



# Mathematical Matters

The Newsletter of the Pacific Northwest Section of the MAA

Fall 2015

## Math in the Heart of the Valley

PNW MAA and NUMS at

Oregon State University

**April 1-2, 2016**

**Oregon State University will host the spring meeting of the Pacific Northwest Section of the MAA on April 1-2, 2016 in Corvallis, OR.**

The 8th annual Northwest Undergraduate Mathematics Symposium (NUMS) will be held in conjunction with the Section meeting. NUMS is a regional mathematics conference providing a venue for undergraduate students to present mathematical research. For the second year NUMS will be embedded within the Section meeting and will consist of student paper sessions and a poster session, as well as other student focused activities. Limited travel support for student speakers will be available.

Friday April 1 will include morning Section NExT activities, afternoon mini-courses, a Math competition for students (with pizza!), and an invited public lecture that evening. Saturday April 2 will be a full day with invited lectures, MAA special sessions, contributed talks, NUMS presentations, a career panel, an evening banquet, and more. Proposals for special sessions and abstracts for contributed talks will be called for in the winter.

The invited speakers for this meeting are MAA Second Vice President Karen Saxe of Macalester College, College Mathematics Journal editor Brian Hopkins of Saint Peter's University, mathematical history buff David Pengelley, formerly of New Mexico State University (and currently of Oregon State University), and the 2013 PNW MAA Distinguished Teaching Award Winner Stuart Boersma of Central Washington University. One mini-course will be taught by David Pengelley and the other by Stuart Boersma jointly with Cheryl Beaver of Western Oregon University. We are excited about the range of expertise and experience that these speakers will bring to our conference!

This year, there will be a student-led panel discussion for Math Club officers and members. Math Clubs from various departments will give brief presentations about their clubs, with the goal of sharing

**Continued on page 4.**

<b>Inside:</b>		<b>MathFest</b>	<b>4</b>	<b>Undergrads</b>	<b>5</b>	<b>Section News</b>	<b>7</b>
<b>Chair Note</b>	<b>2</b>	<b>2016 OAS</b>	<b>5</b>	<b>2015 PNW Meeting</b>	<b>6</b>		
<b>Math Beyond Bars</b>	<b>3</b>	<b>2016 Kryptos</b>	<b>5</b>	<b>Future Meetings</b>	<b>6</b>		

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# Notes from the Chair

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## A strong history, A promising future

By Nancy Ann Neudauer

One hundred years. Celebrating the Centennial of the MAA at an extremely engaging MathFest, punctuated with social activities and music (read *Highlights from MathFest* in this newsletter), prompted me to look back at our own history. While I've been involved in the Pacific NorthWest Section of the MAA since moving here, with a new lens as Chair, I have learned so much not only about our Section but also other MAA Sections. Ours is both distinguished and distinctive for many reasons. Some of these you surely know, some you may not.

The Pacific NorthWest Section has been recognized recently at the Joint Mathematics Meetings and at MathFest for our very strong and innovative Section Meetings. We were invited to talk about our social activities at the Sections Officers meeting at the Joint Meetings in San Antonio, and at MathFest in Washington, DC, we were noted for our June meetings with a focus on beautiful locations where participants might bring their families. And, for hosting the Kryptos Competition, a great service to the mathematical community and especially our students.

Notable also is the amazing diversity of institutions that host meetings in the PNW MAA Section. Recently we have visited many of our public institutions, some of these hosting for the first time: UW- Tacoma, the University of Montana, University of Alaska Southeast, Central Washington University, Southern Oregon University, and University of Alaska Anchorage. Private schools have interlaced the schedule, including Willamette University, University of Portland, Seattle University, Carroll College, Linfield College, and University of Puget Sound. We have achieved a nice balance of private and public schools hosting our meetings and a huge geographical diversity. This, to the amazement of our

colleagues in other MAA Sections! This looks to continue, and in the near future we will return to some of our recent hosts and visit new ones.

I invite you to read our extensive section history on the web page (<http://sections.maa.org/pnw/history/>). For example, I found this entry, which let me know that our discussions about computers may not be as new as I thought.



### 1957 State College of Washington June 14

The invited address, given by R. H. Bruck of the University of Wisconsin, was titled *New patterns in geometry*. There was a joint dinner with the AMS. There was a symposium on *Computing Machines* moderated by Arvid Lonseth of Oregon State College. The titles of the speakers' talks were *The University of British Columbia computing centre*, *Large scale industrial computers and the universities*, and *The computer and the curriculum*.

Each year there are several section officer positions up for election or appointment. This year those are **Chair**, **Student Program Coordinator**, and **PNW NExT Director**. Please e-mail me describing your experience and interest in any of these positions.

