

MAA MISSOURI SECTION NEWSLETTER

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2010 MAA Missouri Section Meeting

The **Mathematics Department** of the **University of Central Missouri** in Warrensburg is looking forward to hosting the **Spring Meeting of the Missouri Section of the Mathematics Association of America** on Friday April 9 and Saturday April 10, 2010 (with the Missouri Collegiate Mathematics Competition beginning the evening of Thursday April 8). More information about the meeting including directions, accommodation, and online registration can be found at the meeting website: <http://www.math-cs.ucmo.edu/maa2010> .

The main speaker for the meeting is **Daniel J. Velleman**. Dr. Velleman received his B.A. from Dartmouth College in 1976 and his Ph.D. from the University of Wisconsin-Madison in 1980. He taught at the University of Texas before joining the faculty of Amherst College in 1983. He is the author of *How to Prove It* (Cambridge University Press, 1994), coauthor (with Stan Wagon and Joseph Konhauser) of *Which Way Did the Bicycle Go?* (MAA, 1996), and coauthor (with Alexander George) of *Philosophies of Mathematics* (Blackwell Publishers, 2002). He received the MAA's Lester R. Ford award in 1994 and its Carl B. Allendoerfer award in 1996. He is currently editor of the American Mathematical Monthly. Dr. Velleman will be giving two lectures at the meeting:

1. A Logician Does Analysis

Abstract: I will use some ideas from mathematical logic to prove a familiar theorem of analysis.

2. An Introduction to Constructive Mathematics

Abstract: Almost all mathematicians agree about what methods of reasoning are acceptable in mathematics--almost all, but not quite all. A small group of mathematicians practice a kind of mathematics known as constructive mathematics. Constructive mathematicians do not accept all of the laws of logic that most mathematicians use. For example, they do not accept the Law of Excluded Middle, which says that for any statement P , either P or not- P is true. Since constructive mathematicians do not use the same laws of logic as other mathematicians, the theorems they prove are also different. In this talk, I will discuss the philosophical motivation for constructive mathematics, and then I will give some examples to illustrate the methods and theorems of constructive mathematics.

Shing So
so@ucmo.edu

2010 MAA MO Section Meeting Tentative Schedule

Thursday, April 8

7:30—10:00 PM Collegiate Mathematics Competition

Friday, April 9

Registration: 10:00 AM - 5:00 PM

8:30 – 11:00 AM Collegiate Mathematics Competition

8:45 – 10:45 AM Project NExT Workshop

1:00 – 1:50 PM Welcome Remarks and MAA Invited Talk (Dan Velleman, Math Monthly Editor)

1:00 – 5:00 PM Displays, Exhibits, MAA Book Sale

2:00 – 5:30 PM Contributed Papers

6:30 – 8:30 PM Banquet; Banquet Speaker: James Guffey, Truman State University

8:30 – 9:30 PM Executive Committee Meeting

Saturday, April 10

6:15 – 7:00 AM 5K Run/Walk

7:30 – 8:20 AM Breakfast meetings of Department Chairs and MAA Liaisons

8:00 – 10:00 AM Registration, Displays, Exhibits, MAA Book Sale

8:30 – 9:45 AM Contributed Papers

10:00 – 10:50 AM MAA Invited Address (Dan Velleman, Math Monthly Editor)

11:00—11:50 AM Business Meeting

CALL FOR PAPERS

You are invited to present a paper at the Spring Meeting. Papers are to be between 15 and 20 minutes in length and may be on research topics or expository in nature and may deal with any topic in mathematics or mathematics education. Faculty members are urged to assist honors students in presenting papers at the meeting. The abstract form is on the last page of this newsletter. Deadline for receipt of abstracts is **March 1, 2010**.

Secretary/Treasurer Nominations

Nominations for the position of Secretary/Treasurer are now being accepted. This is a 3 year position. As stated in the Section Bylaws:

The Secretary-Treasurer shall keep all the books, accounts, and records of the Section. The Secretary-Treasurer shall receive all monies paid into the Section for any purpose and shall deposit such money in a bank to the account of the Section, taking regular receipt of deposit thereof. The Secretary-Treasurer shall pay all bills of the Section out of the Section funds after the approval of the Chair. After each meeting of the Section the Secretary-Treasurer shall prepare a summary of the meeting and submit it to the Secretary of the Association.

Please send nominations to the Section Chair Shing So (email: so@ucmo.edu). Nominations will be forwarded to the nominating committee.

