Allegheny Mountain Section of the Mathematical Association of America

Allegheny Mountain Newsletter

Spring Section Meeting April 13-14, 2012 at West Virginia University

Do you enjoy mathematics? Do you want to reconnect with friends and colleagues from the Western Pennsylvania and West Virginia area? Then the Spring 2012 Section meeting is the place to be.

Our three featured speakers will be **Erica Flapan** of Pomona College, **James Tanton** of St. Mark's School and **Paul Zorn** of St. Olaf College.

At this time, the titles and abstracts of the talks are not available, but as always we look forward to excellent presentations by well respected speakers.

In addition to our invited speakers, there will be the usual contributed paper sessions for faculty and student speakers, a pizza party on Friday night, and much more. Please plan on being there.

Detailed information will be included in the spring newsletter.

From the Governor: Tamara Lakins, Allegheny College

Tamara Lakins of Allegheny College, Section Governor

I am pleased to be writing my first report for the newsletter as the new Allegheny Mountain Section Governor. My first official duty as Governor was to attend the Board of Governors meeting at this past summer's MathFest in Lexington, Kentucky. While I normally don't enjoy the actual act of traveling to a conference, this time I thoroughly enjoyed the beautiful drive from Pittsburgh to Kentucky through West Virginia!

The most exciting item of business at the Board of Governors meeting was the Board's election of Michael Pearson (currently MAA Associate Director and Director of Programs and Services) to assume the role of Executive Director when Tina Straley retires at the end of this year. The Board also commended Tina's successful performance as outgoing Executive Director, and there will be a special reception in her honor at this January's Joint Math Meetings in Boston.

In addition, the Board elected Jim Daniel (University of Texas) as Treasurer, effective February 2012. When the MAA Executive Committee accepted Treasurer John Kennelly's resignation on August 29, 2011, it also appointed Jim Daniel as Treasurer to fill out Kennelly's term.

John Kennelly reported in Lexington that the long-term financial health of the organization is excellent. Not surprisingly, however, the current operating budgets are tight during these trying financial times.

Finally, the relatively new MAA e-memberships continue to be popular, and I encourage you to consider this format if you have not already "switched over." I love my e-membership: it's easy to access the journals electronically, and my office has benefitted from the extra space I now have in my bookcases!

While not strictly speaking a Governor's item, I want to also let you know that our section has welcomed three new national Project NExT fellows this year: R a c h a e l   N e i l a n (Duquesne), Erin Bancroft (Grove City College), and David Prier (Gannon University). David actually arrived in our section last year. Please join me in welcoming them to the section, and please continue to encourage your new faculty to participate in our own Section NExT!

The upcoming MAA meetings (the Joint Meetings in Boston in January, next summer's MathFest to be held in Madison, and our own section meeting next spring at WVU) sound very exciting, and I'm looking forward to seeing you there. Finally, let me end with former Governor James Sellers' tradition of encouraging you to look for ways to be involved in our Section, from attending the Section meeting, encouraging your students to give talks at that meeting, nominating colleagues for our Section Mentor, Teaching, and Service Awards, to participating as a member of a nominating committee or the Executive Committee. Please feel free to contact me (at tlakins@allegheny.edu), or any section officer, about the ways in which you think you might want to contribute to the success of our Section.

I wish you the best as we draw near the ends of our semesters, and I look forward to seeing you in Boston!

From the Chair: Kim Roth, Juniata College

Kim Roth of Juniata College, Section Chair

Greetings from snowy central Pennsylvania. I hope the rest of fall has more autumnal weather than the end of October.

I would like to take a moment to thank John Bukowski for his service to the section as chair. John has served in many positions in the section over the years including section Governor and co-coordinator of Section NExT. John and his family will be heading to the Netherlands in the spring for John to conduct math history research during his sabbatical. Upon his return, he will serve the section as Historian.

The 2012 Section Meeting will be held at West Virginia University in Morgantown, West Virginia. It is easily accessible from the highway,

and the buildings to be used at the meeting are close together. We have an excellent line up of invited speakers: Erica Flapan (Pomona), James Tanton (St Mark's School), and Paul Zorn (St. Olaf). There will be talks from students and faculty along with the student problem contest. Mark your calendar now and plan to attend on April 13 and 14.
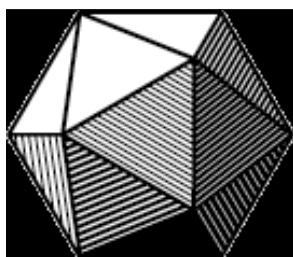
This section functions because of the great work from many of its members. This statement translates into two requests:

1) Consider helping out with the section. We always need more people, especially new people, to run for officer positions, to serve on committees, or to moderate rooms of talks at the section meet-

ing. Contact me (roth@juniata.edu) or any other officer if you are interested in getting involved or have questions about what is involved with getting involved.

