



Representative's Report

By Thomas Drucker, UW-Whitewater



The Congress of the MAA is primarily an advisory body, unlike the Board of Governors that preceded it. It would normally have met at MathFest, but the cancellation of the meeting turned the Congress sessions into Zoom occasions. They were spread over three days at the start of August.

One benefit was a reduction in travel costs for the sections that were represented.

Since there were plenty of demonstrations going on in the streets of the cities while the sessions went on, it is not surprising that one of the main themes was promoting yet further the efforts at diversity the association had already endorsed. Ideas were advanced for getting a wider range of officers and speakers for section meetings, including encouragement of current officers to pass the baton and solicitation of suggestions for speakers from a wide range of sources. Some of the suggestions went even further, but they did not come with the force of requirements.

The association's administration spent a good deal of time promoting the Impact Report that every member should have received electronically. It was designed to demonstrate the benefits that members are getting from their dues, which are not likely to go down with the current national economic woes. In particular, it was claimed that the MAA has an influence on national policy and priorities out of proportion to its size (about 28,000 members), thanks to making coalitions with other organizations.

The particular tool receiving the most attention was MAA Connect, the electronic list aimed to promote communication among members. There are various subsets of the overall list, and there is use being made by the SIGMAA's for discussion and planning. So far, the

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sections have not been finding quite as much usefulness in the tool, but its relative novelty can account for some of that.

We ended the meeting with a report from the MAA Treasurer, who brought good news about the overall financial health of the association. Fifteen years ago, the losses being sustained by the association were in the millions of dollars, while recently they have been cut to the tens of thousands instead. This was accomplished by various cuts in expenses, even if some of us still miss the paper periodicals. Getting new members is helpful, but eliciting donations is even more beneficial.

It was suggested that members might be able to help other members by "micro-volunteering," offering to do small tasks in areas like proofreading. The Association did indicate that they could help sections by handling the processing of the registration fees for section meetings. While there was a certain amount of

discussion and information over the three days, there was also a general sense that a return to face-to-face Congress meetings would be both enjoyable and beneficial.

Chair's Report

By Kseniya Fuhrman, Milwaukee School of Engineering



Greetings!

I hope all of you are well and that you are managing the increased challenges that have an immediate effect on our work due to the pandemic. I am sincerely disappointed that we were not

able to hold our Spring 2020 Section Meeting, as it is an event that I look forward to every year.

You may be surprised to see the make-up of the executive committee this year. At the Spring Business Meeting, the section members voted to extend the terms of office of Chair-Elect **Ken Price** (UW-Oshkosh), Immediate Past Chair **Irfan Ul-Haq** (UW-Platteville) and me for an additional year.

Since the primary role of the Chair-Elect is to serve as a program chair of the Spring Meeting, **Ken Price** was not able to finish the laborious work that he has started last year. The section wanted to give Ken the opportunity to see his work come to completion. I am happy to serve the section as the Chair for one more year and support it during this challenging time.

Thanks to **Clare Hemenway** for having been the section representative previously. The current section officers will continue to pass information along from the MAA punctually.

In unsettling times like this, I am extremely grateful to be able to celebrate the achievements of math educators who excel in their work and show an exemplary commitment to their students. I congratulate **Chris Frayer** of UW – Platteville on receiving the Distinguished Teaching Award from the section last spring! I encourage all section members to consider submitting a nomination for the MAA Wisconsin Section Teaching Award. We want to continue honoring and recognizing the many outstanding educators that are part of our section.

As there are many uncertainties around the future of the pandemic, the executive committee has voted to run the Spring 2021 Section Meeting virtually. The chair-elect, **Ken Price**, is leading the effort of planning the meeting in this uncharted territory. The meeting is in great hands! The details of how the meeting will run and the dates of the meeting are still being determined. We will communicate the details as we have more information.

Be safe, be healthy!

Call for Nominations

Nominations for the **2021 Wisconsin Section Distinguished Teaching Award** are now being accepted. The deadline for consideration for this year's award is January 15, 2021. The nomination form and instructions are available on the MAA-Wisconsin web site at <http://sections.maa.org/wisconsin/award.shtml>

Contests

By Laura Schmidt, UW-Stout



The AMC 8 competition was held on November 12, 2019. A total of 528 Wisconsin students participated in the competition, similar to the last few years' numbers of 577, 549 and 552, and a significant drop from previous years of about 959 and 1,300. Two students received a

perfect score from Wisconsin. Congratulations to **J. Li**, a 7th grader from De Pere Middle School, and **S. Ross**, an 8th grader from Eagle School of Madison. The average score for Wisconsin students was 10.3, compared with the national U.S. average score of 9.4. For the fifth year in a row Wisconsin has outperformed the US average! This is a great trend for our Wisconsin students. The next AMC 8 competition is on November 10-16th, 2020. There is a range of dates to allow for schools to test online with proctoring.

