Allegheny Mountain Section of the Mathematical Association of America

Allegheny Mountain Newsletter

From the Chair: Pam Wovchko, West Virginia Wesleyan College

Okay, I probably sound like a broken record, but...

Happy 100th Birthday to the MAA! Our section will be celebrating the Centennial at our Spring Meeting on the campus of the esteemed Washington and Jefferson College on April 10th and 11th.

Join the excitement... Be a part of the group picture. Read the poster of our section history. Eat some birthday cake. Give a talk. Wear your free t-shirt. Have your students participate in a problem solving session. Listen to some top-notch speakers. Be entered into a drawing for a free registration to the Centennial MathFest in Washington, D.C. (faculty only). Buy a book. Go to the Advanced WebWork Workshop. Catch up with friends. Have your students get entered for a drawing for free MAA student memberships. (You must be present to win the drawings.) Learn something new. Bring your colleagues. Bring your students. Don't miss out.

Book your hotel rooms ASAP. Many hotels are holding blocks until early to mid-March, so don't wait to book your room(s).

The Spring Section Meeting is just the warm-up for the national celebration of the Centennial at MathFest on August 5th-8th in Washington, D.C.! It is a great time to be a part of the MAA. Hope to see you at the meetings!

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Reports from the Governor and the Chair of the Section.

Information about the spring meeting (time-sensitive!).

Abstracts of Invited Talks.

Elections 2015.

MAA 100

MATHEMATICAL ASSOCIATION OF AMERICA

CELEBRATING A CENTURY OF ADVANCING MATHEMATICS

News from the Governor: John Thompson, University of Pittsburgh, Johnstown

Greetings from the frozen tundra that is currently west central Pennsylvania. Now in the midst of the spring term, I look forward to the Section Spring Meeting at Washington and Jefferson College. There we will have great opportunities to attend interesting talks, encourage student engagement in mathematics and congregate with fellow mathematicians. Such opportunities are truly one of the benefits of being a member of the MAA. Returning from the Joint Mathematics Meetings in San Antonio reinforced how fortunate I am to be a member and to serve as Governor of the Allegheny Mountain Section.

In San Antonio, we spent Friday, January 9th in our all-day Board of Governors meeting conducting the business of the MAA. There was the usual business of confirming winners of awards and reviewing committee reports, but there were several other topics which I will share with you here.

The Board of Governors approved a small increase in the dues (a very modest amount) for individual members and changes in the Departmental Membership. There was a fair amount of discussion regarding the Departmental Membership.

While there was concern related to the pricing for large universities, it was generally agreed that providing all undergraduate mathematics students with MAA Student Memberships represents a significant benefit of the new approach.

The Board continues to work on the idea of restructuring the governance of the MAA. There is relative consensus that the Board is too large to truly address budgetary issues or to nimbly direct the organization forward. For example, each time the Board convenes, there is a fair amount of time spent merely explaining standard budgetary practices (e.g. how different grants are administered). However, most believe that the governors provide a vital role in organizational accountability and the setting of general MAA goals. Thus far, there has been no rush to "get it done." Instead, the process has been deliberate and transparent in an effort to "get it right."

The Board approved the budget for 2015. Unfortunately, there is still an anticipated shortfall (it has been a number of years since the MAA actually registered a profit for the year). While the MAA is currently in solid financial standing because of financial reserves accumulated over the years, it should be noted that even a non-

profit organization cannot continue to operate in the red and expect to survive long term.

Finally, there was discussion regarding the year-long celebration of the MAA's service to the mathematical community for the past 100 years. Over the years, the MAA has provided publication outlets for scholarly work, materials to aid our pedagogical foundation, numerous opportunities to share the fruits of our professional endeavors, and many other valuable contributions to our profession. There really is much to celebrate in this centennial year.

Spring Section Meeting April 10-11, 2015 at Washington and Jefferson College

Hotel Information

**Note: When making a reservation, make sure to call the hotel directly and mention that you are with the MAA Conference. This will get you the discounted rate. Hotels will be filling up quickly, and the hotels are strongly encouraging guests to book as far in advance as possible to avoid a "sell out" situation.