Future Meeting Sites

The Spring Meeting is held at various locations around the state. The meeting sites for the past several years and the next seven years are listed below for your convenience. If your campus would be willing to host a Spring Meeting, please contact Shing So, Chair, or any other member of the Executive Committee.

2001	U. of Missouri-Rolla	2009	Truman State University
2002	Truman State University	2010	University of Central Missouri
2003	Washington University	2011	Columbia College
2004	Southeast Missouri State University	2012	University of Missouri-St. Louis
2005	Missouri Western State College	2013	Northwest Missouri State University
2006	University of Missouri-Columbia	2014	Saint Louis University
2007	College of the Ozarks	2015	Missouri University of Science and Technology
2008	Missouri State University	2016	Missouri Western State University

University of Central Missouri Regional Undergraduate Mathematics Conference

We are pleased to announce that the 2010 UCM Regional Undergraduate Mathematics Conference will be held on Thursday, April 8, 2010 on the campus of the University of Central Missouri in Warrensburg, MO. This conference will take place between the hours of 10:00 a.m. and 4:30 p.m., on the day preceding the Spring meeting of the Missouri Section of the MAA, and hours before the Missouri Collegiate Mathematics Competition, both of which will be held at UCM.

The conference will begin with a plenary lecture, given by Professor Daniel J. Velleman, editor of the American Mathematical Monthly, at the level of second semester calculus. This will be followed by several 15-20 minute contributed undergraduate talks. A continental breakfast will be provided during registration and lunch will be provided between the morning and afternoon sessions.

Undergraduates at all levels are invited to present short talks on their research in any area associated with mathematics, its applications, its history, or its education. The deadline for submitting abstracts is March 8, 2010. Further information and registration instructions can be found at the conference website www.math-cs.ucmo.edu/~CUMC

Please forward questions to either

Dr. Nicholas Baeth (baeth@ucmo.edu) or

Dr. Lianwen Wang (lwang@ucmo.edu).

We look forward to seeing you in April.

Funding for this conference is provided by NSF grant DMS-0846477 through the MAA Regional Undergraduate Mathematics Conferences program.

MISSOURI PROJECT NExT

Project NExT (New Experiences in Teaching) is a national program for new or recent faculty in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. Missouri NExT is a similar program designed for faculty members in the Missouri Section of the MAA. Any full-time faculty member in the Section with less than 6 years in current position is invited to apply to become a Missouri NExT Fellow. Information about Project NExT is available at the NExT web site: <http://archives.math.utk.edu/projnext/>

Project NExT Fellows will meet for a morning workshop on Friday April 9, 2010 just prior to the Spring Missouri Section meeting. At the workshop, the Fellows will have a chance to interact with one another while attending sessions dealing with different aspects of our profession. It is anticipated that contact between fellows will continue through the year, both electronically and in person. Fellows will be linked in an electronic network with one another and with a number of distinguished teachers of mathematics.

SUPPORT: Expenses for the Friday morning program including breakfast and lunch, and full registration costs for the Missouri Section Spring meeting will be covered for new Fellows. The remainder of the expenses should be covered by the Fellows' home institutions. However some funds may be available for accommodation costs in cases where the Fellow's home institution is not able to cover these costs (see application form). Financial support for this program is provided by the Missouri Section of the MAA and by another grant.

TO APPLY: Application forms can be found at

http://web.missouri.edu/~aubreyja/mo_next/application.html

Send completed form by April 1, 2010 to:

Dr. Mary Shepherd
Temporary Missouri NExT Organizer
Department of Mathematics
Northwest Missouri State University
Maryville, MO 64468

Phone: (660) 562-1205

Fax: (660) 562-1188

E-mail: msheprd@nwmissouri.edu

Missouri Collegiate Mathematics Competition

The fourteenth Missouri Collegiate Mathematics Competition will be held Thursday, April 8, 2010 and Friday, April 9, 2010 on the campus of the University of Central Missouri 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, 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 be allowed if this person is his or her college's only representative in the competition. A completed registration form for each team must be received by Monday April 5, 2010. Late registration will be accepted only if there is room available. No calculators or computers or reference material can be used during the competition. The contest consists of challenging mathematical problems, comparable to but not quite as difficult as the Putnam Exam.

The first session will begin on Thursday evening at 7:30 pm and last until 10 pm and the second session will begin on Friday at 8:30 am and will end at 11 am. There are five problems in each session. Each problem will be worth 10 points and will be scored by a committee of the MAA Missouri section. Some partial credit may be earned for substantially correct work toward a solution to the problem. The team earning the highest total points is the winner. In case of a tie, the committee will vote to determine the winning team.

