Matters Mathematical

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

FEBRUARY 2007

OREGON WINE COUNTRY SITE OF APRIL 2007 PNW-MAA MEETING

The annual meeting of the PNW-MAA section is quickly approaching. The meeting, cosponsored by Linfield College and Clark College, will be held at Linfield in McMinnville, Oregon, April 13 and 14, 2007.

The city of McMinnville is an hour drive southwest of Portland in the scenic Willamette Valley. The invited speakers are John Conway from Princeton University, Elwyn Berlekamp from UC Berkeley, and David Wolfe from Gustavus Adolphus College.

The meeting begins Friday April 13 with two minicourses. Elwyn Berlekamp and David Wolfe are providing a course entitled "A Tour of Combinatorial Games." Sharon Brown and Chris Dugow of Humbolt State University are giving a course on mathematical biology entitled "An Approach to Population and Biological Modeling for Pre and Post Calculus Students." On Friday night John Conway will give a keynote lecture, which is open to the public.

The meeting continues on Saturday with invited talks by Berlekamp and Wolfe. There are also a variety of contributed paper sessions throughout the day. As this meeting takes place in the spring, we are strongly encouraging undergraduates to attend. There will be several program features of special interest to students.

The conference will culminate Saturday evening with the banquet, which is being held at the Evergreen Aviation Museum, home of the famous Spruce Goose. John Conway will give the keynote address.

For those of you who choose to stay an additional day, you may decide to browse historic downtown McMinnville, partake in wine tasting at the variety of wineries in and around McMinnville, or take a scenic forty-minute drive to the Oregon coast.

Information pertaining to the meeting, including registration, paper submission, and hotel accommodations, is available on the official meeting website http://web.clark.edu/math/PNWMAA.

Note that there are conference rates available at two local hotels in McMinnville; however, you must make reservations by March 12 to make use of the reduced rate. Again, more information about these hotels is available at the above website. And make sure to register for the conference by March 31 to avoid the late fee!

inside this issue:

PROJECT NExT at LINFIELD

As many of you may know, the annual meeting of the PNW-MAA section will be held April 13-14 at Linfield College in McMinnville, Oregon. What you may not know is that the PNW Project NExT section will be meeting at Linfield on April 12-13 before the MAA meeting starts. The NExT meeting is open to PNW Project NExT fellows, NExT consultants, presenters and panelists, Project ACCCESS fellows, and national Project NExT fellows.

Our session topics this year include

- Words of Wisdom
- Developing and Maintaining a Research Agenda
- Effective Technology in the Classroom and Online
- Discovery-Based Learning
- Course and Curriculum Swap Meet

On Thursday evening, April 12, we will continue our tradition of having dinner together at a local restaurant. As the meeting approaches, more information will be available online at http://www.math.umt.edu/pnwnext/

A MESSAGE FROM THE CHAIR

As outgoing PNW-MAA chair, I would like to thank all the volunteers out there. Thank you to the PNW-MAA volunteers who make up and chair important committees. Thank you to all of the PNW-MAA officers who volunteer so much of their time and energy to make our professional organization an active and worthwhile one. Thank you to everyone who shows up at our annual business meetings (and thank you in advance for showing up to this year's business meeting at Linfield College). Thank you to the presenters who submit abstracts and share their recent mathematical thoughts with us at our annual meetings (we'd look an awful silly bunch sitting quietly in rows staring at a blank whiteboard). Thank you to the hardworking organizers of our meetings (who find those classrooms and whiteboards for us!). Whether chair of the PNW-MAA, chair of a department, or chair of a small university committee, it is the volunteers (even the reluctant volunteers) who make a chair's day...a chair's week...a chair's year. Thank you all.

