



Spring 2011 Newsletter



Inside this issue:

Report from the Section Chair and Governor	2
Featured Speakers	4
Section News	6
Spring Puzzle	6
Treasurer's Report	7
Section Officers	8

Spring Meeting at Randolph Macon College



On April 15-16, 2011, Randolph Macon College will host the Spring 2011 MD-DC-VA Section Meeting of the MAA. Highlights include:

Friday: Richard Gillman from Valparaiso University will be offering a late afternoon workshop entitled “*A Game Theory Approach to Quantitative Literacy*.” The workshop will explore the ways in which game theory topics can be used to motivate a general audience of students to review basic mathematical skills, and to use them to solve real problems from a quantitative perspective.

Later that evening, **Sommer Gentry** from the US Naval Academy will be giving the Friday evening banquet address, entitled “*Faster, Safer, Healthier: Adventures in Operations Research*.”

Saturday: In addition to the contributed paper sessions, there will be two invited addresses. The first one will be given by **Sarah Greenwald** of Appalachian State University. Her presentation is titled

“*Rubik’s Cube Games on Spheres: Geometry of Spherical Orbifolds*.” The second invited address will be given by **Richard Gillman**. He will speak on “*Everyday Questions, Not-So-Everyday Mathematics*.”

There also will be the annual Undergraduate Student Conference, featuring student paper and poster sessions and a Jeopardy competition and new this year, the Radical Dash, an *Amazing Race* style game but radically different.

For more information about the Spring meeting, including abstracts and biographies of the invited speakers, see pages 4 - 5.

Lodging

Hampton Inn
705 England St.
Ashland, VA 23005 (804-752-8444)

Holiday Inn Express Hotel and Suites
107 Carter Rd.
Ashland, VA 23005 (804-752-7889)

Henry Clay Inn B&B
114 North Railroad Ave.
Ashland, VA 23005 (804-798-3100)

Apple Garden Inn
101 South Carter Rd.
Ashland, VA 23005 (804-798-9291)

Sleep Inn and Suites
80 Cottage Green Dr.
Ashland, VA 23005 (804-752-2355)

Dates to remember:

- ◆ Spring MD-DC-VA Section meeting: April 15-16, 2011. Deadline for contributed talks: April 1 2011.
- ◆ MathFest 2011: August 4-6, 2011, in Lexington, KY.
- ◆ Joint meetings of MAA and AMS: January 4-7, 2012, in Boston, MA. Proposals for AMS special sessions must be submitted by April 2, 2011.

To find maps, hotels, registration, and program information, visit the MD-DC-VA Section website at <http://sections.maa.org/mddcva/>

REPORT FROM THE SECTION CHAIR AND GOVERNOR

DIPA CHOUDHURY - CHAIR

DAN KALMAN - GOVERNOR

Spring Section Meeting

"If Winter comes, can Spring be far behind?" Amidst the bitterness and monotony of the cold winter, we continue to seek hope and courage from these words of Shelley. And once spring knocks at our door, we would not only get relief from this chilling cold but also could at last start counting our days for the spring meeting at Randolph-Macon College on April 15-16, 2011. John Hamman has put together a nice program for you. I invite all of you to attend the meeting and present your research in the contributed paper session.

According to Jennifer Bergner at the 2011 Spring meeting we will be holding our annual Undergraduate Student Conference, featuring student paper and poster sessions and a Jeopardy competition. We will also be adding a new event to the student conference, a mathematics Amazing Race competition. Schools are invited to bring up to two teams of 2-4 students each. The teams will find themselves facing some *amazing* math challenges. More information on each of these events can be found on our homepage.

Ann Stewart is organizing sessions for the spring meeting of Section NExT fellows. This year Section NExT fellows will help Jennifer to the Undergraduate Student Conference. Bud Brown will give a talk on "How to Give a Talk" in a special session of Section NExT activities. If you need more information on section NExT activities or student activities, please contact either Ann or Jennifer.

