

Volume 42, Number 1

December 2015

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

ALSO IN THIS ISSUE:

Sect. Officer Nominations $\dots 2$
SecTreasurer's Report 4
Call for Nominations for Dist. Service Award4
Past Chair's Report 5
Governor's Report 6
59th MMPC Is Underway9
Call for Papers for Annual Meeting9
Favro Wins Coach Award 10
Boelkins to Be MAA First VP 10
Michigan Undergraduate Mathematics Conference 11
Michigan Section Website 11
58th MMPC (2014–2015) Honors Top Students 13
UP Regional Math Meeting 17
Contest News 19
Photos from 2015 Annual Meeting at Hope College 21
Department Liaisons 23
Institution News 23
Join the MAA Community27
Open Positions
New Newsletter Editor 29
Student Chapter News 29
Calendar of Events 30
Committees & Appointments31



Annual Meeting in April at Hillsdale College 2 Hillsdale College will host our Annual Meeting on Friday and Saturday, April 1–2, 2016. Submit abstracts by February 26 (March 11 for undergraduates).









Quantitative Reasoning for Professionals15 Victor Piercey describes a new course sequence at Ferris State University that prepares students to produce and communicate quantitative information.



Service Award Citation for Mark Bollman.....18 Mark Bollman received the section's 2015 Distinguished Service Award for his faithful management of section finances and active support of math events.



Teaching Award Citation for Christine Phelps . . 22 Christine Phelps (CMU) received the section's 2015 Distinguished Teaching Award for her passionate and compassionate work with future teachers.

Annual Meeting in April at Hillsdale College

By Gavin LaRose (UM-AA)

Annual Meeting Program Committee Chair

The Annual Meeting of the Michigan Section-MAA and MichMATYC will be held Friday and Saturday, April 1 and 2, 2016, at Hillsdale College. These dates are similar to those for the very successful meeting at Hope College in April 2015, and are earlier than we have had meet-



ings in the past. For many participants the earlier meeting dates worked well last year, so we are trying it again this year.

The program committee is pleased to announce a program with plenary speakers to include **Alissa Crans** (Loyola Marymount U) and **Karen Smith**

(UM-AA) and locally invited speakers from Michigan and surrounds, to include last year's Distinguished Teaching Award winner, **Christine Phelps** (CMU). We also expect to include a working group for instructors of mathematics content courses for pre-service teachers. It will look at issues in the curriculum and instruction of these

courses. This will be organized by the TeMaCC group <temacc.org> and the foci will be selected with feedback from the larger community of mathematics content course instructors in Michigan. Full details about the program schedule, including speaker information, will appear in the spring 2016 *Newsletter* and on the section website <sections.maa.org/michigan>.

Contributed talks form an essential component of the Annual Meeting. The program committee urges all section members to consider giving a contributed talk, as this venue is an excellent way to share your scholarly work, become better acquainted with your Michigan colleagues, and foster opportunities for collaborative work. Talks may focus on any subject related to mathematics: mathematical scholarship, expository mathematics, or issues related to curriculum or

"We extend a special invitation to undergraduate students to give presentations at this meeting."

pedagogy in the collegiate classroom. Contributions from graduate students are specifically welcomed.

In addition, we extend a special invitation to undergraduate students to give presentations at this meeting, and faculty should encourage their students to consider this opportunity. The Ron Mosier Memorial Award will again be presented to the student(s) with the most outstanding talk. Ron was a mathematician whose contributions spanned both pure and applied areas. He was also a regular attendee at the Annual Meeting, and one of the things he enjoyed most was the student talks.

Instructions for submitting abstracts for one of the contributed sessions are included in the call for papers advertisement in this newsletter (page 9).

The meeting is scheduled to begin Friday afternoon and run through mid-afternoon on Saturday. There will be a banquet Friday evening and a luncheon on Saturday. As is our custom, the section will present both a teaching award and a service award at the Fri-

day banquet. Both the banquet and luncheon will be followed by a plenary talk.

The 2016 program committee consists of **Gavin LaRose** (UM-AA), **Dave Gaebler** (Hillsdale C), and **Jan Roy** (Montcalm CC). If you have a question or suggestion regarding the program, please contact one of us. The local arrangements chair is Dave

Gaebler (Hillsdale C). A link to updated conference information will appear on the section's website at <sections.maa.org/michigan>. ■

Call for Nominations for Section Officers

By Michele Intermont (Kalamazoo C) Nominating Committee Chair

A tour Annual Meeting in April 2016, the Michigan section will be electing a chair, a four-yearcollege vice chair, a two-year-college vice chair, and a secretary/treasurer. Please contact Michele Intermont <intermon@kzoo.edu> to nominate someone.

Chair's Report By Brian Snyder (LSSU)

Welcome to the Michigan section's online newsletter! Most of the feedback that we have received on the new format has been extremely positive. The savings on supplies and mailing, along with the rich capabilities of an online environment, will be a wonderful asset to the section for



a long time. In my (admittedly brief) mathematical career, the influence of computers and calculators has drastically changed the way we teach, what we teach, what our students expect from us, and what we expect of them. Can you imagine what one of our colleagues who were teaching when the MAA was founded in December 1915 would think of us?

The leaves are beginning to change color, which means it's time for the Upper Peninsula Regional Mathematics Meeting. The meeting was hosted by Lake Superior State University on October 3. **Collette Coullard** and **Kimberly Muller**, both from LSSU, put on a wonderful conference attended by faculty and students from across the UP (see page 17).

As the leaves begin to fall, and winter will be coming soon (hopefully not too soon), preparations have begun for the Michigan section spring meeting. Gavin LaRose from the University of Michigan-Ann Arbor is currently the four-year-college vice chair of the section, and he is already securing speakers for the meeting (see page 2). This year we will also run the Michigan Undergraduate Mathematics Conference as a special session parallel to the section meeting (see page 11). The meeting will be held earlier-on April 1-2, 2016-but will begin later in the day on Friday and run throughout Saturday. This year's meeting will be held at Hillsdale College. A call for papers appears on page 9, and more information on the meeting will be posted on the section's website <sections.maa.org/michigan>. This is the second year of a combined MUMC and section meeting in combination with an earlier date. We would love to have you bring your best students so that we all can see how promising the future looks for our profession. After

all, the section's activities should be activities people can and want to participate in.

The Michigan Mathematics Prize Competition (see page 13 and page 9) is certainly one of these activities! This fall, over 6000 students took the competition's Part I exam. The co-directors of the competition, **Kim Rescorla** and **Carla Tayeh** from EMU, are taking it all in stride. And they're already thinking about the grading of Part II of the exam. This is a large undertaking for the section that would not be feasible without the work of Kim and Carla (and all the directors before them) and all those who show up in the middle of winter to spend the day grading. If you're looking for a way to be involved with our section, consider coming along to Grading Day on Saturday, January 16, at Albion College.

If you are already a member of the MAA and are either living or working in the state, you are automatically a member of the Michigan section. If you would like to assist the Michigan section, please consider a voluntary contribution. All proceeds stay in Michigan to assist with our activities. You have the option of paying by check or via PayPal. Information about both methods is available on page 4 and at <sections.maa.org/michigan/dues.html>. Even better, consider getting more involved than you already are! Consider, too, nominating one of your colleagues for the section's Distinguished Service Award (see page 4) or Distinguished Teaching Award (see page 8); nomination forms for the latter are available at <sections.maa.org/michigan/awards.html>.

Thank you to those who have recently finished serving the section in some capacity. **Steve Blair** (EMU) has completed a three-year rotation as four-yearcollege vice chair, chair, and past chair. **Stephanie Edwards** (Hope C) has passed the duties of webmaster to her colleague **Paul Pearson** (see page 11). I would also like to wish **Katie Ballentine** (Mathematical Reviews) the best as she turns over the duties of *Newsletter* editor to **Victor Piercey** (Ferris State U) and begins a new chapter in her life (see page 29). The section is a richer place because of the work they have done over the past few years.

Most importantly, thanks to you for taking some time to read the *Newsletter*. We all have many commitments with many claims on our time and attention, and I am happy that you spent some time reading about the Michigan section—we are your friends and colleagues in mathematics.

Secretary-Treasurer's Report

By Mark Bollman (Albion C)

The section's current bank balance (as of October 16) is \$3607.26. This is considerably higher than our balance of one year ago, in large part due to the *Newsletter* moving online. As announced at the April section business meeting, the executive committee will be monitor-



ing the effect on our finances of this move. It should be noted that the Washington office recommends that sections hold no more than 2.5–3 times their annual expenses in reserve. The Michigan section has usually run well under this recommendation, and so the savings on printing and mailing expenses offer an opportunity to stabilize our bank account a bit.

The section has some support (\$801 this year) from the Washington office of the MAA, advertising revenue, and occasional grants, but most of the section's income is from the voluntary dues payments of the members. By now, section members should have received their annual dues mailing. The 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 voluntary section dues online through PayPal <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 voluntary contributions.

Call for Nominations for Distinguished Service Award

By Michele Intermont (Kalamazoo C) Committee Chair

N ominations are being solicited for the Michigan section's Distinguished Service Award. The award committee (listed on page 31) will accept nominations until January 31, 2016. Nominations should include the nominee's service in his/her 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 Michele Intermont <intermon@kzoo.edu>.

