



# Mathematical Matters

The Newsletter of the Pacific Northwest Section of the MAA  
Spring 2018

## Seattle University to host PNW MAA meeting

April 20-21, 2018

**By Eric Bahuaud, Seattle U.**

The annual meeting of the Pacific Northwest (PNW) Section of the MAA will take place at Seattle University, April 20-21. PNW NExT activities (by invitation only) will take place the morning and afternoon of Friday, April 20. Starting at 2:30 pm there will be mini-courses and a student puzzle hunt. The evening culminates in public lecture by Sir Randolph Bacon III (cousin-in-law to Colin Adams) and reception Friday evening. Saturday, April 21 will feature a full day of invited lectures, parallel special sessions and contributed talks, followed by an evening keynote address and reception.

We expect a large number of presentations by undergraduate research students, and we encourage students to attend!

Plenary talks will be given by Colin Adams of Williams College (author of the Knot Book), Deanna Haunsperger of Carleton College (President of the MAA) and Kathryn Leonard of Occidental College (and director of CURM).

Mini-courses will be given by Kathryn Leonard (Laying Foundations for Positive Group Collaboration) and William Stein of the University of Washington (SAGE for teaching and research).

Abstracts for general contributed talks, undergraduate talks and special session talks are now being accepted. They will be reviewed on a rolling basis, and abstract submission will close March 23, 2018. Out of town guests are encouraged to book their hotel accommodations before March 20, 2018.

Please visit our website  
<http://www.seattleu.edu/pnwmaa18> or email  
[PNWMAA@seattleu.edu](mailto:PNWMAA@seattleu.edu) for information and registration.

Seattle University, founded in 1891, is a Jesuit Catholic university located on 50 acres in Seattle's vibrant Capitol Hill neighbourhood, near downtown Seattle. The campus is easy to access via I5, I90, or from SEATAC airport via Link Light Rail.

**See poster advertisement on pg. 2.**

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# PNW MAA Section 2018

Pacific Northwest Mathematical Association of America Sectional Meeting



## Seattle University / April 20<sup>th</sup> & 21<sup>st</sup>

### Activities:

- MAA Special & Contributed Sessions
- Minicourses
- PNW NExT
- Student Puzzle Hunt
- Undergraduate Research Talks

### Keynote Speakers:

- Colin Adams of Williams College, author of *The Knot Book*
- Deanna Haunsperger of Carleton College, MAA President
- Kathryn Leonard of Occidental College, Director of CURM

**FYI**

For more info visit: <https://www.seattleu.edu/pnwmaa18/> or email [PNWMAA@seattleu.edu](mailto:PNWMAA@seattleu.edu)

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# News from the Governor

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## News from the Section Representative

By Jennifer Nordstrom, Linfield College

Greetings from your PNW Section Governor/  
Section Representative to the MAA Congress!

One of my roles as your governor is to serve as a connection between our section and the national MAA. I recently attended the Joint Mathematics Meetings in San Diego. You may recall that one year ago we passed new bylaws so that the Board of Governors is now the Congress. I know it will take everyone time to get used to this. In the meantime, the MAA and the Congress have decided that it is fine if we want to keep referring to the person in this role as "Governor."

I would like to continue to encourage you to make sure your department is participating in the new MAA Departmental Membership. Not only does this include a full membership for one departmental member, it includes an unlimited number of student memberships! Some Departmental members have not nominated ANY students. Please check with your department to make sure you are nominating students. The MAA is working on how to make membership more valuable to its members. If you have ideas for services or benefits that the MAA can provide or improve, please let me know!

I have enjoyed serving on a national MAA committee, and would like to encourage other members to think about serving on a national



committee. We currently have about 41 section members on national committees. I would love to significantly increase our participation. It is a great way to broaden your connection with the mathematical community and help with the mission of the MAA. There are many different committees and subcommittees, see <http://www.maa.org/about-maa/governance/council-and-committees-list>. If you are interested in serving on a committee or subcommittee, please contact me and let me know some possible interests. You can also self-nominate at <https://www.surveymonkey.com/r/CFJ56SG>.

I hope to see many of you at the PNW Section Meeting at Seattle University in April. I also hope to see our section well represented at the next MAA MathFest in Denver, August 1-4!

