Coming to Dearborn …

David Austin
Circle Packings

Richard Hill
Getting Involved in Mathematics Education

Ronald Solomon
Finite Simple Groups

Joe Gallian
Mathematics of ID Numbers

Doris Schattschneider
Escher’s Combinatorial Patterns

… and much more

ALSO IN THIS ISSUE:
50th Annual Michigan Mathematics Prize Competition
Mathematical Association of America
Michigan Section Newsletter
Volume 33, Number 2

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Calendar of Events

- March 21–24, 2007 NCTM Annual Meeting, Atlanta
- May 4–5, 2007 Michigan Section Meeting, UM-Dearborn
- August 3–5, 2007 MAA MathFest, San Jose
- November 1–4, 2007 AMATYC Annual Meeting, Minneapolis
- January 6–9, 2008 MAA/AMS Annual Meeting, San Diego
- May 2–3, 2008 Michigan Section Meeting, GVSU
- April 9–12, 2008 NCTM Annual Meeting, Salt Lake City
- July 31–August 2, 2008 MAA MathFest, Madison
- May 8–9, 2009 Michigan Section Meeting, CMU
- August 6–8, 2009 MAA MathFest, Portland
- November 12–15, 2009 AMATYC Annual Meeting, Las Vegas
- January 6–9, 2010 MAA/AMS Annual Meeting, San Francisco
- April 21–24, 2010 NCTM Annual Meeting, San Diego
- August 5–7, 2010 MAA MathFest, Pittsburgh
- November 11–14, 2010 AMATYC Annual Meeting, Boston
- January 5–8, 2011 MAA/AMS Annual Meeting, New Orleans

Organizational Web sites

- Michigan Section–MAA www.michmaa.org
- MAA www.maa.org
- NCTM www.nctm.org
- MCTM www.mictm.org
- AMATYC www.amatyc.org
- MichMATYC www.michmatyc.org
- MMPC www.math.oakland.edu/main/mmpc

Abbreviations

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

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Annual Meeting, May 4–5

The annual meeting of the Michigan Section-MAA and MichMATYC (the Michigan Mathematical Association of Two-Year Colleges) will be held on Friday and Saturday, May 4–5, 2007, at the University of Michigan-Dearborn in Dearborn. This year’s program promises an interesting and exciting mix of talks devoted to mathematics and the teaching of mathematics. These include plenary addresses, local invited sessions, and contributed sessions.

At the Friday luncheon address, Richard Hill, Professor of Mathematics, from Michigan State University will discuss his many interesting experiences with mathematics education issues. These include the Emerging Scholars Program, the development of a capstone course for future high school math teachers, and a study of the transition in math from high school to college (see his article in the December 2006 issue of The American Mathematical Monthly).

The Friday afternoon plenary address will be by Ronald M. Solomon of The Ohio State University, who will speak on the topic of his award winning paper (the 2006 AMS Levi L. Conant Prize for outstanding expository paper), the classification of finite groups. In his talk, “What have we learned from the Classification of the Finite Simple Groups?”, Prof. Solomon will “survey some of the highlights of the journey of discovery” in classifying the finite simple groups.

Following dinner and the Friday evening awards banquet, Joe Gallian (University of Minnesota-Duluth), author of many books and current President of the MAA, will speak on “The Mathematics of Identification Numbers”. He will discuss some of the common bar coding and check digit schemes that are used every day for identifying and error checking consumer products, such as UPC bar codes, credit cards, airline tickets, personal checks, books, and magazines.

Saturday morning will begin with a plenary address by Doris Schattschneider, Professor Emerita of Moravian College and author of several books on M.C. Escher, who will speak on “Escher’s Combinatorial Patterns and their Aftermath”. She will discuss the combinatorial questions
asked and answered by Escher and how he “… opened the door to many tantalizing questions that have recently been addressed by mathematicians and computer scientists”.

The meeting concludes with a Saturday luncheon talk by Anna Spagnuolo, Associate Professor of Mathematics at Oakland University. Prof. Spagnuolo has worked with specialists in the medical sciences and will discuss her work on the mathematical modeling of a pathogenic bacterium in the human intestine.

In addition to the plenary talks, we will have 30-minute local invited addresses by David Austin (GVSU, “Circle Packings from Penrose Tilings”), Michael Bolt (Calvin College, “Paint by Number: a Visualization of Complex Functions”), Anthony Crachiola (SVSU, “Locally Nilpotent Derivations and their Applications”), Lisa DeMeyer (CMU, “The Zero Divisor Graph of a Semigroup”), and Daniel Isaksen (WSU, “Computations with Quaternions, Octonions, and Beyond”).

There will also be many 20-minute contributed talks that cover a variety of topics in mathematics and pedagogical issues. There will also be sessions devoted to talks by undergraduate and graduate students as well as book exhibits from the MAA and other publishers.

Details about the schedule (including abstracts), registration, and accommodations are contained in the Program for the Annual Meeting, which is included with this Newsletter as well as on the Section’s Web site, www.michmaa.org.

Please note that advance reservations for all meals must be made by April 26, and hotel reservations must be made by April 12 for the Hampton Inn and April 24 for the Double Tree, to receive the conference rate. The deadline for submission of abstracts for student talks is March 31.

The program committee for this year consists of co-chairs David Redman (Delta C) and Tom Zerger (SVSU), along with John Clifford (UM-Dearborn) and Amy Hlavacek (SVSU).

