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### **Michigan Section – MAA**

NEWSLETTER

Volume 28, Number 2

#### April 2002

Michigan Section Annual Meeting Lawrence Technological University Ĉ **Coming to** \$ Ű Southfield... Patricia Lamm Inverse problems and CT Glenda Lappan Roger Verhey Preparation of teachers Brian Conrad Prime values of polynomials 131 Keith Devlin Our Public Image Bernard L. Madison 96 Quantitative Literacy: Southfield Everybody's Orphan ...and much more

> ALSO IN THIS ISSUE: Comparing High School and University Performance 45<sup>th</sup> Annual Michigan Mathematics Prize Competition

#### Mathematical Association of America Michigan Section Newsletter Volume 28, Number 2

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#### 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

Pages

#### **Calendar of Events**

April 5–6, 2002	Ohio Section Meeting, Xavier U, Cincinnati
April 22–24, 2002	NCTM Annual Meeting, Las Vegas
May 10–11, 2002	Michigan Section Meeting, LTU, Southfield
August 1–3, 2002	MAA MathFest, Burlington, VT
August 20–28, 2002	Internat. Congress of Mathematicians, Beijing
October 5, 2002	MichMATYC Fall Meeting, Monroe County CC
November 14–17, 2002	AMATYC Annual Meeting, Phoenix
January 15–18, 2003	MAA/AMS Annual Meeting, Baltimore
April 10–12, 2003	NCTM Annual Meeting, San Antonio
April or May, 2003	Michigan Section Meeting, SVSU, Saginaw
July 31–August 2, 2003	MAA MathFest, Boulder
November 13–16, 2003	AMATYC Annual Meeting, Salt Lake City
January 7–10, 2004	MAA/AMS Annual Meeting, Phoenix
April 22–24, 2004	NCTM Annual Meeting, Philadelphia
April or May, 2004	Michigan Section Meeting, OU, Rochester
August 12–14, 2004	MAA MathFest, Providence
November 18–21, 2004	AMATYC Annual Meeting, Orlando
April 7–9, 2005	NCTM Annual Meeting, Anaheim
April or May, 2005	Michigan Section Meeting, Alma C, Alma
August 4–6, 2005	MAA MathFest, Albuquerque
April or May, 2006	Michigan Section Meeting, Calvin C, Gr. Rapids

#### The Web has all the information

Detailed information about most of the events shown above can be obtained from the relevant organizations' Web sites, such as www.maa.org (with links for all the sections), www.nctm.org, www.mictm.org, and www. amatyc.org.

#### Annual Meeting Set for May 10–11

The annual meeting of the Michigan Section–MAA and MichMATYC will be held on May 10–11, 2002 at Lawrence Technological University, Southfield, Michigan.

The meeting will include a well-balanced variety of plenary addresses, talks, and other activities led by mathematicians, mathematics educators, and students. The opening plenary address on Friday morning will be given by Patricia Lamm (MSU) on inverse problems related to CT scans, image reconstructions from satellites and other sources, geophysical exploration, and an overview of recent developments in "local regularization" solution methods. The Friday luncheon speaker will be Glenda Lappan (MSU). She will report on some major recommendations on the mathematical preparation of teachers made by the Conference Board of the Mathematical Sciences in the fall of 2001. Later in the afternoon, **Roger Verhey** (UM-Dearborn) will be the moderator of a panel discussion to further ex plore these recommendations. The Friday afternoon plenary address will be given by Brian Conrad (UM-Ann Arbor). His topic is prime values of polynomials, ranging from proven results in the linear case, to a conjectured asymptotic measuring the frequency of prime values in the multivariable case. The Friday night banquet speaker is Keith Devlin (Stanford U). His topic is "Our Public Image." He will explore whether our image has changed for the better with the recent novels, movies, and plays about mathematicians. Keith will also be the Saturday morning plenary speaker with a talk based on his book The Math Gene: How Mathematical Thinking Evolved and Why Numbers Are Like Gossip. The Saturday luncheon speaker is Bernard L. Madison (U of Arkansas and formerly Visiting Mathematician at MAA). His topic is "Quantitative Literacy: Everybody's Orphan." After the luncheon, he will lead a forum on "Assessing Learning in Undergraduate Mathematics." This forum, sponsored by MAA, will be conducted by Bernie and other MAA representatives at many section meetings across the country over the next year. In the presentation at our section, he will be assisted by Janet Andersen (Hope C), Chair of CTUM, and some other members of the Michigan Section.

In addition, we have a variety of talks on topics of interest from several areas of mathematics, a number of talks relating pedagogical results in particular courses, and a report on a multi-part, multi-year project of enhancement of a mathematical core. Details about the schedule (with abstracts), registration, and accommodations are contained in the Program for the Annual Meeting, which is included with this *Newsletter* and is also available at www.michmaa.org.

There will be book exhibits from MAA and other publishers (many of whom are sponsoring coffee breaks).

The program committee consists of chair, John Mooningham (SVSU), along with Jim Ham (Delta College), Bill Arlinghaus (LTU), and Kristen Moore (UM–AA). Michael Merscher chairs the local arrangements committee; other members are Ruth Favro, Pamela Lowry, and Thomas Lackey (all from LTU).

John Mooningham, Four-Year College Vice Chair

#### **Chairperson's Report**

At both the national and the section level, Project NExT is one of the most effective projects in the MAA. I attended the dinner for the "Cardinal Dots" in San Diego and was impressed with the energy and ideas flowing there. Our own Section Project NExT is continuing under the leadership of **John Clifford** (UM–Dearborn). Being able to stay connected to other new faculty across the country and the state, exchanging ideas from research to teaching concerns, adds a dimension to our profession that translates into satisfaction



and involvement, and can't help but inspire future generations of students in mathematics. I am looking forward to continuing that association.

It's been a busy year back in the Section. **Norm Richert** (Mathematical Reviews) takes over from **Jerry Grossman** (Oakland U) as *Newsletter* Editor. Many thanks to Jerry for his five years as editor. He has done an impressive job of editing, gathering thought-provoking material, and getting out the top Section newsletter. (And that's no hyperbole-a.)

**David Redman** (Delta C) takes over as Director of the Michigan Math Prize Competition from **Bob Messer** (Albion C). For three years Bob has done a splendid job in this labor-intensive occupation. Bob wears another hat as head coach of the Michigan All-Stars ARML team, a subset of the MMPC winners. We see many of them becoming mathematics researchers.

**Brian Snyder** (NMU) will be running the High School Visiting Lecture Program, taking over from **Paul Fishback** and **Steve Schlicker** (GVSU). Many thanks to Paul and Steve who are moving on to other activities.

**John Kiltinen** (NMU) organized an excellent UP Math Conference (story in Fall *Newsletter*).

**Randall Pruim** (Calvin C) and the committee for the MUMC, John Clifford, John Fink (Kalamazoo C), Sivaram Narayan (CMU), Jody Sorenson (GVSU), and Darin Stephenson (Hope C), organized an interesting and well-attended conference (see story on page 32).

I look forward to seeing you at the annual meeting May 10–11, where the food will be good, the conversation lively, and all the talks (as always) way above average.

#### **Two-year college Vice Chair's Report**

#### The Role of the Two-Year College in Preparing Future Mathematics Teachers

Two-year colleges enroll about 45% of all U.S. undergraduates. More than 40% of K-12 teachers completed some of their mathematics work at a 2-year college. Many future elementary and middle school teachers take most, if not all, of their college level mathematics courses at 2-year colleges [1]. In light of these statistics, 2-year faculty look with great interest at the recent initiative of the State of Michigan to identify standards for teacher preparation programs at 4-year colleges and universities [2]. Several questions arise:



- What are the implications of the recent state standards on the 2-year colleges, which play a major role in preparing our state's teachers?
- Will the state create standards for preparing teachers in the first two years of college as a roadmap for the community colleges?
- How will the state accredit, approve or endorse a teacher preparation program at 4-year College X if a large proportion of the students in their program have taken several courses at several different 2-year colleges?
- If several 4-year colleges and universities have different course requirements, how do the 2-year colleges accommodate students who will be transferring into these different programs?
- Will a new round of articulation agreements be initiated to support changes to the teacher preparation programs at 2- and 4-year colleges?

