



2014

WASHINGTON STATE
TWO-YEAR COLLEGE
MATHEMATICS
CONFERENCE

May 8th-10th, 2014
The Coast Wenatchee Center Hotel

Hosted by:
Shoreline Community College
Everett Community College



Conference Schedule

Date	Time	Event
Thursday, May 8 th	4:00 – 6:45 PM	Registration
	7:00 – 8:00 PM	Keynote Speaker: David Lippman
	8:00 – 9:15 PM	Registration
	8:00 – 10:00 PM	Hosted Social (Cengage)
Friday, May 9 th	7:15 – 8:45 AM	Breakfast & Registration
	9:00 – 10:00 AM	Session I
	10:30 – 11:30 AM	Session II
	11:30 – 1:00 PM	Lunch
	1:15 – 2:15 PM	Session III
	2:45 – 3:45 PM	Session IV
	4:00 – 6:00 PM	Activities
	6:00 – 7:00 PM	Dinner & Awards
	7:00 – 8:00 PM	Keynote Speaker: Dr. Louis Kerofsky
	8:00 – 10:00 PM	Hosted Social (Pearson)
	8:00 – 10:00 PM	Activities
Saturday, May 10 th	7:15 – 8:45 AM	Breakfast
	9:00 – 10:00 AM	Session V
	10:30 – 11:30 AM	Session VI
	11:30 AM	Checkout and Departure

2014 Annual Conference

Key Events and Locations:

Registration:

Registration will be in the **Red Lobby**.

Meals:

All meals are served in **Orchard South**.

Socials:

Thursday evening social hosted by Cengage Learning, 8:00 – 10:00 PM at Saddle Rock Pub and Brewery (25 North Wenatchee Ave. Suite 107)

Directions: Walk out front hotel lobby, turn left on Wenatchee Avenue. After one block, take left onto 1st Avenue. Saddle Rock Pub and Brewery is a short distance on the right. Please bring your conference name badge so servers can identify you as part of our group.

Friday evening social hosted by Pearson, 8:00 – 10:00 PM in the **Red Lobby**

Exhibits:

Exhibitors will be in the **Fountain Lobby** and available at various times throughout the day.

Exhibitors this year will be Cengage Learning, Hawkes Learning Systems, Macmillan WH Freeman, McGraw-Hill, The NROC Project, Pearson, SECUWA, Thinkwell, WAMAP, Wiley, and XYZ Textbooks.

The Conversation Room:

A breakout room for conversation among colleagues: Golden Delicious East

Room open: Friday 8:45 AM – 4:30 PM, Saturday 9:00 – 11:30 AM

Extracurricular Activities:

Information on local hiking will be available in the **Red Lobby** for those interested!

Friday afternoon, 4:00 – 6:00 PM, meet at **Red Lobby** prior to activity:

- Basketball at Wenatchee Valley College gym (1300 5th Street, Wenatchee, 98801)
- Wine tour & tasting at Chateau Faire Le Pont Winery (1 Vineyard Way, Wenatchee, 98801)
- Group hike (information and directions in **Red Lobby**)

Friday evening, 8:00 – 10:00 PM, Game Night in **Orchard South**.

Awards:

(During dinner Friday evening)

Washington State Two-Year College Mathematics Awards for the following categories:

- Education Reform - For innovation in mathematics course design or curriculum development at the precollege or college level with results supported by evidence.
- Teaching - For excellence and/or innovation in teaching with influence beyond their institution.
- Service - To recognize a significant contribution outside the classroom which advances mathematics or mathematics education.
- Lifetime Achievement Award - To recognize a career of service to mathematics and mathematics education. For faculty with at least 15 years of experience teaching community college level mathematics.

Thursday Evening Keynote Speaker

Co-Sponsored by WAMATYC

David Lippman

The Case for Open Educational Resources

Abstract:

Open Educational Resources (OER) are textbooks, homework systems, and other materials that are free in both meanings of the word: gratis and libre. OER do more than just lower the cost of education - they give faculty rights to customize, adapt, and align content to best meet their students' needs. They provide an alternative to texts driven by market appeal, encouraging us to think critically about student learning and draw from the collective wisdom of our peers. They encourage augmentation and creative pedagogies. The OER landscape has been advancing at a remarkable pace over the last few years. In this talk we'll explore where we've come from, the current state of OER, and where things are headed, highlighting the contributions of Washington faculty along the way. We'll talk about why you should consider OER, what it can do for you, and how to get started.

