



Michigan Section Mathematical Association of America

NEWSLETTER

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Read these stories online at sections.maa.org/michigan/newsletter

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Annual Meeting in April at Hope College. 2

It starts at 2:00 p.m. on Friday, April 10, and ends at 5:00 p.m. on Saturday, April 11. Register at <sections.maa.org/michigan/15meeting-program.html>.



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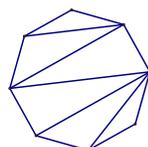
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Michigan Section Annual Meeting

April 10–11 at Hope College

By **Brian Snyder (LSSU)**

Annual Meeting Program Committee Chair

The daylight hours are increasing, so spring will be here soon! For many of us, spring cannot arrive quickly enough. This year, to accommodate one of the festivals of spring, the annual section meeting, to be held at Hope College in Holland, on the western side of the state, has been moved up from its usual date; hopefully spring itself will arrive earlier than expected as well. In addition to having the earlier start date, this year's meeting will also be the location for the Michigan Undergraduate Mathematics Conference (more about the MUMC on [page 3](#)). This will provide an excellent opportunity for the next generation of mathematicians, along with the current generation, to interact informally and hopefully spark some ideas in all of us.



“The local arrangements committee at Hope College has built a website to handle registrations, and the website includes local information about Holland and the latest program. Check it out at sections.maa.org/michigan/15meeting-program.html.”

We have a good selection of plenary and locally invited talks, with topics across the mathematical spectrum. This year the section is pleased to have **Erica Flapan** (Pomona C) join us to present the Pólya Lecture. MAA past president **Bob Devaney** (Boston U) will also be joining us. Rounding out the plenary speakers are **Ben Collins** (U of Wisconsin-Platteville) and **Bill Cook** (U of Waterloo).

We also have invited some great speakers from across Michigan. As a matter of fact, we have the current recipient of the Award for Distinguished College or University Teaching of Mathematics, **Ken Schilling** (UM-Flint), speaking on Saturday. **Eric Mann**

(Hope C), **Tim Pennings** (Davenport U), **Jack Rotman** (Lansing CC), and **Allen Schwenk** (WMU) complete the confirmed speakers.

But we can't have this meeting without you! There is still time to contribute a 20-minute talk for the meeting. The deadline has been extended to March 9 for faculty and graduate student talks; the deadline remains March 16 for undergraduate presentations. Late submissions may be accepted pending available space. To submit an abstract, please email me at bsnyder@lssu.edu with the subject “MAA Contributed Paper”. See [page 11](#) for details.

In any case, we do hope that you will at least attend the meeting. The local arrangements committee at Hope College has built a website to handle registrations, and the website includes local information about Holland and the latest program. Check it out at sections.maa.org/michigan/15meeting-program.html.

The other section officers and I hope to see you in Holland this April 10 and 11. ■

Mark Bollman Wins Service Award

By **Steve Blair (EMU)**

Distinguished Service Award Comm. Chair

Mark Bollman of Albion College has been selected to receive the Michigan section's 2014–2015 Distinguished Service Award. Details will appear in the Fall 2015 *Newsletter*, and Mark will be recognized at the awards banquet at Hope College on Friday, April 10, 2015. ■

Chair's Report

By Michele Intermont (Kalamazoo C)

As winter winds down, plans for the annual section meeting are heating up! Please plan to join us at Hope College in mid-April. This meeting will meld the undergraduate math conference of the last few years with the annual section meeting, so plan to bring your students.



And perhaps you're looking for a new undertaking yourself now that leaving the house doesn't mean leaving the sofa in front of the roaring fireplace for the chill of six below? Recently, some interest has

been shown on the part of parents for starting a math circle on the east side of the state, in or near Macomb. What's a math circle? Well, basically, it's a time to gather and engage kids in interesting math problems. There's more information about math circles at <mathcircles.org>. If you would like to explore this opportunity more, please get in touch with me at <intermon@kzoo.edu>.

If curriculum reform is more your thing, perhaps you'd be interested in collaborating with some folks from MichMATYC on precalculus reform or on developing guidelines for quantitative reasoning courses. There is already work being done in the ranks of MichMATYC, the statewide association of two-year colleges, and they have indicated they would welcome input from folks at four-year institutions. Again, if you're interested in hearing more and/or becoming involved, please get in touch with me.

That's the news from Lake Wobegon. I'm looking forward to seeing many of you in Holland in a few weeks. ■

Michigan Undergraduate Mathematics Conference

By Stephanie Edwards (Hope C)

2015 Michigan Undergraduate Mathematics Conference Organizer

The 17th annual Michigan Undergraduate Mathematics Conference (MUMC) will be held at Hope College on Saturday, April 11, 2015, in conjunction with the annual section meeting. Students should send their abstracts to **Brian Snyder** <bsnyder@lssu.edu> by March 16. All details can be found at the annual meeting website <sections.maa.org/michigan/15meeting.html>. There is no cost for students to register, and a continental breakfast and pizza lunch will be provided. Please encourage your students to attend! ■

Save the Date for UP Regional Math Meeting

By Brian Snyder (LSSU)

Upper Peninsula Regional Mathematics Meeting Co-Organizer

The dates for the 2015 Upper Peninsula Regional Mathematics Meeting have been set for October 2–3, 2015. The meeting will be hosted by Lake Superior State University. The program will consist of several hour-long plenary talks and some 20-minute contributed talks. If you want to give a contributed

talk, send a title and abstract to **Brian Snyder** at <bsnyder@lssu.edu> and include "UP MAA Contributed Talk" in the subject line.

You don't need to be a Yooper to attend or contribute a talk. The changing colors should be near their peak all around Sault Sainte Marie, and the chance to meet some new people you may not otherwise get to know will make the trip across the UP or across the Mackinac Bridge enjoyable. ■

Governor's Report

By **Matt Boelkins (GVSU)**

Recently I took a personal trip across the Mackinac Bridge to St. Ignace for the weekend; while there, we experienced morning temperatures of -20 and wind chills of -40 . Although I'm immensely fond of Michigan generally, at this time of year I find myself entirely ready for spring. The annual section meeting is one of my personal markers of the end of winter, and I'm already excited for the opportunity to gather with colleagues, old friends, and new acquaintances in April at Hope College.



I had a pleasant trip to San Antonio for the 2015 Joint

Meetings. At the conference, several things I experienced highlighted the fine ongoing work of the MAA.

The JMM 2015 app for iPhone <itunes.apple.com/us/app/2015-joint-mathematics-meeting/id943377740?mt=8> and Android <play.google.com/store/apps/details?id=com.tripbuilder.jmm2015&hl=en> provided an outstanding way to view the schedule and to plan one's conference experience. This app is one example of how the MAA is working to embrace and leverage the digital revolution to its advantage. Personally, I found the app much easier to search than the printed schedule, or even the web-based version online.