The AMC 10 and 12 contests were held on January 30 and February 5, 2020. A total of 633 Wisconsin students took the AMC 10A and 12A and 269 took the 10B and 12B. As these numbers were reported differently from past years, we don't have meaningful comparisons.

There were no perfect scores from Wisconsin. The average score for Wisconsin students on the 10A/12A exam was 59.7 (compared to 63.1 for the US overall); the average Wisconsin score on the 10B/12B exam was 61.1 (compared to 60.9).

The next AMC 10/12 competitions are February 4th and February 10th, 2021. An online option is also available for the AMC 10/12 competitions.

The AIME II, USAMO and USAJMO were delayed in the spring due to the pandemic but did occur. Thirteen students participated in the AOIME from 13 different high schools. One student from West High School participated in the USOMO and one student from

Brookfield Central High School participated in the USOJMO. Congratulations to all of them for qualifying!

MAA-Wisconsin Section High School Contest Examination

The Section contest examination was given on Thursday, December 5th, 2019. There were 37 schools reporting scores this year for a total of 829 students. This is lower than the number of schools participating (45, 50 and 44 schools in past three years), however more overall students than last years' 713, but less overall students from earlier years (930 and 1,157 students). The cutoff for the top 1% was a score of 120 out of 120 this year. There were 18 perfect scores this year. The students with perfect scores were **T. Fetting** (Appleton East HS), **Z. Joseph** and **T. Reimer** (Appleton North HS), **J. Hellweg** (Appleton West HS), **S. Polentini**, **S. Harkavy**, and **D. Zhou** (Arrowhead Union HS), **A. Liu** and **D. Perelman** (Brookfield Academy), **J. Rusch**, **A. Wang**, **E. Wang**, and **M. Pokorny** (Homestead HS), **O. Van Note** (James Madison Memorial HS), **J. Wood** and **T. Rose** (Marquette University HS), **R. Yan** (New Berlin Eisenhower HS), and **H. Coyle** (Whitefish Bay HS). Congratulations to all of them!

The contest winners in combined state contest and AMC scores were **John Wood**, a 10th grader, from Marquette University High School, and **David Zhou**, a 10th grader from Arrowhead Union High School. Congratulations to John and David!

The fall 2020 contest is being offered in the traditional format and also with a virtual option so that schools who are not meeting in person can still participate in this year's contest which will take place the first week of December 2020.

Thank you to our hosts that are directing the contest for the third year: **Kevin Haertzen** and the University of Wisconsin – Platteville.

Section NExT-Wisconsin

By Wesley Hough, UW-Whitewater



The Spring 2020 MAA Wisconsin Sectional meeting was cancelled due to the COVID-19 pandemic, so we did not have a Section NExT – Wisconsin annual spring workshop in 2020.

2020 Fall Conference: The Section NExT – Wisconsin annual fall conference will be held virtually through Zoom on Saturday, November 7, 2020. We are pleased to have **Jessica O'Shaughnessy** from Shenandoah University as our keynote speaker. Professor O'Shaughnessy will discuss mastery-based grading in the undergraduate mathematics classroom, and her abstract is below.

Do you ever feel like students argue for points on a test, even though they don't fully understand the material? Or like your C students don't understand enough to be successful in a subsequent course? Mastery grading is a form of assessment that

attempts to address some of these issues. Mastery grading is a tool that gives students the opportunity to learn material deeply. There are many flavors of mastery grading, and all forms require students to complete concepts to a very high standard. On the flip side, students have multiple attempts throughout a semester to master any particular concept. This encourages students to revisit material they do not understand and rewards hard work and dedication from students. In this presentation, we will look at implementing mastery grading in mathematics courses followed by a discussion on how to implement mastery grading in your own courses.

As usual, we will offer 25-minute presentation slots for Section NExT members as well. Though meeting attendance was lower than expected in Fall 2019, we hope the virtual format will entice more people to attend.

Frayer Receives Distinguished Teaching Award

By Benjamin V.C. Collins, UW-Platteville

Professor of Mathematics **Chris Frayer** of UW-Platteville received the 2020 Distinguished Teaching Award from the Wisconsin Section of the Mathematical Association of America.