I look forward to seeing you in April at Oregon State University (who last hosted in 1971). We look forward to a great collection of speakers, a robust program, and a large number of student participants. Please encourage your new colleagues to come to the meeting and to speak in the Junior Faculty Research Session so we can get to know them and their work.



# Math Beyond Bars

**By Ron Irving and Matthew Junge**

Matthew Junge, a Ph.D. candidate at the University of Washington, volunteers as an instructor at the Washington Correctional Center for Women (WCCW) for the Freedom Education Project Puget Sound (FEPPS). The project's goals are to provide any woman inside WCCW with the opportunity to earn a college degree and to create pathways so that women can continue to attend college upon release.

Junge helped design and teach a curriculum that starts with arithmetic and culminates in a "Math in Society" course on combinatorics, probability, statistics, and graph theory. This

was the first for-credit math course offered in WCCW. He describes the students as "amazing to work with," adding, "they value hands-on-instruction, and use every minute of class to the fullest. It is inspiring and humbling to work here." Junge got involved out of a desire to reach a more diverse population. "I want to change their perception of math, both for their future success and for the potential impact it will have when they reenter their communities." Access to education gives offenders purpose while in prison, and the recidivism rate is 45% less for students who go to college while incarcerated. FEPPS offers a range of classes such as biology, English, political science, and women's studies. They also run

a special lecture series at which Junge performed mathematical card tricks.

In recognition of his work, Junge was awarded the 2015 University of Washington Excellence in Teaching Award. This is awarded each year to two graduate students campus-wide. He is the first recipient from the math department in the award's thirty-year history. The experience shifted Junge's priorities. "Prison education is part of my life. Everyone deserves the empowerment of education. I hope that more academics get involved and see how meaningful this work is." He will again teach Math in Society for FEPPS this winter, and has started to revise the curriculum for the Monroe Correctional Complex program University Beyond Bars.



# Highlights from MathFest 2015

By Brian Blitz

MathFest 2015 was a celebration of MAA's centennial. More than 2500 people registered for the meeting which made it the largest MathFest in history. There was so much going on at this meeting that I can't believe how much I did not get to see/hear/feel. In addition to the 13 invited talks, 8 minicourses, 8 invited sessions, 21 themed contributed paper sessions, 12 panel sessions, and 36 student paper sessions, there was the usual plethora of general contributed paper sessions. There were also plenty of social events which included a mathematics carnival where people could participate in card tricks, games, making polyhedra and juggling. After the carnival, there was Cirque de Mathematiques which showcased some of the prominent MAA members in drama, magic, mime and dance. The following evening several mathematicians took the stage to sing and play music. The MAA really did take MathFest to a new level. Here are some of my highlights:

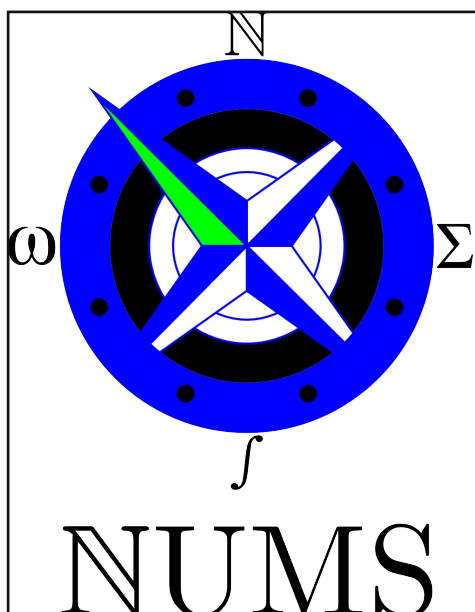
- Karen Smith from the University of Michigan gave an inspiring talk about her journey through school (starting at grade school) that led her to current research in algebra.
- Erik Demaine from MIT revealed to the audience some of the ways that science fiction has inspired research in math and science.
- Ingrid Daubechies from Duke University explained how mathematics has been used to help art historians uncover secrets from the past.
- David Bressoud from Macalester College pleaded to the mathematics community that Calculus is currently in a crisis situation and something needs to be done about it. In particular, he stated that, "today we teach greater numbers of students, who are less prepared, using fewer resources, and with increased expectations for student success."
- Richard Guy and John Conway shared the stage to discuss some old and new ideas about Euclidean triangles.

One thing is for sure, if any of the MAA forefathers were looking down at MathFest 2015, they would be proud of the contributions that the MAA is making to advance the field of mathematics.

