

# MAA MISSOURI SECTION NEWSLETTER

## Fall 2014 • VOLUME 34 • NUMBER 1

### From the Chair (Robert Roe)

#### 2015 MAA Missouri Section Meeting

The Department of Mathematics and Statistics at Missouri University of Science and Technology will be hosting the Spring Section Meeting on Friday, March 27 and Saturday, March 28, 2014 (with the Missouri Collegiate Mathematics Competition beginning the evening of Thursday, March 26). Steven Dunbar of the University of Nebraska-Lincoln who is the Director of Competitions, American Mathematics Competitions, will be visiting the section and speaking at the meeting. Other invited speakers are Angie Hodge of the University of Nebraska Omaha and Martin Bohner of Missouri University of Science and Technology.

More information on the meeting will become available on the meeting webpage, <http://web.mst.edu/~rroe/MAA2015.htm>

This year is the 100<sup>th</sup> anniversary of the MAA. All suggestions for the meeting, particularly those that help us celebrate this centennial year, are welcome. Please send them to Section Chair Robert Roe ([maa2015@mst.edu](mailto:maa2015@mst.edu)).

#### Call for papers

You are invited to present at the Spring Meeting. Presentations 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. For example, papers may pertain to your current mathematical scholarly activity, new courses that you have developed, or successful techniques you have found useful in teaching. You may opt to design a presentation directed to the undergraduate and graduate students attending the meeting. Faculty members are urged to assist students in presenting papers at the meeting.

The form for contributing a presentation at the meeting is on the last page of this newsletter. You may attach a scanned copy of the completed form and email to [maa2015@mst.edu](mailto:maa2015@mst.edu) (please use "MAA abstract" in the subject line) or send by to the address on the form.

Deadline for submissions is **March 13, 2015**.

## From the Governor (Yungchen Cheng substituting for Susan Callahan)

The MAA Board of Governors met August 6, 2014 in Portland, OR. MAA President Robert Devaney presided.

President Devaney welcomed President-Elect, Francis Su, and new Vice-Presidents, Jenna Carpenter and Karen Saxe to the Executive Committee.

He specifically mentioned the visit of a dozen Iranian mathematicians at the JMM in Baltimore and their tour of several institutions around the US. He was impressed with the diversity of their endeavors as well as the fact that there were several female mathematicians in the Iranian delegation. The participants were all very thankful to the MAA for helping to host their travels, and they definitely want to become more involved with the MAA. Given the rising interest in many countries around the globe in topics involving undergraduate education, he wondered if we could find a way to allow for some sort of special membership in the MAA for people from “disadvantaged” or “developing” countries (however this is to be interpreted) or some sort of reciprocity membership (as the AMS provides). This would not only increase our visibility worldwide, but would also be a significant benefit for the greater mathematical community.

President-Elect Francis Su encouraged the Board members to always be ready to articulate why the MAA matters to us. The MAA promotional materials say: “MAA, Participate. Investigate. Educate.” But, what would a member gain by being a member? How can we tell a compelling story about the MAA in just 3-5 words?

From his visits to sections, he identified the following: (1) Fun student activities are a healthy driver of student participation and overall attendance. (2) Plan social activities where people can build connections and friendships. (3) Use Section budgets to incentivize practices that reflect our value for community, such as investing in building a distinctive Section culture, encouraging participation of new faculty, encouraging participation from schools that haven’t been active, and (4) Encouraging faculty collaborations, valuing the community of MAA authors and books, etc.

Secretary Faires mentioned the implementation of a copyright policy by requiring members serving on committees assign copyright of any work done through that committee to MAA to protect the valuable work of our volunteer professionals and to give MAA the means to control inappropriate use of intellectual property generated through Association activities. See <http://www.maa.org/about-maa/policies-and-procedures/copyright-agreement>.

She again invited committee assignment recommendations, noting that most committee terms begin January 1 of each year. (The committees list can be found at <http://www.maa.org/about-maa/governance/council-and-committees-list> ; if anyone would like to be recommended, please contact me at [yungchencheng@missouristate.edu](mailto:yungchencheng@missouristate.edu) or Susan Callahan at [scallahan@cottey.edu](mailto:scallahan@cottey.edu).)

Associated Secretary Gerard Venema reported good attendance at MathFest 2014. A total of 418 abstracts were submitted by the deadline. The following chart shows attendance trends for the past decade:

Year	Venue	Nonstudent Mathematicians	Undergrad Students	Graduate Students	Total Attendance
2003	Boulder	705	123	31	1021
2004	Providence	849	182	38	1230
2005	Albuquerque	836	166	61	1134
2006	Knoxville	776	158	20	1093
2007	San Jose	1051	255	48	1431
2008	Madison	992	269	78	1402
2009	Portland	1079	247	85	1516
2010	Pittsburgh	1013	336	89	1548
2011	Lexington	937	279	78	1400
2012	Madison	1075	235	75	1473
2013	Hartford	1029	295	63	1505

MathFest 2015 will be the MAA’s centennial celebration meeting. Preparations for the meeting have already been underway for several years and are being coordinated by a Centennial Planning Committee chaired by Deanna Haunsperger and Stephen Kennedy. In order to allow time for all the special centennial activities that are planned, MathFest 2015 will be extended by one day and the scientific program will begin on Wednesday morning. The Canadian Society for the History and Philosophy of Mathematics and the British Society for the History of Mathematics will hold their 2015 annual meetings jointly with the MAA.

