Washington State Community College Mathematics Conference 2013

May 9 – 11
The Firs Retreat
Bellingham, WA

Hosted by:
Whatcom
Community College

Conference Schedule

Date	Time	Event
Thursday, May 9th	4:00 – 6:30 PM	Registration
	6:30 – 7:30 PM	Dinner
	7:30 – 8:30 PM	Keynote Speaker: Ed Morris
	8:30 – 9:30 PM	Registration
	8:30 – 10:30 PM	Hosted Social (SECUWA)
Friday, May 10th	7:00 – 8:30 AM	Breakfast & Registration
	8:00 – 8:20 AM	Announcements
	8:30 – 9:30 AM	Session I
	9:45 – 10:45 AM	Session II
	11:00 AM – 12:00 PM	Session III
	12:15 – 1:15 PM	Lunch & Announcements
	1:30 – 2:30 PM	Session IV
	2:45 – 3:45 PM	Session V
	4:00 – 6:00 PM	Activities
	6:00 – 7:00 PM	Dinner & Announcements
	7:00 – 8:00 PM	Keynote Speaker: Dick Termes
	8:30 – 10:30 PM	Hosted Social (Pearson)
Saturday, May 11th	7:00 – 8:30 AM	Breakfast & Checkout
	8:15-8:30 AM	Announcements
	8:45 – 9:45 AM	Session VI
	10:15 – 11:15 AM	Session VII
	11:15 AM	Checkout and Departure
	12:00 PM	Meeting with next Hosts

2013 Annual Conference
Program Highlights and Venues

Key events and locations:

Registration:
Registration will be in the "Getaway Room", located on the lower entrance of the building with the Dining Room and Dorm. You may register before dinner or after the keynote speaker on Thursday night, or Friday morning during breakfast.

Meals:
All meals are served in the Dining Room, just above the Getaway, where registration and exhibitors will be located. We will serve dinner Thursday night before our keynote speaker, Ed Morris. Friday we will serve breakfast, lunch, and dinner, then hear our keynote speaker for Friday, Dick Termes. Saturday we will serve breakfast before our Saturday morning sessions begin. Saturday lunch will be on your own.

Socials:
School Employees Credit Union of Washington (SECUWA) will host a social on Thursday night at the Pavilion of the Firs Retreat. S'mores and beverages will be available.

Pearson will be hosting a social on Friday night at Poppe's 360 Neighborhood Pub, which is in the Lakeway Best Western Hotel.

Exhibits:
Exhibitors will be in the Getaway room, and available at various times throughout the day. Exhibitors this year will be Cengage Learning, Hawkes Learning Systems, McGraw-Hill, Pearson, School Employees Credit Union of Washington (SECUWA), Thinkwell, WAMAP, WH Freeman & Co, and XYZ Textbooks.
Contact information can be found on page 21.

Extracurricular Activities:
Conference Participants interested in a change of scenery are encouraged to participate in a walk around Whatcom Falls Park, which is short drive from the Firs retreat. If interested, meet at 4:00 at the Pavilion (covered area with the fireplace) to carpool to Whatcom Falls Park. We appreciate anyone willing to drive. Others may wish to look at the additional activities sheet in the conference bag for other excursions to do in Bellingham.

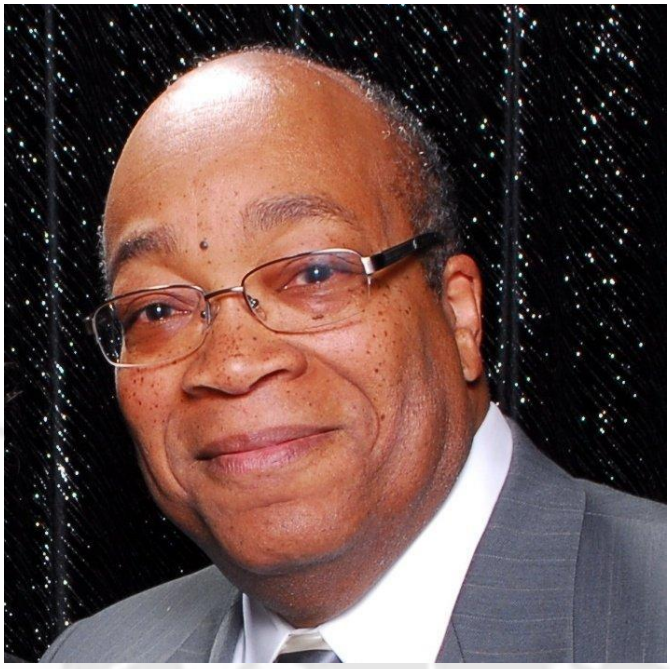
Thursday Evening Keynote Speaker

Ed Morris

Passions for the Profession (How I survived 40 years in Higher Ed)

Abstract:
Forty years is a long time to spend in any one endeavor – especially when that endeavor is teaching. The landscape of Higher Education is constantly changing. To survive these shifts requires more than just modifying pedagogy, updating knowledge and developing better communication skills. My experience suggests that three fundamental "passions" are necessary in sustaining enthusiasm for teaching. Come hear one instructor's insights into what makes a long life in the classroom not only possible but enjoyable, meaningful, and memorable.

Bio:
Ed Morris is currently in his 41st year as a Professor of Mathematics at Highline Community College in Des Moines, Washington. He was involved as one of the lead instructors in the design, development and implementation of a college wide College Algebra program that utilizes multi-media curriculum. He has participated regularly in colloquia, sharing Highline's success with computer-mediated instruction. From 2000-2008 he was the coordinator of the Faculty Resource Center, a teaching and learning center run by faculty dedicated to enhancing faculty and staff teaching effectiveness and improving teaching techniques. He has given several workshops and seminars about Classroom Assessment Techniques and cooperative learning in South Africa and Namibia. Ed has been Coordinator of New Faculty activities for new one year appointments, one year interns and new tenure track faculty from 2003-2006. He has been recognized as the 1997 Highline Community College Outstanding Faculty and a 1998 N.I.S.O.D. Excellence Award Recipient. He is a former Mathematics Department Coordinator, Pure & Applied Sciences Division Chairman and member of the Highline College Strategic Planning Commission.



