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### From the Chair:

**Curtis Cooper, Central Missouri State University**

Central Missouri State University is looking forward to hosting the Missouri Section Meeting of the MAA on Friday and Saturday, April 14 and 15, 2000 in Warrensburg, Missouri. We have a wide variety of talks and presentations on both Friday and Saturday, including a number of student presentations. All sessions will be held in the W. C. Morris Science Building.

Professor Allen Schwenk of Western Michigan University will present the invited address on Friday afternoon. His talk is entitled, "Turn Those Lights Out Now!"

Continuing the tradition of last year, the 1999 recipient of the MAA Missouri Section Distinguished Teacher Award, Professor Rhonda McKee of Central Missouri State University, will be the banquet speaker on Friday evening.

Donald Albers, Associate Executive Director of the MAA, will deliver the MAA invited address on Saturday morning.

We look forward to your participation at the Section Meeting in April and we anticipate that it will be a rewarding experience. You will find a registration form and motel information in this newsletter and on the web at <http://www.math-cs.cmsu.edu/maa.html>. Please visit <http://www.mapquest.com/> to locate directions to Warrensburg and Central Missouri State University.

### Parking

Parking at CMSU for the Missouri MAA Collegiate Mathematics Competition and MAA Missouri Section Spring Meeting: During the day on Thursday and Friday (8 am - 5 pm), we can park in the Multipurpose Building Parking Lot. This lot is about 1/3 of a mile due west of the W.C. Morris Science Building. It is west and across the street from the football stadium. Thursday night (after 5 pm), Friday night, and all day Saturday, any non-reserved parking space on campus is open for parking. There is a parking lot due north and across the street from Hudson Hall and another parking lot due north of WCM. Hudson Hall is due east and about 1/3 of a mile from WCM. Hudson Hall is east of Highway 13 while WCM is west of Highway 13. The University Union is due south and across the street from WCM. Parking in any of these lots at the described times can be done without a parking permit. Finally, those individuals staying in Hudson Hall while attending the meetings/contest will be given a permit to park during the day in the Hudson Hall parking lot.

## COLLEGIATE MATHEMATICS COMPETITION

The fifth Missouri MAA Collegiate Mathematics Competition will be held Thursday, April 13, 2000 and Friday, April 14, 2000 on the campus of Central Missouri State University in Warrensburg, Missouri. Any college or university in the state of Missouri can send up to two official teams of 1-3 undergraduates each to compete in the competition. Unofficial teams will be allowed to compete, depending on the amount of available space, but will not be eligible for awards. They will also be charged the normal registration fee. A one-person team will only be allowed in the competition if this person is his or her college's only representative in the competition. A completed registration form for each team must be sent one week before the competition begins. Late registration will be accepted only if there is room for the team in the competition. No calculators or computers or reference material can be used during the competition. The contest will consist of challenging mathematical problems, comparable but not quite as difficult as the Putnam Exam. The Putnam Exam is a national exam sponsored by the MAA and given to outstanding college mathematics students. Previous Putnam Exams can be found in past October issues of the American Mathematical Monthly.

The first session will begin on Thursday, April 13 at 7:30 pm and last until 10 pm and will consist of 5 problems for each team to solve. The second session will begin on Friday, April 14 at 8:30 am and will end at 11 am. It will also contain an additional 5 problems. Each problem will be worth 10 points and will be scored by a committee of the MAA Missouri section. The committee consists of the following members: Mangho Ahuja (SEMSU), Jim Bruening (SEMSU), Hang Chen (CMSU), Curtis Cooper (CMSU), Joseph B. Dence (UMSL), Leon Hall (UMR), and Alvin Tinsley (CMSU). Some partial credit may be earned for substantially correct work toward a solution to the problem.

There will be a registration fee of \$25 per team. A complementary continental breakfast will precede the Friday morning competition. Each team member and the faculty sponsor are invited to a Friday luncheon at 12 noon. Each team member is also invited to be a guest at the MAA Missouri Section Banquet on Friday night. At that time, the results of the competition will be announced. A traveling trophy will be awarded to the first place team. In addition, each member of the first place team will receive a plaque. Certificates will also be given to each participant in the competition.

