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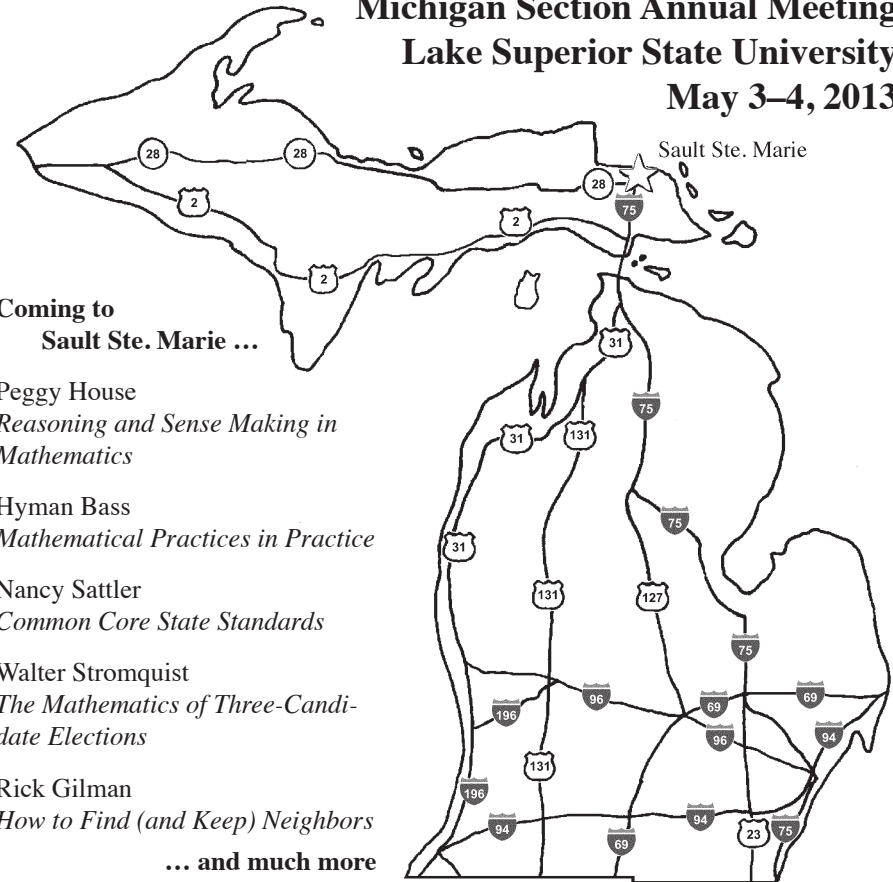


Michigan Section–MAA NEWSLETTER

Volume 39, Number 2

April 2013

**Michigan Section Annual Meeting
Lake Superior State University
May 3–4, 2013**



**Coming to
Sault Ste. Marie ...**

Peggy House
*Reasoning and Sense Making in
Mathematics*

Hyman Bass
Mathematical Practices in Practice

Nancy Sattler
Common Core State Standards

Walter Stromquist
*The Mathematics of Three-Candi-
date Elections*

Rick Gilman
How to Find (and Keep) Neighbors

... and much more

ALSO IN THIS ISSUE:

56th Annual Michigan Mathematics Prize Competition

Mathematical Association of America
Michigan Section Newsletter
Volume 39, Number 2

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www.michmaa.org

Abbreviations

C = College	MTU = Michigan Technological U
CC = Community College	NMU = Northern Michigan U
CMU = Central Michigan U	OU = Oakland U
EMU = Eastern Michigan U	SHU = Siena Heights U
FSU = Ferris State U	SVSU = Saginaw Valley State U
GVSU = Grand Valley State U	U = University
KU = Kettering U	UDM = U of Detroit Mercy
LSSU = Lake Superior State U	UM = U of Michigan
LTU = Lawrence Technological U	WMU = Western Michigan U
MSU = Michigan State U	WSU = Wayne State U

Calendar of Events

- April 17–20, 2013 NCTM Annual Meeting, Denver, CO
- May 3–4, 2013 Michigan Section Meeting, LSSU**
- August 1–3, 2013 MAA MathFest, Hartford, CT
- Oct. 31–Nov. 3, 2013 AMATYC Annual Meeting, Anaheim, CA
- January 15–18, 2014 MAA/AMS Annual Meeting, Baltimore, MD
- Spring, 2014 Michigan Section Meeting, UM-Flint**
- April 9–12, 2014 NCTM Annual Meeting, New Orleans, LA
- August 7–9, 2014 MAA MathFest, Portland, OR
- November 20–23, 2014 AMATYC Annual Meeting, Nashville, TN
- January 10–13, 2015 MAA/AMS Annual Meeting, San Antonio, TX
- Spring, 2015 Michigan Section Meeting, Hope C**
- August 5–8, 2015 MAA MathFest, Washington, DC
- November 19–22, 2015 AMATYC Annual Meeting, New Orleans, LA
- January 6–9, 2016 MAA/AMS Annual Meeting, Seattle, WA
- November 17–20, 2016 AMATYC Annual Meeting, Denver, CO
- January 4–7, 2017 MAA/AMS Annual Meeting, Atlanta, GA
- November 9–12, 2017 AMATYC Annual Meeting, San Diego, CA

Organizational Web sites

Michigan Section–MAA	sections.maa.org/michigan
MAA	www.maa.org
NCTM	www.nctm.org
MCTM	www.mictm.org
AMATYC	www.amatyc.org
MichMATYC	www.michmatyc.org
MMPC	sections.maa.org/michigan/mmpc
MiNExT	www.hillsdalesites.org/personal/dmurphy/MiNExT.html
HSVLP	michhsvlp.weebly.com

Annual Meeting, May 3–4

The Annual Meeting of the Michigan Section of the MAA and MichMATYC (the Michigan Mathematical Association of Two-Year Colleges) will be held on Friday and Saturday, May 3-4, 2013 at Lake Superior State University. The Program Committee is delighted to announce an exciting collection of plenary, local-invited, and contributed talks that are devoted to interesting results in mathematics as well as the teaching and learning of mathematics.

As in recent years, in order to save on printing costs, an advance copy of the meeting program is not included in the Spring *Newsletter*. Details about the schedule, program, and abstracts are available on the program Web page: sites.google.com/site/2013michiganmaa/home. As usual, a printed version of the program (including abstracts) will be provided at the meeting.