Cambria Suites
451 Racetrack Road
Washington, PA 15301
(724) 223-5588
Amenities: Complimentary hot breakfast, coffee maker, refrigerator, microwave, complimentary Wi-Fi, fitness center, and indoor pool
Comments: Located approximately 7 miles from campus.
Group Price: $109/night plus tax
Booking Deadline: March 20, 2015

Comfort Inn, Meadowlands
237 Meadowlands Blvd
Washington, PA 15301
(724) 746-9700
Amenities: Complimentary breakfast, coffee maker, refrigerator, microwave, complimentary Wi-Fi, fitness center, and indoor pool
Comments: Located approximately 5 miles from campus.
Group Price: $99/night plus tax
Booking Deadline: March 31, 2015

Doubletree Hotel
340 Racetrack Drive
Washington, PA 15301
(724) 531-6103
Amenities: Coffee maker, refrigerator, microwave, in-room safe, complimentary Wi-Fi, and fitness center
Comments: Located approximately 5 miles from campus.
Group Price: $119/night plus tax
Booking Deadline: March 10, 2015

SpringHill Suites
16 Trinity Point Drive
Washington, PA 15301
(724) 223-7800
Amenities: Complimentary hot breakfast, coffee maker, refrigerator, microwave, complimentary Wi-Fi, fitness center, indoor pool, and pull-out sofa
Comments: Located approximately 2 miles from campus.
Group Price: $115/night plus tax
Booking Deadline: March 11, 2015

Conference Registration

Registration for the conference is available electronically at the conference webpage:

http://sections.maa.org/allegheny/annual_meeting_2015/meeting2015.htm

Registration is open until Friday, April 3rd at 11:59pm (you may also register at the meeting).

Note: If you are giving a talk, you must complete BOTH registration forms.

Spring Section Meeting Schedule

Friday, April 10, 2015

11:30-12:30	Section Officers' Meeting	Media Room, The Commons
12:30-1:30	Section NExT Lunch	Media Room, The Commons
1:30-3:30	Section NExT Workshop	Media Room, The Commons
2:00-4:00	Registration	Lobby, Olin Fine Arts Center
2:00-3:45	Book Exhibits	Art Gallery, Olin Fine Arts Center
3:55	Welcome from W&J	Olin Theater, Olin Fine Arts Center
4:00-5:00	Invited Address	Olin Theater, Olin Fine Arts Center

Dave Kung, St. Mary's College of Maryland

Harmonious Equations: A Mathematical Exploration of Music

5:00-5:30	Group photo of all attendees	Olin Theater, Olin Fine Arts Center
5:30-5:45	Registration	Lobby, Olin Fine Arts Center
5:35-6:45	Dinner and Awards	Ballroom, Rossin Campus Center
6:45-7:30	Student Problem Competition	Room 114, Burnett Center
6:45-7:30	Advance WeBWorK Workshop	Room 107, Burnett Center
6:45-9:30	Book Exhibits	Art Gallery, Olin Fine Arts Center
7:35-9:30	Student Talks	Various Classrooms, Burnett Center
9:30-11:00	Pizza Party and Centennial Cake	First and Second Floor, Burnett Center

Saturday, April 11, 2015

7:30-8:45	Breakfast	Ballroom, Rossin Campus Center
8:00-8:45	Business Meeting	Ballroom, Rossin Campus Center
8:00-9:00	Registration	Lobby, Olin Fine Arts Center
9:00-10:00	Invited Address	Olin Theater, Olin Fine Arts Center

Barbara Faires, Westminster College and MAA

The First 100 Years

10:00-11:45	Book Exhibits	Art Gallery, Olin Fine Arts Center
10:15-11:30	Faculty Talks	Various Classrooms, Burnett Center
11:45-12:45	Invited Address	Olin Theater, Olin Fine Arts Center

Ron Wasserstein, American Statistical Association

Living with the Improbability Principle

12:45	Closing Remarks	Olin Theater, Olin Fine Arts Center

Invited Addresses

BARBARA FAIRES, Westminster College and MAA

The First 100 Years

On December 31, 1915, 104 delegates voted to form the Mathematical Association of America and the *Monthly* was formally transferred to the MAA. The mast head of volume 23, January 1916, issue reads: The American Mathematical Monthly, official journal of the Mathematical Association of America. In this talk, I will use *The Monthly* as a lens for highlighting the life of the MAA over these first 100 years.