Any questions about the competition can be sent to

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## From the Governor:

Al Tinsley CMSU

Board of Governors Meeting  
Washington, DC  
January 18, 2000

The meeting began with the usual introductions followed by a request from the Secretary and Executive Director that the board approve 2820 individual and 91 institutional memberships. President Tom Banchoff unveiled the new poster for Mathematics Awareness Month 2000 and gave a full explanation of its elements.

Tina Straley, our new Executive Director, stated that she will concentrate her work in the areas of member services, development, and dues restructuring. The MAA is currently looking for an Associate Executive Director for Member Services. Andy Starrett volunteers in that office now. The office can do more in asking for donations from members and will use an outside consultant to put a program in place. Targeted giving will be available, and gifts will be presented to members in various membership categories for their contributions.

James Tattersall, Associate Secretary, announced that the Providence meeting was well attended and that attendance at the Washington, DC meeting is up by 400. He reminded those present that the Los Angeles Mathfest 2000 summer meeting will be held Thursday through Saturday, August 3rd to the 5th followed two days later by AMS's Math Challenges of the 21st Century. The board voted unanimously to hold Mathfest 2001 on August 2-4 at the University of Wisconsin.

Treasurer Jerry Porter expects the 1999 budget will result in a surplus. Last year, \$175,000 was transferred into the general fund due to a substantial surplus in the 1998 budget. He noted that publications continue to do well, but the MAA lost money at the Mathfest 1999 in Providence, RI.

Barbara Faires, Budget Committee Chair, stated that the year 2000 budget of \$4.7 million is balanced with a \$50,000 contingency.

Porter reported that MAA investments had experienced a 12% gain, that the portfolio balance is \$3,102,850, that the Life Member Fund is at \$284,632, and that the Dr. Hu Fund is at \$54,927. He noted that the Hu fund is not earning fast enough to maintain itself and will eventually become \$0.00 which was understood to be the case. Someone else will need to step up and fund the prize if it is to continue. He showed what the dues matrix would look like following the proposed decoupling of dues and journals after the year 2001, and he noted that the membership categories would be Regular, Discount Regular, Student, and Retired. He concluded by observing that a 4% increase in dues has become the practice, and his motion from the Finance Committee to approve membership rates reflecting that increase for 2000-2001 carried.

Straley asserted that a number of issues relating to decoupling need to be studied prior to hazarding a loss of dues income. While the result of such a move may be the retaining of many who do not remain in the mathematics profession, dues notices may be more complicated, and an unintentional consequence may be that members will think they can check off dues without taking a journal. She asked for a one year time period to study and test market the new rates thereafter to present a recommendation to the board. Your comments and recommendations regarding this issue are hereby solicited and should be sent to Jerry Porter and/or Tina Straley.

Marsha Sward stated that she will become Senior Director of a governmental environmental education program. She thanked Andy Starrett and the other headquarters volunteers, and she noted that there had been considerable progress in each of the five priority areas in the new strategic plan for the MAA. She concluded her remarks with an outline of recent grant activity. The board acted to designate Marsha Sward Executive Director Emerite.

Don Albers, Associate Executive Director, Publications and Electronic Services, did not disappoint those who eagerly awaited his traditional humorous report on recent MAA book publications. Don urged all to buy at least two copies of Random Walks of George Polya authored by Jerry Alexanderson. He

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mentioned that JSTOR now has about 800 titles and he expects MAA's remaining two journals be placed there soon. He is continuing to investigate the possibility of a new general interest magazine and is considering whether it should be printed or electronic. Math Forum is interested in joining MAA in the publication of such a magazine. Laura Todd, MAA's new System Administrator, is working to develop the on-line MAA Bookstore.

Jim Gandorf, Director of Marketing and Membership, reported that the MAA had 27,728 members at the end of 1999 and stated that the retention rate is up 2% to 82%. He noted that membership is looking up for the year 2000.

The discussion topic for the luncheon was, "How should the MAA position itself for the electronic age of the 21st century?" A representative from each table gave a summary of the discussion at their table upon returning for the afternoon session.