Let's consider one of the state standards and the implications it might have on existing teacher preparation programs.

Prospective elementary grade teachers should be required to take at least 9 semester-hours on fundamental ideas of elementary school mathematics [2].

Current practice varies significantly on the number of required semester hours in elementary mathematics teacher preparation programs. Very colleges currently require 9 credit hours. Some require 8 hours (24-credit courses), some require 6 hours (2 3-credit courses), and many require a single 4-credit *Math for Elementary Teachers* course. Many 2-year colleges establish their mathematics requirements to parallel the requirements at their principal 4-year transfer institutions. The mathematics requirements in the 4-year colleges are the result of the collaboration of education departments and several discipline departments over several years. Making a change, such as adding 5 additional credit hours to an already bursting-at-the-seams program is not easy to accomplish. While most mathematics educators generally support the state standards, making changes to existing programs on this standard and others will *not* be easy.

There are several sources of support to help us improve our teacher preparation programs. The CBMS [3] and the NRC [4] have published sets of recommendations aimed at improving teacher preparation programs. AMATYC [5] has received an NSF grant to improve the preparation of teachers at the 2-year college level. As part of that grant a week-long institute will be held this summer (July 7–12, 2002) at Grand Rapids Community College. The leaders of MCTM, the Michigan Section, and the MDE held a one-day conference in October, 2001 to promote awareness of the state standards and to promote communication between 2- and 4-year colleges and universities. Similar sessions are planned for the future. And finally, the May 10–11, 2002 Michigan Section/MichMATYC conference will have sessions on improving teacher education programs.

I welcome the mandate from the state to improve our teacher preparation programs. To insure the successful implementation of their mandate the state must recognize the fundamental role of the 2-year colleges in preparing our future mathematics teachers.

For more details on the projects described above, visit the following websites:

1. The National Science Foundation grant, *Investing in Tomorrow's Teachers* (www.nsf.gov/pubs/1999/nsf9949.htm)

2. The Michigan Department of Education standards for mathematics teacher education programs. (www.mde.state.mi.us)

3. The Conference Board of the Mathematical Sciences, *The Mathematical Education of Teachers*. (www.maa.org/cbms)

4. The National Research Council, *Educating Teachers of Science*, *mathematics, and Technology: New Practices for a New Millennium*. (WWW. nap.edu/books/0309070333/html)

5. AMATYC's NSF grant (amatyc.dtcc.edu)

#### **Governor's Report**

At the national level, the MAA is in good shape, with an expanding range of activities and services, increasing membership, and no shortage of enthusiastic, creative, hard-working people. The lastest Board of Governors meeting was held the day before the January meetings in San Diego; it consisted mainly of reports from the staff and committee chairs.

We chose Providence for the 2004 Summer MathFest and Albuquerque for the 2005 MathFest (Boulder had



been selected for the 2003 MathFest last year). Ann Arbor was originally under consideration for the 2005 meeting, but it was not clear that it met the criterion of having convenient air-conditioned dormitories; Associate Secretary **Jim Tattersall** said that he will continue to explore having a future MathFest there, however. I hope to see many of you at the MathFest this summer in Burlington, Vermont. These meetings are more relaxed than the winter meetings, and you can combine the math program with a family vacation (New England in the summer is delightful!).

MAA has special interest groups (known as SIGMAAs—see www. maa.org/sigmaa/sigmaa.html), with more on the way. Currently there are four, covering Research in Undergraduate Mathematics Education; Business, Industry, and Government; Statistics Education; and the History of Mathematics. If these areas interest you, considering joining (for a nominal fee) or maybe think about starting a new one.

The Board raised dues slightly (in line with the increase in the CPI), and also instituted a life membership category available to all members, with rates determined actuarily.

The last thing I want to call your attention to is new professional development programs. The MAA has a \$1 million grant from the NSF for a program called PREP www.maa.org/pfdev/prep/prep.html), which conducts workshops in the summer and during the school year. There is also a new initiative called Preparing Mathematicians to Educate Teachers, with a 2-summer program (2002–2003); see www.maa.org/pfdev/prep/ dub\_app.html for an application form.

#### Jerrold W. Grossman, Governor

#### Secretary/Treasurer's Report

I would like to take this opportunity to thank everyone who sent in a dues payment. We currently have 162 individual members and 27 institutional members. Of the 162 individual members, 60 have paid sustaining member dues of \$30 or more. The lists of institutional members and sustaining members are on pages 32–33. If you have not yet sent in your dues for 2001–2002, you can still do so with the membership form on page 32. Please check the list of institutional members.



If your school is not listed, you might want to remind your department chair.

	<u>3/'98</u>	<u>3/'99</u>	3/'00	3/'01	3/'02
regular members	123	100	97	115	102
sustaining members	48	44	53	61	60
institutional members	21	27	26	25	27

The Michigan Section's current bank balance is \$7,680.42, which includes \$2,280 committed to the Section's Project NExT. Last year's balance was \$10,169 which included the grant for Project NExT. Income from payments from vendors at the annual meeting has been lower than in previous years, and the cost for production of the Section's *Newsletter* has been increasing. I believe it can still be said that the financial health of the Section is satisfactory.

#### Margret Höft, Secretary/Treasurer

#### **Student Chapter News**

#### Grand Valley State University

Fall Student Chapter activities included panel discussions on succeeding in calculus and on attending graduate school. In addition, the club sponsored a game night.

#### Hillsdale College

The 2001–2002 KME student officers are **Jeremiah James** (President), **Matt O'Toole** (Vice President), **Chad Helmick** (Secretary), and **Michelle Dolgos** (Treasurer). Activities include a twice weekly mathematics tutoring service.

#### Siena Heights University

The officers of the Kappa chapter of Pi Mu Epsilon are President Nick Kingsley, Vice President Kristen Wickenheiser, Secretary Liza Iocopelli, Treasurer Nick Kaplan, and Sergeant-at-arms Kelly Ostrander.

#### The Mathematical Association of America Certificate of Meritorious Service John W. Petro Michigan Section

The Michigan Section of the MAA is pleased to recognize Professor John W. Petro as its 2001 recipient of the Certificate of Meritorious Service. We gratefully acknowledge the many contributions that he has made to the Michigan Section, to the MAA, and to the greater mathematical community.

Professor Petro has served the Michigan Section as Program Chair (1987–88), Chair (1988-89), *Newsletter* Editor (1994–97), Governor (1995–98), Section Archivist (1991–present), and Liaison Coordinator (1999–2001). He has been a regular grader of the Michigan Mathematics Prize Competition since he joined the section in 1963. In 1999, he published an update to the "Brief History of the Michigan Section." Also in service to the Section, he has been a member or chair of several committees, including the Nominating Committee, the Student Chapter Committee, and Local Arrangements Committee. John has directed many symposia and workshops on matrix analysis and applications, college teaching, group theory, and Maple.

In 2000, John retired from Western Michigan University, where he had been a member of the faculty since 1961 and Chair of the Department of Mathematics and Statistics from 1996 to 2001. John has made many presentations at colleges and universities and at many Michigan Section, NCTM, and MAA meetings. His service at the national level includes a six-year membership on the AMS-MAA-SIAM Joint Committee on Employment Opportunities (which he chaired in 1986–87), and four-year term as chair of the Committee on MAA Departmental Liaisons (1995–99).

For his many years of dedicated service and outstanding leadership, the Michigan Section is proud to present the 2001 Certificate of Meritorious Service to Professor John W. Petro. d course.

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

Items for From the Origin should be submitted to the editor by the beginning of October to be considered for inclusion in the December issue and by the beginning of February for the April issue. Main opinion pieces should be at most 1800 words long, and responses at most 400. The editors reserve the right to shorten responses, if necessary, in order to fit as many as possible within the available space.