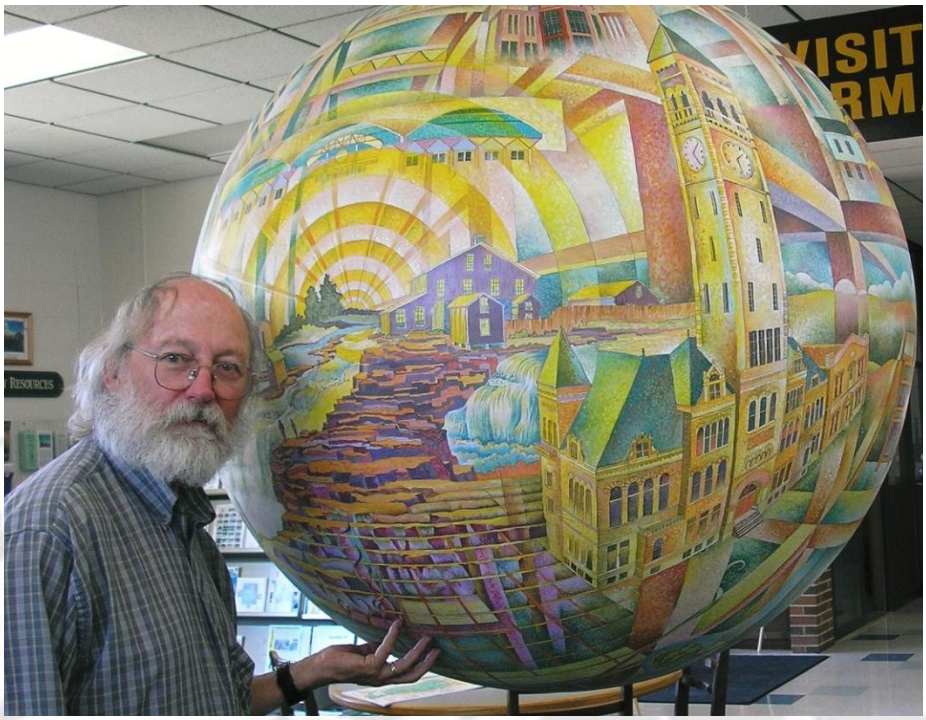
Friday Evening Keynote Speaker

Dick Termes

Six Point Perspective and Termespheres

Abstract:
Through the use of antidotes and discoveries he has made in his forty plus years as a professional arist, Dick Termes will lecture on his work using short videos to show Termespheres in motion. He will explain the artistic and mathematical process involved in his work. Termes will mix the theory of Six Point Perspective with his use of grids. He will also show how perspective evolved from the Renaissance to Six Point Perspective.

Bio:
Dick Termes is an internationally acclaimed artist who has been exploring a whole new concept in art and math. Termes paints on spheres which, when completed, are known as Termespheres. Each Termesphere is a revolving three-dimensional space/time exploration of an entirely closed universe, meaning that what you see, rotating in front of you, is a complete environment around you. He calls his system of perspective, Six Point Perspective. He has lectured on his six point perspective and shown his Termespheres and polyhedron paintings worldwide. He has been published in numerous art and math books, such as *Masters of Deception* by Al Seckel, *The Edge of the Universe* by Haunsperger and Stephen Kennedy, a Mathematical Association of America book, and *New Perspective Systems* by Dick Termes. A Termesphere is the cover art for the French translation of Stephen Hawking's *A Brief History of Time*. Termes lives in the Black Hills of South Dakota in five geodesic domes where he continues to create his spherical paintings.



Session I Abstracts: Friday, 8:30 – 9:30 AM

Implications of the Smarter Balanced Assessment for College Readiness and Math Placement (Alpine Room)

Bill Moore, State Board of Community and Technical Colleges, bmoore@sbctc.edu
with Lisa Reynolds.

As part of implementing the Common Core State Standards the Smarter Balanced Assessment Consortium has proposed that higher education offer high school students "conditional" or "full" exemption from remediation when they enter college based on their scores on the 11th grade college- and career-readiness assessment. This session will provide participants with a chance to discuss the implications of this proposal for 2-year college math programs in Washington and Oregon and learn more about the Core to College project math work in both states. How will the Common Core effort affect readiness for transferable, credit-bearing, entry-level mathematics courses at postsecondary institutions?

Speaker Bios:
Bill Moore has been the policy associate for assessment, teaching and learning for the State Board for Community & Technical Colleges since 1990. He 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 education background is in psychology, higher education policy, and outcomes assessment.
Dr. Lisa Reynolds is the Alignment Director for the Oregon Core to College Grant, a cross-sector initiative based in the Oregon Department of Community Colleges and Workforce Development.

Intro to WAMAP (Alderwood Room)

David Lippman, Pierce College, dlippman@pierce.ctc.edu

WAMAP is a free and open online homework platform, providing algorithmically generated problems with automated grading of algebraic, numeric, and graphical answers. It also provides a standalone learning management system, or can be integrated with Canvas. WAMAP is being used to supplement commercial and open textbooks in face-to-face, online, emporium, and hybrid classes. This session will provide an introduction to WAMAP for people unfamiliar with it, and highlight some new features.

Speaker Bio:
David, aka "the WAMAP guy", has been teaching math at Pierce College Ft Steilacoom since 2000, and has been leading the development of WAMAP for 7 years. He is the co-author of two open textbooks.

