



Mathematical Matters

The Newsletter of the Pacific Northwest Section of the MAA
Fall 2017

2018 PNW Sectional MAA Meeting Seattle University April 20–21, 2018

Friday April 20 will include morning Section NExT activities, afternoon mini-courses, a puzzle-hunt for students (with pizza!), and an evening public lecture by Colin Adams. Saturday April 21 will be a full day including invited lectures, MAA special sessions, contributed talks, and an evening reception. On Sunday April 22, there will be a training workshop for undergraduate research mentors (see the separate item in this newsletter).

The invited speakers for this meeting are 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 (Director of CURM). There will be a mini-course taught by Kathryn Leonard and a second exciting mini-course by a yet-to-be determined person. We are excited about the range of expertise and experience that these speakers will bring to our conference!

Proposals for abstracts for contributed talks will be called for in the winter. If you are interested in organizing a special session,



Seattle University (weather not guaranteed!)
Photo is property of SU

please contact Christine Cole at colech@seattleu.edu by December 29, 2017. We anticipate a strong student presence at this meeting and are encouraging students to make plans to come and to speak.

Seattle University, founded in 1891, is a Jesuit Catholic university located on 50 acres in Seattle's vibrant Capitol Hill neighborhood, near downtown Seattle. The campus is easy to access via I-5 or I-90; or from SEA-TAC airport via the Link Light Rail. Housing options will include nearby hotels.

For more information, visit the website <https://www.seattleu.edu/pnwmaa18/> or email PNWMAA@seattleu.edu.

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Undergraduate Research Training Workshop Seattle University April 22, 2018

Faculty members are invited to participate in a training workshop for undergraduate research mentors on April 22 at Seattle University. We will have presentations by successful mentors from around the section with time to brainstorm resources and plans to support development of your own program. This workshop is being organized to run in conjunction with the meeting Pacific Northwest Section MAA Meeting. For more information contact Brandy.Wiegers@cwu.edu or SooieHoe.Loke@cwu.edu.

Future PNW MAA Section Meetings

2019 University of Portland
2020 University of Alaska Anchorage
2021 Western Washington University
(tentative)

PNW Mathematics Educators win 2017 Alder awards

From MAA announcement--

This year's top mathematics educators were honored for their dedication to teaching the next generation of quantitative thinkers with the mathematical skills to tackle real-world problems at the Mathematical Association of America MathFest in Chicago on July 27. The awards honor mathematics teaching and the authors of educational materials used in the classroom.

"The MAA values dedicated mathematics education to advance the understanding of mathematics and its impact on our world. The educators honored today set the standard for inspiring and teaching the next generation of mathematicians," said Michael Pearson, executive director of the MAA.

Each year the MAA honors beginning college or university faculty whose teaching has been highly effective and successful in teaching undergraduate mathematics. This year the Henry L. Alder Awards go to Steven Klee and Mary Beisiegel. Steven Klee is a professor at Seattle University and is known for seamlessly



Mary Beisiegel and Steven Klee

incorporating undergraduate research into his classroom curriculum and mentoring student researchers who go on to publish and present their work. Mary Beisiegel, professor at Oregon State University, is known for her superb teaching, cultivating engaging classrooms, and her work building up professional development among her teaching peers.

PNW Section NExT

A New PNW Section NExT Fellow's Experience By Luke Rawlings, Bellevue College

After finishing a dissertation, earning a doctoral degree, and landing a job at Bellevue College, I left New York City after having spent almost 20 years there as a dancer/singer turned mathematics instructor. I had no idea what kind of place the Pacific Northwest would be in terms of meeting new people in an academic setting. After one year here, I still marvel at the blackberries that grow like weeds everywhere in the Seattle area, the temperate weather, and I love my job. It was a treasure to have met the small group of people at the MAA meeting at Gonzaga University at the close of the 2016-2017 school year. Making connections in the area is what I consider to be an important part of the process of becoming an effective academic.