The CUPM 2015 Program Guide is now live on the MAA's website <maa.org/programs/faculty-and-departments/curriculum-department-guidelines-recommendations/cupm>. CUPM stands for Committee on the Undergraduate Program in Mathematics, and the 2015 Program Guide is the committee's once-a-decade set of recommendations on a host of issues that affect majors and programs

.....
Governor's Report continued on page 5

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The University of Michigan is an equal opportunity educator and employer.

Governor's Report continued from page 4

in the mathematical sciences. Over 250 different mathematicians worked on the 2015 Guide! There is a wealth of wise counsel in the Guide, and something to benefit every mathematics faculty member and department.

Project NExT hosted its usual impressive program, but with more offerings open to all conference attendees. One of those events was the inaugural Project NExT Lecture, which was delivered by **Uri Treisman** (U of Texas) and titled “Ruminations on Learning to Teach”. I found Uri’s comments profound and moving, and I’d like to share three of them here as a way to exemplify how the MAA is affecting the teaching of collegiate mathematics. In what follows, I will put observations I attribute to Uri in quotes, but I want readers to understand that I was taking notes quickly and likely have not captured him verbatim.

“Good teachers start with worrying about their own classrooms, and then evolve to trying to influence the profession as a whole.” In many ways, this represents to me what the MAA is about: getting each of us to worry about how we can do a better job in our own classroom, and then thinking about how we can channel our own efforts to support others. Indeed, the CUPM Program Guide is a great example of how professors who’ve thought at length about their own classroom are sharing their expertise to positively impact the profession at large.

“We all have this fantasy that we create ourselves. We later realize we are the product of a lot of other people’s work.” Uri made this statement as an observation about students first, and about his own education later. It resonates fully with me. No matter how hard we work or how much we endeavor to stand on our own, who we are is the result of contributions from many others. Here, too, I see the MAA’s fingerprints: through contributed paper sessions, section meetings, Project NExT, its fine journals, and the opportunity to network with talented peers, the association is impacting the work of a lot of people, and helping their “product” be better.

In Treisman’s study of students who were struggling at Berkeley, three key themes emerged that were com-

“How do we help students find community and belonging in studying our great subject?”

mon to all students, in that there were three crises that all students faced right away in their university experience: (1) a crisis of capability, (2) a crisis of belonging, and (3) a crisis of purpose. Uri talked at length about how much (2) matters, and asked, “How do we invite students into the culture of mathematics?” This is a fantastic question, and one the MAA cares deeply about. How do we make students feel even more welcome? How do we help students find community and belonging in studying our great subject? And how do we help students become even more successful in their mathematical work?

These questions drive my own efforts locally and with the association, and I know they motivate many of my colleagues at GVSU and throughout the MAA.

In closing, some key things to know or remember:

- The year 2015 is the MAA’s centennial. MathFest in August in Washington DC promises to be a spectacular conference, and Michigan’s own **Gerard Venema** of Calvin College has been hard at work arranging the program. Please see <maa.org/meetings/mathfest> for more details.
- The MAA is encouraging sections to celebrate the centennial at spring meetings. If you have ideas for how we might do this, please send your thoughts to me at <boelkinm@gvsu.edu>.
- The MAA has quite a few textbooks in process or in print <maa.org/publications>. As MAA books are reasonably priced and of high quality, please consider these as possible options for your students and courses.
- **Francis Su** of Harvey Mudd College is the new president of the MAA. Francis shared with the governors a few thoughts on the association, including that it “is a professional society that values all kinds of mathematics and all kinds of mathematical people, at every educational level” and that “the MAA community is down-to-earth, a lot of fun, and deserves your support!” I agree completely, and I urge you to find ways you can connect with, participate in, and benefit from the MAA.

I hope to see you in Holland in April for the section meeting, and I wish you a productive and effective remainder to your current semester of professional work. ■

Proposed Bylaws Addition

By Michele Intermont (Kalamazoo C)

Chair

For the last few years, the executive committee has been examining the selection process for the section's Distinguished Teaching Award and the section's nominee for the national MAA teaching award. As a result of this work, we will be bringing an addition to the section bylaws to the membership (see sections.maa.org/michigan/bylaws for the current section bylaws). This will occur at the annual meeting at Hope College in April. The proposed bylaw is provided below. Our goal in this action is to codify what is becoming practice and to bring the Michigan section in line with other sections of the MAA.

Here's the proposed addition, which would become Article VI-5 (with the current #5 being moved to #6):

The Distinguished Teaching Award Selection Committee determines the section's Distinguished Teaching Award recipient and ensures that this person is nominated for the national Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics. This committee shall consist of the previous three winners of the award with two additional persons selected by the section chair, and the longest-serving previous award-winner shall be appointed the committee's chair. In the event that any one of the previous three winners is unable to serve, the section chair shall appoint a replacement. ■



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umflint.edu/graduateprograms

Secretary/Treasurer's Report

By Mark Bollman (Albion C)

I would like to thank everyone who has sent in a voluntary section dues payment for 2014–2015. At this time there are 85 dues-paying members, of whom 48 are sustaining members, having paid dues of \$30 or more. The list of sustaining members can be found on [page 13](#). In these challenging financial times, your willingness to support the activities of the section is especially appreciated. I would also like to thank **William Jackson** for his continued support of the Ron Mosier Award as a supplement to his voluntary dues. His contribution will guarantee that the section can continue to recognize the outstanding student talk at the annual meeting.



In addition we now have 22 institutional members. This list can be found on [page 13](#). If your school is not listed, you might want to remind your department chair to attend to this matter. Last year at this time there were 99 dues-paying individual members, including 55 sustaining members, and 16 institution-

al members, so our contributing member number is down slightly, while our institutional membership is up a bit. The membership form for individuals and institutions can be found on [page 13](#).

The Michigan section's current bank balance is \$3645.55. We continue to have a good balance of income and expenses, and the section remains in sound financial shape. With the recent move to an online newsletter, we expect our expenses to drop somewhat and our financial standing to remain solid.

MAA book sales will continue at the annual meeting. Once again, the Washington office of the MAA will provide all section members, not just those attending the meeting, with a 35% discount coupon code that can be used to order MAA books online within one week (before or after) of the meeting. Books ordered through this alternative, like books ordered at the meeting itself, will gain the section a 10% commission. Further details about this program will be available from your department's MAA liaison or at the section meeting.