Bio:

David attended Whatcom Community College, and received his Master's degree from Western Washington University. He has been teaching math at Pierce College Fort Steilacoom since 2000. David has been at the forefront of creating and promoting open resources in the mathematics world since 2005, including creating WAMAP (a free web-based mathematics assessment and course management platform) and two open textbooks. For the past year, David has been working with Lumen Learning, a company that provides support services for institutions adopting open resources. Through that, he has helped with development of open math courses covering arithmetic through calculus, and gained insight into the national open resource movement.



Friday Evening Keynote Speaker

Dr. Louis Kerofsky

Examples of Mathematics Behind the Modern Smart Phone

Abstract:

Mathematics forms the core ideas behind much of modern technology. The role of mathematics is often hidden when it is most effective. This talk will describe examples where mathematics touches the enabling technologies behind the modern smart phone and multimedia. We will explore how probability plays an unexpected role in digital communication and information theory; how digital image and video compression through JPEG and MPEG standards rely upon matrices for data representation and how the cosine function plays an essential role in the core compression algorithms. We will see how mathematical models can produce power saving in LCD displays. What's math got to do with the real world? This talk will provide some answers to that persistent question.

Bio:

Louis Kerofsky PhD and MS in Mathematics University of Illinois Urbana IL, B.S. Physics and Mathematics Arizona State University Tempe AZ 1990. He is a Senior member of the Institute of Electrical and Electronics Engineers, member of the Association of Computing Machinery, and member of the Society for Information Display. Dr. Kerofsky is the inventor of over 60 US patents in the areas of video processing and display and the author of over 30 technical papers in the areas of video compression and image display. He represented Sharp Electronics in video compression standardization in MPEG during 2000-2013. He is currently Principal Engineer with InterDigital Communications leading research in media delivery over wireless networks.



Session I Abstracts: Friday, 9:00 – 10:00 AM

Developmental Math Redesign at Pierce College (Room: Gala-1)

Sharon Camner, Raj Lal, Stewart Jaffe

At Pierce College we redesigned our developmental math program, changing the course structure/sequence, content, and pedagogy. The goal: increase the number of students starting at the school and completing their college-level math in one academic year. Hear about: The pathways we created (taking advantage of the DTA change for QSR). The open source materials we are using. How did we get the department to agree, and the college to approve? How are the pilot sections going spring quarter? What problems remain?

Speaker Bios

Sharon Camner has been teaching math at Pierce College Ft. Steilacoom for 16 years, and previously taught at several other schools for ten years. Stewart Jaffe is a former electrical and nuclear engineer. He has taught full-time at Pierce College for 21 years with 6 of these years devoted to teaching developmental math. Previously, he taught electronics engineering technology. Raj Lal has been teaching math at Pierce College Ft. Steilacoom for 6 years. Previously he taught at Michigan State University.

"Acceleration" through Avoidance: Partnering with High Schools to Get Seniors Ready for College-Level Math (Room: Gala-2)

Bill Moore, Megan Luce

The Core to College project has focused on higher education's understanding of and support for the implementation of the Common Core State Standards and the new Smarter Balanced assessment. The next phase will focus on developing college readiness courses in English and math, co-designed by higher education faculty and high school teachers, which could be offered by any school district in the state. Students would be advised into the courses based on their 11th grade Smarter Balanced scores; if they successfully complete the courses they would be guaranteed placement into some college-level course option without remediation or additional placement testing. This session will:

- 1) Offer some context about Core to College work, including the policy recommendations regarding the Smarter Balanced 11th grade assessment;
- 2) Provide an overview of the math course "blueprint" (content, outcomes, format); and
- 3) Discuss opportunities for getting involved in local partnerships to implement the courses.

Speaker Bios

Bill Moore led the Transition Math Project from 2004-2009 and is currently serving as the alignment director for the Core to College project after finishing up the Re-Thinking Pre-College Math project in December 2012. His educational background is in psychology, higher education policy, and outcomes assessment.

Megan Luce is a math faculty member at Cascadia Community College and a former high school math teacher at Northshore SD. She was actively involved in the Re-Thinking Precollege Math project and is currently helping lead the work in senior year math transition courses for the Core to College project.

Session I Abstracts: Friday, 9:00 – 10:00 AM

The Art of Mathematics (Room: Gala-3)

Teresa Downard, Dina Buric

Learn fun ways to engage students in mathematical problem solving and “unfold” their curiosity through the context of art. Join us as we explore multiple examples that illuminate mathematical concepts through visuals and hands-on projects. For example, we will use origami to fold and create a truncated icosahedron (buckyball), plus examine the related geometry.

Speaker Bios

Dina Buric and Teresa Downard are mathematics instructors at Western Washington University who are currently investigating art as a context for learning mathematics. Teresa has exhibited her mathematical artwork in two Bridges Conferences and at the 2013 Joint Math Meetings and is interested in the interplay between algebraic and geometric ideas, especially if they have visual or symbolic elements. Dina has been creating origami figures since she was 5 years old. Recently, she discovered modular origami and has been captivated by the mathematical ideas hidden within its folds ever since.