2) Nominate people for the section awards. People in this section do great things in mentoring, teaching, and service, and they deserve recognition for it. Calls for nominations for these awards appear in this newsletter.

I hope your fall semester finishes well. I look forward to serving you as chair for the next two years. I hope to see some of you at the Joint Mathematics Meetings in Boston, MA in January and all of you at the 2012 Section Meeting.

Section NExT

Section NExT News: John Thompson

On September 17th, thirty-two participants gathered at the University of Pittsburgh for the Fall Section NExT Workshop. The overall topic was assessment. The morning session was led by Dr. James Hamblin of Shippensburg University. He relayed his experiences as the assessment coordinator at Shippensburg. While assessment is often viewed by faculty as a burdensome task, Dr. Hamblin advised that if you restrain the scope of assessment and remain focused on utilizing the results to improve student programs then it can be a valuable tool. He suggested that it is important to ease

into an assessment program and not try to do too much. Set the goal that assessment is to improve the program and to enhance the student experience rather than to satisfy an administrative edict.

The afternoon session led by Dr. Karen Rhea, University of Michigan, focused on student assessment. In particular, Dr. Rhea described her efforts in assessing calculus students at the University of Michigan by discussing their use of "gateway" exams to address computational requirements which allow their standard exams (common evening exams) to delve into

the theoretical and intuitive understanding of calculus. Both sessions were well-received by the participants. The Section NExT co-coordinators are currently planning the Spring Workshop which will take place in conjunction with the Section's Annual Meeting at West Virginia University in Morgantown, West Virginia.

Submitted on behalf of the co-coordinators of the section, Dr. Tami Lakin of Allegheny College and Dr. Bev Michael of University of Pittsburgh, by Dr. John Thompson of the University of Pittsburgh at Johnstown.

Summer Mathematics Programs: Encouraging Women in Mathematics

By Pam Richardson, Westminster College

The women of the 2010 Summer Mathematics Program at Carleton College, Minnesota

Glancing around the Math/CS Department at Westminster College, one might think that women are doing pretty well in mathematics, as half of the mathematicians are women. However, globally, the situation is not so rosy. While 40% of undergraduate degrees in mathematics are earned by female students, only 26% of Ph.D.s in mathematics are earned by women, and only 22% of women who begin a Ph.D. program in mathematics actually finish the degree. At primarily-undergraduate institutions, only about 25% of the faculty members are women, and at doctoral-granting universities, that number drops to about 11%. Thus, the gender balance that exists at Westminster is certainly an anomaly.

In 1995, two dedicated mathematicians decided to help; Deanna Haunsperger and Stephen Kennedy started the Carleton College Summer Mathematics Program for Women Undergraduates (SMP). This NSF-funded program is a 4-week experience designed to support and encourage female mathematics students in their studies. Each year, 18-20 women who are finishing their freshman or sophomore year of college are selected from a large pool of applicants to participate. During the program, the participants take 2 courses in mathematical disciplines that are not usually taught to undergraduates, attend colloquium talks given by successful female mathematicians, attend a 3-day conference with former participants who now have Ph.D.s, participate in panel discussions on topics like careers and graduate school, and participate in many social and academic activities. The SMP schedule can be quite intense, but the participants form strong bonds with their fellow classmates, their instructors, the program directors, and the mentors they meet at the conference.

The statistics from SMP participants are encouraging. Since 1995, 54% of the women who completed the program earned a Ph.D., and 64% of those who begin a Ph.D. program complete the degree. While these numbers can still improve, they are much better than the national averages. The program directors assert, "We have an impact on the lives of the young women who come to our program; we see the increased confidence, enthusiasm, knowledge, and mathematical sophistication. We do believe we are making a difference."

The Carleton SMP continues to have an enormous impact on my development as a mathematician. My involvement in SMP began in 1999, when I was a student in the program. Participating in the program opened my eyes to exciting new opportunities in mathematics, and I met many friends who are still in my life today. Since I earned my Ph.D. in 2005, I have returned each summer to serve in a variety of roles. In 2010 and 2011, I was delighted to be an instructor in the program, teaching Lie theory to a wonderful group of women. Throughout the years, in all of my roles in the program, I learned a lot of mathematics, developed a great support network of other women in math, and had a lot of fun!

For information on the Carleton Summer Mathematics Program for Women Undergraduates, see http://www.math.carleton.edu/smp/ .