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## Future PNW MAA Meeting Locations

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**2019 Lewis and Clark College**

**2020 University of Alaska Anchorage**

**2021 Western Washington University (tentative)**



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## PNW MAA Distinguished Teaching Award

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By Ron Irving, University of Washington

Julia Pevtsova, Professor of Mathematics at the University of Washington, is the recipient of the 2018 Distinguished Teaching Award from the Pacific Northwest section of the MAA for her educational activities within the university and beyond. Julia received her PhD from Northwestern in 2002, took postdoctoral positions at the Institute for Advanced Study, the University of Oregon, and the University of Washington, and became a regular UW faculty member in 2008. Her research in algebra and representation theory has been recognized by an NSF CAREER grant, selection as a Fellow of the American Mathematical Society, and a Simons Fellowship that is partially supporting her sabbatical this year at the Mathematical Sciences Research Institute.

Julia is as committed an educator as she is a researcher, with contributions at every level from elementary schoolers to postdocs. At the graduate level, Julia has revamped the core first-year algebra course and created a second-year algebra course now offered biennially. She organized a summer school in representation theory at the University of Washington in 2012 that drew 40 young mathematicians, following up four years later with a summer school at the University of British Columbia. As part of a semester-long program taking place now at MSRI she just ran a “Connections for Women” workshop for graduate students and recent PhD’s.

At the undergraduate level, Julia teaches a problem-solving course jointly with Ioana Dumitriu each autumn for students desiring an extra challenge, wishing to improve their problem solving and proof writing skills. Complementing this is their series of prep sessions for undergraduates wishing to participate in the Putnam competition. Just last year, the UW team finished in the second five nationally, with two students achieving Honorable Mention.



Julia Pevtsova

What most distinguishes Julia as an educator is her record of K-12 outreach. Going back to her experience as a young girl in a Saint Petersburg Math Circle, Julia wishes to give the joy of mathematics back to the community. She works with students of many backgrounds, ages, abilities, and interests to introduce mathematics as a way of thinking and interpreting the world, going beyond or even completely outside of what might be presented ordinarily as mathematical sciences. She also aims to show that mathematics removes boundaries and expands one’s vision of the world.

Toward this end, Julia established the Math Challenge program at an elementary school nearby the UW campus, a weekly Math Circle for 7th, 8th, and 9th graders, and a spring series of monthly Math Hour lectures for middle school students and their families (“well-behaved parents and teachers are also welcome to attend with the permission of their children”) that draws audiences of 200 from the area and even across the state.

The culmination of these activities is the annual Math Olympiad, in which students work on elementary but challenging problems and

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### Math Hour Olympiad Participant

discuss them with volunteer judges. Eighty such judges—ranging from advanced

undergraduate students to math professors and high-tech professionals—share their enthusiasm for mathematics with the younger generation.

A recent Math Circle family wrote Julia to let her know that they were "so very grateful for your kindness and love of educating our kids to be our future mathematicians. We do appreciate your gift of knowledge and supreme generosity of volunteering your precious time. We thank you from the bottom of our hearts for all your support and help!" Julia is indeed a gift, to our department and to the community.

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## STEM Diversity in the PNW

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### By Ke Wu, University of Montana

The goal of the "Montana Supports the Mathematicians of Tomorrow" (MT<sup>2</sup>) program at the University of Montana is to develop a diverse well-educated student body in the mathematical sciences. This NSF funded venture attempts to provide traditionally underrepresented students a learning environment that gives them the financial means, professional guidance and community support they need to pursue degrees in the mathematical sciences. The program offers financial scholarships for talented undergraduate and graduate students. In addition, the MT<sup>2</sup> program provides (1) summer program; (2) peer mentorship and faculty mentors that involve weekly or biweekly meetings; (3) cohort community building activities such as joining undergraduate or graduate seminars; and (4) academic tutoring support. Graduate scholars received additional research experiences and support to attend/present at conferences.

As we enter our fourth year of the MT<sup>2</sup> program, we have seen 12 MT<sup>2</sup> students

successfully navigate through their undergraduate and graduate studies. During their time at UM, they developed a strong sense of belonging to the mathematics community and have been actively finding their ways to contribute back to the community – for example, they gave a presentation on diversity of mathematics at the Diverse U symposium at UM and organized a Research Panel for undergraduate and graduate students. Some of them have become role models inspiring gifted, diverse students to pursue their academic dreams in mathematics!