Empower Your Students to Achieve Their Potential With MyMathLab (Room: Gala-4)

Peggy Sue Lucas

MyMathLab empowers your students to achieve their potential, improving results in College Algebra, Trigonometry, and Precalculus courses—and beyond. In this session, we will explore the features developed by Pearson authors that help better prepare students, and help them think visually and conceptually.

Speaker Bio

Peggy Sue Lucan has worked in educational publishing for over 13 years, which lead her on an adventure from Dubuque to Seattle to Boston. The simple reason Peggy Sue loves what she does, is because math instructors inspire her every day.

Duality Problems in Calculus (Room: Red Delicious West)

Stephen Lane

When teaching linear programming we make use of the duality property to minimize a quantity subject to a constraint. We do this by converting the problem to a maximization problem using the transpose of the system matrix. The duality property also exists in calculus and can lead to some interesting problems or make some mundane problems more interesting. In this talk I propose to demonstrate the duality property using the standard box problem and show that this leads to some interesting relationships and illustrates the Fundamental Theorem of Calculus.

Speaker Bio

Stephen Lane has a BS and MS in mathematics and BA and MA in philosophy. Steve has been teaching math at the community college for approximately 30 years.

Session II Abstracts: Friday, 10:30 – 11:30 AM

New and Little-known Features in WAMAP (Room: Gala-1)

David Lippman

Come learn how to use a number of new and little-known features in WAMAP, including: Embedding Desmos graphs, CDFs, Sage interactions, and videos; Creating video-cued and text-embedded assignments; Viewing detailed analytic data; Writing questions that integrate Geogebra and other tools; Adding detailed solutions to questions; Using Outcomes; Integrating WAMAP with Canvas; More!

Speaker Bio

David Lippman has been teaching math at Pierce College since 2000, and is the lead developer of WAMAP, which he started in 2006.

Trig Without Words (Room: Gala-2)

William Webber

A proof without words is a visual representation of a mathematical concept. The truth of the concept is made evident from the image. Join me as we go through a course in trigonometry - without words.

Speaker Bio

Dr. Will Webber has a BS in Math from U of Massachusetts-Amherst, MS in Math from U of Alaska-Fairbanks, Ph. D. in Math (paper folding) from U of Washington. Dr. Webber has spent the last 18 years teaching at Whatcom CC and looking for new ways to help people visualize mathematics.

Analysis of Chemical Data (Room: Gala-3)

Yves Nievergelt

The presentation will show where to get real data, common algorithms for fitting lines or curves to the data, methods for testing the quality of the fit, and reasons for fitting them: they are the reasons chemists know how the reactions proceed. Some of the activities are intended for beginning students.

Speaker Bio

After completing his diploma in mathematics from the Ecole Polytechnique Federale de Lausanne in Switzerland, Yves Nievergelt earned a Ph.D. in several complex variables in 1984 under the guidance of James R. King at the University of Washington in Seattle, where he also benefited from Caspar R. Curjel's mentoring in teaching. Besides outdoor wilderness adventures, Yves also enjoys chemical reactions from brewer's yeasts in many ways.

Session II Abstracts: Friday, 10:30 – 11:30 AM

What Makes a Good Note Card? (Room: Gala-4)

Mike Kenyon

If we allow students to use note cards or "cheat sheets" on exams, what makes a good note card that helps the students learn? We'll look at examples of note cards from students with varying levels of success, what content on the card is typical, and what seems to be most useful.

Speaker Bio

Mike Kenyon is attending his 18th consecutive Washington State Community College Mathematics Conference, split equally between Yakima Valley and Green River Community Colleges.

Emporium Round-table Discussion (Room: Red Delicious West)

Elisabeth Briggs, Elizabeth O'Neil

How is your school's emporium program going? Are you interested in starting an emporium program? Do you wonder what emporium means? Come to discuss successes and failures or come to learn. This is an opportunity for all to share experiences and learn from each other.

Speaker Bios

Elisabeth Briggs and Elizabeth O'Neil teach math at Olympic College where they co-lead the Math Emporium Project.

Session III Abstracts: Friday, 1:15 – 2:15 PM

FREE Placement Test Review Course in WAMAP (ready to copy & use) (Room: Gala-1)

Melonie Rasmussen

A FREE & OPEN classroom was developed in WAMAP to help students review for their initial math placement tests. Review problems spanning Pre-Algebra, Algebra, and College Algebra, in an online format are available. This course includes a pretest and practice problems for every topic with video lessons and a post test. This course is ready to be copied and used in your BOOT CAMP, MOOC, or just for individuals who need help. Come learn how it works, hear a few success stories and share your own success stories! ~ Original funding provided by the "Reforming Precollege Math" grant.