The following speakers have accepted invitations to give “MAA Centennial Lectures” at the Washington meeting:

- Manjul Bhargava, Princeton University
- Carlos Castillo-Chavez, Arizona State University
- Jennifer Chayes, Microsoft Research
- Ingrid Daubechies, Duke University
- Erik Demaine, MIT
- Karen Parshall, University of Virginia

The Hedrick Lectures will be given by Karen Smith of the University of Michigan.

The 2014 Joint Mathematics Meetings were held in Baltimore. Overall attendance was down about 3% from the previous year, but still in line with historic trends.

Year	Venue	Nonstudent Mathematicians	Undergrad Students	Graduate Students	Total Attendance
2004	Phoenix	3150	292	501	4725
2005	Atlanta	3180	361	627	4874
2006	San Antonio	3281	377	656	5068
2007	New Orleans	3252	476	703	5236
2008	San Diego	3510	527	718	5653
2009	Washington DC	3579	650	915	5965
2010	San Francisco	3272	683	932	5795
2011	New Orleans	3490	759	873	5986
2012	Boston	4108	948	1084	7156
2013	San Diego	3805	929	917	6672
2014	Baltimore	3691	950	909	6448

Some program highlights at JMM 2015:

- Bob Devaney will give his MAA Retiring Presidential Address on “The Fractal Geometry of the Mandelbrot Set”. Michel Lapidus and Robert Niemeyer are organizing an MAA Invited Paper Session on “Fractal Geometry and Dynamics” that will complement Bob’s address and honor Bob’s contributions to mathematics.
- Christiane Rousseau of the University of Montreal will give an MAA Invited Address on “Divergent series and differential equations: past, present, future....” Christiane was one of the leaders of MPE2013 and she and Hans Kaper of Georgetown University are organizing an MAA Invited Paper on “The Mathematics of Planet Earth” that is intended to follow up on the MPE2013 effort.
- Ken Ono of Emory University will give an MAA Invited Address on “Golden numbers and identities: The legacy of Rogers and Ramanujan”. He is also organizing an MAA Invited Paper Session on “The Mathematics of Rogers and Ramanujan” that will complement his talk.
- Donald Saari, UC Irvine, will give the Porter Public Lecture on “The Mathematics of Voting”. Mike Jones of Math Reviews, together with colleagues Tommy Ratliff of Wheaton College and Russel Caflisch of UCLA, will organize an MAA Invited Paper Session that will explore the same topic at a level appropriate for an audience of professional mathematicians.
- In her MAA Invited Address, Catherine O’Neil will make the case for Data Journalism.
- Diana Thomas will give an MAA Invited Address in which she uses mathematical modeling to dispel myths regarding obesity.
- The two AMS-MAA Joint Invited Addresses will be given by Richard Tapia and Jordan Ellenberg.
- The MAA Lecture for Students will be given by George Hart of Stony Brook University. He will use examples from the Museum of Mathematics in New York City to demonstrate that mathematics is a living, creative, joyful subject.

Treasurer Jim Daniel reported that our investment returns exceeded our benchmark returns by more than the fee we paid TIAA-CREF Trust for management of our funds. Our Total Cumulative Assets (\$13.0 Million) showed the Association to be financially healthy.

The staff and volunteers have been working hard to break the pattern of past deficits and expect soon to see operating surpluses that can begin to build free reserve toward a goal of 70% of the operating budget. Still, it will require financial discipline and Board support.

The Associate Treasurer reported the actual operational deficit for 2013 was \$208,655. A recent 3-year \$750,000 grant from Simons Foundation for the AMC will be recorded as 2014 income and thus likely show 2014 operations a positive net income. The proposed 2015 budget will have an anticipated deficit of \$98,000. MAA finances are moving in the right direction and, if membership income continues to grow as well as income from book sales and AMC, then MAA will be in a position to start rebuilding its free reserves.

Executive Director Michael Pearson reiterated the over-arching theme of “increase member engagement”, which includes the goal of building our membership by attracting and retaining

early-career faculty who will make up our core membership in the coming years. The launch of the new membership structure provides a base “membership product” on which we hope to base our efforts. He stressed that we need to articulate ways in which belonging to the MAA can make our colleagues’ professional lives more productive and less stressful. A new model of departmental membership under discussion will seek three goals: departmental membership should (1) not include print journals as the key component of the membership; (2) aggressively seek to engage graduate students, as well as assist departments in engaging undergraduate students, and (3) differentiate based on the institution’s size and degrees offered.

He further outlined MAA’s expanding and improving development efforts, such as attracting revenue from private sources to support programs such as Project NExT. The Second Century campaign will move to a public phase at MathFest this year, with \$3.5 million has already been raised during the silent phase. Continued Improvement of MAA website is another ongoing endeavor of high priority, so are increasing sales of MAA books, print and electronic, and broadening participation in MAA AMC contests.

Section elections were held for the Allegheny Mountain, Golden, Indiana, and Metropolitan New York, Nebraska-SE South Dakota, Oklahoma-Arkansas, Rocky Mountain and Wisconsin Sections. We had a record turnout of 22.9% voting.