The Wisconsin Section Distinguished Teaching Award was established in 1991 to emphasize the high importance that colleges and universities in Wisconsin place on teaching mathematics. Winning nominees must display extraordinary success in teaching mathematics. At most one award is given per year. Frayer is the 24th recipient in the 29-year history of the award, and the third from UW-Platteville.

Frayer has been a member of the Mathematics Department since 2008. In addition to his teaching duties, he has been an active mentor for undergraduate research projects, which have led to presentations or

publications. He has created hands-on activities for high-school students to explore higher-level mathematics, such as using Tinker Toys to study knot theory. He has been a leader in establishing New Instructor Learning Communities at UW-Platteville, first for the College of Engineering, Mathematics, and Science, and then for the university as a whole.

According to **Barb Barnet**, the chair of UW-Platteville's Mathematics Department, "Dr. Frayer is an excellent faculty member, who is an exceptional and dedicated teacher." Professor **Timothy Deis** says of Frayer, "His students understand that they will be challenged in Dr. Frayer's courses, but they also know that he will support and assist them through their assigned work." One anonymous student sums up the opinions of many by simply stating, "You can tell he loves to teach."

"It is with great pleasure that I congratulate Dr. Chris Frayer on his selection as the MAA – Wisconsin Section's Distinguished Teaching Award winner for 2020," says **Molly Gribb**, Dean of the College of Engineering, Mathematics, and Science. "UW-Platteville is very fortunate to have faculty like Dr. Frayer so committed to teaching excellence."

Upon receipt of additional supporting material, Frayer will become the Wisconsin Section nominee for the MAA's Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Message from Chair-Elect Ken Price

I was unable to complete my primary responsibility as Chair-Elect when the spring 2020 section meeting was cancelled due to the Covid-19 pandemic. At the April 25 Business meeting, which was held online, a proposal was approved to allow the Chair-Elect, Chair, and Immediate Past Chair retain their offices for one more year. My thanks go out to the section for allowing me another term in this office.

As returning Chair-Elect, I am grateful for the opportunity to head the Program Committee in charge of developing an online spring 2021 Wisconsin MAA meeting. I ask all section members to please wait for this committee to determine the conference dates, registration format, fee information, and the lineup of featured speakers. All these details will be provided in the Spring Newsletter.

Holding an entirely online section meeting is unprecedented in history of Wisconsin MAA but I am confident it will be a fun and worthwhile event for you and your students. We will issue a call for submissions when we have a better idea of the dates and the format of the meeting.

Volunteers Needed

The Section continually seeks nominations for **Chair-Elect**. This is a three-year, elected 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 Chair becomes Immediate Past Chair, continues to sit on the Executive Committee, and oversees the selection of the Distinguished Teaching award recipient. Self-nominations are encouraged.

In addition, the Section is currently seeking candidates to fill the following positions:

- **Secretary/Treasurer.** The Secretary/Treasurer maintains correspondence between the Wisconsin Section and MAA headquarters including submitting reports to the MAA, keeps records of all income and expenses of the section, and maintains the section bank account. This is a three-year, elected position.
- **Student Activities Coordinator.** The Student Activities Coordinator promotes the involvement of students in activities of the Section and serves as a source of information for various student programs and other activities. This is a three-year, appointed position.
- **Mathematics Contest Coordinator.** The Mathematics Contest Coordinator oversees the selection of a director for the Wisconsin Section Contest, and reports the results of the Wisconsin Section Contest and the American Mathematics Competitions contests at the annual meeting. This is a three-year, appointed position.

For more information on the duties of the MAA-Wisconsin Executive Committee, see the Executive Committee Handbook at <http://sections.maa.org/wisconsin/MAA-WIExecCommitteeHandbook.pdf>.

Send nominations to Section Chair **Kseniya Fuhrman** at (fuhrman@msoe.edu). Self-nominations are encouraged. Section officers must be members of the MAA.

Know Your Wisconsin Mathematician

Interview with Clare Hemenway, UW-Stevens Point at Wausau, by Benjamin V.C. Collins, Epic

Where did you grow up and where did you go to undergraduate school?

I grew up in Worcester, Massachusetts, in a neighborhood which was within walking distance of four well-respected colleges and universities. I graduated from Clark University, where I was one of very few commuting students. The campus was located just two blocks from my home, so I guess you could say I took the concept of neighborhood education to the extreme.

What about graduate school?

I ventured further for graduate school—I attended the University of Virginia in Charlottesville, Virginia where I studied Representation Theory of Algebraic Groups from a combinatorics perspective.

When did you decide that mathematics was what you wanted to do with your life?

