Michigan Section Mathematical Association of America NEWSLETTER

VOLUME 46, ISSUE 1

NOVEMBER 2019

2

Read these and other stories online at sections.maa.org/michigan/history.html#newsletter_archive.

Contents

Reports from the BoardChairFour-Year-College Vice ChairSection RepresentativeSecretary-TreasurerWebmasterMMPC Director	2 3 4 5 6
Campus News	8
Distinguished Teaching Award	16
Distinguished Service Award	17
DTA Nominations	18
DSA Nominations	18
Section Officer Nominations	19
Mathematical Contest NewsAMC 10 and 12 ResultsARML ResultsPutnam Results	19 19 20 20
A Mathematics Exhibit at The Henry Ford	21
Congratuations to Norman Richert on his Retirement	22
Photographs from the Section Meeting	22
Committees & Appointments	24
Calendar of Events	25

In This Issue



Nancy Colwell (SVSU) discusses various activities the Section is involved in. Four-Year-College Vice Chair's Report 3 Amy Shell-Gellasch (EMU) gives us a preview of the upcoming (April 2020) Section Meeting. Section Representative's Report 4 Mark Bollman (Albion C) reports on events and actions of the MAA at the national level that will have an impact on the long-term future of the organization. Secretary-Treasurer's Report 4 Ken Schilling (UM-Flint) reports on the Section's financial situation and membership. Call for Teaching Award Nominations..... 18 Nominate an outstanding instructor for the Section's 2020 Distinguished Teaching Award. Nominations are due December 15, 2019. Volunteer to Serve the Section 19 There are volunteer positions with the Section that need to be filled. Volunteer or nominate someone

Chair's Report.....



From the Origin21Amy Shell-Gellasch reviews a visit to an exhibit of
things mathematical at the Henry Ford Museum of
Innovation.21

to help out our local mathematicians!

Reports from the Executive Board

Chair's Report

I hope the Fall 2019 issue of the *Newsletter* finds you well and active. I am happy to share with you some of the many activities that our section is involved with. As I am writing, **Amy Shell-Gellasch** (EMU), our section's four-year-college vice



Nancy Colwell (SVSU) <nccolwel@svsu>

chair, is busy working on planning our annual meeting, which will be at Grand Valley State University, April 3–4, 2020. The Upper Peninsula Regional Mathematics Meeting took place on October 4th and 5th at Northern Michigan University. I attended, and I really enjoyed the intimacy as well as the diversity and range of the topics. I definitely plan to attend this meeting in the future and encourage all of you to attend this regional conference when possible. Also, the upper peninsula is very beautiful this time of year.

For over sixty years, The Michigan Section has been administering the Michigan Mathematics Prize Competition (MMPC), currently under the directorship of **Andrew Poe** (NMU), as a means of developing interest and ability in mathematics among high school students. A great way to become more connected to other section members is to volunteer for MMPC's grading day in January. It is also fun to see some of the student responses.

Other ways in which we support our colleagues include Project NExT and teaching and service awards. In order to help support new colleagues joining our profession, this spring our section voted to fund a Project NExT fellow at an institution in Michigan. Nominations for the section's Distinguished Service and Teaching Awards are now being accepted (see p. 18). I know we have many excellent teachers in this section who are creative and dedicated to their students. We also have many colleagues that go above and beyond the call of duty in serving their profession. If someone springs to mind, please consider nominating them for the Distinguished Teaching Award or the Distinguished Service Award. Speaking of service, our section is run by volunteers. None of these activities could take place without many hours of work put in by many dedicated professionals, all of it for the love of the discipline. I would like to thank the members of the executive committee for all their help. First, I thank Victor Piercey (Ferris State U) for his guidance as chair last year, and now past-chair. Also, although they are no longer on the committee this year, I would like to thank for their help when I was new last year Laura McLeman (UM-Flint), former past-chair; Natascha Rivet (Delta C), former twoyear college vice-chair; and Steve Schlicker (GVSU), MAA Congress Representative. I would particularly like to thank our new MAA Congress Representative, Mark Bollman (Albion C) for his 13 years of service as secretary-treasurer. He was my go-to person whenever I had any kind of question about almost anything. And of course I would like to thank those with the demanding jobs of: Newsletter co-editors, Clark Wells (GVSU) and Beth Wolf (UM-Ann Arbor); MMPC Director Andrew Poe; and Webmaster, Paul Pearson (Hope C). I am also happy to announce our new executive committee members, as well as to thank them for being willing to serve. Our new four-year-college vice chair is Amy Shell-Gellasch. She was willing to take on this role even after serving on the program committee last year, so deserves extra thanks. Our new two-year-college vice chair is Sang Lee (Grand Rapids CC), and Ken Schilling (UM-Flint) has stepped into the role of secretary-treasurer. I am quite grateful to have such a wonderful group to work with.

I have been thinking a lot about service lately. It seems that this is a connecting theme of our profession. We all have a love of mathematics, but we also all have a love of serving our community. This is what brings us to teaching as a profession — a desire to help people. If we feel that we have made somebody's life better, through education, it makes our day. And what we do at the MAA is to try to help each other help our students and our community. I enjoy working with all of you as we continue to do just that.

Four-Year-College Vice Chair's Report

Plans are well underway for the Spring 2020 meeting of the Michigan Section. Our host institution this year is Grand Valley State University. I want to thank **Akula Tefera** and **Matt Boelkins** at GVSU for working very hard to get things ready. The meeting



Amy Shell-Gellasch (EMU) <ashellge@emich.edu>

will be Friday and Saturday, April 3–4, at the Grand Rapids Campus of GVSU in the DeVos Center. This is a lovely classroom and meeting space that should work perfectly for our meeting. It is in the heart of Grand Rapids with hotels and restaurants within walking distance, so those coming in from out of town can leave their cars at the hotel.¹ For local attendees, we will have free parking in one of the nearby campus lots.

The meeting kicks off midday Friday with a free workshop on diversity by **Sandra Crispo** of Michigan State University. The official start of the meeting will follow, with an opening speaker and a short session of contributed talks. The evening will include our annual banquet and a talk by our plenary speaker, renowned historian of mathematics **Bill Dunham** (Bryn Mawr C, PA), about the work of Euler. During the day Saturday we will have several invited speakers, including this year's recipient of the Distinguished Teaching Award, **Yunus Zeytuncu** (page 16). Additionally, we will host contributed paper sessions, poster sessions for students, our section business meeting, and other events. The day will include two more plenary speakers, **Carrie Diaz Eaton** of Bates College (ME), and our MAA Polya lecturer **Charles Hadlock** of Bentley University (MA). The day will wrap up by 5:00 p.m.

Registration and hotel information will be available on the meeting website in early 2020. The call for papers will go out via the website mid-winter, followed by a tentative program. The website for the meeting, <gvsu.edu/mism2020>, will also be accessible from the section website.

We would like to increase our student-centered offerings at the meeting, but in the past we have not had enough student attendees to make specific events for them viable. Please encourage your students (undergraduate and graduate) to attend and give a talk or poster. Prizes are awarded for best student talk and poster. We are always looking for extra hands to help judge posters or talks, and to help in various other ways. If you are interested, or for more information about the meeting, please contact Amy Shell-Gellasch at <ashellge@emich.edu>.

Finally, I would like to thank all of the programing committee: Laura McLeman, Sang Lee, Akalu Tefera, and Matt Boelkins.

Join the MAA!

The MAA is a professional society whose mission is to advance the mathematical sciences, especially at the collegiate level. MAA members include high school teachers, college professors, undergraduate and graduate students, pure and applied mathematicians, statisticians, computer scientists, and many others in academia, government, business, and industry. As a member, you will enjoy registration discounts at national meetings, electronic subscriptions to all MAA journals and magazines, automatic enrollment in your local MAA section, and access to employment services and exclusive online resources. To become a member, or to learn more about what the MAA can offer you, visit <maa.org>.

