March 2012

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

University of Portland Meeting April 20-22, 2012

April 2012 PNW MAA Meeting at University of Portland

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The spring meeting of the PNW MAA is fast approaching! The Department of Mathematics and College of Arts and Sciences of the University of Portland are proud to be hosting this year's conference. There will be a casual meeting of members of Project NExT on the evening of Thursday, April 19th. Project NExT will run a full program beginning Friday morning. From 3-5 p.m, there will be three minicourses: ``An Introduction to R," ``WeBWork Implementation," and ``Getting Started with Inquiry-Based Learning."

Friday evening there will be a Student Social prior to Bob Bosch's public address: ``Opt Art: an Introduction" (see TSP: Art http://www.oberlin.edu/math/faculty/bosch/tspart-page.html and http://www.dominoartwork.com). A reception will follow. Frank Morgan starts off Saturday with one of two talks on research done with undergraduates: "Densities from Geometry to the Poincaré Conjecture." There is a full program of contributed talks prior to Lunch after which Stan Yoshinobu will present; "Saving Ally: Why We Need to Transform Our Educational Paradigms." Following the afternoon contributed sessions there will be a happy hour reception and banquet. Due to constraints, the banquet will be limited to 120, but we still have tickets as of press time! Frank Morgan will wrap up the meeting with the evening address (open to all participants) ``Optimal Pentagonal Tilings" (see http://www.huffingtonpost.com/frank-morgan/).

More information, including registration and hotels (special room rates are still available; deadline TBD; Book Now!) can be found at:

http://college.up.edu/math/pnwmaa

The online registration deadline is Friday, April 6 at 4PM.

If you have any questions or concerns, please contact pnwmaa2012@up.edu

KRYPTOS^2: A Series of Cryptanalysis Challenges

April 12-16

KRYPTOS 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 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:

- Challenges from last year's contest
- The American Cryptogram Association
- 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!

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

Thank you,
Stuart Boersma and Cheryl Beaver

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

I am continually impressed by all of the new opportunities that keep arising for undergraduates in our section. We now have, in addition to our usual section meetings, NUMS (4 years), KRYPTOS (2 years), and the Western Washington Community College Student Mathematics Conference (6 years), and I am probably forgetting some!

Be sure to register for the UP meeting — it's only a few short weeks away.

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 has passed. For more information, please visit the websites listed above.

Upcoming Events and Conferences

Upcoming Meetings and Events:

2012 KRYPTOS (see p. 2)
2012 PNWMAA in Portland, Oregon
http://sections.maa.org/pnw/events/ (section)
http://www.maa.org/subpage_4.html (national)

Portland meeting website:

http://college.up.edu/math/pnwmaa

Tentative Schedule of Events at University of Portland

Friday, April 20

- Minicourses:
  Stan Yoshinobu, "Getting Started with Inquiry-Based Learning"
  Robin Cruz, Linda Danielson, Aaron Wootton, "WeBWork Implementation"
  Christopher Hay-Jahans, "An Introduction to R"
- Project NExT sessions
- Friday evening student social

Saturday, April 21

- Invited and contributed talks
- Special sessions
- Banquet

Welcome to new PNW NExT Section Fellows

The 2012 PNW NExT Section Fellows are

William Breslin, Pacific University
Katie Oliveras, Seattle University
Janet Shiver, Central Washington University

Please welcome them when you see them! The UP meeting would be a great place to say hi.

SECTION NEWS

Oregon

At **Willamette University**, **Inga Johnson** and **Colin Starr** secured funding from the NSF to renew the Willamette Valley Mathematics Consortium REU-RET for three years. This program brings together faculty from **Willamette**, **Linfield**, **University of Portland**, and **Lewis & Clark** to lead teams of undergraduate researchers during the summers of 2012 -2014.

Washington

Stuart Boersma

A partnership between the Carnegie Foundation for the Advancement of Teaching and the Charles A. Dana Center created a developmental level mathematics course with a focus on quantitative literacy, **Quantway**. **Stuart Boersma** (**Central Washington University**) was lead author on this curriculum writing project. A college level sequel, Quantway 2, is currently under development. Stuart Boersma is again lead author and **Cinnamon Hillyard** (**University of Washington, Bothell**) is the project director.

Green River Community College hosted the Western Washington Community College Student Mathematics Conference on February 25. Supported by the WAMATYC as well as the MAA's Regional Undergraduate Mathematics Conferences (RUMC) program, the conference drew 87 attendees to campus, the most in its six years of existence. Student presentations included work on the Fibonacci sequence, sequences and series, music and mathematics (featuring a harp!), summing integers of like powers, a Babylonian method for finding square roots, and a philosophical discussion of the relative values of pure and applied mathematics. The 2013 conference will be held at North Seattle Community College, probably in late February.

At **Pacific Lutheran University**, Mei Zhu coordinated the Mathematical Contest in Modeling and the Interdisciplinary Contest in Modeling. Globally, the MCM and ICM are coordinated by COMAP3, a non-profit organization focused on improving math education for all students worldwide. Three teams consisting of twelve PLU students participated in the contests. Results of the competitions will be available in April. **Jessica Sklar** gave the Keynote Address, titled "Dials and Levers and Graphs, Oh My! Mathematical Solutions to Computer Game Puzzles," at the 4th Annual Northwest Undergraduate Mathematics Symposium hosted by Lewis & Clark College on March 10.

Jessica Sklar

The department is especially excited to announce the publication of the book that Jessica co-edited with Elizabeth Sklar, Mathematics in Popular Culture: Essays on Appearances in Film, Fiction, Games, Television and Other Media. The book's publisher, McFarland, writes the following on the website for the book: "In this collection of new essays, contributors consider the role of math in everything from films, baseball, crossword puzzles, fantasy role-playing games, and television shows to science fiction tales, award-winning plays and classic works of literature. Revealing the broad range of intersections between mathematics and mainstream culture, this collection demonstrates that even 'mass entertainment' can have a hidden depth."

Brian Fischer, DSc from Washington University (2005), joined the Mathematics Department at **Seattle University** in September 2011. His research is in computational neuroscience, including the modeling of auditory response of barn owls, which he pursued most recently as a postdoctoral scholar with the Group for Neural Theory at Ecole Normale Superieure, Paris.

Brian Fischer

Mary Ehlers is retiring after 38 years of service and teaching more than 5000 students at Seattle University. She served the section in a variety of ways, including as Secretary/ Treasurer, as a member of the by-laws committee, as chair of the Distinguished Teaching Award Committee, and as the local arrangements coordinator for the very successful 2010 Section Meeting at SU. A loyal PNW MAA member, she has attended every section meeting since 1994 and earned her undergraduate and graduate degrees at Western Washington University and Washington State University.

Mary Ehlers

The **University of Washington, Tacoma** welcomes two new faculty members this year, **Dr. Julie Eaton** and **Haley Skipper**.

Dr. Eaton earned her Ph.D. from the University of Washington in 2010 and began this fall as an Assistant Professor. Ms. Skipper received her Masters in Mathematics from the University of North Dakota and joined our department as a lecturer.

Haley Skipper