Allegheny Mountain Section of the Mathematical Association of America

Allegheny Mountain Newsletter

Spring Section Meeting!

This year's Section Meeting is being held **April 9-10** on the campus of **Pitt University Johnstown**. 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 **April 2**, 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.

University of Pittsburgh at Johnstown

From the Governor: James Sellers, Penn State University

Dear Colleagues,

I decided to do something different with my Spring 2010 governor's report. I am writing to you from San Francisco as I attend the Joint Mathematics Meetings! It's been a great week, and I would like to take this opportunity to again encourage you to attend these national meetings. I know that many people don't like to attend these conferences because they feel so "big," and I was once such a person! But I have now found that there are advantages to such "largeness." For one, there are tons of talk sessions on a wide variety of topics, from research in numerous mathematical subjects to educational and pedagogical issues. I enjoyed several talks while here, including one given by Bruce Sagan (more about Bruce below) as well as a series of talks by Richard Stanley – it's hard for me to avoid a good combinatorics talk! I also enjoyed talks on developing mathematics course for liberal arts majors and the use of history to enrich mathematics courses.

But there's more to these meetings than just attending talks. Of course, I went to my committee meetings – I am currently a member of the MAA's CUPM as well as an AMS committee which is trying to understand the extent to which colleges and university mathematics departments are utilizing computer-based homework software. I also had the privilege of sitting in on a meeting of undergraduate directors of mathematics departments as part of a push by the AMS to help such folks better understand how they might administratively lead their respective programs. And I fulfilled my duty by attending the Board of Governors meeting on Tuesday. It was fun to see our colleague Barbara Faires there as she transitions into her role as the MAA Secretary. All the best to her as she serves the MAA in this way!

Without a doubt, the most important and enriching part of my conference experience was the "networking" – hanging out with people to talk about various matters. Arguably, I had the most fun reminiscing with a former graduate school officemate. He and I had not seen one another in 17 years, and we met at this conference at a Penn State alumni reception. What a surprise to see one another! We caught up on what we are both doing now and how our families are doing. I also enjoyed time throughout the week sharing meals with

James Sellers of Penn State University, Section Governor

others, including some folks from our own section. (I love to eat, and I love to eat with colleagues and friends even more!)

So with all this "cheerleading" about how wonderful meetings can be, let me share a few words about upcoming meetings. I hope you are planning to attend our section's annual meeting to be held April 9-10, 2010 at the University of Pittsburgh at Johnstown. Doug Ensley, Francis Su, and Laura Taalman, three nationally-known speakers, have already agreed to be our plenary speakers at the Johnstown meeting. The meeting information has been updated recently, including abstracts for these three plenary talks as well as the meeting registration form and the talk registration form. Please plan to attend, and strongly consider giving a talk. Also, please recruit students to come to the meeting – this is a wonderful opportunity for them to see what we do as mathematicians, and that there is a "human" side to our profession. You might try to get some of them to give talks as well – there are both student and faculty talk sessions at the meeting.
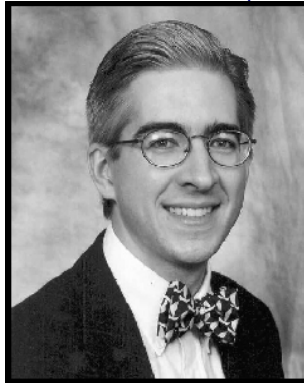
I also hope you are planning to attend MathFest 2010 in Pittsburgh. What a privilege we have to experience a MathFest hosted in our section! This is a rare treat, especially given our close proximity to the meeting. I strongly encourage you to attend. There really is something for everyone at these meetings! (I mentioned Bruce Sagan above – I am pleased to share that Art Benjamin, Jenny Quinn, Bruce Sagan, and Brigitte Servatius have agreed to speak in an invited paper session that I am running on visualizing combinatorial mathematics via tilings. This session, along with many, many others, promises to be really refreshing and enlightening.)

Lastly, don't forget to nominate one of your colleagues for our section's teaching, service, and mentoring awards. More details, including the contact information for the chairs of the award committees, can be found at our section's website, http://www.math.psu.edu/sellersj/alleghenymtn/ .

All the best for 2010!

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From the Chair: John Bukowski, Juniata University

Hello! As I write this note at the end of a cold January, I am thinking about the exciting year ahead of us here in the Allegheny Mountain Section! In addition to having our regular Spring Section Meeting in April, we are very fortunate that MathFest will be held in Pittsburgh this August.

John Bukowski of Juniata College, Section Chair

Later this year, MathFest will be held in the Allegheny Mountain Section, in Pittsburgh, on August 5-7. To celebrate this special event, the Section is hosting a reception for its members – all of you! – on Thursday, August 5, at 5:30 p.m. See the MathFest program later this year for more details.