The local arrangements committee from UM-Dearborn, which consists of Margaret Höft (chair), John Clifford, John Gillespie, Joan Remski, Jennifer Zhao, Belinda Soliz, and Trisha Schlaff, has done a great job of getting ready for all of us.

See you all at UM-Dearborn on May 4 and 5!

Ted Zerger, Four-Year College Vice Chair

Chairperson’s Report

The main event in the Section each year is the Annual Meeting in the Spring. This year the meeting will take place at the University of Michigan-Dearborn on May 4 and 5. The program committee, co-chaired by Tom Zerger (SVSU) and David Redman (Delta C), has put together what looks like an outstanding program for the meeting. Our colleagues at Dearborn, led by Margaret Höft, are taking care of local arrangements. You can read all about program details, registration, and lodging in the Program included in this Newsletter and online at the section Web site. The Michigan Section NExT Symposium will once again take place on the preceding afternoon and evening, May 3. This year’s Section NExT activities are being organized by Paul Yu (GVSU) and Mark Pearson (Hope C). Please encourage your colleagues to join us for the meeting this year and your younger colleagues to participate in the Section NExT activities as well.

I am pleased to announce that we now have locations and dates for the 2008 and 2009 meetings. Grand Valley State University will host the meeting on May 2–3, 2008, and Central Michigan University will host on May 8–9, 2009. We hope to return to the east side of the state in 2010, and it’s not too early to start thinking about whether your department would be willing to host in 2010 or 2011.

Dates have been set for the 2007 Upper Peninsula Regional Meeting as well. This meeting will take place October 5–6 at Northern Michigan University. I’m hoping I can attend this Fall, since I was unable to attend the last meeting. Perhaps a few other trolls can join the UPers in this long standing tradition in the section. John Kiltinen (NMU) is making arrangements this year, and Donald Saari (Institute for Mathematical Behavioral Sciences, UC-Irvine) will be one of the plenary speakers this year.

The third meeting sponsored by the Section each year is the Michigan Undergraduate Mathematics Conference. Although this meeting has a shorter history (the tenth annual meeting will be this coming Fall), it has
Two-Year College Vice Chair’s Report

The Delta College Middle School Mathematics Competition is a one-day event serving approximately 25 schools and 600 students in the greater mid-Michigan area. This year the theme of the competition is “Math makes the pieces fit!” As a morning entertainment project we are assembling what the puzzle manufacturer Ravensburger (www.ravensburger.com) bills as the “World’s Largest Puzzle!” The puzzle is an 18,240-piece compilation of four world maps from the 16th and 17th centuries. When completed, the puzzle will be approximately 9 feet wide and 6 feet high. (See page 23.)

Our goal is to assemble the puzzle in a world-record time. On the day of the event we expect to use approximately 250 volunteers. Volunteers will receive an ordinary sandwich storage bag containing 9 snack bags, each of which contains 9 pieces of the puzzle that will form a 3x3 square. The assignment will be to assemble nine 3x3 squares, then use those squares to form a single 9x9 square of 81 pieces. Other volunteers will then assemble nine 9x9 squares to form a 27x27 square of 729 pieces. Specially-trained professionals will then assemble the approximately twenty-six 27x27 squares to form the completed puzzle. This is truly a task of biblical proportions!

Of course, in order to prepare the activity we must start with a completed puzzle. Faculty in the Mathematics and Computer Science Division at Delta College are currently volunteering their time to assemble the puzzle, which arrived from Ravensburger in four 4,560-piece bags (thank goodness!).

One of our goals is to show the students, teachers, and parents an example of how a very large task can be reduced to many small parallel tasks and then brought together to form a solution in a recursive fashion.

In spite of, or perhaps because of, the extreme disorientation of this assembly, we are spinning off many other entertaining problems. Apart from the basic perimeter and area problems, there are several fun ways to generate problems in counting, factoring, sorting, history, geography, map-making, related rates, and orientation.

Mathematics is everywhere!

David Redman, Two-Year College Vice Chair

Governor’s Report

The first phase of the MAA initiative in strategic planning is now coming to a close with the submission of reports at the January Board of Governors meeting. Phase I topics were AMC, Professional Development, and Revenue. Here is a summary of the reports.

AMC: AMC8 registration is robust but not AMC10/12. A study on participation, including a detailed phone survey of teachers, showed problem areas are: the increase in mandatory testing in the schools, the difficulty of the test (often students’ score is 0), and the test type (some students don’t like the individual competition, especially girls and minority groups). AMC does not collect data on ethnic makeup. Suggestions included collaboration with COMAP on HiMCM, the high school math modeling contest; state liaisons to take the place of former AMC Directors to work with the national office (some states, including Michigan, have them already); and the inclusion of some easier questions at the beginning of the contest exam.

Professional Development: Recommendations included strengthening financial support for professional development, funded by fees and outside sponsors. Lack of support from local institutions and the fluctuations in soft money availability was noted. Programs can be expanded to engage diverse groups, including encouraging SIGMAAs to offer programs and to offer programs jointly with other professional societies. Data should be collected uniformly to support evaluation. Web surveys and focus groups were used to collect information.

Revenue: The report on revenue identified two goals: (1) increasing unrestricted set-aside funds to be at least one half of operating expenses by 2010 and a full year by 2015 (centennial year); and (2) diversifying revenue streams so that no one area be more than 20% of the total revenue. Books and periodicals are strong, and the Carriage House at the headquarters in Washington, D.C. will provide revenue through rentals of the space.