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## Section Meeting, continued from page 1.

ideas, advice, stories, and overall mathematical enthusiasm among Math Clubs in the region. If you are the faculty advisor or a student leader of a Math Club and would like your club to participate, please contact Western Washington University Math Club, in care of David Hartenstine at [David.Hartenstine@wwu.edu](mailto:David.Hartenstine@wwu.edu)



Oregon State University is located in Corvallis, the heart of the Willamette Valley, within 90 minutes of Portland, the Cascades and the rugged Oregon Coast. Enjoy and relax in our quaint downtown, or experience hiking and bicycling in the surrounding hills. Housing options will include nearby hotels.

For more information contact Nathan Gibson, [gibsonn@math.oregonstate.edu](mailto:gibsonn@math.oregonstate.edu), or visit the conference web page: <http://math.oregonstate.edu/pnwmaa2016>.



# OAS Meeting

The 75th annual meeting of the Oregon Academy of Science will be held at Pacific University in Forest Grove, OR in February 2016. On behalf of the Mathematics, Statistics, and Computer Science section, the chairs would like to invite both professors and students to submit abstracts for 20 minute talks. Information on past meetings can be found at <http://www.oas.pdx.edu/>. More information on the 2016 meeting will be disseminated soon. Anyone who is interested in submitting an abstract or in being on the Math, Stats, and CompSci email list is encouraged to send an email to Christopher Lee ([leec@up.edu](mailto:leec@up.edu)).

# κρυπτος<sup>6</sup>

A Series of Cryptanalysis  
W I D P P V O I V F  
C H A L L E N G E S

Intrigued by codemaking  
or  
codebreaking?

Compete individually  
or  
in teams

Solve one  
or all  
three challenges!

April 7 - 11, 2016

visit  
<http://www.cwu.edu/math/kryptos>  
for complete contest information

S P O N S O R E D B Y

The Pacific Northwest Section  
of the  
Mathematical Association of America

## Undergraduate Students at the PNW Meetings

By Dominic Klyve

The PNW Section of the MAA is known nationally for the participation of students at the annual sectional meeting. At several recent meetings, more than 100 students have presented posters, given talks, and participated in all aspects of the conference. Even better, students consistently report that their conference presentation is a pleasant experience – faculty are friendly and supportive, and are eager for students to succeed.

In recent years, students have participated in workshops and cryptography challenges. At the 2016 meeting, however, there will be a chance to be part of something new and exciting – a Math Wrangle!

In a Math Wrangle, two teams have half an hour to prepare solutions to challenging problems. Then the fun part

happens. Teams take turns presenting their solutions, after which the other team makes a “rebuttal”. In the end, judges award points to both teams. But be careful – if the judges aren’t happy with either team’s efforts, they can award the points to themselves!

I hope we’ll once again have a year with lots of great student participation. See you in Corvallis!



Students at the UW Tacoma meeting

# UW Tacoma Meeting

**By Mark Fitch**

Year after year the Project NExT sessions at the MAA Pacific Northwest are filled with ideas that enable us to better perform and enjoy my job. The meeting in Tacoma continued this pattern.

There were multiple sessions providing alternative approaches to teaching. These included sessions on flipping and disrupting class time. No, these were not about classroom accidents, rather they provided ideas on how to change our approach to better engage students in the work they need to do. The flipped classroom session include a teacher currently in Ramstein, Germany. This was not the first use of distance technology for the conference, but it does set a distance record.

Other sessions kept us up-to-date on trends in our field. A review of the common core standards showed us how they have been implemented in different states. Of interest to me was the differences between highly and sparsely populated states. This was a good review of what the standards are and are not as we work with the K-12 programs in our states and with

various parents. We also received updates from the NSF ADVANCE program on the status of women mathematics faculty at universities.

Research is important to our jobs and for many this includes working with undergraduate students. One session was dedicated to tips for successful work with our own students and through REU's. Regular attenders at these meetings have a great deal of experience with undergraduate research making this meeting a great place to seek assistance.

Emphasizing that there is never a shortage of topics, though there is sometimes a shortage of organizers, we included an Un-session. We divided into groups around suggested, broad themes. None of the groups was short on ideas to discuss. Perhaps some of you can pick up one of these topics and organize a session for the spring 2016 meeting.



## Upcoming meetings:

**2016 Oregon State University**

**2017 Gonzaga University**

**2018 Seattle University**

**Lewis and Clark College (tentative)**

**University of Alaska Anchorage (tentative)**

**Western Washington University (tentative)**

## Editor's Note

Hi! I have taken over the newsletter editor position from Colin Starr after 8 years on the job. Please send me ideas for articles and look for my fall and spring notes asking for department news. Thanks for all your contributions this fall. It really made this first edition easy to put together while I get my feet wet!