Joint Math Meetings 2011

We attended the JMM 2011 in New Orleans, with nearly 6,000 other mathematicians, exhibitors and stu-

dents. Approximately 2000 research papers were presented from all specialties of mathematics. In addition to the invited talks, there were presentations and panels in the areas of theoretical research, recent applications of math, significant issues such as the BP Oil spill, health and medicine, the economy, encouraging participation of underrepresented groups, and education. The exhibit halls were filled with vendors including AMS and MAA. Fifty eight mathematician-artists presented their art work in various media in the Mathematics Art Exhibition. The second national *Who Wants to be a Mathematician* game for high school students was very successful. The room was filled with supporters of the contestants and JMM attendees. The game was web-cast and seen by contestant schools.

National Organization

The headquarters office prepares an annual report in the form of a power-point presentation, highlighting the current status and future plans of the MAA. The full report can be accessed online at <http://sections.maa.org/mddcva/OtherDocuments/MAAhighlights2010.pdf>.

The following items from the report are of a timely nature.

- With NSF support, the MAA is sponsoring nine PREP workshops, including Mathematical Biology, Geometry and Art, WeBWorK, Creating and Using Applets with GeoGebra. Registration is now open for some or all of these workshops. For full information, go to <http://www.maa.org/prep/2011/>.

- Current issues of the Monthly, Mathematics Magazine, and the Col-

lege Mathematics Journal, along with Math Horizons, are now available electronically to libraries via JSTOR. Members are asked to make sure that the libraries of their home institutions subscribe to all four publications. Related fact: all the back issues of Math Horizons are now available via JSTOR.

- April is Math Awareness Month. This year's theme is *Unraveling Complex Systems*. Information at: <http://www.mathaware.org>.

- Mathfest will be in Lexington, KY, this year, August 4-6. Program highlights are available at <http://www.maa.org/mathfest>. The deadline for submitting contributed paper abstracts is April 30. See <http://www.maa.org/mathfest/cps.html>.

- Colleges and universities can arrange to be host sites for American Mathematics Competitions examinations. This provides interested high school students in your region a place to participate in the AMC program if their own schools are not involved. For more information, go to <http://amc.maa.org/b-registration/b1-archive/2010-2011/2011-HS-CU-list.shtml>.

- The MAA is always looking for members who are interested in taking an active role in the organization. As reported by MAA Secretary, Barbara Faires in the **February/March Focus** (see page 9), members are encouraged to volunteer for committees or to nominate colleagues. A webpage for this purpose is at <https://www.surveymonkey.com/s/committeesuggestions2011>.

From the Board of Governors meeting in January 2011, the following items (cribbed liberally from the report of EPADEL Governor Bill Dunham) are also noteworthy.

Budget Issues. In the second part of 2010, it became clear that the

MAA income would fall well short of projections for the year. As a result, the organization faced a \$420,000 deficit in an overall budget of eight million dollars. The factors behind this shortfall include a declining membership base and smaller-than-projected sales of MAA publications – presumably the effects of the sluggish U.S. economy.

The MAA has cash reserves that can cover small deficits, but the officers and staff agree that relying on this fund is not a sustainable solution to the problem. Thus staff and executive committee members spent the late fall making hard choices. Staff raises and health care contributions were cut; technology upgrades were postponed; certain positions were left unfilled (at least for now); when possible, meetings were conducted on-line rather than face-to-face; and perks like lunch at the MAA Board of Governors' meeting were eliminated.

With such steps, the projected deficit was reduced to \$145,000. Although still large, it is considerably lower than the original shortfall. The situation for next year remains fluid, as pessimists anticipate the need for further cutting to get the budget in balance whereas optimists hope for increased revenues due to a healthier economy. The budget presented to and approved by the board was prepared with what were reported to us as much more conservative revenue projections than in the past. The current status is that the organization is in no immediate trouble, and is taking aggressive steps to get back to balanced budgets. Vigilance will be needed in the near term on this issue.

Personnel Changes. At the end of January, 2011, David Bressoud completed his term as MAA president. Paul Zorn of St. Olaf College, took the gavel on February 1 and will lead the MAA for the next two years. Also, Executive Director Tina Straley and MAA Treasurer John Kenelly have announced their respective retirements from their positions. The MAA is seeking nominations and applications for their successors. See <http://www.maa.org/edsearch.html> and <http://www.maa.org/aboutmaa/treasurer.html>. There will be a vote later this spring for the next MAA president (after Paul Zorn) and two vice presidents. It was noted that MAA voting, even in important national elections, falls at about 15% of the membership. It would be great if our section far exceeded this number in the upcoming race, so keep your eyes peeled for the ballot.