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	regul	lar	dues
_	Ψ-Ο	- ° 8 °		c.c.c.

\$30	sustaining	g membership

			0		
\$40	small	ins	titu	tion	dues

_	$\Psi = \Psi$	oman motifution ados
	\$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.

Past Chair's Report

By Michele Intermont (Kalamazoo C)

I t's a cloudy day here in Kalamazoo as I pen this column, and the trees are deep into their autumn show, with winter patiently waiting its turn. Luckily, mathematics is for every season.

Our Michigan section of the MAA is for every season too. Right now,



we're gearing up for the election of a new governor for our section. You'll be hearing more about that. We are lucky to have had the leadership of **Matt Boelkins** of GVSU for the past three years in this role. Matt isn't ending his involvement in MAA leadership—he's been elected as the first vice president of the organization at the national level. Congratulations, Matt! I'm sure the section joins me in thanking him for all he has done to keep our section energized in the past few years. We look forward to what he will accomplish with his new position.

Winter is also when most of the section becomes aware of the Michigan Mathematics Prize Competition. **Kim Rescorla** and **Carla Tayeh** at EMU started months ago thinking about this year's competition and orchestrating Part I. This winter, we'll all be asked to help grade Part II of the competition. Consider making the trip to Albion on Saturday, January 16, 2016, to help find the next mathematicians in our state.

With this issue, our newsletter editor, **Katie Ballen-tine**, is stepping down from her role. It is under Katie's tutelage that the *Newsletter* has gone digital, and that has been a big accomplishment. We are grateful for your leadership in this transition, Katie, and hope you'll enjoy reading future issues now that you don't need to edit them!

Finally, we are always on the lookout for institutions willing to host the Annual Meeting. If you think your institution might want to host a future meeting, please let someone on the executive committee know. ■



Governor's Report By Matt Boelkins (GVSU)

As I am now halfway through my final year in a three-year term as governor of the section, I have found that one of the things I enjoy most about the position is the opportunity to attend the summer and winter meetings in order to represent those of us who hail from Michi-



gan. Each conference has been a wonderful opportunity to discuss and work on key issues in mathematics, to connect with colleagues from across the state and country, and to learn new things.

MathFest 2015, the MAA's Centennial, proved to be a particularly exceptional event in Washington, DC. A record number of mathematicians-over 2500-gathered for the conference that celebrated mathematics generally, and the Association in particular. Two of our in-state colleagues played key roles: Karen Smith of UM-Ann Arbor <math.lsa.umich.edu/ ~kesmith> gave the annual Hedrick Lectures, and Gerard Venema of Calvin <calvin.edu/~venema> was the lead organizer of the event in his role as associate secretary of the MAA. There was a special theatrical event (Cirque du Mathematiques) and even an evening of music (Mathematicians by Day, Musicians by Night) as many of the multitalented members of our community came together to share other dimensions of their creativity. And, of course, there were many interesting invited lectures and contributed paper sessions. In all, it was a wonderful time in the nation's capital, and I was reminded in many ways of the powerful positive influence of the MAA on all of our careers.

Amid all of the festivities, there were also sessions that posed challenges or calls for change. Two that particularly challenged me personally were the now-annual Project NExT Lecture and the Leitzel Lecture.

In the Project NExT Lecture, **Catherine Good** of Baruch College spoke on "Reducing Stereotype Threat". Stereotype threat is the "risk of confirming, as a self-characteristic, a negative stereotype about one's group". In mathematics, one example of this is seen when students are asked to first identify their gender before taking an exam, and that very act of self-identification subsequently impacts the results of the exam. Catherine not only shared examples of how stereotype threat is very real, but also offered a wide range of excellent advice for reducing the threat. For instance, we learned that it's important to value "enthusiasm, sharing, making mistakes, curiosity, seeking challenge, persevering, and engaging", all of which are qualities that mathematicians aspire to. Furthermore, research indicates that "effort-based belonging protects against stereotype threat". Catherine also cited Carol Dweck's book Mindset, and discussed the positive effects of a growth mindset on everyone, as hard work and a constant effort to grow is good for the brain and good for the person. You can learn more at <reducingstereotypethreat.org>.

Personally, I am working hard in my current classes to prize student effort, to encourage mistakes and learning from them, and to build a better sense of belonging for all of my students. In so doing, I hope to help all of my students to grow more, to not be affected by negative stereotypes, and ultimately to be more successful in their learning of mathematics.

David Bressoud delivered the Leitzel Lecture, titled "Calculus at Crisis"; he noted immediately that "at crisis" means "a degenerating situation that calls for decisive change". David's lecture drew from his own experience as MAA president and a longstanding mathematics professor, but especially from his work in leading the massive "Characteristics of Successful Programs in College Calculus" (CSPCC) study <maa. org/programs/faculty-and-departments/curriculumdevelopment-resources/national-studies-collegecalculus>, which was funded by the NSF.

You might be surprised to learn that in 2015, 424,000 American high school students took the AP calculus exam; at the same time, in any given year, fewer than 250,000 students typically enroll in Calculus I at a four-year college. David talked about these numbers as part of what he called "the rush to calculus" and some of the challenges this issue poses for collegiate mathematics departments.

But I found even more compelling his discussion of recommendations of government commissions and professional societies for what is wanted from math-

Governor's Report continued from page 6

ematics departments, particularly regarding calculus. Phrases like "quantify and interpret changes in

dynamic systems", "understand how mathematical and computational tools describe living systems", and "comprehend major concepts, their physical meaning, and their application to solving realistic problems" were present on many of his slides, and emphasized an uncomfortable theme: too often, mathematicians aren't doing a good enough job teaching calculus in ways that meet the needs of client disciplines. One

presidential commission went so far as to recommend that mathematics curricula should be developed and taught by **non**mathematicians, using physicists, engineers, and computer scientists instead. Think about that. Again, it was a wonderful event in DC. I loved having the chance to ride the Metro, see various memorials on the Mall, visit a few museums, and attend a wide range of events that celebrated and promoted mathematics and the

"One presidential commission

went so far as to recommend

taught by **non**mathematicians."

that mathematics curricula

should be developed and

MAA.

There are a handful of other MAA-related items that are important for all members of the Michigan section to know.

1. The MAA has changed its membership options for departments. The biggest new feature is that a department membership now comes with an *unlimited* number of student memberships. It would be fantas-

> tic to see a large percentage of Michigan colleges and universities be departmental members and to have them grant memberships to all of their mathematics majors. Full details can be found at <maa. org/membership/membership-categories/ departmental-membership-benefits>.

2. The 2015 CUPM Program Guide is now officially complete and available for departments to use. This is a fantastic resource for all sorts of curricular and program guidance, and you can learn more at <maa.org/programs/faculty-anddepartments/curriculum-departmentguidelines-recommendations/cupm>.

3. On behalf of all of us in the section, I want to thank **David Gaebler** and **David Murphy** and their colleagues at Hillsdale College for being willing to host the spring section meeting on April 1–2, 2016. This will be the first time the Annual Meeting has been held at Hillsdale, and I'm excited for us to gather in this new and historic venue.

4. In the near future, we will be electing a new governor for the section. I have been grateful to have this position (and to hold it until this coming spring meeting), and am looking forward to a new role with the MAA when I begin serving as first vice president in February 2016. ■

You can learn more about David's work at his blog <launchings.blogspot. com/2015_05_01_ archive.html>, or even read his slides for yourself <macalester. edu/~bressoud/ talks/2015/Mathfest-Leitzel.pdf>. Like with stereotype threat, I have been trying to find ways in my own work to make my students' experience in calculus a more successful one that builds skills well beyond just being able to solve certain calculus problems. I encourage all of us to find small

Our section banner at MathFest, which shows that the Michigan MAA has been around since 1923!

or large ways in our teaching that we can help contribute to moving calculus away from being at crisis, in part by helping all students be more successful. At the first link above to the CSPCC, you'll find information about the specific recommendations from David's team, in light of their study.



Distinguished Teaching Award Nominations for 2016 Award Due December 16, 2015

By Matt Boelkins (GVSU)

Distinguished Teaching Award Committee Chair

N ominations for the 2016 award are now being accepted, and must be received by December 16, 2015, 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 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 at <<u>sections.maa.org/michigan/history.html#award</u>>. The person selected by the committee will be presented with the award at the 2016 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 Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

The nomination form is available as a PDF file or a Microsoft Word file at the section's website <sections.maa. org/michigan/awards.html>. Send an electronic copy of the completed form to Matt Boelkins at <boelkinm@ gvsu.edu>; please use "Michigan DTA Nomination" in the subject line. 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.



MASTER MATHEMATICS AND ENHANCE YOUR POWER.

Obtain your Master's in Mathematics or Applied Statistics.



Graduate Adviser Dr. Bingwu Wang bwang@emich.edu 734.487.5044 emich.edu/Math

59th MMPC (2015–2016) Is Underway

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

The 59th Michigan Mathematics Prize Competition (MMPC) is now underway. On October 6, approximately 5300 students from 132 schools across the state of Michigan sat for the Part I MMPC exam, which consists of 40 multiple-choice questions. The top 1000 Part I finishers will be invited to sit for the Part II exam, consisting of five proof-style questions, on December 9. The high point of the competition will be the MMPC Awards Banquet on March 12, 2016, at the EMU Student Center. Professor **Timothy Pennings** (Davenport U) will speak on "Do Dogs Know Calculus?". Dinner will be served, and the top 100 competitors will be recognized, with the top 50 sharing \$20,000 in scholarship awards.

