January 2008

Matters Mathematical

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

HIGHLIGHTS FROM THE APRIL 2007 PNW MAA MEETING

Contents

John Conway

Linfield College hosted the 2007 PNW MAA meeting April 13-14. The two-day conference featured invited speakers John Conway, Elwyn Berlekamp, and David Wolfe and boasted more student talks than any previous meeting.

Professor Conway delivered two addresses. The public address, "The Free Will Theorem," drew a full house in Linfield's Ice Auditorium. His second lecture, "Infinite and Infinitesimal Numbers and Games," pleased a full house in Evergreen Aviation's auditorium after the meeting banquet.

Professor Conway was also a hit at the student reception Friday night, where he posed paradoxes and played games with an appreciative crowd of students, staying late to discuss the physics of rainbows and elaborate on his Free Will Theorem.

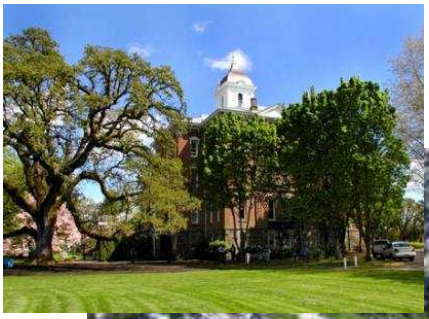
David Wolfe

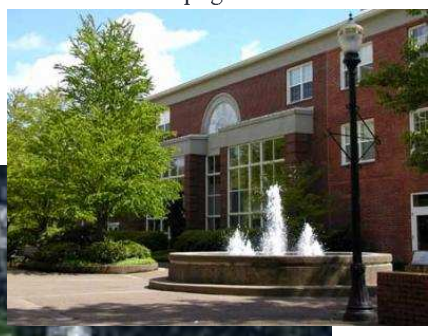
Elwyn Berlekamp

Elwyn Berlekamp and David Wolfe each gave an invited address as well. Professor Berlekamp delivered "Fibonacci Plays Billiards" Saturday morning and Professor Wolfe presented "In Tribute to Martin Gardner." Both talks were lively and again filled Ice Auditorium. Professors Berlekamp and Wolfe each gave a minicourse, as well.

PNW Project NExT fellows gathered at the meeting for several activities; see the article on page 3 for more details.

Saturday lunch was a busy time. Clark College, one of the funding sponsors for this meeting, hosted a panel discussion on teaching in community colleges. For only the second time, students participated in a Student Problem-Solving Session. During these more interesting events, PNW MAA officers held a business meeting; details of this appear in the article on page 6.





2007 PNW MAA Award for Distinguished Teaching of Mathematics

Duane DeTemple, Washington State University (by Sandy Cooper, WSU)

Duane DeTemple epitomizes the highest level of excellence in the pursuit of mathematics instruction. He is not only an exceptional instructor in the classroom, but also develops new courses and programs of study, is a popular speaker for educators, contributes generously in service to both Washington State University (WSU) and the mathematics education profession, and is the author of numerous publications, including a text that is used widely in pre-service teacher preparation programs throughout the United States and Canada.

Duane has been a member of the mathematics faculty at WSU since 1970. At WSU, he is a leader in course and program development and innovation. His contributions to mathematics education include designing and implementing the honors sequence of mathematics courses; developing a Masters of Science with Teaching Emphasis for graduate students planning a career in secondary or community college mathematics instruction; developing a Diversity Resources Handbook highlighting activities emphasizing multicultural mathematics topics; co-authoring (with Kimberly Vincent and Verna Adams) the book "Activity Based Instruction in Elementary Mathematics," used extensively in WSU pre-service education courses.; and co-founding (with Jack Robertson) the Seminar in Combinatorial Geometry that has been offered since 1983.