The meeting begins Friday morning with a plenary talk by **Peggy House** from Northern Michigan University titled “Reasoning and Sense Making in Mathematics: Where Do We Fit In?” Peggy has held leadership positions in the National Council of Teachers of Mathematics (NCTM), the School Science and Mathematics Association, and the National Council of Supervisors of Mathematics. She has received NCTM’s highest honor, the Lifetime Achievement Award, and was the first recipient of the Outstanding Contributions to Mathematics Education Award from the Michigan Council of Teachers of Mathematics. Also on Friday morning are two local-invited talks, “Random Chess Walks and Modern Computational Tools” by **Alan Struthers** (MTU) and “Teaching, Technology and Other Intractable Problems”, by **Gavin LaRose** (UM-AA).

At the Friday luncheon, **Hyman Bass** from the University of Michigan will give a talk entitled “Mathematical Practices in Practice.” Hyman is the Samuel Eilenberg Distinguished University Professor of Mathematics and Mathematics Education at the University of Michigan. He has served as the President of the American Mathematical Society and the International Commission on Mathematical Instruction and as Chair of the National Academy of Sciences’ Mathematical Sciences Education Board.

For the Friday afternoon plenary talk, **Nancy Sattler**, former dean at



Terra Community College, will give a presentation titled “Common Core State Standards— What Does it Mean to University and College Mathematics Faculty?” Nancy is the president-elect of the American Mathematical Association of Two-Year Colleges (AMATYC). She is also a past chair and current Treasurer of the Ohio Mathematics and Science Coalition, and Past President of the Ohio Mathematics Association of Two Year Colleges (OhioMATYC).

At the Friday awards banquet, **Walter Stromquist** of Swarthmore College delivers the evening address titled “The Mathematics of Three-Candidate Elections.” In addition to teaching at Bryn Mawr College and Swarthmore College and in the AwesomeMath Summer Program, Walter has worked at the U.S. Treasury’s Office of Tax Analysis as well as at Daniel H. Wagner, Associates, a mathematical consulting firm. Walter is the current editor of *Mathematics Magazine*.

Saturday opens with a local-invited talk by **Bernie Arbic** (LSSU) titled “Sault Sainte Marie: Michigan’s Plymouth Rock.” This presentation will be an overview of Sault Ste. Marie’s colorful history, containing no equations, only one proof, and plenty of illustrations.

Also on Saturday morning are local-invited talks by **Feryal Alayont** (GVSU) and **Christopher Smith** (LSSU). Feryal will speak on “A Curious Question Opens the Doors to Permutations, Designs, Hypergraphs and Codes” and Christopher’s talk is titled “Fractal Mathematics Applied to Texture Tracking in Video Streams.”

In addition to the Saturday morning talks, **Paul Pearson** and **Ann Kulenberg** of Hope College are offering a workshop titled “An Interactive Introduction to WeBWorK.” Also, Michigan Project NEXt will be holding a focus group on the future of Michigan Project NEXt as well as a panel session, “Teaching Strategies for Improving Student Learning.”

The meeting ends with a lecture by **Rick Gilman** (Valpariso U), which will conclude the Saturday luncheon. Rick’s talk, “How to find (and keep) neighbors”, is based in part on research done by undergraduate students under his supervision. Rick serves as chair of the MAA’s Problem Series Editorial Board, and is Chair of the MAA Committee on Sections.

As in previous years, the meeting includes 20-minute contributed talks covering a variety of topics in mathematics and mathematics education. This includes sessions devoted to talks by undergraduate and graduate students. Please continue to encourage your students to give a talk. Once again, the Ron Mosier Memorial Award will be presented to the student(s) with the most outstanding talk. The deadline for student abstracts is March 29.

As of this writing, there remains space in the program for additional

Annual Meeting continued on page 11

Chairperson’s Report

As warmer weather approaches, it is time to starting planning for the Annual Meeting of the Section. For the first time, the meeting will be held in the Upper Peninsula. Lake Superior State University serves as host. We thank the Program Committee, including **Steve Blair** (EMU), **Frances Lichtman** (Delta C), **Collette Coullard** (LSSU), and **John Kiltinen** (NMU), for their hard work so far. See elsewhere in this *Newsletter* for more details about registration and schedules. As always, we especially encourage presentations from both undergraduate and graduate students. This is a great way for students to gain some valuable experience and make professional contacts.



In recent months, we have experienced a number of changes in the personnel who carry out the various responsibilities of the Section. We welcome **David Tannor** (Grand Rapids CC) as the new coordinator for the High School Visiting Lecture Program. This program has seen declining activity in recent years, and the Section is hoping to revive it. Please consider participating.

We also welcome **Robert Talbert** (GVSU) as the new coordinator for Michigan NEXt. This program is targeted broadly at junior faculty members who have not yet obtained tenure. We’re looking forward to a variety of career development and networking programs.

The Section would like to thank Ada Dong, who served for many years as AMC Coordinator. Her efforts positively impacted many students throughout the state of Michigan. The Section is currently looking for a replacement AMC Coordinator. Please contact **Mike Bolt** (Calvin C) if you are interested.

We especially thank **Norm Richert** (Mathematical Reviews), who is retiring from the position of *Newsletter* Editor after over ten years of tireless service. The *Newsletter* is one of the key networking tools of our Section, and it’s hard to imagine how we will replace Norm.

In February and March the national MAA office conducted an election for Section Governor. The nominees were **Matt Boelkins** (GVSU) and

Chair’s Report continued on page 6

Two-Year College Vice Chair's Report

According to a multi-state study of community colleges, only 20% of students referred to the beginning of a developmental mathematics sequence complete a gateway college credit-bearing course within three years of initial enrollment.* Numerous efforts are underway to design curriculums that accelerate students' completion of developmental mathematics courses. For example, the Statway and Quantway curriculums and the New Mathways Project developed at the Charles A. Dana Center allow students to progress from developmental mathematics through a college credit-bearing mathematics course in one year.



In an effort to help students at Delta College succeed in developmental mathematics, this community college for the last few years has offered a one-semester, seven-credit course entitled Math Cubed that combines Basic Mathematics, Pre-Algebra, and Algebra I. **Nate Blecke, Katrina Nichols, and Tom Wells** designed and piloted the course. It is team taught by two to three instructors, with the aid of a learning assistant, and maintains a student-faculty ratio of about 15 to 1. An immersion course, it is held four days a week, 2.75 hours a day, and utilizes computer-aided homework and diagnostics. The learning assistant provides an additional hour of activities before each class. With no need to review during each sequential course, more time is available to deepen student understanding.

Delta College has tracked 170 students after five semesters and compared their success rates with students who took one developmental course per semester. (Success is defined as a grade of C or above or Pass.) Fifty-six percent of Math Cubed students completed the entire developmental sequence as compared to only 33% of students who followed the traditional three-course sequence. In the most common subsequent college-credit bearing course, Intermediate Algebra, 71% of Math Cubed students succeeded compared to 62% in the traditional sequence.