TREASURE'S REPORT - *Chris Black*

Beginning Balance (12.31.05)

$6,005.09

Revenues

MAA Subvention	1,540.00
Project NExT	388.50
Meeting Income	1,292.35
Interest on Checking	7.15
Book Sales	64.45
MAA Project ACCCESS	1,500.00
Miscellaneous Income	20.00

TOTAL REVENUES **$4,812.45**

Expenses

Postage	59.85
Meeting Expenses	541.25
Project NExT	197.10
Awards	13.15
MAA Project ACCCESS	968.90

TOTAL EXPENSES **$1,780.25**

Ending Balance (12.31.06)

$9,037.29

DISTINGUISHED TEACHING AWARD RECIPIENT

2006 - Jim A. Morrow - University of Washington

by Yves Nievergelt

The 2006 Distinguished Teacher from the Pacific Northwest Section of the MAA is a member who has been for several decades a world-class researcher in pure complex analysis, a world-class researcher in applied impedance tomography, and a world-class teacher and mentor of young students from high school pupils to undergraduates and doctoral candidates in mathematics: Professor James (Jim) A. Morrow at the University of Washington.

In 1963, as a graduate student at Stanford, Jim was already teaching with full responsibility for a class. Leadership in teaching within a top research environment was going to be the hallmark of Jim's career. With a Ph.D. from Stanford in 1967, Jim taught two years at Berkeley and then was appointed at the University of Washington in 1969. It was not until 1978 that I enrolled in his course on several complex variables. Back then the only introductory text was in German, typed (not typeset) with Germanic letters so ornate you couldn't tell them apart, and the first picture, on page 4, was already in four dimensions. Yet Jim made it all look like a piece of cake.

A decade later, Jim's department had acquired additional strength, not only in several complex variables, but also in inverse problems: the mathematics of medical diagnostic imaging tomography scanners (CAT, MRI, PET, etc.). Two junior colleagues, John Sylvester and Gunther Uhlmann, had just published a groundbreaking result on smooth impedance computed tomography in the *Annals of Mathematics*. In this context, with a grant from the National Science Foundation, and at first with his colleague Edward (Ed) B. Curtis, Jim started a summer Research Experiences for Undergraduates (REU) program on discrete impedance computed tomography, a problem which would be more suitable to students, but about which one knew next to nothing: can one determine all the resistors hidden inside a network, from potentials and currents on the network surface only? After the program's first summer in 1988, a participating undergraduate, Thaddeus Edens, was already publishing new results with Jim and Ed, as later did David Ingerman, and Edith Mooers, who, with Amanda Mueller, also earned an Alice T. Schafer honorable mention. David Ingerman received a Sloan Dissertation Fellowship, spent the year of 1999-2000 at Princeton's Institute for Advanced Study, and is now an Assistant Professor at MIT.

Also in that first summer, two of "my" undergraduates, Olga Simek and Laura Smithies, participated in Jim's REU program and then went on to earn Ph.D.s in mathematics. Olga Simek later co-authored publications as a Research Affiliate in the Department of Mechanical Engineering at MIT, while Laura Smithies, now a professor at Kent State University, OH, has already published several research articles and a memoir of the American Mathematical Society. Before Olga Simek and Laura Smithies, no other undergraduate mathematics majors from my institution, Eastern Washington University, had reached so high a level of accomplishments. This leaves no doubt about Jim's phenomenal influence. By the turn of the millenium, new results found by participating undergraduates were presented at the International Congress on Applied Mathematics at Edinburgh, Scotland, and edited into the definitive book on discrete inverse problems. In 2000 and 2001, another student from Jim's REU program, Thomas Carlson, presented papers at the annual joint meeting of the MAA and AMS; as proof of his abilities, he was asked to chair the second session but declined, feeling that his youth would be too evident (he was nineteen years old at the time). Demonstrating the influence of Jim's REU program abroad, 2005 participant Eliana Hechter received a Rhodes Scholarship to pursue a doctorate in mathematics at Oxford, where 2002 participant Jeffrey Giansiricusa is also completing his dissertation in algebraic topology.

