The Fall 2015 Meeting of the MD-DC-VA section of the MAA will be held at St. Mary’s College of Maryland, on November 6-7, 2015.

**Friday:** The afternoon workshop will be run by Edwin O’Shea, of James Madison University, on “Euclid’s Elements Across the Modern Curriculum.” The evening banquet address will be given by Robert Bosch of Oberlin College, on “Opt Art.”

**Saturday:** The morning address, “The Ubiquity of Mathematical Biology”, will be given by Talitha Washington of Howard University, and the afternoon address, on “A ‘Mod’ern Mathematical Adventure in Call of Duty: Black Ops”, will be given by Heidi Hulsizer of Hampden-Sydney College.

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**Contents**

- Meetings
- Chair’s Report
- Governor’s Report
- Call for Nominations
- Section Meeting
- Section News
- Announcements
- Fall Puzzle
- Officer List
- Treasurer’s Report

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**Upcoming National and Section Meetings**

- **Joint Mathematics Meetings,**
  - Seattle, WA, January 6-9, 2016
- **MAA Section Meeting MD-DC-VA**
  - Spring 2016 dates and location TBA
- **MAA MathFest**
  - Columbus, OH, August 3-6, 2016
Section Chair’s Report

I hope that you have had a well-spent summer celebrating the first 100 years of the MAA. We hope to continue those celebratory feelings this year as we enter the centennial celebration of our section. The MD-DC-VA Section of the MAA was founded in December 1916 and we have gathered some great historical information which can be found on our website (http://sections.maa.org/mddcva/history.php). Additionally, we will be showing a centennial video at the upcoming section meeting.

I hope to see many of you at the fall section meeting, held at St. Mary’s College of Maryland on November 6 and 7. We have a great line-up of speakers, including Edwin O’Shea, Bob Bosch, Talitha Washington and Heidi Hulziser. More details of the conference can be found later in the newsletter on pages 5-6 and at http://sections.maa.org/mddcva/Fall2015Meeting.php.

As a reminder, the 99th annual MAA-AMS Joint Math Meetings will be held in Seattle, Washington from January 6 to 9. The program for this meeting looks fantastic and registration is open. You can find more information at http://jointmathematicsmeetings.org/jmm. There is always a good showing of mathematicians from our section and I expect that trend to continue this year.

We are always looking to recognize the best teachers in our section. We have an incredible list of past winners and I know there are people making a difference in student’s lives every day. It is incredibly important that we recognize those individuals for their work in and out of the classroom. Roland Milton is chairing the John Smith Teaching Award this year. The details of how to nominate a deserving colleague are listed on page 4.

We also separately recognize individuals for their service to the section. The section recently launched the Sister Helen Christensen Service Award. Amy Shell-Gellasch is chairing this committee and she can provide details of how to nominate someone for this award.

Lastly, this year we are electing a new Governor for our section. Caren Diefenderfer has done an outstanding job of representing us but her term is coming to an end. If you are interested or would like to know more about that job, please contact Caren or myself and we can get you additional information.

John Hamman
MD-DC-VA Section Chair
john.hamman@montgomerycollege.edu

Summer Math Opportunities

• Summer research experiences for undergraduates (REU) are starting to open their applications for Summer 2016. Check out the NSF’s Mathematical Sciences REU site page for details!

• Park City Math Institute (PCM) has undergraduate, graduate and faculty research opportunities available each summer, focused on a theme. The theme for Summer 2016 (7/10-7/30/2016) is The Mathematics of Data.

• MSRI Undergraduate Program (MSRI-UP) is a comprehensive summer program designed for undergraduate students who have completed two years of university-level mathematics courses. The research topic for 2016 is Sandpile Groups, a topic at the intersection of group theory, combinatorics, linear algebra and algebraic geometry.

Dipa Sarkar-Dey, Jon Scott, Caren Diefenderfer, and Dan Kalman representing the section at MathFest 2015
Section Governor’s Report

MathFest 2015 was an energizing meeting, as we celebrated the MAA’s 100th birthday. The 2500 attendees set a new record for the number of MathFest registrants.

The scientific program included exceptional speakers. We enjoyed presentations and reflections from past MAA presidents. The special evening events included a Mathematicians by Day, Musicians by Night Concert, a performance of Stoppard’s “Albert’s Bridge” by the MAA Community Players, and the ever popular “MAA the Musical” featuring numerous section members.