#### A Comparison of High School and University Math Performance by Richard O. Hill (MSU)

Over the last decade, it slowly became apparent that there are things in the background of some of our incoming freshmen that we did not understand. For example, if you look at the students who place into technical calculus vs. those who place into precalculus, there are small differences in ACT scores, small differences in high school GPAs, but very large differences in what they can handle and how hard they can be pushed. As a related issue, there has been considerable controversy over the effectiveness of reform mathematics curricula. In order to get some insight into these issues so that we might better understand our students and hopefully serve them better, about two years ago I organized a study aimed at comparing the high school and university mathematics performance of students. The study involves some 3000 students who graduated from mid-Michigan high schools and came to MSU in the years 1996–1999. The high schools provided us with what math courses, if any, each student took their senior year together with the grades in those courses. We matched these with ACT scores, MSU math placement scores, what math courses they took here, and grades in those courses

For me, one of the most pleasing aspects of this project has been my interaction with high schools. I have had good conversations with teachers, principals, and administrators. The success of this project depended on their cooperation in providing data. In all, 34 high schools participated in the study. In return, we provided two things to the high schools: first complete confidentiality in their data and second an individualized report on their students. Most schools were delighted to have this feedback about their mathematics program, information otherwise extremely difficult for them to get.

The rigorous analysis of the data has just begun. Thus please keep in mind that the conclusions given below come from the rough overview we have from compiling the individualized reports, unless otherwise indicated. This article is just to give an idea of what we are doing; papers with detailed results and the statistical analysis will be forthcoming. Here are some of the things we have observed.

1. *Schools vary tremendously* as to the number of courses, kinds of course, and effectiveness. Our data agree with the TIMSS results that how well a student does in college significantly depends upon which high school the student attended.<sup>1</sup> Another difference for schools, which is particularly troublesome, is that the percentage of students who come to MSU having taken no math their senior year varies from 0 to 38%.

2. *AP Calculus works well* and at some schools it is spectacular. By this we mean that students who do well in an AP calculus course do well in whatever math course they end up in at MSU. If they do less well in the AP course, they generally do less well at MSU. The first thing that you can ask of a high school is that their grades reflect how much the students learn; this seems to happen in AP calculus. However, initial statistical analysis seems to indicate anomalies (possibly caused by some students who take AP Calculus but are not serious about it, overestimating what they have learned, not working at college, and then doing badly in the college courses).

3. About 25% of incoming freshmen eventually take and pass technical calculus 1. We will try to see what we can say about the success of all students.

4. *Precalculus varies tremendously*. Some schools' precalculus courses (which have various names) prepare students well for beginning university-level mathematics. On the other hand, there are others that produce almost no students who go on to pass MSU's first technical calculus course.

5. "Value added" happens at some schools during the senior year; thus ACT scores (which are from the end of a student's junior year) should not be used for math placement. Some schools have a significant number students score in the mid 20s on the ACT math test (which

From the Origin

#### From the Origin: A Section for Opinion

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would not place them into calculus) but score high on MSU's math placement test, take calculus, and do well there. On the other hand there are schools where this does not happen. This is another of the differences among schools, and it is one reason why it is crucial for colleges and universities to have math placement exams.

6. AP Statistics seems problematic and hence this requires further study. A high percentage of students taking this course perform just slightly better than students who take no math their senior year. Two high school teachers teaching AP Stat explained to me that only about half of Algebra 1 is required for this course. I do think that statistics is important, but instead of a whole course it should be at most a part of a course that is algebraically demanding if the students are going on to college. This is born out by our data on probability/statistics courses in general.<sup>2</sup>

7. Who does poorly at MSU? Roughly 25% of incoming freshmen place into remedial math at MSU. I have heard some criticism of MSU for this. However, roughly 35% of these students took no math their senior year and another 45% either took a lowlevel course (e.g., Informal algebra, business math, etc.) or did poorly in what course they took. Roughly 80% of the students who took no math their senior year placed into remedial math or college algebra (a high percentage doing poorly) or took no math at MSU. We hope to end up with a description of which students place into these two lowest courses and which place into the rest (the rest satisfy MSU's math graduation requirement).

8. Are high school grades too generous? The answer depends upon both school and course, mostly not in upper level courses. However, in some low-level courses a really bad grade is a B+. This is one reason why high school overall GPAs do not mean too much in terms of comparing students; you need to know the courses.

Reform Mathematics. I would now like to turn to our attempt to find out something about the effectiveness of reform mathematics, at least for students coming to MSU. Reform movements, and oftenassociated controversy, have been in U.S. education over 150 years. Diane Ravitch in Left Back<sup>3</sup> gives a scholarly discussion and is critical of educators who draw conclusions with insufficient hard evidence. The current wave of reform math curricula, Core-Plus being one, is based on recommendations of the 1989 Standards<sup>4,5</sup>. Unfortunately

it is easy to misconstrue the intentions of those recommendations, and some reform projects way overemphasized problem solving and calculator usage at the expense of learning mathematical skills and relationships.<sup>6</sup> Fortunately, the 2000 Standards<sup>7</sup> made significant steps in the right direction.<sup>8,9</sup>

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Core-Plus is one of the most popular high school math reformed curriculums in Michigan. It has been the subject of controversy, even math wars, at some places. You can find out a lot about it from the developer's viewpoint from their web site, www.wmich.edu/cpmp. Some high schools have tried it and love it; they feel their students are really benefiting from it, staying in math longer. Other high schools have tried it and dropped it, often saying it is algebraically weak. Rhetoric abounds. We really wanted to know what the facts are, so we invited several Core-Plus schools to participate in the study.

Schools use Core-Plus in roughly two ways. Some schools use it as the main sequence; others use a more traditional series for the main sequence, while using Core-Plus as an option for weaker students. Several teachers using it the second way told me how much they like it and how much better the students understand things and are liking math more. From our study's perspective so far, these students performed roughly the same at MSU as students with similar ACT scores from traditional courses. If a student enjoys math more this is a positive, but we are not sure how to measure this.

We approached six schools that use Core-Plus as their primary curriculum. Unfortunately, five of them turned us down,<sup>10</sup> so we are proceeding with the data that we do have. The results are interesting, but difficult to summarize in a fair way in just a few sentences. They will be published in due course.

Conclusion. The purpose of this study is to find relationships between students' math performance in high school and college. Although we are getting some insight, not surprisingly, we found many areas where more study is needed; i.e., we ended up with more questions than answers. I look forward to the response when the data are analyzed and published.

*Post comment.* This study required me to seek the collaboration of high school teachers, principals, and administrators. This interaction has been very enjoyable and the results interesting. There are other examples in Michigan of constructive interactions between college and

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#### From the Origin: A Section for Opinion

university math faculty and those involved in K–12 math education. The sessions organized at this year's Annual Meeting by **Roger Verhey** (UM–Dearborn) and **Tim Husband** (Sienna C) is one example. The collaboration of **Deborah Ball** and **Hyman Bass** (UM–Ann Arbor) is another. There are others. However, it is important for more mathematicians to get involved in K–12 education, both to work on the plethora of problems and to be at the table for discussions. I hope others are encouraged to do so.

#### (Footnotes)

<sup>1</sup> William H. Schmidt, et al., *Why Schools Matter*, Josse-Boss, Inc., San Francisco, 2001.

<sup>2</sup> Please look at Joel Best, *Damned Lies & Statistics: Untangling Numbers from the Media, Politicians, and Activists*, UCPress, 2001, about \$14 from Amazon.com. This would be a wonderful book to use as a statistical supplement in a course.

<sup>3</sup> ISBN 0-684-84417-6.

<sup>4</sup> *Curriculum and Evaluation Standards for School Mathematics*, National Council of Teachers of Mathematics, March, 1989.

<sup>5</sup> The 1989 Standards were in part a response to calls for reform in A Nation at Risk: The Imperative for Educational Reform, National Commission of Excellence in Education, Washington, D.C., U.S. Government Printing Office, 1983.

<sup>6</sup> For example, one principal at a high school insisted that, because of technology, it is no longer necessary for students to learn to factor simple quadratic expressions.

<sup>7</sup> *Principles and Standards for School Mathematics*, National Council of Teachers of Mathematics, 2000.

