon** and **Bridget Lee** and **Michael Penkava's** students **Ellie Lochner** and **Jack Lazowski**. Student talks were as follows: **Haotian Wu** on "The Moduli Space of Non-nilpotent Complex 5-dimensional Associative Algebras", **Tyler Gonzales** and **Jory Wagner** on "Z2-graded Complex Associative Algebras: Background, Deformation, and Maple v.s. SageMath", and **Jonah Amundsen** on "The Indeterminacy of the Triple Linking Number." Faculty talks were as follows: **Dandrielle Lewis** on "The Development and Implementation of a Mathematics Research Methods Course", **Carolyn Otto** on "Genus One Knots and their Derivatives", **Shanise Walker** on "The Size of a Family Forbidding the Y_{k,2} Poset and its Dual", and **Chris Ahrendt** on "Periodic Solutions and Bifurcations of the Bernoulli Dynamic Equation on a Certain Class of Time Scales".

Melissa L. Troudt was hired to start in Fall 2019 as a Math Education Assistant Professor. She completed her PhD in Educational Mathematics in 2015 from University of Northern Colorado and then did a 3-year postdoctoral position there. She currently holds an Assistant Research Professor position at that same institution. We look forward to Melissa joining us in her tenure-track position here at UWEC starting this Fall 2019.

Danielle Amethyst Brake attended Imaginary Conference 2018 in December, in Montevideo, Uruguay. There, she gave an art show of algebraic surfaces, printed by her and her students. She also gave an accompanying talk titled "Printing the entire Herwig Hauser Gallery of Algebraic Surfaces into 3d, with singularities." The local math faculty also invited her to give a seminar talk after the conference; she did, and it was titled "Theory and Applications of Numerical Algebraic Geometry."

Christopher Davis and **Carolyn Otto** welcomed a new cat into their home of multiple fur-children (5 to be precise). The new cat is named Nutmeg and is receiving a healthy portion of petting and cat food.

Christopher Davis and his two research students **Jonah Amundsen** and **Eric Anderson** posted their research paper on arXiv in January 2019. The paper is titled "On the Indeterminacy of Milnor's Triple Linking Number" and is available here.

aBa Mbirika and his research student **Emily Gullerud** (UWEC 2018 alumnae and current graduate student at University of Minnesota) posted their research paper on arXiv in February 2019. The paper is titled "An Euler Phi Function for the Eisenstein Integers and Some Applications" and is available here.

The UWEC High School Math Meet occurred on Saturday February 16, 2019. Exactly 52 teams competed from 16 different schools (one from as far as South Dakota). The theme of the event was "Avoid Negativity and Stay Positive! f(x)=|x|."

UW-Milwaukee

By Jay H. Beder

James A. York, Distinguished University Research Professor of Mathematics and Physics at the University of Maryland, College Park, will deliver the 2019 Marden Lecture in Mathematics on Tuesday, April 16. He and co-author **T. Y. Li** introduced the term chaos in

dynamical systems in 1975. Further information is available here.

Chao Zhu has been promoted to the rank of full professor. His research specialty is stochastic analysis and control.

Comprehensive reform of the developmental math program at UW-Milwaukee was undertaken at scale in Fall 2014. The legacy curriculum was replaced by a differentiated pathways approach, consisting of a math literacy and an algebra literacy pathway. Each pathway consisted of a two-semester sequence, the first semester being developmental and the second bearing GER credit. Differentiated pathways beginning with the first college course helped dramatically increase the percent of students who begin at the remedial level and then achieve success at the credit-bearing level. In 2018 we began offering each developmental course as a corequisite with the corresponding college-level course.

Of 149 in the math literacy pathway, over 82% earned a C or better in both courses in one semester (compared to roughly 60% who were successful in the two-semester sequence). In fact, the pass rates for the individual courses were also higher than they had ever been.

In the algebra literacy pathway, 80% of the over 100 students earned a C or better in both courses. This is again a marked improvement over the success rates when students took the courses in successive semesters, which was also close to 60%.

Fall 2016 freshmen admits took 3 terms (through the end of Fall 2017) to achieve 80% success rate in a credit-bearing math course. With the new system we have achieved that same level of success in one semester. We anticipate this to have a large positive impact on student retention and credit accumulation.

UW-Oshkosh

By John Beam

Jen Szydlik gave a talk in November at TEDx Oshkosh titled The Cold Hard Truth about School Math. If you want the cold hard truth, you can watch via this link. Feel free to pass it along.

Joan Hart gave an invited talk in a special session at the January 2019 AMS/MAA Joint Meetings in Baltimore. For more information, see the website.

Under the direction of **Eric Kuennen**, UWO will be hosting its third annual Mathematical Problem Solving Contest for students in grades 7-10. The contest, to be held on April 23, is expected to attract over 1,000 students from around the state.

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