Strategic planning Phase II topics include Governance, Membership, and Students. Information was gathered at breakout discussion groups on Governance in August, 2006 from Governors and Section Officers, and on
**Chair’s Report continued from page 3**

Students in January, 2007 from Governors, Section Officers, and Student Chapter Advisors. Winners of a vote on Phase III topics were STEM Issues, Sections and Publications.

The new dues structure (reported on previously) has been put into effect. As you will see or have seen, your latest dues statement has an explanation page included.

MAA President Carl Cowen’s trip to ICM-Madrid and a personal trip to Africa emphasized to him the need to reach out globally. There were conferences in Washington, D.C. and China (and elsewhere) on the report “Rising Above the Gathering Storm”. [The difference was that in China, top government officials attended.]

The Carriage House is ready, and meetings scheduled there started in Fall 2006. Opening celebrations will be April 19–27, 2007.

Euler’s 300th birthday is April 15, 2007. There will be national and international festivities (see www.maa.org/euler at MAA Online). The new books from MAA on Euler will be at the Section Meeting book sale.

Former Governor Jerry Grossman received the Certificate of Meritorious Service Award at the Prize Session at the JMM (see citation and photo on pages 10 and 11).

This will be my last report as Governor. It has been an honor to serve the Section. I have learned a lot about the structure of the MAA, and have been privileged to serve with many dedicated folks from around the country.

Ruth Favro, Governor

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**Secretary/Treasurer’s Report**

I would like to thank everyone who has sent in a contribution. At this time there are 142 dues-paying members. Among these, there are 50 sustaining members, who have paid dues of $30 or more, with 6 of these in the “or more” category. I continue to be impressed by the generosity of our members. The list of sustaining members can be found on page 28.

We now have 26 institutional members. This list can be found on page 29. If your school is not listed, you might want to remind your department chair.

Last year at this time there were 145 dues-paying individual members, and 18 institutional members. If you have not yet sent in a dues payment and wish to do so, the membership form can be found on page 29. Remember, dues-paying members pay no registration fee for the annual meeting.

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<th>3/’02</th>
<th>3/’03</th>
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<td>51</td>
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The Michigan Section’s current bank balance is $6,321.59, compared to $7,085.42 at this time last year. While the balance is down somewhat, the Section is in good shape financially. We have a good balance of income and expenses.

I have enjoyed the past three years of serving the Section as Secretary/Treasurer, and hope to see many members at this year’s meeting in Dearborn.

Nancy Colwell, Secretary/Treasurer
In Memoriam—Hamza Ahmad

The Section lost a dear friend in February, Hamza Ahmad. Below are the thoughts of three friends and colleagues. The first section is adapted from the obituary written for the Saginaw News by Joan Sabourin and Andrew Tierman. The second section is the eulogy given by John Mooningham at the funeral.

Joan and Andrew: Dr. Hamza Ahmad, Professor of Mathematics at Saginaw Valley State University, died on February 11, 2007. Hamza was born in 1967, in Jahra, Kuwait. He received his Ph.D. in 1995 and M.S. in 1992, both in Mathematics from Louisiana State University, and a B.Sc. in Physics from Kuwait University in 1990.

At the time of his death, Dr. Ahmad had taught at SVSU since August 2001. His mathematical research included field theory and the algebraic theory of quadratic forms. Between 1994 and 2006 ten scholarly articles authored by Dr. Ahmad were published in mathematical journals, including Journal of Algebra, and Journal of Pure and Applied Algebra. Several additional papers are pending publication. Dr. Ahmad also contributed to numerous mathematical conferences.

Hamza had a special interest in passing on his enthusiasm for solving mathematical problems to the next generation. Two activities that were particularly important to him were coaching the Michigan All-Star Team for the American Regions Math League and participating in SVSU’s Math Olympics Competition. He intended to assume the leadership of the Math Olympics before his health became an obstacle.

Hamza was married to his best friend and colleague, Dr. Nancy Colwell.

Hamza was a gentle person who passionately loved mathematics, woodworking, and discussing philosophy and politics, while enjoying the society of his friends and colleagues, who will miss him dearly.

John: I have known Hamza for almost 6 years. When we hired Hamza in 2001 at the age of 33, I thought he would be serving our department for many years after many of us would no longer be around, but that was not to be. However, in his short time, he contributed much to our department. He did this in spite of his struggle with cancer for the entire time. When someone dies at such a young age, we often seek to comfort ourselves and others by saying that the quality of one’s years is more important than the quantity. Hamza had quality. It is too bad that he did not get to have both.

Hamza was a very bright man and a strong research mathematician. I will remember that, but more than that, I will remember his human qualities. He was concerned about others even as he was very ill. Hamza had a good sense of humor. He even laughed at my jokes!

In the past 6 years, I had many conversations with Hamza. We talked about Middle Eastern politics. Indeed, we would have solved the problems if someone in power had just had the good sense to ask us for advice! We talked about family; he told me stories about his father. We talked about the origin of the universe and our views on evolution. We compared Christian and Moslem views.

I am proud to have been able to call Hamza my friend. I know everyone in our department feels the same way. We feel as though we have lost a close family member.

Hamza loved life. He struggled to hold on to it as long as he possibly could. Long live his memory, and now may he rest in peace.

Joan Sabourin, Delta C, and Andrew Tierman, SVSU
John Mooningham, SVSU

Michigan NExT

The Eighth Annual Michigan NExT Symposium will be held in conjunction with the 2007 Section Meeting at the University of Michigan-Dearborn on the afternoon of Thursday, May 3, 2007. The topic of this year’s program will be “Explorations in Calculus”.