<sup>8</sup> For example, see p. 24 for their statement about calculator usage, and p. 35, about needing a balance between conceptual understanding and computational proficiency.

<sup>9</sup> Prof. Manuel Berriozabal, UT San Antonio, discussed this and related issues in a MAA Invited Address, *Reforms in mathematics education: Best practices and malpractices*, given at the AMS/MAA 2002 Joint Meetings in San Diego. A greatly expanded version of that talk can be found at www.math.utsa. edu/~prep; click on January 9, 2002 presentation.

<sup>10</sup> Interestingly, the one that participated looks good. Their top course is AP Calculus, its teacher said students coming into it are more confident, more take and pass the AP exam, and "gateway exams" are used to ensure manipulative skills. Their students do well when they come to MSU.

#### John Petro Given Certificate of Meritorious Service

Every year, MAA awards Certificates of Meritorious Service to persons who have served the Association well, either at the national level or within their sections. The Michigan Section has the opportunity to recognize one of their members in this way once every five years. In 2002, the Certificate of Meritorious Service was awarded to **John W. Petro**, Professor Emeritus at Western Michigan University.

Petro has served the Michigan section in many capacities, including *Newsletter* Editor, Program Chair, Chair, Liaison Coordinator, Governor, and Archivist. He has also been very active in recruiting other mathematicians to get involved in the Michigan section MAA. The full text of his commendation is given on page 7.

Professor Petro's award was given in a ceremony at the January 2002 Joint AMS-MAA meeting in San Diego. In an acceptance statement, Petro said, "Through the years I have been just one of many who have shared in the vision of building a truly outstanding mathematics community for the benefit of all. My greatest reward has been to see the Michigan Section and the Mathematical Association of America prosper. I was quite surprised and indeed very honored to have been chosen to receive the MAA Certificate of Meritorious Service."

Previous winners of the Certificate of Meritorious Service from the Michigan Section are **Yousef Alavi** (1987), **Delia Koo** (1992), and **Don Lick** (1997).

#### Welcome to Michigan NExT!

Project NExT(New Experiences in Teaching) is a national program, sponsored by the Mathematical Association of America (MAA) with support from the Exxon Educational Foundation, for faculty in their first few years of full-time teaching, who are interested in improving the learning and teaching of undergraduate mathematics. The Michigan Section of the MAA began Michigan Project NExT in May 2000. The third annual Michigan NExT program will be held in conjunction with the 2002 Annual MAAMeeting to be held at Lawrence Technological University in Southfield, Michigan, on the afternoon of Thursday, May 9th. For more information please visit the Michigan NExT web page at www.calvin.edu/~rpruim/next/mich. There is also a link from the Michigan Section MAA page at www.michmaa.org.

Last year we had a good time at Hope College at the second annual meeting of Michigan NExT, growing in membership from nine to fifteen. The 2001 Michigan NExT members are **Karen Brown** (GVSU), **Pamela Cutter** (Albion C), **Dyana Harrelson** (Hope C), **Randall Pruim** (Calvin C), **Brian Snyder** (LSSU), and **Akalu Tefera** (GVSU). We had a number of wonderful presentations: **Matt Boelkins** on how he uses the internet to get students to read the textbook before class, Randy Pruim on using the internet effectively to teach mathematics, and **Rebecca Walker** on the NCTM Principles and Standards. We ended the meeting with dinner at 84 East in downtown Holland Michigan.

#### John Clifford, UM-Dearborn

#### Michigan Technological University Department of Mathematical Sciences MS and PhD Degrees

Michigan Tech faculty conduct cutting-edge research in bioinformatics, combinatorial designs and algorithms, combustion, computational fluid dynamics, cryptography, error-correcting codes, materials science, wildlife statistics, and many other areas. We have a comprehensive training program for teaching assistants, and PhD students are encouraged to complete an internship at a government agency or private company. These features of our program, along with the coursework in mathematics, statistics, and numerical methods, provide an exceptional preparation for both academic and nonacademic careers.

Full financial support, in the form of teaching and research assistantships, is available for qualified students. For more information, contact: Mark S. Gockenbach, Director of Graduate Studies, Michigan Technological University, Houghton, MI 49931, (906) 487-3083, msgocken@mtu.edu. Michigan Technological University is an equal opportunity educational

#### 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 component, teaching internship, and dissertation. Areas of research strength include approximation theory and optimization, combinatorics, fluid dynamics, functional analysis and operator theory, history of mathematics, statistics, and mathematics education.

Three GAANS fellowships are available for next year. These fellowships offer a \$18,000 yearly stipend and a reduced teaching assignment.

For information contact: Sidney W. Graham, Chair, Department of Mathematics, Central Michigan University, Mt. Pleasant, MI 48859; phone 989-774-3596, fax 989-774-2414, Math@cmich.edu, www.cst.cmich.edu/units/mth.

#### In Memoriam

#### Dr. Howard Jones, October 22, 1939–February 10, 2002

#### Forty Years of Service

**Professor Howard Jones** was an exemplary faculty member who joined the Math & Computer Science faculty at **Lansing Community College** in 1962. He was a leader in the honors program and cofounded the math lab. Throughout his 40 years at LCC, he demonstrated a burning desire for students to succeed in the study of mathematics. He loved learning mathematics, and was skilled at helping students see its joy and beauty. His classes were masterfully organized. He was generous in helping students individually. His delightful sense of humor was cleverly used to cut through some of the anxiety that often hinders students as they approach the study of mathematics.

Dr. Jones will forever be remembered as a fantastic teacher someone who cared enough to push students to their limit, but did so with a caring spirit and an abundance of love and assistance. We

#### **Nominations Sought**

For the last several years, the number of nominees for the Michigan Section Distinguished Teaching Award has been unnaturally low. The Committee racked its collective brains but could not find reasons for the dearth of nominees. We therefore resorted to the experts. We hired consultants and with their help came up with:

#### Larry's Top Ten Reasons NOT to Nominate a Colleague for the Michigan Section–MAA Distinguished Teaching Award

*Reason 10.* Most of the good Michigan teachers have moved to Ohio.

*Reason 9*. There will be so many nominees that my candidate won't have a chance.

*Reason* 8. Because of the abysmal economy, my Department can't afford the postage necessary to send in the nomination.

*Reason 7.* If there are no nominees, then Larry's Committee will have no problem being decisive.

*Reason 6.* Some of the remaining good Michigan teachers have moved to Indiana.

*Reason 5.* I'm the one in my Department most qualified for this award, but how can I nominate myself?

*Reason 4.* It is such a long time between now and Jan 1, 2003 (the nomination deadline) that I can surely procrastinate until it is too late.

*Reason 3.* I can't nominate someone else because I am sure that someone is going to nominate me.

Reason 2. There are no teachers in my Department.

*Reason 1.* No one I know wants to be honored for excellence in his/her life's work.

#### Larry King, UM–Flint

This year's Distinguished Teaching Award Committee consists of **Kalpana Godbole** (chair, Citi Commerce Solutions, formerly of MTU) and the two most recent Award winners: Larry King and **John Fink** (Kalamazoo C). They have selected **Charlene Beckmann** (GVSU) to received the 2002 award. Dr. Beckmann, with 12 years of experience, has dedicated her career to making math more palatable to whole new generation of students and prospective teachers. Further details about her award will be in the Fall 2002 *Newsletter*.

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 2- or 4-year college or university, have at least five years teaching experience, and be a member of the MAA.

Nominations are due by December 31, 2002. More information will be available in the Fall 2002 *Newsletter*.

On a related note, Past Chair **Sidney Graham** (CMU) reports that **Bette Warren** (EMU) is the recipient of the Section's 2001–2002 Distinguished Service Award. She served as Chair of the Section Women's Studies Committee (1992–97), as Secretary-Treasurer (1995–97), Vice Chair (1997–98), Chair (1998–99), and Past Chair (1999–2000). Details will appear in the Fall 2002 *Newsletter*.