Service to both the state and his profession are exemplified by the following examples: Advisory Board Member, High School Mathematics from an Advanced Standpoint. State Coordinator, American High School Mathematics Contest, 1992-1995. Chairman, Pacific Northwest Section, MAA, 1977-1978.

In addition to his service work, Duane works with WSU undergraduates in many capacities outside of his normal teaching duties. He mentors undergraduate research projects; he takes WSU secondary mathematics majors to the annual Northwest Math Conference; and he advises future high school mathematics teachers. Duane is also an informal mentor to less senior faculty members. He includes them in projects, funds travel to professional meetings through his grants, and supports their initiatives. Furthermore, Duane stays current with research on mathematics teaching and learning and is usually one of the first to turn research-based innovations into common classroom practice.

Duane DeTemple is a deserving recipient of this award. He has quietly, but effectively, served WSU, the state and his profession for the past 36 years through course and program innovations, service and publications, and mentoring students and junior colleagues.

Nominations for Distinguished Teaching Award

Officers of the PNW section of MAA solicit your nominations for the Distinguished Teaching Award. This award is given each year to a college teacher in the Pacific Northwest, who is then a nominee for the MAA's Deborah and Franklin Tepper Haimo Award.

Eligibility

- College or university teachers assigned at least half time during the academic year to teaching a mathematical science in a public or private college or university (from two-year college teaching through teaching at the Ph.D. level) in the United States or Canada. Those on approved leave (sabbatical or other) during the academic year in which they are nominated qualify if they fulfilled the requirements in the previous year.
- At least five years teaching experience in a mathematical science.
- Membership in the Mathematical Association of America.

Guidelines for Nomination

The nominees should

- be widely recognized as extraordinarily successful in their teaching. "Teaching" is interpreted in its broadest sense. It may include activities such as preparing students for college-level mathematical competitions (e.g., Putnam Exam or Mathematical Contest in Modeling) or attracting students to become majors in a mathematical science.
- have teaching effectiveness that can be documented.
- have had influence in their teaching beyond their own institutions. This can include demonstrated lasting impact on alumni, influence on the profession through curricular revisions in college mathematics teaching with national impact, influential innovative books on the teaching of college mathematics, etc.
- foster curiosity and generate excitement about mathematics in their students.

If you would like to nominate someone, please print out, complete, and return the preliminary nomination form on the last page of this newsletter. Preliminary nominations will be screened by the Section Screening Committee. The home institutions for the finalists will then be asked to prepare a complete nomination portfolio. Complete nomination portfolios include

- a letter of support by the nominator,
- two letters of support by colleagues,
- two letters of support by students, and
- additional evidence of distinguished teaching

Deadline for submission of preliminary nominations is February 1, 2008. For additional information please contact Chris Black (see form at end of newsletter).

Project NExT at the PNW MAA Meeting

by Klay Kruczek

To kick off the Pacific Northwest MAA Meeting of 2007, the PNW section of Project NExT held its third annual pre-NExT dinner and discussion on Thursday evening, April 12, in McMinnville at McMenamin's Hotel Oregon. The theme of this year's discussion was "What is Good Teaching?" and was organized by Hans Nordstrom (University of Portland).

The Friday meeting was attended by approximately thirty-five PNW Section NExT Fellows, National NExT Fellows, consultants, speakers, and Project ACCCESS Fellows. The new PNW section Fellows, James Bisgard (Central Washington University) and Marianna Bogomolny (Southern Oregon University), were introduced.

The first session of the day, organized by Christina Negoita (Oregon Institute of Technology) and Hans Nordstrom (University of Portland), concerned the "Effective Use of Technology in the Classroom." Kelly Cline (Carroll College) discussed WeBWorK, Christina Negoita discussed using WebCT to teach an online course in discrete mathematics, and Chris Hallstrom (University of Portland) discussed using Maple worksheets in a Calculus-Physics course.