The biggest take-away from the meeting was not so much any new mathematical content, but a strong focus on an important item in mathematics education at the college level: active learning in the classroom. Several conversations ignited my interest in the topic, which I had only read about as a student at Teachers College, Columbia University, in research papers and other talks. Now, in a position as a full time faculty member at Bellevue College, I can begin a process of experimenting in inquiry-based learning, some of which I have already done, to see the benefits of this learning. I walked away from the conference with confidence in active learning techniques that instructors can employ to produce better results in college mathematics courses, from developmental mathematics to real analysis. The sharing of materials—what worked for instructors—was highly valuable, and brought to mind what is missing in many academic departments: the importance of faculty collaboration.

A truly wonderful part of the meeting was meeting Bonni Dichone, a professor at Gonzaga University, who is also a dancer and actor. I no longer feel alone in a world where mathematicians are often seen as hobbits who read books filled with alien symbols; rather, it was nice to see that others in the mathematics community have interests in the arts and humanities. I look forward to future participation in these meetings, and sharing my own art—art guided by mathematics—with the community.

Are you a new faculty member? Do you have a colleague who is new to the profession?

The PNW Section NExT is a professional development program for new college-level faculty in the Pacific Northwest interested in “improving the teaching and learning of undergraduate mathematics.” PNW NExT is an extension of the MAA-sponsored national organization, Project NExT, to the section level. PNW NExT Fellows meet once a year prior to the MAA PNW Section meeting to discuss topics related to all aspects of an academic career: improving the teaching and learning of mathematics, engaging in research and scholarship, finding exciting and interesting service opportunities, and participating in professional activities. During the year, PNW NExT members communicate via an electronic discussion group.

Application deadline for 2018 PNW NExT Fellows will be in the spring. If you are a new faculty member in the PNW, please apply! If you are not new to the profession, please encourage your new colleagues to apply! More information on the program, eligibility requirements and applications can be found on-line: <http://sections.maa.org/pnw/next/>.

MathPOW! - Pacific Northwest Mathematical Outreach Web

<http://sites.google.com/view/mathpow>

At the June Section meeting Dr. Wieggers announced the creation of MathPOW, the Pacific Northwest Mathematical Outreach Web. The goal is to create a regional network that provides shared resources, training, and overall support to leaders of mathematical outreach and enrichment programs.

Ultimately this group should provide:

- Local support for anyone starting math outreach programs.
- A centralized math outreach training program.
- Publishing opportunities with shared lesson ideas.

- Online videos and other shared resources, with opportunities to collaborate for larger grant programs.
- Group outreach events.
- A sense of community for those of us who did this work.

The website is now up and active and we've sent out our first newsletter. Check out our list of outreach programs in the Pacific Northwest and other news and events.

Contact Brandy.Wieggers@cwu.edu for more information.

Dolciani Mathematics Enrichment Grant Accepting Proposals!

Middle or high school teachers who want to hold math enrichment activities at their school, or are educators enrolled in a teaching program who want to engage with secondary math education practices should submit a proposal for the Dolciani Mathematics Enrichment Grant (DMEG). Each year, the Dolciani Foundation supports hundreds of students across America by giving colleges and universities \$5,000 awards from the DMEG. The colleges and universities use this award to provide mathematics enrichment to talented secondary students. Math clubs,

workshops, and summer camps are just a few of the activities that previous awardees have organized, but the Dolciani Foundation prides itself on funding new ideas and diversity of activities.

Awards must be funded through a college or university, but secondary teachers can initiate the partnership between an institution and their school. The deadline to submit a proposal is February 12, 2018.



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.

News and Notes from the PNW MAA section

Alaska

University of Alaska Southeast

UAS mathematics and biology alumna **Micaela Martinez** came back to UAS on September 22 to give a presentation on her current research in disease dynamics. Dr. Martinez was recently awarded the National Institutes of Health (NIH) Director's Early Independence Award of \$2M, along with a research position at Princeton University. Since graduating from UAS in 2009

with a B.S. in Biology and a B.S. in Mathematics, Martinez went on to earn a Ph.D. in 2015 from the University of Michigan Department of Ecology & Evolutionary Biology. Dr. Martinez is currently a National Science Foundation Postdoctoral Fellow in Biology in the Department of Ecology & Evolutionary Biology at Princeton University, and a Postdoctoral Affiliate of the Global Health Program in the Woodrow Wilson School of Public & International Affairs. According to the NIH website, she uses "cutting-edge statistical

methods and dynamic models to deconstruct epidemics and reveal information about host-to-host transmission of viral infections, immunity in the population, and vaccine efficacy. She works at the intersection of epidemiology, computational biology, chronobiology (i.e., the study of biological rhythms), and ecology. Her traditional training in biology, coupled with research in computational/applied mathematics and statistical inference, has allowed her to develop a unique expertise: leveraging Big Epidemiological Data to unmask population-level biological processes that impact human health."