Speaker Bio

Melonie Rasmussen received her Master's degree in mathematics from Western Washington University and has been teaching at Pierce College since 2002. Prior to that, Melonie taught for the Puyallup School District after receiving her degree and teaching credentials from Pacific Lutheran University. Melonie is an advocate for open learning, open materials and pretty much anything that helps students learn and save money.

The Ups and Downs of Complex Roots (Room: Gala-2)

Eric Schulz, Julianne Connell Sachs

The real roots of a polynomial function are commonly seen as the horizontal intercepts of a graph; however, non-real polynomial roots are more challenging to visualize. Through an interactive visualization, we explore the effects complex roots have on the graph of a polynomial function.

Speaker Bios

Eric and Julianne have been teaching at WWCC for a number of years and are always thinking of how to effectively use technology to improve mathematics teaching and learning. Striving to increase student engagement in learning mathematics and strengthen their conceptual understanding keeps them busy.

Alternate Pathway: A Two Quarter Dev Ed Pilot Project at Spokane Falls (Room: Gala-3)

Greg Cripe, Debra Olson

After evaluating several types of dev ed alternatives, the CCS math departments decided to pilot a two quarter dev ed sequence that leads to Math for Liberal Arts, Stats and the new Philosophy course. This discussion will include pre-reqs, placement, content, as well as some very positive preliminary data. We will also discuss our next steps as we fully implement this sequence into our curriculum.

Speaker Bios

Greg Cripe and Debra Olson decided to take on the task of implementing a shortened pathway to college level math after strong encouragement by their administration. They are involved in the MEC/MSP project as well as numerous other initiatives.

Session III Abstracts: Friday, 1:15 – 2:15 PM

Personalizing the Path to College Readiness (Room: Gala-4)

Dani Pedrotti

Attend this session to learn how new media is being leveraged to engage learners, accelerate remediation, and foster student success in EdReady, a robust new diagnostic and review tool for personalized learning.

With the launch of our public EdReady earlier this year, learners around the country now have access to this new college readiness tool – all for free.

For details about this and other grant-funded projects, visit <http://theNROCproject.org>.

Speaker Bio

Dani Pedrotti has worked in the educational technology space for nearly 20 years. Her experience includes implementation/strategic planning, sales, and marketing. Dani currently resides in Gig Harbor, WA, and serves as the Director of Membership Development with the NROC Project, as well as serving on the board of directors for Generation YES! (a non-profit project focused on student success through empowerment and hands-on work experience). She is passionate about helping students achieve and exceed their goals, and live fulfilling, productive lives.

Gamification of Learning, GAISE, and Flipping the Stats Classroom (Room: Red Delicious West)

Crystal Holtzheimer, Taylor Holtzheimer

In this presentation, we will explore the application of gamification concepts and a flipped classroom model to an introductory statistics course. Artifacts of student performance and engagement will be presented, and alignment with the GAISE guidelines will be discussed.

Speaker Bios

Crystal Holtzheimer has been teaching mathematics courses, focusing primarily on statistics, at Whatcom Community College since 2004. She holds a B.S. in Mathematics and an M.Ed. in Adult and Higher Education, both from Western Washington University. Taylor Holtzheimer holds a B.A. in Anthropology from Western Washington University, and is completing a graduate degree in Adult and Higher Education with an emphasis on gamification and eLearning.

Session IV Abstracts: Friday, 2:45 – 3:45 PM

A Monte Carlo Verification of the Frequentist Interpretation of Bayes Theorem Probabilities **(Room: Gala-1)**

David Straayer

Statistics is the one math class where we can really discuss critical thinking. Most of our courses come from a frequentist point of view, but the Bayesian point of view can be very helpful in promoting critical thinking. Some authors, including Richard C Carrier, have suggested that Bayesian reasoning is fully compatible with the frequentist interpretation of probability. This paper supports that suggestion via Monte Carlo simulation.

Speaker Bio

Dave Straayer spent most of his "first career" in high-tech development, mainly computer graphics and human-computer interface. He is enjoying his "encore career" of teaching as an opportunity to share what he's learned with the next generation. Dave teaches statistics and computer programming, and is advisor of the TCC chapter of the Secular Students Alliance.