Success Rates:	Math Cubed	Traditional
Basic Math	92%	72%
Pre-Algebra	87%	77%
Algebra I	70%	61%
Cumulative	56%	33%
Intermediate Algebra	71%	62%

Students in Math Cubed report that immersion strengthens their focus. They appreciate the consistency of course policies and the variety of instructional methods. They describe a sense of community among students and faculty

Delta College also offers a one-semester Basic Math/Pre-Algebra course and a one-semester Pre-Algebra/Algebra I course. Math Cubed shows promise for students who might otherwise face the daunting task of spending at least two semesters in developmental mathematics courses.

*Bailey, T., Jeong, D. W., and Cho, S. (2010). Referral, enrollment, and completion in developmental education sequences in community college. *Economics of Education Review*, 29(2), 255–270.

Frances Lichtman, Two-Year College Vice Chair

Positions Available

NOTE: Most positions in the mathematical sciences, including many of the ones listed here, are advertised in Employment Information in the Mathematical Sciences (www.ams.org/eims). See also www.mathjobs.org. The MAA also has a Web site for employment opportunities (www.mathclassifieds.org). All openings are for Fall 2013 unless otherwise stated, and further information is available from the department.

Mathematical Reviews (eims.ams.org/jobs#/detail/5220575) announces a position as Associate Editor. Areas of special interest are mathematical physics, dynamical systems, algebra, geometry, and number theory.

Schoolcraft College (www.schoolcraft.edu/jobs/employment.asp) anticipates job postings this Spring for two new full-time mathematics instructors. Of the two, one will focus on developmental courses.

Wayne State University (jobs.wayne.edu/applicants/jsp/shared/search/Search_css.jsp) is in the process of hiring four additional Lecturers and an Academic Advisor I/II. The Lecturer positions have posting numbers 039328 and 039243 and the Academic Advisor position has posting number 039291.

Chair's Report continued from page 3

Norm Richert (Mathematical Reviews). The results are in: Matt is our new Governor-elect. My thanks are extended to both Matt and Norm for their willingness to serve.

As always, thanks to all of you who volunteer your time and energy to support the various Section activities, and to everyone who contributes to the mathematical infrastructure in our state. Your enthusiasm and your achievements, together with your commitment to serve our discipline, help us to keep mathematics strong in Michigan.

Dan Isaksen, Chair

Newsletter Editor Sought and Farewell

I began as Editor of this *Newsletter* with the Spring 2002 issue. Somehow more than ten years have slipped by. It is time for me to pass this job on to someone else.

I have enjoyed almost all of the time involved—not the parts involving crashing programs and disappearing *Newsletters*, the technology is better now. I am a great believer in the value of the Section to Michigan mathematicians, and the place of the *Newsletter* in the mission of the Section. The new editor will be instrumental in continuing that mission, which may involve a redefinition of how best to carry out the communication role of the *Newsletter*. Our Section is one of the last to distribute a paper *Newsletter*, in addition to posting PDF copies at the Section Web site. Part of the task of the new editor will be to think carefully, together with the Executive Committee, and the Section as a whole, about that model. The Section is seeking the right person for that job. All those interested should direct inquiries to the Past Chair, **Mike Bolt**. General feedback about the *Newsletter* would also be useful. In the future there may be an online survey.

I extend my appreciation and thanks to all those who have supported this endeavor over the years. I feel lucky to have been given this role. Good luck to the new editor.

Norm Richert, Newsletter Editor

LSSU in May

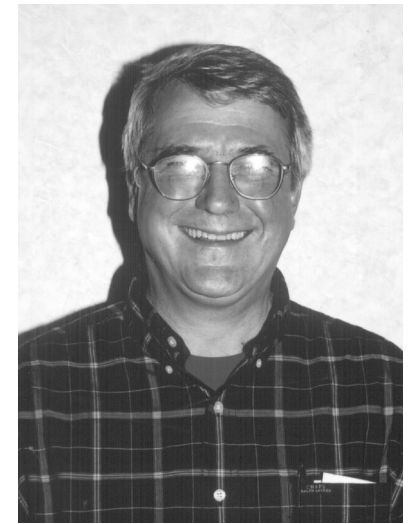
Governor's Report

At the Board of Governors' Meeting in San Diego last January, we were reminded again that the year 2015 will mark the 100th anniversary of the MAA. Plans for celebration are well underway. The joint winter meetings that year will be held in San Antonio, and the summer meeting, MathFest, will be held in Washington, D.C.

The meeting began with a remembrance of **Doug Faires**, a gifted teacher, successful author, and devoted supporter of the MAA. Over his long and successful career, he had been active in the American Mathematics Competition movement, the Modeling Competition, and had served as President of Pi Mu Epsilon. As the Board remembered Doug, who passed away last December, I was struck once again by the rich fabric of personal connection and support that is such an integral part of this organization.

During my tenure as Governor there have been recurring discussions related to membership. One of the concerns has been that younger mathematicians do not seem to be joining with the same commitment as they did in earlier years. This may reflect a larger social pattern of declining memberships in general. In light of this, the association has devoted much thought and effort to communicating more clearly the many benefits of membership in the MAA. You can get a sample of this by visiting the Membership tab at the MAA Web site. Other new initiatives in this direction include a fresh look and enhanced functionality for the Web site, beginning MathFest 2013 in Hartford one day early, with a social event for all attendees, and offering the "Book Sale in a Box" at Section Meetings, which will allow members to buy MAA books at a 35% discount for an extended period of two weeks after the meeting.

Another topic of discussion at this meeting was a new, streamlined dues structure for the MAA, to be implemented in 2014. Its key feature is a reduction of membership categories to just five (down from the current situation, where there are scores of different membership permutations). These new categories will be (1) Member, (2) Member Plus, (3) K-12 Teacher,



Governor's Report continued on page 11

Secretary/Treasurer's Report

I would like to thank everyone who has sent in a voluntary Section dues payment for 2012–2013. At this time there are 111 dues-paying members. Fifty-five of these are sustaining members, who have paid dues of \$30 or more. The list of sustaining members can be found on page 28. In these challenging financial times, your willingness to support the activities of the Section is especially appreciated. The Michigan Section's current bank balance is \$3147.83, and has recovered nicely from the recent fiscal stress, thanks to our members. We continue to have a good balance of income and expenses, and the Section remains in sound financial shape.



In addition, we now have 25 institutional members. This list can be found on page 29. If your school is not listed, you might want to remind your department chair to attend to this matter. Last year at this time there were 125 dues-paying individual members, including 53 sustaining members, and 24 institutional members, so our contributing member numbers are fairly stable. If your department has not yet sent in a dues payment and wishes to do so, the membership form can be found on page 29.