Project NExT. The MAA has learned that Exxon-Mobil, which has generously funded Project NExT for virtually its entire existence, will eliminate all funding after next year. Thus we are seeking corporate funding/sponsorship for what is surely one of the MAA's most successful programs.

Secondary Teachers. The Board of Governors passed a resolution offering a reduced-price membership for secondary teachers. The Board recognized that many high school teachers, especially those teaching A.P. calculus, could benefit from MAA membership, but that our full-price membership, when coupled with NCTM dues, can simply be too much for teachers to bear. It is hoped that this lower rate will encourage more secondary teachers to join the

MAA. The reduced price membership brings with it an on-line subscription to Math Horizons.

E-membership. About 21% of all MAA members have opted for an "e-membership" in which journals are delivered in electronic, rather than paper, format. The Board discussed the pros and cons of e-journals. They can be provided more cheaply than paper copies and thus save money in these tough times. On the other hand, there is the danger than an e-journal might be lost in the electronic detritus that clutters our e-mail, whereas a printed journal is somehow "special" and thus more likely to be read. This is an issue that will require much more discussion.

Mathematical Sciences in 2025

Scott Weidman, Director, Board on Mathematical Sciences and Their Applications has passed a memo along regarding a study called The Mathematical Sciences in 2025. Information about the study committee and its meetings to date may be found by going to www.nas.edu/mathsci2025. Please submit your thoughts through the website.

Election of Section Officers

Spring is the time when we elect new officers. We need to elect a Treasurer, Newsletter editor, and two At-large committee members. If you are interested in running or nominating someone for these positions, please contact Dipa at dsarkardev@loyola.edu. We urge you to become proactive with our section and become a section officer.

See you at Randolph-Macon College.

Spring Meeting - Featured Speakers

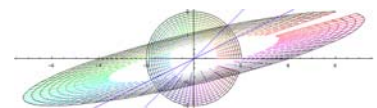
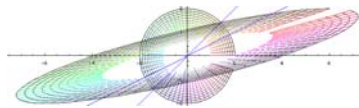
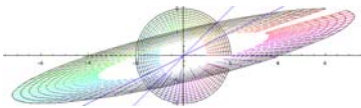
Workshop: A Game Theory Approach to Quantitative Literacy

Richard Gillman
Valparaiso University

Abstract: This workshop explores the ways in which game theory topics can be used to motivate a general audience of students to review basic mathematics skills, and to utilize them to solve real problems from a quantitative perspective. Over the course of the two hours, participants play deterministic games and coalition games while exploring key solution concepts.

Biographical Sketch: Rick Gillman completed his undergraduate work at Ball State University and earned his Doctorate of Arts at Idaho State University in 1986. He has worked at Val-

paraiso University since then, rising to the rank of Professor. Along the way he served as Assistant Dean for Sponsored Research and Faculty Development, was the founding director of VU's Celebration of Undergraduate Scholarship, and is in his eighth year as chair of his department. Rick has edited two volumes published by the Mathematical Association of America (MAA), *A Friendly Competition* and *Current Practices in Quantitative Literacy*, and currently serves as chair of the MAA's Problem Series Editorial Board. He is also Chair of the MAA Committee on Sections. Rick recently co-authored *Models of Conflict and Cooperation*, published by the American Mathematical Society.



Banquet Address: Faster, Safer, Healthier: Adventures in Operations Research

Sommer Gentry
US Naval Academy

Abstract: While mathematical advances of all sorts have impacted our world for the better, operations research is a branch of mathematics that is expressly focused on applying advanced analytical methods to help make better decisions. Operations researchers have eased traffic jams by closing selected streets, and gotten packages to you more quickly by planning U.P.S. routes with fewer left turns. Operations researchers have shown which personal decisions are the leading causes of death, and planned maintenance schedules to minimize bridge collapses. The mathematical tools of operations research, like using random numbers to simulate a range of outcomes when some data are unknown, or finding clever algorithms that shortcut the need to try

every possible decision in order to find the best one, can be recycled to solve problems everywhere in our world. In this talk, I will describe some of my O.R. forays into far-flung fields, and tell my favorite stories about O.R.