The registration fee is \$90 per team. A complementary continental breakfast will precede the Friday morning competition. Each team member and the faculty sponsor are invited to a Friday pizza party at 11:30 am. 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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email: cooper@ucmo.edu

P.S. The Missouri Collegiate Mathematics Competition home page can be accessed directly with the URL <http://www.math-cs.ucmo.edu/~hchen/contest/>

FROM THE GOVERNOR

The MAA Board of Governors met January 12, 2010 in San Francisco, CA. MAA President David Bressoud presided. It was noted that Frank Farris was elected to serve as Chair of the Council on Publications and on the MAA Executive Committee after this January Meeting. He replaces Paul Zorn who will be serving as President-elect. Martha Siegel's term as Secretary will end at the conclusion of this meeting and Barbara Faïres will become the next Secretary.

Among other things, President Bressoud announced the start up of the NSF-DRL REESE grant, *Characteristics of Successful Programs in College Calculus*, and the beginning of planning a Second Century Campaign that will coincide with MAA's 100th birthday party in 2015 and support the programs and activities of MAA's next century.

There has been a clear upward trend in the overall MathFest attendance numbers. The total attendance at MathFest 2009 in Portland was 1516 (mathematicians: 1411, undergraduate students: 247, graduate students: 85), representing an 8% increase from the 2008 total.

MathFest 2010 will be held in Pittsburgh on August 5-7. Invited addresses include Robert Devaney (Hedrick Lectures), Frank Farris (MAA), Somer Gentry (Lecture for Students), Rebecca Goldin (MAA), Martin Golubitsky (MAA), William McCallum (Leitzel), Asamoah Nkwanta (Blackwell), Ami Radunskaya (Falconer) and Zvezdina Stankova (MAA). A full slate of six minicourses is being planned, plus a short course on experimental mathematics.

There has also been a steady increase in attendance at the joint meetings. The total at the 2009 JMM in Washington, DC was 6965 (mathematicians: 5144, undergraduate students: 650, graduate students: 915), representing a 5% increase from the 2008 total.

The Treasurer's section on the website (<http://www.maa.org/treasurer/>) is now being used effectively to make the MAA finance programs transparent to the membership. The Treasurer's report indicated that the MAA made it through the 2008-2009 financial ordeal working within its operating capital account and did not have to draw down any of its investments. Also, our supporters have matched the first Halmos matching gift in record time, but we are experiencing problems making the latest \$200,000 one-to-one match.

The MAA portfolio (total value by 9/30/09: \$7.8M) has shown great improvement in the last two quarters and our chart of *total net assets* is back on its growth curve.

The Budget Committee reported that the 2009 operating budget will come close to the forecast deficit of \$225,779, while the forecast for the 2010 operating budget only calls for a deficit of \$37,559. The overall health of MAA has permitted us to weather operating deficits several years in a row without an undue level of risk, but it's in our interest to move toward the ideal of generating small operating surpluses in at least some years.

For 2011, all membership dues categories will increase by 2% over the 2010 rate with the exception of student memberships, which will remain at the 2010 rates. The rationale was that a slight increase would be helpful in moving the operating budget toward the black while still respecting the fact that many members are not currently receiving raises in salary.

The MAA Task Force on an Expanded Website of Information for Highly Gifted Young Students and their Parents proposes that the MAA seeks funding to host at the Carriage House a meeting of the central players in the area of the highly gifted in mathematics. The goal of this meeting is to determine where such a website is best housed and by what means it should be supported and maintained. The meeting should involve the major players such as MSRI, NCTM, AMS, AMC, the National Association of Math Circles, the Art of Problem Solving Group, Mathcounts, the Math Forum, etc.