Stuart Boersma (Central Washington University), Stephanie Salomone (University of Portland), and Jennifer Nordstrom (Linfield College) explained how they use "Discovery Based Learning" in their Modern Algebra for High School Teachers, Real Analysis and Number Theory courses, respectively. This session was organized by Cheryl Beaver (Western Oregon University) and Stuart Boersma (Central Washington University).

Jim Morrow (University of Washington), winner of the 2006 Distinguished Teacher from the Pacific Northwest Section of the MAA, spoke about "Tips on Teaching" and his Advanced Calculus courses. We hope to make a annual tradition of having the previous year's winner of the Distinguished Teacher from the Pacific Northwest Section of the MAA speak at the meeting of the PNW Section of Project NExT.

In the fourth session, organized by Meike Niederhausen (University of Portland) and Jennifer Halfpap (The University of Montana), the attendees split into two discussion groups, according to interest. One group exchanged materials and ideas for courses at or below calculus, while the second group exchanged materials and ideas in courses after calculus. Next year, we plan to add a third group which does the same for courses for future teachers.

Aaron Wooton (University of Portland) organized a session on "Developing a Research Agenda." Chris Hallstrom (University of Portland), Rob Beezer (University of Puget Sound), Inga Johnson (Willamette University) and David Wolfe (Gustavus Adolphus College) spoke on this topic.

Historical Tidbit from Ken Ross

Jim Harper wondered at the Linfield meeting whether there had been consecutive PNWMAA meetings in Oregon before the most recent two (Ashland last year and Linfield this year). This occurred in 1948-1949 (University of Oregon, Oregon State College) and in 1958-1959 (OSU, U of O).

This sort of occurred in 1976-1978, because we didn't have our normal meeting in 1977. Instead, in 1977 we just had a session and business meeting at the national meeting held in August at UW. (It was felt that a June section meeting didn't make sense just two months before the national meeting.) The meetings in 1976 and 1978 were at Portland State University and University of Oregon. Over the years, there have been several consecutive meetings in Washington state.

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?*

Deadlines for the national and section NExTs have not been announced as of yet. The deadline for the national program is in April, the deadline for the section program is two months before the section meeting. For more information, visit the websites listed above.

Upcoming Events and Conferences

Pacific Coast Undergraduate Mathematics Conference

The third annual Pacific Coast Undergraduate Mathematics Conference (PCUMC) will be held at Loyola Marymount University in Los Angeles on April 5, 2008. In addition to free registration and lunch, the conference will feature talks by undergraduates, with special sessions for freshmen and sophomore students, discussions about career options and undergraduate research, a keynote speaker, and numerous prizes! Talks are encouraged on all topics, ranging from results of research projects to historical/biographical presentations to interesting solutions of math club problems. PCUMC 2008 is being generously supported by an NSA grant, and therefore we will have travel funding available for student speakers (up to $250) and student participants (up to $150). Information about the current and past conferences, including information on travel support for students, can be found on the conference website: www.pcumc-math.org.

Funding for PCUMC 2008 is also provided by NSF Grant DMS-0241090 through the MAA Regional Undergraduate Mathematics Conference program, which can be found at www.maa.org/rumc.

2008 PNW MAA Section Meeting

June 19 – 21 at Carroll College in Helena, Montana

Keynote Speakers: Joe Gallian, Sarah Greenwald, and Ivars Peterson

Minicourses: *Women and Minorities in Mathematics*, by Sarah Greenwald; *Active Learning Through Classroom Voting and Clickers*, by Kelly Cline, Mark Parker, and Holly Zullo

Local Arrangements Chair: Holly Zullo, hzullo@carroll.edu
Watch the conference web page for ongoing updates:

http://math.carroll.edu/PNWMAA/

Helena is a great jumping-off place for a family vacation, with Yellowstone National Park and Glacier National Park each less than four hours away. Helena itself boasts many sights of interest, including the Montana Historical Society Museum, the Last Chance Tour Train, and the world-renowned Archie Bray Foundation for Ceramics. Boat rides tracing part of Lewis and Clark's path are offered at the nearby Gates of the Mountains.