¹Editor's Note: Grand Rapids also has a free downtown area shuttle that runs near the conference center, hotels, and much of downtown Grand Rapids.

Section Representative's Report

[Looking around] Say, the *Newsletter* looks different from this page.

I would like to begin my report by thanking **Steve Schlicker** for his service to the Section and to the MAA as our Congress Representative for the past 3 years.



Mark Bollman (Albion C) <mbollman@albion.edu>

The work of the reorganized Congress is important, and the Michigan Section has benefited greatly from Steve's work at the national level.

In the best way possible, these are interesting times for the national MAA. As you may know, the MAA is ending its formal involvement with the Joint Mathematics Meetings after the 2021 meeting in Washington, DC, though we will continue to be involved at the JMM in "small, symmetric ways" including, but not limited to, Project NExT. This decision is rooted in financial concerns. Much of the discussion at the summer MAA Congress meeting and additional meetings at Mathfest centered around the future of MAA meetings and the possible uses for the funds that the Association currently allocates to the Joint Meetings. There are a lot of questions yet to be addressed, but one likely outcome is increased funding for section-specific projects. For example, it seems likely that each section will be able to host one national-level speaker at all of its annual meetings, similar to the current Polya Lecturer we welcome every 5 years.

The Congress also ratified two goals for the national MAA. One is to curate and develop our programs into a robust portfolio that expand MAA's outward facing impact, and the other is to celebrate the power of mathematics on an international scale through successfully hosting the 2021 International Mathematics Olympiad in Washington, DC, leveraging the event to strengthen the reputation of the MAA.

As the Congress looks toward the long-term future of our organization, I welcome your suggestions and comments on what our direction should be. Thank you for the opportunity to serve the Section and the MAA as your representative.

Secretary-Treasurer's Report

It is with some trepidation that I have accepted the honor of being elected secretary-treasurer of our Michigan section. I succeed, though certainly do not replace, **Mark Bollman**, who gave the section umpteen years of distinguished ser-



Ken Schilling (UM-Flint) <ksch@umich.edu>

vice in this position. (Yes, that's the exact number.) I am grateful for his support and guidance, his supply of useful historical files, and for pretending (as all of us who teach mathematics have learned to do) that my incessant questions haven't been hopelessly dumb.

The section's bank balance as of October 28 is \$4993.37. The section has some support from the Washington office of the MAA, advertising revenue, and occasional other sources, but most of the section's income is from the voluntary dues payments of its members.

By now, section members should have received their annual dues mailing. The voluntary dues contribution for an individual dues-paying membership remains \$15, or \$30 (or more) for a sustaining membership. We are again offering the option to pay section dues online through PayPal <www.paypal.com>. Online payments using PayPal should be directed to <MichiganSectionDues@gmail.com>.

Institutional membership dues are \$40 or \$70 depending on the size of the institution. Institutional members will receive the end-of-year report from the Michigan Mathematics Prize Competition, and also have access to a database of all MMPC Part II participants to aid in recruiting efforts.

The members of the executive committee continue to appreciate your support of the section's activities through your contributions.

Graduate studies at



For information about any of our programs or how to apply, contact:

Graduate Coordinator Department of Mathematics Central Michigan University Mount Pleasant, MI 48859 phone: (989) 774-3596 mthgrad@cmich.edu se.cmich.edu/mth

CMU, an AA/EO institution, strongly and actively strives to increase diversity within its community (see https://www.cmich.edu/aaeo).

Ph.D. in Mathematical Sciences

The Ph.D. degree is designed to prepare individuals for a career in college teaching and research, as well as other careers that require the knowledge of advanced mathematics. The program consists of broadly distributed coursework, professional pedagogical components, teaching internships, and a dissertation. Areas of research strength include algebra, algebraic geometry, approximation theory, combinatorics, complex analysis, computational mathematics, differential geometry, ethnomathematics, fluid dynamics, functional analysis, mathematical biology, mathematics education, operator theory, and representation theory.

M.A. in Mathematics

The M.A. degree has an emphasis in the more computational aspects of mathematics for students who are interested in jobs in business, industry, and government. The degree program also retains the flexibility to prepare students for teaching mathematics at the undergraduate level or to undertake doctoral work in mathematics.



Webmaster's Report

As the webmaster, I enjoy keeping the section website up to date and sharing important announcements.

Please let me know if you see anything that needs to be updated or if you find a broken link.



Paul Pearson (Hope C) cpearsonp@hope.edu>

If you have any suggestions for improving the website or you want to suggest an announcement, please get in touch.

Thanks!

MMPC Director's Report

Andy Poe (NMU) <apoe@nmu.edu>

The 62nd Annual Michigan Mathematics Prize Competition began with the Part I Examination given on Tuesday, October 9, 2018. A total of 4351 students from 134 schools answered 40 challenging multiplechoice questions covering the entire spectrum of high school mathematics. Of these, 1126 students were invited to take the Part II Exam on Wednesday, December 5, 2018, an exam consisting of five very challenging problems for which the students needed to show all their work and prove their answers correct.

The year's Examination Committee consisted of Chair **David Friday** (Macomb CC), **Dorin Dumitrascu** (Adrian C), **Bingwu Wang** (EMU), and **Lazaros Kikas** (U Detroit Mercy).

Mark Bollman did a wonderful job, as always, of hosting Grading Day at Albion College. The graders from across the state and the backgraders from NMU all did a wonderfully efficient job and I greatly appreciate their service. Winter 2019 was plagued with a large amount of snow days across the state, and this was especially true in the Upper Peninsula, but the backgraders worked as quickly as they could ... on those days the university was open!

The top 100 scorers of the competition were invited to attend the annual banquet on Saturday, March 9, 2019 at Albion College. **Bao Q. Truong** (NMU) delivered a well-received keynote address in which he talked about the trials and tribulations of pursuing mathematics. A delicious pasta buffet was revealed for dinner and then the assembly honored Michigan's most gifted high school math students. I note that, while I had planned to host the 2020 banquet in Marquette, there have been no Upper Peninsula finalists in the last two years, so instead we plan to continue holding the event downstate.

The top 10 MMPC Competitors for 2018–2019 are shown in the table below.

Name	School	Award
Alox VII	Trov High School	Cold (1st lovel)
Alex Au	Hoy High School	Gold (Ist level)
Freddie Zhao	Troy High School	Gold (2nd level)
Alan C. Zhu	Greenhills School	Gold (3rd level)
Steven N. Raphael	Roeper School	Silver (1st level)
Timothy L. Wu	Northville High School	Silver (1st level)
Jason Hu	Pioneer High School	Silver (1st level)
Daniel Tian	Northville High School	Silver (2nd level)
Reagan Choi	Troy High School	Silver (3rd level)
Daniel Y. Xu	Cranbrook Schools	Silver (3rd level)
Ajay Arora	Novi High School	Silver (3rd level)

The 40 students placing 11th–50th received Bronze Awards. These top 50 finishers shared \$20,000 in scholarships ranging in value from \$250 to \$2500.

Honorable-Mention Awards went to those students placing 51st–100th. These students received a copy of *What If? Serious Scientific Answers to Absurd Hypothetical Questions*, by Randall Munroe, writer and artist of the popular XKCD comic strip. This book was selected by my co-director, Assistant Professor **Daniel R. Rowe**, PhD, from NMU, and it was a very good choice! In addition, there were a dozen raffle prizes, most of them gag gifts, but also some calculators compliments of Mu Alpha Theta, a mathematics honor society for students in high school and two-year colleges.

Ruth Favro (LTU), a long-time champion of women in mathematics, presented the award to our top female competitor, **Kristine X. Zheng** of Huron High School (who earned 24th place overall).

Thank you to the personnel of NMU and Albion for helping to facilitate the competition, and Mu Alpha Theta for their financial support. Thanks also to the students who were able to get their geek on last year, and to their parents for having to share their homes with math nerds!