	3/'09	3/'10	3/'11	3/'12	3/'13
<i>Dues-paying members</i>	134	136	126	125	111
<i>Sustaining members</i>	44	51	51	53	55
<i>Institutional members</i>	24	17	23	25	25

These is some good news to report about book sales at the upcoming Section Meeting. As recent meeting participants know, due to concerns about sales tax liability, there are no “cash and carry” book sales at Section Meetings, including the upcoming Michigan Section Annual Meeting at LSSU. This year, the Washington office of the MAA will provide all Section members, not just those attending the meeting, with a 35% discount coupon code that can be used to order MAA books online within one week (before or after) of the meeting. Books ordered through this alternative, like books ordered at the meeting itself, will gain the Section a 10% commission. Further details about this new program will be available from

your department's MAA liaison or at the Section Meeting.

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

Mark Bollman, Secretary/Treasurer

Michigan NExT

I am **Robert Talbert** of GVSU, and I am the new coordinator for the Section's Project NExT. We're planning two events for Michigan NExT at the Annual Meeting at LSSU on Saturday, May 4. First, there will be an open discussion forum in the morning about the future of Michigan NExT. This open drop-in time will be for anybody who wants to ask questions or share ideas about Michigan NExT and what you'd like to see from Michigan NExT in the next few years. Second, Michigan NExT will be sponsoring a discussion panel on “Teaching to Improve Student Learning and Engagement”, followed by breakout discussion sessions with the panelists. It is shaping up to be an outstanding and fun group.

If you have any questions or ideas for the future of Michigan NExT, please contact me at talbertr@gvsu.edu. Thanks!

Robert Talbert, GVSU

Graduate Programs

NEW Part-Time Master's Program in Mathematics

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- Also applicable for those who wish to prepare to teach mathematics in a community college setting

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Teaching Award Nominations Sought

The Distinguished Teaching Award Committee—**Mike Merscher** (LTU), **Andrew Ross** (EMU), and **Gavin LaRose** (UM-AA)—is pleased to announce that the 2013 recipient of this award is **Matt Boelkins** (GVSU).

Matt will join the continuing members of the Distinguished Teaching Award Committee (Andrew and Gavin) to select next year's recipient of the award. Nominations for the 2014 award will be accepted beginning in the Fall. Completed nominations must be received by November 1, 2013 to be considered for the 2014 award. A complete description of the process can be found at the Michigan Section Web site at sections.maa.org/michigan/awards.html. The person that the committee selects will receive the Michigan Section Award for Distinguished College or University Teaching of Mathematics at the Annual Meeting of the Michigan Section-MAA, and will also, upon receipt of additional supporting material, become the Michigan Section nominee for the national MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics. Information about the additional supporting material that is required can be found at www.maa.org/awards/Haimo_NF.pdf. Women and minority nominations are encouraged. Every math department has someone who deserves nomination. Please take the time to honor that person by nominating them.

Mike Merscher, LTU

MAA Campus Liaisons

Your local MAA liaison is committed to keeping you informed about everything happening in the MAA and our Section. If you are not receiving periodic e-mails from the Section, have a look at the list of liaisons at sections.maa.org/michigan/liaisons.html to make sure your institution has a liaison. If not, please consider volunteering; it's an easy job and your colleagues will appreciate your help in keeping them up to date. If you do have a liaison, be sure to say thanks for their efforts. And please contact the Section Liaison Coordinator, **David Austin** (austind@gvsu.edu), if you have any questions.

David Austin, GVSU

LSSU in May

Governor's Report continued from page 7

(4) Student Member, and (5) Departmental Member. This should greatly simplify a chaotic situation. The proposed Member Plus option (working name) will come with a copy of the MAA Book of the Year, free membership in any three SIGMAA's and other additional benefits still to be decided. Two notable features of this new structure are that basic individual MAA membership will decline from the current \$199 to \$169 and that members will receive all four MAA journals—the *Monthly*, *Mathematics Magazine*, the *CMJ*, and *Math Horizons*—albeit in electronic form. Anyone wanting paper journals will have to pay an additional amount. For instance, a print version of the *Monthly* will cost an additional \$57 per year.

This was my last meeting as Governor of the Michigan Section. I am grateful to the Section for having given me the opportunity to serve it in this way.

In closing, I want to say that it looks like a wonderful list of speakers on the schedule for the Annual Meeting in Sault Ste. Marie this year. I hope to see many of you UP there!

John Fink, Governor

Annual Meeting continued from page 2

contributed talks by faculty. Contributions from faculty and students will be accepted beyond the deadlines as long as space permits. Abstracts can be submitted via e-mail to **Steve Blair** at sblair6@emich.edu.

An important aspect of the meeting is the book exhibits from the MAA and from other publishers. As in recent years, there will be no “cash and carry” book sales from the MAA at the meeting. MAA books will be displayed and available for purchase, but all books will be shipped from the Association's headquarters after the meeting ends.

Note that reservations for meals must be received by April 19. Please also be aware that there is a \$25 meeting registration fee for faculty attending the meeting. (The fee is waived for students.) This registration fee is in addition to the regular \$15 annual Section dues.

Special thanks are due to the local arrangements committee consisting of chair **Tom Boger**, **Collette Coullard**, **Sherry Duesing**, **Lorraine Gregory**, **Kimberly Muller**, **Brian Snyder**, and **Colleen Barr** from LSSU. They have done a great job getting many important conference details in order. The program committee consists of chairs **Steve Blair** (EMU) and **Frances Lichtman** (Delta C), together with **Collette Coullard** (LSSU) and **John Kiltinen** (NMU).

We look forward to seeing you at LSSU!

Steve Blair, Four-Year College Vice Chair

New Officers to be Elected at Annual Meeting

The annual business meeting of the Michigan Section-MAA will take place at 5:00 p.m. on Friday, May 3, 2013 at Lake Superior State University during the Annual Meeting. One of the major items of business is the election of officers. The Nominating Committee, chaired by **Mike Bolt** (Calvin C), will propose a slate of candidates. **Steve Blair** (EMU) will be nominated for Chair. **Michele Intermont** (Kalamazoo C) will be nominated for Four-Year College Vice Chair. **Frances Lichtman** (Delta C) will be nominated for a second term as Two-Year College Vice Chair. **Mark Bollman** will be nominated for another three-year term as Secretary/Treasurer. Nominations from the floor are also accepted (permission of the nominees should be secured in advance). The Annual Meeting will also have reports on Section activities during the year, as well as an opportunity for members to raise other issues.

As of this writing, the Executive Committee still is looking for a member to serve the Michigan Section as *Newsletter* Editor. After more than 10 years, **Norm Richert** (Mathematical Reviews) is retiring from this important role. The *Newsletter* Editor serves as an ex-officio non-voting member of the Executive Committee and has a primary responsibility to assemble, edit, and make available the Section Newsletter two times each year. Contact me at mbolt@calvin.edu if you're interested in serving in this capacity.