Developmental Math Reform in Washington State – Can We/Should We Innovate Together for Student Success? (Room: Gala-2)

Rebecca Hartzler, Bill Moore

Over the past decade the national emphasis in higher education, and especially developmental mathematics, has shifted from access to success, prompting a variety of curriculum reforms, sweeping policy changes, large investments from private foundations, and increased research on two-year colleges. Community and technical colleges in Washington State have been leaders in many of these efforts, but the data on student performance across the state suggest that improvement is uneven at best, even after years of attention to the problems in developmental mathematics. One issue is that significant work happens in isolation, so there has been increased attention by policymakers recently on whether Washington should take a state-wide approach to reforms in developmental mathematics. This session will provide some background about the status of those discussions, ask participants to consider the pros and cons of a collective approach to tackling these problems, and consider how faculty can shape the process.

Speaker Bios

Rebecca Hartzler teaches math and physics at Seattle Central. She has worked for the Seattle Colleges' Pathways to Completion project, the Carnegie Foundation's Pathways Initiative and the Dana Center's New Mathways Project. She co-coordinated AMATYC's Mathematics Across the Community College Curriculum project. She has taught math, physics and engineering for 23 years.

Bill Moore has been with SBCTC since 1990 and leading math-related system projects for the past decade, most recently the Core to College project. His educational background is in higher education policy and outcomes assessment, with a master's in counseling psychology and a Ph.D. in student development and higher education.

Session IV Abstracts: Friday, 2:45 – 3:45 PM

Are You Ready For Some Fantasy Football? (Room: Gala-3)

Mike Kenyon, Donnie Hallstone

The first and second runners-up from the 2013 GRCCFFL will give you tips on how to use your mathematical capabilities to win your fantasy football league. Disclaimer: Your results may vary. Not responsible for the fickleness of Fate.

Speaker Bios

Donnie Hallstone is about to become the longest-serving math instructor in the history of Green River Community College. Mike Kenyon will break that record in a couple dozen years or so.

Enhancing Student Engagement through Digital Learning Tools (Room: Gala-4)

Eric Ziegler

Cengage Learning continues to make improvements to Enhanced WebAssign to better improve learning outcomes in mathematics courses. Come learn about the latest enhancements in EWA and see the new MindTap platform prototype and how this new platform can focus student practice efforts around key learning objectives for better student performance in your math courses.

Speaker Bio

Eric Ziegler is the Senior Implementation and Training Specialist for Cengage Learning in the Pacific Northwest. Since 2008, he has trained faculty on the use of Enhanced WebAssign and other Cengage digital products.

Practices for Math Learning Centers (Room: Red Delicious West)

Rosalie Tepper

This will be an opportunity to share successful practices in our math tutoring centers. Topics will be determined by attendee interest (as time allows) and may include hiring, training, managing staff, center leadership models, data collection, etc.

Speaker Bio

Rosalie Tepper has been the Director of the Math Learning Center at Shoreline Community College since 2008.

Session V Abstracts: Sat, 9:00 – 10:00 AM

Making OPEN Material Work for YOU (Room: Gala-1)

David Lippman, Melonie Rasmussen

So you have just learned about open material or you have been thinking about adopting open material. We'll help you take the next step! Come learn about “backwards design” and how to use open textbooks to create a tailored learning experience.

With commercial books, you find yourself sorting through dozens to find the one with a suitable table of contents for your course, just to skip several sections you don't need. With open books, you can rearrange, combine, and customize the materials to exactly align with your outcomes.

We will show you where to find open material and how to blend the right materials to match your courses outcomes, link students to the open material, add an online homework component, and help your bookstore order the material (if you want a bound book).

IT'S TIME TO GO OPEN!

Speaker Bios

Melonie and David have been teaching at Pierce college for a combined 25 years, and have extensive experience creating and adapting open materials in their courses.

The Determinate Theory of Achievement in Mathematics (Room: Gala-2)

Charles Wikman

Some observations on about 1000 students I have had the pleasure of instructing over the last three years. Their achievement varies based on student ability. Variation in achievement is inevitable, but some students are much more industrious than others and make good use of their time. Others are very intelligent. Is there a way of knowing what role each plays? I have some generalizations to offer that provides perspective.

Speaker Bio

Charles Wikman has been a part time instructor at Everett CC for seven delightful years, working with great colleagues. His background is in industry, allowing him to look at things a bit differently.