I was top tracked in high school, but I entered with a deficit in formal algebra education. I remember taking a standardized test my first day in my high school math class and scoring the lowest out of the 45 students in my classroom. (I remember saying to myself how do I identify a parabola if I do not know what one is). My teacher started the class about halfway through the book. I had to pick up the missed material on my own. While this could have been devastating, I devoured the material—I particularly remember struggling with concepts such as abstract binary options (my K-12 math education was completely “new math” and it was taught properly) and I remember my “eureka” moment when I finally “got it.” And I did it on my own! The other “aha” moments that I readily recall from high school were when I was able to get to the understanding of ideas again through concentrated thought on my own. (I guess I could be a poster person for the benefits of productive struggle). I just loved the beautiful logic and reasoning behind mathematical concepts, and I loved abstraction. (Just a side note: At the end of my first year in high school, my class retook that same test and I scored the highest in the class).

She told me that every time I construct a proof on my own, even of well-known facts, that this was indeed creativity and original work.

I started college with an intended major in biology. But I disliked laboratory work and still loved theory, so I studied Mathematics and Computer Science (back in the day of huge mainframes and punched cards). I had to make a choice between these two fields for further study, and I chose mathematics because I continued to love the beauty, logic, and theory.

What was the influence of your family on your education?

Both my parents graduated from College in 1935. My mom was a great speaker, writer, and grammarian and my dad was an engineer who loved mathematics. My parents encouraged all in my family to pursue a college education as a springboard to further our knowledge of the world

As a high school student, I would sometimes ask my dad for help with my math homework. I was so impressed that he would take the time to read my book to understand my question and the math behind it. But I was even more impressed with his explanations—he would take straightforward algebra problems and

somehow come up with solutions from a geometric perspective. I learned there were different, equally valid methods to solve problems. As a kid, I took this for granted - I assumed everyone had a parent who found it exciting to work on math problems.

Are there any teachers who had influenced you to become a mathematician?

The first was my high school teacher **Sister Donald Marie** who taught me two years of high school algebra and Calculus I and II. At the time she was taking graduate courses in Mathematics and would inform us about topics she was studying. As a senior, she suggested that I should consider a mathematics major in college. I told her that I did not think I was “good enough.” I mentioned that I could produce proofs on my own, but that these proofs were mostly routine definition- checking proofs and were the same proofs you could find in books. I told her that I did not think I could construct original and creative proofs. Her response had a great impact on me. She told me that every time I construct a proof on my own, even of well-

known facts, that this was indeed creativity and original work. She reinforced that once I constructed a proof, then I owned it and that was my accomplishment.

Like many of our students, I wage a constant struggle with confidence in my abilities. I never would have considered pursuing graduate studies in mathematics if one of my college professors did not strongly encourage it. He was **Dr. Ed Cline** and I took several courses from him, including a graduate course in Abstract Algebra. He helped me with the application process by suggesting several graduate programs. I also remembered that he always gave us two grades on our assignments—one was for the solution and the other was for the style and exposition of our solution. I appreciated this as it bolstered my passion for elegant mathematical expression.

How did you end up at UW Stevens Point at Wausau?

My first job out of graduate school was a temporary position at Carleton College in Minnesota. After two years there, I taught at Bates college in Maine. Unfortunately, I did not complete my dissertation, and so I sought an academic position for which that was not required. This brought me to UW Marathon County in the two-year transfer institutions known as the UW Colleges. I truly enjoy being here as I think I have great impact on my students. A few years ago, the UW Colleges were eliminated, and my campus was integrated into the UW Stevens Point campus. While wary at first, my fears soon disappeared as the UWSP campus and math department has been very welcoming and supportive and the change has been very good for our small campus and for me personally.

What have your students meant to you as a teacher and mathematician?

When a student asks a question (often in the form of “can you do a certain exercise”), I usually probe the student before answering—what confused or scared you about this problem or how is this problem different from the others. Then we work together to try and come to an understanding of the solution. Teaching and learning are two-way streets: I learn from my students and my students learn from me. I often get to a deeper learning of

concepts from my student’s questions and this makes me both a better teacher and mathematician.

What courses do you like to teach?

I currently enjoy teaching Statistics, Calculus I and II, and Linear Algebra. When I was at Bates College, I loved teaching Introduction to Abstraction, Complex Variables, and Abstract Algebra.

How have you found that teaching of mathematics has changed over the years?

Okay, this is a loaded question during these pandemic times. And I could write much about the technology learning curve I am currently scaling. I am not going to talk about specific changes during this past year, but I do wonder what the permanent changes may be. Will there be more of a shift to online and hybrid learning? Will most

courses be offered so that students can take them in different modalities? Time will tell.