PNW MAA Purchases Brick in the "River of Bricks"

The PNW MAA section has purchased a brick in the Paul R. Halmos Commemorative Walk at the Carriage House Conference Center, part of MAA headquarters in the "other Washington." The walk will form a map of the confluence of the Potomac and Anacostia Rivers. The inscription came from a section-wide contest; Jack Tull (Emeritus, The Ohio State University) submitted the winning entry:

MAA PACIFIC NW
AB AK BC ID MT
NV NW OR WA YK

The inscription contains the postal abbreviations for all ten states and provinces in our vast PNW section.

Call for Special Sessions

In preparation for the 2008 Pacific Northwest Section MAA Meeting, to be held June 19-21 at Carroll College in Helena, MT, we are now inviting proposals for special sessions.

Sessions at recent meetings and possible new sessions include:

Junior Faculty Research
the Teaching of Mathematics
Discrete Mathematics
Dynamical Systems
Student Papers
Innovation in College Algebra/Precalc
General Papers
Activities of Successful Math Clubs
Introduction to Proof-Writing courses
Theory, Education, and Applications in Probability and Statistics
Projects in Undergraduate Mathematics Courses
Alternative Teaching Methods

If you are interested in organizing a session of 15 minute talks on any of these topics **or a session of your choice**, please submit your proposal by February 29th.

Your proposal should include:

1. Title of the proposed session
2. Name of the organizers and their detailed contact addresses
3. One or two paragraphs describing the theme and topics to be covered by the session
4. The names of a few potential speakers.

Please e-mail your proposal by February 29th to:

Chris Hallstrom hallstro@up.edu)

SECTION NEWS

Alaska

In 2002 a former student of Dr. Ping-Tung Chang donated the funds to start the Dr. Ping-Tung Chang Scholarship Fund. Through the tireless efforts of Dr. Chang, the Mat-Su College, the Mat-Su College University of Alaska Anchorage Math Club, and students, the scholarship has managed to obtain a current balance of $12,304. It is their goal to achieve endowment status, which requires $25,000, in order to open this fund.

The purpose of this scholarship is to help under-funded students in Alaska obtain the education they need to be successful in modern society. The scholarship is currently sponsored by the Mat-Su College Math Club. Dr. Chang was the recipient of the Distinguished College or University Teaching of Mathematics Award 1990-1999, Mathematics Association of America, Pacific Northwest 1999. He was the 2001 US Alaskan Professor of the Year, from the Carnegie Foundation for the Advancement of Teaching, Washington, DC. In 2003, Dr. Chang was the UAA Alumni Association's Distinguished Teaching Award recipient.

Dr. Rieken Venema, **University of Alaska Anchorage**, graduated in 1999 from the University of Groningen in the Netherlands with a Ph.D. in Statistics. He has held teaching and research positions at Oregon State University, Boise State University, and Idaho State University. His area of research is Neural Networks and Time Series Analysis, and he will be teaching statistics courses.

Bryan Hitchcock joined the faculty at **University of Alaska Southeast** in Juneau as a Visiting Assistant Professor.
Bryan earned his B.S. in mathematics from the University of Alaska Anchorage; and his M.S. in mathematics from Western Washington University.

British Columbia

The **British Columbia Institute of Technology** had several retirements last year, with Ross Bradbeer (robotics, electronics), G. John Smith (statistics for forestry, and fish, wildlife and recreation), and Paul Smith (quality control) all retiring in June.

Goran Ruzic (PhD in Computing Science in progress at Simon Fraser University) is new to the BCIT math department this year.

The BCIT Mathematics Department has been awarded a large in-house TEK (Technology Enabled Knowledge) Grassroots Program award for 2007-08 for *Improving Visual Literacy and Interaction in Lecture Presentations using Tablet PC's*. All faculty will be test-driving Tablet PC's in the classroom over the coming months, as a way of combining software output (PowerPoint, Excel, Maple, Minitab, etc.) with written 'overhead' presentation.