The Nominating Committee is listed on page 31.

Mike Bolt, Calvin C

Webmaster's Report

The Michigan Section is now on Facebook. You can find us by going to Facebook and searching for "Michigan Section MAA". Alternately, you can go to our regular Web page at sections.maa.org/michigan and clicking on the appropriate link. I encourage to "like" our page. If we get 30 or more "likes", we can start getting statistics on our activity.

The Facebook page will focus on announcements about upcoming Section activities. I also hope to post pictures from Section activities. Donations of pictures will be gratefully accepted.

Sid Graham, CMU

LSSU in May



The registration table at the MMPC Awards Banquet at Hope C.

The Mathematics Education Admissions Committee at Michigan State University is accepting applications for its Doctoral Program in Mathematics Education

The *Doctoral Program in Mathematics Education* is designed for those who show promise of becoming researchers and leaders in state, national and international mathematics education communities. This program places an emphasis on:

- mathematics content
 - mathematics education research
 - research experience
 - mathematics teaching
- and prepares researchers to address critical issues in mathematics teaching, learning, curriculum and policy.

Apply by December 1 for enrollment the following Fall! Teaching and research assistantships and fellowships are available. Visit our website <http://prime.msu.edu/> for more information, or contact:

Lisa Keller, Mathematics Education Graduate Program Coordinator
North Kedzie; 354 Farm Lane Room 221; East Lansing, MI 48824
Phone: 517.432.5472; Fax: 517.432.9868; or kellerl@msu.edu

MMPC Honors Top High School Students

A total of 100 Michigan high school students, from 31 different schools, were honored for their achievement in the 56th Annual Michigan Mathematics Prize Competition at the Awards Day program held on Saturday, March 2 at Hope College. This was the second year of the three-year term of Director **Stephanie Edwards** (Hope C).

Matt Boelkins (GVSU) spoke on “Fibonacci’s Garden”, and there was a poster session. The award winners are:

Name	School	Award
Akhil Nistala	Novi High School	Gold, First Place
Dhruv Medarametla	Troy High School	Gold, Second Place
Daniel Gershenson	Houghton High School	Gold, Third Place
Hirsh Jain	International Academy	Silver, First Level
Noah Chen	Ann Arbor Skyline H.S.	Silver, First Level
Joseph Renzi	University Liggett School	Silver, Second Level
Eric Ryu	Detroit Country Day School	Silver, Second Level
Ahkan Bhattacharya	I.C.A.E.	Silver, Second Level
Mayank Patke	Okemos High School	Silver, Third Level
Aaron Zeng	Detroit Country Day School	Silver, Third Level
Raj Raina	Novi High School	Silver, Third Level

In addition 39 Bronze Awards were given, and 50 students received Honorable Mention. The top 50 students received \$20,000 in scholarships in amounts ranging from \$250 to \$2,500. The Honorable Mention winners received books.

Part I of the MMPC is a 40-question multiple choice test, which this year was administered on October 2. The top 1408 participants from Part I were invited to take Part II on December 12 (which happened to be 12/12/12).

Of the top 100 students, there were 11 females, 80 males, and 9 unreported.

A special thank you goes out to **Mark Bollman** from Albion College who hosted Grading Day. Mark your calendars for next year’s Grading Day: January 11 (at Albion C). And thank you to the graders that made grading day so fun and productive! We couldn’t have done it without you all! Also, thank you to the Hope College Mathematics Department and the Division of Natural and Applied Sciences.

The official Web site of the MMPC (math.hope.edu/mmpc) contains information about the competition. Part I of the competition is given in the Fall of each year. “Like” us on Facebook!

MMPC Top 100 Statistics

- The top Gold Award winner, **Akhil Nistala**, is a senior. The second-place Gold Award Winner, **Dhruv Medarametla**, is a freshman. The third-place Gold Winner, **Daniel Gershenson**, is a sophomore.
- Of the eight Silver Award winners, three are seniors, four are juniors, and one is an 8th-grader.
- **Cyndia Cao** was the top female winner.

Top MMPC Results for Each Grade

Grade	Place	Score	Grade	Place	Score
12	1	91.0	8	6	87.2
11	5	87.8	7	47	71.4
10	3	90.6	6	14	81.4
9	2	90.8			

Top 100 Results by Grade

Grade	Total	12	11	10	9	8	7	6
# in Top 100	95	39	26	13	11	2	3	1

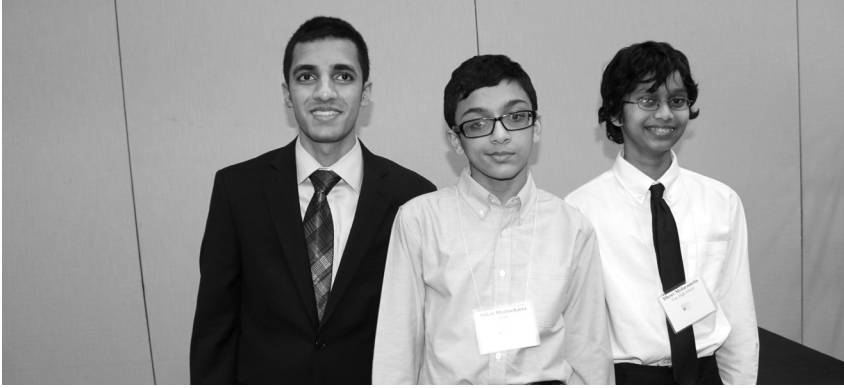
(5 grades were not reported)

Top 100 Results by Gender

Grade	Total	M	F	Unreported
Scholarships	51	42	5	4
Honorable Mention	49	38	6	5
Total	100	80	11	9

- A student’s score is the sum of the Part I score (out of 40) plus 1.2 times the Part II score (out of 50).
- The cutoff score to qualify for Part II this year was 18 (out of 40).
- The cutoff score to make the top 50 of the competition this year was 67.8.
- 25% of those who qualified for Part II were females (of those who reported gender).

MMPC Awards Day, Hope College, March 2, 2013



Gold and Silver Award winners (l to r): Akhil Nistala, Ankan Bhattacharya, and Dhruv Medarametla.



Section Chair Dan Isaksen recognized First Place Gold winner Akhil Nistala.



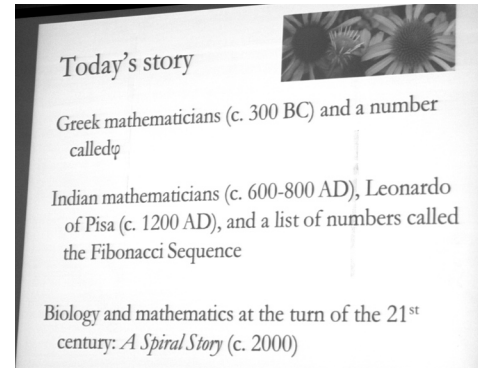
Students and parents relaxed and socialized at the poster session, "Great things you can do with a strong mathematics background".