Co-organizers Mark Pearson (Hope C) and Paul Yu (GVSU) are currently soliciting speakers. If you would like to speak about some issue pertaining to teaching calculus, please email a proposed abstract for your talk to Mark (pearson@hope.edu) and Paul (yupaul@gvsu.edu) by Friday, March 16. Once proposals have been reviewed and speakers confirmed, the schedule for the day’s events will be posted on www.math.hope.edu/pearson/MINExT-2007.html. We anticipate being able to post the schedule, as well as other information about the symposium, by the first week of April.

Michigan NExT is a forum designed for faculty in their first six years of full-time teaching who have a strong commitment to undergraduate mathematics education. We encourage eligible faculty to apply for membership in Michigan NExT, although interested faculty and graduate students are welcome to participate in the symposium. If you are interested in joining Michigan NExT or participating in the 2007 Michigan NExT Symposium, please email Mark and Paul by Friday, April 20.

We look forward to a lively and engaging afternoon of discussion, and we hope you’ll be able to join us on Thursday, May 3.

Mark Pearson, Hope C
Certificate of Meritorious Service
Jerrold W. Grossman, Michigan Section, 2007

The Certificate of Meritorious Service is presented for service at the national level or for service to a Section of the Association. The first such awards were made in 1984. At each January meeting of the Association, honorees from several Sections are recognized. In New Orleans in 2007, Jerry Grossman was recognized. His nomination statement follows.

The Michigan Section of the Mathematical Association of America is pleased to nominate Jerrold W. Grossman, Professor of Mathematics, Oakland University, for the 2006 Certificate of Meritorious Service given by the MAA. We gratefully acknowledge the many contributions he has made over the years both to our Section and to the larger mathematical community.

Jerry has a long history of service to the Michigan Section. He was a member of the Michigan Mathematics Prize Competition Exam Committee and the Michigan MAA Teaching Excellence Award Committee (after receiving the Section’s 1994 Teaching Excellence Award), Director of the High School Visiting Lecture Program, Newsletter Editor, and Section Governor. As Governor, Jerry was responsible for revising our Section By-laws.

Jerry has also served the larger mathematics community through his work on the MAA Monthly problems editorial panel, on the Dolciani series editorial board, as an AP Calculus Exam reader, as a problems consultant to the AMC and AIME national high school mathematics competitions, and as a member of the NCTM’s Educational Materials Committee. Jerry also created and maintains the Web site for The Erdös Number Project.

At Oakland University, Jerry has served in many roles, including as an elected member of the University Senate, College of Arts and Sciences Assembly, College Executive Committee, Senate Steering Committee, Faculty Re-employment and Promotion Committee, College of Art and Sciences Committee on Appointment and Promotion, Secondary Education Council and its Steering Committee. Jerry has been an Associate Chair and Coordinator of Undergraduate Programs for the Department of Mathematics and Statistics. In addition to being active in the AAUP at the university level, Jerry has also served at the state level as a member of Committee W (on the status of women in the profession).
Teaching Award Nominations Sought

This is a preliminary announcement that the Distinguished Teaching Award Committee will be seeking nominations for the seventeenth annual (2008) MAA Award for Distinguished College or University Teaching of Mathematics. The committee will choose one of the nominees for the Michigan Section Award, and he or she will be honored at the Spring 2008 meeting of the Section. The awardee will also become the Section’s candidate for the national MAA’s Deborah and Franklin Tepper Haimo Award.

This year’s committee recently selected Eddie Cheng (OU) to receive the 2007 award. In his 11 years of teaching, Eddie has had a tremendous impact at Oakland University via his supervision of undergraduate research, as a member of the Putnam Coaching Staff, and through his central role in their Summer Mathematics Institute. He has also had a wider impact through his heavy involvement with the Section’s Visiting Lecturer Program and Michigan Mathematics Prize Competition. Further details about his award will appear in the Fall 2007 Newsletter.

Dr. Cheng joins the continuing members of the committee, Tim Carroll (EMU), chair, and Ted Sundstrom (GVSU), the previous recipients, for next year’s selection process.

Anyone, other than the candidate him/herself, is entitled to make a nomination. To be eligible, a candidate must be a college or university teacher teaching a mathematical science at least halftime during the academic year in a two- or four-year college or university, have at least five years teaching experience, and be a member of the MAA. Nominations are due by December 31, 2007. More information will be available in the Fall Newsletter. Please start thinking now about nominating your department’s best teacher.

On a related note, Past Chair John Fink (Kalamazoo C) reports that Robert Messer (Albion C) was selected to receive the Section’s 2006–2007 Distinguished Service Award. Details will appear in the Fall 2007 Newsletter.

Student Chapter News

Lawrence Technological University

George Placinta is now President. Student Luke Ewalt presented a talk on the history of pi calculation, from biblical times to the present. Plans are underway for Pi Day on March 14 and Euler’s birthday in April.

Western Michigan University

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 40 graduate teaching assistants and doctoral associates. Western Michigan University is located in beautiful Southwestern Michigan, midway between Chicago and Detroit, near Lake Michigan.

Degree Programs 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; and master’s degrees in Mathematics, Applied and Computational Mathematics, and Mathematics Education. Graduate students receive individualized attention and encouragement from professors committed to maintaining the highest standards in research and teaching.