David Holloway (BCIT) has articles in *Annals of Botany* (in press), *Proceedings of the World Congress on Engineering and Computer Science* (in press), and *Developmental Dynamics* **235**, 2949-2960, on modelling and data analysis in plant shape generation and fruit fly embryonic patterning. Dr. Holloway receives support from the joint NSF/NIH BioMath program, the School of Computing and Academic Studies research fund, and Western Economic Diversification.

Alan Isaak (BCIT, electronics) won the teaching excellence award for the School of Computing and Academic Studies in May 2006.

The 2nd edition of Stela Dumitrescu's (BCIT) book, *Plane and 3D-Geometry: A World of Applications* (PEARSON - Custom Publishing), has just been released. It includes a foreword by Julia Hein, Program Head, Architecture and Building Engineering Technology.

Andrew McConnell (BCIT) is supported for work in computational fluid dynamics by the School of Computing and Academic Studies research fund.

Oregon

As of Fall 2006, **Oregon Institute of Technology** is offering a BS degree in Applied Mathematics. The program requires the prospective major to complete coursework in calculus, differential equations, numerical methods and a sequence in introductory physics, as well as a focused sequence in a technical field outside of mathematics. Those interested in the major are encouraged to visit OIT's website at www.oit.edu/math.

The 2006-2007 academic year was another exciting year for **Western Oregon University**'s mathematics majors. The Mathematics Club has been active with about 30 members and bi-weekly talks or social events. Six new members were inducted into Oregon Delta Chapter of Pi Mu Eplison in May. Karen Lange, Holly Bochsler and Keith Schoeman participated successfully in the mathematics modeling COMAP competition. The outstanding mathematics major graduate of 2007, Keith Schoeman, participated in original research on the connections between Sudoku and group theory with Mike Ward. He gave a presentation about his work at the April meeting of the Pacific Northwest MAA at Linfield College and is currently enrolled in the mathematics graduate program at OSU. Four more mathematics majors from Western Oregon University gave presentations on their senior projects at the 2007 MAA meeting.

The mathematics department at WOU hosted another Sonya Kovalevsky Day for high school girls on campus on January 27th 2007. Students from Newport, Marshfield and Dallas attended this fun-filled educational day.

Drs. Laurie Burton, Cheryl Beaver and Klay Kruczek of the WOU mathematics department have received competitive funding from the Mathematical Association of America to provide a summer training workshop on "Active Learning Approaches and Visual Methods for Teaching the Foundational Mathematics for Elementary Teachers Courses."
The workshop, to be offered July 2008, is targeted to college instructors who are new to or are seeking to improve their proficiency in teaching elementary teacher candidates. Participants will experience how a dynamic and carefully

guided classroom atmosphere, with appropriate curriculum choices, can improve the learning experience and overall attitude of future elementary school teachers.

Willamette University welcomed Josh Laison to the faculty in the fall. Josh comes to Willamette with a wealth of experience in teaching and research, including undergraduate research. Josh graduated from Oberlin College in 1996 with honors in mathematics and minors in computer science and English. He earned his Ph.D. from Dartmouth in 2001. Josh loves games and has drawn many students to his popular game nights.

Washington

Amy Shell-Gellasch of **Pacific Lutheran University** has an upcoming book titled "Hands On History: A Resource for Teaching Mathematics."

Central Washington University's mathematics department welcomes two new members this year. The department's latest tenure-track hire is Jim Bisgard, a native of Walla Walla and a graduate of the University of Wisconsin (Ph.D. in 2005). Jim's primary mathematical interest is in Variational Methods and Applications in Differential Equations. When Dr. Bisgard is not teaching and solving differential equations he enjoys getting wet and cold while fishing in Yakima river.