Congratulations to the following three section members who received awards at MathFest 2015:

Heidi Hulsizer Assistant Professor at Hampden-Sydney received the Trevor Evans Award for “A ‘Mod’ern Mathematical Adventure in Call of Duty: Black Ops”, *Math Horizons*, February 2014, pages 12-15.


Sister Helen Christensen posthumously received the Certificate of Meritorious Service Award for our Section. Professor Dipa Sarkar-Dey from Loyola University Maryland accepted this award on behalf of Sister Helen.

At the Board of Governors meeting, Francis Su led a discussion on membership, with the hope of solving the declining number of paid MAA memberships. The proposed 2016 budget deficit of $416,761 was approved; however, when taking the Simons Foundation funding and the accumulated Project NExT funds into account, the “real” anticipated deficit is $47,771. Publications reported that sales have decreased since 2012; fifteen new books should be published in 2015, which should increase revenues. The BOG discussed strengths and weaknesses of three proposed models from the Governance Task Force final report. The task force will present three revised plans to the BOG in January 2016 for a vote. The BOG requested that every governance model that is brought to BOG should have both a board and an assembly.

Also at the Board of Governors Meeting, three important programs were discussed (for more information, see [www.maa.org](http://www.maa.org)): a new MAA program to train graduate students to teach, PIC Math, Preparation for Industrial Careers in Mathematical Sciences, a program to help faculty to do industrial research problems (information is available at [www.maa.org/picmath](http://www.maa.org/picmath)), and the Common Vision project which is looking at curricular guidelines suggested by AMATYC, SIAM, MAA, ASA and AMS.

At the Section Officers Meeting, the interest from SIGMAA BIG participating in Section meetings was discussed. We need to create a list of BIG organizations in our section. We also need to identify institutions in our section with PIC Math programs. Contact Greg Coxson ([gcoxson@ieee.org](mailto:gcoxson@ieee.org)). In addition, the MAA’s council on outreach would like us to consider programming and activities for high school students and their teachers at section meetings. Please contact Kathryn Linehan, Program chair, if you are interested in helping to organize sessions at Section meetings that deal with either of these possibilities.

I hope you will make plans to attend JMM in Seattle this January 6-9 as well as MathFest 2016 in Columbus, Ohio (August 3-6, 2016). And please urge all your colleagues to become MAA members.

Caren Diefenderfer
MD-DC-VA Section Governor
cdiefenderfer@hollins.edu

Bud Brown and Amy Shell-Gellasch enjoying some downtime at MathFest 2016
Call for Nominations
John M. Smith Distinguished Teaching Award

Nominations for the 2016 MAA Section Awards for Distinguished College or University Teaching of Mathematics are now being accepted. The Award Selection Committee will determine the recipient of the John M. Smith Teaching Award from those nominated. The awardee will be honored at the Spring 2016 meeting of the Section and will be widely recognized and acknowledged within the Section. The awardee will also be the official Section nominee for the 2017 MAA Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Anyone may make a nomination, but nominations from chairs or MAA liaisons in departments of mathematical sciences are especially solicited. For this reason, this call for nominations is sent to both department chairs and MAA liaisons so that the responsibility for nominations can be shared between them. An outline of the nomination process can be found on the web site http://www.maa.org/awards/teachingawards.htm.

We urge you to submit a nomination for the MAA John M. Smith Teaching Award if you have someone eligible and qualified in your department. Even if not selected this year, it is an honor for someone to have been nominated, and your candidate can likely be nominated again in a future year. 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 a tribute in itself. Self-nomination is not permitted.

Eligibility and Guidelines for Nomination

- College or university teachers who currently teach a mathematical science at least halftime during the academic year in a public or private college or university (from two-year college teaching through teaching at the Ph.D. level) in Maryland, Washington DC, or Virginia. 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.
- More than seven years experience in teaching a mathematical science.
- Membership in the Mathematical Association of America.
- 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 institution.
- Foster curiosity and generate excitement about mathematics in their students.

Submitting a Nomination

There is a two-step nominating process. Initial nominations are made by completing the Short Nomination Form by Friday December 4, 2015. The Section Award Committee will review these “short” nominations, and finalists will be invited to submit a full nomination packet. The full nomination packets will be due on Friday January 22, 2016. Initial submissions may be done either by mail or electronically.