#### **MMPC Honors Top High School Students**

A total of 103 Michigan high school students, from 43 different schools, were honored for their achievement on the 45<sup>th</sup> Annual Michigan Mathematics Prize Competition at the Awards Day program held on March 2 at Albion College. **Robert Messer** (Albion C) is completing the final year of his three-year term as director of MMPC. **David Redman** (Delta C) will be the director next year for the 46<sup>th</sup> MMPC.

**Aparna Higgins** (U of Dayton) gave a talk "Defending the Roman Empire" and **Joseph Gallian** (U of Minn–Duluth) spoke on "Breaking Drivers' Licence Codes". **Ryan Timmons**, the second-place Gold Award winner, spoke to the banquet about his participation in the Michigan All-Star Math Team and the ARML competition. This year's Midwestern ARML, in which teams drawn from the MMPC top 100 compete against teams from around the country, will be held June 1 at the University of Iowa in Iowa City.

The first-place Gold Award winner and Ford Motor Company Scholar is **Robert Hough** (Dow High School). The second-place award went to **Ryan Timmons** (Groves High School) and **Christopher Cunningham** (Bay City Central High School), and **Thitideji Ujjathammarat**(Cranbrook Kingswood School) tied for third-place Gold. The first-level Silver Award went to **Peter Landry** (Dow High School); **Shailesh Agarwal** (Troy High School) and **Charles Crissman** (Dow High School) tied for second-level Silver; and third-level went to a group of five students: **Craig Chasseur** (Saginaw Arts and Sciences Academy), **Matt Elsey** (Harrison High School), **Dennis Lu** (Detroit Country Day), **Dino Sejdinovic** (Cranbrook Kingswood School), and **Michael Zajac** (Dow High School). An additional 53 Bronze Awards were given, and 24 students received Honorable Mentions.

The top 50 students received over \$30,000 in scholarships in amounts ranging from \$450 to \$2500. Thanks go to the corporate and other donors to the MMPC scholarship fund. The Honorable Mention winners received a copy of the book *Mathematical Treks*, by Ivars Peterson, courtesy of the Michigan Council of Teachers of Mathematics.

Part I of the MMPC is a 40-question multiple choice test, which this year was administered on October 10. The top 997 scorers were invited to take Part II on December 5 at Albion. There were 969 participants.

The exams are available in PDF format at the MMPC Web site: www.albion.edu/math/mmpc. Follow the link to "Previous MMPC Exams".

#### **MMPC Top 100 Statistics**

- Top Gold winner Robert Hough is a junior, having been a Bronze winner as a sophomore and a Silver winner the previous year. Ryan Timmons, a senior, was the second-place Gold Award winner. He makes his sixth straight appearance in the Top 100. Two students tied for the third-place Gold Award: Christopher Cunningham, a senior, and Thitidej Ujjathammarat, a senior.
- Of the eight Silver winners, six are seniors and two are juniors, including Silver winners Craig Chasseur and Dino Sejdinovic.
- Among the 39 Bronze winners are 24 seniors, 9 juniors, and five are sophomores.
- Twenty-six seniors, 19 juniors, four sophomores, three freshman, and one eighth grader took Honorable Mentions.
- About 45% of the original contestants were female, as were about 23% of those who qualified for Part II. There were 13 young women among the Top 103 (including four Bronze Award 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 91.6 out of 100. The cutoff score for scholarships was 49.5. It took a 48.2 to make it into the Top 103.
- The cut-off score to qualify for Part II this year was 24.

#### 45<sup>th</sup> MMPC Part II Problems

The top 1000 students had 100 minutes to solve these five problems and compete for scholarships and recognition.

**1.** A clock has a long hand for minutes and a short hand for hours. A placement of those hands is natural if you will see it in a correctly functioning clock. So, having both hands pointing straight up toward 12 is natural and so is having the long hand pointing toward 6 and the short hand half-way between 2 and 3. A natural placement of the hands is symmetric if you get another natural placement by interchanging the long and short hands. One kind of symmetric natural placement is when the hands are pointed in exactly the same direction.

Are there symmetric natural placements of the hands in which the two hands are not pointed in exactly the same direction? If so, describe one such placement. If not, explain why none are possible.

**2.** Let m/n be a fraction such that when you write out the decimal expansion of m/n it eventually ends up with the four digits 2001 repeated over and over and over. Prove that 101 divides n.

### MMPC Awards Day, Albion College, March 2, 2002



Gold and Silver Award Winners Front row, L to R: Dennis Lu, Charles Crissman, Craig Chasseur, Robert Hough, Michael Zajac. Second row: Shailesh Agarwal, Chris Cunningham, Dino Sejdinovic, Thitidej Ujjathammarat, Ryan Timmons, Matt Elsey.



Michigan Section–MAA Chair Ruth Favro (LTU) congratulates first place winner Robert Hough



The top female contestant, Lusi Fang





Arpana Higgins (U of Dayton) and Joseph Gallian (U of Minn–Duluth) speak to the Top 100



Faculty volunteers grade Part II at Albion College in January



Ryan Timmons relates experiences at last year's ARML

3. Consider the following two questions:

Question 1: I am thinking of a number between 0 and 15. You get to ask me seven yes-or-no questions, and I am allowed to lie at most once in answering your questions. What seven questions can you ask that will always allow you to determine the number? Note: You need to come up with seven questions that are independent of the answers that are received. In other words, you are not allowed to say, "If the answer to question 1 is yes, then question 2 is XXX; but if the answer to question 1 is no, then question 2 is YYY."

Question 2: Consider the set S of all seven-tuples of zeros and ones. What sixteen elements of S can you choose so that every pair of your chosen seven-tuples differ in at least three coordinates?

a. These two questions are closely related. Show that an answer to Question 1 gives an answer to Question 2.

b. Answer either Question 1 or Question 2.

**4.** You may wish to use the angle addition formulas for the sine and cosine functions:  $\sin(\alpha+\beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta$ ,  $\cos(\alpha+\beta) = \cos \alpha \cos \beta - \sin \alpha \sin \beta$ .

a. Prove the identity  $(\sin x)(1+2\cos 2x)=\sin(3x)$ 

b. For any positive integer n, prove the identity  $(\sin x)(1 + 2 \cos 2x + 2 \cos 4x + ... + 2 \cos 2nx) = \sin((2n+1)x)$ .

**5.** Define the set  $\Omega$  in the xy-plane as the union of the regions bounded by the three geometric figures triangle A with vertices (0.5,1.5), (1.5,0.5) and (0.5,-0.5); triangle B with vertices (-0.5,-1.5), (-1.5,-0.5), and (-0.5,0.5); and rectangle C with corners (0.5,1.0), (-0.5,-1.0), and (0.5,-1.0).

a. Explain how copies of  $\Omega$  can be used to cover the xy-plane. The copies are obtained by translating  $\Omega$  in the xy-plane, and copies can intersect only along their edges.

b. We can define a transformation of the plane as follows: map any point (x,y) to (x + G, x + y + G), where G = 1 if y < -2x, G = -1 if y > -2x, and G = 0 if y = 2x. Prove that every point in  $\Omega$  is transformed into another point in  $\Omega$ , and that there are at least two points in  $\Omega$  that are transformed into the same point.

#### **Out of the Mouths of Budding Mathematicians**

Here is a collection of the humorous remarks of contestants in MMPC Part II recorded by graders.

"Hello Mr./Mrs. Judge-Be kind-I could use some \$"

"It is difficult to prove a statement I don't understand"

### **Brooks** Cole

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*Regarding #3:* "Question 2 is the offspring of Question 34 who is the sister of Question 15 being the third cousin (twice removed) of Question 66 ..."

One student offered a 'proof by injunction' on #4.

"Hey! Look! A nose plug  $(\Omega)$ "

"What do you call Santa's elves? Subordinate clauses."

"I don't need to prove it ... I believe you."

*On #2:* "Well, you look at the number, then you do some math."

On #3: "This is tricky, I haven't taken precalculus in months."

"This is hard. Why am I doing this? I hate math."

"I hope this isn't the test to get to utopia because if it is ... I'm screwed."