Kelly McKinnie  
University of Montana



**The n-th Annual Combinatorial Potlatch will be hosted by the University of British Columbia on Saturday, November 21, 2015 in Vancouver, BC.**

Main Potlatch Page:

<http://buzzard.ups.edu/potlatch/index.html>

2015 Conference Page:

<http://buzzard.ups.edu/potlatch/2015/potlatch2015.html>

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.

There is no advance registration required, nor any registration fee. The first talk will be mid to late morning, to allow for travel, followed by a no-host lunch, and three talks later in the afternoon. Many participants choose to stay for dinner locally.

Program Committee:

Nancy Neudauer, Pacific U  
<nancy@pacificu.edu>

**Program:**

10:00 AM	Registration, Bagels and Coffee
11:00 AM	Kilian Raschel, Université de Tours A Human Proof of Gessel's Lattice Path Conjecture
12:00 PM	Lunch
2:30 PM	Daniel Johnston, The University of Montana On $k$ -Ramsey Numbers of Graphs
3:00 PM	Cory Palmer, The University of Montana Turán-type Theorems for Berge-Hypergraphs
3:30 PM	Cookies, Coffee and Cokes
4:00 PM	Alexander Holroyd, Microsoft Research, TBA
5:30 PM	Happy Hour, Dinner

Communications Committee:

Rob Beezer, U of Puget Sound  
<beezer@ups.edu>

Local Arrangements Committee:

Jozsef Solymosi, U of British Columbia,  
<solymosi@math.ubc.ca>

## Section News

### Alaska

The Department of Mathematics and Statistics at the **University of Alaska**

**Anchorage** welcomes new tenure track faculty member **Nate Bushek**. Nate received



Nate Bushek

his PhD in 2015 from the University of North Carolina, Chapel Hill.

His research lies in the areas of representation theory and algebraic geometry; but, more generally he is interested

in the symmetries of, or group actions on, geometric objects. He is very excited to be in Alaska, and looks forward to exploring this beautiful state!

### Montana

**Dr. Frederick Peck** is a new Assistant Professor of Mathematics Education in the Department of Mathematical Sciences at the **University of Montana**. His PhD is in



Fred Peck

Mathematics Education from the University of Colorado at Boulder. Prior to earning a

PhD, he taught high school math for six years. His research is focused on how people use tools to learn and do mathematics, and how individuals become particular kinds of people as they participate in mathematical practices in and outside of school.

Longtime faculty members **James Hirstein** and **D. George McRae** have retired from the University of Montana.

**Jim Hirstein** received his doctorate from the University of Georgia in 1978. He taught for several years in Illinois and Pennsylvania before joining

the University of Montana as an Associate Professor in 1989. Jim served the Department as Chair from 1999 to 2005 and directed a combined 19 masters candidates and doctoral students. He has published articles and gave over a hundred presentations at state, national, and international conferences on how children learn mathematics. In 2007 he received the Montana Faculty Service Award. His influence on the teaching of mathematics has certainly been felt at the University of Montana, but it extends far beyond.

**George McRae** came to the Mathematics Department at the University of Montana as an undergraduate student in 1957. After completing his Ph.D. at the University of Washington in 1967 and spending three years teaching in Illinois, he returned to UM as Assistant Professor in 1970. In 1993 he received the University's Robert Panzer Humanitarian Award. Throughout his career, George has been recognized as an excellent teacher and advisor.

A combined 27 doctoral and masters students have finished under George's direction. He has served on the boards of directors for the Montana Academy of Sciences and the Rocky Mountain Mathematics Consortium. As a student, a young professor, a scholar, a leader, and finally as a senior resource, George has been an

ambassador for the Department of Mathematical Sciences for over fifty years.

## Oregon

**Linfield College** is excited to welcome new assistant professor **Christian Millichap**. He has a B.S. In Math and Philosophy from Dickinson College and a Ph.D. In Math from Temple University. Dr. Millichap's research focuses on low-dimensional topology, hyperbolic geometry, and knot theory. In particular, he is interested in understanding the geometry and topology of knot complements (the area surrounding a knot in three-



Christian Millichap and Chuck Dunn right after running the Pints to Pasta half marathon in Portland

dimensional space). He is advisor for the Linfield Math Club, introducing some fun new activities, such as modular bowling and a cryptography scavenger hunt. He enjoys running, hiking, and ultimate frisbee. He is new to the PNW, and is excited to explore all the great places for trail running and hiking.