Mail Submissions: Please fill out the Short Nomination Form (available at http://sections.maa.org/mddcv/SmithAwardNominations.php) and send a signed copy to:

Roland Minton, Section Teaching Award Committee Chair
Roanoke College
221 College Lane
Salem, VA 24153

Electronic Submissions: Please fill out the Short Nomination Form (doc format, odt format, or pdf format) and email it to: minton@roanoke.edu

Please use a subject line of John M. Smith Award Nomination. Nomination forms must be attached to the email and must be in either doc, odt or pdf format. Please note that these forms must be signed so a scanned pdf is probably the easiest form of submission. Nominations must be postmarked or emailed by Friday December 4, 2015.
Afternoon Workshop: Euclid’s Elements Across the Modern Curriculum  
Speaker: Edwin O’Shea (Madison University)  

Abstract: Many college students have tablets, phones, and laptops (often all out in front of them in the same class), but those devices often function more as distractions than as learning tools. This doesn’t have to be the case: from function visualization tools and electronic textbooks to effective note-taking software and group collaboration apps, there are plenty of ways to integrate mobile devices into the mathematics classroom in ways that avoid distractions, gimmicks, or time-wasting. Similarly, on the faculty side, there are apps that make it easier to create and distribute innovative course materials, or keep track of student involvement, questions and resources. This is hands-on workshop on how to use web or mobile-based apps in the math classroom, with a focus specifically on calculus, pre-calculus and linear algebra. Participants should bring their own device to the workshop, as only a limited quantities of iPads will be available as extras.

Banquet Address: Opt Art  
Speaker: Robert Bosch (Oberlin College)  

Abstract: Optimization is concerned with optimal performance—finding the best way to complete a task. It has been put to good use in a great number of diverse disciplines: advertising, agriculture, biology, business, economics, engineering, manufacturing, medicine, telecommunications, and transportation (to name but a few). In this lecture, we will showcase its amazing utility by demonstrating its applicability in the area of visual art, which at first glance would seem to have no use for it whatsoever! We will begin by describing how to use integer programming to construct a portrait out of complete sets of double nine dominoes. We will then describe how high quality solutions to certain large-scale traveling salesman problems can lead to beautiful continuous line drawings. We will conclude by presenting other examples of Opt Art—art constructed with the assistance of optimization techniques.

Biographical Sketch: Edwin O’Shea  
Edwin O’Shea is an associate professor at James Madison University. Before coming to Virginia he held positions in Kentucky, Mexico, and Ireland. His research is in combinatorics with related interests in the areas of number theory and geometry. Edwin has mentored a number of undergraduate summer research projects and senior theses in these areas. He takes particular pride in teaching courses designed for liberal arts majors and future teachers of high school mathematics. Most of his free time is spent baking deserts, reading for pleasure, and hanging out with his young family and close friends.

Biographical Sketch: Robert Bosch  
Robert (Bob) Bosch is Professor of Mathematics at Oberlin College. He specializes in optimization, the branch of mathematics concerned with optimal performance. Since 2001, Bosch has devoted increasing amounts of time and effort into devising and refining methods for using optimization to create pictures, portraits, and sculpture. He has had pieces commissioned by Colorado College, Western Washington University, Occidental College, Spelman College, and the organizing committees of several academic conferences. Free plans for several of his domino mosaics (including a 44-set portrait of President Barack Obama) can be downloaded from his website www.dominoartwork.com. His sculpture Embrace was awarded first prize at the 2010 Mathematical Art Exhibition in San Francisco.
Saturday Morning Address: The Ubiquity of Mathematical Biology
Speaker: Talitha Washington (Howard University)

Abstract: What comes to mind when you hear the phrase “mathematical biology”? Perhaps you begin to think of biological processes and mathematical equations. Perhaps you think of differential equations and exponential growth of bacteria. Perhaps even you think of modeling cancer growth in animals. In this talk, we will take a tour of the concept of “mathematical biology”.

Saturday Afternoon Address: A ‘Mod’ern Mathematical Adventure in Call of Duty: Black Ops
Speaker: Heidi Hulsizer (Hampden-Sydney College)

Abstract: Call of Duty: Black Ops is a popular video game that was released in 2010. Interestingly, one can use mathematics to solve an interesting problem that appears in the game. The problem involves turning dials to reach a desired solution, however when a player turns one dial he simultaneously turns others in a special configuration. Two perspectives on the solution will be presented; one involves solving a system of equations modulo ten and the other involves converting a directed graph with four vertices into a matrix equation. This example provides an affirmative answer to the question: “Will I ever use math in real life?” This talk will be accessible to undergraduates.