Section Teaching Award: Call for Nominations

Nominations for the 2012 Allegheny Mountain Section Award for Distinguished College or University Teaching of Mathematics are now being solicited. 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. The awardee is also the official Section candidate for the national MAA Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics. Recent recipients of the award include:

2011: **Jerry Kruse**, Juniata College

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, and we urge you to do so if you have someone eligible and qualified in your department. In this way, your candi-

date has an opportunity to be considered for the Section Award and, if so selected, also for the national award. Even if not selected this year, it is a great honor for the person nominated, your department will have demonstrated its commitment to excellence in teaching, and the work done in preparing a nomination folder for your candidate is not wasted since your candidate can be nominated again in a future year. Self-nomination is not permitted.

Eligibility:

*) College or university teachers assigned at least half time during the academic year to teaching a mathematical science in a public or private college or university (from two-year college through teaching at the Ph.D. level) in the Allegheny Mountain Section of the MAA. 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.

*) At least five years teaching experience in a mathematical science

*) Membership in the Mathematical Association of America

Guidelines for Nomination: The nominees should:

*) Be widely recognized as extraordinarily successful in their teaching(1)

*) Have teaching effectiveness that can be documented

*) Have had influence in their teaching beyond their own institutions (2)

*) Foster curiosity and generate excitement about mathematics in their students.

(1) "Teaching" is to be interpreted in its broadest sense, not necessarily limited to classroom teaching (it may include activities such as preparing students for mathematical competitions at the college level, for example, the Putnam Prize Competition or the Mathematical Contest in Modeling, or attracting students to become majors in a mathematical science or to become Ph.D. candidates).

(2) "Influence beyond their own institution" can take many forms, including demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential or innovative books on the teaching of college mathematics, etc.

To nominate someone for this award, please see the full instructions for completing a nomination packet at www.math.psu.edu/sellersj/alleghenymtn/nom2.pdf. The Nomination Form can be found at www.math.psu.edu/sellersj/alleghenymtn/nomination.pdf. Please follow all instructions precisely to assure uniformity in the selection process both at the Section and national levels.

Please send three copies of the nomination packet to:

Dr. George Bradley
Department of Mathematics and Computer Science
440 College Hall
Duquesne University
Pittsburgh, PA 15282

Materials must be received no later than February 2, 2012.

The Section Selection Committee will choose the Section awardee and communicate its selection to the national MAA secretary no later than March 1 so that the national Committee can then make its selections.

We look forward to your participation in this exciting MAA venture of taking substantive action to honor extraordinarily successful teaching. We want to see such teaching recognized at all post-secondary school levels. We depend on you to help us identify those who merit such recognition.

2011 Teaching Award winner Jerry Kruse of Juniata College

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:

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

2004: **Lyn Miller**, 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, 2012.**

2010 Mentoring Award winner Roman Wong of Washington & Jefferson College

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

2010: **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, 2012** to:

Kim Roth
Department of Mathematics
Brumbaugh Academic Center
1700 Moore Street
Huntingdon, PA 16652
roth@juniata.edu

2010 Service Award winner John Bukowski of Juniata College

News from the Campuses

Duquesne University
submitted by **George Bradley**

Dr. Rachael Miller Neilan joined the faculty in August. Rachael is from Martinsburg, PA. She received her B.S. in Mathematics from Drexel University and Ph.D. from the University of Tennessee. After graduate school, Rachael spent two years working as a postdoctoral researcher in the Department of Oceanography at Louisiana State University. Her research interests include optimal control theory, mathematical biology, differential equations, and individual-based modeling.

Dr. Stacey Levine received the Excellence in Teaching Award from the McAnulty College of Liberal Arts. Stacey is an Associate Professor and a Project NExT fellow.

Dr. John Fleming received tenure and was promoted to Associate Professor.

Spring 2011 mathematics graduate **Josh Koslosky** has been accepted into the PhD program in applied mathematics at the University of Minnesota. Josh will also be a graduate assistant in this program, which is one of the top 20 in the US.

Dr. Karl Wimmer, Assistant Professor, has received an NSF grant, "New Directions in Fourier Analysis, Noise Sensitivity, and Learning Theory," for $231,480. The award period is June 1, 2011 through May 31, 2014.

Mr. Sean Tierney joined the faculty in August. Sean is originally from Philadelphia, PA. He received his B.A. in Mathematics and B.S. in Secondary Education from Duquesne University and his M.A. in Research Methodology from the University of Pittsburgh, where he served as a Teaching Fellow and Research Assistant for 6 years. In addition to teaching introductory statistics courses, Sean's research interests include evaluating the validity and reliability of standardized test results and linking and equating test forms.

Juniata College
submitted by **John Bukowski**

Kim Roth was an invited presenter at two events: the Project NExT workshop before MathFest and the Section NExT workshop held before the Fall Ohio Section meeting. Both presentations were about using classroom voting and peer instruction.

Gerald Kruse was promoted to full professor and named the John '54 and Irene '58 Dale Endowed Professor of Mathematics and Computer Science. In addition, he was named Director of Juniata's James J. Lakso Center for the Scholarship of Teaching and Learning for the 2012-13 academic year.

