

## Fall 2017, Volume 20, Number 2

### Upcoming Meeting

#### Hope to see you at the University of MN – Morris

Morris will host the MAA-NCS Fall meeting, October 20-21, 2017. Our invited speakers for the spring meeting are Doug Anderson (Concordia College), Michael Pearson (MAA Executive Director), and Kaisa Taipale (University of Minnesota).

A program for the Fall 2017 meeting will be posted approximately one to two weeks on the MAA-NCS website prior to the meeting.

### Invited Speakers

*Doug Anderson, Concordia College*

Talk Title: Proportional Derivatives - What they are and how they might relate to fractional calculus

Abstract: My colleague Darin Ulness from Concordia's chemistry department and I introduced proportional derivatives in 2015, which are motivated by proportional-derivative controllers in control theory. Their definition and properties will be explored, particularly the kind of calculus that they generate. A possible connection to the new Caputo-Fabrizio definition of fractional derivatives without singular kernel (2015, 2017) will also be briefly mentioned.

*Michael Pearson, MAA Executive Director*

Talk Title: Solving Problems – MAA American Mathematics Competitions and Evolving Views of Mathematics Education

Abstract: Through its years as the American High School Mathematics Examination and now as the AMC, MAA competitions programs illustrate the evolving views of what constitutes effective mathematical problem solving, as well as identifying and cultivating mathematical talent. We'll take a leisurely tour through more than a half-century of the Association's efforts to advance mathematics through competitions.

*Kaisa Taipale, University of Minnesota (Section Next Speaker)*

Talk Title: Color Me Combinatorial: Beauty from Statistical Mechanics

Abstract: It's easy for students to think that math is dead — nothing new since Euler, right? Totally symmetric self-complementary plane partitions (TSSCPPs), fully packed loop (FPLs), and domino tilings of Aztec diamonds say otherwise. These mathematical objects come up at the intersection of probability, combinatorics, algebra — and coloring! These very visual and frankly fascinating objects draw in mathematicians and non-mathematicians alike. In this talk, I want to tell a story of modern math research that brings together beauty, computers, and a number of Midwestern mathematicians. Come for the colors, stay for the math!

## **Offier Reports**

### **Governor's Report**

Jason Douma, University of Sioux Falls

The MAA Congress, which replaces the Board of Governors as part of the association's new governance structure, met for the first time on July 26, 2017, in Chicago. This occasion also marked my first meeting in this role as the North Central Section's representative. (Many representatives are Governors whose positions "rolled over" to become Representatives to Congress.) Under the association's revised governance structure, the MAA Congress is designed to serve as a conduit for communication between the Board of Directors and the Sections, and to advise the Board of Directors on policies and directions of strategic importance to the association. The fiduciary and administrative roles previously assumed by the Board of Governors have now been shifted, for the most part, to the Board of Directors. In short, I will be serving as your liaison, keeping you apprised of developments in the national organization and helping the national leadership to better understand your interests, concerns, and experiences as members of the MAA. I will be—or will at least try to be—more of a "discerner" than a "decider."

Understandably, much of our meeting in July centered around an effort to understand our new role, and its implications for how we order our business when we meet. A considerable portion of the agenda was dedicated to gathering feedback—through small group discussions and reports to the larger body—on issues such as a draft of Strategic Goals produced by the MAA leadership, financial sustainability, expanding and supporting membership, changes to the model for publications, outreach to underrepresented groups, opportunities for professional development, and connections to other disciplines and societies. Many of these are, of course, perennial issues for the MAA. I would characterize most of our July discussions as a continuation of a long and ongoing idea-generating process. One particular development, however, may be worth noting explicitly. The MAA has completed negotiations to partner with Taylor & Francis to publish and distribute our journals. The content and editorial standards of the journals will remain unchanged under this arrangement. What will change is the online platform for accessing the journals, the visibility of the journals beyond the MAA membership, and the cost structure for producing the journals. The meeting of Congress also included election of officers. As colleagues in the North Central Section, you will be pleased and proud to know that our own Su Doree is now the Chair-Elect (as well as the current Vice Chair) of the MAA Congress!

