Allegheny Mountain Section of the Mathematical Association of America

Allegheny Mountain Newsletter

Spring Section Meeting!

This year's Section Meeting is being held **April 5-6** on the campus of **Indiana University of Pennsylvania**. As usual, we have an exciting array of invited speakers as well as faculty and student talks. There will also be a student problem competition, a book exhibit and a pizza party. Look inside for more details.

The deadline for registering is **March 30**, which is also the deadline for submitting a talk. Special lodging rates require an early hotel reservation so act soon! Further hotel information is on page 11.

From the Governor: Tamara Lakins, Allegheny College

By now everyone's spring semesters must be progressing within epsilon of spring break! Soon after spring break, of course, comes the Allegheny Mountain Section meeting on April 5-6 at IUP. Tim Flowers at IUP has been working hard to organize the meeting, and the program of invited speakers sounds exciting. I'm looking forward to seeing many of you there!

The Board of Governors voted on several items at the San Diego Joint Meetings last January. Here are the highlights:

Tamara Lakins of Allegheny College, Section Governor

The Board of Governors approved a new and much simplified MAA membership structure, which will be effective in 2014. The new categories of membership will be Member (including reduced dues for verified long-term MAA memberships), Member Plus (which will include additional benefits), K-12 Teacher, Student, and Departmental.

As I've reported in the past, the MAA remains on financially solid ground, although there are some areas that need to be addressed, including recurring operating deficits. The Board approved the 2013 operating budget recommended by the Executive Council. Treasurer Jim Daniels noted that while the operating deficit will again be about $600,000, he expects that just over half of that deficit amount can be eliminated over time by the type of "investment in the MAA" that I reported in last fall's newsletter. As an example, the planned conversion of MAA customer service to an in-house version is expected to have a very fast "pay back" period once it is accomplished in 2014, and this should lead to significant yearly savings in the operating budget.

Other news from the January Board meeting includes: the introduction of the MAA "Book Sale in a Box" for section meetings, which will allow members to buy MAA books at a 35% discount for an extended period of two weeks using an e-coupon. As we approach the spring section meeting, look for your e-coupon in your email! In addition, we learned that MAA MathFest 2013 in Hartford will begin a day early with a social event for all attendees, an opening reception which is included in your registration fee. Finally, beginning in 2015, the MAA Meritorious Service Awards will be awarded at MathFest. It's not too early to start thinking about MathFest 2013, and I hope to see many of you there!

From the Chair: Kim Roth, Juniata College

Come one and come all to the Spring Section Meeting. The spring section meeting will be held at the Indiana University of Pennsylvania on April 5th and 6th. We have an excellent line up of speakers and it should be a great time. Bring your colleagues and your students. Due to the nature of industry in the Indiana area make sure to reserve your hotel room early .

At the Joint Mathematics Meetings our section was asked to speak about activities in our section. I chose to speak about all the activities for students at the section meetings and other sections representatives were impressed. We have had the student talks, the student problem competition, and the pizza party for the last several years. New this year is a panel

Kim Roth of Juniata College, Section Chair

about options for graduate study for students on Saturday opposite the faculty talks. Encourage your students to come to the meetings and stay for both days.

This year the section decided to simplify the Section Teaching Award nomination process and therefore nominate the previous years winner for the national Haimo award. Please have a look at the new nomination process here http://sections.maa.org/allegheny/teachingaward_call and see if you can think of a colleague to nominate. The deadline for applications has been extended until March 22nd.

I hope your semester is going well. See you all in Indiana, Pennsylvania!

Section NExT News: Jackie Jensen-Vallin, Slippery Rock University

The 2013 Allegheny Mountain Section NExT Workshop will be Friday, April 5th at Indiana University of Pennsylvania immediately prior to the Allegheny Section Meeting, from 1:30 – 3:30 pm.

We are excited to have Katherine Socha leading the workshop.

Title: Building and Running Successful Emerging Scholar Programs (ESP)

Abstract: What are ESPs? What are the characteristics of a successful ESP and what good does it do for the students? What are the essential elements needed to start and run an ESP? Why should your school's administrators like and support your work in this area? In this brief workshop, we'll explore these questions and examine some lessons learned (some painful, some great!) from Katherine's experiences building and running an ESP with her colleague Dave Kung at St. Mary's College of Maryland. (As the commercials say, "Dave and batteries not included." Participants will receive an annotated list of every resource Katherine needed (and would need again if she were starting over) to start up and run a Calculus-based ESP.