Saint Vincent College
submitted by **Michael Botsko**

Dr. Michael Botsko has published the following problems and solutions in the fall of 2010 and the spring 2011: Q1005 and A1005, *Mathematics Magazine*, 83 No. 5, (2010), 392 and 397; Q1010 and A1010, *Mathematics Magazine*, 84 No. 2, (2011), 151 and 156, 157; Solution to Problem 1850, *Mathematics Magazine*, 84 No. 3, (2011), 235, 236.

Dr. Daniel Arcara has published the following paper with A. Bertram: "Reider's Theorem and Thaddeus Pairs Revisited," in Grassmannians, Moduli Spaces and Vector Bundles, Clay Mathematics Proceedings, Volume 14, 2011.

Washington & Jefferson College
submitted by **Roman Wong**

Dr. Jenny Kline became the new chair of the Mathematics Department this year, succeeding Dr. **John Zimmerman** in the position. The Department thanks John for his service and leadership during the last nine years.

Dr. Faun Doherty has had a paper written jointly with three students of Washington and Jefferson College, **Jennifer Magee**, **Peter Gentile**, and **Christian Miedel**, accepted for publication in the journal *Congressus Numerantium*. The title of the paper is "A vertex ordering result for tripartite unit probe interval graphs." The research was supported by a HHMI grant received by W&J.

Dr. Ryan Higginbottom, **Dr. Michael Woltermann**, and **Dr. Roman Wong** were accompanied by six students, **Marie Buggey**, **Kerri Nunnamaker**, **Cammie Monahan**, **Emily Sasala**, **Sammi Taylor**, and **Kristina Woodside**, to the 2011 CURM at Penn State on November 4-5. Nunnamaker and Woodside each presented a talk of their research at the conference.

Wheeling Jesuit University
submitted by **Marc Brodie**

WJU welcomes **Dr. Nate Mays** to the faculty. Originally from Morgantown, WV, Nate earned his Ph.D. in numerical analysis from the University of Pittsburgh.

Due to an unfortunate lack of valid reasons to avoid the position, **Marc Brodie** was made chair of the department of Mathematics and Computer Science.

Section Executive Committee: Call for Nominations

At the 2012 Spring Meeting, the Section must fill the offices of Secretary, Second Vice Chair, and Chair-Elect. Descriptions of these positions can be found below. Please consider nominating yourself or a colleague for one of these positions. The Nominating Committee this year consists of

Pam Richardson (chair):
724-946-7286,
richarpa@westminster.edu

John Bukowski:
814-641-3591,
bukowski@juniata.edu

Alfred Dahma:
724-357-2388,
alfy@iup.edu

Please send your nomination to one of the members of the Nominating Committee by **January 31, 2012**. As always, nominations will also be taken from the floor at the business meeting next spring. Descriptions of the officers' responsibilities are below.

Second Vice-Chair:
The primary duty of the Second Vice-Chair is to organize the faculty contributed talks at the Spring Section Meeting. This includes collecting the e-mail talk registrations, coordinating with the host institution, and scheduling times and rooms. Much of this work is done in the weeks directly preceding the Section Meeting. After one year, the Second Vice-Chair becomes the First Vice-Chair for one year. The First Vice-Chair acts as the contact person for the three invited speakers for the Spring Section Meeting. Duties include inviting the speakers (usually during the summer) and confirming travel, lodging, and registration with the invited speakers.

Secretary:
The Secretary keeps minutes of the Business Meeting and the three Executive Committee Meetings each year. The Secretary also submits the Annual Section Report to the MAA after gathering the appropriate data (with the help of the Treasurer and others).

Chair-Elect:
The Chair-Elect serves for one year before beginning a two-year term as Chair. The Chair-Elect has no specific duties other than to serve on the Executive Committee and to prepare to become Chair. The Chair prepares meeting agendas with input from the other officers and presides at the Business Meeting and the three Executive Committee Meetings each year. The Chair is generally responsible for the operations of the Section throughout the year. After completing the two-year term, the Chair becomes Past Chair for one year to maintain continuity in the Section leadership.

All Section Officers:
All section officers are expected to participate in three Executive Committee Meetings each year. The Spring meeting is held at the Spring Section Meeting, usually in April. The Summer meeting is usually held in June, and the Fall meeting is usually held in October. Section officers are also expected to attend the Business Meeting held at the Spring Section Meeting. Section officers often serve the Section in other ways, such as serving on committees or assisting with the events of the Spring Section Meeting. In addition, all section officers contribute to e-mail discussions about Section business throughout the year.

Student Submissions Wanted!

If your students have attended a conference or other mathematical event and would like to write an article that can be used in the newsletter, please have them send it to the editor at mbrodie@wju.edu .