The Spring Meeting will be held April 9-10 at the University of Pittsburgh at Johnstown, and the Section's Executive Committee has put together yet another great program for our meeting. There will be something for everyone – sports, voting, Sudoku, and more! Our invited speakers will be Doug Ensley (Shippensburg University, and the Second Vice President of the MAA), Francis Su (Harvey Mudd College, and the First Vice President of the MAA), and Laura Taalman (James Madison University). We will also have the usual great assortment of student and faculty talks, as well as the exciting student problem competition. Don't miss this meeting!

While the Section Teaching Award nomination deadline has passed, the deadlines for the Service and Mentor Awards have not. Please consider nominating a worthy colleague for one of these honors.

Finally, I encourage all of you to get involved in your Section. There are many ways to do so –running for a Section office, serving as a room monitor for talks at the Section meeting, serving on an award selection committee, or by sharing your ideas for speakers or activities with us! If you have an interest in doing any of these things, or if you have any questions about the Section, please contact me (bukowski@juniata.edu, 814-641-3591) or any of the Section officers.

I hope that things are off to a good start for all of you this semester, and I look forward to seeing everyone in Johnstown on April 9 and 10!

Section NExT News: Tami Lakins, Allegheny College

The Fall 2009 Section NExT workshop "Math Modeling of Toxic Financial Assets," held at the University of Pittsburgh on September 19, 2009, was presented by John Chadam of the University of Pittsburgh. Nearly 30 Section NExTer's attended this workshop.

The **Spring 2010 Section NExT workshop** will precede the Spring section meeting on April 9. Doug Ensley of Shippensburg University (one of the invited speakers for the section meeting) will present the workshop "Discrete Mathematics: Puzzles, Patterns, and Proof." All current and past national and section NExT fellows are invited to participate in all Section NExT activities.

Abstract: Discrete Mathematics includes many of the underlying principles for the sorts of puzzles, patterns, and games that appeal to students. This fact can be exploited to design engaging problems and activities for the introduction of topics in a traditional discrete mathematics or "transitions" course. This workshop will present a series of examples and provide participants with the resources and inspiration to design even more.

Bio: Doug Ensley is Professor of Mathematics at Shippensburg University, where he has been on the faculty since receiving his Ph.D. from Carnegie Mellon in 1993. Professor Ensley has nearly twenty years of experience running professional development workshops, mini-courses, and summer programs, particularly those that apply to discrete mathematics

and the use of technology in teaching mathematics. He has been PI on an NSF grant to develop technology-based learning material for the student-centered teaching of mathematical proof, which is incorporated in the textbook, *Discrete Mathematics: Mathematical Reasoning and Proof with Puzzles, Patterns and Games* (John Wiley & Sons). More recently he co-founded the website, www.flashandmath.com, which won the *2009 ICTCM Award for Excellence and Innovation with the Use of Technology in Collegiate Mathematics*. In the MAA world he is past chair and governor of the Eastern PA/ Delaware section, an inaugural (=old) Fellow in Project NExT, and a founding member of the MathDL Advisory Board. He is currently serving as Second Vice President of the national MAA. (http://webspace.ship.edu/deensley/)

Doug Ensley at work

Section Mentoring Award: Call for Nominations

For the past few years, the Allegheny Mountain Section of the MAA has awarded the Distinguished Faculty Mentor of Undergraduate Mathematics Students 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. **We are soliciting nominations for this award from now through <u>March 30, 2010</u>.** A nominee should have made significant contributions to the development of undergraduate mathematics students 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. Please send your nomination with a description of how the nominee meets the criteria to:

James Sellers
Department of Mathematics
Penn State University
104 McAllister Building
University Park, PA 16802

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. The Section announces the winner of this award each year at its annual meeting in the spring. In the context of this award, "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 Section.

Pamela Richardson serves as Chair of the Service Award Committee. **Any member of the Section is welcome to forward nominations to her by <u>March 15, 2010</u>.** Her contact information is as follows:

Pam Richardson
Department of Mathematics and Computer Science
Westminster College
319 S. Market St.
New Wilmington, PA 16172-0001

Tentative Schedule for the Spring 2010 Meeting

Friday, April 9

11:30-12:30	Section Officers Meeting
12:30	Section NExT Lunch
1:00-3:30	Section NExT Workshop
2:00-5:00	Registration
3:55	Welcome from University of Pittsburgh at Johnstown
4:00-5:00	Invited Address: Doug Ensley, Shippensburg University
5:15-6:30	Dinner & Awards
6:30-7:15	Student Problem Competition
6:45-9:15	Book Exhibits
7:30-9:25	Student talks
9:30-??	Pizza Party