The faculty at UM has also learned something from this program; checking in once a week on a graduate or undergraduate student is good for the department as a whole! Student voices are heard, faculty members have a better sense of who our students are and how we can serve them best, and as a result, the mathematical community at UM is stronger.

In spring 2018 MT<sup>2</sup> graduate Fellows organized and hosted a panel of faculty and

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Back row panelists, left to right:

Kelly McKinnie, Jennifer Brooks, Ian Nicolas,  
Ricela Feliciano-Semidei

Front row MT<sup>2</sup> mentors and scholars: Ke Wu,  
Claire Siebold, Jennifer McNulty, Carah  
Pearson, Dominika Dec

graduate students who spoke about the difficulties and vast rewards of research. The panel discussion was not only informational, but was an opportunity to gain perspective, learn why research is so important and hear strategies for being successful. Pictured to the left are the panelists and MT<sup>2</sup> Fellows and faculty mentors.

For more information on our program, check out our webpage  
<http://hs.umt.edu/mtsquared/>

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## Conferences and Contests in the PNW

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### Announcement and Call for Papers: **The Montana ActiveStatistics Conference**

June 28 and 29, 2018  
Carroll College, Helena, Montana

Keynote Address by Prof. Robert Gould,  
Director of the UCLA Center for Teaching  
Statistics

Please join us for a conference and workshop on statistics, data science, and innovations in the teaching of these subjects. In addition to contributed papers and roundtable discussions, we will hold a special session where we will share a freely available set of statistics teaching materials developed at Carroll College including labs based on large data sets from AirBnB, Montana FWP, and more! No registration fee will be charged, breakfast and lunch will be provided.

Confirmed Invited Speakers include:  
Robert delMas, University of Minnesota  
Jennifer Green, Montana State University  
Stacey Hancock, Montana State University  
Brian Steele, University of Montana  
Matt Roscoe, University of Montana

Roger Johnson, South Dakota School of Mines  
Kyle Caudle, South Dakota School of Mines

Call for Papers: We are seeking papers on topics in statistics, data science, and the teaching of these subjects. Please submit an abstract, no more than 200 words to: [kcline@carroll.edu](mailto:kcline@carroll.edu). Presentations will be limited to 15 minutes in length with a question and answer session to follow. Proposals from undergraduate students will receive special consideration.

Paper Submission Deadline: May 15, 2018.

Conference Registration Deadline: June 10, 2018

Robert L. Gould has been with the UCLA Statistics Department since its founding in 1998 where he has served as Director of the Center for Teaching Statistics. He has served on the ASA Undergraduate Statistics Education Initiative, the Advisory Committee on Teacher Enhancement, and the GAISE writing committee.



## KRYPTOS8: A Series of Cryptanalysis Challenges

April 5 – 9, 2018

KRYPTOS8 is a contest open to undergraduate students. The theme of the contest is centered around the breaking, or cryptanalysis, of ciphers (secret writing). Each challenge presents contestants with a brief scenario together with some ciphertext (encoded message). The goal is to discover the original plaintext message!

Clues to help break the cipher may be contained in the actual ciphertext or in the details of the accompanying scenario.

While it is not the intent of this contest to test overly technical aspects of cryptanalysis or advanced mathematical algorithms, some familiarity with basic codemaking and codebreaking is certainly helpful. Some useful sources include:

- Challenges from last year's contest.
- The American Cryptogram Association.
- Wikipedia entries for Cryptography and Cryptanalysis

- The Code Book by Simon Singh.
- Secret History: The Story of Cryptology by Craig Bauer
- Codes and Ciphers by R.F. Churchhouse
- Codes, Ciphers and Secret Writing by Martin Gardner

We had over 100 students participate last year and many have been clamoring for more! Please announce this contest to your students! Cool prizes are sent out to first and second place winners!

Visit: <http://www.cwu.edu/math/kryptos/> for more information -- including instructions on registering students for the contest and a one-page flyer that you can post around your department or campus.

KRYPTOS is sponsored by the Pacific Northwest Section of the Mathematical Association of America together with Central Washington University and Western Oregon University.



### Pacific Inland Mathematics Undergraduate Conference

Looking for a **Spring Term** opportunity to present your research?

Undergraduates at Universities and Colleges throughout the Pacific Inland Region are invited to participate in the inaugural year of the annual Pacific Inland Mathematics Undergraduate Conference. Talks and Posters accepted.