Natasha Consul (l) and Akhil Nistala gave a talk about their experiences in ARML, encouraging other Top 100 winners to take part.



Ruth Favro presented the award for the top female winner to Cyndia Cao at a later date.



Matt Boelkins (below) of GVSU gave a talk to the students, "Fibonacci's garden".



Ruth Favro is shown assembling an ARML recruiting poster.



Moses Lee, Dean of the Division of Natural and Applied Sciences, welcomed the participants.

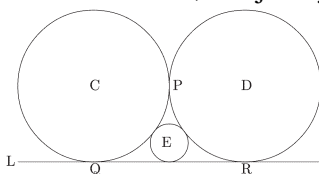


The Schaap Science Center Atrium was the site for a poster session by Hope College students.

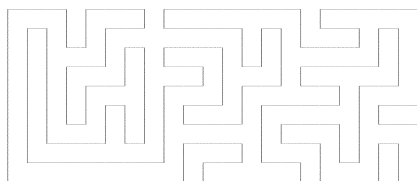
56th MMPC Part II Problems

The top 1000 students had 100 minutes to solve these five problems.

1. A permutation on $\{1, 2, \dots, n\}$ is an ordered arrangement of the numbers. For example, 32154 is a permutation of $\{1, 2, 3, 4, 5\}$. Does there exist a permutation $a_1 a_2 \dots a_n$ of $\{1, 2, \dots, n\}$ such that $i + a_i$ is a perfect square for every $1 \leq i \leq n$ when
 - a) $n = 6$?
 - b) $n = 13$?
 - c) $n = 86$?
 Justify your answers.
2. Circle C and circle D are tangent at point P . Line L is tangent to C at point Q and to D at point R where Q and R are distinct from P . Circle E is tangent to C , D , and L , and lies inside triangle PQR . C and D both have radius 8. Find the radius of E , and justify your answer.



3. (a) Prove that $\sin 3x = 4\cos^2 x \sin x - \sin x$ for all real x .
 (b) Prove that $(4\cos^2 9^\circ - 1)(4\cos^2 27^\circ - 1)(4\cos^2 81^\circ - 1)(4\cos^2 243^\circ - 1)$ is an integer.
4. Consider a $3 \times 3 \times 3$ stack of small cubes making up a large cube (as with the small cubes in a Rubik's cube). An ant crawls on the surface of the large cube to go from one corner of the large cube to the opposite corner. The ant walks only along the edges of the small cubes and covers exactly nine of these edges. How many different paths can the ant take to reach its goal?
5. Let m and n be positive integers, and consider the rectangular array of points (i, j) with $1 \leq i \leq m$, $1 \leq j \leq n$. For what pairs m, n of positive integers does there exist a polygon for which the mn points (i, j) are its vertices, such that each edge is either horizontal or vertical? The figure below depicts such a polygon with $m = 10$, $n = 22$. Thus 10, 22 is one such pair.



Student Chapter News

Alma College

Our student-run Math Club continues to be very active. Our Pi Mu Epsilon Chapter is active.

Central Michigan University

KME officers are **Marie Ermete** (President), **Troy Klingler** (Vice President), **Jessica Willson** (Secretary), **Anthony Pochini** (Treasurer) and **Brady Tyburski** (Public Relations). **Sivaram Narayan** and **Meera Mainkar** are the faculty advisors. In January, Marie Ermete gave a talk on her REU project in graph theory. **Arnie Hammel** (CMU Emeritus) and **Bruce Sagan** (MSU) will be giving talks on February 13 and March 27, respectively. There will be a Pi Day T-shirt sale in March and a KME Initiation ceremony in April. Also, some of the members will be attending the MUMC in February and the KME Biennial National Convention in Topeka, Kansas in April.

High School Visiting Lecture Program

The Michigan High School Visiting Lecture Program is up and running. The program offers high school students and teachers throughout the state of Michigan the opportunity to connect with college and university faculty, and other mathematics professionals, through lectures and workshops centered on mathematics. The program is designed to help high school teachers broaden their students' views about mathematics beyond what they normally see in their school settings. Examples of topics that mathematicians share with students are recreational mathematics; careers in mathematics and statistics; applications of mathematics and statistics in areas such as engineering, biological sciences, and voting; graph theory; and chaos theory.

Our current challenge is the lack of awareness of this program. Please assist us in spreading the word to high school teachers you know. New speakers and topics of interest to high school students are always welcome. For more information about the program please visit michhsvlp.weebly.com or contact **David Tannor** at David.Tannor@muskegoncc.edu.

David Tannor, Muskegon CC

LSSU in May

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MUMC was held at Siena Heights U on Saturday, February 23. Students are shown participating in the Aerial Assault Competition. Jim Albert (Bowling Green State U), author of "Teaching Statistics Using Baseball", gave the keynote address.



A view of the Wisconsin state capital from the Monona Terrace in Madison, site of MathFest 2012.

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News from the Campuses

Alma College [reported by Mel Nyman]

Zoe Dai has been awarded tenure, promoted to Assoc. Prof., and is on sabbatical leave for the Winter term. **Andrew Thall** has been awarded tenure and promoted to Assoc. Prof. • Speakers for the Winter term include **Will Dickinson** (GVSU), February 4, **Steve Kelly** and **Zach Cresswell**, February 5, student presentations on Tuesdays from March 12 through April 2, and **Ed Burger** (Williams C), April 3. [Nyman@Alma.edu]

Central Michigan University [reported by Sid Graham]

Timothy Gowers will give two lectures April 2–3. These talks are part of the Fleming Lecture Series. See www.cmich.edu/academics/sci_tech/math/Pages/News-and-Events.aspx for more details. • The conference “Conversations among Colleagues” was hosted at Central Michigan University on March 23. The theme was “Making Practice Core: Mathematical Practices and the Practice of Teaching”. The keynote speaker was **Jere Confrey** of North Carolina State U. • This year’s Great Lakes Society of Industrial and Applied Mathematics (GLSIAM) conference will be held on Saturday, April 20 at CMU. The conference theme is “Computational Mathematics: Modeling, Algorithms and Applications”. Invited speakers are **Russel Cafilisch** (UCLA, keynote speaker), **Hans Othmer** (U of Minnesota), and **Guowei Wei** (MSU). For more information, see www.cmich.edu/academics/sci_tech/math/GLSIAM/Pages/default.aspx. [sidney.w.graham@cmich.edu]