**Oregon State University** recently added several visiting faculty. **Chris Jennings-Shaffer, Ph.D.** University of Florida, 2015 has been hired as a Postdoctoral Scholar working on problems in

number theory, primarily in modular forms. **Jeffrey Vaaler**, formerly of the University of Texas, is now a Visiting Professor at OSU teaching Special Topics in Algebra. **David Pengelley**, formerly of New Mexico State University, is now a Courtesy Faculty at OSU.

We have also made investments in our Mathematical Biology research group by hiring a new tenure-track Assistant Professor, **Benjamin Dalziel**, with a joint appointment in Integrative Biology. Dalziel is a population biologist working at the interface of theory and data. He uses mathematical models to uncover causal connections among different types of times-series data, including high-resolution data on animal movement patterns, population density, and the incidence of infectious disease. Previously, Dalziel was a post doctoral research associate in the Department of Ecology and Evolutionary Biology at Princeton University.

We are pleased to formally announce **Enrique Thomann** as the Head of the OSU Department of Mathematics. Thomann has served as interim head of the department since October of last year.

OSU has recently added two new specialized degree options for undergraduate majors. In addition to the existing Secondary Teaching Emphasis, we now offer a Statistics option and an



Applied and Computational Mathematics option.

**Emerald Stacy** was awarded OSU's 2015 Herbert F. Frolander Award for Outstanding Graduate Teaching Assistant. The award recognizes OSU graduate teaching assistants with outstanding teaching and professional involvement with both faculty and students.

OSU says goodbye to two recent postdocs. **Aditya (Adi) Adiredja, PhD**, UC Berkeley, has started his new appointment as an Assistant Professor in the University of Arizona. His research is in mathematics education with a particular focus on equity issues. **Thomas Humphries, PhD**, SFU, is now an Assistant Professor at the University of Washington Bothell. His research is focused on imaging, including computed tomography.

**Nancy Ann Neudauer (Pacific University)** spent her sabbatical getting to know the MAA better as the Visiting Mathematician at their national offices. She continues this work now on building connections between secondary and tertiary faculty. She also got to travel the world, on a Fulbright Specialist grant to Tanzania and Ghana, at the African Institute for Mathematical Sciences in South Africa, supervising Masters theses in Ghana, and visiting mathematicians in Germany and throughout the US. It was a productive year also, resulting in the

publication of three research articles and submission of two more. This year she is working with five students through an NSF-CURM undergraduate research grant. Stay tuned for their results!

**Reed College** has a new statistics professor, **Dr.**

**Andrew Bray.** Andrew



Andrew Bray

received his Ph.D in 2013 from UCLA and spent two years as a postdoctoral fellow

through the Five College

Consortium in western Massachusetts. His research involves spatial statistics, statistical computing, and statistics education. He's also an active contributor to the OpenIntro project and helps coordinate ASA DataFest, an undergraduate data science competition.

**Angélica Osorno and Kyle Ormsby** (both of **Reed College**) organized a conference on equivariant and motivic homotopy theory at Reed College, May 30-31, 2015. The conference was partially supported by the NSF and Reed College.

<http://people.reed.edu/~ormsb/eqmotconf2015/>

**Steve Bleiler (of Portland State University),** and

**Angélica Osorno and Kyle Ormsby** are organizing the 55th Cascade Topology Seminar

<http://people.reed.edu/~ormsb>

[yk/ctsfall15/](http://yk/ctsfall15/) at Portland State University, November 7-8, 2015.

This year is the first year that the mathematics majors at **Reed** can add a concentration in computer science or a concentration in statistics.

In 2015/16 **Reed College** is running a search for a tenure-track position in analysis/applied mathematics and another search for a tenure-track position in computer science.

**Carolyn McCaffrey James, University of Portland**



Carolyn McCaffrey James University in mathematics

education. Her research interests include leveraging justification for deeper conceptual understanding and better teaching through use of technology. She holds a Masters in mathematics from Oregon State University, a Masters in international management from Johannes Kepler Universität in Linz, Austria, and a Bachelors of Arts in mathematics from Carleton College in Northfield, MN. She is an Oregon native and is happily settled in Portland with her husband and daughter. She enjoys spending time with her family, cooking, and playing competitive ultimate Frisbee.

**Christopher Lee** earned his Ph.D. from the University of Illinois in 2009; he is now an Assistant Professor at the



Christopher Lee  
University of Portland.  
His primary field of research lies in differential topology and geometry, but he has interests in a variety of disciplines, including linear algebra and the mathematics of physics. When not teaching or learning math, Chris enjoys playing hockey, dabbling in cooking, and resisting the tendency for gravity to anchor heavy things to the ground.