Creating a Math Tutoring Lab – Discussion of Your Best Practices (Cedar Room)

Tyler Wallace, Big Bend Community College, tylerw@bigbend.edu

This discussion will compare and contrast what colleges across the state are using for math tutoring models. Are you using SI? Drop in tutoring? Private tutors? Group study sessions? Study skills? Something else? Come prepared to discuss what your school is offering for math tutoring and other help in the math classroom. Discussion will also include the pros and cons of various models, and what you would change if you could. Ideas from attendees will be shared along with opportunities to ask questions. This session will be a facilitated discussion – come to share what your college is doing and how it works!

Speaker Bio:
Tyler Wallace earned his master's degree in mathematics from the University of Houston. He is in his fifth year teaching math at Big Bend Community College in traditional, online, hybrid, and emporium classrooms. He is the author of an open source Beginning and Intermediate Algebra textbook and is currently working on a STEM grant supporting the math courses needed for the new Engineering program.

Passion Transforms Lives (Dogwood Room)

Dusty Wilson, Highline Community College, dwilson@highline.edu
with Johnny Cheng, Harry Kim, Matthew Meerdink, and Alex Tereshchenkov.

Lover of mathematics - do you miss the depth of mathematical conversation you had in graduate school or with a close colleague? What if there was a way to rekindle your own passion for our discipline, grow professionally, build meaningful intellectual relationships, and watch the number of mathematics majors at your college increase? I have experienced this renewal and am convinced that you can as well. Best yet, this isn't about teaching tips or handouts that work for me but probably won't for you. Come learn how you can work to your strengths and interests, rekindle your passion for mathematics, and make a difference in the lives of students.

Speaker's Bio:
Dusty is in his 12th year at Highline where he remains the youngest tenured faculty in history. He regularly teaches from arithmetic to linear algebra. He maintains his passion by experimenting with seminars based on a graphic novel and recently taught his first course in engineering. He has an interdisciplinary undergraduate degree from Evergreen and a Master's in mathematics from Western. Other interests include singing, church, carpentry, softball, and boomerangs. He's married with three children.

Session II Abstracts: Friday, 9:45 – 10:45 AM

Content in Context: Teaching Students with Real-World Applications (Alpine Room)

Stefan Baratto, Clackamas CC, sbaratto@clackamas.edu

Motivating students who ask, "When will I ever use this?" can be a challenge. Move beyond using applications to motivate topics; use them to teach content. We explore what to look for in applications, which applications will be relevant to a student's future career, how to find them, how to build on them, and how to use them to teach new topics, maintaining student interest and increasing learning and knowledge retention. We explore problem-solving strategies so students can advance their critical-thinking skills. Each application is chosen for its relevance to students' lives and the world around them. Participants will take applications back to their own classrooms and immediately see the results for themselves. Join us and together, we will answer the student with "Here, this is where you will use this!"

Speaker Bio:
Stefan taught in New York middle schools, at U-Oregon, Southeast Missouri State University, and York County Technical College (in Maine). Currently, Stefan teaches at Clackamas CC in Oregon. Stefan serves on the AMATYC Executive Board as the Northwest Vice President. He is the lead author of a popular series of developmental math texts for McGraw-Hill Education. Stefan and his wife, Peggy, try to spend free time enjoying the wonders of the Pacific Northwest.

(Session II Abstracts: Friday, 9:45 – 10:45 AM continued)

Modeling Using Video (Alderwood Room, 9:45-10:05)

David Lippman, Pierce College, dlippman@pierce.ctc.edu

This session will show some examples of posing modeling problems using videos of experiments, making real-world problems actually "real." It will include a demo of Tracker, a free program that can be used for extracting data from a video, like the position of a falling ball over time.

Speaker Bio:
David has been teaching math at Pierce College since 2000. He likes to contextualize mathematics whenever possible.

A Pivotal Study in Learning Linear Algebra (Alderwood Room, 10:15-10:45)

Spencer Payton with Dr. Kimberly Vincent, Washington State University, spencerpayton08@gmail.com

We will discuss our research to improve students' understanding of the meaning of linear algebra terms. Linear algebra is typically the first college-level math class that requires students to think abstractly, focusing on concepts and relationships. The immense amount of vocabulary is overwhelming because typically they were taught to memorize a collection of rules and algorithms. We focused on the terms they struggled with and core concepts.
Spring of 2013, we adapted vocabulary learning aides from English. We had 110 students participate. We analyzed written responses, surveys, test responses and scores, and MatLab projects, as well as observations in class. This study had two goals: A) to identify what linear algebraic terms students struggle with the most, and B) to study the impact of the use of the vocabulary aides.

Speaker Bios:
Spencer Payton is a first-year PhD student at Washington State University. He earned his undergraduate degree in theoretical mathematics from WSU. He did research on applications of linear algebra and is currently studying math education in linear algebra with Dr. Kimberly Vincent. Dr. Kimberly Vincent is a mathematics education faculty for the math department. Her research interests are to improve student understanding of mathematics through the use of discourse, technology, and critical thinking.

The WAMAP Emporium - Increasing Student Success and Motivation in Precollege Math (Cedar Room)

Tyler Wallace, Big Bend Community College, tylerw@bigbend.edu

Developmental math has long been the bottle neck in the curriculum. The problem may be that we are teaching today's students using yesterday's methods. Today's students naturally go to the internet and YouTube to learn a new skill, rather than the library or a college lecture. Using an open source homework system (WAMAP), faculty at Big Bend redesigned the pre-college curriculum to employ Emporium Model strategies and have seen a 67% increase in success rates. The emporium model blends the benefits of online, traditional, hybrid, and inverted instruction to stimulate student success. Students complete videos and homework on the computer with instant feedback and on-demand help from tutors and instructors. This presentation will explore the process of change at Big Bend and answer questions about how similar changes could be implemented at another college.