To register for this Section NExT workshop, please complete the form at:

http://www.surveymonkey.com/s/FF5ZFZ7

Attention students!

Can you solve this problem? It is one of nine from last year's competition.

If $x(x + 1)(x + 2)\ldots(x + 2013)$ is multiplied out and the like terms collected, what is the sum of the coefficients in the polynomial?

If you enjoy solving mathematical problems and puzzles, come to the Spring Section Meeting for the

2013 Allegheny Mountain Section
Problem-Solving Competition

Join us on Friday at 6:30 for fun, candy, and 9 new problems to solve.
For each problem you solve correctly, your name will be entered in a drawing

The competition is followed by student talks. Come support your fellow students. Then, it's pizza time! Funding for the pizza party is provided by NSF grant DMS-0846477 through the MAA Regional Undergraduate Mathematics Conferences program, www.maa.org/RUMC.

Questions? Contact Dr. Pamela Richardson, Coordinator of Student Programs
(richarpa@westminster.edu) or Dr. Jeffrey Boerner, Puzzle Czar
(boernej@westminster.edu)

Section Mentoring Award: Call for Nominations

The Allegheny Mountain Section of the MAA seeks nominations for the annual Distinguished Faculty Mentor of Undergraduate Mathematics Students Award (or, Mentor Award). Awardees have made significant contributions to the development of undergraduate students in mathematics as scholars. This includes, but is not limited to, encouraging student participation in MAA activities and advising students who make presentations at the Section meetings.

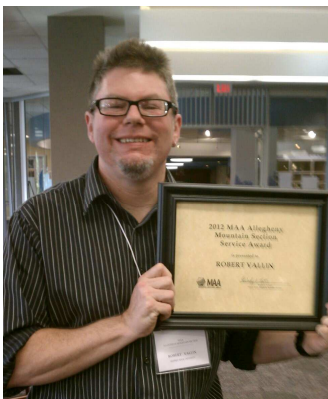Recent recipients of this award include:

2012: **Stacey Levine,** Duquesne University

2010: **Roman Wong**, Washington & Jefferson College

2009: **James Sellers**, Penn State University

2008: **Rich Marchand**, Slippery Rock University

2007: **Mike Berry**, West Virginia Wesleyan College

2006: **Eric Rawdon**, Duquesne University

2005: **Robert Vallin**, Slippery Rock University

To nominate a colleague for the 2011 award, please send a note by email to:

John Tolle, Chair
Mentor Award Committee
jut14@psu.edu.

We are soliciting nominations for this award from now through **March 16, 2013.**

2012 Mentoring Award winner Stacey Levine of Duquesne University

Section Service Award: Call for Nominations

The criterion for the Annual Allegheny Mountain Section Service Award is a consistent record of excellence in service to the section over a period of time. In this context "service" is interpreted in a broad sense to include holding office, coordinating contests, organizing sessions, acting as a panelist, speaking at sessions, acting as the coordinating host for a meeting, or participating in any other activity that contributes to the well-being of the organization.
The Section announces the winner of this award each year at its annual meeting in the spring. Recent recipients of this award include

2012: **Robert Vallin**, Slippery Rock University

2011: **John Bukowski**, Juniata College

2009: **Tamara Lakins**, Allegheny College

2008: **Don Platte**, Mercyhurst College

2007: **Ben Freed**, Clarion University

2006: **Ron Harrell**, Allegheny College

The service award committee consists of Tim Flowers (IUP), Tami Lakins (Allegheny), and Kim Roth (Juniata). Please send your nomination, with a description of how the nominee meets the criterion, by **March 16, 2013** to:

Pam Wovchko
Department of Mathematics
W. Va. Wesleyan College
59 College Ave
Buckhannon, WV 26201
wovchko_p@wvwc.edu

2012 Service Award winner Robert Vallin of Slippery Rock University

Section Teaching Award: Call for Nominations
Deadline extended!

Nominations for the 2013 Allegheny Mountain Section Award for Distinguished College or University Teaching of Mathematics are now being solicited.

There have been some changes to the teaching award nomination process this year. First, in order to encourage nominations, the nomination process is being simplified. Second, in order to then allow winners of the award to be nominated for the national MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics, which has a longer nomination process, the winner of the section teaching award will be nominated for the Haimo in the year following the section award.

The new criterion for nominations for the teaching award will be on the section website http://sections.maa.org/allegheny/teachingaward_call.htm in a few weeks. It will be a simplified criterion from what is there now.