Aristides C. Petrides  
Aristides C. Petrides has had the opportunity to teach math and science to students of diverse backgrounds and varying objectives. At Oregon State University he attained his PhD major in the department of water resources engineering with Ph.D. minors in statistics and science and mathematics education. Aristides has worked as an adjunct Instructor at Washington State University, Portland Community College and **University of Portland** where he is now serving as a visiting assistant professor. Aristides finished his Ph.D. dissertation in 2012,

developing and calibrating a regional hydrological model for the Walla Walla Basin. He currently serves as an advisor to the UP Lions Club and serves as a volunteer mathematics instructor for Latinos and agricultural workers in the Willamette Valley. Aristides enjoys bicycling and outdoor pursuits with his wife, three kids and "Bouncy", a three year old golden retriever.

The **Western Oregon University** Mathematics Department announces the retirements of **Mike Ward** and **Cathy Aune**.

Mike earned a PhD in finite group theory from the University of Utah in 1979. From '79 - '97 (nice symmetry) he worked at Bucknell University before relocating for family reasons to Western Oregon University where he counts good colleagues and some fine students among his blessings. We will miss Mike acutely; he has been a wonderful colleague and a great friend to all of us.

Cathy taught high school, community college math and university math, off and on, from 1966 to present. She has been a highly valued member of the WOU Mathematics Department since 2000, and will be very sorely missed.

We wish Mike and Cathy all the best in their retirements! We have been joined by three new hires this year.

**Bryce Christenson**

graduated with a BS in mathematics from Colorado State University in 2005 and graduated with a MS in mathematics from Portland State University in 2009. He completed his PhD in Mathematics, under the direction of Markus J Pflaum, from the University of Colorado in 2013. The title of his thesis is "Whitney functions determine the real homotopy type of a semi-analytic set." From 2013 to 2015 Bryce was a postdoctoral research scholar in the topology group, under the direction of Markus Banagl, at the University of Heidelberg in Heidelberg, Germany. His main area of research is in the topology of stratified spaces, fiber bundles, and algebraic topology.

**Masaki Ikeda** graduated from Western Oregon University in 2009 with Bachelor of Science in Mathematics. From 2010 to 2015 he attended the University of Idaho for graduate work. In 2012, Masaki earned an M.S. in Mathematics, and is currently on track to complete his Ph.D. in Mathematics while a Visiting Instructor at WOU. Masaki's research interest is in enumerative combinatorics. The title of his dissertation is "Enumeration of permutations indexing local complete intersection Schubert varieties."

**Sylvia Valdés-Fernandez** earned her bachelor's in math from San Jose State University and her Master's in Education from the University



of Washington. She has dedicated her career to helping underrepresented students access higher education, and continues that mission here at WOU. Sylvia and her husband have just relocated from the Seattle area. They have a daughter who is a freshman majoring in cello performance at Mary Baldwin College in Virginia and a son who is a junior majoring in math right here at WOU.

**WOU** congratulates the 2014-15 Charlie Dolezal and Ernie and LaVerne Cummins Scholarship Winners: **Sally Peck** and **Tyler McAfee**.

**WOU** held their 11th Annual Sonia Kovalevsky Day in February 2015, with well over 120 students and teachers attending.

**Stuart Boersma (CWU)** and **Cheryl Beaver (WOU)** organized the fifth annual KRYPTOS competition in April 2015. From the KRYPTOS website: One hundred and fifty three students formed 67 teams representing colleges, universities, academies, institutes, and high schools from Alaska, California, Colorado, Florida, France, Kentucky, Idaho, Illinois, Indiana, Massachusetts, Michigan, Missouri, Montana, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Texas, Virginia, and Washington.

**Willamette** hosted the 4th annual Pacific Northwest Intercollegiate Ginormous

Blokus Tournament (PNIGBT), winning back the trophy. After participating in the international MegaMenger project last year (in which we built a level 3 Menger sponge out of 66,000 business cards), we had a plexiglass case built to preserve it for many years to come. It is on display in our Math Hearth and acts as a centerpiece for prospective students on their tours. Finally, this summer was the first summer of our REU renewal. We hosted three teams of three students each for eight weeks and had a great time doing mathematics research with students from around the country.

## Washington

The Math department at **Central Washington**



Andy Richards

**University** welcomes **Andy Richards** as its newest instructor. Andy earned his bachelors in Mathematics (2005) and Masters in Education (2006) from the University of Oregon. Mr. Richards taught at Lane Community College from 2011 to 2014 and last year he taught at Oregon State University and Linn-Benton Community College. When Andy is not teaching math he enjoys riding his bicycle and camping.