Bill Hawkins of SUMMA stated that NSF has expressed strong interest in the proposal for Project WELCOME (Web Educators' Library Collection of Mathematical Explorations) at the level of \$300,000 for two years. Members of CMPM have proposed a national program titled Research Experiences for Undergraduates (REU) which would target under-represented students, and a prospectus will be brought to the MAA leadership for consideration.

Titu Andreescu, Executive Director of the American High School Mathematics Examinations reported that registrations for the Exams were up from last year, and Dick Gibbs, Chair of the American Mathematics Competitions, noted that the number of perfect scores on the Junior High School Mathematics Examination was up from 77 to 177. Walter Mientka, Executive director of IMO 2001 USA, Inc. reported budget needs of \$3.7 million. His office has received approximately half that amount from the Department of Education, the NSF, NSA, Texas Instruments, and other sources.

Roger Horn reported that the waiting time for publication in the Monthly is now considerably shorter, and Fernando Gouvea added that Focus now has a lead time of 2 months.

Ed Dubinski, Coordinator of ARUME, stated that ARUME is the first organization to receive SIGMAA status, but several other organizations are thinking about becoming SIGMAA's.

The Executive and Finance committees recommended that the MAA discontinue distributing the MAA Placements tests as of June 30, 2000. Existing subscribers would be offered perpetual royalty-free license to the tests forever. The tests cannot meet many state and national norms for validation, and standardization is expensive at \$40,000 to \$50,000 per year. The board approved.

In her report on Project NEXt, Christine Stevens stated that the latest gift of \$220,000 from the ExxonMobil Foundation is the last the MAA will receive.

Stanford Segal, Chair of the Membership Committee, and Jerry Porter, Chair of the Task Force on Institutional Membership, strongly recommended that the Association take the preliminary step of modifying its bylaws so that future proposals concerning the membership-journal issue may be considered by the Board of Governors without going through the time consuming process needed to change the bylaws each time. Many spoke for and many against this issue, mentioning such factors as the advent of electronic media, the potential resultant instability in journal publication, a lack of urgency in making such a move, and the effort involved in amending the by-laws. An alternative would be to redefine "journal". The issue was tabled until the next meeting.

Richard Jarvinen, Chair of the MAA Committee on Student Chapters, reported that the Executive and Finance Committees have decided that the income of approximately \$20,000 per year from the MAA credit cards shall be dedicated to the support of student activities.

Respectfully submitted,

Al Tinsley

## **Motel Information**

# Missouri Section MAA Meeting, Warrensburg April 14-15, 2000

There is a volleyball tournament in town at the same time as the MAA meetings. Some motels were already nearly full for the night of April 14. You may want to book your room early. Please mention that you are with the MAA mathematics meetings in order to get the prices quoted.

## Warrensburg Motels

- |                                  |   |
|----------------------------------|---|
| University Inn                   | Junction of Hwys 13 and 50. East side of 13. Phone: 1-877-966-8537 toll free<br>Price: \$42 single, \$51 double<br>(Many rooms available)   |
| Holiday Inn Express              | 626 E. Russell Ave., East side of 13                      Phone: 1-660-747-3000<br>Price: \$74<br>(Four rooms available. Will be held until March 17.)  |
| Super 8                          | Near Junction of Hwys. 13 and 50, East side of 13. Phone: 1-660-429-2183<br>Price: \$40.40 one person/one queen<br>\$43.99 two people/one queen<br>\$53.90 one or two people/ one king bed                  |
| Days Inn                         | (Sixteen rooms available. All have only one bed. Will be held until April 7.)<br>Near junction of 13 and 50. West side of 13.                      Phone: 1-660-429-2400<br>Price: \$45 single, \$48 double |
| Old Drum Inn Bed and Breakfast   | 315 E. Gay                      Phone: 1-660-422-8334<br>Price: \$75 and up. Includes evening snack and full breakfast.   |
| Camel Crossing Bed and Breakfast | 210 E. Gay      Phone: 1-660-429-2973<br>Price: \$75 and up. Includes snack and full breakfast.   |
| Good House Bed and Breakfast     | 707 N. Holden                      Phone: 1-660-747-9563<br>Price: \$75. Includes snack and full breakfast.   |