2018 MMPC Part II Problems

1. Let ABCD be a square with side length 1, Γ_1 be a circle centered at B with radius 1, Γ_2 be a circle centered at D with radius 1, *E* be a point on the segment *AB* with |AE| = x ($0 < x \le 1$), and Γ_3 be a circle centered at *A* with radius |AE|. Γ_3 intersects Γ_1 and Γ_2 inside the square at G and F, respectively. Let region I be the region bounded by the segment GC and the minor arc GC of Γ_1 , and region II be the region bounded by the segment FG and the minor arc FG of Γ_3 , as illustrated in the graph below.



Let r(x) be the ratio of the area of region I to the area of region II.

- (i) Find r(1); justify your answer.
- (ii) Find an explicit formula of r(x) in terms of x (0 < x < 1); justify your answer.
- 2. We call a *party* any set of people V. If $v_1 \in V$ knows $v_2 \in V$ in a party, we always assume that v_2 also knows v_1 . For a person $v \in V$ in some party, the *degree* of v, denoted by deg(v), is the number of people v knows in the party.
 - (i) Suppose that a party has four people with $V = \{v_1, v_2, v_3, v_4\}$, and that deg $(v_i) = i$ for i = 1, 2, 3; show that $\deg(v_4) = 2.$
 - (ii) Suppose that a party is attended by n = 4k ($k \ge 1$) people with $V = \{v_1, v_2, \dots, v_{4k}\}$, and that deg $(v_i) = i$ for $1 \leq i \leq n-1$; show that $\deg(v_n) = \frac{n}{2}$.
- 3. Let *a*, *b* be two real number parameters and consider the function $f(x) = \frac{b + \sin x}{a + \cos x}$. (i) Find an example of (a, b) such that f(x) > 2 for all x = 1.
 - (i) Find an example of (a, b) such that $f(x) \ge 2$ for all real numbers x. Justify your answer.
 - (ii) If a > 1 and the range of the function f(x) (when x varies over the set of all real numbers) is [-1, 1], find the values of a and b; justify your answer.
- 4. Let f be the function that assigns to each positive multiple x of 8 the number of ways in which x can be written as a difference of squares of positive odd integers. (For example, f(8) = 1, because $8 = 3^2 - 1^2$, and f(24) = 2, because $24 = 5^2 - 1^2 = 7^2 - 5^2$.)
 - (a) Determine with proof the value of f(120).
 - (b) Determine with proof the smallest value x for which f(x) = 8.
 - (c) Show that the range of this function is the set of all positive integers.
- 5. Consider the binomial coefficients $C_{n,r} = \binom{n}{r} = \frac{n!}{r!(n-r)!}$, for $n \ge 2$. Prove that $C_{n,r}$ are even, for all $1 \le r \le n-1$, if and only if $n = 2^m$, for some counting number m

WHO WILL GET PAID TO GET A PHD? SPARTANS WILL.

Michigan State University is accepting applications for its Doctoral Program in Mathematics Education

- Designed for those who show promise of becoming researchers and leaders in state, national and international mathematics education communities.
- Administered jointly by the Colleges of Natural Science and Education.
- This program prepares researchers to address critical issues in mathematics teaching, learning, curriculum and policy.



Assistantships and fellowships are now available! Apply by December 1 for enrollment the following fall.

Assistantships include tuition waiver, health insurance, and stipend. Requirement: an undergraduate major in mathematics or the equivalent. Teaching experience is preferred, but not required. **Apply now!**

ANT

Program in Mathematics EducationFor more information on this program, please contact:MICHIGAN STATE UNIVERSITYLisa Keller, Assistant Director of PRIME
517.432.5472 | kellerl@msu.edu
https://prime.natsci.msu.edu

Campus News

Adrian College

Elizabeth Lamprecht <elamprecht@adrian.edu>

Anastasia Shabanskaya recently published a paper, "Solvable extensions of the naturally graded quasifiliform Leibniz algebra of second type L4," in *Communications in Algebra*. Timothy Clark's paper "Categorical equivalences in the theory of sharp transitivity" will

Albion College

Mark Bollman <mbollman@albion.edu>

Reza Bidar has joined us as Visiting Assistant Professor

appear in the journal *Quasigroups and Related Systems* in December, 2019.

Jo Lynne Hall earned a Graduate Certificate in Online Teaching and Learning from Michigan State University.

In spring of 2019, **Elizabeth Lamprecht** taught a short course entitled "The History of Women in Science and Mathematics" for Lenawee Lifelong Learning, a program for Seniors in Lenawee County, Michigan.

of Mathematics.

The department expects to fill a tenure-track position in computer science to begin in the fall of 2020. Further details will be posted on our website.

Robert Molina <molina@alma.edu>

The Mathematics and Computer Science Department at Alma College is excited to welcome two new members: **Scott Dexter** (Computer Science) who arrives from Brooklyn College, and **Lisa Kaylor** (Math) who

Alpena Community College

Dan Rothe <rothed@alpenacc.edu>

The fall semester has begun here at ACC. We are happy to report that our enrollment is up 4.71% in headcount and 4.32% in credit hours. Dual enrollment and early college programs continue to play a role in our positive numbers. In addition to our online Intermediate Algebra, we are also offering a section via video conferencing, which allows students from several of the smaller outlying high schools to be a part of the class. These are students from schools that would be too small to have their own section and too far away for dual-

Central Michigan University

Ben Salisbury <ben.salisbury@cmich.edu>

Ana Dias, Yeonhyang Kim, and Christine Phelps-Gregory were each promoted to professor.

Central Michigan University became one of six higher education institutions to receive the ADVANCE Catalyst Award from the National Science Foundation; Professor **Katrina Piatek-Jimenez** is part of the leadership team for this award. Per the NSF website, "... the goal of the National Science Foundation's ADVANCE program is to increase the representation and advancement of women in academic science and engineering careers, thereby contributing to the development of a more diverse science and engineering workforce."

Associate Professor **Meera Mainkar** received the College of Science and Engineering Award for Outstanding Teaching.

arrives from Wesleyan University. Professor **Tim Sipka** retired this year after 40 years of outstanding service. Our department is developing a new program in Data Science.

Alma College will be hosting the Michigan Section of the MAA Meeting in 2021.

enrollment students to commute for one class.

Our Sigma Zeta Math/Science Honor Society inducted seven new members in the spring. The group assisted with events at the Regional Science Olympiad Tournament. A majority of our members graduated in May, so as we begin this next year we are searching for new members. The group will once again be providing a coat check and valet parking at the Military Ball at the Phelps Collins Air National Guard Base here in Alpena. New officers for the 2019-2020 school year are: Jozie Appelgren, President; Alexis Mutschler, Vice President; Laurie Smith, Secretary; and Oscar Montaño, Treasurer.

Savannah Swiatlowski, now a student in the Master's program in the Department of Mathematics at CMU, gave a presentation at the 2019 Annual Meeting of the Michigan Section of the MAA held at University of Detroit Mercy, April 5–6, 2019. Her talk, titled "Automorphism Groups of Nilpotent Lie Algebras Associated to Certain Graphs," was based on her summer research work with mathematics faculty advisors Debraj Chakrabarti and Meera Mainkar. Ms. Swiatlowski received the The Ron Mosier Memorial Award which is given to the student or students with the most outstanding talk at the meeting.

Robert Chamblin, Mahmoud Aldeni, Nancy Matar, and **Keshab Dahal** completed PhD degrees in 2018–2019.

Calvin College

John Ferdinands < ferd@calvin.edu>

Stacy DeRuiter has been awarded a grant of £2000 from the Company of Biologists in support of a work-shop at the World Marine Mammal Conference on analysis of data from high-resolution animal-borne tags.



research in all areas of applied and theoretic biostatistics, including large-scale statistical computing, longitudinal data, missing data, survival analysis, clinical trial design, and statistical genetics. Numerous student funding opportunities are available, including training grants and research assistantships. Graduates of our program are favored by national employers in many areas, including universities, governmental agencies, pharmaceutical companies, and biotech companies.