Grand Valley State University [reported by Paul Fishback]

Steve Schlicker and **Matt Boelkins** are on sabbatical this spring. • **Edward Jonathan Hodge** has been elected department chair, replacing **Edward Aboufadel**, whose term ends June 30. • GVSU is planning to host an REU again in the Summer, with research topics to include equal circle packing, wavelet analysis, voting theory, and extended outer billiards in the hyperbolic and Euclidean plane. Please encourage your students to apply. See www.gvsu.edu/mathreu for further details. [fishbap@mail.gvsu.edu]

Mathematical Reviews [reported by Mike Jones]

Assoc. Editor **Arthur Greenspoon** passed away on February 5. He was a zealous promoter of mathematics and physics and helped shape Mathematical Reviews’ products and our workplace with his joyous spirit for over 33 years. He will be greatly missed. **Dean Carlson** is on study leave in the Spring. In the Fall **Lon Mitchell** organized a weeklong research session on Positive Semidefinite Zero Forcing and Applications as part of Research in Teams at the Banff International Research Station. [maj@ams.org]

Saginaw Valley State University [reported by Emmanuel Ncheuguim]

Patrick Pan is on sabbatical this semester. • The annual SVSU high school Math Olympics Competition will be held on March 15. [ekenagni@svsu.edu]

University of Michigan-Flint [reported by Ken Schilling]

Ricardo Alfaro has retired as Associate Dean, and returns home to the Mathematics Department. • In February, **B. Dimitrov**, **L. Gawarecki** and **S. Chakravarthy** of Kettering U gave a statistics talk titled “One city—one hundred years under variability”, and actuary **Tom Krause** of Ally Insurance spoke on “A day in the life of an Ally Insurance actuarial analyst”. In March, **Thomas Garrity** of Williams C spoke on “Describing numbers”, and UM-Flint alumnus **Douglas Bunker** spoke on combinatorics. [ksch@umflint.edu]

Wayne State University [reported by Dan Drucker]

William Velez (U of Arizona) visited February 25–27. He gave a colloquium talk on “Increasing the Number of Mathematics Majors”, a student talk, and met with advisors and administrators. **Gunnar Carlsson**, (Stanford U, Visiting Scholar) gave colloquium talks on topology and data entitled “The Shape of Data” and “Measuring Shape”, as well as a seminar talk on persistence barcodes, March 4–6. **Neil Sloane** (OEIS Foundation) will give the Owens Lecture (aimed at a wide audience) on Wednesday, April 3 at 3 p.m. He will speak about “Integer Sequences”. On April 4, he will give a more technical talk on “Sphere Packing and Applications”. • **Boris Mordukhovich** and **Leonid Makar-Limanov** have been named Fellows of the American Mathematical Society. [drucker@math.wayne.edu]



Some of the faithful workers at MMPC Grading Day at Albion C on January 11 are shown. All Michigan faculty are invited to participate in this annual service.

Celebrating

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In 2013 the American Mathematical Society is celebrating its 125th anniversary. Founded in 1888 to further the interests of mathematics research and scholarship, the AMS continues to serve the national and international community through its meetings, publications, and other programs.

Look for announcements of special events and sales throughout 2013 on ams.org, Facebook ([amermathsoc](https://www.facebook.com/amermathsoc)), and Twitter ([@amermathsoc](https://twitter.com/amermathsoc), or use [#AMS125](https://twitter.com/AMS125)).

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Contest News

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

The 2012 AMC 8 Exam was taken by 152,670 students from 2,436 schools, with an average score of 10.67 out of 25 total points. The top 1% scored 22 or above. In Michigan, 3,231 students from 43 schools took the exam.

Five students (up from two last year) in Michigan got a perfect score of 25: 7th graders **Spencer Liu** and **Freddie Zhao**, and 6th grader **Shivani Konduru**, all from Boulan Park MS (Troy); 7th graders **Justin Lee** from Clague MS (Ann Arbor), and **Daniel Li** from ICAE (Troy). The team winner was Boulan Park MS with a score of 75 out of 75.

Eleven students (up from seven last year) in Michigan got a score of 24: 8th graders **Sai Abduri**, **Mitchell Huang**, and 7th grader **Ashwin Vangipuram** from Novi MS (Novi); 8th graders **Ankan Bhattacharya** and **Kuvam Shahane**, and 7th grader **Malini Mukherji** from ICAE (Troy); 8th graders **Jonathan Liu** and **Omer Siddiqui** from Detroit Country Day MS (Beverly Hills); 8th grader **C Thavamani** from Boulan Park MS (Troy), 7th grader **Timothy Li** from Clague MS (Ann Arbor); and 8th grader **Valerie Zhang** from Meads Mill MS (Northville).

Outgoing Michigan AMC Director **Ada Dong** (OU) arranged a gathering at Oakland University to honor the top winners. **David Friday** (Macomb CC) gave an interesting and entertaining talk on his investigations into “Almost Pythagorean Triples”, **Raghunath Khetan** (ICAE) said a few words, and the students were awarded prizes. A selection of tasty food provided by the parents complemented the evening.

Many thanks to Ada Dong for her years of service as Michigan AMC Director, and congratulations on the stellar performance of our Michigan students!

Ruth Favro, LTU

LSSU in May

Distinguished Service Award

Past Chair **Mike Bolt** (Calvin C) is delighted to report that **Gerard Venema** of Calvin College and MAA Associate Secretary has been selected to receive the Section’s 2012–2013 Distinguished Service Award. Details will appear in the Fall 2013 *Newsletter*, and Gerard will be recognized at the awards banquet at LSSU on Friday, May 3, 2013.



The new Section Governor, Matt Boelkins (SVSU) (r), is congratulated by Governor candidate Norm Richert (Mathematical Reviews).

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Sustaining Members Listed

The Michigan Section dues structure includes a sustaining individual member category for those who make a \$15 contribution beyond the basic dues rate of \$15. For 2012–2013, as of February 15, the 55 members of the Section listed below are sustaining members. The Section is grateful to those several individuals who generously exceeded the suggested sustaining member contribution. If you have not already sent in your dues, please do so, using the form on page 29, and please be generous!