Financial Assistance The Department has a wide variety of forms of financial assistance. Stipends range from $10,512-$12,904. Currently all supported doctoral students receive tuition waivers, while supported master’s students receive partial tuition waivers. Additional support may be available for the Summer sessions. Applications for Fall 2007 are due by 15 February 2007. 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:

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Web site: www.wmich.edu/math

Western Michigan University is an Equal Opportunity/Affirmative Action Institution
MMPC Honors Top High School Students

A total of 102 Michigan high school students, from 35 different schools, were honored for their achievement in the 50th Annual Michigan Mathematics Prize Competition at the Awards Day program held on Saturday, February 24 at Oakland University. This was the second year of the three-year term of director Eddie Cheng (Oakland U).

Daniel Frohardt (WSU) spoke on “Creative Counting”, and Hugh Montgomery (UM-Ann Arbor) lectured on “The Pleasures of Mathematics”.

The first-place Gold Award winner and Ford Motor Company Scholar was Alan Huang (Detroit Country Day). The second place Gold Award went to Yongwhan Lim (Ann Arbor Huron High School). The third-place Gold Award went to Neil Gurram (Detroit Country Day). Silver Award winners at the first level were: Allen Yuan (Detroit Country Day) and Sunil Agarwal (Troy High School); at the second level, Krithika Shanmugasundaram (Farmington High School) and Lee Gunderson (Ann Arbor Pioneer High School); at the third-level, Nicholas Fireman (Groves High School), Kevin Wu (Cranbrook Kingswood), and Wenxin Zhu (Groves High School). In addition 41 Bronze Awards were given, and 51 students received Honorable Mention.

The top 51 students received scholarships in amounts ranging from $250 to $2600. Thanks go to the corporate and other donors to the MMPC scholarship fund. The Honorable Mention winners received copies of the MAA publication From Erdős to Kiev, by Ross Honsberger. We would like to thank the MAA and the Michigan Council of Teachers of Mathematics for their generous donations that covered a portion of the cost of these books.

Part I of the MMPC is a 40-question multiple choice test, which this year was administered on October 11. About 1000 participants from Part I were invited to take Part II on December 6.

The official Web site of the MMPC (www.math.oakland.edu/main/mmpc/index.html) contains information about the competition. Part I of the competition is given each Fall.

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**Top MMPC Results for Each Grade**

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**Top 102 Results by Grade**

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<td>7</td>
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<td>6</td>
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**Top 102 Results by Gender**

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<th>Total</th>
<th>M</th>
<th>F</th>
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<td>8</td>
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<tr>
<td>Total</td>
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<td>82</td>
<td>20</td>
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About 45% of the original contestants were female, as were about 30% of those who qualified for Part II. There were 20 young women among the Top 102 (including eight scholarship winners).

The total score for the competition is the sum of the Part I points (out of 40) and 1.2 times the Part II points (out of 50). The highest score was 78.8 out of 100. The cutoff score for scholarships was 46.8. The cutoff score for the Top 102 was 38.6 (after regrade).

The cutoff score to qualify for Part II this year was 16.
MMPC Awards Day, Oakland University, February 24, 2007

Gold and Silver Award Winners (l to r): Lee Gunderson, Alan Huang, Kevin Wu, Allen Yuan, Nicholas Fireman, Yongwhan Lim, Wenxin Zhu, Krithika Shanmugasundaram.

Randy Pruim congratulates the First Place Gold Award Winner, Alan Huang.

Hugh Montgomery (l) and Dan Frohardt gave talks to the students, parents, and teachers in the afternoon.

Lee Gunderson (left) demonstrates the enthusiasm required to win a T-shirt (above).

Krithika Shanmugasundaram is recognized as the top female contestant by Ruth Favro.

Asra Shaik and Yongwhan Lim give a pitch for ARML.

Djordge Milicevic and Austin Shapiro on Grading Day.

MMPC Director Eddie Cheng demonstrates proper award etiquette with Lazaro Kikas.

Mathematics is required to organize Grading Day.
Thanks from the MMPC Director

You might know some of the people behind the scenes of the competition, but we would still like to bring them to your attention and formally thank them. We apologize in advance if we do not mention all of the significant contributions to the competition.

The examination committee works diligently behind the scenes preparing Part I and Part II: Patrick Pan (SVSU, Chair), Akalu Tefera (GVSU), Lazaros Kikas (UDM) and Ada Cheng (Kettering U). They patiently work with the Director and the reports of the various reviewers, who in turn deserve a great deal of thanks, though they are too numerous to mention here. The examination committee also provides the Director with a valuable sounding board and advisory group.

The volunteers from various institutions around the state who attended Grading Day did a wonderful job. They are listed on the MMPC Web site (www.math.oakland.edu/main/mmpc/index.html).

The MMPC supervisors at the participating schools are essential, collecting information and organizing participants, keeping timely and frequent contact with the Director. If you know a supervisor at a participating school, thank them, and if you have any contacts in your local high schools encourage them to consider participating if they do not already do so.

Eddie Cheng, OU

50th MMPC Part II Problems

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

1. Suppose $A$, $B$, and $C$ are the angles of a triangle. Prove that

$$1 - 8 \cos A \cos B \cos C = \sin^2(B - C) + (\cos(B - C) - 2 \cos A)^2.$$

2. Let $x_1, x_2, \ldots, x_{100}$ be integers whose values are either 0 or 1. (a) Show that

$$x_1 + x_2 + \cdots + x_{100} - (x_1 x_2 + x_2 x_3 + \cdots + x_{99} x_{100} + x_{100} x_1) \leq 50.$$

(b) Give specific values for $x_1, x_2, \ldots, x_{100}$ that give equality.