**Gonzaga** has two new hires. **Jeffrey Wand** and **Katherine Shultis**. **Jeffrey Wand** joined

the department of



Jeffrey Wand

Mathematics at Gonzaga University in August 2015 as a lecturer. This past summer he earned his Ph.D in Mathematics at the University of California, Riverside, where he studied Lie Theory and Representation Theory. Outside of academics, Jeffrey enjoys running, hiking, and watching sports.

**Katharine Shultis** earned her



Katharine Shultis

BA from Scripps College (Claremont, CA) in mathematics and chemistry, her MA in mathematics from UC San Diego, and her PhD in 2015 from the University of Nebraska – Lincoln. Her research is in commutative algebra. When not teaching or doing research, Katharine enjoys weight-lifting and baking.

The Mathematics Department at **Pacific Lutheran University** congratulates **Daniel Heath** on receiving this year's Carl B. Allendoerfer Award for his article "Straightedge and Compass Constructions in Spherical Geometry" published in the Mathematics Magazine in 2014.

Three **PLU** faculty members:

**Rachid Benkhalti, Daniel Heath, and Tom Edgar** are on full-year sabbaticals, and three visiting faculty members are teaching in the department this year: **Yajun An, Michele Dijkstra, and Natalya Strand**. **Yajun** got her PhD in mathematics from the University of Washington in 2015. When she is not busy teaching, she enjoys doing research on numerical analysis and hyperbolic PDEs. **Natalya** is from the South of Ukraine, and has been teaching mathematics in the U.S. for eight years. Her hobbies are skiing and hiking. **Michele** graduated from PLU in 1988 has worked there for 26 years. She has spent fifteen of those years teaching, primarily in the Computer Science department.

**Ksenija Simic-Muller** has returned from sabbatical and is reviving the department's Mathlete Coaching Project, an outreach program that trains PLU students to coach middle school students for the Washington State Math Olympiad.

The **PLU** department holds seminars on select Wednesday afternoons, and encourages those living in or visiting the area, and who are interested in speaking, to contact Ksenija Simic-Muller. A notable speaker this fall has been Abraham Flaxman, Assistant Professor of Global Health, Institute for Health Metrics and Evaluation (IHME) at the University of Washington, who spoke about

the Mathematics of Disease Burden Measurement.

This is an exciting year for **UW Tacoma**! They are welcoming three new full time hires and have a brand new Bachelor of Science in Mathematics!

The WU Tacoma mathematicians are proud to offer a strong but flexible mathematics major to their students this autumn. The program is structured so that students are guaranteed to see the three branches of mathematics: algebra, analysis, and geometry, and will study one of these topics in depth during a two-quarter sequence. Work culminates in a capstone experience with students researching, discovering, or applying mathematical results beyond their coursework and showcase their results to others in both in writing and as a presentation.

**Dr. Emily Cilli-Turner** joins **UW Tacoma** as a lecturer supporting the new math major. Dr. Cilli-Turner's earned her Ph.D. in Arts, Mathematics at the University of Illinois at Chicago. Dr. Cilli-Turner's research focuses on questions in undergraduate mathematics education. She investigates the thought processes of student in a transition to proof course and determining effective ways to teach students to prove in mathematics.

**UW Tacoma** welcomes **Dr. Maureen Kennedy** as a new

Assistant Professor. For her graduate work in Quantitative Ecology and Resource Management at the University of Washington, Dr. Kennedy developed a simulation model of branch morphologies for old-grown conifers. She used multi-criteria optimization to discover branch morphologies that represented alternative optimal solutions to the problem of longevity under growth constraints. Dr. Kennedy continues to conduct quantitative research in model uncertainty assessment, in understanding spatio-temporal patterns in fire history data, in employing spatially explicit analysis to evaluate fuel treatment efficacy during wildfire, and in estimating non-linear growth and yield models for sustainable forest management.

**Dr. Erik Tou** also joins **UW Tacoma** as a lecturer. Dr. Tou earned his Ph. D. in Mathematics at Dartmouth College and now serves as the Chief Historian of the Euler Archive, a scholarly organization devoted to the collection, digitization, and translation of the works of Leonhard Euler. His research covers a wide range of topics, including the mathematics of juggling, zeta functions, and Gaussian integers.

After 34 years at **Walla Walla University**, **Dr. Kenneth Wiggins** retired in 2014. Ken served as chair of the Department of Mathematics for 21 years, and he provided wise and able leadership in

the department and school. His students fondly remember his hospitality, his clear instruction, his humor, and his keen interest in their success. He will be sorely missed!

**Dr. Heidi Haynal** also retired from **Walla Walla University** in 2014 after six years with us, and she is off to new adventures in the Portland area. We couldn't have asked for a better colleague. We wish her the best!