Speaker Bio:
Tyler Wallace earned his master's degree in mathematics from the University of Houston. He is in his fifth year teaching math at Big Bend Community College in traditional, online, hybrid, and emporium classrooms. He is the author of an open source Beginning and Intermediate Algebra textbook and is currently working on a STEM grant supporting the math courses needed for the new Engineering program.

Fitting Exponentials to Data (Dogwood Room)

Yves Nievergelt, Eastern Washington University, ynievergelt@ewu.edu

The push for mathematical modeling in the classroom may be ahead of the available theory: The presentation will show data with two best-fitting least-squares exponential curves, one decaying, the other one growing. There are also strictly increasing data with two best-fitting least-squares exponential growth curves. Examples from radioactive decay reveal that least-squares may be the culprit: another criterion tailored to radioactivity leads to exactly one best-fitting curve. The presentation will also demonstrate how to design examples with two curves. There is here an opportunity for anyone with time and access to a computer to do a little research with other curves: for instance, are there increasing data with two best-fitting least-squares Verhulst logistic growth curves? This time there will also be copies or links to complete notes from this and previous presentations.

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 King at the University of Washington.

Session III Abstracts: Friday, 11:00 AM – Noon

Introduction to the New Mathways Project (Alpine Room)

Amy Getz, Charles A. Dana Center, University of Texas at Austin, getz_a@austin.utexas.edu

The New Mathways Project (NMP) is the Dana Center's systemic approach to reforming developmental and gateway math programs to support student success and completion. The Dana Center is working with colleges to develop services and materials to support colleges, student support staff and faculty to implement meaningful reform. The session will provide a broad overview of the full project with a focus on mathematics curricular materials and discussion of opportunities for future involvement.

Speaker Bio:
Amy Getz is the Dana Center's Manager of Community College Services. Her work focuses on the reform of developmental and gateway mathematics programs at community colleges and four-year institutions through working with state and regional systems and implementation of the New Mathways Project. Past experience includes leading the development of the Quantway curriculum in partnership with the Carnegie Foundation for the Advancement of Teaching and teaching mathematics for 20 years in high school and college.

(Session III Abstracts: Friday, 11:00 – Noon continued)

Using WAMAP to Facilitate a Mastery Approach to Developmental Math (Alderwood Room)

Matt Lewis, Yakima Valley Community College, mlewis@yvcc.edu
with Ben Mayo and Mike Jenck

In the winter of 2013, we conducted a computer-based class using WAMAP that is designed to serve developmental math students in such a way that they move more efficiently through our curriculum. The course is self-paced, in that a student progresses through the material on the basis of showing mastery in different skill areas. Students are able to quickly show mastery over material they already know, which leaves more time to work in the areas that are most challenging. Student learning is achieved through individual instructor attention, mini-lectures given to groups of students, the course text book, and online videos that have been vetted by members of the math department. The curriculum is based on the content and exercises in Arithmetic: With an Introduction to Algebra, by Ben Mayo.

Speaker Bios:
Matt Lewis: Math Instructor at Yakima Valley Community College (2010-present)
Graduate Teaching Assistant at Western Washington University (2008-2010).
Ben Mayo: Math Instructor at Yakima Valley Community College (1987-present).
Mike Jenck: Math Instructor at Yakima Valley Community College (2003-present)
Math Instructor at Klamath Community College (2002-2003)
Math Instructor and Institutional Researcher at Northern Marianas College (1991-2001).

Supporting and Engaging Adjunct Faculty (Cedar Room)

Helen Burn, Highline Community College, hburn@highline.edu

This interactive session is for faculty interested in supporting adjunct faculty or increasing adjunct engagement in their department. The session will help participants think critically about the role and expectations of adjuncts in their department, current support structures, and adjunct faculty professional growth. The session will include theories and findings from a research study of adjuncts in three community college mathematics departments that participated in the Re-Thinking Pre-College Mathematics grant.

Speaker Bio:
Helen Burn is an instructor of mathematics at Highline Community College and director of the Curriculum Research Group. She has served as department coordinator and division chair at Highline. She holds an M.S. in mathematics from Western Washington University and a Ph.D. in higher education from the University of Michigan.

Zombie Rave – Simulating and Modeling an Outbreak (Dogwood Room)

Ed Miller, Lewis-Clark State College, edmiller@lcsc.edu

The Walking Dead, Zombieland, Resident Evil, and World War Z: zombies are in. Flipped classrooms are in. Active learning is still in. Be part of the "in" crowd. Simulate a zombie epidemic and then model it – graphically, numerically, or even solve the IVP. During this presentation you will run the simulation and we'll talk about how to use it in classes as varied as liberal arts math, differential equations, indeed wherever logs and exponentials are found.

Speaker Bio:
Ed Miller teaches a wide range of courses ranging from elementary algebra to general topology. His current focus in teaching is creating a general education experience that is useful to students but also preserves the traditions and rigor of the mathematics curriculum. His current focus is on the back deck, learning how to use his new smoker.

Session IV Abstracts: Friday, 1:30 – 2:30 PM

Who Cares...About Math, That Is! (Alpine Room)

Jerry Johnson, Western Washington University, Jerry.Johnson@wwu.edu

In response to an algebra exam question, a student wrote "WHO CARES!" This session will explore our possible responses to this student's response, both in the context of this algebra exam and in the broader arena of mathematics education. For example, I CARE...and here is why...!