DAVE KUNG, St. Mary's College of Maryland

Harmonious Equations: A Mathematical Exploration of Music

Mathematics and music seem to come from different spheres (arts and sciences), yet they share an amazing array of commonalities. We will explore these connections by examining the musical experience from a mathematical perspective. The mathematical study of a single vibrating string unlocks a world of musical overtones and harmonics-and even explains why a clarinet plays so much lower than its similar-sized cousin the flute. Calculus, and the related field of differential equations, shows us how our ears hear differences between two instruments-what musicians call timbre-even when they play the same note at the same loudness. Finally, abstract algebra gives modern language to the structures beneath the surface of Bach's magnificent canons and fugues. Throughout the talk, mathematical concepts will come to life with musical examples played by the speaker, an amateur violinist.

RON WASSERSTEIN, American Statistical Association

Living with the Improbability Principle

"The Improbability Principle: Why Coincidences, Miracles, and Rare Events Happen Every Day" is a stimulating 2014 book by distinguished statistician David Hand. Ron Wasserstein, Executive Director of the American Statistical Association, will talk about how this principle affects our lives and perspectives, the surprising ways in which our notions of such things as probability and coincidence can mislead us, and the dismaying realization that understanding this principle better does not necessarily change our thinking.

Workshops at the Spring Section Meeting

Section NExT Workshop

Dave Kung: Mathematics and Responsible Citizenship

The world is an unfair, unjust place. What can math teachers do about it? This talk will focus on two specific ways mathematicians have worked to address issues of social justice both in our classrooms and in our world. The first half of the workshop will focus on the inequalities that pervade mathematics and science classrooms and what people have done to help level the playing field, especially in college math classrooms. In the second half, we will look at how math teachers are using innovative curricula to raise awareness of social justice issues while simultaneously teaching math content. These courses ask students to use the tools of mathematics to study, understand, and even address issues ranging from economic inequity to environmental impacts. Sample classroom activities will illustrate the types of content that might replace the algebra-intensive curriculum for many humanities students.

Biography: Dave Kung took to activism early on, protesting against wars, racist school board members, and his parents' outrageous rules throughout high school. During his college years at the University of Wisconsin--Madison, he worked to help retain talented students of color, teaching in the inaugural years of the Wisconsin Emerging Scholars Program. During graduate school (also at UW), he worked with the graduate student union to improve working conditions for graduate students and improve TA training. He graduated in 2000 with a Ph.D. in Harmonic Analysis and a minor in Mathematics Education.

Now a Professor of Mathematics at St. Mary's College of Maryland, Dave has helped to create programs that attract and retain underrepresented students. He co-founded the Emerging Scholars Program in mathematics at SMCM, helped expand it to other departments, helped other institutions start similar programs that work with historically-underserved populations, and runs the Emerging Scholars Program REU, an NSF-funded summer research program for talented underrepresented math students. He serves as the Director of Project NExT, a national professional development program for new faculty in mathematics.