But while technology had been integrated into teaching before the pandemic, the goals of teaching mathematics concepts has not changed. In recent years, there has

been a shift to student-centered active learning with group work. And actually, technology tools can provide more support for group work than what can be accomplished in a face to face classroom (particularly if socially distanced).

But whatever the modality, methods, or tools, the objective of teaching mathematics is to foster a deep understanding of mathematics in our students.

How have you been involved with the MAA?

I have been involved with the MAA since my arrival in Wisconsin approximately 30 years ago. I have attended most of the MAA Wisconsin Spring Meetings and I have presented at some. I was the local host for the Spring Meeting when it was at UW Marathon County. I served a three-year term on the MAA Wisconsin Executive Board as Chair Elect-Chair-Past Chair and just recently finished another three-year stint on the MAA Wisconsin Executive Board as the first MAA Wisconsin Section Representative to the national MAA Congress. I was elected to serve on the Elections Committee of the MAA Congress and I am

Occasionally experiment with something out of your comfort level-you may discover a new passion or talent.

currently a member of the national MAA Committee for the Undergraduate Teaching of Mathematics.

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

Sharing mathematical and pedagogical ideas with my colleagues.

What is the worst part of teaching mathematics?

Many of our students lead complicated lives and for me the worst part of teaching is many times failing to successfully motivate students to keep up with their coursework amidst their challenges.

How do you describe what you do when you are talking to somebody outside of mathematics?

I tell them that mathematics is more than numbers and facts; it is ideas and abstraction.

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

The best part of my job is teaching, and it is what I am most proud of.

What is your advice to college students and new teachers?

To College Students: Try new things; occasionally experiment with something out of your comfort level-you may discover a new passion or talent; think outside the box; do not be afraid to risk failure even in giving it your all.

To New Teachers: Try new things, occasionally experiment with something out of your comfort level-you may discover a new passion or talent; think outside the box; do not be afraid to risk failure even in giving it your all.

In Memoriam, Ranjan Roy,

By Scott Bierman, Beloit College President

Beloit College and the mathematical community lost one of its brilliant teachers and scholars on Aug. 12 when **Ranjan Roy** died suddenly of a heart attack in Beloit.

Beloved by generations of students who said he was the best math teacher they ever had, he brought his passion and knowledge to his teaching and sparked an interest in math among students who had little confidence in the subject. He was equally a favorite among math majors and students who took his advanced mathematics courses. Students often said they would take any course at Beloit, as long as he was teaching it.

Ranjan earned his reputation as an amazing teacher by quickly learning his students' names, then tuning into them individually to understand what they needed, and often staying in touch with them long after they graduated. His kindness and pithy humor in the classroom and beyond were legendary. Many of his former students attribute his teaching to nothing less than changing the way they think about the world. One described Ranjan as "funny and brilliant ... a great combination ... the kind of teacher who changes your life."

Ranjan started his Beloit career in 1982. At the time of his death, he was the Ralph C. Huffer Professor of Mathematics and Astronomy and current chair of the Math and Computer Science Department. His family said he was looking forward to teaching this fall.

Ranjan's life was devoted to his family and to the subject of mathematics, especially classical mathematics. He found tremendous joy working on proofs and problems with his students, and he enjoyed helping former students go into graduate studies or careers and keeping up with them over the years.

He was a prolific researcher, author, and co-author of papers and mathematics textbooks. His interests in the history of mathematics and in the lives and work of mathematicians brought a deep historical perspective to his teaching and research. Among his books is the highly praised *Special Functions*, co-authored with **Richard Askey** and **George Andrews** and published by Cambridge University in English, with Chinese and Russian editions.

In 2003, he was one of three professors to receive the Haimo Award, the MAA's highest national teaching honor, for those who have been "extraordinarily successful, both in their home institutions and also in a wider setting." The MAA award citation read in part: "Professor Roy teaches mathematics as a body of ideas of great depth and beauty, and as a way of thinking which can improve the lives of all who study it ..." He received Teacher of the Year honors from Beloit College in 1986 and 2000.

Ranjan is survived by Gretchen Roy, his wife of 49 years, his son Kalyan'05, daughter Maitreyi, six grandchildren, and two brothers. Our thoughts are with his family, his colleagues, and the generations of Beloit students whose lives he touched.

Campus News

Carroll University

By Kristen Lampe

Thomas St. George earned tenure and was promoted to Associate Professor of Mathematics.

Milwaukee School of Engineering

By Chunping Xie

Three new faculty members joined the Mathematics Department in Fall 2020.