Conference Sessions

	Gala 1	Gala 2	Gala 3	Gala 4	Red Delicious West
FRIDAY MORNING					
Session I 9:00 – 10:00 AM	Developmental Math Redesign at Pierce College Sharon Camner, Raj Lal, Stewart Jaffe	Acceleration through Avoidance: Partnering with High Schools to Get Seniors Ready for College-Level Math Bill Moore, Megan Luce	The Art of Mathematics Teresa Downard, Dina Buric	Empower Your Students to Achieve Their Potential With MyMathLab Peggy Sue Lucas	Duality Problems in Calculus Stephen Lane
Session II 10:30 – 11:30 AM	New and Little-known Features in WAMAP David Lippman	Trig Without Words William Webber	Analysis of Chemical Data Yves Nievergelt	What makes a good note card? Mike Kenyon	Emporium Roundtable Discussion Elisabeth Briggs, Elizabeth O'Neil
Session III 1:15 – 2:15 PM	FREE Placement Test Review Course in WAMAP (ready to copy & use) Melonie Rasmussen	The Ups and Downs of Complex Roots Eric Schulz, Julianne Connell Sachs	Alternate Pathway: A Two Quarter Dev Ed Pilot Project at Spokane Falls Greg Cripe, Debra Olson	Personalizing the Path to College Readiness Dani Pedrotti	Gamification of Learning, GAISE, and Flipping the Stats Classroom Crystal oltzheimer, Taylor Holtzheimer

FRIDAY AFTERNOON	Gala 1	Gala 2	Gala 3	Gala 4	Red Delicious West
Session IV 2:45 – 3:45 PM	A Monte Carlo Verification of the Frequentist Interpretation of Bayes Theorem Probabilities David Straayer	Developmental Math Reform in Washington State – Can We/Should We Innovate Together for Student Success? Rebecca Hartzler, Bill Moore	Are You Ready For Some Fantasy Football? Mike Kenyon, Donnie Hallstone	Enhancing Student Engagement through Digital Learning Tools Eric Ziegler	Practices for Math Learning Centers Rosalie Tepper
SATURDAY MORNING					
Session V 9:00 – 10:00 AM	Making OPEN material work for YOU David Lippman, Melonie Rasmussen	The Determinate Theory of Achievement in Mathematics Charles Wikman	Learning: Anytime, Anywhere Jennifer Moore	Mystery Theater: The Case of the Asphyxiated Algebra Class Christopher Quarles	The DTA Agreement and Pre-College Math Options: An Ongoing Saga of Promise, Peril, and Paradox Bill Moore Rosalie Tepper
Session VI 10:30 - 11:30 AM	What's Tuesday Got To Do With It ? Dan Canada, Dave Goering	Competency-Based Grading: What Math do the Students Really Know? Matteo Tamburini, Cassandra Cook, Jamielee Rose Kamkoff	The Math Behind the Problems Fred Kuczmariski	“What the Flip” is all the Excitement about Flipping Classrooms? Tyler Wallace	Conference Planning Tips Steven Bogart, Rosalie Tepper, Michael Nevins

Session V Abstracts: Sat, 9:00 – 10:00 AM

Learning: Anytime, Anywhere (Room: Gala-3)

Jennifer Moore

Hawkes Learning is excited to launch a new browser-based platform built specifically with the tablet in mind. We've added more benefits to the same Expert System and approach to mastery that we've spent years perfecting. We also understand that some students still depend on our unique ability to work without internet access, so we will continue to support this by offering dual platforms to you and your students.

Speaker Bio

Jennifer Moore is an Educational Courseware Specialist for Hawkes Learning Systems, a software company and textbook publisher that specializes in Mathematics courseware and textbooks for college students. Jennifer is a graduate of James Madison University with a Bachelor of Business Administration in Economics. Jennifer works to educate instructors on the products and services that Hawkes offers, as well as provides support to clients both during and after the adoption process.

Mystery Theater: The Case of the Asphyxiated Algebra Class (Room: Gala-4)

Christopher Quarles

Why does a math redesign project fail? While we often hear about great ideas and promising practices, data show that far too many of our attempts don't increase outcomes. Participants will hear the sordid story of math reform gone wrong: a long and thoughtful process that led to a contextualized algebra class. Then, as in any good murder mystery, participants will guess "Whodunnit?" Why did it fail?

The question is not whether a given popular approach is effective, but whether a given popular approach is effective at YOUR college the way YOU have implemented it. This session is an examination of the complex nature of designing and implementing math reform. It will provide participants with the opportunity to view someone else's work from the outside and to see how bad things sometimes happen to good ideas.

Speaker Bio

When he's not solving mysteries, Chris Quarles has a side job as math instructor. He has 15 years of experience teaching math from arithmetic through advanced calculus. He is also a co-lead for Achieving the Dream at Everett Community College, and really wants students to learn math that matters.