We would like to thank the exam committee, chair **Robert Messer** (Albion C), **Eddie Cheng** (OU), **Michael (Cap) Khoury** (LTU), and **David Friday** (Macomb CC), for their fine work in crafting the Part I and Part II exams.

We would also like to thank **Mark Bollman** for hosting the MMPC Grading Day on Saturday, January 16, 2016, at Albion College. This event is a chance to get together with colleagues, share some fun and food, and serve our talented young Michigan math students. Here is a brief timeline. Please mark your calendars!

8:30-8:55	Welcome and refreshments
9:00–12:00	Grading
12:30	Lunch

Please see the MMPC website below for maps, problems, solutions, and a very brief registration form on which you can specify problem preference. This event promises to be a lot of fun, so round up your colleagues, and we'll see you there. We appreciate your service greatly, as the competition would not be feasible without your generous support.

Thanks to Eastern Michigan University for supporting the 58th, 59th, and 60th Michigan Mathematics Prize Competitions.

Contact information:

- <mmpcdirector@gmail.com>
- <emich.edu/math/mmpc>
- <facebook.com/pages/Michigan-Mathematics-Prize-Competition/130271120400690> ■

Call for Papers

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

Hillsdale College • April 1–2, 2016

Abstracts should be sent via email to Gavin LaRose at <<u>glarose@umich.edu</u>> with "MAA contributed paper" in the subject line. Talks may focus on any subject related to mathematics: mathematical scholarship, expository mathematics, or issues related to curriculum or pedagogy in the collegiate classroom.

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 Gavin LaRose.

The deadline for abstracts is Friday, February 26, 2016. Undergraduate abstracts may be submitted until Friday, March 11, 2016.

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

Ruth Favro Wins Distinguished Coach Award

By Andrew Livingston

Former MAA Michigan section chair **Ruth Favro** (LTU) has won the Samuel L. Greitzer Distinguished Coach Award from the American Regional Mathematics League (ARML).

Ruth is one of the coaches of Michigan's ARML team, the All-Stars, which comprises 30 to 45 students recruited from current and former winners of the Michigan Mathematics Prize Competition. They compete every year at the ARML competition at the University of Iowa. ARML gives the annual award in recognition of outstanding service to a regional team.

Ruth was recruited to coach the team in 1995 by head coach **Bob Messer** (Albion C), who won the Greitzer Award in 2006. Ruth succeeded him as head coach in 2005 and led the team until this year.

Dave Friday (Macomb CC) presented the award to Ruth on May 30, 2015, at the 40th Annual ARML Competition. Dave has been a coach of the Michigan All-Stars since 2009 and took over as head coach from Ruth in 2015. ■



Dave Friday presents Ruth Favro with the Greitzer award.

Matt Boelkins Elected MAA First Vice President

By Andrew Livingston

C urrent MAA Michigan section governor **Matt Boelkins** (GVSU) has been elected first vice president of the MAA for a two-year term starting February 1, 2016.

In his new role Matt has pledged to "work hard to contribute to [the MAA's] mission and how we communicate it; to support ongoing efforts to embrace and use the digital revolution to our advantage; and to share in as many ways as possible the fantastic work the MAA is doing in order to publicize our work and invite new contributors to join us in this great endeavor".

Matt has been active in the Michigan section for many years, including winning the Distinguished Teaching Award in 2013, the year he became the section's governor. ■

Michigan Section–MAA Annual Meeting Hillsdale College April 1–2, 2016

Mich. Undergraduate Math Conference

By Stephanie Edwards (Hope C)

The Michigan Undergraduate Mathematics Conference was held at Hope College in conjunction with the Michigan section's Annual Meeting April 10– 11, 2015. The students enjoyed and presented many wonderful talks, ate pizza, and had fun! Lindsay Czap (GVSU) and Raoul Wadhwa (Kalamazoo C) won the Ron Mosier Memorial Award for best student talk. Please check out images from the conference on our Facebook page <facebook.com/Michigan-Section-MAA-115543895295620>. The parallel conferences were a great success, and Hillsdale College will host the 2016 MUMC in conjunction with the section meeting in April. ■

Mich. Section Website

By Paul Pearson (Hope C)

Webmaster

P lease send announcements, updates, links, photos, corrections, and suggestions for improvement to me at <michmaawebmaster@gmail.com>. I have updated content on the section history page <sections.maa.org/michigan/history.html>, departmental liaison page <sections.maa.org/michigan/ liaisons.html>, and most top-level pages. Broken links have been fixed (except for some links on old archived pages), so navigating the site should go smoothly. If you have a neat math image you'd like to share on the "contributed images" page <sections. maa.org/michigan/contributed_images.html> please send it to me—we may even put it on the front page in place of the image of 3D geometric shapes! ■

Never Organized MCM Teams? Do It for 2016! By Ruth Favro (LTU)

The Mathematical Contest in Modeling (MCM) is a four-day, international math modeling contest. Teams of three students choose one of two open-ended applied math problems, research it, model it using math, computer, and other science skills, and then write a research paper showcasing their results. Good writing and teamwork are essential.

It is demanding, fun, and a great benefit to the students. Teams with interdisciplinary knowledge are good. Our teams at LTU have had majors in math, computer science, physics, chemistry, and several engineering fields.

The problems are often current. The 2015 problems concerned (a) getting medicine to Africa to treat the Ebola epidemic, and (b) searching for an airplane lost in the ocean, emitting no signals.

Benefits to students include the teamwork, producing results under time pressure, self-confidence in being able to learn new material, concise exposition, and more. We follow up by having each team give a public presentation of their papers on campus, and by inviting teams to present at local conferences. Participation can go on their résumés. Papers are judged into categories: Successful Participant, Honorable Mention, Meritorious, Finalist, and Outstanding. From a few hundred teams in the beginning in the mid '80s, there are now over 7500 teams entering, a large proportion of them from China.

It would be great to have more Michigan teams (as well as more US teams in general). A faculty member willing to sponsor a team will find that problems from prior years for practice are online at the contest site <<u>comap.com/undergraduate/contests/matrix</u>>, as well as elsewhere. I would be willing to help with tips and prior student papers.

There is a \$100 per team registration fee, and you will want to provide some food over the long weekend, so it is helpful to have your department agree to pick up the cost (otherwise you are in for a lot of bake sales or other fundraising).

Dates for 2016 are January 28 (8:00 p.m.) to February 1 (8:00 p.m.). Go to <<u>comap.com</u>> and click on the contests link in the menu bar for more information. My email is <<u>rfavro@ltu.edu</u>>. ■



The Department of Mathematics, Western Michigan University, consists of 37 full-time faculty members with specialties in many areas of mathematics and mathematics education, with about 35 graduate teaching 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 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 \$11,895-\$17,812. Additional summer support may be available. Currently all supported doctoral students and master's students receive tuition waivers. Applications are due by February 15, 2016. 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 Secretary Department of Mathematics Western Michigan University 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.

58th MMPC (2014–2015) Honors Top Students

By Kim Rescorla (EMU) and Carla Tayeh (EMU)

MMPC Co-Directors

The top 102 competitors from 36 schools across Michigan were honored at the Michigan Mathematics Prize Competition (MMPC) Awards Banquet held on Saturday, March 21, at Eastern Michigan University. **Steve Blair** (EMU) spoke on "Conway's Pinwheel Tessellation—A Short Exploration on How Inflation (and Deflation) Can Be Leveraged for Mathematical Power". Dinner was served, and the main event was to honor some of Michigan's most talented math students. Here are the top 10 MMPC competitors for 2014–2015.

Name	School	Award
Jackie Bredenberg	Detroit Country Day School	Gold (1st level)
Ankan Bhattacharya	International Academy East	Gold (2nd level)
Daniel Gershenson	Houghton HS	Gold (3rd level)
Dhruv Medarametla	Troy HS	Silver (1st level)
Lawrence Wu	Troy HS	Silver (1st level)
Freddie Zhao	Troy HS	Silver (2nd level)
Stephen Jasina	Saline HS	Silver (2nd level)
Eric Winsor	Saline HS	Silver (3rd level)
Jason Hu	Pioneer HS	Silver (3rd level)
Sirawich Pipatprathanpor	Cranbrook Kingswood	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; they received a copy of the MAA book *Mathematical Adventures for Students and Amateurs*.



Ruth Favro (LTU) congratulates Gold 1st level winner Jackie Bredenberg of Detroit Country Day School.

The 2014–2015 competition made MMPC history! **Jackie Bredenberg** of Detroit Country Day High School was only the second female to ever win the Gold 1st level prize in the 58 years of the MMPC. (**Linda Chen** of Ann Arbor was the winner in 1991.) What's even more interesting about Jackie's win last year is that she also took first place the previous year. This makes Jackie the only female competitor to win the MMPC twice—in fact, two years in a row! There is a nice article about Jackie and her historic two-time win in the July 12, 2015, *Detroit News* at <detroitnews.com/story/news/ local/oakland-county/2015/07/12/michigan-math-champ-chartspath-career-gold/30115987>. **Ruth Favro** (LTU), a longtime champion of women in mathematics, gave a nice presentation punctuating Jackie's remarkable mathematical achievements.