APPLY TODAY: <u>sph.umich.edu/biostat</u>

Davenport University

Tim Pennings <tpennings@davenport.edu>

In October, **Tim Pennings** gave a new talk, "Mathematical Surprises and Challenges," at an NSF conference in St. Louis and at a Christian Educators Association Conference in South Bend.

Eastern Michigan University

Amy Shell-Gellasch <ashellge@emich.edu>

Stephanie Casey was awarded a summer research award to continue work on her project, "Teachers' Designed Tasks to Develop Students' Statistical Thinking and Data Analysis Skills with CODAP." **Jay Ramanathan** was awarded a sabbatical to write *An Open*

Ferris State University

Kirk Weller <kirkweller@ferris.edu>

Victor Piercey was invited to speak and participate in

Hope College

Todd Swanson <swansont@hope.edu>

Brian Yurk was a co-author of "Homogenization techniques for population dynamics in strongly heterogeneous landscapes," which was named the best paper of 2017 and 2018 by the *Journal of Biological Dynamics*. **Todd Swanson** and **Jill VanderStoep** were co-authors of "Assessing the Association Between Precourse Metrics of Student Preparation and Student Performance in Introductory Statistics: Results from Early Data on Simulation-based Inference vs. Nonsimulation-based In*Source Text for Differential Equations*. **Roxanne Katuswas** awarded a Faculty Research Fellowship to pursue her work on the "Magnetospheric Ion Temperature Dependence upon Solar Wind Driving."

Jiuqiang Liu is on leave this year. He will be doing research focused on game theory with colleagues at the Xi'an University of Finance and Economics.

the second annual Ethics in Mathematics conference at Cambridge University, UK. Together with **Catherine Buell** (Fitchburg State U, MA), he started a website <ethicalmath.com> to promote ethics in mathematics in the United States.

ference," which won the Jackie Dietz Best Journal of Statistics Education Paper Award for 2018.

Student Eric Leu won the Janet L. Andersen Award for Outstanding Student Presentation in Mathematical Biology during MathFest this past summer. Students Johanna Emmanuel, Sophia Kleinheksel, and Ian Mc-Namara won first place while students Christopher Belica, Kendall Collins-Riley, and Safia Hattab received honorable mention in the Fall 2019 Undergraduate Statistics Project Competition. Students Sally Hakim and Aidan Piwnicki won third place in the Spring 2019 Undergraduate Statistics Project Competition.

Lawrence Technological University

Ruth Favro <rfavro@ltu.edu> and Guang-Chong Zhu <gzhu@ltu.edu>

We welcome new mathematics faculty members **Bruce Pell** and **Matthew Johnston** to the Mathematics and Computer Science Department. Both have research areas in mathematical biology. The department is also currently searching for two computer science faculty.

Congratulations to the student team of **Evan Grossman-Lempert**, **Michael DiFranco**, and **Joe Schulte** for their first place finish in the 2019 Lower Michigan Math Competition in April. LTU's two teams were organized by **Guang-Chong Zhu**. LTU also fielded four teams in the 2019 Mathematical Contest in Modeling (MCM), which presented solutions to problems about Dragon Ecology, the Opioid Crisis, and Evacuating the Louvre. Three student teams gave talks at the MAA Section meeting on their SCUDEM and MCM papers.

Math Club officers for 2019–2020 are Michael DiFranco and **Daniel Piotrowski**, co-presidents, and Joe Schulte, **Andrea Houck**, and **Marissa Mizwa**.



[X,[Y,Z]]+[Y,[Z,X]]+[Z,[X,Y]]=0 Western Michigan University



The Department of Mathematics at Western Michigan University consists of 36 full-time faculty members with specialties in many areas of mathematics and mathematics education, with about 32 graduate teaching assistants, research assistants and doctoral associates. Western Michigan University is located in beautiful Southwestern Michigan, midway between Chicago and Detroit, near Lake Michigan.

<u>Degree Programs</u> The Department offers a variety of graduate programs tailored to meet the wants and needs of our graduate students. We offer Ph.D.s in Mathematics and Mathematics Education; Master's degrees in Mathematics, Applied and Computational Mathematics and Mathematics Education. Graduate students receive individualized attention and encouragement from professors committed to maintaining the highest standards in research and teaching.

Financial Assistance The Department offers several forms of financial assistance. Stipends range from \$13,003-\$15,577. Additional summer support may be available. Currently all supported doctoral students and master's students receive tuition waivers. Applications are due by February 15, 2020. Late applications are accepted as long as openings remain.

All application materials are available on our web pages:

www.wmich.edu/math

For additional information, please contact:

Graduate Programs Administrative Assistant Department of Mathematics Western Michigan University 1903 W. Michigan Ave. Kalamazoo, MI 49008-5248

Phone:	(269) 387-4512
Fax:	(269) 387-4530
E-mail:	math-info@wmich.edu
Web site:	www.wmich.edu/math

Western Michigan University is an Equal Opportunity/Affirmative Action Institution.

Lansing Community College

Homa Ghaussi-Mujtaba <ghaussih@lcc.edu>

Lansing Community College welcomes four new faculty members this year.

Jordan Gill graduated from Spring Arbor University in 2011 with a bachelor's degree in mathematics and a focus in secondary education. He taught high school for three years at Neuse Charter School in North Carolina. In the fall of 2013, he moved back to Michigan to pursue a PhD from Central Michigan University. He is planning on defending his dissertation this fall and graduating with a PhD in mathematics with a concentration in collegiate mathematics education. When not working on lessons or mathematics problems Jordan enjoys spending time with his wife Nicole and two beautiful daughters, June (2 years old) and Nina (4 months old).

Mathew Kerns spent thirteen years as an over-the-road truck driver before returning to college to complete his degrees. He has a BS in pure mathematics, an MS in

pure mathematics, and an M.Ed in mathematics education. Mat spent two years teaching high school in Ohio and then four years teaching at Fulton-Montgomery Community College in upstate New York. He is a member of NCTM, MAA, and NYSMATYC (New York State Mathematics Association of Two-Year Colleges).

Kristen Meck was a high school teacher for seventeen years and taught part time at community colleges for ten years before accepting this full-time position. She has a BS in mathematics, a master's degree in secondary mathematics education, and is pursuing a PhD in curriculum and instruction with a focus in secondary mathematics education and a minor in pure mathematics.

Lillian Ryall has previously taught mathematics courses at the University of Michigan, Washtenaw Community College, Schoolcraft Community College, and Madonna University. She holds a BS in mathematics and chemistry from Madonna University, a master's in mathematics from the University of Texas, and a *Juris Doctor* from Wayne State University. Lillian is very excited to be a new member of the LCC Mathematics Department.

Michigan Technological University

Jeanne Meyers <jemeyers@mtu.edu>

The department hosted the fifth annual Kliakhandler Conference, Computational Modeling and Image Processing of Biomedical Problems, June 15–17, 2019. The Kliakhandler Conference is an annual event funded by a generous gift from **Igor Kliakhandler**, a former Michigan Tech faculty member. The conference was organized by **Zhengfu Xu** of Mathematical Sciences and **Jingfeng Jiang** of Biomedical Engineering. In addition to the Kliakhandler gift, Xu received a grant from the National Science Foundation (NSF) to support the conference.

Ken Ono, Thomas Jefferson Professor of Mathematics at the University of Virginia, gave the fifth Kliakhandler lecture on "Why Does Ramanujan, 'The Man Who Knew Infinity,' Matter?" in which he explained why Ramanujan matters today. Ono also gave a departmental talk on September 20, "The Jensen-Polya Program for Riemann Hypothesis and Related Problems."