If you have any questions regarding the section's finances, please feel free to contact me. ■

Section Officers to Be Elected

By Steve Blair (EMU)

Nominating Committee Chair

The annual business meeting of the Michigan Section–MAA will take place during the annual meeting on Friday, April 10, 2015, at Hope College.

One of the major items of business is the election of officers. The Nominating Committee, chaired by **Steve Blair** (EMU), will propose a slate of candidates.



Brian Snyder (LSSU) will be nominated for Chair, **Gavin LaRose** (UM-Ann Arbor) will be nominated for Four-Year-College Vice Chair, and **Jan Roy** (Montcalm CC) will be nominated for Two-Year-College Vice Chair. Nominations from the floor are also accepted (permission of the nominees should be secured in advance).

The annual meeting will also have reports on section activities during the year, as well as an opportunity for members to raise other issues. ■

Math + Art + U = Mega Menger

By Randy Pruim (Calvin C)

Calvin College was selected as one of 20 host sites for an international fractal build—the construction of a level-3 model of a Menger sponge. Together, the 20 level-3 sponges, all built in October and early November, formed the largest distributed fractal build in the world. (For more information about the worldwide Mega Menger Project, visit megamenger.com.)

Calvin's mathematics and statistics department invited students, faculty, and friends of the college to help build a Menger sponge out of 66,048 business cards (48,000 blank cards and 18,048 specially printed cards that simulated an additional three levels). The mathematics department at Grand Valley State University contributed by “adopting” a level-2 sponge that they built and delivered to Calvin for inclusion in the larger model.

For more information about Calvin's participation, visit calvin.edu/go/mega-menger.



The first cube is always the hardest one.



Students from Grand Rapids Middle School assemble many level-0 cubes and some of the first level-1 cubes.



Many hands make light(er) work.



Public build sessions attract enthusiastic builders of all ages.

Mega Menger continued from page 8



Finishing up the first level-2. Twenty more of these and we're done.



Making progress.



Mega Menger spelunkers working late into the night.



Hoisting the top into place.



Adding the last few cards and performing final inspection.



Success!

American Mathematics Contest Results

By David Friday (Macomb CC)

AMC Coordinator

The American Mathematics Contest 8 (AMC 8), for students in grades 8 and below, is a 25-question, 40-minute multiple choice examination in middle school mathematics designed to promote the development and enhancement of problem-solving skills; to demonstrate the broad range of topics available for the junior-high-school mathematics curriculum; and to promote excitement, enthusiasm, and positive attitudes towards mathematics.

The 2014 AMC 8 exam was taken by 146,180 students from 2,354 schools, with an average score of 11.43 out of 25 total points. The top 1% scored 23 or above. In Michigan, 2,589 students from 34 schools took the exam.

Six students in Michigan (down from 11 last year) got a perfect score of 25: 8th grader **Chenxin Song** of AAMOC (Ann Arbor), 7th grader **Pratham Soni** and 8th grader **Freddie Zhao** of Boulan Park MS (Troy), 8th grader **Zachary Stein Perlman** and 7th grader **James Xiu** of Clague MS (Ann Arbor), and 7th grader **Alan Zhu** of Greenhills School (Ann Arbor).

Sixteen students in Michigan (up from seven last year) got a score of 24: 8th grader **Ajay Arora** and 7th grader **Sukrit Ganesh** of Novi MS, 6th grader **Prathik Guduri** and **Elizabeth Li** of Clague MS (Ann

Arbor), 8th grader **Bhaviko Gummadi** of Hillside MS (Northville), 8th graders **Jason Hu** and **Christopher Jiang** of AAMOC (Ann Arbor), 6th grader **Max Li** of Chippewa MS (Okemos), 8th graders **Vishal Nayak** and **Laurence Yang** of East MS (Plymouth), 7th grader **Camil Suci** of Northern Hills MS (Grand Rapids), 8th graders **Anna Sun** and **Madeleine Yang** of Detroit Country Day MS (Beverly Hills), 8th grader **Timothy Wu** and 7th grader **Victoria Zhang** of Meads Mill MS (Northville), and 6th grader **Alexander Xu** of Boulan Park MS (Troy).

“The 2014 AMC 8 exam was taken by 146,180 students from 2,354 schools.”

There was a tie for team winner between Clague MS and Boulan Park MS; both teams had scores of 74 out of 75.

Results from the AMC 10/12 A and AMC 10/12 B were still pending at press time.

Since I took over as AMC coordinator in the fall of 2013, we have had our second awards ceremony, hosted by Macomb Community College. Professor **Dan Frohardt** (WSU) delivered the keynote speech, “The Mathematics of Calendars”. Dinner was provided by the University Center of Macomb Community College. Also in attendance was **Ruth Favro** (LTU) to help honor the winners.

Congratulations once more to all of the 2014 AMC 8 winners! ■

Department Liaisons

By David Austin (GVSU)

Liaison Coordinator

Your departmental liaison helps keep you informed about what’s happening in our section by passing along announcements of upcoming events. If you are not receiving these announcements, please contact **David Austin** at <austind@gvsu.edu>. If your department does not have a liaison, we would love to have you join us. It’s an easy job, and your colleagues will appreciate your efforts. Just contact David Austin to volunteer. ■

Michigan Section Website & Facebook Page

By Stephanie Edwards (Hope C)

Webmaster

Please take a look at the website <sections.maa.org/michigan> and “like” us on Facebook <facebook.com/pages/Michigan-Section-MAA/115543895295620>! I appreciate any and all suggestions for our website. ■

Call for Papers

The Michigan section of the MAA and MichMATYC invite papers from students and faculty for the next combined annual meeting.

Hope College April 10–11, 2015

Abstracts should be sent via email to Brian Snyder at <bsnyder@lssu.edu> with “MAA contributed paper” in the subject line.

Talks should be 20 minutes in length, including a few minutes for questions. Your abstract must include your name, affiliation, home or office address, phone number, email address, and any equipment needs for your presentation. If you have any questions, please contact Brian Snyder.

The deadline for abstracts has been extended to March 9, 2015.
Undergraduate abstracts may be submitted until March 16, 2015.

Abstracts received after the deadlines will be considered as space permits.

