October 2013

Matters Mathematical

The Newsletter of the Pacific Northwest Section of the Mathematical Association of America

Missoula MEETING June 26-28, 2014

June 2014 PNW MAA Meeting at University of Montana

Contents

The 2014 PNW MAA meeting will be held at the University of Montana in Missoula on June 26, 27, 28. The invited speakers include the current MAA president Bob Devaney of Boston University, Ravi Vakil of Stanford University and Skip Garibaldi of Emory University.

Proposals for special sessions and abstracts for contributed talks will be called for in the spring. Planned and optional activities include an outdoor banquet, hiking and whitewater rafting. We will take advantage of the beautiful Missoula summer season!

Housing options will include dorms and nearby hotels. More information and online registration will be posted on our website http://cas.umt.edu/math/pnwmaa/ and in the spring newsletter.

Contact Kelly McKinnie, kelly.mckinnie@umontana.edu, for more information.

http://cas.umt.edu/math/pnwmaa/

PNW MAA Chair's Report

By Brian Blitz

Hey PNW-MAAers,

At the end of the April 2013 section meeting at Willamette University, I took over as Chair of the section. In May, I received a report from Frank Farris about the Willamette meeting (he was one of the invited speakers). It was clear from the report that Frank was impressed with the meeting and our section in general. However, he also noted some areas of improvement which included lining up section meeting locations two or three years in advance (please let me know if your school is interested in hosting a section meeting) and getting more members to the business meeting (during the business meeting in Montana we will be electing a Chair-Elect and a Secretary-Treasurer).

In August at Mathfest, I attended the Section Officers meeting. The big news there was the fact that the MAA turns 100 years old in 2015. To celebrate this, Mathfest 2015 in Washington D.C. will be an extra day long and include six invited speakers (typically Mathfest has three invited speakers). They encouraged each section to post some of the section's history on the section's website. Our section along with Ohio was praised for already having a great history webpage (thanks to Ken Ross). This fall there is a committee to update the section by-laws and the updated version will be sent out in the spring and voted on at the Montana meeting.

Finally, I would like to thank all the members that volunteer their time and energy to make our section vibrant and effective. Please let me know if you have any concerns or if you are interested in getting more involved with the section.

Brian Blitz
bgblitz@uas.alaska.edu

Editor's Greetings

Welcome to all of the new faculty in our region! There are a lot of new additions to our section.

If you are reading this but did not see an announcement from the MAA that it is available, then you are not currently signed up to receive section emails (even if you get some other emails from the MAA). To remedy this, see the instructions on page 3.

Colin Starr, Editor
cstarr@willamette.edu

Upcoming Events and Conferences

Upcoming Meetings:

2013 *n*th Annual Combinatorial Potlatch (see p. 9)
2014 PNW MAA at U. Montana (Missoula)
2014 NUMS (Dates, location TBA)

http://sections.maa.org/pnw/events/ (section)
http://www.maa.org/subpage_4.html (national)

NUMS Conference Spring, 2014

NUMS to be Hosted by OSU

NUMS 2013 was held April 6, 2013 at Pacific Lutheran University, with Invited Address given by Inga Johnson, Willamette University. Student speakers from Eastern Oregon University, Lewis and Clark College, Oregon Episcopal School, Pacific Lutheran University, Pacific University, Seattle Pacific University, Seattle University, University of Puget Sound, and Western Washington University filled three parallel sessions during the full day event. NUMS 2014 will be held in Spring 2014 at Oregon State University. Look for the Call for Papers to be sent out early next year.

NUMS is a one-day regional mathematics conference whose objective is to provide a venue for undergraduate and high school students to present their mathematical research. While the main program will consist of talks by undergraduate students, NUMS will also feature a keynote address by a local professor. Registration is free for all participants, as is lunch.

When planning for the spring semester, we encourage you to consider NUMS as a forum for your students and advisees to present results from their coursework, capstone projects, senior theses, modeling competitions, and undergraduate research projects. NUMS is open to undergraduates at all levels and experience, so please encourage all students, including freshmen and sophomores, to attend and give talks at NUMS. The research that students present need not be original!

Registration for NUMS will open soon and continue through March 1. More information should be forthcoming soon; watch your email for an announcement.

Not getting section emails?

At the most recent section meeting, a number of participants said that they were not receiving MAA emails such as solicitations for news for the newsletter. Many were surprised to learn that they needed to "opt in" to these emails per the MAA's new policy. If you wish to opt in now, here is how:

Click here to go the MAA's mailing list sign-up page. After you enter your email address, you will be asked to submit it, and then instructions will be emailed to you about how to proceed.