**Spring Meeting of the Missouri Section of the MAA  
W. C. Morris Science Building  
Concurrent Sessions**

**Friday, April 14, 2000**

<b>Times</b>	<b>WCM 128</b>	<b>WCM 129</b>	<b>WCM 131</b>
1:00-1:20	<b>On a Generalization of a Theorem of Schinzel</b> Robert E. Kennedy, CMSU	<b>Florence Nightingale, Statistician</b> Susan Callahan, Cottey College	<b>Monuments and Mathematics</b> SMSU Calculus I Class Kishor Shah, SMSU
1:20 - 1:40	<b>Fun With the Sigma Function</b> Andrew Feist, (student) CMSU	<b>On the Meanness of the Mean Value in the Mean Value Theorem</b> Rick Mabry, LSU and Paul Deiermann*, Lindenwood University	<b>Conics, Curves, and Nature</b> SMSU Calculus I Class Kishor Shah, SMSU
1:40 - 2:00	<b>Mersenne Primes and GIMPS: Part I</b> Curtis Cooper* and L. Vincent, Edmondson, CMSU	<b>Multicultural Mathematics</b> Linda Hand, MSSC	<b>History of Calculus</b> SMSU Calculus I Class Kishor Shah, SMSU
2:00-2:20	<b>Mersenne Primes and GIMPS: Part II</b> L. Vincent Edmondson* and Curtis Cooper, CMSU	<b>Proof of the Fundamental Theorem of Algebra Using Sylow's Theorem</b> Lucille Marshall, (student) SMSU	<b>Why Study the History of Mathematics?</b> LaShall Crane, (student) MSSC
2:20-2:40	<b>Some Relationships Between Triangular, Oblong, and Square Numbers</b> Shing So, CMSU	<b>Introduction to Difference Operations and Differential Equations</b> Vu Ong, (student) SMSU	<b>Art Galleries: Klee's Question, Chvátal's Answer, and Fisk's Proof</b> Keith Brandt, MWSC
4:20-4:40	<b>Generalized Dedekind <math>\eta</math> Functions and Additive Number Theory</b> Donald L. Vestal, MWSC	<b>Cool Calculus Problems II</b> Mark Maxwell, Maryville University	<b>What is Linear Algebra?</b> Linear Algebra Class Kishor Shah, SMSU
4:40 - 5:00	<b>Maple Animation in Precalculus</b> Michael Z. Williams, Westminster	<b>Ternary Operations on Quaternions and the Complex</b>	<b>Applications of Linear Algebra</b> Linear Algebra Class

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College

**Plane**  
 Kristi Smith\* (student) and Carol  
 Collins, Drury University

Kishor Shah, SMSU

5:00 –5:20

**Nonlinear Regression Using Excel**  
 Ben Budde, Westminster College

**History of Mathematics**  
 Linear Algebra Class  
 Kishor Shah, SMSU

**Saturday, April 15, 2000**

**Times**

**WCM 128**

**WCM 129**

**WCM 131**

8:40 – 9:00

**A Study of Coincidences**  
 Andrea Farrell, (student)  
 Truman State

**One-way ANOVA to Compare  
 the Means Using the TI-83**  
 S. Balakumar, Lincoln University

**Population Dynamics: Modeling with  
 First Order Differential Equations**  
 Brian Haile, NWMSU

9:00 - 9:20

**A Study of Probability Models  
 Involving Seed Position That  
 Are Used in Predicting the  
 Winner of the NCAA Tournament**  
 Lisa Muldoon, (student)  
 Truman State

**Three, Seven, Nine, and One**  
 Scott Garten, NWMSU

**Models and Game Theory in the  
 Social Sciences: A GE Course**  
 Craig Haile, College of the Ozarks

9:20 – 9:40

**A Goals 2000 MATHEMATICS  
 Project**  
 James Guffey, Truman State

**High Finance and Higher Mathematics**  
 Mark Sand, NWMSU

## Summer workshops for 2000

A short description of each is listed below. For further information, including application procedures, visit the web addresses or get in touch with the contact persons.