Student Chapter News

Adrian College

The Adrian College Math Club, the Algebrainiacs, has been reactivated. ■

Alpena Community College

Sigma Zeta Math/Science Honor Society enjoyed an end-of-the-semester tour of the Sault Locks with the assistant engineer. Wandering through the tunnels under the locks and looking at all the equipment gave the students a good picture of the use of math and engineering. The software monitoring ships and systems from the control tower was of interest to those with a computer-science career in their future. In the afternoon, we toured Cloverland Electric Cooperative’s Edison Sault hydroelectric power-plant. Society members are planning an event they are supervising for the Science Olympiad, as well as looking forward to Spring Induction and a to-be-determined end-of-semester trip. ■

Eastern Michigan University

Dr. **Andrew Ross** coached the EMU team for the Math Contest in Modeling (MCM). He recruits the students for this competition from his modeling

class. • **Jamie Berger** is the president of our Math Club. ■

Grand Valley State University

The president of the Math & Stats club <[facebook.com/groups/GVSUMathStatsClub](https://www.facebook.com/groups/GVSUMathStatsClub)> is now **Danielle Harris**, the vice president is **Katie Tizedes**, the secretary is **Lauren Barry**, and the treasurer is **Andrew DeLernia**. ■

Hillsdale College

This year’s KME officers are **Ayla Meyer**, **Joshua Mirth**, **Arena Govier**, and **JoAnna Waterman**. ■

Lawrence Technological University

The LTU Math Club held some interesting meetings during the fall semester using the activities in the 2014 Math Awareness Month calendar of Math, Magic, and Mystery. In February we fielded three teams in the Mathematical Contest in Modeling, which gave the very current choices of modeling the containment of the ebola epidemic or searching for an airplane lost in an ocean. Plans are afoot for Geek Week and Pi Day. ■

Distinguished Teaching Award

By **Gavin LaRose (UM-Ann Arbor)**

Distinguished Teaching Award Committee Chair

Christine Phelps (CMU) Wins 2015 Award

The Distinguished Teaching Award Committee—**Katie Ballentine** (Mathematical Reviews), **Matt Boelkins** (GVSU), **Gavin LaRose** (UM-Ann Arbor), and **Ken Schilling** (UM-Flint)—is pleased to announce that the 2015 recipient of the Award for Distinguished Teaching of College or University Mathematics is **Christine Phelps**, associate professor of mathematics education at Central Michigan University. Christine receives this award in recognition of her outstanding teaching, work with teaching assistants and other faculty, curriculum design and inquiry-based pedagogy, and research on the teaching and learning of mathematics.

Nominations for 2016 Award Due December 16, 2015

Nominations for the 2016 award will be accepted beginning in the fall. Completed nominations must be received by December 16, 2015, to be considered. The Distinguished Teaching Award Committee strongly urges departments or individuals to nominate a deserving faculty member for this award. We recognize that there are many outstanding teachers in the section, but we can consider only those who are nominated for the award. So please nominate an outstanding instructor from your department! The committee specifically welcomes nominations of individuals from groups (or type of institutions) that have historically been under-represented in mathematics or in the list of previous recipients of the award. Past recipients may be found listed at sections.maa.org/michigan/history.html#award. The person selected by the committee will be presented with the award at the annual spring meeting of the Michigan section and will also, upon receipt of additional supporting material, become the Michigan section nominee for the national MAA Deborah and Franklin Tupper Haimo Award for Distinguished College or University Teaching of Mathematics.

Nomination Instructions

Completed nominations must be received by December 16, 2015, to be considered for the 2016 award. The nomination form is available at the section's website sections.maa.org/michigan/awards.html as a PDF file or a Microsoft Word file. Send an electronic copy of the completed form to Matt Boelkins at boelkinm@gvsu.edu; please use "Michigan DTA Nomination" as the subject. Email is preferred, but you may also send it by mail to Matt Boelkins, Department of Mathematics, Grand Valley State University, A-2-178 Mackinac Hall, 1 Campus Drive, Allendale, MI 49401. Anyone may make a nomination (of someone else—self-nomination is not permitted), but nominations from chairs or MAA liaisons in departments of mathematical sciences are especially solicited.

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 in Michigan (from two-year-college teaching through teaching at the PhD level). Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year. The nominee must have at least seven years' experience in teaching the mathematical sciences and be a member of the Mathematical Association of America.

Guidelines for Nomination

To be considered for the award, nominees should be widely recognized as extraordinarily successful in their teaching, broadly interpreted; have had teaching effectiveness that can be documented; have had influence in their teaching beyond their own institutions, and foster curiosity and generate excitement about mathematics in their students. ■

Sustaining Members 2014–2015

The Michigan section voluntary dues structure includes a sustaining member category for those who make a \$15 contribution beyond the basic dues rate of \$15. As of mid-February, the 48 section members listed below are sustaining members for 2014–2015. The section is grateful to those several individuals who generously exceeded the suggested sustaining member contribution. If you have not already sent in your dues, please do so using the form on [page 13](#), and please be generous!

Edward Aboufadel
Hyman Bass
David Basterfield
Larry Beauchamp
Louis Bragg
Mary Bragg
Robert Bruner
Joseph Buckley
Tim Carroll
Nancy Colwell
James Dudziak
Peter Duren

Paul Eenigenburg
Graeme Fairweather
Ruth Favro
Richard Fleming
Dan Frohardt
Chris Gardiner
Sid Graham
Jerry Grossman
Jim Ham
Konrad Heuvers
Margret Höft
Dan Isaksen

William Jackson
Gerald Janusz
Michael A. Jones
John Kiltinen
William Lewis
Frances Lichtman
László Lipták
Tom Miles
Jack Miller
Robert Myer
Mel Nyman
Gene Ortner

John Petro
David Redman
Norman Richert
Bruce Sagan
Bert Schreiber
Carl Sinke
Larry Smyrski
Richard Vandervelde
Gerard Venema
Bette Warren
Matt Wyneken
Robert Xeras

Institutional Members 2014–2015

As of mid-February, the 22 institutions listed below have begun or renewed their institutional memberships in the Michigan section for 2014–2015.

Albion College
Calvin College
Central Michigan University
Delta College
Eastern Michigan University
Grand Rapids Community College
Grand Valley State University
Henry Ford College
Hope College
Kalamazoo College
Macomb Community College
Mathematical Reviews
Michigan State University
Michigan Technological University
Northern Michigan University
Oakland University
Olivet College
Saginaw Valley State University
Schoolcraft College
Spring Arbor University
West Shore Community College
Western Michigan University

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 Mark Bollman, Secretary/Treasurer, Michigan Section—MAA, Department of Mathematics and Computer Science, Albion College, Albion, MI 49224-5013.

Michigan Mathematics Prize Competition

By **Kim Rescorla (EMU) & Carla Tayeh (EMU)**
MMPC Co-Directors

The 2014–2015 (58th) Michigan Mathematics Prize Competition got underway on October 7, 2014, when 5441 students across the state of Michigan had 100 minutes to complete a 40-question multiple-choice exam. On December 10, the top 1170 participants from Part I went on to compete in Part II, which consisted of five proofs. (See the problems on [page 15](#).)