Biographical Sketch: Sommer Gentry is Associate Professor of Mathematics at the U.S. Naval Academy and is also affiliated with the Johns Hopkins University School of Medicine. She studied Operations Research at Stanford University and M.I.T. She was a Department of Energy Computational Science Graduate Fellow from 2001-2005, and won a CSGF contest for excellence in technical writing that conveys computational science to a lay audience. She designed optimization methods used for nationwide kidney paired donation registries in both the United States and Canada. Her work has attracted the attention of major media outlets including Time Magazine, Reader's Digest, Science, the Discovery Channel, and the Diane Rehm show. In 2009, she received the MAA's Henry L. Alder award for distinguished teaching by a beginning mathematics faculty member.

Invited Address: Everyday Questions, Not-So-Everyday Mathematics

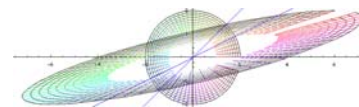
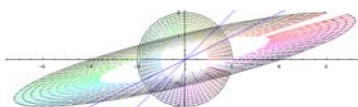
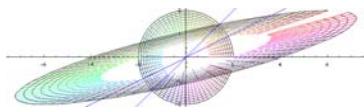
Richard Gillman
Valparaiso University

Abstract: The world is full of unexplored mathematical problems. This talk presents the stories of three prob-

lems that the presenter found in his everyday world and investigated with undergraduate research partners. One is solved completely, one quickly reaches deep and un-explored mathematical territory, and the third, while

not solved, opens many paths for further exploration.

Biographical Sketch: Richard Gillman also is scheduled to conduct the Friday evening workshop. His biographical sketch appeared on page 4.



Invited Address: Rubik's Cube Games on Sphere: Geometry of Spherical Orbifolds

Sarah Greenwald
Appalachian State University

Abstract: We'll slice up basketballs in order to form new spaces like footballs and triangular pillows, and then look at the geometry of the resulting spaces, called orbifolds. Orbifolds furnish a natural starting point for the study of singular spaces and they are especially of interest to mathematicians and physicists. Diverse applications of orbifolds include connections to crystallography, string theory and music theory. Many results, such as those requiring local analysis, generalize easily to the orbifold setting, but most

global results do not. Imagine a spherical Rubik's game where you can rotate spherical triangles on the surface of the sphere. This game exists and is called the Impossible and we'll use it to help understand orbifolds, as we look at lots of examples and results related to the diameter, Euler characteristic, and spectrum.

Biographical Sketch: Sarah J. Greenwald is Professor of Mathematics and a Women's Studies core faculty member at Appalachian State University. She received her PhD from the University of Pennsylvania. Her scholarship areas include Riemannian geometry, popular culture as it pertains to mathematics, and women and minorities in mathematics, and she is a 2005 Mathematical Association of America Alder Award winner for distinguished teaching and the 2010 Appalachian State University Wayne D. Duncan Award for Excellence in Teaching in General Education. She was also inducted into the Appalachian State University College of Arts and Sciences Academy of Outstanding Teachers in 2010. She is a member of the executive committee of the Association for Women in Mathematics and the editorial board of PRIMUS. She co-created the educational website

SimpsonsMath.com with Andrew Nestler. While it is not affiliated with the show, the site was mentioned in the audio commentary of the 7th season of *The Simpsons*. Her interactive mathematics lecture has been distributed on approximately one million DVDs worldwide as a 25-minute DVD extra for the 20th Century Fox *Futurama* movie *Bender's Big Score* and it is listed as "Mind-bending." Dr. Greenwald has spoken about the impacts of scientific popular culture representations on NPR's Science Friday and all over the country.