Currently MAA has 14 federal grants (total budget \$11.5 million) and five privately funded programs (annual budget of \$700,000), including Project NExT, such as:

- Training the Next Generation of Mathematical and Statistical Sciences Professionals: A Workforce Development Project (NSF-DMS, Linda Braddy and Ronald Wasserstein)
- Undergraduate Curriculum Guide for the Mathematical Sciences (NSF-DUE, Martha Siegel and Carol Schumacher)
- Characteristics of Successful Programs in College Calculus (NSF-DRL, David Bressoud, Chris Rasmussen, and Vilma Mesa)
- WeBWork: Improving Student Success in Mathematics (NSF-DUE, Arnie Pizer, Mike Gage, and Vicki Roth)
- MAA Distinguished Lecture Series (NSA, Joe Gallian)
- MAA Regional Undergraduate Mathematics Conferences (NSF-DMS, Michael Dorff, Joe Gallian, Colin Adams, and Dan Schaal)
- MAA SUMMA Research Experiences for Undergraduates (NSA, NSF-DMS, Bill Hawkins and Bob Megginson)
- MAA Professional Enhancement Program (PREP)(NSF-DUE, Nancy Baxter Hastings, Bill Haver, Jon Scott, and Nate Dean)
- Travel Grants for Undergraduate Students to Attend National Meetings (NSF-DMS, Charlotte Simmons)
- Using Research to Shape Instruction and Placement in Algebra and Precalculus (NSF-DUE, Bernie Madison, Marilyn Carlson, and Caren Diefenderfer)
- Tensor Grants for Women in Mathematics (Tensor Foundation, Caren Diefenderfer)
- Tensor SUMMA Grants (Tensor Foundation, Rosalie Dance)
- Dolciani Mathematics Enrichment Grants (Dolciani-Halloran Foundation, Nancy Neudauer)

AMC Director Steve Dunbar reported that a total of 194,583 students from more than 3,750 schools participated in the February 2014 AMC 10/12 contests. Score distributions and statistics were very similar to the 2013 contests. Participation data are available on the MAA website (<http://amc-reg.maa.org/reports/generalreports.aspx>). In March 2014, 7,432 students from 1,496 schools participated in the American Invitational Math Exam (AIME). The November 2013 AMC 8 had 150,227 participants from 2,422 schools. The 2014 USA Mathematical Olympiad (USAMO) took place April 29-30 with 250 participants, and the USA Junior Mathematical Olympiad (USAJMO) on the same days with 245 participants.

The Third European Girls Math Olympiad took place in Antalya, Turkey, on April 10-16. The MAA team placed second among the 29 participating teams with an overall score of 98. Ukraine placed first with an overall team score of 102.

The AMC office in Lincoln closed on June 30, and all fulfillment and customer service operations are now handled by BrightKey and MAA staff at the headquarters office. Furthermore, there will be a clearly defined ownership and intellectual property rights for AMC contests content in all future correspondences between MAA and the volunteers

Meetings and Facilities Director Angelique Wilkins reported that eight lectures have been hosted at the Carriage House this year, all to “sell out” capacity.

- “Your Humble Servant, Is. Newton” was presented by William Dunham on January 28. See <http://www.maa.org/meetings/calendar-events/your-humble-servant-is-newton>.
- “Making Mathematics Real: Knot Theory, Experimental Mathematics, and 3D Printing” was presented by Laura Taalman on February 19. See <http://www.maa.org/meetings/calendar-events/making-mathematics-real-knot-theory-experimental-mathematics-and-3d-printing>.
- Glenn Van Brummelen presented “Triangles before Logarithms: Trigonometry in the Lost Century” on March 10. See <http://www.maa.org/meetings/calendar-events/triangles-before-logarithms-trigonometry-in-the-lost-century>.
- Colm Mulcahy presented “Mathematics, Magic and Mystery and the Man Who Brought Them Together” on April 1. See <http://www.maa.org/meetings/calendar-events/mathematics-magic-mystery-and-the-man-who-brought-them-together>.
- Peter Winkler presented “Games People Don’t Play” on April 23. See <http://www.maa.org/meetings/calendar-events/games-people-dont-play>.
- Francis Su presented “Voting in Agreeable Societies” on May 14. See <http://www.maa.org/meetings/calendar-events/voting-in-agreeable-societies>
- Alissa Crans presented “A Surreptitious Sequence: The Catalan Numbers” on May 21. See <http://www.maa.org/meetings/calendar-events/a-surreptitious-sequence-the-catalan-numbers>.
- Jordan Ellenberg presented “How to Get Rich Playing the Lottery” on June 11. See <http://www.maa.org/meetings/calendar-events/how-to-get-rich-playing-the-lottery>.

MAA’s social media presence continues to expand :

- Google+: 33,287 followers (up from only 500 in March, 2014)
- Facebook: 10,314 fans (up 5% since March)
- Twitter: 16,600 followers (up 10% since March)

- YouTube: 1,123 subscribers (up 23% since March) and 127,359 views of MAA video content (up 19% since March)
- Flickr: 2,319 photos, 1,145,962 views (views up 12% since Q1 2014)
- MAA also realized increases in the followings of The Monthly's Facebook page (up to 4,139 fans, a 9.4% increase since March); MathFest Facebook page and Twitter account (610 fans, 220 followers, respectively); and Math Awareness Month Facebook page (3,749 fans, a 22% increase since March).

Project NExT Director Aparna Higgins reported that eighty new faculty have been selected to form this year's cohort. The Fellows will learn from each other and from the presenters of various sessions in the Project NExT Workshop.

Publications and Communications Director Ivars Peterson reported several key elements for increasing revenues from the sale of MAA books are now in place: expanded book acquisitions, identification of new book publishing opportunities, increased book marketing, and ebook improvements.