Montana

The University of Montana

The University of Montana is pleased to announce two recent hires. **Elizabeth Gillaspy** (Assistant Professor) joined the University of Montana math department after a postdoc at the University of Muenster in Germany. In the last ten years she has also lived in Colorado, New Hampshire, Minnesota, and Spain, but having grown up north of Spokane, Elizabeth is thrilled to be back in the Pacific Northwest.

Elizabeth's research focuses on C^* -algebras, a branch of analysis that also has links to topology, geometry, physics, and algebra. When she's not busy exploring these connections,



Dr. Gillaspy

Elizabeth can probably be found hiking or cooking, or curled up on the couch with a good book, a cup of tea, and her cat Missy.

Javier Perez Alvaro received his doctorate in Mathematical Engineering in June 2015 at Universidad Carlos III of Madrid, where he solved certain structured matrix perturbation problems related with the polynomial root-finding problem. Prior to the appointment at the

University of Montana, Dr. Pérez held post-doctoral positions at the University of Manchester (UK) and the University of Leuven (Belgium), where he devised and analyzed numerical algorithms for solving Nonlinear Eigenvalue Problems. His research interests are in matrix theory and numerical linear algebra, fundamental parts of the field of numerical analysis.



Dr. Perez Alvaro

Oregon

Pacific Lutheran University

At the Pacific Lutheran University, **Bryan Dorner** retired after 37 years of service to the Mathematics Department and the university. He still remains active in the Sound South Math Circles.

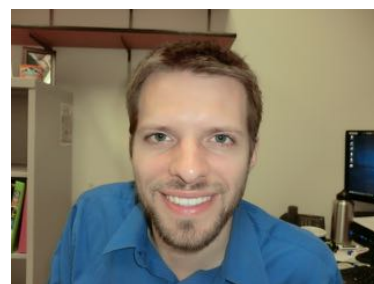
Jessica Sklar has (self)published an open source text First Semester Abstract Algebra: A Structural Approach, which is available on her website. She also published a poem, "Disciple," in the Journal of Humanistic Mathematics.

Washington

Central Washington University

The math department at Central Washington University welcomes its two newest faculty members Peter Klosterman and Jamie Fife.

Peter Klosterman earned his Ph.D. in mathematics education from Washington State University in 2016. Last year Peter taught at the University of Mary Hardin-Baylor. Dr.



Dr. Klosterman

Klosterman's specialty and research interests include "Justification and argumentation of mathematical claims in grades four to eight." When Peter is not teaching and doing other university duties he enjoys biking, hiking and playing with his two daughters.

Jamie Fife earned her MAT at the Western Governors University in 2010. Last year Jamie was teaching high school in Vancouver, Washington. She taught at BYU-Hawaii for two years. Outside the classroom Ms. Fife can be found with a sabre or épée (fencing) and she is a national referee for the United States Fencing Association. (Indeed, she was called to duty the weekend of October 13-16.)



Jamie Fife

Dominic Klyve has been chosen as the next editor of the College Mathematics Journal. His term as Editor-Elect will begin in January 2018, and his five-year term as editor will begin in January 2019. Professor Klyve also serves as one of the PIs for the TRIUMPHS project (Transforming Instruction in Undergraduate Mathematics via Primary Historical Sources). The project authors have written 38 projects to date. Each project allows students to spend some time (usually 1-5 days, depending on the project) to learn a standard topic from the undergraduate mathematics curriculum from a Primary Historical Source, an act which we believe can lead to deeper understanding of the mathematics, and can help humanize the subject. Interested in trying out a project? Contact Dominic Klyve to find out how to become an official "site tester" (stipends available!) at klyved@cwu.edu, or see the TRIUMPHS website at <http://webpages.ursinus.edu/nscoville/TRIUMPHS.html>.