To receive member and section news, you need to check the **first** box in the list ("member news"). (Many members may have checked only the "general" box at the bottom.)

It generally takes one to four weeks for the change to take effect, so if you would like to have it take effect immediately, please email Annie Baer at programs@maa.org to let her know that you would like to receive section emails, and she will set you up right away.

Nominations Sought for PNW MAA Distinguished Teaching Award

Chris Black

Dear Members of the MAA Pacific Northwest Section,

It's that time of year again -- classes are in session, the leaves are turning, there's a nip in the air, and I start badgering you for nominations for the Distinguished Teaching Award for the Pacific Northwest Section of the MAA. You can nominate your friend, you can nominate your arch-rival, you can even coerce someone to nominate you!

Preliminary nominations are due to me by October 20th. Electronic submissions can be sent to me at blackc@cwu.edu and paper submissions will also be accepted at the address at the bottom of this message.

Here's what you need to do:

(1) Consult the eligibility requirements at http://www.maa.org/awards/Haimo_EGN.pdf to ensure that your nominee is eligible.

(2) Nominate your colleague by downloading and completing the first page only of the nomination form available at http://www.maa.org/Awards/Haimo_NF.pdf. Include the nomination form and narrative as described in the directions.

To streamline the process, the Section uses the same nomination form as for the national Haimo award. But for the first round of selection for the PNW Section Distinguished Teaching Award, we only require that you complete the first page of the nomination form and provide a narrative. No recommendation letters are required for the first level of selection.

Initial nominations are due October 20th, 2013.

(3) The DTA committee will select two or three semifinalists. The nominators of the semifinalists will then be asked to complete a full nomination packet, including letters of recommendation, by January 7th, 2014.

Winners of the section award are automatically nominated for the national MAA Deborah & Franklin Tepper Haimo award.

Any questions about the process? Contact Chris Black, PNW Section secretary, at blackc@cwu.edu.

Thanks, and get those nominations ready!

Chris Black
blackc@cwu.edu
Secretary/Treasurer
Pacific Northwest Section MAA

Mailing Address:
Chris Black, Mathematics
Central Washington University, Lynnwood
20000 68th Ave. W.
Lynnwood, WA 98036

Project NExT at the Salem Meeting, April 2013

By Ian Besse, Mark Fitch, and Cristina Negoita

This year the PNW Project NExT meeting was once again met with enthusiasm by old and new NExT-ers: bright and early on Friday April 12th many Project NExT members gathered on the campus of Willamette University. There was sun in the sky and there were flowers outside, and inside there were many bright new ideas. The meeting started with introductions of new fellows and then dove right into a "hands-on" session exploring innovative ways to keep our courses "fresh" (organized by Janet Shiver from Central Washington University). We formed groups to discuss topics like assessment, online learning, or novel pedagogies, and then took turns sharing our ideas with the larger group, so that everyone had a chance to contribute to the discussion on each topic. We exchanged many terrific ideas for infusing new life into old courses.

The next session, organized by Bill Breslin (Pacific University) looked closely at ways to keep our research alive. This session was in a panel format (panelists including Gary Gordon, Kelly McKinnie and Dave Perkinson) so the advice was diverse, yet focused. The panelists recommended things like "just work on problems, don't worry about reading all the background" or "work with undergraduate students" to keep you going. Some stressed the importance of applying for grants from places like the Center for Undergraduate Research in Mathematics (CURM) that allow for some course release for instructors, or other organizations like PCMI, MRC and AIM. They also stressed the importance of being connected with the research community through publications that appear on Google Scholar or by subscribing to arXiv.org. One panelist emphasized the social aspect of working on math problems, especially with undergraduate students – which many appreciated, since some view research as a somewhat lonely pursuit.

Allison Henrich (Seattle University) gave a formal presentation on flipping the classroom, and it was a resounding success. It included many different sources and generated lots of discussion as participants inquired about the challenges and opportunities this type of setting presents. The authors of this article note that ted.com has a whole series dedicated just to the flipped classroom model. Some of the lessons are in fact pretty mathematical too, so if you get a chance check out ed.ted.com.

Following the flipping discussion we enacted a sphere packing problem in the back of the Sassy Onion restaurant. Of course discussion was as interesting during this informal time as during the rest of the meeting.