**Save the Date: Saturday April 07, 2018**

Location: Gonzaga University

Website: <https://sites.google.com/view/pimuc>

Registration is FREE!

# GREATPUZZLEHUNT.COM



Join WWU's brain-stretching outdoor adventure race:  
The WWU Great Puzzle Hunt!

**REGISTRATION OPENS JANUARY 9, 2018**

**Saturday, April 14, 2018 @ 10:00 a.m. Red Square**

**T-Shirts – Music – Food – Prizes – and More!**

**\$5 Students\*, \$10 Non-Students\* – Teams of up to 6**

Check-in 10 a.m. Hunt starts at 11 a.m. Prizes awarded at 4:00 p.m.

**\*Save on Early Bird Discount Prices!**

Register here – <https://greatpuzzlehunt.com/register>

Check out Official Puzzle Gear – <http://www.wvu.edu/emarket/puzzlehunt/>

Be part of the fun as we take over WWU for the 3<sup>rd</sup> Annual WWU Great Puzzle Hunt (GPH), an OUTDOOR adventure\* – think scavenger hunt, but with puzzle-solving. The puzzles are hands-on, group oriented, and internet exploration is encouraged! It will be to your advantage to have teammates with knowledge of music, art, theatre, dance, humanities, social sciences, sciences, and mathematics. So think up a fun team name and pick friends with a variety of interests!

Awesome prizes will be awarded to top three teams in each division. Other prizes for best team names, costumes, spirit, and more!

Excitedly Yours,

GPH Puzzle Masters

Millie Johnson [Millie.Johnson@wvu.edu](mailto:Millie.Johnson@wvu.edu), Coordinator

Scott St. Clair [stclais2@wvu.edu](mailto:stclais2@wvu.edu), The WWU Great Puzzle Hunt AS Club, President

Account/registration questions [support@greatpuzzlehunt.com](mailto:support@greatpuzzlehunt.com)

\*Registered teams are assigned a QR code and connected to our game platform on their smartphone. Your mission: Reach the location shown on your screen & scan QR code (which starts clock) to receive puzzle. Don't forget your bag of scissors, tape, hole punch, etc. to MacGyver your way through. Once you determine and enter code words, the clock stops and you are sent to the next destination. Connect all the code words to complete the game!

**OPEN TO ALL!**

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## News and Notes from the PNW MAA section

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### Oregon

#### Western Oregon University

Leanne Merrill and Ben Coté joined the WOU Mathematics Department as tenure-track assistant professors in fall term 2017. Leanne completed her Ph.D. at the University of Oregon in 2017. Her dissertation concerns the homotopy groups of spheres. She is interested in algebra and topology research, as well as mathematics education and the intersection of mathematics and music theory. In her free

time, she sings professionally, plays a lot of board games, and brews beer.



Leanne Merrill, WOU

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## News and Notes, pg. 8

After receiving his Ph.D. from UC Santa Barbara in 2016, Ben spent a year teaching at Bridgewater State University. His research is in the area of geometric group theory, specifically affine complex reflection groups. At WOU his main teaching focus will be the mathematical preparation of educators.



Ben Coté, WOU

Associate professor Breeann Flesch departed the Mathematics Department for the Computer Science Division at WOU. We'll miss her in the department but we will get to see her around campus. Best wishes Breeann!

NTT Instructor Sylvia Valdes-Fernandez has been accepted into the Ph.D. program in Math Education at Oregon State University and began coursework in fall 2017. Sylvia continues to teach in the WOU Mathematics Department as she pursues her doctorate.

In student news, Brittany Johnson and Julia Pride were inducted into the (WOU) Oregon Delta chapter of Pi Mu Epsilon, and Brittany Johnson and Amelia Tatman won the Charlie Dolezal Mathematics Scholarship.

Finally, the WOU Mathematics Department sponsored its 14th annual Sonia Kovalevsky Day in February 2018, with over 50 high school girls in attendance.

## Washington

### Central Washington University

After 30 years of teaching Jim Harper will be retiring this June from Central Washington University. Jim has been an active member of our section attending 22 of our regional meetings and giving talks in about a dozen of those meetings since 1988. He will be leaving the windy city of Ellensburg and move, as his wife Lila says, "back to the nest", to Eugene, Oregon.



Jim Harper, CWU