The Strategic Planning Working Group on Meetings presented their report. Their main recommendations include:

- Keep registration fees as low as possible while covering the costs of the meetings.
- Work with the Committee on Short Courses to find ways to increase revenue and cut costs.
- The Committee on Sessions of Contributed Papers should make sure that the list of CPS for a particular meeting represents the breadth of the MAA mission.
- In marketing our meetings, highlight the diversity (especially the ‘real math’ topics) of the Contributed Paper Sessions, the invited lecturers, and invited paper sessions. Remind people of the wide range of interests of our members and of the events at the meeting.
- Continue the recent trend of having invited paper sessions at both meetings.
- Consider renaming the (non-general) Contributed Paper Sessions, to distinguish them from the General CPS and other AMS CPS.
- As the MAA website is revised, work with the Council on Professional Development and Meetings to select and organize the information displayed on their sections of the site.
- Continue the activities for both undergraduate and graduate students that were done at MathFest 2009 and actively advertise them.
- Add mathematics exposition to our program without necessarily subtracting mathematics pedagogy, in order to enable many faculty members to attend and to attract more of them.
- Continue to work closely with Project NExT to coordinate NExT summer workshops and MathFest. Find ways to stay in touch with NExT Fellows after their fellowship year.
- The Council on Professional Development and Meetings should act as the coordinating committee for each national meeting. The MAA should not establish new standing program committees for JMM and MathFest.
- The MAA should establish a new Committee on Invited Paper Sessions, and the Council should recommend a name and a formal charge for the MathFest Management Committee/MathFest Group and use it consistently.

Cycle III Strategic Planning Group on Publications will present theirs at the 2010 MathFest. At the completion of this cycle, we will stop, study the reports carefully, and begin to set priorities and make plans.

Executive Director Tina Straley mentioned that, although we have a good number of continuing grant projects that are very valuable additions to MAA programs, most do not pay much in the way of MAA direct and indirect expenses. Thus, we saw a loss of income with the termination and trailing off of funding for PMET and MathDL. With grant money we have ups and downs. The MAA has many programs, funded by gifts and grants to MAA, which in turn fund individuals and departments. These include student travel grants, undergraduate research conferences, research experience summer programs for underrepresented populations, enrichment programs for middle school, high school, and beginning college students, the faculty development workshops. In total, the MAA makes approximately 250 awards a year.

Although the MAA journals have been available online for several years, this may be the year in which online access becomes a significant component of member benefits. About 25% of new and renewed members are choosing e-membership. We will need to continue a general overhaul of our website and to serve our constituencies, especially groups like Sections and SIGMAAs.

We will next look into Departmental Memberships, as immediately impacted by the new benefits student nominees receive. The larger issue is the benefits to the departments.

We continue to be engaged in public policy issues, especially on the need for STEM, particular mathematics, majors and the need to reach out to and retain minority students.

The rental activity of Carriage House is expanding and will hopefully soon cover a significant portion of its operating costs. Check the MAA website for details of the Carriage House's lecture series. Stories on the lectures and interviews (including audio excerpts) are available through the MAA website. In addition, video segments of the lectures are posted on the new MAA Video channel on YouTube (<http://www.youtube.com/maavideo>).

Currently funded projects: Characteristics of Successful Programs in College Calculus (NSF-DRL), WeBWork: Improving Student Success in Mathematics (NSF-DUE) (http://webwork.maa.org/wiki/Main_Page), MAA Distinguished Lecture Series (NSA) (www.maa.org/dist-lecture), MAA Regional Undergraduate Mathematics Conferences (NSF-DMS) (www.maa.org/rumc), MAA SUMMA Research Experiences for Undergraduates (NSA, NSF, Moody's) (www.maa.org/nreup), MAA Professional Enhancement Program (PREP)(NSF) (www.maa.org/prep), Syndication of "Hard Problems" on American Public Television (<http://www.maa.org/news/091409hp.html>), Travel Grants for Undergraduate Students to Attend National Meetings (NSA, NSF), Tensor grants for Women in Mathematics.

All members with electronic memberships now receive a 'table of contents' email as soon as each new journal issue becomes available online at Ingenta. Overall journal circulation is down (Monthly -5%, Math Magazine -5%, CMJ -4%), continuing the downward trend of the last few years. The number of views per month of the digital editions of the journals fluctuates from month to month, but overall has been growing for all three titles.

MAA is working to develop a proposal to NSF to support the creation of an online archive and database of the problems and solutions published in the three MAA journals. It would be a valuable teaching and learning resource.

Starting 2010, future issues of MAA Focus will each include an attractive poster to promote an MAA event or activity and other features designed to encourage readership of both the print and online editions.

The circulation of Math Horizons is down (by 5-9%) over the previous years. Ingenta is hosting the standard digital edition of Math Horizons, so all subscribers have online access to current issues. For October 2009, the top three full-text downloads were journal problem sections. The top article in the list was "Voting, the Symmetric Group, and Representation Theory" published in the October Monthly, followed by the note "Starting with Two Matrices" published in the October Mathematics Magazine.