The final topic brought the discussion full circle by presenting teaching beyond mathematics. If anything can keep our perspectives fresh it is incorporating other interests into our jobs. Examples included visual arts, musical arts, and women's studies. This session, too, was in a panel format; it included panelists Frank Farris, Gary Gordon, David Kung and Elizabeth McMahon (and was organized by Nancy Ann Neudauer). This was inspirational on many levels – it provided some insight into opportunities like co-teaching with a faculty from a different department, or collaborating with artists in creating beautiful fabric designs inspired by mathematics. Although it seemed that this is something that one explores later on in one's career, it did encourage us to consider other opportunities beyond the traditional mathematics classroom.

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MAA Dolciani Mathematics Enrichment Grant
An Example from our Section

By Kelly McKinnie (University of Montana) and
Nancy Ann Neudauer (Pacific University), Dolciani Mathematics Enrichment Grant Program Director

The MAA DMEG program has awarded forty grants to projects providing enrichment activities for talented middle and high school students, supported by the Mary A. Dolciani Foundation and the MAA. Four years of funded projects showcase a wide diversity of project types and geographical areas. We invite distinctive, fresh, and innovative proposals for this year (by 12 February 2014). Several grants have been awarded in the PNW Section. Here is an example of a project at the University of Montana, from the Project Director herself.

The Missoula Math Beyond the Classroom program consists of two components. The first component is Math Day. Math Day is a one-day event for 8-12th graders held on the University of Montana campus each fall. Our first Math Day in 2010 attracted 60 students. Since then we have made slight changes to the format and our numbers have certainly grown in response. For each of the last two years we have welcomed over 200 students to campus to participate in Math Day! A bit about Math Day: after registering and getting a schedule, students attend three hands-on math workshops. We have had a wide variety of interesting topics presented over the years. Last year some of the most popular topics were "Math puzzles and games", "When is a knot knotted" and "Forever Frets" a foray into math and music. After attending the first two workshops students attend a career panel. Last year we invited scientists from around campus to tell us in 8 minutes how they use math in their work. We had a biologist, a geo-scientist, and a professor of public health tell us how they use math in their research. It was fascinating and we all learned a lot. After lunch on campus (many eating in the dining hall) students attend one last workshop.

After Math Day in the fall, we continue the fun with Math Circle, the second part of our program. During Math Circle meetings we introduce 8-12th graders to engaging mathematical topics that are not generally covered in the high school curriculum. Math Circle meets 6 weeks in the fall and 6 weeks in the spring on Thursday afternoons on campus. We use Math Day to recruit students to attend the on-going portion of our program. In response to students who are unable to attend the on-going Math Circle due to the long distances they would have to drive, we have recently added the capability to hold our program virtually. We ask that teachers organize their students and set up the technology so that we can see each other and then we run Math Circle. We had one school participate online last year and are hoping to add more in the future. We feel that this is a viable way to reach more students from Montana since the population is so spread out and the driving distances between towns are often insurmountable. After three rounds of MAA DMEG funding supporting the program for over four years, we have plans to sustain it indefinitely. Kelly McKinnie and Jennifer McNulty started this program, and the majority of the University of Montana mathematics faculty members have participated in it.

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The meeting was animated, instructional and inspirational – precisely the sort of professional development opportunity for which Project NExT was designed. Project NExT newcomers and seasoned participants alike appreciated the lively exchange of ideas on teaching strategies, the advice on maintaining active scholarship, and the chance to begin or continue building a network of colleagues across what is surely one of the most welcoming and spirited sections of the MAA. We look forward to an equally enjoyable gathering at the section meeting in Missoula next summer.

SECTION NEWS

Alaska

University of Alaska Anchorage Welcomes Dr. **Christopher J Winfield,** who joined the faculty as a visiting assistant professor. Last year, he was an assistant professor of mathematics at University of Alaska Fairbanks, Kuskokwim Campus. He received his PhD from UCLA. His research interests lie in PDE and Mathematical Physics.

In other news, Dr. **Deborah Narang** took over as chair of the department in July 2013. Our department recently changed its name to the Department of Mathematics and Statistics, from the Department of Mathematical Sciences. We will be hiring a new tenure track mathematics faculty member, to begin in Fall 2014.