As the names of the MMPC winners are kept secret until the Awards Banquet, and the spring *Newsletter* came out before the banquet, the above winners were not included in that issue. However, the spring 2015 issue did contain the Part II problems along with mean scores by problem, grade, and gender; see pages 14 and 15 at <sections.maa.org/michigan/newsletters/Vol41no2_Spring 2015. pdf>.

58th MMPC (2014–2015) continued from page 13



Arav Agarwal (International Academy) and Raul Dutta (Troy HS), above, and Ovidiu Calin (EMU), right, show there's more than one way to have fun with Rubik's cubes.





Jackie Bredenberg (Gold 1st level winner) with her teacher Ross Arseneau (both of Detroit Country Day School).



Steve Blair (EMU) delivers the keynote address, "Conway's Pinwheel Tessellation".



Students Zachary Obsniuk (Livonia Math/Science/Computer Program) and Jackie Bredenberg (Detroit Country Day School) encourage fellow students to participate in other competitions—in particular ARML.



Mark Bollman (section secretary-treasurer, Albion C) and Steve Blair (section past chair, EMU) present Kevin Jiang (Detroit Country Day School) with his award.



Happy winners gather on the stage while proud parents enjoy capturing the moment.



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.

Quantitative Reasoning for Professionals: a New Course Sequence at Ferris State University

By Victor Piercey (Ferris State U)

O ver the last three years, Ferris State University has created a new general education course sequence entitled Quantitative Reasoning for Professionals (QRP). The course is designed for students in professional majors in areas such as business, health professions, criminal justice,

and social work. The course is currently configured for business students, with plans to expand to other programs in coming years. A course for education students is under separate development. The new sequence is an alternative to the Beginning/Intermediate Algebra sequence.

The population for QRP is different from that traditionally served by "The typical target population is prepared to intelligently consume quantitative information. Students in professional areas need to be prepared to produce and communicate quantitative information."

successful business professional should be able to predict how long it will take to pay off a loan. This involves solving an annuity equation for the time variable, which itself requires the use of logarithms. This is one of several examples in which algebraic manipulations play a substantial

role in QRP. The approach to algebraic manipulation is couched in contextualization and the building of meaning, the hallmarks of quantitative reasoning. Further, topics typically found in the algebra curriculum that aren't part of the framework useful for professionals are dropped. These topics include factoring, quadratic equations, and rational expressions.

QRP has been designed as an inquiry-based course. One

quantitative reasoning or quantitative literacy courses. Typical quantitative reasoning and literacy courses are built around the noble task of helping students incorporate data and modeling into their everyday lives as customers and citizens. As such, the typical target population is prepared to intelligently *consume* quantitative information. Students in professional areas such as business need to be prepared to *produce* and *communicate* quantitative information to audiences that include their clients and their coworkers.

This difference shows up most starkly in the content of the courses. Algebra plays a larger role in QRP than in traditional quantitative literacy and reasoning courses. For example, a of the course outcomes is independent problem solving. Ferris faculty have developed (and continue to revise) inquiry-based course materials for QRP. The primary materials consist of "explorations"—guided inquiries that are mostly set within an appropriate and realistic context. The explorations are designed to guide the student from calculations to deeper mathematical insights, followed by the application of those insights to new problems. Some explorations are completely open-ended, with expectations scaffolded throughout the year. Students work on the explorations in small groups in class and present their results. Some presentations are more formal and some are less formal. Following

Quantitative Reasoning continued from page 15

each exploration, students submit written responses to "reflection questions" which are assigned as daily homework. The presentations and the written reflections sharpen the students' communication skills.

In addition to the explorations, students complete weekly "extension assignments"—short, targeted explorations that are completed outside of class. These assignments are designed to force students to solve novel problems using prior knowledge and the mathematical concepts they constructed in class. Sometimes several extension assignments are clus-

tered around a single theme. For example, there is a sequence of extension assignments that culminate in calculating the precise income beneath which a 20% flat tax costs a taxpayer more than the current progressive system.

There are other features of this course that could be included in a traditional quantitative reasoning or literacy course, but are particularly poignant for those in professional majors. One such feature is the use of Excel. Students make increasingly sophisticated use of

spreadsheets throughout the course. Excel serves an important role in helping students make sense of algebraic formulas. Students also use Excel to solve linear programming problems with three or more decision variables, and they use Excel together with logarithmic transforms to complete nonlinear regression analysis. The other feature of this course concerns ethics. Several explorations include questions under the label "focus on quantitative ethics". These questions address ethical issues that come out of the mathematical work. For example, when we derive a formula for the payoff time of a loan, the limitations on the domain of a logarithm lead to an inequality that must be satisfied by the minimum payment if the loan is going to be paid off in finite time. Students grapple with whether it is appropriate for a credit card lender to allow a borrower to stay current with a minimum payment that does not satisfy this inequality. Does the decision maker have a greater responsibility in this case to the borrower or to their shareholders? Is the burden on the consumer in this case?

As this course has developed, we have observed success in terms of reduced math anxiety and increased

"Weekly extension assignments are designed to force students to solve novel problems using prior knowledge and the mathematical concepts they constructed in class."

student engagement. Students tend to appreciate the authentic contexts and problems and some have asked impressive questions. After investigating slope, one student asked very earnestly how to find the slope of a nonlinear function. He persisted in attempting to use averages to approximate this slope, and demonstrated cognitive readiness for the ideas of limits and derivatives.

We have struggled most with the extension assignments. Early versions of these assignments were too overwhelming for their audience, often consisting of several parts that were rigidly connected. Later ver-

> sions suffered from lack of clarity in the questions. A question in an exploration that is unclear can be addressed in class, but that is more difficult with homework. In addition, most of the students aren't developmentally ready to conduct their own out-of-class inquiry until a few weeks into the first course. This has been addressed in the latest revision. Informally, the current versions have generated much less stress than their predecessors, and we are optimistic.

The other struggle we have had

with this course has been supporting students' reading comprehension challenges. Given the contextualized nature of the explorations and extension assignments, students often have to read blocks of text that may pose challenges to their attention span, attention to detail, and overall comprehension. Sometimes students have trouble making sense of a single question. These problems appear to get more acute each year. Our reading specialists have helped us appreciate the role of asking the readers to summarize text in their own words as a way of identifying what they do and don't understand. We have also found that simply asking the student to read something aloud may help.

I n a contributed talk at the 2015 Joint Mathematics Meetings, Michael Starbird stated that this is an exciting time to be a mathematics educator. There are great opportunities to create new courses for students who have been disenfranchised by their past mathematical experiences. As courses such as QRP evolve, we should remember that quantitative reasoning is not a body of content, but a collection of habits and attitudes. We feel that our new QRP sequence holds great promise to fulfill this mission. ■

Upper Peninsula Regional Mathematics Meeting By Brian Snyder (LSSU)

n October 3 the School of Mathematics and Computer Science at Lake Superior State University hosted the Upper Peninsula **Regional Mathematics Meet**ing of the MAA Michigan section. Faculty and students from across the UP visited LSSU to hear a variety of talks contributed by undergraduate students and professors. I'd like to thank Jeff Horn, Carter Murray, Daniel Rowe, Anthony Webb, and Travis Wheeler. Next year's conference will be held in Marquette at Northern Michigan University.



Brian Snyder speaks on the history of fractions.

UNIVERSITY OF MICHIGAN-FLINT

Part-time Master's in Mathematics

FOCUS:

 UM-Flint's Master of Arts in Mathematics is designed to address the needs of a wide variety of students including current and prospective teachers, members of the workforce needing to deepen their understanding of mathematics, and recent graduates in pursuit of further credentials.

FLEXIBILITY:

- The 18-30 month program is part-time with evening and summer classes on the UM-Flint campus, scheduled to accommodate students with a wide variety of work schedules.
- The program is comprised of 30 graduate credit hours, including four core classes and a flexible set of electives covering a wide range of modern mathematical ideas.

umflint.edu/graduateprograms

RIGHT HERE. RIGHT NOW.

2015 DISTINGUISHED SERVICE AWARD PRESENTED TO MARK BOLLMAN

The Michigan section of the Mathematical Association of America is pleased to recognize Mark Bollman as the 2015 recipient of its Distinguished Service Award. We gratefully acknowledge the many contributions he has made to his institution, to our section, and to the larger mathematical community for many years.

Professor Bollman has served as secretary-treasurer on the executive committee of the Michigan section of the MAA continuously for the past eight years. During this time, he has faithfully managed the section's finances, solicited voluntary section dues, filed tax returns, and "paid the bills". As secretary, he has kept the official record of the work of the executive committee. His wise and steadfast presence on the executive committee has provided an invaluable degree of institutional memory for the section. He has also consistently supported the annual section meetings by providing an opportunity for attendees to browse and purchase books published by the MAA.

Professor Bollman has also actively supported a number of other mathematical events at the state level. He has served as co-director for the Michigan Autumn Take-Home Challenge. For many years, he has been a grader for both the Michigan Mathematics Prize Competition and the Lower Michigan Mathematics Competition. He has also been integral to MMPC grading day by organizing and hosting the event at Albion College for the past several years.