The following books were published in the first half of 2014:

- 101 Careers in Mathematics, 3rd Edition by Andrew Sterrett Jr. (Classroom Resource Materials)
- Textbooks, Tests, Training: How We Discourage Thinking by Stephen S. Willoughby (no book series, ebook)
- Ordinary Differential Equations: From Calculus to Dynamical Systems by V.W. Noonburg (MAA Textbooks)
- Game Theory through Examples by Erich Prisner (Classroom Resource Materials, ebook)
- Mathematicians on Creativity, edited by Peter Borwein, Peter Liljedahl, and Helen Zhai (Spectrum)

MAA Top Sellers in Print, MAA Store, January-June 2014

1. 101 Careers in Mathematics, Third Edition, Andrew Sterrett, editor, Classroom Resource Materials, 2014 (267 copies; total to date: 348 copies)
2. Math through the Ages: A Gentle History for Teachers and Others, Expanded Edition, William P. Berlinghoff and Fernando Q. Gouvêa, MAA Textbooks (jointly with Oxton House Publishers), 2004 (207 copies; total 15,178 copies)
3. Game Theory and Strategy, Philip D. Straffin, MAA Textbooks, 1993 (198 copies; total 15,249)
4. Learning Modern Algebra: From Early Attempts to Prove Fermat's Last Theorem, Al Cuoco and Joseph J. Rotman, MAA Textbooks, 2013 (151 copies; total 408 copies)
5. Exploring Advanced Euclidean Geometry with GeoGebra, Gerard A. Venema, Classroom Resource Materials, 2013 (135 copies; total 445 copies)

MAA Top Sellers in Print, Amazon.com, January-June 2014

1. Mathematical Interest Theory, Second Edition, Leslie Jane Federer Vaaler and James W. Daniel, MAA Textbooks, 2009 (136 copies)
2. Math through the Ages: A Gentle History for Teachers and Others, Expanded Edition, William P. Berlinghoff and Fernando Q. Gouvêa, MAA Textbooks (jointly with Oxton House Publishers), 2004 (127 copies)

3. First Steps for Math Olympians: Using the American Mathematics Competitions, J. Douglas Faires, Problem Books, 2006 (114 copies; total 5,475 copies)
4. Geometry Revisited, H.S.M. Coxeter and S. L. Greitzer, MAA Textbooks, 1967 (112 copies; total since 1996: 11,830)
5. Distilling Ideas: An Introduction to Mathematical Thinking, Brian P. Katz and Michael Starbird, MAA Textbooks, 2013 (102 copies; total 487 copies)

#### MAA eBook Top Sellers, January-June 2014

1. Textbooks, Tests, Training: How We Discourage Thinking, Stephen S. Willoughby, 2014 (new, 71 copies)
2. Ordinary Differential Equations: From Calculus to Dynamical Systems, V. W. Noonburg, MAA Textbooks, 2014 (new, 52 copies)
3. Illustrated Special Relativity through Its Paradoxes: A Fusion of Linear Algebra, Graphics, and Reality, John dePillis and José Wudka, Spectrum, 2013 (47 copies, total to date 60 copies)
4. Solve This: Math Activities for Students and Clubs, James Tanton, Classroom Resource Materials, 2001 (38 copies, total 100 copies)
5. Undergraduate Mathematics for the Life Sciences, Glenn Ledder, Jenna Carpenter, and Timothy Comar, MAA Notes, 2013 (32 copies, total 96 copies)

Under the membership scheme adopted for 2014, all MAA members receive electronic access to the three MAA journals and to Math Horizons. Print subscriptions are available to members as an add-on, priced at \$5 per issue (\$50 annually for the American Mathematical Monthly, \$25 each for Mathematics Magazine and the College Mathematics Journal, and \$20 for Math Horizons). This change has meant that we are now producing far fewer print copies of the journals than we did a year ago. However, because all eligible members now receive print copies of MAA FOCUS, and many departments continue to order bulk copies of Math Horizons for distribution to students, we are still printing large numbers of the magazines.

The MAA was responsible for Mathematics Awareness Month in April 2014, leading the Joint Policy Board for Mathematics effort to increase public understanding of and appreciation for mathematics. The chosen theme was “Mathematics, Magic, and Mystery,” which echoes the title of an early book by renowned math popularizer Martin Gardner, and was tied to the 100th anniversary of Gardner’s birth. The MAM website ([www.mathaware.org](http://www.mathaware.org)) featured 30 magical and mysterious topics—a new one revealed each day in April 2014. Contributors included professional mathematicians and magicians of the highest caliber. Each topic was introduced by a short video and included supporting materials at various levels of mathematical sophistication. The MAM 2014 poster itself showed 30 images, representing the various topics that were unveiled day by day.

COO John Wyatt reported aggressive new member acquisition, member reinstatement and continued renewals for current members. Membership numbers appear to be leveling off.

Also, MAA has launched a new and enhanced member lookup tool and no longer participates in the Combined Membership List (CML). The new member lookup is accessible to MAA members and is fully integrated with MAA’s member database. Efforts have been continued to develop a sustainable departmental membership that will seek to engage graduate students and also help instructors engage undergraduate students.

A new project will be launched in Q2 of 2015 to provide an e-Library within the member portal. This new tab will allow members to access their electronic publications and other electronic subscriptions from a single page.

He mentioned that a new payment model for new and renewing members will be in place to have the option of paying for the annual member dues over twelve months by charging the member's credit card each month. Membership using the recurring payment option will automatically renew at the end of the twelve month term unless the member contacts MAA to cancel.

Currently, there are 17400+ members, including 5350+ K-12 teacher members. The new membership category for K-12 Teacher Membership is aimed at increasing participation and engagement in the MAA American Mathematics Competitions.

MAA has been working with Cenveo (the company that hosts the mobile version of MAA journals) on implementing functionality that will allow MAA members to log into the Cenveo website with MAA member login credentials.