3. Let $ABCD$ be a trapezoid whose area is 32 square meters. Suppose the lengths of the parallel segments $AB$ and $DC$ are 2 meters and 6 meters, respectively, and $P$ is the intersection of the diagonals $AC$ and $BD$. If a line through $P$ intersects $AD$ and $BC$ at $E$ and $F$, respectively, determine, with a proof, the minimum possible area for quadrilateral $ABFE$.

4. Let $n$ be a positive integer and $x$ be a real number. Show that

$$\text{fl}(nx) = \text{fl}(x) + \text{fl}(x + 1/n) + \text{fl}(x + 2/n) + \cdots + \text{fl}(x + (n - 1)/n)$$

where $\text{fl}(a)$ is the greatest integer less than or equal to $a$. (For example, $\text{fl}(4.5) = 4$ and $\text{fl}(-4.5) = -5$.)

5. A $3n$-digit positive integer (in base 10) containing no zero is said to be quad-perfect if the number is a perfect square and each of the three numbers obtained by viewing the first $n$ digits, the middle $n$ digits and the last $n$ digits as three $n$-digit numbers is in itself a perfect square. (For example, when $n = 1$, the only quad-perfect numbers are 144 and 441.) Find all 9-digit quad-perfect numbers.

Preliminary Announcement and Call for Papers

Upper Peninsula Regional Meeting

October 5 and 6, 2007
Northern Michigan University, Marquette

- Plenary talk by Donald Saari (UC-Irvine), “The evolution of Newton’s Universe”.
- Plenary talk by Randall Pruim (Calvin College).
- Contributed shorter talks.
- Choice of a student play or a concert by Finnish folk music group JPP on Friday evening.

Contributed talks of 10 or 20 minutes are invited. Send title and abstract to John Kiltinen at kiltinen@nmu.edu. More details will be posted at the NMU Dept. of Math. and CS Web site, math.nmu.edu.
News from the Campuses

Adrian College [reported by Elizabth Lampecht]
Justin Witt has joined the department as an Instructor for the Spring semester. Justin has an M.S. in Mathematics from Middle Tennessee State U. [elamprecht@adian.edu]

Albion College [reported by Robert Messer]
Again this year, the Math/CS Department at Albion C encourages people from around the world to show their support of mathematics by wearing plaid on April 27, the last Friday of Mathematics Awareness Month. [Ram@albion.edu]

Calvin College [reported by Daryl Brink]
Chis Moseley is visiting at the U of Hawaii this semester. Dorett Pronk from Dalhousie U is a Visiting Scholar in Residence for the Spring semester. [brkd@calvin.edu]

Central Michigan University [reported by Sid Graham]
We had the following outside speakers give colloquia in the Fall: P. C. Wang (Taiwan), Akalu Tefera (GVSU and MIT), Nikita Netsvetaev (University of St. Petersburg and Penn State U), and Jennifer H. Van Mulleken (Dupont). Richard St. Andre is on administrative leave in the Spring semester. He has finished 13 years as Associate Dean in the College of Science and Technology, and he will rejoin the Mathematics Department as a faculty member in the Fall. [sidney.w.graham@gmail.com]

Eastern Michigan University [reported by Tim Carroll]
Ovidiu Callin was tenured and promoted to Assoc. Prof. John Ginther is retiring after 41 years at EMU. Tanweer Shapla and Andrew Ross have joined the department as Assist. Profs. [tcarroll@emich.edu]

Grand Valley State University [reported by Reva Kasman]
Akalu Tefera and David Cofer are currently on sabbatical. Charlene Beckmann was recently recognized with the Distinguished Alumni Award from the Mathematics Department at WMU. GVSU’s Art of Mathematics series continues in 2007. The final talk is “Mathematics in Stone and Bronze” by artists Clair and Helaman Fergusson. It will be held on April 12 at 7 p.m. in Louit Lecture Hall 102 at the Allendale Campus. Admission is free. [kasmanr@gvsu.edu]

Hope College [reported by Todd Swanson]
Prof. Emeritus Elliot Tanis has co-authored a new book A Brief Course in Mathematical Statistics with Robert Hogg, a retired professor of statistics from the U of Iowa. [swansont@hope.edu]

Position Openings
Assistant Professor of Mathematics (2)
Siena Heights University, a Catholic liberal arts institution founded and sponsored by the Adrian Dominican Sisters, invites applications for two anticipated continuing positions of Assistant Professor or Instructor of mathematics, to begin August 20, 2007. Responsibilities include teaching 12 semester hours per semester of mathematics on all levels, advising undergraduate students, supervising senior projects and encouraging student participation in professional activities. Requires master's degree in mathematics; Ph.D. preferred. Requires teaching excellence in a liberal arts setting. The successful candidates will be very familiar with the use of technology in mathematics instruction. Review of applications will begin immediately and continue until the positions are filled. We encourage applications from minorities. Please send a letter of application, resume, statement of teaching philosophy, and three letters of reference to: Dr. Timothy Husband, Chair, Mathematics Search Committee, Department of Mathematics, 1247 E. Siena Heights Dr. Adrian, Michigan 49221 or submit materials electronically to thusband@sienahnts.edu. Visit our website at www.sienahnts.edu for more information regarding Siena Heights University. E.O.E.

The Division of Science and Mathematics Education at Michigan State University is offering a new program:
Ph.D. in Mathematics Education
The Ph.D. in Mathematics Education is designed for persons who show promise of becoming leaders in local, state, national and international mathematics education communities.
This program places an emphasis on:
- mathematics content
- mathematics education research
- research experience
and prepares researchers to address critical issues in mathematics teaching, learning, curriculum and policy.

