March 2011

Matters Mathematical

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

Juneau MEETING June 23-25, 2011

June 2011 PNW MAA Meeting at University of Alaska Southeast

This year's PNW-MAA section meeting will be held June 23-25 at the University of Alaska Southeast in Juneau, Alaska. Registration is open at the link below. **NOTE**: early registration ends **March 31** (postmark date).

http://www.uas.alaska.edu/arts_sciences/naturalsciences/math/maa/registration.html

Dr. John Adam

The invited speakers are **Dr. John Adam** (Old Dominion University), **Dr. David Bressoud** (Macalester College), and **Dr. Karen Seyffarth** (University of Calgary). On Thursday evening, June 23rd, Dr. Adam will provide a public lecture about some interesting mathematical patterns in nature. On Friday morning, Dr. Bressoud will provide an invited talk on transitioning from high school to college. This will be followed by some contributed paper sessions and an outing to the Mendenhall Glacier. The Banquet will be on Friday night concluding with the keynote address by Dr. Bressoud. The conference will continue Saturday morning with an invited talk by Dr. Seyffarth whose research area is combinatorial mathematics. After more morning contributed paper sessions, the conference will culminate with a whale watching tour.

Dr. David Bressoud

Dr. Karen Seyffarth

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Stuart Boersema

There will be two minicourses on Thursday afternoon. The first is "Quantitative Reasoning in the News" by **Stuart Boersma** (Central Washington University) and **Caren Diefenderfer** (Hollins University). The second is "Teaching Mathematical Modeling through Patterns in Nature" by John Adam (Old Dominion University). As usual there will be the Pacific Northwest section NExT meeting on Thursday morning.

Dr. Caren Diefenderfer

The University of Alaska Southeast-Juneau campus is nestled between Alaska's Inside Passage and the Mendenhall Glacier. It is surrounded by glacier-fed lakes and streams, which fill with wild salmon in the summer and early fall. The campus is located along the shores of Auke Lake, on the ancestral lands of the Auke people. Juneau's 32,000 people make it the largest city in the region and the third largest in the State, behind Anchorage and Fairbanks. Juneau lies in the Tongass National Forest which occupies approximately 77 percent of the land in Southeast Alaska. At 16.8 million acres the Tongass is the largest national forest in the country and the world's largest temperate rainforest.

For more information about Juneau, contact Brian Blitz at bgblitz@uas.alaska.edu.

For more information about contributed paper sessions, contact the contributed paper coordinator, Chris Hallstrom at hallstro@up.edu.

We welcome talks on Junior Faculty Research, Mathematics Education, Inquiry Based Teaching Methods, Algebra / Algebraic Geometry, Student Talks / Undergraduate Research, as well as talks for a general audience.

NUMS Conference April 9

Call for Undergraduate Presentations

Join us at **Reed College** in Portland, Oregon on Saturday, April 9, 2011 for the third annual Northwest Undergraduate Mathematics Symposium.

The Reed Mathematics Department invites all mathematics students in the Pacific Northwest to present their work at NUMS this spring. First-year graduate students are welcome to present research completed while still undergraduates. Talks may be short (10 mins) or long (25 mins), and there will also be a poster session.

In addition, Dr. Naiomi Cameron of Lewis & Clark College will present the invited address on "*Combinatorial Enumeration with the Riordan Group*."

There is no registration fee. Also, travel support will be available to students thanks to NSF-RUMC funding from the MAA, and lunch is included for those registering online. Please e-mail nums@lists.reed.edu for details.

Registration for participants and speakers begins March 7 and continues until March 28.

For more information, visit http://academic.reed.edu/math/nums.

KRYPTOS: A Series of Cryptanalysis Challenges

Stuart Boersma and Cheryl Beaver

KRYPTOS is a new 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 English 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:

* Wikipedia entries for Cryptography and Cryptanalysis
* The Code Book by Simon Singh.
* Codes and Ciphers by R.F. Churchhouse
* Codes, Ciphers and Secret Writing by Martin Gardner

Please announce this contest to your students!

To register and obtain more information, including a printable brochure/poster, go to

http://www.cwu.edu/~boersmas/kryptos/

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

Editor's Greetings

Thanks to all contributors, and welcome to all of the new faculty in our region. Be sure to register right away for the Juneau meeting — March 31 is the deadline for early registration.

Also, take special note of the upcoming NUMS conference, now in its third year. This is a very fun, low-key conference for everyone.

Colin Starr, cstarr@willamette.edu

Interested in Project NExT?