William Keith was promoted to associate professor with tenure, and **Melissa Keranen** and Zhengfu Xu were promoted to professor effective August 19, 2019.

Fabrizio Zanello was awarded a five-year Simons Foundation Collaboration grant. **John Gruver** is co-PI on a four-year project, *Developing and Investigating Unscripted Mathematics Videos*, that has received a \$1,521,015 research grant from the NSF. (The lead institution is San Diego State; Michigan Technological University's share is \$600,000.)

Associate Professor **Yang Yang** will be on sabbatical for the spring semester. **Stefaan De Winter** is spending a third year at the NSF as a program officer.

The department has created a new MS in Applied Statistics that is offered entirely online and is targeted at working professionals. The first cohort started the program in Summer 2019.

Oakland University

Daniel Steffy <steffy@oakland.edu>

Beginning in Fall 2019, **Anna Spagnuolo** is the new department chairperson. During this fall semester, **Dorin Drignei** will be on sabbatical. **Tamas Horvath** and **Jun Hu** have joined the department as assistant professors, and **Ashrafur Rahman** and **Rosangela Sviercoski** joined the department as visiting assistant professors.

Oakland University will host the 2020 IMS/ASA spring research conference in statistics May 20–22; more details to follow.

We expect to conduct the 25th annual Summer Mathematics Institute for talented local high school students in the summer of 2020. Please visit our website <oakland.edu/math> for more information.

Saginaw Valley State University

Emmanuel Ncheuguim <ekengnin@svsu.edu>

Tony Crachiola was appointed as the new Associate Dean of the College of Sciences, Engineering and Technology. **Olivier Heubo-Kewgna** was promoted to the rank of professor.

Garry Johns will be on sabbatical in Winter 2020. The department also welcomes **Brian Hassen** for a one-year temporary lecture position.

Steve Kahn, Professor of Mathematics and Director of the Center for Excellence and Equity in Mathematics at Wayne State University in Detroit, visited SVSU on October 11, 2019 to talk about his experience in teaching mathematics to under-prepared college students.

University of Michigan-Flint

Mehrdad Simkani <simkani@umich.edu>

Lixing Han is on sabbatical in Fall 2019. **Shu-Yi Tu** will be on sabbatical in Fall 2020.

The mathematics department is hosting its Family Math Night on March 24, 2020, from 6–8p.m. in the Michigan Rooms at the University Center. The 53rd Math Field Day will be on Monday, March 2, 2020.

The department will be offering a new concentration in Mathematics for Data Science starting Fall 2020.

Michigan Section Dues

Your voluntary dues contribution will help support the activities of the Michigan section, such as the Annual Meeting and the *Newsletter*. Dues may be submitted online via PayPal (log in to your account at paypal.com and specify MichiganSectionDues@gmail.com as the address of the recipient), or you may print and mail this form and a check to the address given below.

Enclosed is a check for:

\$15 regular dues

\$30 sustaining membership

\$40 small institution dues

\$70 large institution dues

Name _____

Institution	
Mailing address	

Email address

Make checks payable to: Michigan Section–MAA, and mail them to:

Ken Schilling Secretary-Treasurer, Michigan Section–MAA Mathematics Department University of Michigan-Flint 303 E. Kearsley Street Flint, MI 48502

Western Michigan University

Melinda Koelling <melinda.koelling@wmich.edu>

Christine Browning retired in December 2018, and **Dennis Pence** will retire in December 2019. For 2018– 2019, awards were granted to **Conor Doig** (Math Department Presidential Scholar), **Noha Abdelghany** and **Omar Abu-Ghalyoun** (WMU Mathematics Department Graduate Teaching Award), Noha Abdelghany (Univer-

Wayne State University

Dan Drucker <aa1856@wayne.edu>

Paoliu Chow and **Andre Furtado** retired at the end of the 2018–2019 academic year. **Byungjae Son** and **Xiang Wan** completed their postdoctoral appointments and found positions elsewhere. **Kim Morgan** was promoted to Academic Adviser IV. **Rohini Kumar** will be on sabbatical leave during Fall 2019. **Bert Schreiber** passed away on August 12, 2019.

Dan Isaksen has received an NSF grant, "Motivic and equivariant stable homotopy groups".

Our first annual Mathematics Placement Exam Boot Camp was run this past summer in conjunction with the Department of Physics. We have also introduced courses on the Mathematics of Finance and on Internships in the Mathematical Sciences, as well as submitting proposals for courses on Topological Data Analysis, Introduction sity Graduate Teaching Award), **Jamie Hallas** (WMU Mathematics Department Graduate Research Award), and **Drake Olejniczak** (University Graduate Research Award).

David Bindel gave a colloquium talk on October 24 for our fall Pi Mu Epsilon induction, and a general talk on October 25. We will hold our fourth annual Undergraduate Mathematics Competition on October 26.

to Data Science, and Applied Regression Analysis, the latter replacing a course on Linear Modeling.

Wayne State's Department of Mathematics hosted a Conference on Applied Stochastic Processes and Applications during April 2019. Part of the aim was to celebrate the contributions of Professor Paoliu Chow on the occasion of his retirement.

The WSU Math Society is open to Wayne State students, undergraduate and graduate, regardless of major, who have an interest in mathematics, want to have fun learning and applying it in unique ways, and who want to give back to the community. The executive committee members are **Dalton Cymbal** and **Maria Berishaj**, Co-Presidents; **Tashawn Huggins**, Treasurer and Head of Fundraising Committee; and **Richard Pineau** and **Tiana Bosley**, Co-faculty advisors.

2019 Award for Distinguished College or University Teaching of Mathematics Presented to Yunus Zeytuncu

David Murphy (Hillsdale C) <dmurphy@hillsdale.edu>

The Michigan Section of the Mathematical Association of America is pleased to present the 2019 Award for Distinguished College or University Teaching of Mathematics to **Yunus Zeytuncu** of UM-Dearborn.



Yunus Zeytuncu, 2019 Distinguished Teaching Award Recipient

Yunus Zeytuncu is receiving this award for his excellent teaching at the UM-Dearborn, his work as founder and Director of the Maize & Blue Math Circle (presently reaching more than sixty K–12 students from Detroit), as co-Director of the Math Corps summer camp outreach program to Detroit Public Schools, and his work to promote undergraduate research (mentoring of REU students as well as PI and PI/co-PI for several REU grants). Yunus has 10 years of experience teaching mathematics. In his five years teaching at the University of Michigan-Dearborn, he is characterized as an excellent classroom instructor by his students and colleagues, and he was nominated for their campuswide Distinguished Teaching Award in the Non-Tenured Track category in 2016. Yunus is interested in pedagogy and curriculum. He co-authored "Flipping a college calculus course: a case study," an article that studied students' views on flipped courses and compared their success with students from non-flipped classes. He also co-designed the Mathematics of Finance Certificate for the department.

Yunus's teaching endeavors reach beyond the classroom. He has mentored more than 28 students (12 from underrepresented groups in mathematics and 16 female students) in REUs at the University of Michigan-Dearborn and Texas A&M University, and he has published multiple papers with undergraduates. He is PI for several grants (NSF, NSA, and MAA) sponsoring the REU Site at the UM-Dearborn. His dedication to undergraduate research earned his 2016 nomination for the Center for Undergraduate Research Mentor Award.

Above all of this, upon arriving at the UM-Dearborn in 2013, Yunus established their Maize & Blue Math Circle, which has flourished and enabled outreach activities where high school students come by bus to campus for enrichment sessions, and mathematics students and faculty visit local schools exporting the same programs. Presently there are three K–12 level math circle programs, involving more than 60 students from Detroit. Yunus is also co-director of the Math Corps outreach program, a six-week summer camp in mathematics for students from Detroit Public Schools.

It is therefore with great pride and pleasure that the Michigan section of the Mathematical Association of America presents the 2019 Distinguished University Teaching of Mathematics Award to Yunus Zeytuncu.