Professor Bollman has also served the mathematical community at the national level. He has been an AP exam reader since 2001 and a table leader since 2006. He is a reviewer for Mathematical Reviews/MathSciNet and a referee for several journals. He is also a current reviewer for the American Mathematics Competitions exams.

At Albion College, Professor Bollman is serving as chair of the Department of Mathematics. He has been a strong advocate for mathematics education at Albion College and has shepherded some key departmental curricular changes.

For his many years of dedicated service and outstanding leadership, the Michigan section is proud to present its 2015 Distinguished Service Award to Mark Bollman.

Contest News

By Ruth Favro (LTU) and Dave Friday (Macomb CC)

AMC

uring the 2014–2015 academic year, a total of 5079 Michigan students participated in the AMC (American Mathematics Competitions): 2601 students from 34 schools took part in the AMC 8, and 2478 students took part in the AMC 10/12; among them 919 students from 38 schools took the AMC 10/12 A and 1559 students from 82 schools took the AMC 10/12 B.

Six students earned perfect scores on this year's AMC 8: C. Song (8th grade, Ann Arbor Math Olympiad Co-Op), Pratham Soni (7th grade, Boulan Park MS, Troy), Z. Stein Perlman (8th grade, Clague MS, Ann Arbor), J. Xiu (7th grade, Clague MS, Ann Arbor), Freddie Zhao (8th grade, Boulan Park MS, Troy), and A. Zhu (7th grade, Greenhills School, Ann Arbor). The top scorer from this year's

AMC 10 A was Kuvam Shahane (10th grade, Lawrence Technological U, Southfield) with a perfect score. The top scorer from this year's AMC 12 A was Dhruv Medarametla (11th grade, Lawrence Technological U, Southfield). The top scorers on this year's AMC 10 B were Ankan Bhattacharya (10th grade, International Academy, Canton) and Freddie Zhao (8th grade, Troy HS) with perfect scores. The top scorer on this year's AMC 12 B was Dhruv Medarametla (11th grade, Troy HS).

In 2015, a total of 86 Michigan students qualified for the AIME (American Invitational Mathematics Examination). Among them, six qualified for the US-AMO (USA Mathematics Olympiad) and six qualified for the USAJMO (USA Junior Mathematics Olympiad). The USAMO/USAJMO qualifiers were Shaumik Baki (11th grade, Lawrence Technological U, Southfield), Ankan Bhattacharya (10th grade, Lawrence Technological U, Southfield), Jacqueline Bredenberg (12th grade, Detroit Country Day School, Beverly Hills), Daniel Gershenson (12th grade, Hough-

Contest News continued on page 20

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 fax: (989) 774-2414 mthgrad@cmich.edu www.mth.cmich.edu

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

Ph.D. in Mathematics

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, applied mathematics, approximation theory, combinatorics, complex analysis, differential geometry, fluid dynamics, functional analysis, mathematics education, number theory, operator theory, representation theory, and statistics.

<u>M.A. in Mathematics</u>

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.

M.S. in Applied Statistics & Analytics

This program is an M.S. degree in data science. It has two tracks: Applied Statistics and Data Analytics tracks. It is designed to prepare students for a career in business, industry and government. The program has unique features including partnership with SAS, offering two SAS professional certification exams on campus, opportunity to participate in statistical consulting projects, and providing industrial internship experience.

Data Mining Certificate

The data mining certificate program is designed to give each student a comprehensive training of basic foundation, advanced knowledge and applications of data mining. The primary goal is to develop a high-quality program and a creative learning environment that enables students to acquire advanced data mining knowledge and experience in real-world applications.

Contest News continued from page 19

ton HS), **Spencer Liu** (9th grade, Troy HS), **Dhruv Medarametla** (11th grade, Troy HS), **Zachary Obsniuk** (11th grade, Churchill HS, Livonia), **Raviraj Rege** (9th grade, Lawrence Technological U, Southfield), **Kuvam Shahane** (10th grade, Rochester Adams HS), **Chittech Thavamani** (9th grade, Troy HS), **Valerie Zhang** (10th grade, Phillips Academy, Andover), and **Freddie Zhao** (8th grade, Troy HS).

ARML

The 2015 American Regions Mathematics League (ARML) competition took place on May 31 on the campuses of the universities of Iowa, Penn State, Georgia, and Nevada-Las Vegas. A total of 150 teams 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 fielded two full teams of 15 students each in the A division, with 10 alternates competing on a team in the B division.

The Michigan A1 Reals placed 23rd nationally out of a field of 90 in the A division. They were fifth at the Iowa site in the A division. Individual round top scorers with 8 out of 10 were **Ankan Bhattacharya** 60 teams in the B division. Team co-captains were **Tyler Pleasant** (Harrison HS) and **Rohan Gurram** (Detroit Country Day School).

The Michigan All-Stars won the team T-shirt contest at Iowa with an original design combining the concepts of graphs and "stars" by **Noah Luntzlara** (Ann Arbor Homeschool). Coach **Ruth Favro** received the Samuel Greitzer Distinguished Coach Award for outstanding service to a regional team.

The contest consists of four parts: team problems, 20 minutes for 10 problems; 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 <arml.com>.

Team coaches were **Dave Friday** (Macomb CC), **Ruth Favro** (LTU), **Cap Khoury** (LTU/UM-AA), and **Mark Bollman** (Albion C). Additional help came from UM student **Mayank Patke; Ada Dong** (OU); **John Gershenson** (MTU); WSU students **Nicholas Cirullo** and **Latasha Byrd**; parents **Glenn Obsniuk**,

Zhu Yu, Susie Khoury, and **Debbie Gershenson**; and **Peter Collins** (Ann Arbor Huron HS). The Michigan All-Star Project is an activity of the Michigan Section—MAA. We recruit from the top 100+ winners of the Michigan Mathematics 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.

Putnam

The top three 2014 Putnam winners from Michigan are all at the University of Michigan: in order, Joseph Richey, Hai Tran Bach, and Qingzhong Liang. There were seven students from UM-AA in the top 500 in the 2014 exam. ■



The Michigan All-Stars ARML team.

(International Academy East), **Dhruv Medarametla** (Troy HS), and **Freddie Zhao** (Troy HS). Next highest with 7 was **Daniel Gershenson** (Houghton HS). Team co-captains were **Zachary Obsniuk** (Churchill HS) and **Dhruv Medarametla**.

The Michigan A2 Naturals placed 67th nationally out of a field of 90 teams in the A division. They were 13th at Iowa. Individual round top scorer with 7 out of 10 was **Raviraj Rege** (Novi HS). Scoring 6 were **Sathvik Byreddy** (Troy HS), **Abhay Goel** (Kalamazoo Math and Science Center), and **Stephen Jasina** (Saline HS). Team co-captains were **Raviraj Rege** and **Julian Wellman** (Greenhills School).

Ten students competed in a combined team with Tennessee students, on Iowa Alternate B1 in a field of

Annual Meeting at Hope College, April 10–11, 2015



Gavin LaRose presents the 2015 Distinguished Teaching Award to Christine Phelps (CMU).



Raoul Wadhwa (Kalamazoo C) receives a Ron Mosier Award for best student talk from section chair Michele Intermont.



Tim Pennings shares math inspired by Elvis, the Welsh Corgi.



A special cake at the banquet marks the 100th birthday of the MAA.



Edward Aboufadel (GVSU) demonstrates 3-D printing projects for multivariate calculus and geometry.



Sandy Becker (EMU) explores how teaching practice connects to student efficacy.



Past winner John Fink, right, presents the 2015 Distinguished Service Award to Mark Bollman (Albion C).



Eddie Cheng (Oakland U) explains how to inspire students at math camps.

2015 Award for Distinguished College or University Teaching of Mathematics Presented to Christine Phelps

The Michigan section of the Mathematical Association of America is pleased to present the 2015 Award for Distinguished College or University Teaching of Mathematics to Christine Phelps of Central Michigan University. Christine has been recognized for the quality of her teaching by Central Michigan's College of Science and Technology, and is known for her use of formative educational research to improve her instruction and course content, curriculum design, and research on undergraduate mathematics education.

Christine's instruction is characterized by her compassionate and passionate work with future teachers, and her patience in working with them to develop the mathematical habits of mind that will be crucial to them when they enter their own classrooms. She has led her department's work to redesign the curriculum for education students, working with members of her department to advance that effort.

In addition to her work in her own classroom and on the curriculum for students in her department, Christine has been instrumental in preparing, organizing, and facilitating the twoweek new instructor training workshop that the Central Michigan mathematics department runs for teaching assistants. She has, in addition, not only conducted the workshop, but also provided a model for the design, content, and assessment of such a teaching workshop.

Christine's impact on her students also includes a significant advising role. She is currently the advisor for her department's elementary math education program and the transfer advisor for the secondary math education program, and has in addition served as graduate student advisor.

Finally, Christine's research in mathematics education both informs her teaching and curriculum design and provides evidence-based work from which others may develop their instructional practice. Her publication record extends from development of pre-service teachers' mathematical abilities to the use of classroom evidence to inform and improve teaching.

It is, therefore, with great pleasure and pride that the Michigan section of the Mathematical Association of America presents the 2015 Distinguished College or University Teaching of Mathematics Award to Christine Phelps.

MAA Department Liaisons

By David Austin (GVSU)

Liaison Coordinator

With so many things happening in the MAA and the Michigan section, it's important to keep our members informed of news and opportunities. This is the job of the MAA liaisons.