Project NExT (New Experiences in Teaching) is a professional development program for new or recent graduates in the mathematical sciences (including pure and applied mathematics, statistics, operations research, and mathematics education). It addresses all aspects of an academic career: improving the teaching and learning of mathematics, engaging in research and scholarship, and participating in professional activities. It also provides the participants with a network of peers and mentors as they assume their new responsibilities.

1.What are the requirements for the national program?

Applicants for the national program must have a Ph.D. in the mathematical sciences and be in the first two years of a full-time college/university teaching position. For more information, visit
http://archives.math.utk.edu/projnext

2. *What are the requirements for the PNW Project NExT section?*

Applicants for the PNW section must have a Ph.D. or a master's degree in the mathematical sciences and be within the first four years of full-time teaching at a college, university, or community college in the PNW. For more information, visit
http://www.math.umt.edu/pnwnext/
or contact Jenny McNulty at McNulty@mso.umt.edu.

3. *How often do we meet?*

Participants in the national program meet at two consecutive MathFests and at the intervening Joint Meetings of the AMS and MAA. Participants in the section NExT meet at two consecutive PNW MAA meetings.

4. *When can I apply?*

This year's deadline is April 15. For more information, please visit the websites listed above.

Upcoming Events and Conferences

Upcoming Meetings:

2011 NUMS at Reed (see p. 2)
2011 PNWMAA in Juneau, Alaska
http://sections.maa.org/pnw/events/ (section)
http://www.maa.org/subpage_4.html (national)

Juneau meeting website:

http://www.uas.alaska.edu/arts_sciences/naturalsciences/math/maa/index.html

Tentative Schedule of Events at Juneau

Zoom in to read, or visit the meeting website.

PNW MAA 2011 Section Meeting - Tentative Schedule

6/19 Sun.	6/20 Mon.	6/21 Tue.	6/22 Wed.	6/23 Thurs.	6/24 Fri.	6/25 Sat.	6/26 Sun.	6/27 Mon.
University Housing opens at 3:00 pm for early arrivals (Hotels reservations for special rates also begin on this date)	Independent Sightseeing (Early Arrivals) See suggested options on Meetings Extracurricular Page	Independent Sightseeing (Early Arrivals) See suggested options on Meetings Extracurricular Page	Independent Sightseeing (Early Arrivals) See suggested options on Meetings Extracurricular Page	Packet Pickups: Project NExT Packets at 7:45 AM and others from 12:00 - 5:00 PM Project NExT Meeting 8:00 AM - 2:15 PM Minicourses & Panel Discussion 2:30 - 5:30 PM Project NExT Dinner & Discussion 5:30 - 7:30 PM Public Lecture: John Adam 8:00 - 9:00 PM Reception 9:00 PM +	Packet Pickups: 8:00 AM - 2:00 PM Executive Committee Meeting 8:00 - 9:00 AM Student Poster/Book Sales Introduction and Welcome. Invited Lecture David Bressoud 9:00 - 10:15 AM Contributed Talks 10:30 AM - 12:00 PM (Multiple Sessions) Business Meeting 12:15 - 1:15 PM Lunch Provided 12:00-1:30 Contributed Talks (Multiple Sessions) 1:30 - 3:00 PM Outing 1: Mendenhall Glacier 3:15 - 5:30 PM Social Hour: 6:00 - 7:00 PM Section Awards, Banquet 7:00 - 8:00 PM Invited Lecture: David Bressoud 8:00 - 9:00 PM	Student Poster/Book Sales Invited Lecture: Karen Seyffarth 9:00-10:00 AM Contributed Talks (Multiple Sessions) 10:15 - 11:30 AM Outing 2: Whale watching trip 12:30 - 4:00 PM Boxed Lunch to be Provided Independent Tours See suggested options on Extracurricular Page	Independent Sightseeing (Early Arrivals) See suggested options on Meeting's Extracurricular Page	University Housing closes at 11:00am

PNW MAA Distinguished Teaching Award

This year's PNW Distinguished Teaching Award goes to...a person to be named at the Juneau meeting! Come to Juneau to learn first-hand who earned this year's award.

Carnegie Foundation's 2010

U.S. PROFESSOR OF THE YEAR

The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education have named Dr. Ping-Tung Chang at the Matanuska-Susitna College the 2010 U.S. Professor of the Year. Dr. Chang was selected from more than 300 top professors in the United States.

Dr. Chang's outstanding achievements include recent efforts at Shaoguan University to establish a master's program in math education, focusing on cutting-edge educational methods and synthesizing a method that takes advantage of the best features in both Chinese and American educational systems.