CFO Sharon Tryon reported that we began using PayPal as our new processor for several reasons including increased functionality going forward in areas such as reoccurring invoicing which will give our members greater flexibility in paying their dues and/or contributions over time. We will also be paying lower credit card fees across all transactions and we are now accepting American Express. A high priority is adding technical functionality to the dissemination of financial information.

The Audit Committee Chair Jenny McNulty reported that the auditors from the firm Tate & Tryon gave the opinion that the financial statements of the MAA present fairly the financial position of the MAA. The auditors mentioned the organization's internal controls and compliance with federal grant requirements to be good. The auditors commented that management was well-prepared and provided satisfactory answers; the audit was smooth and transparent. Last year the auditors made two informational comments to the Association. The first regarding a change in the federal deposit insurance policies and the second involving privacy principals. The Association implemented the recommendations regarding safeguarding the privacy for personal information. With regard to the Association's Federal deposit coverage, the Association reviewed its deposit coverage and believes it is not exposed to any significant credit risk. Based on several well-publicized cases of fraud among not-for-profit organization, the auditors made suggestions for the Association. In order to identify unusual or suspicious activity, it is recommended that there is a periodic review of the master vendor list. The audit committee which does not have intimate knowledge about the day-to-day operations of the Association, would like to see this suggestion implemented for the benefit of the members and protection of management. When asked about any concerns the auditor had for the organization, the auditor mentioned that going forward the Association needs to be attentive to subscription levels and the amount that investment income plays and to adjust spending or increase revenue streams. Overall, the auditor said this was an A+ report. We are pleased with the report and congratulate the staff on an excellent job.

Upon the recommendations from the Committee on Sections presented by Chair Rick Gillman, the By-Laws of the following 5 sections: Golden, Oklahoma-Arkansas, Pacific Northwest, Southeastern, and Southern California-Nevada were approved by the Board.

Based on the requests from the Committee on Undergraduate Programs in the Mathematical Sciences, the Board approved the motions to reaffirm support for the principles of the 2004 CUPM Curriculum Report and to support the cognitive and content recommendations of the 2015 CUPM Curriculum Guide to Majors in the Mathematical Sciences.

Dates and locations for future Joint Meetings and MathFest are

2015	San Antonio, TX	Joint Meetings	January 10-13
2015	Washington, DC	MathFest	August 5-8
2016	Seattle, WA	Joint Meetings	January 6-9
2016	Columbus, OH	MathFest	August 3-6
2017	Atlanta, GA	Joint Meetings	January 4-7
2017	Chicago, IL	MathFest	July 26-29
2018	San Diego, CA	Joint Meetings	January 10-13
2018	Denver, CO	MathFest	August 1-4
2019	Baltimore, MD	Joint Meetings	January 16-19
2019	Cincinnati, OH	MathFest	July 31-August 3

Finally, I met with each governor of the Iowa, Kansas, and Nebraska/Southeast Dakota to inform them of our 2016 meeting in St. Joseph and to welcome them to join us as they desire. It was just an initial step to continue exploring collaborative interaction with other Missouri River sections based on the experience we had during our first joint meeting in Maryville in 2013. The Executive Committee will keep you informed of any development in this regard.

## From the Secretary (Grant Lathrom)

### Centennial of the MAA!

We sincerely hope this is not the first time you've heard this, but 2015 marks the Centennial of the MAA!

Here are a few ideas to celebrate the centennial.

- We will provide you with the link to a 13-minute celebratory Centennial Video for the MAA. This video will open the 2015 Centennial MAA MathFest meeting, and may be previewed at our spring meeting.
- Display historical documents from the founding of our section, or historical documents from institutions our section.
- Serve birthday cake; provide your colleagues with party hats and noisemakers.
- Take photos of your section celebrating the MAA's Centennial, and send a few to Maia Henley ([mhenley@maa.org](mailto:mhenley@maa.org)) who will post them on the Centennial Webpage.

You are encouraged to support the MAA by making contributions to the MAA's Second Century Fund (through this fall's mailing, or online at [maa.org](http://maa.org)). The section with the largest percentage of members contributing and the section contributing the most overall will win prizes. Donate in the name of the founders of your section. Donate in the names of respected members of your section. Donate to name a Project NExT fellow after your section. Just donate and celebrate the MAA!

Throughout the year check out the content on MAA Online's Centennial page, which will include interviews, historical articles, and section histories. The celebrations will culminate in an extra-long MAA MathFest, August 5-8, 2015 in Washington DC. (The MathFest was so packed that we added a day to its length!) We hope to see a much larger than usual turnout to help us celebrate, so please encourage your colleagues to attend. Attendees of this joint meeting with the Canadian Society for the History and Philosophy of Mathematics and the British Society for the History of Mathematics will enjoy:

- **Headline Centennial Lecturers:** Manjul Bhargava, Carlos Castillo-Chavez, Jennifer Chayes, Ingrid Daubechies, Erik Demaine, Karen Parshall, joining the usual slate full of minicourses, invited and contributed paper sessions, panels, undergraduate activities, etc.
- A parade of section flags at the opening reception
- An evening of vaudeville including a juggler, magician, card tricks, mime, ...
- An evening of music
- An evening of mathematical theater
- A closing banquet with the MAA Players

You are encouraged bring your families to MathFest and turn it into a amazing family vacation! Washington DC is a fantastic destination for young and old alike. Section flags will be provided by the MAA office in DC. You will not need to bring a section flag with you. There will be a march of section flags around 7 p.m. on Wednesday, August 5, 2015; your section should designate someone to be the official Flag Bearer; watch for details about how to participate. Show your section spirit in your own way! Wear a section t-shirt, challenge other sections to a game, plan a section reunion at MAA MathFest.