We hope that you are receiving news through a liaison at your institution. If you are, please thank your liaison for helping to keep you informed. If not, please help us make sure that our list of liaisons is current by visiting <<u>sections.maa.org/michigan/liaisons.html</u>> and sending any corrections to David Austin <<u>austind@gvsu.edu</u>>, the section's liaison coordinator.

If your institution does not have a liaison, please consider volunteering for the job. It's not a lot of work, and your colleagues will appreciate it! ■

Institution News

Albion College

By Mark Bollman • mbollman@albion.edu **Ellen Kamischke** has joined the department as a visiting instructor. Ellen comes to Albion after several years teaching at the Interlochen Arts Academy and a recent position at Ferris State University.

Alpena Community College

By Dan Rothe • rothed@alpenacc.edu As I write this report, registration week is in progress and the weather is hot and humid. Enrollment numbers are down for us; we don't have final figures yet but we hear numbers between -6.6% and -9.5%. Steve Lewis is on sabbatical preparing for his new role in the electrical power technology bachelor's program, which will begin in 2016. Jim Berles continues his work with GIS in connection with the marine technology program. He and Dave Cummins (drafting/CAD instructor) have new office and computer lab space in the old electrical area, which was vacated when the new electrical building opened last spring. This allows the CAD and pre-engineering programs opportunities to work together and puts them in the same location as their computer lab. This leaves Mike Kelley, Meghan Cameron, and Dan Rothe alone in Math Land.

Calvin College

By John Ferdinands • ferd@calvin.edu

Hyunyi Jung joined the department as an assistant professor in September 2015. She graduated from Purdue University in 2015 with a PhD in mathematics education. • **Jan Koop** has been awarded a grant of \$236,628 from the Michigan Department of Education for improving teacher quality by working with mathematics in local schools. ■

Central Michigan University

By Sid Graham • sidney.w.graham@cmich.edu Mohan Shrikhande retired in April. Mohan joined the CMU faculty in 1981. • Jean Chan and Lisa DeMeyer are on sabbatical leave for Fall 2015 and Spring 2016. Tibor Marcinek is on sabbatical leave for Fall 2015. Kahadawala Cooray and Christine Phelps will be on sabbatical for Spring 2016. • Chen-I Ching and Xiaoming Zheng were promoted to associate professor. Katrina Piatek-Jiminez was promoted to professor, and Chen-I Ching earned tenure. • Sivaram Narayan was awarded the 2015 CMU President's Award for Outstanding Research and Creative Activity. • Byeongseong Jeong and Jungho Yoon (both from Ewha U, South Korea) are visiting scholars this year. Brian Clark, Charles Joseph, Irmgard Redman, Daniel Sievewright, and Guangyu Zhao are new fixed-term faculty. • Ryan Hines, Maalee Almheidat, Mutaz Mohammad, and Drew Lazar finished doctoral degrees. • Louis Nirenberg (Courant Institute) will deliver the 2016 Fleming Lectures on April 14 and 15, 2016. The Fleming Lectures were founded by Professor Emeritus Richard Fleming. • We will host a special colloquium series again this year. There will be three colloquia, one each in the areas of mathematics education, statistics, and mathematics. In mathematics, Steven Krantz (Washington U) will speak on March 24, 2016. In statistics, Nancy Reid (U of Toronto) will speak on April 7, 2016. The speaker for mathematics education will be named later.

Institution News continued from page 23

Delta College

By Frances Lichtman • franceslichtman@delta.edu We are pleased and proud to announce that **Jim Ham** is the president-elect of AMATYC. **Mary Roberson** was named the recipient of the 2015 MichMATYC Teaching Excellence Award. **Steve Rosin** was promoted to the rank of professor, and **Joe Hernandez** and **Myung Pinner** earned tenure.



Delta College hosted the third annual Dow Great Lakes Bay STEM Festival on September 25 and 26, enabling thousands of students and the public to explore the excitement of STEM fields. The Mathematics Division provided activities and demonstrations of origami, the Doomsday Algorithm, a Raspberry Pi computer, estimation, and a PVC marimba.



Eastern Michigan University

By Carla Tayeh • ctayeh@emich.edu Andrew Ross and John Curran have been promoted to full professor. Tim Carroll will retire in December 2015. Joan Cohen Jones is participating in the three-year phased-out retirement. Chris Gardiner will step down as department chair in July 2016. Kim Rescorla and Carla Tayeh are co-directors for the Michigan Mathematics Prize Competition (MMPC) for the next two years.

Ferris State University

By Jerome Trouba • troubaj@ferris.edu We hired one new faculty member, **Anil Venkatesh** from Duke University. • **Victor Piercey** has developed a two-course general education sequence called Quantitative Reasoning for Professionals using an inquiry-based learning paradigm.

Grand Valley State University

By Paul Fishback • fishbacp@mail.gvsu.edu Brian Drake, Firas Hindeleh, and Darren Parker received tenure and promotion to associate professor. Jonathan Hodge was promoted to professor. Marge Friar retired. The department has two new affiliate faculty members, Mandy Forslund and Ginger Rowher, and four new visiting faculty members, Allan Bickle, Kathy Coffey, Koshal Dahal, and James Schwass. • Grand Valley once again hosted an NSF-funded REU during the summer of 2015. Eight students from across the country worked in pairs under the direction of Akalu Tefera, Will Dickinson, Shelly Smith, and Jon Hodge. Each team gave a presentation at MathFest in Washington, DC. One team of students, Robert Dickens and Samantha Moore (working under the direction of Will Dickinson), received an MAA award for their presentation. GVSU is hoping (pending funding) to host an REU again in the summer of 2016, with research topics to include equal circle packing, outer billiards, Hausdorff metric geometry, voting theory, and visualizing big data. For further information, see <gvsu.edu/mathreu>. • The 2016 Mosaic Lecture will take place on March 30, 2016. This year's speaker is Talithia Williams from Harvey Mudd College. • The department has established a new Student Mathematics Colloquium, and **Eugenia Cheng**, author of *How to Bake* π , was the inaugural speaker. • Math in Action will take place on February 27. The conference consists of six hour-long sessions with eight separate interactive presentations during each. Presentations are focused on specific mathematics topics at a variety of grade levels, providing an opportunity for practicing preK-12 teachers, prospective teachers, curriculum directors, and college and university faculty to share ideas, concerns, and resources. SCECH credits are available for most sessions. For more information about the conference go to <gvsu.edu/mathinaction>. ■

Mathematical Reviews

By Mike Jones • maj@ams.org Associate editor **Suzanne Zeitman** retired in March after working nearly 21 years for Mathematical Re-

Institution News continued from page 24

views (MR). She was responsible for covering computer science and logic. These areas will now be covered by **Andrés Caicedo**. He came to MR from Boise State University, where he was an associate professor. He is a set theorist/logician who earned his PhD from UC Berkeley in 2003. • MR helped organize and sponsor "Who Wants to Be a Mathematician?" (the American Mathematical Society game) at the University of Michigan in March 2015. For those interested, "Who Wants to Be a Mathematician?" will be back in Ann Arbor in spring 2017.

Michigan Technological University

By Jeanne Meyers • jemeyers@mtu.edu **Kui Zhang** joined the Department of Mathematical Sciences this fall as a full professor of statistics. Zhang holds the David House Endowed Professorship in Statistics, Data Mining, and Data Analytics. He is pursuing methodological developments and seeking collaborations in statistical genetics and genomics, bioinformatics, and biostatistics. • David House is one of Michigan Tech's leading strategic supporters. As department chair **Mark Gockenbach** has noted, "It is gratifying that Mr. House recognizes the importance of statistics and data science in today's world. His support has been critical in helping Michigan Tech to move forward, and I am very grateful for his latest contribution to the university." • The department hosted the first annual Kliakhandler Conference, Algebraic Combinatorics and Applications. August 26–30, 2015. The Kliakhandler Conference is an annual event funded by a generous gift from Igor Kliakhandler, a former Michigan Tech faculty member. Professor Vladimir Tonchev organized the conference. In addition to the Kliakhandler gift. Tonchev received a \$15,000 research and development grant from the National Science Foundation to support the conference. • Professor George Andrews, Evan Pugh University Professor of Mathematics, Pennsylvania State University, gave the inaugural Kliakhandler lecture on the life and work of the Indian mathematician Srinivasa Ramanujan on October 8, titled "The Indian Genius, Ramanujan: His Life and the Excitement of His Mathematics". Andrews also gave a departmental talk on October 9, titled "Partitions, Dyson, and Ramanujan". His visit

Institution News continued on page 26

BIOSTATISTICS UNIVERSITY OF MICHIGAN

Now accepting applications to MS, MPH, and PhD programs

The nation's #1 biostatistics program is Doing a World of Good through cutting-edge 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>

Institution News continued from page 25

was part of the annual lecture series also supported by Kliakhandler. • Asoociate Professor Jiguang Sun received a \$144,996 grant from the National Science Foundation for a research and development project titled "Finite Element Methods for High Order Eigenvalue Problems". This is a three-year project. • Vladimir Tonchev received new funding from the US Department of Defense National Security Agency in the amount of \$39.835 for a project titled "Codes, Galois Geometries, and New Invariants for Incidence Structures". • Professor Iosif Pinelis will be on sabbatical during the spring semester. Shari Stockero, associate professor of mathematical sciences and director of teacher education, cognitive and learning sciences, continues her sabbatical during the 2015 fall semester. • Professor Juergen Bierbrauer retired August 14, 2015. ■