Biographical Sketch: Heidi Hulsizer

Heidi Hulsizer is an assistant professor at Hampden-Sydney College and she has been teaching there since 2010. She received her B.A. from Drury University and her M.A. and Ph.D. from the University of Missouri. She recently received the Trevor Evans award from the MAA for her article “A ‘Mod’ern Mathematical Adventure in Call of Duty: Black Ops” which appeared in Math Horizons. She was a Project NExT fellow (blue10!). Her research interests are in commutative algebra, the scholarship of teaching and learning, and statistics education. In her free time she enjoys walking her dog, gardening, and finding mathematics in unusual places.

Biographical Sketch: Talitha Washington

Talitha Washington is an Associate Professor of Mathematics at Howard University. She has been an Assistant Professor of Mathematics at the University of Evansville and The College of New Rochelle, and a VIGRE Research Associate in the Department of Mathematics at Duke University. She earned her master’s and doctoral degrees in mathematics from the University of Connecticut, and completed her undergraduate studies in mathematics at Spelman College. She is interested in the applications of differential equations to problems in biology and engineering. She serves on the Executive Committee of the Association for Women in Mathematics (AWM) and the Board of Advisors for the National Institute for Mathematics and Biological Synthesis (NIMBioS).
Around the MD-DC-VA Section:
News from our Membership

Mathematical Origami:

Eve Torrence of Randolph-Macon College won the "Best in Show" People's Choice Award at the International Juried Mathematical Art Show at the Bridges Math-Art conference for her paper sculpture titled "Day." Over 300 works were submitted by 151 artists from 32 states and 25 countries. The Bridges Math and Art Conference celebrates the connections between mathematics and art, architecture, music, culture, and science. It is an international gathering, with participants from 30 countries. The conference includes talks, workshops, a juried art show, poetry readings, and theater and dance performances. For further information, see http://www.rmc.edu/news-and-calendar/current-news/2015/09/15/mathematics-professor-wins-best-of-show-award.

Adrian Rice, Professor of Mathematics at Randolph-Macon College, spent the 2014-2015 academic year as a visiting member of the Mathematical Institute of the University of Oxford, during which time he was elected to a Fellowship of Queen’s College. While there, he joined a research group looking into the mathematics of Ada Lovelace, via an examination of her extensive correspondence with Charles Babbage and Augustus De Morgan. The results are due to be presented at a symposium commemorating Ada’s 200th birthday in December 2015.

Raina Robeva, Visiting Professor of Mathematics at Randolph-Macon College and Professor of Mathematical Sciences at Sweet Briar College, is the editor and a contributing author for the new book Algebraic and Discrete Mathematical Methods for Modern Biology published in April 2015 by Academic Press. Inspired by the national initiative toward a new biology, the book offers a collection of topics appropriate for introducing methods from modern discrete mathematics into the undergraduate mathematics and biology curricula. Each topic begins with a question of significance from contemporary biology, followed by the description of mathematical methods and theory appropriate for the search of answers. The list of contributors includes authors from over twenty colleges and universities in the United States and Europe who are actively involved in research on the forefront of mathematical biology and are deeply committed to advancing mathematical biology education at the undergraduate level. The book offers numerous exercises and projects appropriate for undergraduate research. For more information, visit the book’s website: http://booksite.elsevier.com/9780128012130/

It is never too early to start thinking about the Sister Helen Christensen Section Service award! Nominations are not due till spring, but the information is always available on the section website.
MAA meetings provide opportunities to keep up with the latest developments in mathematics, catch up with friends and colleagues, and forge new professional relationships. Join us for MathFest, the annual summer meeting of the MAA, from **August 3-6, 2016 in Columbus, OH**.

MathFest 2015 celebrated the Centennial of the MAA and had over 2,500 registered participants, the largest in MathFest history.