Speaker Bio:
Jerry Johnson, a WWU mathematics professor, focuses on teaching quality mathematics and preparing secondary math teachers. He has taught mathematics for forty-two years by sharing mathematics with students from ages 4 to 80+, stressing that learning mathematics is possible, fun, useful, and an endless adventure. As a mathematics educator, Jerry's primary interests are problem solving, the history of mathematics, geometrical thinking, and humor in the classroom.

Revolutionizing Your Redesign (Alderwood Room)

Anthony Belen, Hawkes Learning Systems, abelen@hawkeslearning.com

Technology continues to play a vital role in course redesigns. It's important to keep the student experience in mind when selecting a technology system for your redesign that will help students succeed. What makes Hawkes stand apart from the rest? Come learn how our low-cost, mastery-based software can be the key to revolutionizing your math course redesign and be entered in a raffle for a $50 Amazon Gift Card!

Speaker Bio:
Anthony Belen 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. Anthony is a graduate of Duke University with a Bachelor of Science in Economics and Spanish, with a minor Cultural Anthropology. Anthony 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.

Curve Fitting in Algebra = Great Preparation for Statistics (Cedar Room)

Jay Lehmann, College of San Mateo, MathNerdJay@aol.com

Using curve fitting in elementary and intermediate algebra not only excites students and enhances their understanding of algebra, it also increases success rates in statistics. The approach offers rich student experiences of data analysis, contextual learning, project assignments, and critical thinking such as determining which function best models a situation.

Speaker Bio:
Jay Lehmann has taught for the past 22 years at College of San Mateo, where he received the "shiny apple award" for excellence in teaching. He has presented talks on curve fitting at over fifty conferences including AMATYC and ICTCM over the past fifteen years. He is currently on the board for California Mathematics Council, Community Colleges (CMC3). Jay plays in a rock band called the Procrastinistas. He has authored several algebra textbooks published by Pearson.

(Session IV Abstracts: Friday, 1:30 – 2:30 continued)

McGraw-Hill Adaptive Learning (Dogwood Room)

Andy Set, McGraw-Hill Higher Education, andy.set@mheducation.com
with Becky Studtmann, McGraw-Hill Education, Rebecca.studtmann@mheducation.com

McGraw-Hill is leading the digital advantage in Mathematics with a sweep of adaptive learning products like ALEKS and LearnSmart. By taking an active role to help increase retention rates within the developmental math sphere, we have partnered with ALEKS to create products that go beyond assessment of student skills and comprehension into true learning and understanding.

Speaker Bios:
Andy Set, Sr. Marketing Manager and ALEKS Implementation Specialist has consulted over 200 institutions on how to incorporate ALEKS into the classroom, summer bridge and math placement programs. He has been with McGraw-Hill Higher Education for over 8 years and strives to partner in a meaningful way with each institution to drive student retention of math material and success in future course work. Andy balances his love of adaptive math technology moonlighting as a DJ in Chicago as well as spoiling his favorite and only niece Emma (16 months old).
Becky Studtmann is a Learning Technology Consultant with McGraw-Hill Education.

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

Lessons Learned from the Re-Thinking Pre-College Math (RPM) Project (Alpine Room)

Bill Moore, State Board of Community and Technical Colleges, bmoore@sbctc.edu

This session will present a brief overview of the recently-concluded Re-Thinking Pre-College Math project and offer some reflections on the findings and lessons learned based on in-depth discussions with faculty from the 7 colleges involved in the work. Session participants will have an opportunity to respond to and discuss those findings and explore the implications for their own colleges as well as next steps for the ongoing work in re-thinking developmental math.

Speaker Bio:
Bill Moore has been the policy associate for assessment, teaching and learning for the State Board for Community & Technical Colleges since 1990. He 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 education background is in psychology, higher education policy, and outcomes assessment.

Imagine the Possibilities – Using Improvement Science to Improve Student Success (Alderwood Room)

Peg Balachowski, Everett Community College, mbalachowski@everettcc.edu

The concept of improvement science recently emerged to provide a framework for research focused on healthcare improvement. The primary goal is to determine which improvement strategies work as health care professionals strive to assure effective and safe patient care. How does this relate to student success? In this session participants will learn how this framework is transforming educational research and development, more closely joining researchers and practitioners to improve teaching and learning. Participants will learn how to use three of the primary tools from improvement science – Driver Diagrams, PDSA Cycles, and Run Charts - to increase productive persistence in their students.

Speaker Bio:
Peg Balachowski has been teaching math at Everett Community College for 10 years. Her research interests include improving student success in math by focusing on student attribute activities in the classroom, and improving the success of new faculty with professional development activities designed to build community across disciplines.

I-Best / Math 900: Bucketfuls of Success (Cedar Room)

Hector Valenzuela, Lake Washington Institute of Technology, Hector.valenzuela@lwtech.edu

Washington Institute of Technology we piloted a precollege math 'bucket' program, Math 900. Developed in conjunction with our I-BEST Math program, Math 900 moves students quickly through the precollege math sequence, allowing completion of up to four pre-college math levels in one quarter. Math 900 embraces technology and values integrity. It involves active learning with applications, practices multiple methods of assessment, and is well on its way to becoming a one-class preparation for college math. Our I-BEST Math program incorporates integrated learning and contextualization. We would like to share our journey in the development of Math 900 and our I-BEST Math programs at Lake Washington Institute of Technology. These programs are rigorous, humane, therapeutic, and they work.

Speaker Bio:
Hector Valenzuela is a Math Faculty member at Lake Washington Institute of Technology. His expertise and specialty is in integrated learning, contextualization and accelerated math learning models. He has a background in finance, business, computer science and education, and he is working on his PhD in Education and Math Curriculum and Instruction.