Advanced WeBWorK Workshop
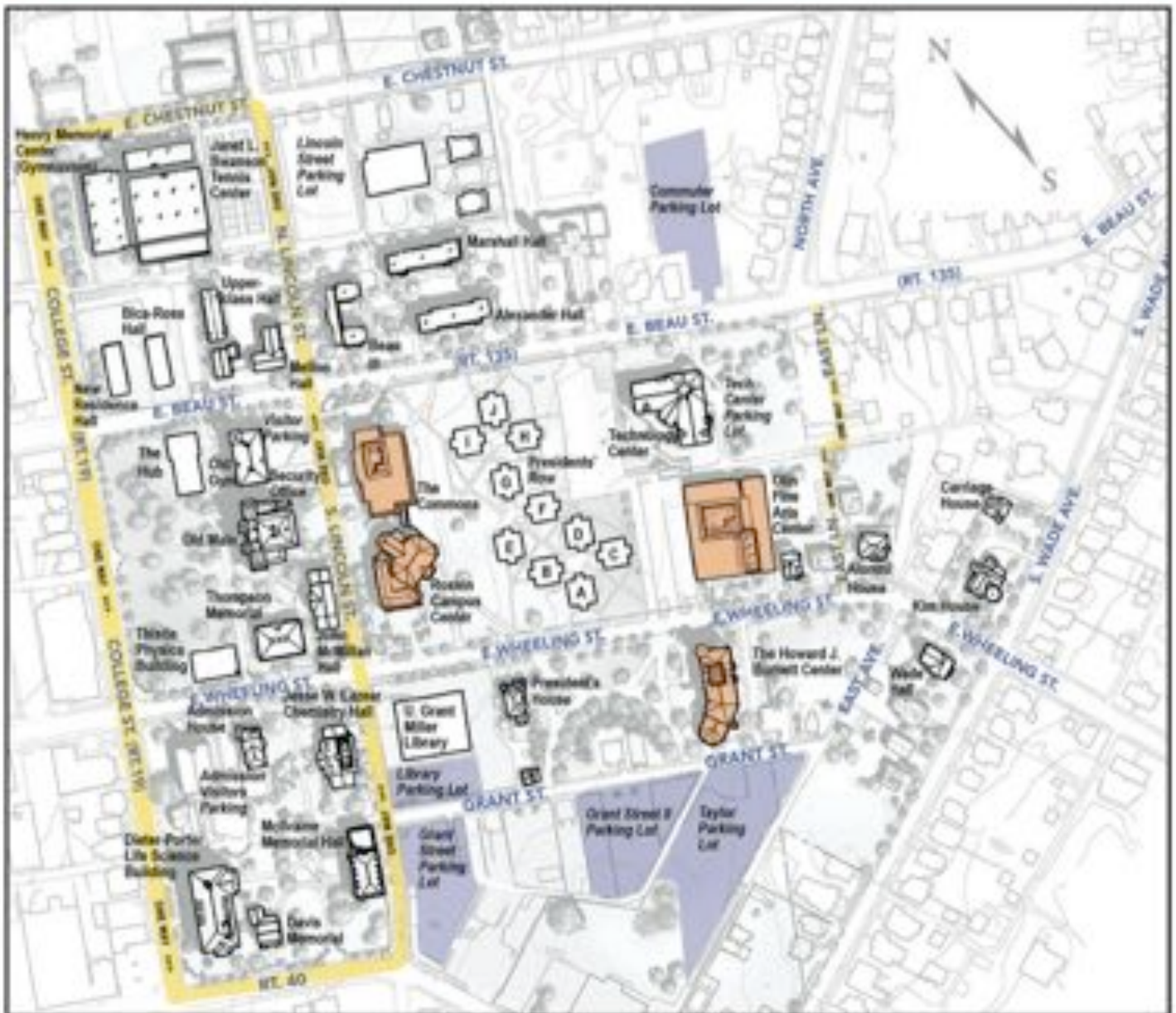
Presented by Tim Flowers (IUP)

Are you a WeBWorK user? Are you interested in learning more about how to maximize the experience for you and your students? Possible topics for this workshop include the following: the recently reorganized problem library, editing problems, authoring problems, and new features like using essay questions, rewarding student achievement badges, a math palette, and a "show me another" option.

Those interested in attending are requested to email flowers@iup.edu (by March 31) so that specific topics may be chosen and prepared to meet the needs of the audience.

WeBWorK is an open-source online homework system supported by the MAA

The file size of the newsletter had to be reduced to post on the webpage. For a clearer copy of the campus map, please go to the conference webpage.

Directions to Washington & Jefferson College

From the north

Take I-79 South to I-70 East. Take exit 20/Beau Street. Bear right on the exit ramp and proceed to the light. Turn left at the light onto Beau Street (PA 136). At the next light turn left onto South Wade Street. (Directions continue below—see "From South Wade Street.")

From the south

Take I-79 North to I-70 West. Take exit 20/Beau Street. At the end of the exit ramp, turn left at the stop sign. Turn left at the first light onto Beau Street (PA 136). At the second light turn left onto South Wade Street. (Directions continue below—see "From South Wade Street.")

From the east

Take I-70 West to exit 20/Beau Street. At the end of the exit ramp, turn left at the stop sign. Turn left at the first light onto Beau Street (PA 136). At the second light turn left onto South Wade Street. (Directions continue below—see "From South Wade Street.")

From the west

Take I-70 East to exit 20/Beau Street. Bear right on the exit ramp and proceed to the light. Turn left at the light onto Beau Street (PA 136). At the next light turn left onto South Wade Street. (Directions continue below—see "From South Wade Street.")