Apply now for Fall 2007! Teaching and research assistantships and fellowships are available. For more information and to apply, visit our website at www.dsme.msu.edu/mathed or contact:
Margaret Iding, Graduate Secretary, DSME
116 N. Kedzie, East Lansing, MI 48824
Phone: 517.355.1708 x105; Fax: 517.432.9868; or idingm@msu.edu
Lawrence Technological University [reported by Michael Merscher]
The Robofest World Championship will be held again this April at LTU. C.J. Chung will head up the festivities. The 38th Annual LTU Math Competition for High School students will be held on April 29, authored again this year by Mike Merscher. The department fielded four teams in the Mathematical Contest in Modeling, February 8–12. [merscher@ltu.edu]

Oakland University [reported by Jerry Grossman]
OU is hosting the SIAM Great Lakes Section Spring Meeting, whose theme is Numerical Partial Differential Equations, Modeling, Algorithms and Applications. It will be held on the OU campus on April 21, 2007. For more details, see www.engin.umd.umich.edu/glsiam/SIAMGL.htm. [grossman@oakland.edu]

University of Detroit Mercy [reported by John O’Neill]
We will be hosting the 45th Midwestern Graph Theory Conference in October. Those interested should contact Lazaros Kikas for more details (313-993-3379 or kikasld@udmercy.edu). We also have a number of ongoing programs this Spring and Fall for elementary and high school students, cosponsored by GMC, Ford and DaimlerChrysler, to interested them in Mathematics and Science. For further details contact Dan Maggio (313-993-1435 or maggiodd@udmercy.edu). [oneilljd@udmercy.edu]

University of Michigan-Dearborn [reported by F.-J. Papp]
Judith Flowers, Research Assoc., and Roger Verhey are engaged in a state-wide Mathematics Science Partnership grant to develop teacher-leaders for grades 5–8 across the state. The leadership for this grant includes mathematics and science educators from UM-Ann Arbor, UM-Dearborn, GVSU, and SVSU. • Roger Verhey was recently awarded the designation Prof. Emeritus. • Jennifer Zhao has received a sponsored research trip to Eastern Europe as part of her sabbatical. • New to the department this year is Margaret Rathouz, Mathematics Education. Margaret was formerly at California State U-Monterey Bay. • Nesrin Cengiz will join the department in September. She is currently completing her doctorate in Mathematics Education at Western Michigan University. • The Department of Mathematics at the University of Michigan-Dearborn will host the Annual Meeting of the Michigan Section of the MAA and MichMATYC. [fjpapp@umich.edu]

Wayne State University [reported by Daniel Frohardt]
The department is in the process of making a tenure-track hire. • Robert Devaney of Boston U will give this year’s Owens Lecture, “Chaos Games and Fractal Images”, on March 26. • Douglas Ravenal of the U of Rochester will be a Visiting Scholar in the department in late February. • Eugene Driker, a 1959 graduate of the department, was elected to an eight-year term on the WSU Board of Governors in last November’s election. • The guest of honor at last year’s departmental awards ceremony was Yousif B. Ghafari, who received a 1974 BA degree and a 1975 MA degree from the department. [danf@math.wayne.edu]

Western Michigan University [reported by Paul Eenigenburg]
Our department is pleased to host two visitors this term. Vinod Kumar is visiting from Rajagiri University in India and works in the area of topological dynamics and chaos theory. Shigeru Kuroda is a postdoctoral fellow at Kyoto University. His area of research is commutative algebra and algebraic geometry. [paul.eenigenburg@wmich.edu]

Michigan Undergraduate Mathematics Conference
The Tenth Michigan Undergraduate Mathematics Conference will take place at Michigan State University in Fall 2007. Information about the conference date and the keynote speaker will be posted at a conference Web site soon. There will be opportunities for student talks, as well as presentations by faculty representatives from graduate schools and local mathematics REU programs.

Aklilu Zeleke, MSU
Doctoral Studies at 
Central Michigan University
PhD with Concentration in 
the Teaching of College Mathematics

This PhD is a content-based degree designed to prepare individuals for a career in college teaching. The program consists of broadly distributed coursework, professional pedagogical components, teaching internships, and a dissertation. Areas of research strength include approximation theory, combinatorics, fluid dynamics, functional analysis, operator theory, number theory, algebraic geometry, algebra, differential geometry, statistics, and mathematics education.

For information contact: Sivaram Narayan, Graduate Coordinator, Department of Mathematics, Central Michigan University, Mt. Pleasant, MI 48859; phone 989-774-3596, fax 989-774-2414, mthgrad@cmich.edu, http://www.cst.cmich.edu/units/mth.

CMU, an AA/EO institution, is strongly and actively committed to increasing diversity within its community (www.cmich.edu/aaeo.html).

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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). The MAA also has a Website for employment opportunities (www.maa.org/pubs/employ.html). All openings are for Fall 2007 unless otherwise stated, and further information is available from the department.

Albion College (www.albion.edu/mathcs) Department of Mathematics and Computer Science invites applications for a full-time one-year visiting position in Mathematics to begin August 2007.

Hope College (www.math.hope.edu/position.html) is accepting applications for a tenure-track position in mathematics.

Siena Heights University (www.sienahts.edu) invites applications for two anticipated continuing positions of Assistant Professor or Instructor of mathematics.