Michigan Section Awards 2019 Distinguished Service Award to Matt Boelkins

Laura McLeman (UM Flint) <lauramcl@umflint.edu>

In recognition of his long-standing leadership both within the section and nationally, as well as his dedication to fostering the learning of undergraduate and K–12 mathematics, the Michigan Section of the Mathematical Association of America awarded **Matt Boelkins** its 2019 Distinguished Service Award.



Matt Boelkins, 2019 Distinguished Service Award Recipient

Matt Boelkins has been instrumental in many facets of governance within the Section. From 2001–2005, Matt co-organized the Project NeXT Symposium, and, in 2003, was on the organizing committee for the Sixth Annual Michigan Undergraduate Mathematics Conference. Moving on from there, Matt served on the program committee for the 2006 Annual Meeting and acted as a co-four-year-college vice chair during that time. Matt then served on the executive committee from 2007–2010 in the roles of four-year-college vice chair, chair, and past chair. Finally, Matt served as one of the last governors of the section (a position now replaced with the section representative to the MAA Congress) from 2013–2016.

Building on his tremendous service record at the state level, Matt became an active leader at the national level. In 2016, he was the first vice president of the Mathematical Association of America and in 2017, was the chair of the MAA Congress. However, Matt did not forget his roots in Michigan. In 2018, Matt led the program committee in planning the 75th Anniversary Tri-Section meeting in Valparaiso, IN.

Beyond his work within the MAA organization, Matt has worked tirelessly to promote undergraduate and K-12 mathematics within the state of Michigan. He co-organized the Math in Action conference in 2001 and 2002, a conference that brings together different constituents, including K-12 teachers, pre-service teachers, curriculum directors, and university professors, to discuss issues and share resources related to mathematics education. He co-authored the free, open-source text series Active Calculus. Currently, he serves as co-editor in chief for PRIMUS, a research journal geared toward promoting the teaching of undergraduate mathematics. His dedication to teaching has been honored numerous times, most notably in 2013 with the Section's Distinguished Teaching Award and in 2016 with the Michigan Association of State Universities' Distinguished Professor of the Year.

We thank you, Matt Boelkins, for all of your hard work!

2020 Distinguished Teaching Award Nominations Due December 15, 2019

Carl Lee (CMU) <lee1c@cmich.edu> Distinguished Teaching Award Committee Chair

Nominations for the 2020 award are now being accepted, and must be received by December 15, 2019 to be considered. The Distinguished Teaching Award Committee strongly urges departments or individuals to nominate deserving faculty for this award. We recognize that there are many outstanding teachers in the section, but we can consider only those who are nominated.

The committee particularly welcomes nominations of individuals from groups (or types of institutions) that have historically been under-represented in mathematics or in the list of previous re-Past recipients may cipients of the award. be found at <sections.maa.org/michigan/ history.html#teaching_award>. The person selected by the committee will be presented with the award in the spring of 2020 at the annual meeting of the Michigan Section, and will also, pending submission of additional supporting material and membership in the MAA, become the Michigan Section nominee for the national MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics.

Nomination Instructions Completed nominations must be received by December 15, 2019, to be considered for the 2020 Award. The nomination form is available at <sections.maa.org/michigan/awards. html> as a Microsoft Word document.

Send an electronic copy of the completed form to

Carl Lee <lee1c@cmich.edu>; please use "Michigan DTA Nomination" as the subject. Email is preferred, but you may also send it by mail to:

Carl Lee Chair and Professor Department of Statistics, Actuarial and Data Sciences Pearce Hall, Room 105 Central Michigan University Mt. Pleasant, MI 48859

Anyone may make a nomination (of someone else; selfnomination is not permitted), but nominations from chairs or MAA liaisons in departments of mathematical sciences are especially recommended.

Eligibility for the Award To be considered for the award, a nominee must: • Be a college or university teacher who currently teaches a mathematical science at least half-time during the academic year in a public or private college or university (from two-year college teaching through teaching at the PhD level) in Michigan. Those on approved leave (sabbatical or otherwise) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year. • Have at least seven years' experience in teaching the mathematical sciences. • Have had teaching effectiveness that can be documented. • Have had influence in their teaching beyond their own institution. • Foster curiosity and generate excitement about mathematics in their students.

2020 Distinguished Service Award Nominations Due January 31, 2020

Victor Piercey (Ferris State U) <victorpiercey@ferris.edu>

Nominations are being solicited for the Michigan Section's Distinguished Service Award. The awards committee will accept nominations until January 31, 2020. Nominations should include the nominee's service in their home department as well as service to the section, and any service performed for national mathematics organizations or for the promotion of mathematics in a local community.

Please send nominations to Victor Piercey <victorpiercey@ferris.edu>.

Nominations for Section Officers

Victor Piercey (Ferris State U) <victorpiercey@ferris.edu>

Our section needs volunteers! At our annual meeting this spring, we will elect several officers, including fouryear-college and two-year-college vice chairs and a director of the Michigan Mathematics Prize Competition (MMPC).

The four-year-college vice chair serves for one year and is in charge of the annual meeting. Typically the fouryear-college vice chair is elevated to the position of section chair for the following year, and serves as the past-chair in the year after serving as chair. The twoyear-college vice chair serves for at least one year and provides an important link between the Michigan Section of the MAA and MichMATYC. Finally, the director of the MMPC serves for 3 years and administers all aspects of this competition. See the section by-laws for more detail; they can be found at the section's webpage, <sections.maa.org/michigan/>.

We are also searching for a public information officer, who will be responsible for writing and distributing press releases about the section. This is typically limited to information about the winners of the Michigan Mathematics Prize Competition, which is sent out to the home newspapers of each of the winners.

If you know someone (including yourself!) who would be good for these positions, please contact Victor at <victorpiercey@ferris.edu>. Please consider volunteering and helping out your section!

Spring 2018 Mathematical Contest News

The 2019 American Mathematics Competitions Results

David Friday (Macomb CC) <fridayd@macomb.edu>

The American Mathematical Contest 10 (AMC 10) and the American Mathematical Contest 12 (AMC 12) are 25-question, 75-minute competitions designed to challenge talented high school students outside of their typical classroom curriculum. The AMC 10 is geared toward students at grade 10 or below, and the AMC 12 is geared toward all high school students.

In the 2018–2019 academic year, a total of 42,101 students (up from 41,145 last year) at 1,920 schools worldwide (up from 1,774) took part in the AMC 10 A, and 34,476 students (up from 33,226) at 1,872 schools worldwide (up from 1,720 last year) took part in the AMC 12 A. Additionally, a total of 23,832 students (down from 32,081 last year) at 1,375 schools worldwide (down from 1,659) took part in the AMC 10 B,

and 19,116 students (down from 27,657) at 1,459 schools (down from 1,777) worldwide took part in the AMC 12 B. The A and the B versions of the AMC 10 and the AMC 12 have the same number of questions, the same scoring, and the same rules for administration. The only differences are the competition dates and that each version has a distinct set of questions, although the two examinations are designed to be equal in difficulty and distribution of topics.

In the state of Michigan, three students earned a perfect score on one or more of these competitions. **Reagan Choi**, an 9th grader from Boulan Park MS (Troy) and **Freddie Zhao**, a 12th grader from Troy HS (Troy) earned perfect scores on the AMC 12 A. **Alex Xu**, a 10th grader from Troy HS, earned a perfect score on the AMC 10 B.

2019 Michigan All-Stars ARML Results

Ruth Favro (Lawrence Tech U) <favro@ltu.edu>

The 2019 American Regions Math League (ARML) competition took place on June 1, 2019 on the campuses of the Universities of Iowa, Penn State, Georgia, and Nevada-Las Vegas. A total of 132 teams of up to 15 students each represented various regions of the United States and Canada. International teams participated in the International Regions Mathematics League (IRML). This year the Michigan All-Stars took 33 students: two full teams, both in the A division, and three students who competed on an alternate team with alternate students from other states. Our students came from 16 different cities from around Michigan. It was our 30th year of participation in ARML!