Grading Day was hosted by **Mark Bollman** at Albion College. Thank you, Mark, and a special thanks to all the graders from across the state for making Grading Day so productive and so much fun. The competition would not be possible without your service. Next year, Grading Day will be on Saturday, January 16, 2016: please mark your calendars!

The Awards Banquet will be held on March 21, 2015,

during which **Steve Blair** (EMU) will speak on “Conway’s Pinwheel Tessellation: A Short Exploration on How Inflation (and Deflation) Can Be Leveraged for Mathematical Power”. The top 50 competitors will share \$20,000 in scholarships ranging from \$250 to \$2500, while the 52 Honorable Mention winners will receive copies of the book *Mathematical Adventures for Students and Amateurs*.

Please look to the fall *Newsletter* for a detailed report of the Awards Banquet and the names of the top competitors. (The winners are kept secret until the Awards Banquet.)

For their generous support of the MMPC, we would like to thank Eastern Michigan University and Mu Alpha Theta. Thanks also to outgoing MMPC director **Stephanie Edwards** (Hope C) for her outstanding leadership during her three-year tenure and for her generous support of the new directors, **Kim Rescorla** (EMU) and **Carla Tayeh** (EMU). ■

MMPC Top 102 Statistics

There was a three-way tie for 100th place. Hence we have the privilege of recognizing 102 (instead of 100) distinguished student competitors this year.

	Count	Part I Score	Part 2 Problem Scores					Part 2 Score	Total Score
			Prob. 1	Prob. 2	Prob. 3	Prob. 4	Prob. 5		
Average Score by Grade*									
Grade 12	21	31.9	4.8	4.4	2.1	6.2	6.1	23.7	60.3
Grade 11	36	31.8	4.2	4.6	1.3	6.0	6.0	22.1	58.3
Grade 10	15	30.3	4.4	3.6	1.7	4.7	4.7	20.5	54.9
Grade 9	16	31.1	3.7	3.9	1.2	6.1	6.1	20.6	55.9
Grade 8	6	33.5	6.3	6.0	0.5	5.3	5.3	22.8	60.9
Grade 7	3	29.3	4.7	3.3	0.3	6.7	6.7	22.7	56.5
Average Score by Gender									
Female	15	30.4	5.4	3.7	1.9	5.2	4.3	20.6	55.1
Male	87	31.5	4.1	4.5	1.3	6.0	6.2	22.1	58.1

*Note that five students did not report their grade level.

- The Total Score is the Part I Score (out of 40) plus 1.2 times the Part II Score (out of 50) for a maximum possible Total Score of 100 points.
- The cut-off score to qualify for Part II this year was 17 points. There were 1135 students who qualified in this way. Another 35 students scored the highest in their school and were also invited to compete in Part II.
- The cutoff to make the top 50 was 55.2, and the cutoff to make the top 102 was 46.2.

58th MMPC Part II Problems

The finalists had 100 minutes to solve these five problems. The problems and their solutions are available on the MMPC website <emich.edu/math/mmpc/grading>.

1. If P is a (convex) polygon, a triangulation of P is a set of line segments joining pairs of corners of P in such a way that P is divided into non-overlapping triangles, each of which has its corners at corners of P . For example, the following are different triangulations of a square.



- (a) Prove that if P is an n -gon with $n > 3$, then every triangulation of P produces at least two triangles T_1, T_2 such that two of the sides of T_i , $i = 1$ or 2 , are also sides of P .
- (b) Find the number of different triangulations of a regular hexagon.
2. There are n students, $n \geq 2$, and $n + 1$ cubical cakes of volume 1. They have the use of a knife. In order to divide the cakes equitably they make cuts with the knife. Each cut divides a cake (or a piece of a cake) into two pieces.
- (a) Show that it is possible to provide each student with a volume $(n + 1)/n$ of a cake while making no more than $n - 1$ cuts.
- (b) Show that for each integer k with $2 \leq k \leq n$ it is possible to make $n - 1$ cuts in such a way that exactly k of the n students receive an entire (uncut) cake in their portion.
3. The vertical lines at $x = 0, x = 1/2, x = 1, x = 3/2, \dots$ and the horizontal lines at $y = 0, y = 1/2, y = 1, y = 3/2, \dots$ subdivide the first quadrant of the plane into $1/2 \times 1/2$ square regions. Color these regions in a checkerboard fashion starting with a black region near the origin and alternating black and white both horizontally and vertically.
- (a) Let T be a rectangle in the first quadrant with sides parallel to the axes. If the width of T is an integer, prove that T has equal areas of black and white. Note that a similar argument works to show that if the height of T is an integer, then T has equal areas of black and white.
- (b) Let R be a rectangle with vertices at $(0, 0), (a, 0), (0, b),$ and (a, b) , with a and b positive. If R has equal areas of black and white, prove that either a is an integer or b is an integer.
- (c) Suppose a rectangle R is tiled by a finite number of rectangular tiles. That is, the rectangular tiles completely cover R but intersect only along their edges. If each of the tiles has at least one integer side, prove that R has at least one integer side.
4. Call a number *simple* if it can be expressed as a product of single-digit numbers (in base ten).
- (a) Find two simple numbers whose sum is 2014 or prove that no such numbers exist.
- (b) Find a simple number whose last two digits are 37 or prove that no such number exists.
5. Consider triangles for which the angles $\alpha, \beta,$ and γ form an arithmetic progression. Let a, b, c denote the lengths of the sides opposite α, β, γ respectively. Show that for all such triangles,

$$(a/c) \sin 2\gamma + (c/a) \sin 2\alpha$$

has the same value, and determine an algebraic expression for this value.

From the Origin: A Section for Opinion

From the Origin provides a forum for lively discussion of issues of importance to the mathematical community. The Michigan Section–MAA Newsletter solicits opinion pieces for publication in this column from anyone in the Michigan mathematical community. In addition, comments on pieces published in earlier issues are welcomed.

Open Textbooks Come of Age

By Lon Mitchell (Mathematical Reviews)

Students appreciate low-cost course materials, but not when they come at the expense of quality or features. A project of the American Institute of Mathematics aims to identify open-access (free to download and use) and/or open-source (often can be modified to suit)

mathematics textbooks that can compete with commercial books in both categories, not to mention price.

The AIM Open Textbook Initiative <aimath.org/textbooks> has established a number of criteria used in reviewing open textbooks, including requiring enough content to provide an entire semester-long course, with exercises, and having been extensively classroom-tested and already used at multiple institutions. The Approved Textbook list contains only those titles that meet the criteria and that the AIM Editorial Board can recommend for your consideration.