Answer to several problems: "42" [c.f. Hitchhiker's Guide to the Galaxy, by Doug Adams]

"I haven't taken trigonometry, I have no clue what I am doing here. I guess I am just trading convenience with points—I give one less paper to grade and you give me some points." [On a blank #4.]

"I'm only in the 8th grade. Please don't try to hurt me."

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#### MICHIGAN STATE UNIVERSITY

#### **Department of Mathematics**

The Department offers coursework leading to the degrees of

Master of Science Master of Science in Applied Mathematics Master of Science in Industrial Mathematics Master of Arts for Teachers Doctor of Philosophy

Doctoral candidates may pursue study and research in the areas of

algebra analysis applied mathematics combinatorics and graph theory dynamical systems geometry logic mathematics education topology

*Assistantships are available.* The Department usually awards at least 110 graduate teaching assistantships to new and returning graduate students on the basis of merit. Duties include classroom instruction, paper grading, and help room duties, and normally require no more than 20 hours per week. An assistantship provides a stipend of approximately \$1300 per month and includes health insurance and a 9-credit tuition waiver each semester.

Detailed information is available on our Web pages:

http://www.math.msu.edu

For further information and application materials, contact

Director of Graduate Studies Department of Mathematics Michigan State University East Lansing, MI 48824-1047 Telephone: 517-353-4650 E-mail: grad@mth.msu.edu

#### News from the Campuses

#### Albion College [reported by Robert Messer]

**David Reimann** has been granted tenure. • On the last Friday, April 26, of Mathematics Awareness Month, show your support for mathematics by joining people around the world in wearing plaid during International Plaid Day. • **Mark Bollman** has been appointed to a tenure-track position as Assistant Professor of Mathematics. • **Tom Sgouros** will be performing his play "Judy, or What Is It Like to Be a Robot?" at Albion C on the evening of April 7. He will examine questions such as "Do people with mortgages have free will?" and "If you build a robot smart enough to do the dishes, will it also be smart enough to find them boring?" Section members are invited to attend.

#### Andrews University [reported by Donald Rhoads]

**Edward Specht** was appointed Professor Emeritus. He served Andrews University from 1947 to 1972 as Chair of the Mathematics Department. • **Ted Hatcher** was appointed Professor Emeritus. He served on the faculty since 1969 and retired in September, 2000. • **Kenneth Franz**, Associate Professor of Developmental Mathematics, retired in October, 2001, and was appointed Professor Emeritus. He had served on the faculty since 1987. • **Shandelle Henson**, formerly of the College of William and Mary, was appointed Associate Professor of Mathematics. She received a BS from Southern Adventist U, an MA from Duke U, and a PhD from the U of Tennessee at Knoxville. Her research interests are Nonlinear Dynamical Systems and applications of Mathematics to Biology. She is a member of the "Beetle Team", a group of mathematicians, statisticians, and biologists studying population dynamics of *Tribolium* (flour beetles). • **Yun Myung Oh** was appointed Assistant Professor of Mathematics. She received her BS and MS degrees at Ewha Women's University (Korea) and her PhD from Michigan State University. Her research interest is Riemannian Geometry.

#### Calvin College [reported by Daryl Brink]

Earl Fife is on sabbatical leave and is spending this semester in the Department of Computer Science at Purdue University.

#### Central Michigan University [reported by Ahmed Assaf]

**Faaiz Geerdin** of MSU is a new instructor for the spring semester in Math. Ed. • **Ivars Peterson** spent 2 days on campus speaking on mathematics and art. • On March 18–19, **Ed Burger** of Williams College will give a series of lectures.

#### Eastern Michigan University [reported by Tim Carroll]

After stepping down as Department Head, **Don Lick** continues at EMU as an active faculty member. • **Bette Warren** is serving as Interim Department Head. EMU is one of the stops on **Peter Hilton** and **Jean Pederson**'s Michigan Tour. • **Joanne Caniglia**, **Barb Leapard**, **Irene Duranczyk**, and **Elaine Richards** have been awarded an Eisenhower Grant entitled "Math in the City" in conjunction with the Detroit P. S. and Detroit Historical Museum.



#### Department of Mathematics

The Department of Mathematics, College of Arts and Sciences, Western Michigan University, consists of 27 full-time faculty members with specialties in many areas of mathematics and mathematics education. About 45 graduate students are supported by assistantships and doctoral associateships. The University is located in southwestern Michigan, midway between Chicago and Detroit, and less than an hour's drive from Lake Michigan.

<u>Degree Programs</u> The Department offers Ph.D.'s in Mathematics, Mathematics Education, and Collegiate Mathematics Education; and Master's degrees in Mathematics, Applied Mathematics, Computational Mathematics, and Mathematics Education. Our graduate students receive individualized attention and encouragement from professors who are committed to maintaining the highest standards in both research and teaching.

*Financial Assistance* A variety of assistance is available. Stipend levels for 2001–2002 were \$11,000 to \$15,000. We anticipate a similar level of support for 2002–2003. All teaching assistants receive tuition waivers. Additional support may be available for either the Spring or the Summer session. Applications submitted by February 15, 2002, will receive full consideration. Even after this date, feel free to apply, as assistantships are often available until July. All application materials are available on-line. Late applications are accepted as long as openings remain. For additional information, please contact:

Graduate Committee Department of Mathematics Western Michigan University 1903 W Michigan Avenue Kalamazoo, MI 49008-5248

Phone	616-387-4512
Fax	616-387-4530
E-mail	grad@math-stat.wmich.edu
Web site	http://www.wmich.edu/math-stat

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

#### Grand Valley State University [reported by Paul Fishback]

Georgianna and Bruce Klein have retired from the Mathematics and Computer Science Departments, respectively, after lengthy, distinguished careers. • New department faculty include Rebecca Walker (PhD, WMU) and Nance Macky (PhD, U of Wisconsin-Madison). • Frank Morgan (Williams C) will be speaking at GVSU on Friday February 15, one day before his talk at the Michigan Undergraduate Mathematics Conference. • The Department of Mathematics has been awarded a 3-year NSF REU award. Students interested in participating in this summer's REU program are invited to visit the program's website at sandpiper.math.gvsu.edu/reu. • Jody Sorensen, along with Chip Ross (Bates C), were named by the editors of the College Mathematics Journals as winners of this past year's George Polya Award. The award, which is given every two years, recognizes articles of expository excellence in CMJ. • Charlene Beckmann and **Pamela Wells** have been directing a program entitled "Enhancing the Core", in which they work with other colleagues in the department to infuse intermediate and upper level mathematics courses with activities that are particularly relevant to future middle-school and secondary mathematics teachers. • The department will once again host "Math-in-Action", which will be held on February 17th. More information may be found at www.gvsu.edu/math/MathInAction.

#### Hope College [reported by Todd Swanson]

**Janet Andersen** has been appointed director of the Pew Midstates Science and Mathematics Consortium.

#### Lake Superior State University [reported by Brian Snyder]

**Brian Snyder** was selected as a Project NExT National Fellow for the 2001–2002 academic year.

#### Lansing Community College [reported by JingLing Wang]

**Michael Masterson** has been appointed Interim Chairperson of the Mathematics and Computer Science Department at LCC. He has a MS in Physics from the U of Chicago with additional credits earned there toward the PhD degree, and a BA in Physics and Mathematics from MSU. He has also earned an AS in Electronics Technology from Lansing Community College. Our former chairperson, **Nan Jackson**, has resumed her full-time faculty position at LCC.

#### Lawrence Technological University [reported by M. Merscher]

**Ruth Favro** has developed a new course "Geometry and Art" designed for architecture majors, which has been very popular with those students. • Several departmental activities will be featured at LTU's Annual Open House on April 27–28. **Chan-Jin Chung** will oversee Robofest again this year. Robofest has become a huge attraction since its inception three years ago. • **Mike Merscher** will head up LTU's 33<sup>rd</sup> Annual High School Mathematics Competition.