Edward Aboufadel	William Jackson
Hyman Bass	Gerald Janusz
Larry Beauchamp	Michael Jones
Andreas Blass	John Kiltinen
Matt Boelkins	William Lewis
Louis Bragg	Frances Lichtman
Mary Bragg	Laszlo Liptak
Robert Bruner	Michael Merscher
Joseph Buckley	Jack Miller
Tim Carroll	Valerian Nita
Anthony Crachiola	Mel Nyman
James Dudziak	Gene Ortner
Peter Duren	John Petro
John Dwyer	Norm Richert
Paul Eenigenburg	Fred Rufus
Graeme Fairweather	Bruce Sagan
Ruth Favro	Steven Schlicker
John Fink	Carl Sinke
Richard Fleming	Larry Smyrski
Dan Frohardt	Eliot Tanis
Chris Gardiner	Richard Vandervelde
R. Kent Gilbert	Gerard Venema
Tony Gioia	Sylvia Verdonk
Sidney Graham	Bette Warren
Jerrold Grossman	Brennen Waugh
Jim Ham	Matt Wyneken
Margret Hoft	Robert Xeras
Daniel Isaksen	

Institutional Members

As of February 15, the 25 colleges and universities listed below have begun or renewed their institutional memberships in the Michigan Section for 2012–2013. Tardy institutions and others who wish to join are encouraged to send in their dues, using the form below.

Albion College	Michigan State University
Alma College	Monroe County Community College
Andrews University	Northern Michigan University
Calvin College	Oakland University
Eastern Michigan University	Olivet College
Grand Valley State University	Saginaw Valley State University
Henry Ford Community College	Siena Heights University
Hillsdale College	University of Michigan-Dearborn
Hope College	University of Michigan-Flint
Kalamazoo College	Wayne State University
Kettering University	West Shore Community College
Lake Michigan College	Western Michigan University
Lansing Community College	

Section Dues: Individual • Institutional

The 2012–2013 individual and institutional membership dues for the Michigan Section are now being accepted. The \$15 individual dues payment (or \$30 contributing member payment) and the \$40 (small school) or \$70 (large school) institutional dues help support the activities of the Section such as its annual meeting and *Newsletter*. This coupon may be used to submit dues payments.

Enclosed is a check for:	Regular Dues	@ \$15	<input type="checkbox"/>
	Sustaining Membership	@ \$30	<input type="checkbox"/>
	Small Institutional Dues	@ \$40	<input type="checkbox"/>
	Large Institutional Dues	@ \$70	<input type="checkbox"/>

Name _____

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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.**

COMMITTEES AND APPOINTMENTS

Michigan Section

Mathematical Association of America

Contact Information

Executive Committee

<i>Chair</i>	Dan Isaksen (13)	WSU	isaksen@math.wayne.edu	313 577 2479
<i>Vice Chair</i>	Frances Lichtman (13)	Delta C	franceslichtman@delta.edu	989-686-9195
<i>Vice Chair</i>	Steve Blair (13)	EMU	sblair6@emich.edu	734-487-1296
<i>Sec./Treas.</i>	Mark Bollman (13)	Albion C	Mbollman@albion.edu	517-629-0261
<i>Past Chair</i>	Michael Bolt (13)	Calvin C	mbolt@calvin.edu	616-526-6719
<i>Governor</i>	John Fink (13)	Kalamazoo C	John.Fink@kzoo.edu	269-337-7062

Michigan Mathematics Prize Competition (MMPC)

<i>Director</i>	Stephanie Edwards (14)	Hope C	sedwards@hope.edu	616-395-7224
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Exam Committee:

<i>Chair</i>	Sid Graham (13)	CMU	grahalsw@cmich.edu	989-774-3813
<i>Member</i>	Hugh Montgomery (14)	UM-AA	hlm@umich.edu	734-763-3269
<i>Member</i>	Daniel Frohardt (15)	WSU	danf@math.wayne.edu	734-763-3269
<i>Member</i>	Bob Messer (16)	Albion C	ram@albion.edu	517-629-0287

Program Committee: 2013 Annual Meeting

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<i>Co-Chair</i>	Frances Lichtman (13)	Delta C	franceslichtman@delta.edu	989-686-9195
<i>Member</i>	Collette Coullard	LSSU	ccoullard@lssu.edu	906 635-2166
<i>Member</i>	John Kiltinen	NMU (ret.)	kiltinen@nmu.edu	

Local Arrangements Committee: 2013 Annual Meeting

<i>Chair</i>	Tom Boger	LSSU	tboger@lssu.edu	906-635-2427
<i>Member</i>	Colleen Barr	LSSU	cbarr@lssu.edu	906-635-2441
<i>Member</i>	Collette Coullard	LSSU	ccoullard@lssu.edu	906-635-2166
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<i>Member</i>	Lorraine Gregory	LSSU	lgregory@lssu.edu	906-635-2154
<i>Member</i>	Kimberly Muller	LSSU	kmuller@lssu.edu	906-635-2170
<i>Member</i>	Brian Snyder	LSSU	bsnyder@lssu.edu	906-635-2658

Michigan Section Newsletter

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<i>Chair</i>	Michael Bolt (14)	Calvin C	mbolt@calvin.edu	616-526-6719
<i>Member</i>	Timothy Husband (13)	SHU	thusband@sienaheights.edu	517-264-7647
<i>Member</i>	Dan Isaksen (15)	WSU	isaksen@math.wayne.edu	313 577 2479

Distinguished Teaching Award Committee

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<i>Member</i>	Gavin LaRose (15)	MU-AA	glarose@umich.edu	734-764-6454

Nominating Committee

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<i>Member</i>	Frances Lichtman (13)	Delta C	franceslichtman@delta.edu	989-686-9195
<i>Member</i>	Dan Isaksen (13)	WSU	isaksen@math.wayne.edu	313 577 2479
<i>Member</i>	Ruth Favro (13)	LTU (ret.)	favro@ltu.edu	

Audit Committee

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<i>Member</i>	Dan Drucker	WSU	drucker@math.wayne.edu	313-577-3189

MMPC Audit Committee

<i>Member</i>	Margret Höft	UM-Dearborn	mhoft@umd.umich.edu	313-593-5007
<i>Member</i>	John Mooningham	SVSU	jwm@svsu.edu	989-964-4183

Organizing Committee: Upper Peninsula Regional Meeting

<i>Chair</i>	John Kiltinen	NMU	kiltinen@nmu.edu	
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High School Visiting Lecture Program (HSVLP)

<i>Dir.</i>	David Tannor (15)	Grand Rapids CC	David.Tannor@muskegoncc.edu	231-777-0609
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Other Appointments and Contacts

<i>Webmaster</i>	Sid Graham (14)	CMU	grahalsw@cmich.edu	989-774-3813
<i>Pub. Inf. Off.</i>	Bob Xeras	SHU	rxeras@sienahts.edu	517-265-5832
<i>St. Act. Coord.</i>	John Clifford (13)	UM-Dearborn	jcliff@umd.umich.edu	313-593-4259
<i>WAM</i>	Toni Carroll	SHU	toni@alpha.sienahts.edu	517-264-7658
<i>Liaison Coord.</i>	David Austin	GVSU	austind@gvsu.edu	616-331-3431
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C

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