The 2009 AMC 8 contests were held on November 17. Final registration was 2,256 schools (approximately 150,000 students), a 2.6% increase from 2008 and larger than the past 4 years. Preliminary analysis shows that the mean and median of the contest are within one problem of last year's statistics of about 10 correctly answered. The 2010 AMC 10 and AMC 12 contests will be held on February 9 and February 24, and the 2010 AIME contests will be on March 16 and March 31.

There were 27 books worked on in 2009, 24 of which are already in print. Bestselling books in 2009: (1) Math Through the Ages, (2) Game Theory and Strategy, (3) Mathematical Interest Theory, (4) Sink or Float: Thought Problems in Math and Physics, (5) First Steps for Math Olympians, and (6) Geometry Revisited. The MAA is the publisher of two e-books – Mathematics for Business Decisions and Calculus: Modeling with Applications.

A third title is not far behind. Financial considerations alone make it difficult for the MAA to jump into e-books with both feet.

Even though it wasn't originally committed when the e-membership was approved, the feature of having each of the three core journals available as add-ons is now available to an e-membership.

In September, the MAA switched to anniversary date memberships for most types of individual membership. This means that a new member now will begin their membership on the day the order is processed and will receive a full twelve months of MAA benefits. This will allow memberships not to look backwards, but will provide benefits going forward. The need for excess journal inventory will be minimal. The renewal campaigns will no longer be seasonal, either.

A draft of the revised MAA Bylaws was presented by the Ad Hoc Committee on Bylaw Revision to the Board for comments. Major changes proposed are:

- The role of the Board has significantly increased. The Board will elect council chairs, and one of its own members to the Audit Committee.
- Whenever possible, omit specifying details, making it easier for the Board to make decisions without changing the bylaws.
- The role of the Councils is greatly strengthened. Council Chairs will serve on the Board of Governors.
- Journal editors will not, by virtue of their position as editors, serve on Board; but the Chair of the Council on Publications will serve on the Executive Committee.
- The relationship of the Budget Committee, the Investment Committee, and the Audit Committee will be clarified.
- More will be said about the duties, responsibility, and administrative authority of the Executive Director.
- Efforts will be made throughout to anticipate and properly authorize electronic voting, electronic communication in committees, and the possibility of non-print journals.
- A single nominating committee with expanded responsibilities, chaired by the Past President, will be formed with the charge to balance the need for experience and competence against the tendency to repeatedly turn to the same people.
- Two new officers (Associate Secretary and Associate Treasurer) have been introduced.

After providing the Committee with comments, the Board will review a revised draft at the next meeting.

Dates and locations for future Joint Meetings and MathFests are

2010	Pittsburgh, PA	MathFest	August 5-7
2011	New Orleans, LA	Joint Meetings	January 5-8
2011	Lexington, KY	MathFest	August 4-6
2012	Boston, MA	Joint Meetings	January 4-7
2012	Madison, WI	MathFest	August 2-4
2013	San Diego, CA	Joint Meetings	January 9-12
2013	Hartford, CT	Math Fest	August 1-3
2014	Baltimore, MD	Joint Meetings	January 15-18
2014	Portland, OR	MathFest	August 7-9
2015	San Antonio, TX	Joint Meetings	January 10-13
2015	Washington, DC	MathFest	August 5-8
2016	Seattle, WA	Joint Meetings	January 6-9
2017	Atlanta, GA	Joint Meetings	January 4-7

The **MAA Missouri Section Newsletter** is published in October, March, and May each year. Please send any news, comments, questions or corrections to me at setourville@ccis.edu.

Suzanne Tourville
Newsletter Editor

**MISSOURI SECTION
OF
THE MATHEMATICAL ASSOCIATION OF AMERICA**

ABSTRACT FOR CONTRIBUTED PAPERS

Name(s) (* means Speaker): _____

Institution: _____

Address: _____

Phone: (_____) _____

Email: _____

PAPER TITLE: _____

BRIEF ABSTRACT OR DESCRIPTION OF PAPER:

AMS SUBJECT CLASSIFICATION (see [Math. Subj. Class.](#)) _____

SPECIAL ACCOMMODATIONS NEEDED (Overhead projector, computer, etc.):

Is the speaker a student? _____

Is the presentation directed toward a student audience? _____

PLEASE RETURN THIS FORM BY **MARCH 1, 2010**, TO:

Shing So
Department of Mathematics and Computer Science
University of Central Missouri
Warrensburg, MO 64093

Or e-mail to so@ucm.edu.