The Michigan A1 Reals placed 12th nationally out of a field of 72 teams in the A division. They were 3rd at the Iowa site in the A division. Qualifying for national ranking in the individual round with 9 out of 10 points was **James Xiu**, Ann Arbor Huron High School. James was ranked 13th nationally. Next highest, with 7 points, were **Yashwanth Bajji** and **Reagan Choi**, Troy High School, **Vishal Nayak**, Plymouth-Canton High School, and **Derek Zhu**, Arbor Huron High School. Derek Zhu and Vishal Nayak were team co-captains.

The Michigan A2 Naturals placed 54th in the A division, and 13th at Iowa. Individual round top scorer with 7 points was **Aaryan Chandna**, W Bloomfield

High School. Team co-captains were **Elizabeth Plotner**, Ann Arbor Huron High School, and **Aneesh Sabnis**, Plymouth-Salem High School.

Michael Lu, a 6th grader, was the high scorer on an Iowa Alternate team, with 6 points.

The contest consists of four parts: team problems, 20 minutes for 10 problems; a power problem, one hour for a sequence of related problems requiring proof; individual problems: 10 problems, 10 minutes for each group of two; and the relay round: short problems requiring a number to be passed back to the next team member. Groups of three get six minutes to complete each of two relays. A tiebreaker round is held for ties for the top score in the individual round. Complete information can be found at www.arml.com.

Team coaches were **Dave Friday** (Macomb CC), **Cap Khoury** (Everi Games), **Ruth Favro** and **Na Yu** (LTU), and **Mark Bollman** (Albion C). Additional help came from **Peter Collins** (Ann Arbor Huron HS), **Tasha Betterly-Byrd**, **Susie Khoury**, **Ming Zhu**, **Byoung Choi**, and **Austin Khalaila**.

The Michigan All-Star Project is an activity of the MAA-Michigan Section. We recruit from the top 100+ winners of the Michigan Math Prize Competition. Thanks to our supporters: the alumni/ae, parents, and coaches of the All-Stars, and a grant from the George S. and Helen G. Deffenbaugh Foundation, with in-kind support from the coaches' institutions.

The 79th William Lowell Putnam Competition

Ruth Favro (Lawrence Tech U) <favro@ltu.edu>

The 79th Putnam Competition was held on December 1, 2018, with over 4000 students competing in the six-hour, 12-question exam. Results were announced in late February, 2019. Congratulations to all who participated in this challenging contest! Top students at Michigan colleges are:

Top 1–193 MSU: Mohit Bansil; UM: Jit Wu Yap, Honorable Mention.

Top 206–495.5 MSU: Neel Modi, Lukan Wiljanen; UM: Noah Luntzlara, Omer Siddiqui, Aman Karunakaran, Conor Thompson, Yuxuan Bao.

A Review of Mathematica, An Exhibit at The Henry Ford Museum

Amy Shell-Gellasch (EMU) <ashellge@emu.edu>

son and I visited the Mathematica ex-My hibit at The Henry Ford Museum of Innovation in Dearborn, Michigan <thehenryford. org/visit/henry-ford-museum/exhibits/ mathematica/>. If you have not heard of The Henry Ford, you may have heard of its other half, Greenfield Village, the outdoor 19th century museum that has in its collections such wonderful things as the Wright brothers' actual bicycle shop and Edison's Menlo Park laboratory, building and all. The Henry Ford started as a car and train museum but has expanded over the vears to including everything innovative. It still has an amazing collection of cars and trains, including the cars of many Presidents, including John F. Kennedy.

In the fall of 2017, the Henry Ford opened a permanent exhibit about mathematics titled *Mathematica*. (It has no connection to the computer algebra package.) It is not a large exhibit, only perhaps 1500 square feet, but it is beautifully done, with just the right variety of topics and amount of description. Even if you read every detail, you could complete the exhibit in less than an hour. Most people, like my son, would probably spend about 20 minutes.

I teach at Eastern Michigan University about 30 minutes away, and I offered extra credit to students in my mathematics for elementary education course who visited the exhibit. I was surprised by how many students got themselves there, and how many really enjoyed it. I know they enjoyed it because in many of their write-ups (their extra credit was not free!) they mentioned that they were surprised at how much they actually liked it.

The exhibit includes a gravity well, a Mobius trip with an arrow shaped car on a track, a normal curve ball drop, lightbulbs that show multiplication of three numbers as a volume, a random walk generator, minimal surfaces with soap bubbles, non-Euclidian geometry, and projective geometry. There is also a history wall, which is not new but apparently was compiled at some point in the mid-20th century and updated in the 1980s — so the history wall is itself a piece of history. They also have a small display accompanying the wall on the Fields Medal. Unfortunately, by not updating it, they have missed the opportunity to include the important fact that we now have a woman Fields Medalist.

Three of the exhibits really caught my fancy. First, right as you come in is a hyperboloid. Since I worked on the Olivier String Models while at West Point, I was immediately drawn to this object. This hyperboloid was made of thin metal rods instead of string. The most interesting part is a matching metal rod on a rotating arm that passes through a cross section of the hyperboloid as it rotates. In this way you can actually see that straight lines form the apparently curved surface of the hyperboloid.

Second is the case on projective geometry. From the side the viewer sees several different three-dimensional prisms and surfaces of various colors suspended at different locations. But when you look through a small viewer at the right end of the case, you see that the objects all come together perfectly to form a two-dimensional square with the different colors meeting at the axis of the viewer's line of sight.

Finally, my absolute favorite is the exhibit on the conic sections. Inside an octagonal enclosure are thin wires arrayed in flat, cylindrical, and conical shapes. Small beams of light span these sets of wires to show the conics as well as the intersection of the conics and other surfaces. The exhibit is accompanied by music that reminded me of some of the more sleep-inducing but visually stimulating scenes from Kubrick's *2001: A Space Odyssey*.

Though I would have loved for the exhibit to be larger, I think it is probably the right size for a nonmathematician. Likewise, I think a little more could have been said in the descriptions, but again they probably rightly erred on the side of "less is more". If you are in the metro Detroit area, The Henry Ford and Greenfield Village are well worth the day — and you need a full day to do both!

Congratuations to Norman Richert on his Retirement

Beth Wolf (UM-Ann Arbor) <bethwolf@umich.edu>

On behalf of the Michigan Section of the MAA, the editors wish to offer our congratulations to **Norman Richert** on his retirement. A long-time editor of this *Newsletter*, serving from 2002 to 2013, Norm recently retired from *Mathematical Reviews* at the American Mathematical Society, where he has been an editor since 1999 and a managing editor since 2010. Norm edited reviews in number theory, an area in which he has himself published several papers. He also enjoys photography, and

while editor was known for taking most of the photos for this *Newsletter* himself. *Congratulations, Norm!*

Are you interested in becoming a reviewer for Mathematical Reviews? For more information, see Norm's article "An avuncular chat about reviewing for *Mathematical Reviews*" in the Notices of the AMS, vol. 60 (2013), no. 6, pp. 775–776, or this article <sections.maa.org/michigan/newsletters/ 36_2 Spring 2010 Newsletter.pdf>

Photographs from the Section Meeting



Steve Schlicker (R, GVSU) passes the MAA Congress Representative baton to our new representative Mark Bollman (L, Albion C).



Ruth Favro presents her experience with involving students in the Mathematical Contest in Modeling.



Amy Hlavacek (SVSU), Suzanne Weekes (Worcester Polytechnic Institute, MA), Ruth Favro (LTU), Amanda Serenevy (Riverbend Community Math Center), and Roni Ellington (Morgan State University, MD) (L to R) discuss their work in various outreach programs with Section members.