Oregon

David Koslicki

David Koslicki joined the **Oregon State University** Mathematics Department in September 2013. He received his BS degree in Theoretical Mathematics from Washington State University in 2006 and his PhD in Mathematics from the Pennsylvania State University in 2012. His research area is in mathematical biology, especially genomic mathematics. His mathematical interests include random substitutions, Markov chains, Martin boundaries, symbolic dynamics, applications of compressive sensing, and thermodynamic formalism, while his biological interests include entropy techniques, alignment-free genomic analysis, gene-finding techniques, metagenomics and microbial community analysis. Before arriving at OSU, he held positions as a postdoctoral researcher at Drexel University in Philadelphia and at the Mathematical Biosciences Institute at the Ohio State University in Columbus.

Patrick De Leenheer

Patrick De Leenheer joined the OSU Departments of Mathematics and Zoology in September 2013 as a full professor hired through the Biological Informatics and Genomics cluster hiring initiative. Patrick was born in Belgium and earned an MS degree in electro-mechanical engineering in 1995 and a PhD in Applied Sciences in 2000 from Ghent University. His research interests are in mathematical biology, differential equations, and control theory. He has been a postdoctoral research fellow of the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) in 2003-04, and held a professorial faculty appointment at the University of Florida since 2004.

Elise Lockwood

Elise Lockwood joined the OSU Department of Mathematics in September 2013. She earned her BS in Mathematics in 2004 from Wheaton College in Illinois, her MST degree in Mathematics in 2006, and her PhD in Mathematics Education in 2011 from Portland State University. She came to OSU after two years as a Postdoctoral Fellow at the University of Wisconsin - Madison. Her primary research interest concerns the teaching and learning of combinatorics, and she has focused on students' combinatorial thinking in solving counting problems.

Dennis Garity

Dennis Garity, former chair of the mathematics department at Oregon State University, retired in June 2013. Dennis's research interests include geometric topology, particularly embeddings of Cantor sets, manifold theory, knot theory, decmoposition theory, dimension theory, and infinite dimensional topology. He earned BS, MA, and PhD degrees in mathematics from the University of Wisconsin, Madison. He came to OSU as an assistant professor in 1981, was tenured and promoted to associate professor in 1986, and was promoted to full professor in 1995. Dennis served as Chair of the OSU Mathematics Department from 2007-2011.

Hannah Callender

Hannah Callender of **University of Portland** had a paper accepted for publication in *Involve* with three of her research students. The title of the paper is "Mathematical modeling of integrin dynamics in Initial formation of focal adhesions" and her coauthors are Aurora Blucher, Michelle Salas, and Nicholas Williams.

Washington

Christine Cole

Christine Cole joined **Seattle University** in Fall, 2013. She received her BA in Mathematics and Physics from Macalester College, and her

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PhD in Applied Mathematics from the University of Washington in December 2011. She previously held a Visiting Assistant Professor position at Pacific Lutheran University. Her research interests are in the area of mathematical biology.

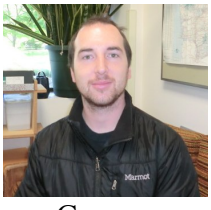
Katya Yurasovskaya

Ekaterina Yurasovskaya received her PhD in 2008 from the University of British Columbia (UBC) and completed a postdoc as a Science Teaching and Learning Fellow with the Carl Wieman Science Education Initiative at UBC. Her present interests include international perspectives on teaching and learning, interactive engagement, effective teaching practices, math circles and outreach, as well as low-dimensional topology and braid groups.

The **Central Washington University** math department has hired five new faculty members this Fall: four non-tenure track faculty and one tenure - track faculty.

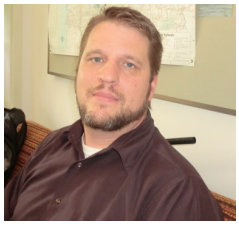
Molly Andaya

Molly Andaya has a MAT from CWU and she taught for 15 years at Ellensburg High School before joining the faculty at Central. Besides teaching math, Molly enjoys sports, especially volleyball.



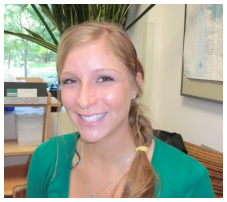
George Kreppein

George Kreppein has an MS from Western Washington University. George's favorite outdoor activity is rock climbing. This is his first teaching job besides being a TA WWU. **Tim Brown** has a MAT from CWU and he taught for eight years Naches High School. Outside the classroom Tim enjoys mountain biking. **Thad O'Dell** has an MA from Cal State Fullerton. Before Thad came to Central he taught for six years at Cle Elum High School. Thad is an avid long distance runner competing in road races from 10K to half – marathons. **Danielle Jacobson** has an MAT from CWU. Last year Danielle was the Director of the CWU Math Skills Center. Danielle likes to keep active outside the classroom by running, hiking and playing volleyball.