## **From the Newsletter Editor (Dan Daly)**

The next Missouri Section Newsletter will be published in March 2015. Please send any news, comments, questions or corrections to me at [ddaly@semo.edu](mailto:ddaly@semo.edu).

Also, I am looking for ideas and suggestions for improving the section newsletter. If you have any ideas, please send them to me at the email address above.

## **Missouri Collegiate Mathematics Competition (Curtis Cooper)**

The nineteenth Missouri Collegiate Mathematics Competition will be held 7:30pm - 10:00pm, Thursday, March 26, 2015, and 8:30am - 11:00am, Friday, March 27, 2015 on the campus of the Missouri University of Science and Technology.

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 March 23, 2015. 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 official website of the Contest is: <http://www.math-cs.ucmo.edu/~hchen/contest/>

Additional information, registration forms and past contests can be found at that site.

## Nominations for Section Teaching Award

**STATE YOUR INTENTION TO NOMINATE BY DECEMBER 1, 2014.**

Nominations for the [2015 Missouri Section Award](#) for Distinguished College or University Teaching of Mathematics are now being accepted. The Missouri Section Selection Committee will choose one of the nominees for the Section Award. The awardee will be honored at the Spring 2015 meeting of the Section and will be widely recognized and acknowledged within the Section. The awardee will also be the official Section candidate for the pool of Section awardees from which the national recipients of the MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics will be selected except that one of the national winners may be selected from another source. There will be at most three national awardees, each of whom will be honored at the national MAA meeting in January 2016 and receive a \$1,000 check and a certificate. More information about the teaching award can be found on the MAA web site <http://sections.maa.org/missouri/teaching.html>.

Anyone is entitled to make a nomination, but nominations from chairs or MAA representatives in departments of mathematical sciences are specially solicited. For this reason, this call for nominations is sent to both department chairs and MAA representatives so that the responsibility for nominations can be shared between them.

We urge you to submit a nomination if you have someone eligible and qualified in your department in order that your candidate has an opportunity to be considered for the Section Award and, if so selected, also for the national award. Even if not selected this year, it is an honor for someone to have been nominated, your department will receive recognition for its commitment to excellence in teaching, and the work done in preparing a nomination folder for your candidate is not wasted since your candidate can be nominated again in a future year. Self-nomination is not permitted. In addition to discussing this memo with your colleagues, preferably at a department meeting, please post it in a prominent place in your department.

### Eligibility

- College or university teachers assigned at least half-time during the academic year to teaching a mathematical science in a public or private college or university (from two year college teaching through teaching at the Ph.D. level) in the United States or Canada. Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year.
- At least five years teaching experience in a mathematical science.
- Membership in the Mathematical Association of America.

## Guidelines for Nomination

The nominees should

- be widely recognized as extraordinarily successful in their teaching\*
- have teaching effectiveness that can be documented
- have had influence in their teaching beyond their own institutions\*\*
- foster curiosity and generate excitement about mathematics in their students.

\*"teaching" is to be interpreted in its broadest sense, not necessarily limited to classroom teaching (it may include activities such as preparing students for mathematical competitions at the college level, for example, the Putnam Prize Competition or the Mathematical Contest in Modeling, or attracting students to become majors in a mathematical science or to become Ph.D. candidates).

\*\*"influence beyond their own institution" can take many forms, including demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential innovative books on the teaching of college mathematics, etc.

## Procedures

- Send an email to Grant Lathrom [lathrom-g@mssu.edu](mailto:lathrom-g@mssu.edu) stating your intention to nominate by **December 1, 2014**.
- Nominations must be submitted on the [Teaching Nomination Form](http://sections.maa.org/missouri/teaching.html) found at <http://sections.maa.org/missouri/teaching.html>. Anyone may nominate an eligible candidate, but self-nomination is not permitted.
- Please follow the instructions on that form precisely to assure uniformity in the selection process both at the Section and national levels. If a file on a Section awardee significantly exceeds the prescribed limits (as stated on the back of the Nomination Form), it will not be considered for a national award and will be returned to the Section.
- Nominations for the Missouri Section Award should be sent to Grant Lathrom at the address below so as to be received no later than **January 1, 2015**. Nominations for candidates who are not members of the Missouri Section should be sent to the Secretary of the nominee's Section.

## 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 several years are listed below for your convenience. If your campus would be willing to host a Spring Meeting, please contact Robert Roe, Chair ([rroe@mst.edu](mailto:rroe@mst.edu)), or any other member of the Executive Committee.

2015	Missouri University of Science and Technology
2016	Missouri Western State University
2017	Missouri Southern State University
2018	Drury University
2019	Lindenwood University
2020	University of Central Missouri
2021	Truman State University
2022	University of Missouri – Kansas City

## **Southeast Missouri State University's Math Redesign (Tamela Randolph)**

A newly constructed 2,600-square-foot math classroom with 60 computer stations, an 842-square-foot math tutoring center with 13 computer stations and a 447-square-foot math breakout room which adjoins the math classroom.

Faculty members participated in training sessions prior to the beginning of fall semester. Advisors, staff, and faculty across campus attended informational meetings, so they could better advise students and answer students' general questions regarding the changes in the mathematics curriculum.

Under the redesign, some content from developmental algebra and intermediate algebra courses that previously were each three credit hour courses will now be delivered in a one-credit hour lab which meets for two hours each week that students will take simultaneously with a gateway course.