Saturday, April 10

7:30-8:45	Breakfast
8:00-8:45	Business Meeting
8:00-9:00	Registration
9:00-10:00	Invited Address: Francis Su, Harvey Mudd College
10:00-11:45	Book Exhibits
10:15-11:30	Faculty Talks
11:45-12:45	Invited Address: Laura Taalman, James Madison University
12:45	Closing Remarks

Invited Speakers for the Spring Section Meeting

Doug Ensley, Shippensburg University

Talk Title: A Recurring Theme in the Mathematics of Sports

Abstract: In recognition of April as Mathematics Awareness Month, this presentation will focus on this year's theme, "Mathematics and Sports." One of the primary themes of a discrete mathematics course is "recursive thinking." As it turns out, it is easy to use this idea in the modeling of many sporting events, ranging from baseball to bowling to tennis. In this presentation, we will start with simple recursive models and build up to Markov chain analysis. Along the way we will compare the predictions of our models to real data from the world of sports. See http://www.mathaware.org for more information on Mathematics Awareness Month.

Francis Su, Harvey Mudd College

Talk Title: Voting in Agreeable Societies

Abstract: When do majorities exist? How does the geometry of the political spectrum influence the outcome? What does mathematics have to say about how people behave? When mathematical objects have a social interpretation, the associated theorems have social applications. We give examples of situations where sets model preferences, and prove extensions of classical theorems on convex sets such as Helly's theorem that can be used in the analysis of voting in "agreeable" societies. This talk also features research with undergraduates.

Laura Taalman, James Madison University

Talk Title: Sudoku: Questions, Variations and Research

Abstract: Sudoku puzzles and their variants are linked to many mathematical problems involving combinatorics, Latin squares, magic squares, polyominos, symmetries, computer algorithms, the rook problem, graph colorings, and permutation group theory. In this talk we will explore variations of Sudoku and the many open problems and new results in this new field of recreational mathematics. Many of the problems we will discuss are suitable for undergraduate research projects. Puzzle handouts will be available for all to enjoy!

At the business meeting during the section meeting we will elect three officers: Chair-elect, 2nd Vice-chair and Treasurer. The nominating committee has put forth the following names and we remind all section members that nominations can be made from the floor at the business meeting as well. The nominating committee consisted of Lyn Miller from Slippery Rock University, John Thompson from the University of Pittsburgh at Johnstown and Pam Wovchko from West Virginia Wesleyan University.

Nominations for Chair-elect:

Michael Mays has a B.A. (1973) in Mathematics from WVU and a Ph.D. (1977) from Penn State. His professional career has been at WVU, where he currently holds an Eberly Professorship, except for a visiting appointment at the University of Queensland in Brisbane, Australia, and several appointments at the University of the Witwatersrand in Johannesburg, South Africa. He has served as President of the West Virginia Council of Teachers of Mathematics, and received the WVCTM Distinguished Service Award and College Teaching Award. The Allegheny Mountain Section honored him with a Distinguished Teaching Award in 2004. He has been a member of the Institute for Math Learning at WVU since it was established in 1999, and is currently its Director.

Kim Roth is an assistant professor at Juniata College and hopes by the time this is published to be a tenured associate professor. She earned her Ph.D. in chaos and fractals from Penn State in 2002 and her BA from Oberlin in 1996. She also studied at the Budapest Semesters in Mathematics in the 96-97 school year. Kim has served the section in the past as a Vice-Chair. She is a 2002-2003 Project NExT fellow (forest dot) and is currently exploring the use of clickers in calculus.

Nominations for 2nd Vice-chair:

Jerry Kruse is in his 11th year at Juniata College, where he is an Associate Professor of Mathematics and Computer Science. He received his Ph.D. and M.Sc. in Applied Mathematics from Brown University, and his B.S. in Computer Science from the University of Illinois. On his sabbatical in 2007, he redesigned Juniata's Quantitative Methods course, and is now undertaking a SoTL project to assess the quantitative reasoning skills of the students in the class, using CLA-like performance tasks. In 2006, he was brave enough to be local co-coordinator (with friend and colleague John Bukowski), for the local meeting hosted by Juniata College. This experience inspired him to volunteer as one of the local organizers for the 2010 CCSC-Eastern conference, to be held at Juniata this coming October.

John Tolle earned a Ph.D. from the University of Kentucky in 1996 in partial differential equations. He was a Lecturer in the Mathematical Sciences Department at Carnegie Mellon University for 12 years. In Fall 2008 he joined the Mathematics and Geosciences Department at Penn State DuBois, where he will become a co-coordinator for the Honors Program beginning this fall. He loves to attend the MAA section meetings and soak up student and faculty talks, and has given talks at the meetings for five years in a row. At Penn State DuBois he has organized an Applied Mathematics Colloquium with invited speakers from western Pennsylvania colleges and universities. He has written papers with undergraduates in differential equations and voting theory and also has a very strong interest in mathematics pedagogy.