Session V Abstracts: Sat, 9:00 – 10:00 AM

The DTA Agreement and Pre-College Math Options: An Ongoing Saga of Promise, Peril, and Paradox (Room: Red Delicious West)

Bill Moore, Rosalie Tepper

For well over a decade the Washington community and technical colleges have been engaged in an epic endeavor to update and clarify the quantitative and symbolic reasoning requirement included in the Direct Transfer Agreement (DTA) with the four-year institutions in the state, an ongoing saga full of promise, peril and paradox. This session will summarize this saga by:

- 1) Providing a brief update on the status of the changes in the math requirements for the system Direct Transfer Agreement;
- 2) Offering participants an opportunity to discuss strategies and next steps for resolving the current roadblocks in the work; and
- 3) Discussing non-STEM pre-college options emerging at community colleges in response to the DTA change.

Attendees from colleges that have already made changes are encouraged to bring course descriptions (or access them on smartphones, etc.) and share them with the group.

Speaker Bios

Bill Moore led the Transition Math Project from 2004-2009 and is currently serving as the alignment director for the Core to College project after finishing up the Re-Thinking Pre-College Math project in December 2012. His educational background is in psychology, higher education policy, and outcomes assessment.

Rosalie Tepper has been involved in various DTA-related conversations such as the Liberal Arts Pathway work, and she has participated in developing Shoreline CC's new algebra sequence in response to the DTA change.

Session VI Abstracts: Sat, 10:30 – 11:30 AM

What's Tuesday Got To Do With It ? (Room: Gala-1)

Dan Canada, Dave Goering

Consider the following: You know Mr. Jones has two children, and one day you see him with a boy whom he introduces as his son. Now that you know he has a boy, what is the probability his other child is boy? In our presentation, this classical paradoxical problem in conditional probability receives fresh attention in two ways: First, a recent extension helps illuminate the fundamental nature behind the perceived paradox. Second, our treatment includes the use of the dynamic software Fathom to create simulations of differing interpretations of the underlying scenario. We'll invite participants to delve with us into the hidden nuances of language, intuition, and fundamental aspects of probability as we expand upon competing interpretations. This session will appeal to both those who are familiar and those who are not familiar with this enduring problem, and is sure to stimulate thinking in new directions.

Speaker Bios

Dan Canada and Dave Goering have been colleagues together at Eastern Washington University for the past ten years. They enjoy finding new problems in data and chance to explore, as well as discovering alternate ways of addressing old problems. Prior joint publications and presentations include surprising results for "The River Crossing Game" involving the sum of two dice.

Competency-Based Grading: What Math do the Students Really Know? (Room: Gala-2)

Matteo Tamburini, Cassandra Cook, Jamielee Rose Kamkoff

"I got a 72%, 83%, 95%, 60%, and 77% on my quizzes which averages to 77.4 and makes up 60% of the points so that's 46.44 points out of the possible hundred and I got 17.2 out of the 20 possible homework points so that's 63.64 so I only need 6.36 more points which means I only have to get $(6.63/20 = 0.3315)$ 33.15% on the final to get a C. With partial credit, that should be easy."

The math faculty at NWIC have been engaged in an ongoing, collaborative, exploratory process of making fundamental changes to what it means to give grades in our classes. We have completely done away with percentages and "points." Instead, we developed some definitions of what our students should be able to do by the time they leave the class. We're eager to share what we have learned and how it's working.

Speaker Bios

Matteo Tamburini (BS, Mathematics, UW; MS, Mathematics, WWU) has been teaching at Northwest Indian College since fall of 2009 . He received the exemplary faculty award in 2012. Earlier, he taught at West Side High School in Newark, NJ. In the summer of 2011, he attended the Patterns 1 workshop offered by the Mathematics Education Collaborative. He believes deeply in the importance of faculty collaboration, and that mathematics can be a tool for liberation.

Session VI Abstracts: Sat, 10:30 – 11:30 AM

The Math Behind the Problems (Room: Gala-3)

Fred Kuczmariski

Many of this year's contest problems were gleaned from journal articles. We take a journey through the beautiful mathematics behind some of the problems.

Speaker Bio

Fred Kuczmariski teaches math at Shoreline Community College.

“What the Flip” is all the Excitement About Flipping Classrooms? (Room: Gala-4)

Tyler Wallace

Flipping the classroom has become a “buzzword” of education. What exactly is a flipped classroom? Does this flipped model have any impact on student success, teaching interaction, classroom interaction, perceived learning, or student success? What is required to prepare for a flipped course? What is the role of the instructor in such a course? How can Open Educational Resources supplement this environment? The presenter will discuss his experience flipping the Finite Math course at Big Bend Community College and lessons learned along the way. Come with questions and experiences of your own to share about the flipped classroom. It will be flippin' awesome!

Speaker Bio

Tyler Wallace is on his 6th year teaching math at Big Bend Community College. He earned a Master's Degree in Mathematics from the University of Houston and a Master's Degree in Teaching Mathematics from George Fox University. Tyler is also currently working on his doctorate in education at Liberty University. He is currently working on a STEM grant to improve student success in mathematics through large scale course redesign, improved tutoring strategies, and providing professional development for faculty. In his spare time he enjoys running half marathons and spending time camping with the family.