Oakland University

By Jerry Grossman • grossman@oakland.edu Statistician Michael Lawlor (recent PhD from Purdue University) has a one-year position as visiting assistant professor. Associate Professor Robert Kushler retired this summer, after 28 years of service in our department. His area was statistics, and, in addition to usual faculty duties, he played an important role in our off-campus program with the automobile industry and in consulting for colleagues in other departments. Professors Jerrold Grossman and Barry Turett have begun a phased retirement program, whereby they teach one semester per year for two or three years before leaving the university. Fiki Shillor is on sabbatical leave this fall, and Professor László Lipták and Associate Professor Libin Rong will be on sabbatical leave in the winter. Professor Fiki Shillor was awarded the title of Distinguished Professor. • The department hosted Krzysztof Bartosz from Jagiellonian University in Krakow, Poland, as well as three students, as part of the European Grant Contract. The guests stayed two weeks, interacting with various faculty members. • Assistant Professor Dan Steffy started a term as the vice president of the **INFORMS Southeast Michigan Chapter.** • We expect to conduct the 21st annual Summer Mathematics Institute for talented local high school students in 2016. Last summer Professor Bruce Golden (U of Maryland) gave a colloquium talk to the students in the program. • The department presents colloquium talks from internal and external scholars on Tuesday afternoons. • In cooperation with the School of Education and Human Services, we strengthened the subject-area content requirement for all elementary education

majors and the requirement for those who want a major or minor certification in mathematics. • Please visit our website <<u>oakland.edu/math</u>> for details on many of the items mentioned above.

Saginaw Valley State University

By Emmanuel Ncheuguim • ekengnin@svsu.edu Allen Schwenk of Western Michigan University presented "Mathematical Induction: The Good, the Bad, and Ugly". Schwenk was a local invited speaker at this year's Mathematical Association of America Michigan Section Annual Meeting. His talk was very well received, so he was invited to present at the SE&T Colloquium Series here at SVSU on October 6, 2015. • Cyrus Aryana and Olivier Heubo-Kwegna are on sabbatical leave for Fall 2015. ■

University of Michigan-Flint

By Ken Schilling • ksch@umflint.edu Lixing Han received the UM-Flint Scholarly or Creative Achievement Award. Kenneth Schilling has begun a term as mathematics department chair. Daniel Coffield is on sabbatical this semester. Family Math Night, an evening of fun with mathematical activities for children and their parents, was held on October 27, from 6:00 to 8:00 p.m. Math Field Day, a day of competition for teams of high school students, will be on March 4, 2016. ■

Wayne State University

By Dan Drucker • drucker@math.wayne.edu Alia Khurram, who received her PhD in mathematics from Southern Illinois University, is joining our faculty as a lecturer. We have two new post-docs, officially assistant professors (research), with twoyear positions: Nicolas Ricka, an algebraic topologist who received his PhD in 2013 from the University of Paris 13 under Geoffrey Powell and who has held postdoctoral positions in Strasbourg and Paris; and Xing Wang, a partial differential equations researcher who received his PhD earlier this year from Johns Hopkins University under Christopher D. Sogge and who has collaborated with Jiuyi Zhu, a graduate of our program in 2013. Dalaal Balawi, Matt Blaghdurn, Samantha Flores, Deborah Gordon, Kaili Hardamon, Melinda Klakulak, Naresh Mahabir, and Andrew Vincentini, all of whom have taught or will teach full time in the Rising Scholars Program (RSP), are joining the faculty as RSP lecturers. Our "graduating" postdocs, Rebecca Stockbridge and Jarod Hart, moved on to General Motors and the University of Kansas, respectively. In the past year,

Join the MAA Community

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>.



Institution News continued from page 26

three faculty members left for personal reasons. Tao Mei is now an associate professor at Baylor University, Kyungyong Lee has accepted a position at the University of Nebraska effective next semester, and Sandra Robinson is now a lecturer at the University of Toledo. In addition, six full-time faculty/academic staff members of the department retired last year. Patty Bonesteel retired last winter. John Breckenridge, Larry Brenton, C. J. Rhee, and Claude Schochet all retired in May. Mary Klamo retired in August. Hengguang Li has been promoted to associate professor as of Fall 2015. Rohini Kumar and Guozhen Lu will be on leave during Fall 2015. Hengguang Li and Zhimin Zhang will be on leave during Winter 2015. • On October 12, 2015, Hugh Montgomery of the University of Michigan gave a colloquium talk entitled "Kronecker's Approximation Theorem". • The Board of Governors of Wayne State University has approved the establishment of a bachelor of arts degree with a major in mathematical economics in the College of Liberal Arts and Sciences. • George Yin was named a member of the SIAM (Society for Industrial and Applied Mathematics) 2015 Class of Fellows. Yin was recognized for his contributions to stochastic systems theory, modeling, computational methods and applications. He and 30 other fellows were honored in Beijing at the International Congress on Industrial and Applied Mathematics in August. • Hengguang Li was awarded a 2015

US Air Force Summer Faculty Fellowship to conduct computational mathematical research at the Air Force Flight Test Center of Edwards Air Force Base in southern California. • Guozhen Lu was awarded a Simons Fellowship in Mathematics from the Simons Foundation for academic year 2015–2016, allowing him to extend a one-semester sabbatical leave to two semesters. He will spend the year investigating multi-parameter harmonic analysis, sharp geometric inequalities, and their applications to partial differential equations. • We have several visitors from mainland China this year. Li Guo is a postdoc associate from the School of Mathematical Sciences at the University of Science and Technology of China in Hefei specializing in numerical solutions of partial differential equations. Her contract is for one year, starting in August 2015 and renewable for a second year. The area of interest of the other visitors is probability, stochastic processes, and applications. Xiaofeng Zong is a postdoc fellow from the Huazhong University of Science and Technology in Wuhan, who will be with us from September 2015 through March 2017. Xiaoyue Li, a visiting assistant professor from Northeast Normal University in Jilin, has been visiting us for a year starting in November 2014. The one-year visit by Xianggang Lu, a graduate student from Sun Yat-Sen University in Guangzhou, started in December 2014. Finally, Ben Pei is a graduate student from Northwestern Polytechnical University in Xi'an visiting us from September 2015 through September 2016.

Open Positions

Most positions in the mathematical sciences, including many of the ones listed here, are advertised online at <ams.org/eims>, <mathclassifieds.org>, and/or <mathjobs.org>.

■ **ALBION COLLEGE** is searching for a tenure-track assistant or associate professor of mathematics, with the area of specialization open. Details about the application process may be found at <tinyurl.com/AlbionMath2K15>.

• **CENTRAL MICHIGAN UNIVERSITY** is recruiting for tenure-track positions in mathematics and statistics. We are also recruiting for a new department chair; see <jobs.cmich.edu/postings/22863>.

• **EASTERN MICHIGAN UNIVERSITY** invites applications for two tenure-track faculty positions in applied statistics and data science. Additionally, the mathematics department is conducting a search for department head to begin July 2016. See the postings on the EMU website <<u>emich.edu/jobs</u>>. ■ **GRAND VALLEY STATE UNIVERSITY** is accepting applications for the position of assistant professor of mathematics. Further information is posted at <gvsu.edu/math/faculty-hiring-33.htm>.

■ **MICHIGAN TECHNOLOGICAL UNIVERSITY** plans to advertise for one faculty position in mathematics education. The position will be posted at <<u>mtu.edu/math</u>> later this fall.

• **OAKLAND UNIVERSITY** will be hiring an assistant professor. See <<u>oakland.edu/math/positions</u>> for details.

• WAYNE STATE UNIVERSITY will conduct a search to fill a new tenure-track position, effective Fall 2016. Further details will be available on the department's website and on <mathjobs.org>.

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 available! Apply by December 1 for enrollment the following fall! http://prime.msu.edu For more information, contact: Lisa Keller, Program Coordinator 354 Farm Lane, Room 221 North Kedzie East Lansing, MI 48824 517.432.5472 kellerl@msu.edu Get paid to get a PhD! 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!

New Newsletter Editor in 2016

By Katie Ballentine (Mathematical Reviews)

It's been a fun couple of years working on the *Newsletter*. I have learned a lot and have enjoyed getting to know so many kind and interesting people from around the Michigan section. Many of you have directly contributed to the success of the *Newsletter* by writing articles, making helpful suggestions, or offering editorial assistance, and I thank all of you. Please keep up the good work! Now it's time for me to pass the editorial fun on to someone else. Beginning with the spring 2016 issue, **Victor Piercey** (Ferris State U) will take over as editor. I'm happy to be leaving the *Newsletter* in such capable and enthusiastic hands. ■

Student Chapter News

Alpena Community College

Sigma Zeta Math/Science Honor Society inducted five new members in the spring. They enjoyed an educational field trip to Ann Arbor in May, visiting the U of M Museum of Natural History, the Kelsey Museum of Archeology, and the Matthaei Botanical Gardens and Nichols Arboretum. New officers for the 2015–2016 school year are **Britny Faught** (president), **Andrew Phal** (vice president), **Brendan Cordes** (secretary), **Eric Luty** (treasurer), and **Dan Rothe** (advisor). ■

Eastern Michigan University

Drs. **Bingwu Wang** and **David Folk** are coaching our EMU Putnam team. They meet each Friday afternoon for problem sessions. **Lillianna Blair** is the president of our math club.