#### Michigan State University [reported by Peter Lappan]

Vladimir Peller (Professor), Moxun Tang (Assistant Professor), Michael Shapiro (Assistant Professor), and Kirill Vaninsky (Assistant Professor) have all joined our faculty this year. In addition, there are a number of visitors, including: Zoltan Buczolich (Eotvos U, Hungary), Tomasz Downarowicz (U of Technology, Wroclaw, Poland), Mohamed Elgindi (U Wisconsin–Eau Claire) and Mahmoud Mohseni-Moghadam (U of Kerman, Iran), and Ronen Peretz (Ben-Gurion U of the Negev). • The Richard Phillips Lectures this year will be given by Michael Atiyah (U of Edinburgh). The lecture titled "Polyhedra in Geometry, Physics, and Chemistry" will be given at 4 pm on Tuesday March 26. A lecture titled "A challenging problems in elementary geometry" will be given at 4 pm on Thursday, March 28. The final lecture, "Projective planes and spheres", will be at 4 pm on Friday, March 29. Further details are available on the website: www.math.msu. edu/Lecture\_series/2002.html. • Alexander Volberg was named Distinguished University Professor this past fall.

#### Michigan Technological University [reported by Lynn Murphy]

New Faculty: **Igor L. Kliakhandler**, Assistant Professor (PhD, Applied Mathematics, School of Mathematical Sciences, Tel-Aviv University, Israel) and **Shuanglin Zhang**, Assistant Professor (PhD, Statistics, Peking University, Beijing, China). • Resignations: **Tao Jiang** accepted a position at Miami University, **Alan Ling** accepted a position at the University of Vermont, Burlington, **Vassil Yorgov** accepted a position at Fayetteville State University. • Individuals on leave: **Barbara S. Bertram** (Sabbatical for 2001–2002 academic year at Signature Research in Calumet, MI and the University of Wisconsin), **Russell M. Reid** (leave of absence for 2001–2002 academic year at Apple Computer Co.), and **Allan A. Struthers** (Sabbatical for Spring 2002 at Jafo, Inc. in Baltimore, MD and the Center for Research in Electro-Optics at the University of Central Florida). • Visiting Faculty: **Jeffrey T. Bonn** and **Kathleen L. Bonn**, Visiting Assistant Professors, from Mayville State University, North Dakota. • **Alexander Kurganov**, from Tulane University, gave a colloquium on December 3, 2001: "Central-Upwind Schemes for Systems of Hyperbolic Conservation and Balance Laws".

#### Saginaw Valley State University [reported by Tom Zerger]

Hamza Ahmad (PhD in Algebra/Algebraic Number Theory from Louisiana State University) from Lincoln University in Pennsylvania has joined the faculty as Associate Professor. • Hasan Al-Halees (PhD in Functional Analysis from Central Michigan University) has joined the faculty as Assistant Professor. Zhidong (Patrick) Pan has been promoted to Professor.

#### Schoolcraft College [reported by Randy Schwartz]

**Rheta N. Rubenstein** retired from our department effective April 30, 2001 after five years at Schoolcraft C, and is now teaching at UM–Dearborn. She has been replaced by **Katherine J. Jankoviak**, who joins us following eight years of work at MidMichigan CC. • New courses at Schoolcraft this year include a second semester of Mathematics for Elementary Teachers, and a revamped Beginning Algebra/Intermediate Algebra sequence.

#### University of Dearborn [reported by F. J. Papp]

The mathematics department received a \$400,000 grant from the National Science Foundation for scholarships for qualified students in mathematics, computer science, and engineering. Co-directors of the four year project are **Margret Höft** and **Joan Remski**. • The Center for Mathematics Education was officially opened in October. **Edward Silver**, Professor of Education and Mathematics at UM-Ann Arbor, was the main speaker at the inauguration event. • The Undergraduate Colloquium Series featured a lecture by **Bruce Elenbogen** (UM-Dearborn, Computer Science Department) entitled "On Edge in Infinite Dimensional Space (on average)".

#### University of Michigan-Flint [reported by Steve Althoen]

**Stacy McGaugh**, Astronomy Department, U of Maryland, College Park presented the talk "Monkey Wrenches in Gravity and Cosmology" in January. • John Petro of WMU is scheduled to give a presentation on Sierpinski triangles in February.

#### Washtenaw Community College [reported by James Egan] Janet MacDonald retired in December.

Wayne State University [reported by Daniel Frohardt]



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We are in the process of hiring a tenure-track person. • The Owens Memorial Lecture this year will be on Monday, April 1. The speaker will be **Michael Water-man** (U of Southern California). The department's colloquium schedule can be found at: www.math.wayne.edu/~sarah/colloq/colloq.html.

#### New Newsletter Editor

With this issue, Norm Richert takes over from Jerry Grossman as *Newsletter* Editor. He is the Administrative Editor of Mathematical Reviews in Ann Arbor. Before coming to Michigan 3 years ago he was on the faculty of U of Houston–Clear Lake, where he was chair, Marquette U, and Loyola–Marymount U. He has strong interests in undergraduate education, the use of technology in the curriculum, and the training of teachers.



#### Michigan Undergraduate Mathematics Conference

On Saturday, February 16, over 150 students and faculty from Michigan, Illinois, Indiana, Ohio, Nebraska, and West Virginia attended the fourth annual Michigan Undergraduate Mathematics Conference (MUMC) on the campus of Calvin College in Grand Rapids. The conference was organized by a conference committee consisting of **Randall Pruim** (Calvin C, chair), **John Clifford** (UM–Dearborn), **John Fink** (Kalamazoo C), **Sivaram Narayan** (CMU), **Jody Sorensen** (GVSU), and **Darin Stephenson** (Hope C) with local arrangements made by **Tom Scofield**, **Mark Hanisch** and Randall Pruim.

The conference included approximately 35 15-minute presentations. Over half of these were given by undergraduate students about their research projects or other mathematical interests. The remaining presentations were given by representatives of graduate programs, REU sites, and industry. These presentations provided a forum to learn about opportunities for mathematics students. Several schools also had exhibit tables where students could pick up information or speak with representatives individually.

This year's keynote address was given by **Frank Morgan** (Williams C). Dr. Morgan spoke about the famous (now proven) "Double Bubble Con-

#### Section Dues: Individual • Institutional The 2001–2002 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 🖙 @ \$70 \$ Large Institutional Dues Name:\_\_\_\_\_ Institution:\_\_\_\_\_ Mailing Address E-mail Address Make checks payable to the Michigan Section-MAA, and mail them to: Margret

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jecture" and the role undergraduates have played in the research into this and related questions about minimal surfaces. The day concluded with the second episode of "Who Wants to Be a Mathematician?" hosted by Randall Pruim and **Will Dickinson** (GVSU). Six students survived the fastest finger round and qualified for a chance to win mathematical prizes by correctly answering multiple choice questions. The final contestant, **David Koop** (Calvin C), answered all 11 questions correctly and took home the grand prize, a full professional edition of Maple 7. Prizes for the game show were contributed by Deloitte and Touche, Texas Instruments, Waterloo Maple, Wolfram Research, and World Scientific Publishing.

For a complete description of the conference schedule, pictures, a list of sponsors and exhibitors, and links to information about other undergraduate mathematics conferences, visit the conference Web page (www.calvin. edu/academic/math/mumc2002).

Plans for subsequent conferences are already underway. Next year's conference is to be held on the campus of the UM–Dearborn. Initial discussion of sites for 2004 and 2005 are underway already as well. Any departments interested in hosting the conference in future years, or any individuals interested in serving on the conference committee should contact Randall Pruim, Section Student Activities Coordinator (rpruim@gvsu.edu, 616-957-7113), or one of the conference committee members.



#### **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 Web site for employment opportunities (www.maa.org/pubs/employ.html). All openings are for Fall 2002 unless otherwise stated, and further information is available from the department.

*Albion College* (www.albion.edu/math/position.htm) invites applications for a full-time sabbatical replacement position.

*Grand Valley State University* (www.gvsu.edu/math/postdoc0102. html) seeks applications for a Postdoctoral Teaching Fellowship.