Peak Performance - Training Students To Do Well in Math (Dogwood)

Kathy Starr, Yakima Valley Community College, Cklstarr@yvcc.edu, with Doug Lewis

Help your students up their game in math by viewing math as a sport. This seminar will include "game plans" for test preparation, test-taking, evaluating types of test-errors, increasing positive self-talk, and the power of protein. The Presenters have used these strategies successfully at Yakima Valley Community College and want to help other instructors to easily incorporate these study skills and strategies into the classroom to keep student's heads in the game.

Speaker Bios:
Kathy Starr is a math study skills instructor at Yakima Valley Community College and has team taught a variety of math classes with Doug Lewis, a long time faculty member of the college, for the past five years.

Conference Sessions:

FRIDAY MORNING	Alpine	Alderwood	Cedar	Dogwood
8:30 - 9:30 AM	**Implications of the Smarter Balanced Assessment for College Readiness and Math Placement** Bill Moore, State Board of Community and Technical Colleges with Lisa Reynolds.	**Intro to WAMAP** David Lippman, Pierce College	**Creating a Math Tutoring Lab – Discussion of Your Best Practices** Tyler Wallace, Big Bend Community College	**Passion Transforms Lives** Dusty Wilson, Highline Community College, with Johnny Cheng, Harry Kim, Matthew Meerdink, and Alex Tereshchenkov.
9:45 - 10:45 AM	**Content in Context: Teaching Students with Real-World Applications** Stefan Baratto, Clackamas CC	**(9:45-10:10)** **Modeling Using Video** David Lippman, Pierce College **(10:15-10:45)** **A Pivotal Study in Learning Linear Algebra** Spencer Payton, with Dr. Kimberly Vincent Washington State University	**The WAMAP Emporium - Increasing Student Success and Motivation in Precollege Math** Tyler Wallace, Big Bend Community College	**Fitting Exponentials to Data** Yves Nievergelt, Eastern Washington University
11:00 - Noon	**Introduction to the New Mathways Project** Amy Getz Charles A. Dana Center, University of Texas at Austin	**Using WAMAP to Facilitate a Mastery Approach to Developmental Math** Matt Lewis, Yakima Valley Community College, with Ben Mayo and Mike Jenck	**Supporting and Engaging Adjunct Faculty** Helen Burn, Highline Community College	**(11:00 – 11:45)** **Zombie Rave – Simulating and Modeling an Outbreak** Ed Miller, Lewis-Clark State College

FRIDAY AFTERNOON	Alpine	Alderwood	Cedar	Dogwood
1:30 - 2:30 PM	**Who Cares ... About Math, That Is!** Jerry Johnson, Western Washington University	**Revolutionizing Your Redesign** Anthony Belen, Hawkes Learning Systems	**Curve Fitting in Algebra = Great Preparation in Statistics** Jay Lehman, College of San Mateo	**McGraw-Hill Adaptive Learning** Andy Set and Rebecca Studtmann, McGraw-Hill Higher Education
2:45 - 3:45 PM	**Lessons Learned from the Re-Thinking Pre-College Math (RPM) Project** Bill Moore, State Board of Community & Technical Colleges.	**Imagine the Possibilities – Using Improvement Science to Improve Student Success** Peg Balachowski Everett Community College	**I-Best / Math 900: Bucketfuls of Success** Hector Valenzuela, Lake Washington Institute of Technology	**Peak Performance - Training Students To Do Well in Math** Kathy Starr, Yakima Valley Community College with Doug Lewis
SATURDAY MORNING				
8:45 - 9:45 AM	**Aligning Instruction with the Standards for Mathematical Practice** Ruth Parker, Mathematics Education Collaborative (MEC)	**Open Course Library Project: Free Texts for Beginning Algebra through Calculus** Melonie Rasmussen, Pierce College Fort Steilacoom, with David Lippman, Dale Hoffman, Tyler Wallace, and Shana Calaway.	**Why is the title Precalculus when we don't preview calculus concepts?** Alice Kaseberg, Lane CC Eugene (retired)	**Curriculum Design and Reflective Practices Applied to Mathematics Education** Hector Valenzuela, Lake Washington Institute of Technology
10:15 - 11:15 AM	**Learning by doing in developmental math: a work in progress** Matteo Tamburini, Northwest Indian College with Cassandra Cook, Jamielee Kamkoff, Zach Bunton	**Pearson- Always Innovating** Pearson Team	**(10:15 – 10:40) Effective Self-Paced Pre-College Classes** Carlea McAvoy, South Puget Sound Community College **(10:45-11:15) Free Placement Test Review** Melonie Rasmussen, Pierce College, Fort Steilacoom	**Solving AMATYC Puzzles** Terry Meerdink, Highline Community College with Harry Kim

Session VI Abstracts: Saturday, 8:45 – 9:45

Aligning Instruction with the Standards for Mathematical Practice (Alpine Room)

Ruth Parker, Mathematics Education Collaborative (MEC), ruthp@mec-math.org

The Standards for Mathematical Practice of the Common Core State Standards are central to calls for deep-level changes in the teaching and learning of mathematics across the K-20 continuum. This interactive session will address practical ways to bring the Standards to the foreground of all mathematics instruction. Participants will be engaged in doing mathematics in ways that illuminate the Standards for Mathematical Practice.

Speaker Bio:
Ruth Parker, PhD, is the developer of a series of acclaimed mathematics content courses taught to grades K-20 teachers. A former classroom teacher, Parker has worked with 2-year college faculty from throughout Washington as they have redesigned developmental education courses to align with the Standards for Mathematical Practice of the College Readiness Standards. As CEO of the Mathematics Education Collaborative, Parker has worked with thousands of parents, K-20 educators, and business and community leaders throughout the country.

Open Course Library Project: Free Texts for Beginning Algebra through Calculus (Alderwood Room)

Melonie Rasmussen, Pierce College Fort Steilacoom, mrasmuss@pierce.ctc.edu
with David Lippman, Dale Hoffman, Tyler Wallace, and Shana Calaway.