Solution to Worms Sudoku: Flip vertical

3	9	6	1	8	2	4	5
2	1	5	6	3	4	9	8
4	1	8	9	5	2	3	6
6	8	3	2	4	1	5	9
9	2	1	5	6	1	8	3
1	5	4	8	9	3	6	1
8	3	9	4	1	5	1	2
1	6	1	3	2	9	4	5
5	4	2	1	8	6	1	9

**Plan now for the Fall Meeting at Christopher Newport University,
November 4 - 5, 2011!**

Section News

New Faculty, Award and Recognition

The Mathematical Science department at **Loyola University** has recently hired **Timothy B. Clark** as a Visiting Assistant Affiliate Professor. Dr. Clark received his Ph.D. from University of Albany, SUNY and has been at Loyola since September. The department also hired **Dan Heinz** as an Assistant Professor of Statistics. Dr. Heinz received his Ph.D. from Carnegie Mellon University and is a lecturer in the department of Statistics at the University of Chi-

cago. He will start at Loyola in Fall 2011. The department is being renamed as the Department of Mathematics and Statistics, partly to recognize the fact that it now offers two distinct majors: mathematics and statistics.

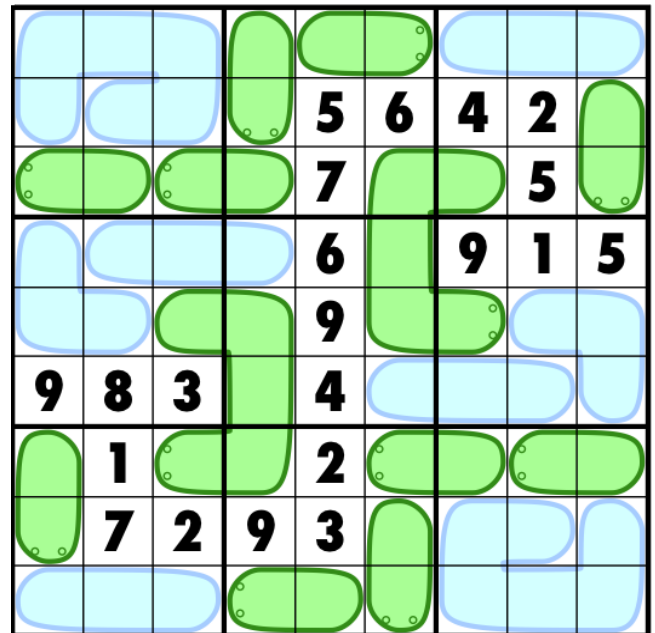
Professor Chris Morrell of **Loyola University** was named a fellow of the American Statistical Association.

During the section's fall 2010 meet-

ing, **Dan Kalman** read the names of those being recognized by MAA for 25 and 50 years of membership. For **25 years** these were **Ronald Calinger, Elaine Magee, Thomas Mayo, Jan McGarry, Vincent Mirelli, Kenneth Moss, Robert Reynolds, Arthur Robinson, Ronald Sturm, and Convers Wyeth**. The **50 year** members were **Walter Elias, John Hennessey, Lois Reid, and Richard Summerville**.

Spring Puzzle: Worms Sudoku — Laura Taalman

Rules: Fill in the grid so that each row, column, and 3 x 3 block contains the numbers 1 through 9 exactly once. In addition, each worm contains numbers that increase from tail to eyes; for example, a worm of length 4 could contain the numbers 2, 5, 7, and 9, in that order, from tail to eyes. Green worms have marked eyes; you must determine the direction of the blue worms. To see the solution go to page 5.



brainfreezepuzzles.com

Future National MAA Meetings

MathFest

2011: Lexington, KY - August 4-6
 2012: Madison, WI - August 2-4
 2013: Hartford, CT—August 1-3
 2014: Portland, OR August 7-9
 2015: Washington, DC - August 5-8

MAA-AMS Joint Mathematics Meetings

2012: Boston, MA - January 4-7
 2013: San Diego, CA - January 9-12
 2014: Baltimore, MD - January 15-18
 2015: San Antonio, TX - January 10-13
 2016: Seattle, WA - January 6-9
 2017: Atlanta, GA - January 4-7

Changes to MAA Section Book Sales

The MAA has announced changes to the way book sales are handled at Section meetings. To be in compliance with state and local sales taxes, the MAA will no longer allow "cash and carry" purchases. The good news is that you will still be able to order from the entire catalog of MAA titles at the special reduced meetings prices; you'll just not be able to take possession at the Section meeting as you have been able to do in the past. The MAA will ship your order to you, free of shipping charges, shortly after the meeting.