Some AIM-approved titles feature the open-source software Sage <sagemath.org>, which is worthy of note in its own right as an impressive mathematics system. A few titles make use of other exciting projects in mathematical publishing, such as KNOWLS <aimath.org/knownpedia>, which brings definitions to you in a web page, and Mathbook XML <mathbook.pugetsound.edu>, which can cre-

ate multiple document formats (PDF, HTML, EPUB, etc.) from a single XML source.

In addition to free electronic copies, many of these texts provide low-cost print editions (often \$20 or less). Research shows that 75% of

students still prefer a print copy with, or instead of, an electronic version of a textbook. A print edition with an International Standard Book Number that can be provided to the

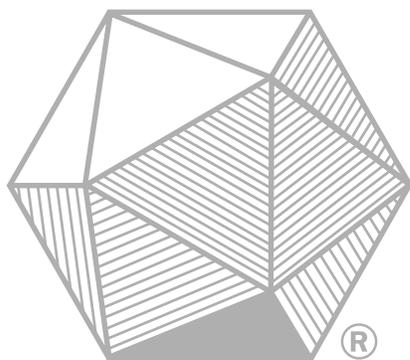
“From adoption to use, many open textbooks no longer require any extra work or notice on the part of the instructor or student (except perhaps when paying for them).”

bookstore can also facilitate the adoption of an open textbook. Open textbooks have really come of age in this way: from adoption to use, many no longer require any extra work or notice on the part of the instructor or student (except perhaps when paying for them).

You, too, can contribute to the open textbook movement. Encourage that colleague who has been teaching from her own notes (perhaps it's you!) to polish them and make them available to a wider audience. AIM provides a guide for authors. Or perhaps you have a title that is now out of print; get the rights back from the publisher and release it as an open book. If nothing else, the AIM-approved open textbooks deserve consideration for use in your classes. If you haven't looked previously, you will be impressed by the options that are now available. ■

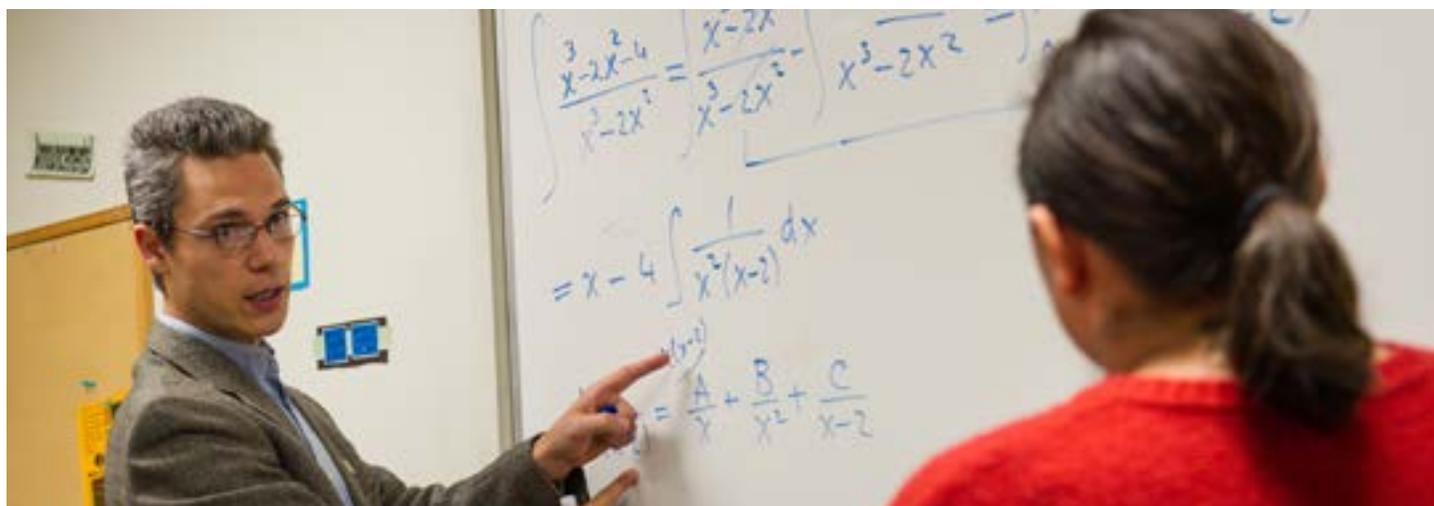
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Institution News

Adrian College

By Elizabeth Lamprecht • elamprecht@adrian.edu
Several mathematics faculty members have presented in the 2014–2015 Math Colloquium Series. Dr. **Alia Khurram** and Prof. **Jo Lynne Hall** spoke on “Math Assessment from the Ground Up”. This talk dealt with processes for assessing and improving the Intermediate Algebra course. In addition, Dr. **Dorin Dumitrascu** presented “An Invitation to Inquiry-Based Learning”, and Dr. **Gregory Sulisz** presented “An Introduction to Number Theory through Examples”. Dr. **Elizabeth Lamprecht** recently gave her sabbatical report, “Women in Science: An Interdisciplinary Approach”. ■

Albion College

By Mark Bollman • mbollman@albion.edu
Recent visitors to the department include **Jeremy Troisi** (Albion '08, Purdue U) and **Stavros Christofi** (Western Connecticut State U). The math/CS department at Albion encourages people from around the world, and our section colleagues in particular, to show their support for mathematics by wearing plaid on International Plaid Day: April 24, the last Friday of Mathematics Awareness Month. ■

Alpena Community College

By Dan Rothe • rothed@alpenacc.edu
Our spring semester has begun. Our new Electrical Power Technology Center has been completed and the electrical programs are in the process of moving into their new space. This new space will increase the capacity of the electrical studies programs, which will affect some of our technical math classes. The new Electrical Systems Technology Bachelor of Science Degree will be launching within the next year or so and should bring some new students into some of our math classes. • We look forward to hosting the regional Science Olympiad Tournament in early March with faculty members running a number of events. ■

Calvin College

By John Ferdinands • ferd@calvin.edu
Allan Bickle and **Ben Dekker** joined the department in Fall 2014, and **Stacy De Ruiter** joined in Spring 2015. **Jim Turner** has been promoted to the rank of professor. **Chris Moseley** is on sabbatical at the University of Hawaii for 2014–2015. **Randy Pruim** is on sabbatical for the calendar year 2015, and is visiting the statistics department of the University of Auckland, New Zealand, from January to July. ■