The department also hired an instructor last year, Jae-Chun Kim, a native of Korea and a graduate of Wayne State University (Ph.D., 2000). Jae-Chun's research interest interests are in the field of mathematical statistics, in particular Image Reconstruction. Jae-Chun is also a fan of hockey and baseball.

A long time faculty member and full professor, Alla-Ditta Choudry, has retired from CWU after 21 years in the department. He has returned to his native Pakistan where he now teaches at the National Center for Mathematics at GC University/Lahore. He will be missed.

Seattle University is very pleased to welcome two new faculty members this year.

Leanne Robertson joined the Mathematics Department at Seattle University in September, 2007, following nine years as a faculty member at Smith College in Massachusetts. Leanne is delighted to be back in the Pacific Northwest, having received her B.A. in Mathematics from Reed College and taught at Lewis & Clark College prior to her appointment at Smith. She received her Ph.D. in Mathematics from the University of California, Berkeley, and specializes in Algebraic Number Theory. Her current research is on power bases and class numbers for cyclotomic fields. When not teaching or doing mathematics, Leanne enjoys swimming, hiking, exploring Seattle and the surrounding mountains, and playing with her two young children.

Jeffery DiFranco also joined the Mathematics Department at Seattle University in September, 2007. Prior to his current appointment, Jeff spent three years as a Post-Doctoral Assistant Professor at the University of Michigan. He received his B.S. degree as well as his Ph.D. in Mathematics from the University of North Carolina, Chapel Hill, and his research interests include Integrable Systems, Nonlinear Waves, Random Matrices, and Orthogonal Polynomials. Jeff is excited to be living west of the Mississippi for the first time and is enjoying exploring Seattle and the rest of the Pacific Northwest. In addition to his mathematical pursuits, Jeff enjoys swimming, running, traveling, and cooking.

Editor's Greetings

Many thanks go to Chuck Dunn, who served as our newsletter editor for two years and set a new standard for it. Both as a reader of his newsletters and the editor of the current newsletter, I can say with certainty that his touch will be missed. His influence remains, however, as I am cribbing shamelessly from his layout and design. Thanks, Chuck!

If you have any news items or other information for the next edition of the newsletter, please send them to me at any time. Thanks, and enjoy your reading!

Colin Starr
cstarr@willamette.edu

Business Meeting at Linfield

Afton Cayford (University of British Columbia) agreed to continue as the section webmaster, and Michael Boardman (Pacific University) agreed to continue as Liasion coordinator. Colin Starr took over section newsletter duties from Chuck Dunn.

The 2008 PNW section meeting will be held at Carroll College in Montana in June. The 2009 meeting will be held at Central Washington University. Seattle University will host the 2010 meeting, and the University of Alaska Southeast (in Juneau) will host the 2011 meeting.

The executives are proposing a change in the section bylaws that declares a quorum to be 15 members. This will be voted on at the summer meeting and, if approved, submitted to the Board of Governors for final approval.

Distinguished Teaching Award PNW-MAA Section

Complete this form and return to
Dr. Chris Black
CWU-Lynnwood Center
20000 68th Ave. W
Lynnwood, WA 98036-5999
email: blackc@cwu.edu
Fax: 425-640-1488
DEADLINE: February 1, 2008

Nominee Information
Name of Nominee_____
Name of College or University_____
Work Address_____
_____
Work Phone _____
Home Phone_____
Number of years teaching experience in a mathematical science_____
Has the nominee taught at least half-time in a mathematical science for
the past 3 years (not counting sabbaticals)?_____
Activities related to teaching, if any (list only 5 most significant)_____
_____
_____
_____
_____
Membership and significant activities in relevant professional organizations
_____
_____
_____
_____
Previous awards for teaching, if any_____
_____
Additional relevant information_____
_____
Nominator Information
Name_____
Address_____
_____
E-mail_____
Work Phone_____