May, 2000

May 19-21: Branson, MO

Show Me Conference: Middle School Mathematics Teacher Preparation

Keynote sessions will focus on the current status of teacher preparation in mathematics at the middle level, mathematics preparation of middle grades teachers, the NCTM Principles and Standards for School Mathematics, and the impact of technology on teaching and learning mathematics in the middle grades. Existing models of middle school teacher preparation at a variety of institutions of higher education will be showcased via workshops and a poster session. Finally, five middle-grades mathematics curricula: Mathematics in Context, Connected Mathematics Project, MathScape, Math Thematics, and Middle-school Mathematics Through Applications will be showcased with specific emphasis on strategies for using these materials within teacher preparation programs

Contact: Show-Me Center, 573.884.2099, [center@showme.missouri.edu](mailto:center@showme.missouri.edu)

Deadlines: March 1, 2000

June, 2000

June 1-4: Century Center, South Bend, IN

Cooperative Learning Conference

This conference will provide an opportunity for practitioners of cooperative learning in college-level mathematics courses, from beginners to experts, to come together to discuss their activities, techniques, and experiences. The conference is intended to enable those who are struggling with cooperative learning as a pedagogical strategy to learn from and provide support for each other, as well as to interact with experts in the field. Presented by MAA's Project CLUME.

Contact: David Mathews, 616.782.1276, [dmathews@smc.cc.mi.us](mailto:dmathews@smc.cc.mi.us)

Deadlines: April 15, 2000, Proposals for Contributed Papers

May 15, 2000, Early Registration

June 5-9: Central Missouri State University, Warrensburg Missouri

T<sup>3</sup> Teachers Teaching with Technology Summer Institute

This institute for mathematics/science teachers will focus on statistics and data analysis.

Contacts: Dr. Cindy Ramey, [ramey@cmsu1.cmsu.edu](mailto:ramey@cmsu1.cmsu.edu)

Dr. Sue Sundberg, [ses8721@cmsu2.cmsu.edu](mailto:ses8721@cmsu2.cmsu.edu).

June 4-9: Franklin & Marshall College, Lancaster, PA

Viewpoints: Mathematics and Art

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Viewpoints is an intensive workshop featuring classroom tested activities and field trips which explore the connection between mathematics and art. Activities can be used collectively to form a full semester course, or as independent modules to enhance and enliven a wide range of courses. This workshop is sponsored by the EPADEL Section of the MAA.

Contact: Annalisa Crannell, [a\\_crannell@acad.fandm.edu](mailto:a_crannell@acad.fandm.edu)

June 5-9: Fort Lewis College, Durango, CO  
Teaching Dynamical Systems Across the Curriculum

This course, taught by Professor Robert Devaney, will focus on methods by which ideas from dynamical systems theory may be included in various parts of the undergraduate curriculum. These topics provide an ideal opportunity to give students (particularly lower division students) a glimpse of modern ideas in mathematics in a setting that is germane to the course at hand. The short course is sponsored by the Rocky Mountain Section of the MAA.

Contact: Annette Cooper, 970.247.7232, [Cooper\\_a@fortlewis.edu](mailto:Cooper_a@fortlewis.edu)

June 5-10: Rensselaer Polytechnic Institute, Troy, NY  
Partnerships: Engineering and Mathematics

Participants will study materials developed by NSF Mathematical Sciences and their Applications Across the Curriculum program, and work in interdisciplinary teams to adapt and develop materials for use at their home institution. Topics come from all levels of the undergraduate curriculum in mathematics and engineering using storyboarding and technological delivery. Applications for the workshop are accepted from teams of two to four, which must include one mathematics and one engineering faculty. This workshop is sponsored by the MAA.