Four national winners are recognized each year, chosen to honor the nation's best undergraduate teacher, focusing on educators who excel and influence the lives and careers of their students. This is the only national program to honor undergraduate teaching and mentoring.

The Council for the Advancement and Support of Education (CASE) is the largest international association of education institutions. CASE is the leading resource for professional development, information, and standards in the fields of educational fundraising, communications, marketing, and alumni relations.

The Carnegie Foundation for the Advancement of Teaching is the only advanced-study center for teachers in the world and the third oldest foundation in the nation. Its nonprofit research activities are conducted by a small group of distinguished scholars.

SECTION NEWS

British Columbia

BCIT has a number of updates: **Retirements:** a steady trickle in recent years – **Arch McFarlane** in June 2008; **Colin Lawrence** (who taught math for Geomatics for many years) in June 2009; **Stela Dumitrescu** (who taught into Building Technology) in January 2010; and most recently, **Louise Routledge**, BCIT's mathematics department head for many years.

Hires: Mark Jackson became a permanent faculty member in 2010, and teaches math for Geomatics.

Awards: Math was awarded the BCIT Department Extra Mile award in 2009; **Paul Rozman** won the School of Computing and Academic Studies teaching award in 2009; and **Scott Hagan** received the teaching award in 2010; **David Holloway** received the 2010 Excellence in Research award from the BCIT Alumni Association.

David Holloway

Leaves: Eric Hiob is on a professional development leave to write 3 textbooks: *Mathematics for Electronics and Robotics*; *Calculus for Electronics and Robotics*; and *Differential and Difference Equations for Electronics and Robotics*. He will also update and incorporate *Math for Technology Suite* and *Algebra Coach* software into these.

Research: David Holloway published articles on fruit fly development in *PLoS Computational Biology* (vol. 4, e1000184 and vol. 7, e1001069) and on plant shape generation in *Biochemical Society Transactions* (vol. 38, p. 645). He was awarded a grant from the Natural Sciences and Engineering Research Council of Canada, 2008-2013, to work on Chemical Kinetics and Mechanics in the Generation of Biological Form.

Programs: Laura Billing and **Scott Hagan** presented a talk on "Why Do We Need to Know This?": Opening Students' Eyes to Real-World Applications of Math, at the British Columbia Association of Mathematics Teachers conference in Delta in Oct. 2010. The talk highlighted the department's work on creating a large bank of real-world applications tied to the high school math curriculum. One of the goals of the project is to encourage more students to pursue technical and engineering careers. The talk ran twice at the conference and was standing room only for both sessions. The feedback from the high school teachers on the project was extremely positive.

This led to initial funding for what is now known as the Building Better Math project (http://www.bcit.ca/bettermath/): an online database using Maple TA software, tied to the high school curriculum, of real-world math problems. We aim for rich and broad applications in many fields of science, health, engineering and technology to encourage and inspire students to consider and explore careers in science and technology. Feedback or suggestions for new high-school problems are welcome: bettermath@bcit.ca.

Oregon

Gary Gislason

Dr. Gary Gislason is retiring from **Willamette University** after more than a decade of service as our most reliable and experienced adjunct. Gary came to us after retiring from University of Alaska, Fairbanks. He has been our "go-to guy" whenever we have needed to offer another section of something, and his willing spirit and easy-going demeanor will be sorely missed. **Thanks, Gary! There is always a place for you!**

Pacific University hosted its first Pacific Math Day for high school students. Over 50 students attended the conference, which featured **Sarah Greenwald** as the keynote speaker and activity sessions run by **Cheryl Beaver, Rob Beezer, Naiomi Cameron**, and **Chuck Dunn**.

We welcome **William Breslin** to our faculty in the autumn. William received his PhD from UC Davis and is currently a postdoc at the University of Michigan; he works in low-dimensional geometry and topology.

Colloquium speakers this year include **Meike Neiderhausen, Jeffrey DiFranco, Winfried Hochstättler, Sarah Greenwald**, and **Chuck Dunn**.

Washington

Kelly McConville

The **Whitman** mathematics department is very pleased to announce that we have a new member of the department joining us next Fall. **Kelly McConville** is currently finishing her PhD in statistics at Colorado State University with plans to graduate this summer. She received her B.A. in mathematics with a concentration in statistics from St. Olaf College. Her research interests include improving the estimation procedures for complex survey data using modern regression techniques and she has collaborations with both the US Forest Service and National Center for Infectious Diseases. A lover of ice cream, Kelly ran her first half-marathon last autumn to ease the negative effects of her dairy cravings.