Each year, the Allegheny Mountain Section of the MAA recognizes one of its own for Distinguished College or University Teaching of Mathematics. The awardee is honored at the spring meeting of the Section and is widely recognized and acknowledged within the Section. Recent recipients of the award include:

2012: **Rick Brazier**, Penn State, DuBois

2011: **Jerry Kruse**, Juniata 2010: **Richard**

Marchand, Slippery Rock University

2009: **George Bradley**, Duquesne University

2008: **Antonella Cupillari**, Penn State Erie—The Behrend College

2006: **James Sellers**, Penn State University

2005: **James Reynolds**, Clarion University

2004: **Michael Mays**, West Virginia University

Anyone is entitled to make a nomination, although self-nomination is not permitted. Even if not selected this year, completed nominations are held for three years with the nominator's permission.

Nominations can be sent by **March 22, 2013** to:

Kim Roth
Juniata College
Brumbaugh Academic Center
1700 Moore Street
Huntingdon, PA 16652

Or by email to:
roth@juniata.edu

2012 Teaching Award winner Rick Brazier of Penn State—DuBois

Tentative Schedule for the Spring 2013 Meeting

Friday, April 5, 2013

11:30-12:30	Section Officers Meeting	Oak Room A, Foster Hall
12:30-1:30	Section NExT Lunch	Oak Room C, Foster Hall
1:30-3:30	Section NExT Workshop	Oak Room C, Foster Hall
2:00-5:00	Registration	Stright Hall, 202
2:00-3:45	Book Exhibits	Stright Hall, 302/310
3:55	Welcome from IUP	Beard Aud., Stouffer Hall
4:00-5:00	Invited Address:	Beard Aud., Stouffer Hall
	Dr. Katherine Socha, Math for America	
5:15-6:30	Dinner and Awards	Delaware Room, HUB
6:30-7:25	Student Problem Competition	Stright Hall, 226/229
6:30-9:30	Book Exhibits	Stright Hall, 302/310
7:35-9:30	Student Talks	Stright Hall
9:30-11:00	Pizza party	Delaware Room, HUB

Saturday, April 6, 2013

7:30-8:45	Breakfast	Oak Room, Foster Hall
8:00-8:45	Business meeting	Oak Room, Foster Hall
8:00-9:00	Registration	Stright Hall, 202
9:00-10:00	Invited Address:	Beard Aud., Stouffer Hall
	Dr. Ravi Vakil, Stanford University	
10:00-11:45	Book Exhibits	Stright Hall, 302/310
10:15-11:30	Faculty Talks	Stright Hall
11:45-12:45	Invited Address:	Beard Aud., Stouffer Hall
	Dr. William Dunham, Muhlenburg College	
12:45	Closing Remarks	

Invited Speakers for the Spring Section Meeting

Katherine Socha, Math for America
Talk Title: "Sea battles, Benjamin Franklin's oil lamp, and jellybellies"
Abstract: "During our passage to Madeira, the weather being warm, and the cabbin windows constantly open for the benefit of the air, the candles at night flared and run very much, which was an inconvenience. At Madeira we got oil to burn, and with a common glass tumbler or beaker, slung in wire, and suspended to the ceiling of the cabbin, and a little wire hoop for the wick, furnish'd with corks to float on the oil, I made an Italian lamp, that gave us very good light...." (Benjamin Franklin, December 1, 1762 letter to John Pringle)

Observations of real phenomena have led to mathematical modeling of surface water waves, interfacial waves, and Lagrangian coherent structures among other examples. This expository talk will provide a quick tour of the (mostly advanced undergraduate level) mathematics needed to describe idealized versions of the rings formed by striking a surface of water with a large object (like a bomb), the oil-water waves observed by Founding Father Benjamin Franklin on his voyage to Madeira, and the motion of nutrient laden water being swept into the underbelly of a swimming jellyfish.

Ravi Vakil, Stanford University
Talk Title: "The Mathematics of Doodling"
Abstract: Doodling has many mathematical aspects: patterns, shapes, numbers, and more. Not surprisingly, there is often some sophisticated and fun mathematics buried inside common doodles. I'll begin by doodling, and see where it takes us. It looks like play, but it reflects what mathematics is really about: finding patterns in nature, explaining them, and extending them. By the end, we'll have seen some important notions in geometry, topology, physics, and elsewhere; some fundamental ideas guiding the development of mathematics over the course of the last century; and ongoing work continuing today.