Siena Heights University invites applications for a continuing position

of Assistant Professor of Mathematics, to begin August, 2002. Teaching excellence in a liberal arts university is essential for consideration for this position. We are looking for a creative individual able to balance curriculum development with maintaining scholarship, while advising undergraduate students and encouraging their participation in professional activities. Proficiency in teaching upper level courses in analysis or applied mathematics is highly desirable. The successful candidate should be familiar with the use of technology in instruction as nearly every mathematics course incorporates calculator and computer technology.

#### **Institutional Members**

As of February 18, the 29 colleges and universities listed below have begun or renewed their institutional memberships in the Michigan Section for 2001–2002. Tardy institutions and others who wish to join are encouraged to send in their dues, using the form on page 32.

Albion College Alma College Alpena Community College Calvin College Central Michigan University Eastern Michigan University Grand Rapids Community College Henry Ford Community College Hillsdale College Hope College Kalamazoo College Kettering University Lake Michigan College Lake Superior State University Michigan State University Michigan Technological University Mid Michigan Community College Monroe County Community College Northwood University Oakland University Olivet College Saginaw Valley State University Schoolcraft College St. Mary's College of AMU University of Detroit Mercy University of Detroit Mercy University of Michigan–Ann Arbor, Mathematics Department University of Michigan–Ann Arbor, Engineering Department University of Michigan–Dearborn Western Michigan University

#### New Officers To Be Elected at Annual Meeting

The annual business meeting of the Michigan Section–MAA will take place at 5:15 PM on May 11, 2002 at Lawrence Technological University. One of the major items of business is election of officers. The Nominating Committee, chaired by **Sidney Graham** (CMU), will propose a slate of candidates. **John Mooningham** (SVSU), currently the four-year Vice Chair, will, in keeping with tradition, be nominated for Chair. **Marc Lipman** (OU) will be nominated for four-year Vice Chair. **Scott Barnett** (Henry Ford CC) will be nominated for two-year Vice Chair. These positions are all for one year. **Margret Höft** (UM–Dearborn) continues in the third year of her 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, a vote on revised Bylaws (see the Section Web site for details) as well as an opportunity for members to raise other issues.

#### **Contributing 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 2001–2002, as of February 18, the 60 members of the Section listed below are sustaining members. If you have not already sent in your dues, please do so, using the form on page 32, and please be generous!

Edward Aboufadel **Steven Althoen Robert Bartle** Irene Besancon **Robert Bix** Mary Bragg Joe Brandell Joseph Buckley **Stephen Bullock Timothy Carroll Donna Cash** Jim Chesla **Arthur Daniel Paul Eenigenburg Ruth Favro Richard Fleming** Judith Flowers **Dan Frohardt Chris Gardiner Tony Gioia** Sid Graham Jerry Grossman Jim Ham **Arnold Hammel Margret Höft Chris Hough** Wilfred Kaplan Virginia Kasten John Kiltinen **Peter Lappan** 

**Margaret Marchand Colin Mayers Michael McDaniel Renate McLaughlin Thomas Miles** W. Keith Moore **Ronald Mosier Ed Moylan Robert Myers Mel Nyman** John Petro **George Piranian** Joan Rahn **Norman Richert Frank Sherburne Harold Slaby** William Sledd Lawrence Smyrski Anna Spagnuolo **Philip Stich Elliot Tanis Michael Tanoff Richard Vance Rick Vandervelde George Van Zwalenberg Gerard Venema Sylvia Verdonk Bette Warren** John Wenzel **Matthew Wyneken** 

#### **COMMITTEES AND APPOINTMENTS**

#### **Michigan Section**

#### **Mathematical Association of America**

#### **Contact Information**

#### **Executive Committee**

Chair	Ruth G. Favro (02)	Lawrence Tech U	favro@ltu.edu	248-204-3531
Vice Chair	John Mooningham (02)	Saginaw Val. S U	jwm@svsu.edu	989-790-4183
Vice Chair	Jim Ham (02)	Delta College	jaham@alpha.delta.edu	989-686-9141
Sec/Treas	Margret Höft (03)	UM-Dearborn	mhoft@umich.edu	313-593-5007
Past Chair	Sidney W. Graham (02)	Central Mich U	Sidney.W.Graham@cmich.edu	989-774-3596
Governor	Jerrold W. Grossman (04)	Oakland U	grossman@oakland.edu	248-370-3443
	High Schoo	l Visiting Lect	ıre Program (HSVLP)	
Co-director	Paul Fishback (02)	Grand Valley S U	fishbacp@gvsu.edu	616-895-2443
Co-director	Steven Schlicker (02)	Grand Valley S U	schlicks@gvsu.edu	616-895-2305
	Michigan Ma	thematics Priz	e Competition (MMPC)	
Director	Robert Messer (02)	Albion C	ram@albion.edu	517-629-0200
Exam Co	ommittee:			
Chair	Philip J. Hanlon (02)	U of Mich-AA	Phil.Hanlon@math.lsa.umich.edu	734-763-3275
Member	William Sledd (03)	Michigan St U	sledd@math.msu.edu	517-355-9694
Member	Ed Aboufadel (04)	Grand Valley S U	aboufade@gvsu.edu	616-895-2445
Member	Eddie Cheng (05)	Oakland U	echeng@oakland.edu	248-370-4024
	Ad Hoc Committee to	o Study Calcul	ator Usage on the MMPC Ex	am
Chair	Paul J. Eenigenburg	Western Mich U	eenigenburg@wmich.edu	616-387-4522
	Program	Committee: 2	002 Annual Meeting	
Chair	John Mooningham (02)	Saginaw Val. S U	jwm@svsu.edu	989-790-4183
Member	Bill Arlinghaus (02)	Lawrence Tech U	arlinghaus@ltu.edu	248-204-3565
Member	Jim Ham (02)	Delta College	jaham@alpha.delta.edu	989-686-9141
Member	Kristen Moore (02)	U of Mich-AA	ksmoore@umich.edu	734-615-6864
	Local Arrange	nents Commit	tee: 2002 Annual Meeting	
Chair	Michael Merscher (02)	Lawrence Tech U	merscher@ltu.edu	248-204-3513
Member	Ruth G. Favro (02)	Lawrence Tech U	favro@ltu.edu	248-204-3531

#### Michigan Section Newsletter

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Ad Manager	Matthew Boelkins	Grand Valley S U	boelkinm@gvsu.edu	616-895-3384

#### **Distinguished Service Award Committee**

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Member	Ruth G. Favro (04)	Lawrence Tech U	favro@ltu.edu	248-204-3531

#### **Distinguished Teaching Award Committee**

Chair	Kalpana Godbole (02)	Assoc. Com. Sol.	(see page 32)	423-282-2086
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Member	John B. Fink (04)	Kalamazoo C	fink@kzoo.edu	616-337-7062
		Nominating (	Committee	
Chair	Sidney W. Graham (02)	Central Mich U	Sidney.W.Graham@cmich.edu	989-774-3596
Member	Jim Ham (02)	Delta College	jaham@alpha.delta.edu	989-686-9141
Member	John O. Kiltinen (02)	Northern Mich U	kiltinen@nmu.edu	906-227-1600
Audit Committee				
Member	Gerald D. Ludden	Michigan State U	ludden@math.msu.edu	517-353-6335
Member	Howard Young	U of Mich-AA	hyoung@math.lsa.umich.edu	734-425-1842
	Organizing Com	mittee: Upper	Peninsula Regional Meeting	

#### Co-chair Sujay Datta Northern Mich U sdatta@nmu.edu 906-227-1584 Co-chair John O. Kiltinen Northern Mich U kiltinen@nmu.edu 906-227-1600 906-227-1598 Co-chair Andrew Poe Northern Mich U apoe@nmu.edu

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AMC 8 Dir.	Kristina D. Hansen	U of Mich-Flint	khansen@umich.edu	810-762-3304
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Liaison Crd.	Robert Molina	Alma College	molina@alma.edu	517-463-7197
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MCTM Rep.	Renate McLaughlin	U of Mich-Flint	RMcL@umich.edu	810-762-3177

#### Michigan Section-MAA World Wide Web Site

www.michmaa.org

National MAA Headquarters, Washington, DC

www.maa.org, 800-741-9415

## MAA National Membership Form