Central Michigan University

By Sid Graham • sidney.w.graham@gmail.com
On April 9 and 10, **Béla Bollobás** (Cambridge U and U of Memphis) will deliver the 2015 Fleming Lectures. He will speak on “Bootstrap Percolation” and “Universality for Monotone Cellular Automata”. The Fleming Lectures were founded by Prof. Emeritus **Richard Fleming**. • The department is also hosting a special colloquium series this year. There will be three colloquia, one each in the areas of mathematics education, statistics, and mathematics. In mathematics education, **Zalman Usiskin** (U of Chicago) will speak on March 3. In statistics, **Robert C. delMas** (U of Minnesota) will speak on March 19. In mathematics, **William Fulton** (UM-Ann Arbor) will speak on April 2. • **Debraj Chakrabarti** has received a Simons Foundation Grant to support collaborative research in several complex variables. **Felix Famoye** was awarded a fellowship by the Carnegie African Diaspora Fellowship Program to travel to Nigeria to work with the University of Lagos on training and mentoring of graduate students, collaborative research in statistics with faculty members, and hosting workshops on statistical packages. ■

Delta College

By Frances Lichtman • franceslichtman@delta.edu
After many wonderful years of teaching and service, Prof. **Barbara (Bobbi) Allen** and Prof. **Katrina Nichols** will be retiring at the end of this academic year. Bobbi Allen has served the college for 37 years, during which time she has been a leader in classroom assessment, general education, and our shared governance process. Katrina Nichols has served the college for 31 years and supervised the tutoring center for six years prior to joining the mathematics division. Her initiatives in the teaching of developmental mathematics have had a lasting impact on the curriculum. The mathematics division extends best wishes to Bobbi and Katrina in all their future endeavors; we will miss them. • The 19th annual Middle School Mathematics Competition will be held on Pi Day, Saturday, March 14. About 500 students are expected to participate. Numerous celebratory activities are planned throughout the day for students, family members, and teachers. ■

Eastern Michigan University

By Carla Tayeh • ctayeh@emich.edu
Prof. **Paul Howard** is on sabbatical this year continuing his work on the rigid relation principle. Dr. **Bingwu Wang** is on sabbatical this semester; his

Institution News continued from page 18

work focuses on normal cones to unions of sets with applications to disjunctive optimizations. • Dr. **Kim Rescorla** and Dr. **Carla Tayeh** are co-directors of the Michigan Mathematics Prize Competition (MMPC). EMU will host the MMPC Awards Banquet in March. • Dr. **Stephanie Casey** is the associate editor for the ASA journal *STEW* (STatistics Education Web). Dr. **Ovidiu Calin's** book *An Informal Introduction to Stochastic Processes with Applications* will be published by World Scientific Publishing in 2015. ■

Grand Valley State University

By William Dickinson • dickinsw@gvsu.edu

Professors **Lisa Kasmer** and **Akalu Tefera** are on sabbatical leave during Winter 2015. Prof. Kasmer won a 2015 Pew Teaching Excellence Award, and Prof. **Robert Talbert** won the 2015 Pew Teaching with Technology Award. • Prof. **Charlene Beckmann**, *Adventures with Mathematics* director, reports that the Michigan Council of Teachers of Mathematics has published 13 grade-level books in its *Adventures with Mathematics* series. Each book contains 20 or more engaging games and activities

plus 60 or more short problems to help keep students learning mathematics. Books make great awards or gifts for pre-service and in-service teachers. Proceeds support the MCTM Scholarship Endowment Fund. *Adventures with Mathematics* books were created by over 200 volunteers from universities and schools all over Michigan. For more information, contact **Chris Berry** <techberry@mictm.org> or see the MCTM website <mictm.org/index.php/mctm-publications/adventures-with-math>. • On Saturday, May 2, from 7:30 a.m. to 6:30 p.m., GVSU will host the Society for Industrial and Applied Mathematics—Great Lakes Section 2015 Annual Conference on “Multiscale Modeling with PDEs in Computational Science and Engineering: Algorithms, Simulations, Analysis and Applications”. For more information see <gvsu.edu/siamgls2015> or contact Prof. **Salim M. Haidar**, conference chair, at <haidars@gvsu.edu>. • Grand Valley once again hosted an NSF-funded REU during the summer of 2014. Eight students from across the country worked in pairs under the direction of professors **Steve Schlicker**, **Will Dickinson**, **Feryal Alayont**, and **Jon Hodge**. Each team gave a presentation at

Institution News continued on page 20

Michigan State University

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Institution News continued from page 19

MathFest in Portland, OR. Two teams of students—**Brenna Baker** and **Julia Dandurand**, working with Will Dickinson, and **Joshua Mireles** and **Adam Volk**, working with Feryal Alayont—received MAA awards for their presentations. GVSU is planning to host an REU again in the summer of 2015, with research topics to include equal circle packing, combinatorial sums and identities, voting theory, and sudoku. • On March 18, GVSU will host the second annual Mosaic Lecture, featuring MAA president Dr. **Francis Su**. For more information, visit gvsu.edu/s/PJ. ■

Hillsdale College

By David Murphy • dmurphy@hillsdale.edu

At the end of this year, our computer scientist, **Reinhardt Zeller**, will retire after 23 years teaching at Hillsdale College. • On March 26 Dr. **Matt Boelkins**, professor of mathematics at GVSU, will deliver a talk on seed patterns in flowers. In addition, **Paul Schumacher** will speak about actuarial science on March 20. • We will host the 2016 annual meeting of the Michigan section of the MAA. ■

Hope College

By Todd Swanson • swansont@hope.edu

Stephanie Edwards has been elected secretary/treasurer of the Pi Mu Epsilon National Council. **Brian Yurk** and **Vicki-Lynn Holmes** have been promoted to associate professor with tenure. ■

Lawrence Technological University

By Mike Merscher • mmerscher@ltu.edu

Robofest 2015, headed by **CJ Chung** and **Chris Cartwright**, is based at LTU, as it has been since its creation by Dr. Chung. Finals will be held on the campus in the spring. See robofest.net for more information. ■

Mathematical Reviews

By Michael A. Jones • maj@ams.org

Associate editor **Suzanne Zeitman** will retire in mid-March after 20 years at MR. We congratulate her and wish her well during her retirement. **Milan Lukić** is on study leave until August 1. • MR celebrated 75 years of *Mathematical Reviews* at the Joint Mathematics Meetings in San Antonio. We had an anniversary cake, and five former executive editors were in attendance. • The AMS Central Spring Sectional Meeting at MSU on March 14 and 15 will include a MathSciNet demonstration/tutorial for students and interested faculty members. • On March 6, the AMS and UM-Ann Arbor are hosting the *Who Wants to Be a Mathematician?* competition for high school stu-

dents at the Michigan Union. The event begins at 10 a.m. with a talk by **Sarah Koch** (UM-Ann Arbor). ■