Please do not hesitate to contact me with your questions about developments in Congress or the national level of the MAA. (I may not know the answer myself, but I will help you try to find it.) I also welcome hearing your suggestions or perspectives that may help inform the ongoing work of the greater MAA organization. My email address is [jason.douma@usiuouxfalls.edu](mailto:jason.douma@usiuouxfalls.edu). Submitted by Jason Douma

### **President's Report**

Namyoug Lee, Minnesota State University- Mankato

Welcome back to another wonderful academic year and a beautiful season in North Central Section! As MAA has started its second century, the national board members have reviewed MAA's new mission and strategic initiatives. A short summary is written in the MAA Focus (Vol. 37, No. 5, 2017, 14-15), written by current president Deanna Haunsperger. Our North Central Section also has started to plan how to expand and strengthen our section to benefit

our section members. If you have any idea or suggestion to improve the section, please feel free to contact any section board members (their contact information is listed on the section website (<http://sections.maa.org/northcen/officers.html>)).

In each year, we also need new board members as each position is 2 to 3-year term. Please recommend yourself or your talented colleague to us. We are also rebuilding our section NExT leadership team, who plans and runs section NExT program, because our former leader, Su Dorée, has taken an important role in national MAA. I would especially like to encourage national NExT fellows to join this leadership team. (<http://sections.maa.org/northcen/secNext.html>)

The board is also planning the section's 2018 summer seminar. Please let us know if you have a recommendation for a topic, speaker, and/or if your campus would like to host it. The section plans to identify and to announce the topic and speaker for summer seminar before next section meeting (Spring 2018).

Finally, please consider nominating someone for the Distinguished Teaching Award and the Meritorious Service Award (<http://sections.maa.org/northcen/awards.html>) and encourage your new faculty to apply a section NExT fellow. Recently, we have changed the nomination process much simpler than before, and it is easier to nominate your colleague to the section. Submitted by Namyong Lee.

### **Secretary's Report**

Shawn Chiappetta, University of Sioux Falls

Nothing to report.

### **Information Officer's Report**

Kris Nairn, College of St. Benedict/St. John's University

This year's Distinguished Teaching Award (2017) went to Cindy Kaus, from Metropolitan State University. Congratulations Cindy!

The spring 2018 meeting for the Wisconsin Section of the MAA is tentatively scheduled for University of Wisconsin – Eau Claire.

The spring 2018 Pi Mu Epsilon meeting at CSBSJU will be on April 13-14, 2018. The invited speaker is Tim Chartier, Davidson College. See the College of St. Benedict/St. John's University website for further details: <http://www.csbsju.edu/mathematics/pi-conference>

Jill Fisher, Academic Administrative Assistant – Physics Department, and Program Administrator for Budapest Semesters in Mathematics Education (BSME), has asked me to share information on the program. BSME is a semester-long program in Budapest, Hungary, designed for undergraduates and recent graduates interested in teaching secondary

mathematics. Participants will study the Hungarian approach to learning and teaching, in which a strong and explicit emphasis is placed on problem solving, mathematics creativity, and communication. BSME is specifically intended for students who are not only passionate about mathematics, but also the teaching of mathematics. Applications are currently being accepted for Fall 2017 and Spring 2018 semesters. You can find the online application at : <http://www.bsmeducation.com>

## Campus News

### Augsburg University

Yes, we are now Augsburg University -- a name that better recognizes the work we do across both liberal arts and professional studies. Also, we are now the Department of Mathematics, Statistics, and Computer Science -- a merger that reflects the interdisciplinary preparation our students seek. In December, we will be moving into a wonderful new building, the Hagfors Center for Science, Business, and Religion. We are especially excited about having more collaborative work space for students. (You'll be able to check it out at the MAA NCS Spring 2019 meeting.)

Our statistician, Miles Ott, moved back East for a wonderful job opportunity. We are already engaged in searching for his tenure-track replacement, as well as two additional tenure-track positions in Computer Science (one retirement replacement, one expansion). Su Dorée is back from a full-year sabbatical last year and Jody Sorensen is on sabbatical this fall working on writing projects.

We continue work on renovating our calculus curriculum -- to add more inquiry-based activities, contextualized labs (that we hope will build transference skills), and to streamline the content in our continued quest for a "lean and lively" calculus sequence. This work is supported through a grant from NSF. Submitted by Suzanne Dorée, Ph.D.