Tim Brown

Thad O'Dell



Danielle Jacobson

Our newest tenure - track faculty member is **Janet Shiver**. She earned her Ph.D. in Math Education from Auburn University (Go Tigers!). For the past two years Janet was an non-tenure professor here at CWU. Janet and her husband (chair of the music department) enjoy all types of music and watching football games. This is not the first time Janet has lived in the Pacific Northwest – she lived in Eugene for a few years as a child.

Janet Shiver

Professor **Teri Willard** and **Dr. Shiver** have published a book through Kendal Hunt, *Explorations in Elementary Mathematics through Activities*. Also, recently published by Kendal Hunt is *Logic, Sets & Proof: An Introduction* by Professor **James D. Harper**. This textbook can be used for transition or bridge courses.

Green River Community College is pleased to welcome Dr. **Andrew Brasile** to the ranks of our tenure-track mathematics faculty. Andy completed his Ph.D. in three-manifold topology this summer at the University of Illinois at Chicago. He looks forward to teaching a wide range of courses and exploring the Great Northwest.

John Foster

The **Walla Walla University** mathematics department is pleased to welcome back Dr. **John E. Foster**. Dr. Foster received his bachelor's degree in mathematics from WWU in 2007, after which he went on to pursue graduate studies in Algebra at the University of Oregon. He successfully defended his dissertation on the Semisimplicity of Certain Representation Categories in June of 2013. Dr. Foster is joined by his wife Bethany (also a WWU graduate) and their newborn son Andrew.

After 42 years teaching in the Walla Walla University mathematics department, Dr. **Thomas**

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M. Thompson will retire at the end of the 2013 calendar year. Dr. Thompson has challenged and inspired generations of mathematics students at WWU, being honored with numerous teaching awards during his career including the PNW MAA 2012 award for distinguished college or university teaching of mathematics. Dr. Thompson has been an important part of the WWU mathematics department and will be sorely missed.

Thomas Thompson

This past spring, a math conference was held at Walla Walla University in honor of professors Kenneth L.Wiggins and Thomas M. Thompson combined 60+ years of service. Presentations were given by graduate students, professors, and other professionals. The list of speakers included many Walla Walla University graduates including Dr. Kevin Vixie (Washington State Univeristy), Dr. Andrea Hawkins-Daarud (Northwestern), and Dr. Laura Foster (University of Minnesota). Talks covered a wide variety of topics including: the mathematics of medical imaging, using mathematics to analyze brain tumor growth, near points and the Chebyshev set problem, and many more. The conference coordinators collected donations to start the Thomas M. Thompson and Kenneth L. Wiggins Excellence in Scholarship Fund, which will provide scholarships to WWU mathematics students as well as support students traveling to give presentations at mathematics conferences. More information can be found on the conference website, math.wallawalla.edu/

n-th Annual Combinatorial Potlatch at University of Victoria Saturday, November 23, 2013

The n-th Annual Combinatorial Potlatch will be hosted by the University of Victoria on Saturday, November 23, 2013 at their main campus.

Speakers and talks for this year's edition are:

Dillon Mayhew, Victoria University of Wellington, New Zealand
Characterizing Representable Matroids

Richard Hoshino, Quest University Canada
Applying Combinatorics to Inspire Change

Jérémie Lumbroso, Simon Fraser University
Title: Analytic Random Generation of Combinatorial Objects

The conference page contains titles and abstracts for the talks, a schedule for the day, and information about meals and social activities.

2013 Conference Page:
http://buzzard.ups.edu/potlatch/2013/potlatch2013.html

Main Potlatch Page:
http://buzzard.ups.edu/potlatch/index.html

There is no advance registration required, nor any registration fee. There will be refreshments from 10 AM, with the first talk starting at 11 AM to allow for travel, followed by a no-host lunch, and two talks later in the afternoon. Many participants choose to stay for dinner locally.

Combinatorial Potlatches have been held for many years at various locations around Puget Sound and southern British Columbia, and are an opportunity for combinatorialists in the region to gather informally for a day of invited talks and conversation. While most who attend work in, or near, the Puget Sound basin, all are welcome.

Funded by the Pacific Institute for the Mathematical Sciences (PIMS) and the Department of Mathematics and Statistics at University of Victoria.

Please forward this announcement to anyone, especially graduate students, that might be interested and are not on our list.