Michigan Technological University

By Jeanne Meyers • jemeyers@mtu.edu

Professor **Vladimir Tonchev** has been named the inaugural Igor Kliakhandler Fellow in the Department of Mathematical Sciences. **Igor Kliakhandler**, a former Michigan Tech faculty member, established the eponymous fellowship to stimulate research activity in the mathematical sciences. A portion of the funding will be used to hold a conference or workshop each year. “The Kliakhandler Fellow program is going to provide an annual boost to our research activities and also give the department a lot of visibility in the mathematical sciences community,” said department chair **Mark Gockenbach**. “I couldn’t be more pleased, both that Igor remembers his time in the department fondly and that he has made this commitment to help us move forward.” Kliakhandler received his PhD in applied mathematics in 1997 from Tel Aviv University. He held positions at Universidad Complutense de Madrid, Lawrence Berkeley National Laboratory, and Northwestern University before joining the Department of Mathematical Sciences as an assistant professor in 2001. He was promoted to associate professor in 2005 and left the university in 2007 to work in the energy sector in Houston, where he is now involved in trading energy futures. “Vladimir is a worthy recipient of the first Kliakhandler Fellowship,” said Gockenbach. “He has been doing research at a high level for many years and is consistently both energetic and productive.” Tonchev, who has been a member of the department since 1991, is an internationally renowned expert on combinatorics, especially coding theory and design theory. He has published more than 150 papers and several books, and his work has been funded by the National Science Foundation and the National Security Agency. Tonchev will organize the 2015 Kliakhandler Conference, which will be on the subject of algebraic combinatorics and applications. ■

Saginaw Valley State University

By Emmanuel Ncheuguim • ekengnin@svsu.edu

Saginaw Valley State University will host the 55th Lower Michigan Mathematics Competition (LMMC) on March 28, 2015; we thank all the students and advisors who will make this year’s event possible. The 2015 Math Olympics at SVSU will be held on March 20, 2015; we thank all the high school students and teachers who will take part in this year’s competition. ■

*.....
Institution News continued on page 21*

Institution News continued from page 20

University of Michigan-Flint

By Ken Schilling • ksch@umflint.edu

Mehrdad Simkani and **Shu-Yi Tu** have returned from their fall sabbaticals. Shu-Yi resumes her post as chair of the mathematics department. The 48th annual Math Field Day, a day of problem-solving competitions for teams of high school students, will be held on March 6, 2015. Family Math Night, an evening of mathematical fun for children and parents together, will be held on March 31, 2015. ■

Wayne State University

By Dan Drucker • drucker@math.wayne.edu

Patty Bonesteel retired at the end of the Fall 2014 term. **John Breckenridge**, **Lawrence Brenton**, **C.-J. Rhee**, and **Claude Schochet** will retire at the end of the 2014–2015 academic year. **Alex Korostelev** and **T.-C. Sun** have initiated three-year phased retirements, joining **Leonard Boehm**, whose phased retirement is already in progress. **Mary Klamo** will retire at the end of the Spring-Summer 2015 term. **Bob Berman**, **Kyungyong Lee**, and **George Yin** are on leave during Winter 2015. • **Guozhen Lu** has been awarded a Simons Fellowship in Mathematics from the Simons Foundation for the academic year 2015–

2016. The award allows Prof. Lu to extend one semester of sabbatical leave to two semesters. He will spend his fellowship year engaged in research projects on multi-parameter harmonic analysis, sharp geometric inequalities, and their applications to partial differential equations. The Simons Foundation awards up to 40 Simons Fellowships in Mathematics each year. • Our visiting scholar for the Winter 2015 term is **Kate Juschenko** (Northwestern U), the 2014–2015 AMS Centennial Fellow. She gave talks on February 23, 24, and 25. The titles were “Techniques and Concepts of Amenability of Discrete Groups”, “Groups Acting on Trees and Bratteli Diagrams”, and “Amenability of Groups via Their Actions”. The 2015 Owens Lecturer, **Luis A. Caffarelli** (U of Texas), will speak at 2:45 p.m. on Monday, April 20, on “The Porous Medium Equation: Local and Non Local”, a survey of the theory of how a gas propagates in a porous medium. • The Conversations among Colleagues (CaC) 2015 conference coe.wayne.edu/ted/mathematics/cac.php will be held on Saturday, March 21, at WSU. The theme is Supporting Teachers Mathematically and Pedagogically. **James Hiebert** (U of Delaware) and **Hyman Bass** (UM-Ann Arbor) will join the conversation and provide keynote talks. ■

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Calendar of Events

Michigan Section–MAA Annual Meeting

2015: [Hope College](#) | April 10–11

2016: Hillsdale College

Upper Peninsula Regional Mathematics Meeting

2015: Lake Superior State University | October 2–3

MAA MathFest

2015: [Washington, DC](#) | August 5–8

2016: Columbus, OH | August 3–6

2017: Chicago, IL | July 26–29

2018: Denver, CO | August 1–4

2019: Cincinnati, OH | July 31–August 3

MAA-AMS Joint Math Meetings

2016: Seattle, WA | January 6–9

2017: Atlanta, GA | January 4–7

2018: San Diego, CA | January 10–13

2019: Baltimore, MD | January 16–19

2021: Washington, DC | January 6–9

AMATYC Annual Conference

2015: [New Orleans, LA](#) | November 19–22

2016: Denver, CO | November 17–20

2017: San Diego, CA | November 9–12

2018: Orlando, FL | November 15–18

NCTM Annual Meeting & Exposition

2015: [Boston, MA](#) | April 15–18

2016: San Francisco, CA | April 13–16

2017: San Antonio, TX | April 5–8

2018: Washington, DC | April 25–28

2019: San Diego, CA | April 3–7

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Executive Committee

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<i>Past Chair ('15)</i>	Steve Blair (EMU) sblair6@emich.edu • 734-487-1296
<i>Governor ('16)</i>	Matt Boelkins (GVSU) boelkinm@gvsu.edu • 616-331-3384

Michigan Mathematics Prize Competition (MMPC)

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<i>Co-Director ('17)</i>	Carla Tayeh (EMU) ctayeh@emich.edu • 734-487-1659

Exam Committee:

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<i>Member ('17)</i>	Eddie Cheng (Oakland U) echeng@oakland.edu • 248-370-4024
<i>Member ('18)</i>	Michael Khoury (LTU) prof.cap.khoury@gmail.com • 248-204-3531

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2015 Annual Meeting Program Committee

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