Ferris State University

We have three student math organizations: the math club, Pi Mu Epsilon, and Gamma Iota Sigma. • The math club's board members are Tyler Dietz (president), Allie Wicklund (vice president), Alex Gullickson (secretary), Nathan Klingel (treasurer), and Jocelyn Aigboduwa (community service). The math club has already started weekly tutoring sessions. We are planning our annual trip to Chicago as well as T-shirt sales, game day, and movie day. • Our chapter of Pi Mu Epsilon (Michigan Mu) has board members Jared T. Meehan (president), Jacob D. Laird (vice president), Nathan W. Klingel (treasurer), Corey T. Bledsoe (secretary), and Leighann McReynolds (community service). The chapter recently inducted four new student members as well as a faculty member. Last semester we went to the Michigan Undergraduate Mathematics Conference. We are still planning activities for this year. • Gamma Iota Sigma's board members are Alex Gullickson (co-president),

Kathryn Rolka (co-president), Corey Bledsoe (secretary), Kara Versalle (treasurer), Jared Meehan (community service), and Morgan Wiard (social media). Gamma Iota Sigma recently went to the annual GIS International Conference in Chicago. We plan on doing community service events such as Rake and Run, The Big Event, and Relay for Life. We plan on having social and professional events in the future, as well as bringing insurance professionals to campus to address students. We also want to attend the national RIMS conference in San Diego this year. ■

Grand Valley State University

Ed Aboufadel is the Mathematics and Statistics Club advisor. **Jane DeCoeur** will serve as president this year. In April, 20 students were inducted into the department's Pi Mu Epsilon chapter.

Oakland University

The officers of the Oakland University Society of Actuarial Science <oakland.orgsync.com/org/ societyofactuarialscience40191> are **Tyler Monbleau** (president), **Theresa Bolchi** (vice president), **Sabiha Sultana** (treasurer), and **Alex Grix** (secretary). ■

Schoolcraft College

The Math and Physics Club officers this fall are **Joe Peper** (president), **Daryl Graham** (vice president), **Ajay Arora** (secretary), and **Steven Paris** (social media director). Recent guest lectures sponsored by the club include February 11, 2015, "The Mathematics of Finance and the Fallacy of 'Normality'" by **Richard A. Consul**, chartered financial analyst and senior portfolio manager, Victory Munder Capital Management; and November 11, 2015, "Operations Research in the Army: A Cost Estimating Perspective" by **Chris Sommers**, operations research analyst, US Army Tank-automotive and Armaments Command (TA-COM), Warren, MI. ■

Calendar of Events

Michigan Section-MAA Annual Meeting

2016: Hillsdale College | April 1-2

Upper Peninsula Regional Mathematics Meeting

2016: Northern Michigan University

MAA MathFest

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 2020: Philadelphia, PA | July 29-August 1 2021: Sacramento, CA | August 4-7

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 2020: Denver, CO | January 15-18 2021: Washington, DC | January 6-9

AMATYC Annual Conference

2016: Denver, CO | November 17-20 2017: San Diego, CA | November 9-12 2018: Orlando, FL | November 15-18

NCTM Annual Meeting & Exposition

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 3-6

For every way you teach. For every way they learn.

PRESENTING THE AUTHO	RS OF OUR ©2016 TITLES
DEVELOPMENTAL MATHEMATICS	APPLIED CALCULUS

Aufmann/Lockwood Nolting

APPLIED CALCULUS

Harshbarger/Reynolds Tan

COLLEGE ALGEBRA / PRECALCULUS

Larson Stewart/Redlin/Watson

CALCULUS

Stewart

Berresford/Rockett

ADVANCED MATHEMATICS Burden

LIBERAL ARTS MATHEMATICS Johnson/Mowry

STATISTICS Ott/Longnecker **TEACHER MATHEMATICS** Bassarear

Visit us at www.cengage.com/mathematics to view our complete catalog and to order review copies.

CENGAGE _earning®



Increased Engagement. Improved Outcomes. Superior Service.

Exclusively from Cengage Learning, Enhanced WebAssign[®] combines the exceptional Mathematics content that vou know and love with the most powerful online homework solution, WebAssign, Enhanced WebAssign engages learners with immediate feedback, rich tutorial content, and interactive eBooks, helping students develop a deeper conceptual understanding of the subject matter. Online assignments can be built by selecting from thousands of textspecific problems or supplemented with problems from any Cengage Learning textbook.

To learn more about Enhanced WebAssign, visit www.cengage.com/ewa.

Michigan Section–Mathematical Association of America Committees and Appointments

Executive Committee Chair ('16) Brian Snyder (LSSU) bsnyder@lssu.edu • 906-635-2658 Gavin LaRose (UM-Ann Arbor) Vice Chair ('16) glarose@umich.edu • 734-764-6454 Vice Chair ('16) Jan Roy (Montcalm CC) janr@montcalm.edu • 989-328-1235 Sec.-Treas. ('16) Mark Bollman (Albion C) mbollman@albion.edu • 517-629-0261 Past Chair ('16) Michele Intermont (Kalamazoo C) intermon@kzoo.edu • 269-337-7107 Governor ('16) Matt Boelkins (GVSU) boelkinm@gvsu.edu • 616-331-3384 Michigan Mathematics Prize Competition (MMPC) Co-Director ('17) Kim Rescorla (EMU) krescorla@emich.edu • 734-487-2137 Co-Director ('17) Carla Tayeh (EMU) ctayeh@emich.edu • 734-487-1659 **Exam Committee:** *Chair* ('16) Bob Messer (Albion C) ram@albion.edu • 517-629-0287 Eddie Cheng (Oakland U) *Member* ('17) echeng@oakland.edu • 248-370-4024 Member ('18) Michael (Cap) Khoury (LTU) prof.cap.khoury@gmail.com • 248-204-3531 David Friday (Macomb CC) *Member* ('19) fridayd@macomb.edu • 586-226-4731 2016 Annual Meeting Local Arrangements Comm. David Gaebler (Hillsdale C) Chair dgaebler@hillsdale.edu • 517-607-2743 2016 Annual Meeting Program Committee Chair Gavin LaRose (UM-Ann Arbor) glarose@umich.edu • 734-764-6454 Member David Gaebler (Hillsdale C) dgaebler@hillsdale.edu • 517-607-2743 Member Jan Roy (Montcalm CC) janr@montcalm.edu • 989-328-1235 Michigan Section Newsletter Editor Katie Ballentine (Mathematical Reviews) michmaanewsletter@gmail.com Assoc. Ed. Jerrold Grossman (OU) grossman@oakland.edu • 248-370-3443 Assist. Ed. Victor Piercey (Ferris State U) piercev1@ferris.edu • 231-591-2823 Advert. Manager Will Dickinson (GVSU) dickinsw@gvsu.edu • 616-331-3745 Staff Writer Andrew Livingston aliving1@gmail.com

Distinguished Service Award Committee

Chair ('17)	Michele Intermont (Kalamazoo C) intermon@kzoo.edu • 269-337-7107
Member ('16)	Steve Blair (EMU) sblair6@emich.edu • 734-487-1296
Member ('18)	Brian Snyder (LSSU) bsnyder@lssu.edu • 906-635-2658
Distingui	shed Teaching Award Committee
Chair ('16)	Matt Boelkins (GVSU) boelkinm@gvsu.edu • 616-331-3384
Member ('17)	Ken Schilling (UM-Flint) ksch@umflint.edu • 810-762-3244
Member ('18)	Christine Phelps (CMU) phelp1cm@cmich.edu • 989-774-3920
Member ('16)	Katie Ballentine (Mathematical Reviews) michmaanewsletter@gmail.com
Member ('16)	Frances Lichtman (Delta C) franceslichtman@delta.edu
Chair ('16)	Nominating Committee Michele Intermont (Kalamazoo C) intermon@kzoo.edu • 269-337-7107
<i>Member</i> ('16)	Jan Roy (Montcalm CC) janr@montcalm.edu • 989-328-1235
Member ('17)	Brian Snyder (LSSU) bsnyder@lssu.edu • 906-635-2658
	Audit Committee
Member	Chris Gardiner (EMU) cgardiner@emich.edu • 734-487-3386
Member	Dan Drucker (WSU) drucker@math.wayne.edu • 313-577-3189
	MMPC Audit Committee
Member	Margret Höft (UM-Dearborn) mhoft@umich.edu • 734-663-2992
Member	John Mooningham (SVSU) jwm@svsu.edu • 989-964-4183
Othe	r Appointments and Contacts
Webmaster ('17)	Paul Pearson (Hope C) michmaawebmaster@gmail.com • 616-395-7529
Public Inform. Off.	Bob Xeras (Siena Heights U) rxeras@sienaheights.edu • 517-265-5832
AMC Coordinator	David Friday (Macomb CC) fridayd@macomb.edu • 586-226-4731
Liaison Coord.	David Austin (GVSU) austind@gvsu.edu • 616-331-3431
Archivist	John W. Petro (WMU) john.petro@wmich.edu • 616-387-4591