Jonathan Cox has joined the department as an Associate Professor. He received his Ph.D. in Mathematics from Oklahoma State University. His interests include active learning (especially inquiry-based learning), the history of mathematics, algebraic geometry, theology, and running. Dr. Cox grew up in Wisconsin and attended his first Wisconsin Section meetings while a student at Wisconsin Lutheran College. After stints in Oklahoma, Illinois, and Louisiana, he spent the last 14 years at the State University of New York at Fredonia. While there, he was active in the Seaway Section of the MAA, serving in various positions including Program Chair and Section Chair. He will bring extensive experience and will teach a broad spectrum of mathematics courses.

Steven (Nate) N. Harding has joined the department as an instructor. He received his Ph.D. in Mathematics from Iowa State University in May, 2020 and his professional interests are in Harmonic Analysis, Fourier analysis and transforms, pure and applied Functional Analysis, frame theory, operator theory, spectral theory Data Science, topological data analysis, and algorithms.

Nicholas Mayers has joined the department as an instructor. He received his Ph.D. in Mathematics from Lehigh University in May, 2020 and his research interests lie in algebraic combinatorics.

UW-Eau Claire

By aBa Mbirika

We have seven new faculty starting this Fall 2020.

Allison Beemer has joined the mathematics department as an assistant professor. Her research is in the areas of coding and information theory, and she was most recently a postdoc at the New Jersey Institute of Technology.

Adam Buck earned his doctorate from UW-Milwaukee this past spring. He is happy to join the mathematics department as a visiting assistant professor.

Brian Dandurand is joining the computer science department as a visiting assistant professor with primary duties of teaching computer science as well as mathematics courses. Dandurand was a postdoctoral researcher in mathematical optimization for the last six years (RMIT University in Melbourne Australia from 2014-16 and Argonne National Laboratory from 2017-20). He is looking forward to the change of focus to teaching, and also to stargazing in the Eau Claire area after having been in urban settings for the last several years. His other hobbies include chess, jogging/hiking and study of the Latin language.

Teresa Gonske is joining the mathematics department as a visiting assistant professor. She is excited to begin teaching in her home state after being at the University

of Northwestern-St. Paul and the University of Northern Colorado.

Erich Jauch joins the mathematics faculty as a visiting assistant professor. He completed his doctorate at Iowa State University this last May and is excited to work with the faculty and students of UW-Eau Claire.

Katrina Rothrock has joined the mathematics department as an assistant professor and will be coordinating the developmental mathematics program. She was previously at the University of Kansas in the Center for STEM Learning and the UKanTeach program.

Daniel Yee earned his doctorate from UW-Milwaukee in 2017, worked at Bradley University for the past three years and is now excited to join the mathematics department as a visiting assistant professor and teach at UW-Eau Claire.

aBa Mbirika and former UWEC math majors **Austin Goodrich** and **Jasmine Nielsen** submitted their paper to a journal to be considered for publication. The paper is titled "New methods to find patches of invisible lattice points." ArXiv version available [here](#).

Tim Pervenecki and his collaborators **Adam Jobson** and **André Kézdy** (University of Louisville), and **Jenő Lehel** and **Géza Tóth** (Alfréd Rényi Mathematical Institute in Hungary) had an article published in Discrete Mathematics titled "Petruska's question on planar convex sets". Available [here](#).

Chris Ahrendt and former UWEC math majors **Claudia De Valk**, **Matthew Lehnen**, and **Caleb Nunn** had an article published in International Journal of Difference Equations titled "Properties of Solutions to a Discrete Analog of the Bernoulli Equation in the Case of Nonregressivity Using Time Scales Calculus." Available [here](#).

Christopher Davis and his students **Eric Anderson** (UWEC Alumnus) and **Jonah Amundsen** (UWEC Alumnus, now at Michigan State University) had a paper appear in the Journal of Knot Theory and its Ramifications titled "On the indeterminacy of Milnor's triple linking number". ArXiv version available [here](#).

Christopher Davis and his collaborators **Matthias Nagel** (ETH Zurich), **Patrick Orson** (ETH Zurich), and **Mark Powell** (Durham University) had a paper appear in the Indiana University Mathematics Journal titled "Triple linking numbers and surface systems". ArXiv version available [here](#).

Christopher Davis, **Carolyn Otto**, and **Vicki Whitledge** have been awarded sabbatical for the 2020-2021 academic year.

Mckenzie West along with co-organizers **Heidi Goodson** (Brooklyn College) and **Christelle Vincent** (University of Vermont) are organizing a workshop titled "RNT: Rethinking Number Theory" from Oct 5-18, 2020. This workshop is intended for early-mid career number theorists and has two major emphases: number theory research and making math more equitable through conversation and action. Information available at [this link](#).