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University of Michigan
Biostatistics Department
MS, MPH, PhD Degree Programs

Our department offers training in the development and application of statistical and mathematical methods to the design and analysis of biomedical research. We offer course work leading to the degrees of Master of Science, Master of Public Health, and Doctor of Philosophy. We have a large number of funding opportunities for our students including graduate student instructorships, graduate student research assistantships, training grants, scholarships, and fellowships. The faculty conduct cutting-edge research in bioinformatics, imaging, longitudinal data, missing data, survival analysis, statistical genetics, and many other areas. Our graduates have great job opportunities in fields such as government, industry (e.g. biotech, pharmaceuticals), medical research institutions, and universities.

For detailed information on our programs and to find out how to apply go to: www.sph.umich.edu/biostat.
For further information, please contact sph.bio.inquiries@umich.edu.
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 May 5, 2007 at University of Michigan-Dearborn during the Annual Meeting. One of the major items of business is the election of officers. The Nominating Committee, chaired by John Fink (Kalamazoo C), will propose a slate of candidates. Tom Zerger (SVSU) will be nominated for Chair. Matt Boelkins (GVSU) will be nominated for Four-Year College Vice Chair. David Redman (Delta C) will be nominated for Two-Year College Vice Chair. Mark Bollman (Albion C) will be nominated for 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. The Nominating Committee is listed on page 31.

Contest News

The American Mathematics Competitions are sponsored by the MAA and the University of Nebraska-Lincoln. The AMC 8 Exam, given to students in grade 8 and below, is a 25-question, 40-minute multiple-choice contest with no penalty for guessing. A student’s score is the number of problems correctly solved. The 2005 AMC 8 Exam was taken by 6310 students from 80 schools in Michigan on November 14, 2006. The overall Michigan average score was 9.34.

Perfect scores were achieved by eight Michigan students, all eighth graders. They were Disha Bora, Mason Liang, and Perry Zong, all from Boulan Park Middle School in Troy; Raghu Subramaniam, from Boyd Larson Middle School in Troy; Lajari Anne and Allen Yuan, from Detroit County Day Middle School in Beverly Hills; Randy Jia, from ICAE in Troy; and Sai Namuduri, from Smith Middle School in Troy.

The Edyth May Sliffe Award recognizes the excellence of 50 exam managers whose students are most successful on the AMC 8. The 2006 recipients of the award in Michigan were Frank Sikorski, Smith Middle School in Troy, Jan Janigian, Hillside Middle School in Northville, and Margaret Hom, Boulan Park Middle School in Troy.

Special thanks are due to Raghunath Khetan of ICAE for his generous support of AMC10/12A. AMC 10/12A of 2007 was scheduled on February 6. Unfortunately, most high schools in southeast Michigan were closed for cold weather that day. After receiving phone calls and emails from students and their parents, I contacted the AMC national director, Professor Steven Dunbar, the evening before the contest. With Steven’s instruction, I contacted Raghunath for help, and he agreed without hesitation. On contest day, Raghunath drove back from Saginaw to handle the agitated crowd of parents and students. Everything went smoothly and everyone was satisfied. Because all public schools were closed on February 21, the AMC 10/12B date, many students would not have had the opportunity to take any AMC 10/12 this year without the support of Raghunath. Further, due to the structure of AMC competitions, one cannot move into higher-level competitions (AIME, USAMO) without qualifications through AMC10/12. Without Raghunath’s dedication, Michigan would have suffered a dramatic drop in AIME and USAMO participants this year.

Ada Dong, Oakland University
### 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 2006–2007, as of February 26, the 50 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!

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### Institutional Members

As of March 1, the 26 colleges and universities listed below have begun or renewed their institutional memberships in the Michigan Section for 2006–2007. Tardy institutions and others who wish to join are encouraged to send in their dues, using the form below.

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### Section Dues: Individual • Institutional

The 2006–2007 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
- [ ] Contributing Membership @ $30
- [ ] Small Institutional Dues @ $40
- [ ] Large Institutional Dues @ $70

**Name:**

**Institution:**

**Mailing Address**

**E-mail Address**

Make checks payable to the Michigan Section–MAA, and mail them to: Nancy Colwell, Secretary/Treasurer, Michigan Section–MAA, Department of Mathematical Sciences, Saginaw Valley State University, University Center, MI 48710-0001.
COMMITTEES AND APPOINTMENTS

Michigan Section
Mathematical Association of America

Contact Information

Executive Committee

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Vice Chair: Tom Zerger (07) SVSU zergert@svsu.edu 989-964-4334
Sec/Treas: Nancy Colwell (07) SVSU ncolwelw@svsu.edu 989-964-4353
Past Chair: John Fink (07) Kalamazoo C fink@kzoo.edu 269-337-7062
Governor: Ruth Favro (07) LSSU favro@lssu.edu 248-762-4024

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Co-Director: Kimberly Muller (08) LSSU kmuller@lssu.edu 906-635-2170

Michigan Mathematics Prize Competition (MMPC)
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Member: Lazaros Kikas (09) UDM kikasld@udmercy.edu 313-993-3379
Member: Ada Cheng (07) Kettering U aching@kettering.edu 810-762-7914

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Ad Manager: Will Dickinson GVSU dickensw@gvsu.edu 616-331-3745

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Member: Randy Pruim (09) Calvin C rpruim@calvin.edu 616-526-7113

Distinguished Teaching Award Committee
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Member: Timothy Carroll (09) EMU tcarroll@emich.edu 734-487-1996

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Member: Jerrold W. Grossman (07) Oakland U grossman@oakland.edu 248-370-3443
Member: Matt Boelkins (07) GVSU boelkinm@gvsu.edu 616-331-3384

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Member: Gerald D. Ludden MSU ludden@math.msu.edu 517-335-6335

MMPC Audit Committee
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