We are pleased to welcome **Ross Magi** back to **Walla Walla University**. Ross received his bachelor's degree from WWU in 2007, after which he went to graduate school at The University of Utah for his PhD in mathematics. In 2014 he successfully defended his dissertation, Dynamic Behaviors of Biological Membranes, before joining our department.

Finally, **WWU** is pleased to welcome **Benjamin Jackson** to our math department. Ben received his bachelor's degree from Texas A&M University-Corpus Christi in 2001. He finished a master's degree at Washington State University and taught for three years at Lewis-Clark State College in Idaho before enrolling in graduate school at Montana State University. In August he successfully defended his dissertation, Transport of dissolved and particulate material in biofilm-lined tubes and channels. We are pleased he is here!

**Dr. Yuan Wang** joins the faculty of **Washington State University** as an assistant



Yuan Wang

professor in the department of Mathematics and Statistics. She received her PhD in

Statistics from Colorado State University in 2013, and was a postdoctoral fellow in the department of Biostatistics at the University of Texas MD Anderson Cancer Center from 2013 to 2015. Professor Wang's research interests mainly focus on statistical learning of complex data objects including tree-structured data, imaging data, and functional data. Her work has applications to neurosciences, cancer research, and wireless communication.

Professor **John dePillis** of the University of California, Riverside, delivered the Calvin and Jean Long Distinguished Lecture in Mathematics in October. Calvin Long was a faculty member at WSU for 36 years. Professor dePillis gave a general lecture on "Mathematical Conversation Starters" and later gave a colloquium talk titled "Linear Algebra as a Natural Language for Special Relativity and Its Paradoxes".

Faculty member **David Wollkind**, who recently reached the 45 year mark at

**WSU**, was honored by the Associated Students of WSU as the recipient of the Cougar Award, given to one individual from the university who has made a positive impact on the university and community. Professor Wollkind is an accomplished researcher and teacher. One his most notable accomplishments, among many, is his 23 PhD students.

**WSU** faculty member **Jeannette Martin** received the Richard G. Law Excellence Award for Undergraduate Teaching, a university-wide award. One nominator summed up her qualities by remarking "For all audiences she creates an exciting, supportive learning environment in which students learn to take risks, are willing to make mistakes and learn from them, and work to reach the high standards she sets for them."

**Whitman College** has two new faculty members joining the department this year.

**Stacy Edmondson** joined the Department of Mathematics



Stacy Edmondson

and Computer Science at Whitman College in the fall of 2015. Stacy received her Ph.D. in Statistics from

Colorado State University in the summer of 2015 where her research focused on developing statistical methods



for accounting for identity, capture, and recapture uncertainty when estimating detection probability from capture-recapture surveys. Her other areas of interest include computational, Bayesian and environmental statistics. Stacy also enjoys both watching and participating in a wide variety of sports and activities.

**Janet Davis** earned her B.S. in Computer Science at



Janet Davis

Harvey Mudd College and her M.S. and Ph.D. in Computer Science and Engineering at the

University of Washington. Her research in human-computer interaction focuses on participatory design and value sensitive design of persuasive technologies. During her nine years at Grinnell College, she enjoyed teaching functional problem solving, computer systems, software engineering, technology studies, and more. At Whitman College, Dr. Davis will lead the development of a new computer science department and curriculum.

After 40 years in education, **Doug Mooers** retired in June 2015.

Doug chartered Mu Alpha Theta Chapters in two States and a Math League Team at Whatcom Community College. He developed math and

programming courses; taught lab based and lecture courses, and taught on a Telecommunications broadcast system.

He Chaired Whatcom Community College's Math Program for 15 years, sponsored Women in Mathematics speakers, Math Student Awards, and worked with the Whatcom County Middle School Math Olympiad. He produced over 200 videos; developed and taught Math Anxiety Workshops, and authored a Math Lab Peer Tutoring Program. At Whatcom, he taught the first Mathematics Honor Seminar (1992) and the first "Writing in Mathematics" Project (1997).

Doug co-coordinated with Susan Indorf, "Mathematical Tours To England" (1989-1992), co-chaired the 1995 Washington State Community College Mathematics Conference in Wenatchee, and was the 2013 Bellingham Speaker Coordinator.

Doug secured several technology grants which provided faculty training and sponsored local conferences. He created Whatcom's Online Math Center, and sponsored visits by the Human Calculator, Scott Flansburg, and NCTM President Linda Gojak. He was WAMATYC President (2002 – 2004) and designed the organization's logo.

Doug received the 1992 Puget Power Outstanding Full Time Faculty Award and the 2004

PNWMAA Distinguished Teaching Award.

Doug holds degrees from Santa Monica College, UCLA, San Diego State University, and UC Davis.