Carolyn Otto was awarded the CUR Mid-Career mentoring award. More information available [here](#) and [here](#).

UW-Eau Claire-Barron County *By aBa Mbirika*

Students **Haiyuan Yu** and **Selina Sun**, mentored by faculty member **Wufeng Tian**, were awarded as Regional Finalists by the American Mathematical Association of Two-Year Colleges Student Research League for a paper they wrote titled "Mathematical Analysis of Student Loan Debt in the United States".

Students **Swor Alexander**, **Owen Xu** and **Yujia Jiang**, mentored by faculty member **Wufeng Tian**, wrote a paper, "What makes a helpful online review in Amazon? - A case study of ratings and reviews for Sunshine Company." The paper was designated as Honorable Mention Winner in the 2020 annual Mathematical Contest in Modeling/Interdisciplinary Contest in Modeling sponsored by COMAP.

Student **Owen Xu**, mentored by faculty member **Wufeng Tian**, presented a paper "The optimization of the renewable and sustainable energy in Wisconsin" at

the 17th UW System Research in the Rotunda on March 11, 2020.

Wufeng Tian received 2020 Emerging Mentor in Research, Scholarship and Creative Activity Award from the University of Wisconsin-Eau Claire Office of Research and Sponsored Programs. Information available [here](#).

Wufeng Tian and **Yinlin Dong** (University of Central Arkansas) had a paper published by the International Journal of Computational Fluid titled "On the thresholds of vortex visualisation methods". Available [here](#).

UW-Milwaukee

By Jay H. Beder

Panos Skordi has joined the Department as Clinical Professor and Director of Actuarial Science. He is a Fellow of the Institute and Faculty of Actuaries and the Casualty Actuarial Society. Dr. Skordi previously taught Data Analytics, Risk Management and Actuarial Science at both undergraduate and graduate levels at California State University, Chapman University, UC Santa Barbara and UCLA. He has won numerous awards for excellence in teaching, mentoring, and advising. His primary research interest is in developing the classroom environment in STEM classes. Before teaching Dr. Skordi worked as an actuary, and is still active as a consultant.

The Department has had two retirements. **Allen Bell** has retired after 32 years at UWM. He received his PhD from the University of Washington under **Robert Warfield, Jr.**, specializing in noncommutative ring theory, and held post-doc positions at the University of Utah and USC before coming to UWM. Prof. Bell served as chairperson in 2005-2009 and again in 2018-2019. He directed seven PhD students and mentored many others, including an advanced high school student studying abstract algebra at UWM.

It was **Yang Ho's** retirement that opened the position for Panos Skordi. Dr. Ho joined the Department in 2009 as Actuarial Program Coordinator after retiring from industry, and was promoted to Director of Actuarial Science in 2014. He has a PhD in mathematics and is a

Fellow of the Society of Actuaries. When he joined the department, the actuarial program had about 50 students (declared + intended majors). The size of the program doubled over the next five years and reached its peak in 2015. It has remained at around 100 students since then, although UWM has experienced substantial enrollment declines over the last 5 years. Dr. Ho's industry experience, business connections and knowledge helped students to get internships, full time jobs, and guidance about exams and career advice. These same qualities were important for the program's achieving the Center of Actuarial Excellence designation in 2016.

Jon Kahl (atmospheric science) will be receiving the 2019-20 UWM Distinguished Undergraduate Teaching Award. **Chao Zhu** has been awarded a UWM Discovery and Innovation Grant for the project McKean-Vlasov Functional Stochastic Differential Equations with Applications. The Simons Foundation has awarded grants to **Dexuan Xie** (Advanced Nonlocal Dielectric Continuum Ion Channel Models and Their Fast Finite Element Solvers) and **Chris Hruska** (Relative Hyperbolicity and Coarse Geometry).

Graduate students **Andrew Whetten** and **Joseph Paulson**, along with **Ryan Whetten** (undergraduate at Brigham Young University) were awarded first place in the American Statistical Association's ENVR Data Challenge 2020. They will be presenting their results at the ASA's ENVR Workshop in Provo, UT in October 2021.

Undergraduate **Kenneth Schilleman**, working with **Burns Healy**, was awarded one of UWM's Support for Undergraduate Research Fellowships. In his proposal, Kenneth outlined his plan to continue his capstone work from the previous semester, which is on certain geometric and topological properties of complex exponentiation. His goal is to generalize a result from the 70's which describes the way in which the graph of the function $f(x)=x^x$ embeds into real 3-space.