As a part of the Open Course Library Project free and modifiable digital materials were developed for elementary and intermediate algebra, math in society (MA 107), precalculus/trig (MA 141/142), calculus (MA 151-153), and business calculus (MA 148). These courses include text books, homework, quizzes, exams and more. They have been peer reviewed, classroom tested, and several have been officially adopted by faculty around the country.

Speaker Bios:
Melonie Rasmussen & David Lippman teach at Pierce College Fort Steilacoom and developed precalculus (MA 141 / MA 142). David Lippman also developed Math in Society (MA 107). Dale Hoffman teaches at Bellevue College and developed the calculus sequence (MA 151, 152 & 153). Tyler Wallace teaches at Big Bend Community College and developed elementary and intermediate algebra. Shana Calaway teaches at Shoreline and developed Business Calculus (MA 148)

Why is the title Precalculus when we don't preview calculus concepts? (Cedar Room)

Alice Kaseberg, Lane CC, Eugene (retired), kaseberg_alice@msn.com

Paired or grouped participants explore settings and extensions that lead to and motivate calculus concepts: limits, slopes of curves, related rates, summations, and area under curves. Examples include rational equations, polynomial equations, sequences, and, if time, one 3D arc length requiring the trigonometric tangent definition. A graphing calculator will be helpful.

Speaker Bio:
During 30 years of classroom teaching Alice Kaseberg took advantage of every opportunity to highlight examples related to calculus. She wanted her algebra students to not be afraid of calculus but instead anticipate calculus as learning the theory behind slope and area. Alice has brought on Spokane Falls CC instructors Greg Cripe and Pete Wildman as coauthors of her Introductory and Intermediate Algebra books.

Curriculum Design and Reflective Practices Applied to Mathematics Education (Dogwood Room)

Hector Valenzuela, Lake Washington Institute of Technology, hector.valenzuela@lwtech.edu

The field of curriculum and reflective practices provides math educators with a significant amount of ideas that can be applied to redesigns and teacher development. Please join me for a conversation and forum about education, curriculum and reflective practices as applied to teaching mathematics at the college level.

Speaker Bio:
Hector Valenzuela is a Math Faculty member at Lake Washington Institute of Technology. His expertise and specialty is in integrated learning, contextualization and accelerated math learning models. He has a background in finance, business, computer science and education, and he is working on his PhD in Education and Math Curriculum and Instruction.

Session VII Abstracts: Saturday, 10:15 – 11:15

Learning by doing in developmental math: a work in progress (Alpine Room)

Matteo Tamburini, Northwest Indian College, mtamburini@nwic.edu
with Cassandra Cook, Jamielee Kamkoff, Zach Bunton

"Why can't you just teach the steps?", students ask us frequently. Often teachers and administrators are similarly anxious for a quick recipe to "fix" the problems surrounding developmental math.
Spurred by the Rethinking Precollege Math grant, and with support from the Mathematics Education Collaborative, we have been engaged in an ongoing, collaborative, exploratory process of making fundamental changes to our developmental algebra sequence. We will present our syllabi, share a snippet of what we do in our classroom, discuss our new grading policy, and share results of surveys that we have been conducting with students. Though we do not claim to have "the answers", we are excited about our approach and are eager to engage with a broad audience to see if we can move forward collectively.

Speaker Bio:
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.

Pearson- Always Innovating (Alderwood Room)

Pearson Team, Contact: Deborah Harden, Higher Education Representative, Arts & Sciences, Deborah.Harden@Pearson.com

Come see what's new with Pearson authors, technology, canvas integration, alternate pathways, and the future of higher education publishing and partnerships.

Speaker Bio:
No biography provided. Deborah Harden is a representative of Pearson.

(Session VII Abstracts: Saturday, 10:15 – 11:15 AM continued)

Effective Self-Paced Pre-College Classes (Cedar Room, 10:15 – 10:40)

Carlea McAvoy, South Puget Sound Community College, cmcavoy@spscc.ctc.edu

How do you let students do most of their work on a computer, give them the opportunity to complete more than one class in a quarter, only meet once a week, and still provide an effective learning environment? We have offered this class for 2 years now and have been perfecting this as we go. Join us for a discussion of what we have learned and maybe offer some solutions of your own.

Speaker Bio:
"Carlea McAvoy started teaching in 1988, first working with juvenile delinquents, then middle school students, and finally community college students. She moved to Olympia, Washington, in 1992 and for the next six years taught for Northwest Indian College, South Puget Sound Community College, Medicine Creek Tribal College and Pierce Community College. She got a full time position at South Puget Sound Community College in 1998 and has been teaching mostly pre-college classes since then.

Free Placement Test Review (Cedar Room, 10:45-11:15)

Melonie Rasmussen, Pierce College Fort Steilacoom, mrasmuss@pierce.ctc.edu

A practice area to help students review for initial math placement tests was created through funding from the "Rethinking precollege math" grant. Placement review problems spanning PreAlgebra, Algebra and College Algebra, in an online format, offer a pretest in each area, practice problems, and video lessons as well as a post test. This is a free practice area open to the public.

Speaker Bio:
Melonie Rasmussen teaches math at Pierce College Fort Steilacoom.

Solving AMATYC Puzzles (Dogwood Room)

Terry Meerdink, Highline Community College with Harry Kim, tmeerdink@highline.ed

We will explore strategies for solving interesting math and logic puzzles.

Speaker Bios:
Harry is Highline's current high scoring AMATYC student.
Terry runs the contest at Highline and enjoys solving puzzles.