### Bemidji State University

Glen Richgels won the 2017 BSU Award for Excellence in Teaching and has retired from the mathematics education side of our program after 24 years on our campus. The department hired Jenna O'Dell in a probationary mathematics education position. Jenna taught 4<sup>th</sup> grade for 6 years and defended her dissertation "Beyond Problem-Solving: Elementary Students' Mathematical Dispositions When Faced with the Challenge of Unsolved Problems" in July 2017 at Illinois State University. We have two new fixed term faculty members. Hannah Altmann is a graduate of NDSU, specializing in commutative algebra (semidualizing DG modules over tensor products) and comes to us after two years in a fixed-term position at UM-Morris. Tami Worner moved to the area after 18 years at Wayne State College in Nebraska and is filling a gap in applied mathematics and statistics while Co Livingston is on sabbatical and Derek Webb serves as our local faculty union president. Tami's mathematical focus is in analysis but she brings teaching experience across the curriculum to our table. (Submitted by Co Livingston)

### Bethel University

Eric Gossett retired in May 2017 (although he's still around teaching a class). Tanner Auch joined our department this Fall. Submitted by Nathan Gossett

### Concordia College-Moorhead

Concordia College-Moorhead mathematics majors Laura LeGare '19 and Grace Bryan '19 have published their summer 2016 research, "The Calculus of Proportional alpha-Derivatives", in the Rose-Hulman Undergraduate Mathematics Journal. The research was funded by an NSF-STEP grant and supervised by faculty mentor Douglas Anderson. Also, Dr. William Tomhave, who has served as Concordia's mathematics education professor since 1985, has announced his retirement at the end of the 2017-2018 year. Dr. Tomhave was the 2016-2017 Concordia Student Government Association's faculty service award winner. After two years of exile, the mathematics department has migrated back to the newly renovated Integrated Science Center, on third floor south for those wishing to visit. Submitted by Doug Anderson.

### Gustavus Adolphus College

There have been a lot of changes in the MCS (Math, Computer Science, and Statistics) department at Gustavus during the last three years. We had four retirements and one faculty member passed away during this period. These changes form the background for the many new faces on campus this fall.

Imre Tuba has joined the department as a Visiting Assistant Professor teaching mathematics. Imre recently worked at Saint Louis University and has a PhD in Algebra from the University of California - San Diego.

Jeff Boatman has joined the department as a Visiting Assistant Professor teaching statistics. Jeff is a recent PhD graduate from the BioStatistics program at the University of Minnesota.

Jacob Siehler, who had been with the department as a Visiting Assistant Professor, will now be in a tenure-track Assistant Professor position. Jacob is a PhD graduate of Virginia Tech University and is an alumnus of the Budapest Semester in Mathematics (he speaks fluent Hungarian). Jacob is a prolific writer of mathematics, having articles published in the Mathematics Magazine, the College Math Journal, Math Horizons, the American Mathematical Monthly, and the Journal of Algebraic and Geometric Topology. In 2013, Jacob received the George Pólya Award from the Mathematical Association of America for his article "The Finite Lamplighter Groups: A Guided Tour." Submitted by Mike Hvidsten.

### Minnesota State University Moorhead

We have a new tenure-track hire: Ashok Aryal. He completed his Ph.D. at Kansas State University and specializes in PDEs. We have a new fixed term hire: Olaniyi Iyiola. He completed his Ph.D. at University of Wisconsin Milwaukee and also specializes in PDEs. Submitted by Adam Goyt

### St. Cloud State University

Keith Agre had taken over as the department chairperson at SCSU starting this fall (email is [kmagre@stcloudstate.edu](mailto:kmagre@stcloudstate.edu)). Submitted by Peiyi Zhao

### University of St. Thomas

We are pleased to welcome three tenure-track faculty members this year: Christina Knudson (Statistics), Dongchen Li (Actuarial Science), and Huan Zhang (Actuarial Science). Submitted by Eric Rawdon

## University of Sioux Falls

Dr. Timothee Bryan has joined the University of Sioux Falls mathematics faculty this year as a Visiting Assistant Professor of Mathematics. Meanwhile, two other familiar faces in the North Central Section have taken on new/modified roles at the University of Sioux Falls. Dr. Joy Lind now serves as USF's Vice President for Academic Affairs, and Dr. Jason Douma has accepted a split appointment as Professor of Mathematics and Associate Vice President for Institutional Research.

The University of Sioux Falls will be host to this year's Math on the Northern Plains Conference on April 7, 2018. Details about this annual undergraduate research conference, including registration information, will be posted a few months prior to the event. Submitted by Jason Douma

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