The mathematics curriculum redesign is a component of Southeast's participation in the 2013 Missouri Completion Academy, sponsored by the Missouri Coordinating Board for Higher Education and Complete College America (CCA). CCA is a national nonprofit organization dedicated to working with states to significantly increase the number of Americans with quality career certificates or college degrees and to close attainment gaps for traditionally underrepresented populations. The Academy offered participants strategic planning support as they work toward large-scale, high-impact strategies to improve completion on their campuses.

The Department of Mathematics pursued redesigning the developmental mathematics curriculum after a University team considered the matter at the Missouri Completion Academy last summer. The Missouri Completion Academy offered participants recommendations on reducing time to complete a degree, tackling developmental education and implementing flexible strategies to ensure student success.

Dr. Debbie Below, vice president for enrollment management and student success and dean of students, says the Missouri Completion Academy is important as a part of a larger nationwide effort to increase the proportion of Americans with high quality degrees, certificates or other credentials to 60 percent by 2025.

Randolph said national statistics indicate that students who take developmental math courses are not graduating at the rate of other students. For every one developmental class a student takes, the likelihood of that student graduating diminishes by 50 percent, she said. While these numbers have not been calculated at Southeast, Randolph says they will be studied after the redesign is complete to evaluate its effectiveness.

Thirty-nine percent of Southeast's beginning freshmen come to the University needing a developmental math course.

Southeast hosted a Math Summit in March with 12 institutions sending teams to participate.

Southeast math faculty shared information about the department's developmental mathematics redesign with colleagues from other two- and four-year institutions of higher education across Missouri.

## **From the Campuses:**

### **Missouri University of Science and Technology (submitted by Robert Roe)**

Dr V. Samaranayake received the Governor's Award for Excellence in Education on April 2, 2014 at a ceremony held in the Reynolds Alumni Center on the UMC campus. The award was presented by the Chair of the Council of Public Higher Education.

Dr V. Samaranayake and Dr Gayla Olbricht are co-PI's of a \$250K Improving Teacher Quality Grant funded by the Missouri Department of Higher Education. The title of their grant proposal is, "Science Education and Quantitative Literacy: An Inquiry-based Approach".

This past spring and summer several members of the department have been traveling internationally to give invited talks. They include Martin Bohner who spoke in Izmir, Turkey; Novacella, Italy; Madrid, Spain; Wuhan, Bijing and Linyi, China: Roman Dwiliewicz who spoke in Paris, France; Cheim, Poland; Tokyo, Japan; Hong Kong; and Pohang, South Korea: Elvan Akin who spoke in Antalya, Turkey: Robert Paige who spoke in Cadiz, Spain: Wlodzimierz Charatonik who spoke in Tuxla Gutierrez, Mexico: Xiaoming He and Matt Insall who spoke in Toluca, Mexico.

Prof Akim Adekpedjou is currently on sabbatical leave at the University of Ulm in Ulm, Germany.

The department is currently involved in a multi-year project to redesign the engineering calculus sequence. The project is funded by a grant from UM system. Paul Runnion is heading up the redesign effort with the assistance of Stephanie Fitch and Robert Roe.

### **Saint Louis University (submitted by Brody Johnson)**

The department welcomes three new faculty for the 2014-2015 academic year, Qayum Khan, Imre Tuba, and Carlos Vega. Dr. Khan, a topologist, is the department's only new tenure-track faculty member and his primary research interest is the topology of high-dimensional manifolds. Dr. Tuba is a visiting assistant professor whose research focuses on braid groups and tensor categories. Finally, Dr. Vega joins the department as a postdoctoral fellow working in the area of spacetime geometry and mathematical relativity.

Two longstanding faculty members, David A. Jackson and T. Christine Stevens, retired after the 2013-2014 academic year. David Jackson joined the Science and Mathematics Department of Parks College of Saint Louis University in 1982 and was welcomed to the Department of Mathematics and Computer Science at Saint Louis University as part of a SLU reorganization in the late 1990's. His research interests include combinatorial group theory, commutators, and semigroups. Dr. Jackson mentored scores of students in the international Mathematical Competition in Modeling (MCM) which is run by the non-profit organization Consortium for

Mathematics and Its Applications (COMAP). Dr. Stevens joined the department in 1989 and served as the department chair from 1994 to 1999, conducting research on topological groups and directing two Ph.D. students. Dr. Stevens was also active at the national level with several professional organizations in mathematics and was one of the co-creators as well as a long-time co-director of the MAA's Project NEXt (New Experiences in Teaching).

For more information about the department and its faculty, please visit the department's website. <http://mathcs.slu.edu/>

### **Southeast Missouri State University (submitted by Jerzy Wojdylo)**

Dr. Dan Daly and Dr. Andrew Schwartz were both promoted to Associate Professor with tenure.

### **University of Central Missouri (submitted by Curtis Cooper)**

Dr. Shing So announced his retirement in May 2014 after serving the department for 31 years. Dr. So, Professor of Mathematics, earned a Diploma in Mathematics in 1976 from Hong Kong Baptist College, an M. A. in Mathematics from Northeast Missouri State University (now Truman State) in 1980, a Masters of Science in Mathematics at the University of Nebraska-Lincoln in 1985, and a Ph.D. in Mathematics from the University of Missouri-Kansas City in 1989. He began his career here at the University of Central Missouri in 1983. Dr. So taught analysis and topology courses and his research areas included geometry, topology, and topological semigroups. He directed graduate student theses, authored numerous papers, and regularly presented his research at institutions and conventions. In 2002 he received the University of Central Missouri Byler Distinguished Faculty Award and in 2008 he was the recipient of the Mathematical Association of America Missouri Section Distinguished College/University Mathematics Teaching Award. Dr. So continues his work as coordinating editor for the Missouri Journal of Mathematical Sciences and is solutions editor for the College Mathematics Journal. He is also on the editorial board for the International Electronic Journal of Geometry, the JP Journal of Geometry and Topology, and the Journal of Inquiry Learning in Mathematics. In August, Dr. So departed the Midwest moving to New York City where he is now the department chair for the Mathematics Department at Pace University.