Contact: Maureen Callanan, 202.483.5450 (FAX), [mcallana@maa.org](mailto:mcallana@maa.org)  
Application Deadline: May 1, 2000

June 19-23: Allegheny College, Meadville, PA  
Teaching Statistics: Data, Concepts, Activities

This short course, presented by Professor Allan Rossman, aims to help instructors to teach introductory statistics in accordance with the recommendations of a joint ASA/MAA committee: emphasizing statistical thinking with more data and concepts, less theory and fewer recipes. Participants will engage in hands-on investigations of statistical concepts and methods that can be adopted for immediate use with students. Many of these activities will make use of Minitab statistical software. These activities concern such topics as data collection, exploratory data analysis, randomness, and statistical inference. Sessions will also be devoted to discussing resources for teaching statistics and to issues of assessing students' learning of statistics. Sponsored by the Allegheny Mountain Section of the MAA.

Contact: Steve Bowser, 814.332.5348, [sbowser@pellns.alleg.edu](mailto:sbowser@pellns.alleg.edu)

June 25-30: University of New Hampshire, Durham, NH

### In Search of Newton

This short course will focus on the combined calculus and physics curriculum at University of New Hampshire. Participants will study updates and changes to both the calculus and physics curriculum, and will examine class materials and the studio format of instruction. This short course is sponsored by the Northeastern Section of the MAA.

Contact: Kelly Black, [kelly.black@unh.edu](mailto:kelly.black@unh.edu)

June 28-30: Cedarville College, Cedarville, OH

Proofs and Conjectures: The Story of the Alternating Sign Matrix Conjecture

Discrete mathematics is now a regular part of the undergraduate mathematics curriculum at most colleges. Too often, the adjective "discrete" also applies to the individual topics which seem to bear little relationship to each other. They lack a sense of historical development. The stories and connections are missing. This short course, presented by Professor David Bressoud of Malachester College, provides a chance to share some favorite stories. They interweave in often surprising ways and each lead, in some fashion, to the story of the alternating sign matrix conjecture. There will also be a lot of hands-on work, with opportunities to explore the algorithms and patterns that arise. This summer short course is sponsored by the Ohio Section of the MAA.

Contact: James Sellers, 937.766.7695, [sellersj@cedarville.edu](mailto:sellersj@cedarville.edu)

### July, 2000

July 5-7: Lebanese-American University, Beirut, Lebanon

International Conference on Technology in Mathematics Education

The conference provides a forum for educators, researchers and developers to share their experiences on the use of technology at the university level as well as the secondary school. We hope that this conference will provide a forum for in-depth treatment, as well as informal exchange that will promote the creative use of technology in Lebanon as well as the neighboring Arab countries. In addition, it will provide a dialogue between practitioners and researchers in the developed nations and the developing countries.

Contact: May Abboud, [mabboud@beirut.lau.edu.lb](mailto:mabboud@beirut.lau.edu.lb)

Deadlines: March 30, 2000, abstracts for papers

July 17-20: Carroll College, Helena, MT

Partnerships: Life Sciences and Mathematics

Participants will study materials developed by NSF Mathematical Sciences and their Applications Across the Curriculum program, and work in interdisciplinary teams to adapt and develop materials for use at their home institution. Topics come from all levels of the undergraduate curriculum in mathematics and population growth, the environment, human physiology, animal population, and more. Applications for the workshop are accepted from teams of two to four,

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which must include one mathematics and one life sciences faculty. This workshop is sponsored by the MAA.

Contact: Maureen Callanan, 202.483.5450 (FAX), mcallana@maa.org  
Application Deadline: May 1, 2000

July 31-August 5: UCLA, Los Angeles, CA  
Project NExT: New Experiences in Teaching

Project NExT is the MAA's program for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. Faculty who are just beginning or just completing their first year of full-time teaching at the college/university level are invited to apply to become Project NExT Fellows.

Contact: T. Christine Stevens, 314.977.2436, stevenssc@slu.edu  
Application Deadline: April 14, 2000

**Editor's Note:** I apologize for the poor quality of the pictures in the mailed version of the Fall Newsletter. The pictures are clear when viewed on the Missouri Section Web Page. The pictures were also clear when I viewed them on my computer screen, when I printed them, and when I copied them on our department's copier. I assumed the pictures would have the same quality when they were copied by the printing service here on campus. I would again like to include pictures from the Spring Meeting in the Fall 2000 Newsletter, but I will need to investigate the cost of using printing rather than copying.