Besides leading his REU program alone (Ed Curtis having opted out), Jim also prepares students for the world-wide Mathematical Contest in Modeling (MCM). As an associate editor of the UMAP Journal, I have witnessed first-hand the extraordinary accomplishments and publications of Jim's undergraduates in the contest. From 2002-2005, Jim has advised two teams a year. In 2002, one team won an Outstanding Award and the SIAM Award for Problem A; the other team won a Meritorious Award for Problem B (among a total of 525 teams). In 2003, one team won an Outstanding Award and the MAA Award for Problem A; the other won an Outstanding Award and the INFORMS Award for Problem B (among 492 teams). In 2004, one team won an Outstanding Award for Problem A; the other team won a Meritorious Award for Problem B, (among a total of 600 teams). As an omen of 2005, Jim's very young colleague Rekha Thomas advised a third team, who won a Meritorious Award. In 2005, one won a Meritorious Award, the other an Honorable Mention (among a total of 644 teams). Jim also helped coach a team advised by Rekha Thomas. That team won an Outstanding Award and the INFORMS Award.

Since 1994, Jim has also been organizing singlehandedly a spring break Mathday which attracts 1200 high schoolers to campus. In 2005, under Jim's leadership, they came not only from the Pacific Northwest, but from as far away as the Republic of South Africa. Seemingly with plenty of time to spare, Jim now also organizes a Summer Institute which brings together 24 high schoolers from the United States and Canada for six weeks at the University of Washington. In recognition of the international reputation of his teaching, in 2005 Jim won the Education Prize from the Pacific Institute for the Mathematical Sciences at the University of British Columbia. Both the world-wide success of undergraduates participating in his REU programs and MCM teams, and the more than one-thousand high schoolers attending his Mathday and Summer Institute each year, show that Jim is an extremely caring and effective teacher of students from all walks of life. Such a relentless dedication and stunning success with students at all levels is exceptional for a researcher who has worked with the world's best and famous to publish results of lasting influence. For these accomplishments, James Allen Morrow received the 2006 Distinguished Teaching Award from the Pacific Northwest Section of the Mathematical Association of America.

NEW WILLAMETTE VALLEY REU-RET PROGRAM

Four schools in Oregon have gained funding from the National Science Foundation for a Research Experience for Undergraduates - Research Experience for Teachers (REU-RET) Program. The Willamette Valley Consortium for Mathematics Research is an eight-week summer research experience for undergraduate math students and teachers of mathematics centered at Willamette University, Lewis and Clark College, Linfield College, and the University of Portland. Professors Inga Johnson and Colin Starr of Willamette University are the principal investigator and co-principal investigator, respectively.

The four consortium schools will each host a research team of four undergraduates, one K-12 or community college teacher, and two faculty mentors from the host institution. Each research team will focus on a project from faculty research interests in number theory, graph theory, combinatorial game theory, probability and statistics, geometry, computer science, or applied analysis. All four research teams will gather on Thursdays for informal and formal talks about their projects, presentations by invited speakers on mathematics and mathematical careers, and social activities.

The dates for this summer's program are June 19, 2007 - August 10, 2007. Preference will be given to applications received by March 30, 2007, and the final deadline is April 6, 2007. If you know of undergraduates or teachers who might be interested and qualified for this program, please encourage them to apply. More information can be found at the following website: http://www.willamette.edu/cla/math/REU-RET/.

JUNE 19-21, 2008 - MARK THE DATES!

2008 Meeting at Carroll College

Located in Helena, Montana, this meeting will be the perfect start or end to your summer vacation in Yellowstone or Glacier, as each is a mere 200 miles from Helena. Oh, and there will be some great talks, too! Joe Gallian is already lined up to speak at both the Project NExT meeting and the regular meeting, and other great plans are in the works as well.

More information to come in future newsletters.

If you have any questions, comments, or suggestions concerning the newsletter, please contact

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