### **University of Missouri – Kansas City (submitted by Richard Delaware)**

Spring & Summer 2014

As of this past year, our department now offers both an MS in Mathematics and an MS in Statistics.

Two new IPh.D. students graduated, Wei Wu in December 2013 (Advisor: Kamel Rekab), and Justin Hoffmeier in May 2014 (Advisor: Liana Sega).

Statistician and Chair Jie Chen was elected a fellow of the American Statistical Society for significant contributions to bioinformatics over her career. She left UMKC this summer to take a position in Georgia.

In March 2014, we sent our first team of 3 students to the MAA MO meeting to participate in the Missouri Collegiate Mathematics Competition, and one of those students later participated in a Summer 2014 REU in Industrial Mathematics and Statistics at Worcester Polytechnic Institute.

On April 24, 2014 we welcomed back an alumnus, Mike Keefe (BS 1973, MS 1974) to receive a UMKC Spotlight award, since in 2011 he was awarded a Pulitzer Prize for 36 years of editorial cartooning at The Denver Post.

In May 2014 UMKC three undergraduate mathematics majors were winners in the 10<sup>th</sup> annual HOMSIGMAA (History of Mathematics Special Interest Group of the MAA) contest for expository papers written in History of Mathematics courses across the country for their papers written in Spring 2013 for our History of Mathematics, Writing Intensive course. See the UMKC web announcement and picture at: <http://info.umkc.edu/news/to-the-power-of-three/>

Fall 2014

This Fall, Yong Zeng is on leave at Princeton University as Visiting Professor of Operations Research and Financial Engineering. He was elected as new Chair before he left, and will begin those duties in January 2015. This Fall, Eric Hall will be our Acting Chair.

This Fall we started a new UMKC Mathematics Club for undergraduates. One of us also created a small 8 page booklet “A Historical Dozen: Notable Mathematics Faculty & Students, Colorful Characters 1933-1993.” For more department history see: <http://d.web.umkc.edu/delawarer/MathDeptHistory.htm>

This Fall 2014, the 24<sup>th</sup> annual Kansas City Regional Mathematics Technology EXPO [ <http://kcmattechexpo.org/> ] was again held at UMKC, as we have done since 2009. It is a two-day conference for mathematics teachers at the 4-year college, 2-year college, and high school level always held the first weekend in October: “A forum for mathematics instructors at both the college and secondary levels to demonstrate how they use technology successfully in their teaching, to learn about new mathematics technology, and to discuss the philosophy and future of technology in the mathematics classroom.” We hope many of you will attend in 2015!

You can read about our faculty and other department news on our department web site: <http://cas.umkc.edu/mathematics/>

### **Washington University in St. Louis (submitted by Ron Freiwald)**

We expect to have two positions available for next year: at the assistant (or possibly associate) level in mathematics, and a senior position in statistics. Visit the department’s web page (<http://wumath.wustl.edu/>) for official information which should be posted very soon.

### New Assistant Professors:

- Todd Kuffner Todd was a visiting instructor last year in our department. He received his Ph.D. in 2011 from Imperial College London, and came to us after a time teaching at the American University of Beirut. His research interests are in mathematical statistics, likelihood and asymptotics, and econometrics.

- Wushi Goldring Wushi works in algebraic geometry and number theory. He received his Ph.D. from Harvard under Richard Taylor in May 2011, and will join us in Fall 2015 after completing a postdoc position at the University of Paris.

#### New William Chauvenet Postdoctoral Lecturer

- Xuanyu (Peter) Pan Peter works in algebraic geometry and has just completed his Ph.D. at Columbia University.

#### New PostDoctoral Teaching Fellow in Statistics

- Han Liang Gan Han is a new Postdoctoral Teaching Fellow in Statistics, having just finished his Ph.D. at the University of Melbourne, Australia.

#### On leave

- Professor Matt Kerr, for 2014-2015
- Professors Jimin Ding and Nan Lin, for the Fall 2014 semester
- Professor Jack Shapiro for the Spring 2015 semester

#### Retirement

- Professor Richard Rochberg retired at the end of the past academic year, although we expect to continue to see him around the Department.

#### Finally

- We are saddened by the loss of [Professor Emeritus Al Baernstein](#) who died on June 11, 2014. Al retired from the University in 2011.

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

ABSTRACT FOR CONTRIBUTED PAPERS

Author(s): \_\_\_\_\_

Presenting author: \_\_\_\_\_

Presenter is faculty \_\_\_\_\_ a graduate student \_\_\_\_\_ an undergraduate student \_\_\_\_\_

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Paper Title: \_\_\_\_\_

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Is the presentation directed towards a student audience? \_\_\_\_\_

All presentation rooms are equipped with computers and projectors or presenters can connect their own laptop computers to use projectors. Rooms will also have chalk or marker boards.

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You may attach a scanned copy of the completed form and email to [maa2015@mst.edu](mailto:maa2015@mst.edu) (please use “MAA abstract” in the subject line) or send by regular mail to:

MAA Spring 2015 Meeting c/o Robert Roe  
Mathematics & Statistic Department  
400 W. 12<sup>th</sup> St.  
Rolla, MO 65409-0020

The deadline for submissions is **March 13, 2015.**