William Dunham, Muhlenberg College
Talk Title: "Two (More) Morsels from Euler"
Abstract: : Leonhard Euler (1707 Ð 1783) ranks among history's greatest mathematicians, and he is justly acclaimed for any number of famous results. This talk will focus on two of his lesser-known proofs - crumbs, as it were, from the great Eulerian feast.

The first is a 1781 argument in which Euler found four different whole numbers, the sum of any two of which is a perfect square. Remarkably, his answer was the fearsome foursome of:

$$18530 \, , \, 38114 \, , \, 45986 \, , \, 65570$$

The second is one of his methods for summing the infinite series of the reciprocals of the squares, the so-called "Basel Problem." He did this in various ways over his career, and I'll consider the 1755 argument in which he evaluated the series via three applications of l'Hospital's rule!

Spring Section Conference Registration

Conference registration can be done on-line:

To register for the conference ~ https://www.surveymonkey.com/s/QCNPGXL
To submit a talk ~ https://www.surveymonkey.com/s/QR8PTQM

If you submit a talk, you must register for the conference also.
Deadline for each of the above is March 30, 2013.

If you wish to register for the conference by mail, print the survey and mail the information to Ben Freed at the address found on the survey.

Local Arrangements:

Driving Information:

Directions to IUP and a campus map can be found at

http://www.iup.edu/mapanddirections/

Hotel Information:
There are four hotels located near Indiana University of Pennsylvania with special rates for conference attendees. Further information, including deadlines and amenities, can be found at

http://sections.maa.org/allegheny/annual_meeting_2013/hotel.htm

Mention the Section Meeting to receive the prices below.

Holiday Inn Indiana	$99.00	(724) 463-3561
Comfort Inn	$99.99	(724) 465-7000
Indiana Inn (formerly "Super 8")	$79.99	(724) 349-4600
Quality Inn and Suites	$108.00	(724) 349-9620

Moderators Needed!

Are you looking for ways to get involved in the Allegheny Mountain Section? If so, consider serving as a moderator at this year's meeting. Moderators are needed for the student presentations as well as the faculty presentations. If you are interested in moderating a student session on Friday night, please contact Pamela Richardson, Coordinator of Student Programs, at richarpa@westminster.edu. If you are interested in moderating a faculty session on Saturday morning, please contact Papiya Bhattacharjee, Second Vice-Chair, at pxb39@psu.edu.

Section Business

At the business meeting during the Spring Section Meeting the Section must fill the offices of Treasurer, Second Vice Chair, Coordinator of Student Programs, and Newsletter Editor. The nominating committee has received the following nominations, and we remind all section members that nominations can be made from the floor at the business meeting as well. Members who are interested in serving as a section officer in the future should speak to a current section officer about how to get involved.

The committee would like to thank Ben Freed of Clarion University, Ryan Higginbottom of Washington & Jefferson College, Pam Richardson of Westminster College and Marc Brodie of Wheeling Jesuit University for their service to the section.

Treasurer:
Duane Farnsworth, Clarion University
Dr. Duane Farnsworth is a faculty member at Clarion University

Second Vice-Chair:
Kevin Drees, Edinboro University
Dr. Kevin M. Drees received his bachelor's and master's degree from Wright State University in 2002 and 2004, respectively, and his doctorate from Bowling Green State University in 2009. His research area includes topology and algebra, with a focus on rings of continuous functions and topological algebra. Kevin is a Mathematics Instructor at Edinboro University where he has been working on various remediation techniques to improve students' success. He has also worked with Larson Text, Inc. in Erie, PA were he has contributed to several books in their catalog.

Tim Flowers, Indiana University of Pennsylvania
Tim Flowers is in his third year in the Section as an assistant professor at IUP. He has been active in the section, attending meetings and workshops, and serving on section award committees. Tim is also the local organizer of the Spring 2013 Meeting at IUP.

Coordinator of Student Programs:
Pamela Richardson, Westminster College
Pamela Richardson is an associate professor at Westminster College. She earned a B.S. from Bowling Green State University and a Ph.D. from the University of Virginia, both in mathematics. She is a nonassociative algebraist and truly enjoys the looks people give her when she tells them her research field. Pam is a 2005-2006 Project NExT fellow and has been the Coordinator of Student Programs for the past two years. She is very involved in the Carleton College Summer Mathematics Program for women, most recently as an instructor for the program.

Newsletter Editor:

Submitted by the Nominating Committee,
Jeff Boerner (chair), Westminster College
Ryan Higginbottom, Washington & Jefferson College
Nathaniel Mays, Wheeling Jesuit University