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**Fall Number Puzzle**

Fill in the grid so that each row, column and region contains at most one copy each of the digits 1 through 6. Puzzle taken from “Puzzlium”, the “puzzle social network.” Scan the QR code on the right to play the puzzle in the Puzzlium app.
### Treasurer’s Report

**10/13/15**

**General Account Balance, March 2, 2014**

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<th>Receipts</th>
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<td>Registrations, Spring 2015</td>
<td>Meals, Spring 2015</td>
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<td>MAA Subvention</td>
<td>Speaker Expenses</td>
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<td>Other Contributions</td>
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<td>JS Teaching Award &amp; Plaque</td>
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<td>Supplies</td>
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<td>Refunds</td>
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**Total Receipts** $6449.00  **Total Expenses** $6341.30

**General Account Balance, October 13, 2015**

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<tr>
<td>Interest</td>
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<td>MAA book sales, Spring 2015</td>
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<td>Contributions to JCM, Spring 2015</td>
<td>Student Talk Awards</td>
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<td>Vendor Fees</td>
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**Total Receipts** $328.09  **Total Expenses** $415.98

**John G. Milceticich Memorial Student Achievement Fund, March 2, 2015**

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**Total Receipts** $2710.00  **Total Expenses** $2500.00

**Project NExT Fund Balance, March 2, 2015**

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**Total Receipts** $710.00  **Total Expenses** $2716.00

**John G. Milceticich Memorial Student Achievement Fund, October 13, 2015**

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**Total Receipts** $1077.77  **Total Expenses** $2500.00

**Project NExT Fund Balance, October 13, 2015**

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**Total Receipts** $1261.86

**Section NExT Fund Balance, March 2, 2015**

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**Total Receipts** $710.00  **Total Expenses** $2716.00

**Section NExT Fund Balance, October 13, 2015**

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**Total Receipts** $1261.86

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Brian Lins  
Treasurer
**Section Officers**

For complete contact information, visit our website, http://sections.maa.org/mddcva/

Chair – **John Hamman** (2-year term ending 2017)
Montgomery College 240-567-7794  
[john.hamman@montgomerycollege.edu](mailto:john.hamman@montgomerycollege.edu)

Past Chair – **David Shoenthal**
Longwood University 434-395-2193  
[shoenthaldw@longwood.edu](mailto:shoenthaldw@longwood.edu)

Program Chair – **Kathryn Linehan** (2-year term ending 2016)
Montgomery College 240-567-7764  
[kathryn.linehan@montgomerycollege.edu](mailto:kathryn.linehan@montgomerycollege.edu)

Program Chair Elect – **Heather Moon**
St. Mary's College of Maryland 240-895-2197  
[hamoon@smcm.edu](mailto:hamoon@smcm.edu)

Governor – **Caren Diefenderfer** (3-year term ending 2016)
Hollins University 540-362-6595  
[cdiefenderfer@hollins.edu](mailto:cdiefenderfer@hollins.edu)

Secretary – **Edwin O'Shea** (3-year term ending 2018)
James Madison University 540-568-4014  
[osheam@jmu.edu](mailto:osheam@jmu.edu)

Treasurer – **Brian Lins** (3-year term ending 2017)
Hampden-Sydney College 434-223-6264  
[blins@hsc.edu](mailto:blins@hsc.edu)

Newsletter Editor – **Karin Saoub** (2-year term ending 2017)
Roanoke College 540-375-2348  
[saoub@roanoke.edu](mailto:saoub@roanoke.edu)

Director of Member Communication – **Amy Shell-Gellasch** (3-year term ending 2018)
Montgomery College, Rockville 240-567-4059  
[amy.shell-gellasch@montgomerycollege.edu](mailto:amy.shell-gellasch@montgomerycollege.edu)

Student Activities Coordinator – **Gwyneth Whieldon** (3-year term ending 2018)
Hood College 301-696-3730  
[whieldon@hood.edu](mailto:whieldon@hood.edu)

New Faculty Coordinator (Section NExT) – **Dina Yagodich** (2-year term ending 2016)
Frederick Community College 301-846-2582  
[dyagodich@frederick.edu](mailto:dyagodich@frederick.edu)

At Large Executive Committee Member – **Phillip Poplin** (2-year term ending 2017)
Longwood University 434-395-2406  
[poplinpl@longwood.edu](mailto:poplinpl@longwood.edu)

At Large Executive Committee Member – **Ethan Duckworth** (2-year term ending 2016)
Loyola University 410-617-2607  
[educworth@loyola.edu](mailto:educworth@loyola.edu)

Webmaster – **Brian Heinold** (3-year term ending 2016)
Mount Saint Mary’s University 301-447-6823  
[heinold@msmary.edu](mailto:heinold@msmary.edu)