Special at the Randolph-Macon Section Meeting on April 16: The Section has a large inventory of titles left over from past Section meetings. To help reduce that collection and to show appreciation for your past support of MAA books, anyone that placing an order at this meeting may select one title from our inventory free of charge.

Thanks for your continued support of Section Book Sales. Our share of the proceeds from these sales goes towards supporting programs for students at Section meetings.

Treasurer's Report

March 30, 2011

<u>General Account</u> Balance, September 28, 2010		\$6,703.89	
<u>Receipts</u>		<u>Expenses</u>	
Meeting Registrations, Fall 10	\$2,840.00	Meals, Fall 10	\$1,824.90
		Speaker expenses, Fall 10	783.20
		PayPal processing fee, Fall 10	92.56
		Student Raffle Book Prize	13.50
<u>Total Receipts</u>	\$2,840.00	<u>Total Expenses</u>	\$2,714.16
General Account Balance, March 30, 2011		\$6,829.73	

<u>John G. Milcetch Memorial Student Achievement Fund</u>, September 28, 2010		\$ 1,012.04
Contributions, Fall 10		115.00
Interest		3.38
<u>John G. Milcetch Memorial Student Achievement Fund</u>, March 30, 2011		\$1,170.42

<u>Section NEXt Fund</u> Balance, September 28, 2010		\$ 954.76
From registration fees, Fall 10		790.00
Meals, Fall 10		(556.00)
<u>Section NEXt Fund</u> Balance, March 30, 2011		\$1,188.76

<u>Project NEXt Fund</u> Balance, September 28, 2010		\$ 0.00
Contributions, Fall 10		240.00
<u>Project NEXt</u> Balance, March 30, 2011		\$240.00

Jan Minton
Treasurer

Section Officers

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

Chair - Dipa Sarkar-Dey (2 year term ending 2011)

Loyola College in Maryland 410-617-2898 dsarkardey@loyola.edu

Chair Elect - Daniel Joseph

Virginia Military Institute 540-464-7495 josephDS@vmi.edu

Past Chair - Jon Scott

Montgomery College 240-567-7795 jon.scott@montgomerycollege.edu

Program Chair - John Hamman (2 year term ending 2012)

Montgomery College 240-567-7794 john.hamman@montgomerycollege.edu

Past Program Chair - David Shoenthal

Longwood University 434-395-2193 shoenthaldw@longwood.edu

Governor - Dan Kalman (3 year term ending 2013)

American University 202-885-3122 kalman@american.edu

Past Governor - Bud Brown

Virginia Tech, Blacksburg 540-231-6950 brown@math.vt.edu

Secretary - Daniel Symancyk (3 year term ending 2012)

Anne Arundel Community College 410-777-2587 dfsymancyk@aacc.edu

Treasurer - Jan Minton (second 3 year term ending 2011)

Roanoke College 540-375-2488 jminton@roanoke.edu

Newsletter Editor - Dawit Haile (2 year term ending 2011)

Virginia State University 804-524-5461 dhaile@vsu.edu

Departmental Liaisons Coordinator - Cindia Stewart (3 year term ending 2012)

Shenandoah University 540-665-5440 cstewart@su.edu

Student Activities Coordinator - Jennifer Bergner (3 year term ending 2012)

Salisbury University 410-677-5429 jabergner@salisbury.edu

At Large Executive Committee Member (Project NExT) - Ann Stewart (1 year term ending 2011)

Hood College 301-696-3733 stewart@hood.edu

At Large Executive Committee Member - Robert Sachs (1 year term ending 2011)

George Mason University 703-993-1464 rsachs@gmu.edu

Webmaster - Don Spickler (3 year term ending 2013)

Salisbury University 410-543-6148 despickler@salisbury.edu