From South Wade Street

At the second stop sign turn right onto East Wheeling Street. Proceed approximately one block and turn left onto East Lane. (An Event Parking sign will mark the way.) Proceed one block and turn right onto Grant Street. Parking is available on the left in both the Taylor and Grant Street II parking lots. If these lots are full, continue west on Grant Street and look for parking in either the Grant Street or Library parking lots. In the unlikely event that all four of these lots are full, continue west on Grant Street to South Lincoln Street. Turn right onto South Lincoln Street and turn right at the second light onto Beau Street. Drive past The Church of the Covenant. The Commuter parking lot is located on the left, immediately after the Family Promise building. (You may safely ignore the sign that indicates parking is only for church members.)

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PARTICIPATE. INVESTIGATE. EDUCATE.

MATHEMATICAL ASSOCIATION OF AMERICA

Section Executive Committee Election

Report of the Nominating Committee Submitted by Kim Roth, Chair

The members of the Nominating Committee are Kim Roth (Juniata College), Chair; Faun Doherty, Washington & Jefferson College; and David Miller (West Virginia University). The committee is pleased to present the following slate of candidates for the election at the 2015 Spring Meeting at Washington & Jeffereson College. The candidates are as follows:

Second Vice-Chair/First Vice-Chair

TBA

Treasurer

Duane Farnsworth (Clarion University of PA)

Melissa Sovak (California University of PA)

Newsletter Editor

Jeffrey Wheeler (University of Pittsburgh)

Coordinator of Student Programs

Papiya Bhattacharjee (Penn State Behrend)

Candidate Biographies

Duane Farnsworth, Clarion University of PA – Candidate for Treasurer

Duane Farnsworth graduated from the University of Buffalo in 2007 having developed research interests in functional analysis and differential equations. After spending some time as a visiting professor at Marshall University, he joined the mathematics department at Clarion University in the fall of 2011. As a teacher at Clarion he works hard for his students while trying to impart to them some of his enthusiasm for mathematics. He has been an active conference participant in both the Ohio and Allegheny Mountain Sections of the MAA, and he has served as treasurer of the Allegheny Mountain Section since 2011. Now that he has finally learned how to do the job, he would like the opportunity to serve as treasure for another term.

Melissa M. Sovak, California University of Pennsylania – Candidate for Treasurer

Melissa Sovak is an assistant professor at California University of Pennsylvania. She earned a B.S. from Carlow University in Mathematics and Accounting, an M.S. from Duquesne University in Computational Mathematics and Ph.D. from the University of Pittsburgh in statistics. Melissa's research area is Statistics and Mathematics education and has redesigned several courses using the Flipped Classroom technique. Melissa is also the program coordinator for Cal U's new PSM program in Applied Mathematics.

<u>Jeff Wheeler, University of Pittsburgh –
Candidate for Newsletter Editor</u>

Jeff completed his PhD in Combinatorial
Number Theory from Memphis in May, 2008
and immediately relocated to the Pittsburgh
area. As a Wheeling native, moving to the
area was a welcomed return home. Jeff
taught part-time that first year at Pitt,
Carnegie Mellon, and Duquesne, and secured
a full-time position at Pitt the following
year. In addition to teaching, Jeff oversees
the Calc 2 courses for Pitt's College in High
School program and chairs the department's
Undergraduate Mathematics Seminar. He has
designed two courses at Pitt and was one of
30 faculty accepted into the MAA's pilot PIC
Math program.   Jeff lives outside Cranberry,
PA with his wife (an analyst for FedEx) his
daughter (8) and two sons (6 and 3).

<u>Papiya Bhattacharjee, Penn State Erie –
Candidate for Coordinator of Student Programs</u>

Dr. Papiya Bhattacharjee is an Assistant
Professor of Mathematics at Penn State Erie,
The Behrend College. She earned a
M.S.(2005) in Pure Mathematics at University
of Calcutta in India, and received her
Ph.D.(2009) in Mathematics from Bowling
Green State University. Her research area
includes ordered algebraic structures,
commutative algebra, and topology. Dr.
Bhattacharjee is a 2010-2011 Project NExT
Fellow. She has conducted several
undergraduate research projects at Penn State
with 12 students, she is involved with the
Student Life Committee creating a welcoming
environment for international students, and she
practices Inquiry-Based Learning in her upper-
level mathematics courses. Dr. Bhattacharjee
loves to travel, and so far she has driven across
the United States, from Erie, PA to Orange,
CA, to Portland, OR, and back; she has visited
South Africa several times, Italy, and her home
country of India.

Interim Newsletter Editor

Dr. Tamara Lakins

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