Students Katelyn Seger, Bethany Balint, and Amar Dabaja (L to R) from Lawrence Tech present their work from a recent SCUDEM competition. The 2019 meeting included 11 undergraduate student talks, involving 20 students, and 2 graduate student talks, involving 3 students.



National MAA Secretary James Sellars speaks during the banquet.



Savannah Swiatlowski (L) from Central Michigan University is awarded the Ron Mosier Memorial Award for the best undergraduate talk by Laura McLeman (R, UM-Flint).

Michigan Section—Mathematical Association of America

Committees and Appointments

Executive Committee

Chair	('20)	Nancy Colwell (SVSU)
		<nccolwel@svsu.edu> • 989-964-4353</nccolwel@svsu.edu>
Vice Chair	('20)	Amy Shell-Gellasch (EMU)
		<ashellge@emich.edu> • 734-487-1444</ashellge@emich.edu>
Vice Chair	('20)	Sang Lee (Grand Rapids CC)
		<sanglee@grcc.edu> • 616- 234-4076</sanglee@grcc.edu>
SecTreas.	('22)	Ken Schilling (UM-Flint)
		<ksch@umflint.edu> • 810-762-3244</ksch@umflint.edu>
Past Chair	('20)	Victor Piercey (Ferris State U)
		<pre><piercev1@ferris.edu> • 231-591-2823</piercev1@ferris.edu></pre>
Sec. Rep.	('22)	Mark Bollman (Albion C)
		<mbollman@albion.edu> • 517-629-0261</mbollman@albion.edu>

Michigan Mathematics Prize Competition (MMPC)

Co-Director ('20) Daniel R. Rowe (NMU)
<darowe@nmu.edu>• 906-227-1594</darowe@nmu.edu>
Co-Director ('20) Andrew Poe (NMU)
<apoe@nmu.edu> • 906-227-1598</apoe@nmu.edu>

MMPC Exam Committee

Chair	('20) Dorin Dumitrascu (Adrian C)
	<ddumitrascu@adrian.edu>• 517-265-5161</ddumitrascu@adrian.edu>
Member	('21) Bingwu Wang (EMU)
	<bwang@emich.edu> • 724-487-5044</bwang@emich.edu>
Member	('22) Lazaros Kikas (U Detroit Mercy)
	<kikasld@udmercy.edu> • 313-993-3379</kikasld@udmercy.edu>
Member	('23) Michael Dabkowski (UM-Dearborn)
	<mgdabkow@umich.edu> • 313-593-5365</mgdabkow@umich.edu>

2020 Annual Meeting Program Committee

Amy Shell-Gellasch (EMU)
<ashellge@emich.edu> • 734-487-1444</ashellge@emich.edu>
Laura McLeman (UM-Flint)
<lauramcl@umflint.edu> • 810-237-6656</lauramcl@umflint.edu>
Sang Lee (Grand Rapids CC)
<sanglee@grcc.edu> • 616-234-4076</sanglee@grcc.edu>
Akula Tefera (GVSU)
<teferaa@gvsu.edu> • 616-331-3746</teferaa@gvsu.edu>
Matt Boelkins (GVSU)
<boolkinm@gvsu.edu> • 616-331-3384</boolkinm@gvsu.edu>

Audit Committee

Member	Dan Isaksen (Wayne State U)
	<isaksen@wayne.edu> • 313-577-2479</isaksen@wayne.edu>
Member	Michael Bolt (Calvin C)
	<mbolt@calvin.edu> • 616-526-6719</mbolt@calvin.edu>

Michigan Section Newsletter

Co-Editor	('20) Clark Wells (GVSU)
	<wellsc@gvsu.edu> • 616-331-2444</wellsc@gvsu.edu>
Co-Editor	('20) Beth Wolf (UM-AA)
	<bethwolf@umich.edu> • 734-763-1172</bethwolf@umich.edu>
Ad. Manager	Will Dickinson (GVSU)
C	<dickinsw@gvsu.edu> • 616-331-3745</dickinsw@gvsu.edu>

Distinguished Service Award Committee

<pre><piercev1@ferris.edu> • 231-591-2823</piercev1@ferris.edu></pre>
Member ('20) Nancy Colwell (SVSU)
<nccolwel@svsu.edu> • 989-964-4353</nccolwel@svsu.edu>

Distinguished Teaching Award Committee

Chair	('20)	Carl Lee (CMU)
		<carl.lee@cmich.edu> • 989-774-3555</carl.lee@cmich.edu>
Member	('21)	Angela Kubena (UM-Ann Arbor)
		<akubena@umich.edu> • 734-763-3249</akubena@umich.edu>
Member	('22)	Yunus Zeytuncu (UM-Dearborn)
		<zeytuncu@umich.edu> • 313-583-5178</zeytuncu@umich.edu>
Member	('20)	Elizabeth Lamprecht (Adrian C)
		<elamprecht@adrian.edu> • 517-264-3936</elamprecht@adrian.edu>

Nominating Committee

Chair	('20)	Victor Piercey (Ferris State U)
		<pre><piercev1@ferris.edu> • 231-591-2823</piercev1@ferris.edu></pre>
Member	('20)	Nancy Colwell (SVSU)
		<nccolwel@svsu.edu> • 989-964-4353</nccolwel@svsu.edu>
Member	('20)	Sang Lee (Grand Rapids CC)
		<sanglee@grcc.edu> • 616 234-4076</sanglee@grcc.edu>

MMPC Audit Committee

Member	David Redman (Delta C)
	<bdredman@delta.edu> • 989-686-9249</bdredman@delta.edu>
Member	Michael (Cap) Khoury (Lawrence Tech. U)
	<pre><prof.cap.khoury@gmail.com>• 248-204-3531</prof.cap.khoury@gmail.com></pre>

Other Appointments and Contacts

Webmaster	('22) Paul Pearson (Hope C)
	<michmaawebmaster@gmail.com> • 616-395-7529</michmaawebmaster@gmail.com>
Public Inform. Off.	Ruth Favro (Lawrence Tech U)
	<rfavro@ltu.edu> • 248-214-4375</rfavro@ltu.edu>
AMC Coordinator	David Friday (Macomb CC)
	<fridayd@macomb.edu> • 586-226-4731</fridayd@macomb.edu>
Archivist	John W. Petro (WMU)
	<john.petro@wmich.edu> • 616-387-4591</john.petro@wmich.edu>

Calendar of Events

Michigan Section-MAA Annual Meeting

2020: Grand Valley State University, April 3-4
<gvsu.edu/mism2020>.
2021: Alma College

MAA MathFest

- 2020: Philadelphia, PA, July 29–August 1
- 2021: Sacramento, CA, August 4–7
- 2022: Washington, DC, August 3–6
- 2023: Tampa, FL, August 2-5

MAA-AMS Joint Mathematics Meetings²

2020: Denver, CO, January 15-18
<jointmathematicsmeetings.org/jmm>

2021: Washington, DC, January 6–9

AMS Annual Meeting²

- 2022: Seattle, WA, January 5-8
- 2023: Boston, MA, January 4-7

AMATYC Annual Conference

- 2020: Spokane, WA, November 12–15
- <amatyc.site-ym.com/page/2020ConfHome>
- 2021: Phoenix, AZ, October 28–31
- 2022: Toronto, ON, November 17–20
- 2023: Omaha, NE, November 9–12
- 2024: Atlanta, GA, November 14–17
- 2025: Orlando, FL, November 19–22

NCTM Annual Meeting & Exposition

- 2020: (NCTM Centennial Annual) Chicago, IL, April 1–4
- <www.nctm.org/annual/>
- 2020: St. Louis, MO, October 21-24
- 2021: Atlanta, GA, September 22–25
- 2022: Los Angeles, CA, September 28–October 1

²The agreement with the AMS to jointly run the Joint Mathematics Meetings will end following the JMM in 2021. Thus, beginning in 2022, this meeting is listed as the AMS Annual Meeting.