UW-Oshkosh

By John Beam

This year brings a number of changes within our department (aside from the instructional format changes that all of us are struggling with as we adapt to the COVID-19 situation). Three Oshkosh faculty members have retired: **Zoubir Benzaid**, **Jayanthi Ganapathy**, and **Kandasamy Muthuvel**. All three have been professors in the department for many years, and it is difficult to see them leave. Additionally, several long-time members of our academic staff have retired: from the Oshkosh campus, **Jeannette Boudry**, **Miriam Lamb**, and **Rohini Muthuvel**; from the Fond du Lac campus, **Ray Rucinski**; and from the Fox Cities campus, **Kathryn Hopper** (and also **Dee Dewitt**, whom I neglected to mention in last year's newsletter). We thank all of these fine people for their commitment to teaching and their service to the university over the years, and we wish them all the best in their retirement.

On a happier note, we'd like to welcome **Robert Woodle** as a member of our academic staff on the Oshkosh campus, and **Jeremy Parrott** as a returning member.

Also on a positive note, **Chris Edwards** is part of an interdepartmental team that has recently been awarded a five-year NSF educational research grant.

UW-Platteville

By James A. Swenson

The UW-Platteville math department congratulates **Terry Hanson** on her retirement from teaching. After 27 years as the only math teacher at Benton High School, Terry taught developmental math at Southwestern Wisconsin Technical College and UW-Platteville before announcing her retirement this spring.

The UW-Platteville math department congratulates **Benjamin V. C. Collins** on his retirement from teaching. Ben taught at Midland Lutheran College and St. John's University, then spent 20 years as a professor at UW-Platteville before changing careers. He now works at Epic in Verona, WI.

In August, **Jodean Grunow** led the STEMStart Summer Institute, a two-day training event for Wisconsin high school teachers. Through the STEMStart program, UW-Platteville offers two dual credit engineering courses for high school students, giving participants an opportunity to become more familiar with the various engineering disciplines.

UW-Stout

By Steve Deckelman

The department made two tenure track hires. **Min Shu** received her PhD in statistics from Stoney Brook University. **Derek Sturgill** received his PhD in mathematics education from Ohio University.

Abraham Smith and **Scott Turner** were granted tenure with promotion to associate professor. **Dennis Schmidt** has returned to the department as a lecturer. **Saleh Anacli**, **Steve Deckelman**, **Andrei Ghenciu**, **Nelu Ghenciu**, **Laura Schmidt**, and **Derek Sturgill** participated in the June 2020 UW Math Initiative.

The department was deeply shocked and saddened by the sudden passing away of **Nasser Hadidi**. Nasser was a professor of statistics at Stout for over thirty years, was a Fellow of the Casualty Actuarial Society, and member of the examination committee.

UW-Whitewater

By Thomas Drucker

The Mathematics Department took part in a weekend Webinar series on "Battling Emerging and Re-emerging Epidemics & Mitigating Strategies COVID19." During this unprecedented time of COVID 19 outbreak, individuals from different institutions quickly came together to deliver collaborative outcomes in the form of designing a novel webinar series, special issues and articles. It was a joint initiative from University of Wisconsin Whitewater, Intercollegiate Biomathematics Alliance (IBA), Illinois State University, Arizona State University, George Mason University and PrecisionHeor, to discuss complex mathematical modeling challenges, theoretical and practical fundamental principles, and model based prediction issues related to understanding of transmission dynamics of the current COVID-19

pandemic. **Anuj Mubayi** from PrecisionHeor, **Aditi Ghosh** from University of Wisconsin Whitewater, **Olca Akman** from Intercollegiate Biomathematics Alliance (IBA), Illinois State University, **Padmanabhan Seshaiyar** from George Mason University, **Rebecca Perlin** from Arizona State University, **Sara Leisman** from Illinois State University organized this webinar series to discuss more of the mathematical models that are used to understand the COVID-19 transmission.

The focus of the webinar series was on discussion related to why mathematical models have been able to capture COVID patterns in some cases and why they have been of limited scope in managing the spread of

the disease through various non-pharmaceutical interventions. The first panel discussion was held on July 26, and focused on Mathematical Models. The second panel discussion was on Aug 2, on Linking Quantitative Models to Data. The next webinar on Aug 22 focused on Data-Driven Computing-Intensive Modeling. The fourth panel discussion was on Sept 19 on the Impact on Education and Pedagogical Practices. The webinar series ended on Oct 10 with a discussion on Modeling the Impact of Non-Pharmaceutical Interventions on COVID-19. All the webinars had 65-90 attendees. Details of the speakers and their talks can be found [here](#).

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