Conference Planning Tips (Room: Red Delicious West)

Steven Bogart, Rosalie Tepper, Michael Nevins

Lead planners from this year's conference will share their experiences and pass on conference planning tips and materials. They will help you understand the work that goes into planning the conference and suggest ways your department can manage the work. Strongly recommended if your college is hosting the conference soon or is considering hosting.

Speaker Bios

Steven Bogart (Shoreline CC), Michael Nevins (Everett CC), and Rosalie Tepper (Shoreline CC) are lead planners of this year's math conference, along with Heidi Weiss-Green (Everett CC).

WAMATYC Conference History

The first Washington State Community Colleges Mathematics Conference and Retreat was held in 1969. The organizers were Phil Heft, Jim Reif, Larry Larson, and John Van Duff. We are told that the per-person cost at the time was \$16.68 and that 33 people attended the conference. It was held at “The Lodge” at Ashford where accommodations required sleeping bags. The menus for the first banquet as well as the name of the first guest speaker remain unsolved mysteries. Today's retreats, usually referred to as Spring Math Conferences, involve more than 200 mathematicians from both two and four-year colleges. There are usually a few invited talks, but the bulk of the program is contributed by inspired volunteers. Responsibility for conference planning is passed among the 34 Washington community colleges. There's no particular formula for who hosts when; and there is no set location where the meetings are held. As if by magic, volunteers appear (usually a few years in advance) and destination meeting sites are found in the Cascade Mountain corridor, on the Olympic Peninsula, or in the Columbia Gorge. There is a traveling fund, the Washington State Math Conference Foundation that helps the host institution with start-up costs.

Year	Conference Host Schools	Location of Conference
1969	Green River/Highline/Ft. Steilacoom CC's	The Lodge
1970	Spokane Falls CC	The Lodge
1971	Everett CC	Snoqualmie Pass
1972	Everett CC	Snoqualmie Pass
1973	Seattle Central CC	Snoqualmie Pass
1974	Green River CC	Lake Wilderness
1975	Highline CC	Providence Heights
1976	Bellevue CC	Snoqualmie Pass
1977	Shoreline CC	Providence Heights
1978	Edmonds CC	Providence Heights
1979	Olympic College	Port Ludlow
1980	Spokane Falls CC	Sun Mountain
1981	Spokane Falls CC	Sun Mountain
1982	Highline CC	Lake Chelan
1983	Olympic College	Port Ludlow
1984	Green River CC	Alderbrook
1985	Shoreline CC	Sun Mountain
1986	North Seattle CC	Alderbrook
1987	Lower Columbia CC	Alderbrook
1988	Olympic College	Port Ludlow
1989	Bellevue CC	Lake Chelan
1990	Clark College	Alderbrook
1991	Pierce College and Tacoma CC	Lake Chelan
1992	Yakima CC	Yakima
1993	Highline CC	Wenatchee
1994	South Seattle CC	Silverdale
1995	Skagit Valley and Whatcom CC	Wenatchee

1996	Spokane Falls CC and ORMATYC	Skamania Lodge
1997	Green River CC	Lake Chelan
1998	Tacoma CC & Big Bend	Lake Chelan
1999	Edmonds CC	Ocean Shores
2000	Bellevue CC	Wenatchee
2001	Peninsula College and ORMATYC	Skamania Lodge
2002	Clark CC	Yakima
2003	Spokane CC and North Idaho CC	Wenatchee
2004	Pierce CC	Yakima
2005	Highline CC	Ocean Shores
2006	Olympic College and ORMATYC	Skamania Lodge
2007	Wenatchee Valley CC and Big Bend CC	Wenatchee
2008	North Seattle CC	Lake Chelan
2009	Columbia Basin College	Pasco
2010	Yakima Community College	Yakima
2011	Green River CC and ORMATYC	Skamania Lodge
2012	Tacoma Community College	Wenatchee
2013	Whatcom Community College	Bellingham, WA
2014	Shoreline CC and Everett CC	Wenatchee
2015	Bellevue College	
2016	Clark College and ORMATYC	

Note about the logo this year:

The conference logo was designed by Everett CC Math Faculty member, Heather Cleveland. The design uses non-periodic Penrose tiling. Heather is a quilter and this Penrose tiling is one of her quilting designs. Visit (http://en.wikipedia.org/wiki/Penrose_tiling) for more information.



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Michael Nevins (Everett CC), Heidi Weiss-Green (Everett CC)

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AMATYC

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Juliet Lovejoy from Shoreline CC

Shoreline Community College Foundation