Nomination for Secretary:

Bob Fliess received his B.S. in Mathematics in 1975 and a M.Ed. in Secondary Education Math in 1979 (with additional graduate work in mathematics from 1985 to 1988) from the University of Pittsburgh. After beginning as an Instructor of Mathematics at the University of Pittsburgh and teaching high school mathematics in Pittsburgh, he moved to West Liberty State College, where he has been for 20 years. His hobbies include tennis, bridge (Life Master), and poker. He has served as the Secretary of the Allegheny Mountain Section since 2006.

Annual Spring Meeting - Talk Information Form

(online at http://www.math.psu.edu/sellersj/alleghenymtn/annual_meeting_2010/talkreg.htm)

Note: All contributed talks are 15 minutes in length.

Mark the appropriate blank: I am _____ a student _____ faculty.

Name: _____

Institution: _____

Email Address: _____

Mailing Address: _____

_____

_____

_____

Title of Talk: _____

_____

Abstract of Talk: (Please **attach** separately if needed.)

Equipment Needs — Please read carefully: *Note that each room is equipped with whiteboard and a projector which displays the output of an attached MS Windows computer. In addition, there is a port where the output from a laptop can be connected to the projector. The computers in each room have PowerPoint software, the Internet Explorer web-browser, USB ports, and CD-ROM drives. It may be wise to bring one's talk on a jump drive/USB drive if possible. Overhead projectors, VCRs, etc.,* **may be** *available with advance notification, but this is not guaranteed.* **If you request additional technology or software, please provide a clear and comprehensive list of your needs; attach separately if needed.**

Mail *student* **Talk Information Forms to:**
Natacha Fontes-Merz
Department of Mathematics and Computer Science
Westminster College
New Wilmington, PA 16172

Mail *faculty* **Talk Information Forms to:**
Kimberly Burch
Mathematics Department
Indiana University of Pennsylvania
210 S. Tenth St.
Indiana, PA 15705

Talk Information Forms must be received by <u>April 2, 2010</u>**.**

Annual Spring Meeting – Registration Form

(online at http://www.math.psu.edu/sellersj/alleghenymtn/annual_meeting_2010/meetreg_start.htm)

Name: _____

Institution: _____

Email Address: _____

Mailing Address:

_____

_____

_____

_____

Registration Category (check one): (Faculty members, please select based on the **highest mathematics degree** offered at your institution.)

Regular Registration ($25.00)

_____Faculty, Associate's Offered
_____Faculty, Bachelor's Offered
_____Faculty, Master's Offered
_____Faculty, Doctorate Offered
_____Business, Industry, or Government
_____High School Teacher

"New Person" Registration (free) *

_____Faculty, Associate's Offered
_____Faculty, Bachelor's Offered
_____Faculty, Master's Offered
_____Faculty, Doctorate Offered
_____Business, Industry, or Government
_____High School Teacher

Special Registration (free)

_____Undergraduate Student
_____Graduate Student
_____Retired

* - A "new person" is defined as someone who, as of this academic year, is either a new member of the MAA or is a member of the MAA who is new to the Allegheny Mountain Section.

MAA member?	_____yes	_____no	
Optional Contribution supporting Section NExT?	_____yes ($5)	_____no	_____yes ($10)
Friday Evening Dinner?	_____yes ($20)	_____no	
Saturday Breakfast?	_____yes ($9)	_____no	

Additional Information (such as whether you are bringing a guest to meals):

Checks should be made payable to Allegheny Mountain Section, MAA, and sent with this form to:
Ben Freed, Mathematics Department, 840 Wood St., Clarion University, Clarion, PA 16214.

Deadline for receipt of registration forms: April 2, 2010

Local Arrangements for the Spring Section Meeting:

Driving Information:
Driving directions to The University of Pittsburgh at Johnstown can be found on the University's web site at http://www.upj.pitt.edu/417/

Hotel Information:
There are four hotels located near UPJ with special rates for conference atten-dees. Addresses and phone numbers can be found on the University's web site at
http://www.upj.pitt.edu/Admission/21092/
(scroll to the bottom of the page) Mention the Section Meeting to receive a dis-count. Here is some further information:

Comfort Inn and Suites $89+ $6 for an extra (+9% tax).   Deadline: April 2

Sleep Inn $76+$6 for an extra (+9% tax).   Deadline: April 2

Holiday Inn Express Johnstown $70 (+9% tax).   Deadline: April 1

Super 8 Motel, $55 (+9% tax)   Deadline: March 9
(the rate will be honored after 3/9/10, but availability of rooms is not guaranteed).

Campus Map:
A campus map can be found at http://www.upj.pitt.edu/4788.pdf