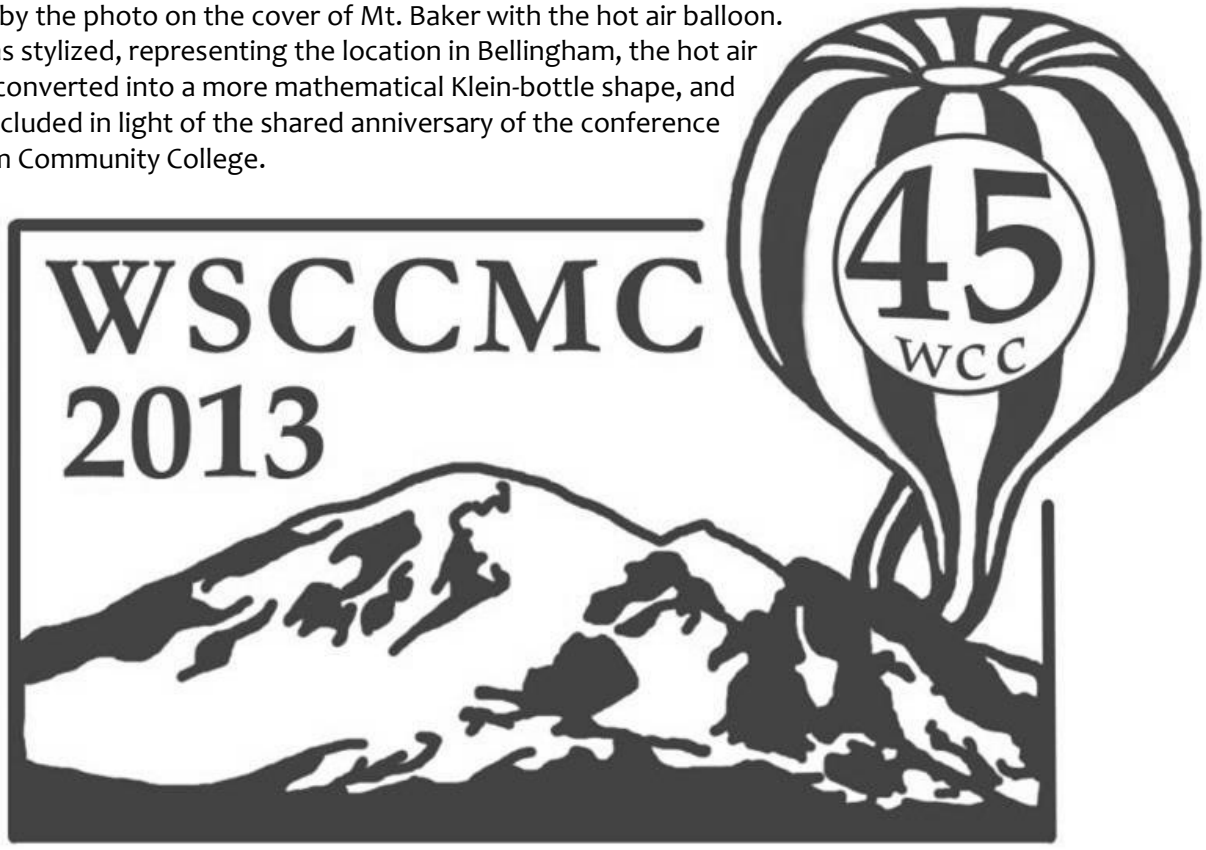
WAMATYC Conference History

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:
Whatcom Community College is celebrating its 45th anniversary this year, and the Washington State Community College Math Conference is celebrating its 45th anniversary as well. The logo was inspired by the photo on the cover of Mt. Baker with the hot air balloon. Mt. Baker was stylized, representing the location in Bellingham, the hot air balloon was converted into a more mathematical Klein-bottle shape, and the 45 was included in light of the shared anniversary of the conference and Whatcom Community College.



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Acknowledgments

Special thanks:

Ed Morris and Dick Termes, for keynote talks and images used in their biographies.

Shandeen Germanis and Lynne Swan (with WCC Community Education), for their help with registration.

Dr. Lee Singleton, for artwork used in the booklet and website. Photo on front cover is "Hot Air Balloon over Mt. Baker" and photo on the back is "Sunset over Bellingham Bay."

Key Organizers:
Dr. Will Webber (Conference Chair, Facilities, Logos),
Johnny Hu (Conference Website, Registration),
Doug Mooers (Conference Speakers, Equipment),
Dr. Lee Singleton (Program Booklet, Logos)
Leslie Hastings (Registration, Housing)
Jessica Conner (Exhibits Coordinator)
Jody DeWilde (Goodie bags and Door Prizes)

Other Members of the WCC math department for various organizational details (alphabetically):
Wendi Davis, Nathan Hall, Crystal Holtzheimer, Dr. Jeanette Stephens, Russell Stevenson, Heidi Ypma

Math Contest problems were adapted from *selected articles in the book "All the Math that's Fit to Print: Articles from the Guardian" by Keith Devlin,* and suggestions from Ed Harri and Dr. Lee Singleton.

Socials Sponsored by:

School Employees Credit Union of Washington (Thursday)
Pearson (Friday)

Goodie Bag Contributions:

AMATYC
Hawkes Learning Systems
McGraw-Hill
Pearson
Whatcom Community College Foundation

Door Prizes:

Jody DeWilde
McGraw-Hill
Starbucks
Woods Coffee

Notes

Conference Contest

Answers to the conference contest must be submitted on the answer sheet provided in the conference bag. (Rules are included on the answer sheet.) Completed answer sheets must be handed in to the registration desk by 6:00 PM Friday (before dinner). Winners will be announced at the Saturday morning breakfast.

1. What is the exact value of i^i?

2. What is the smallest whole number M so that when you move its first digit to the end of the number, you end up with a number exactly 50% larger than M?

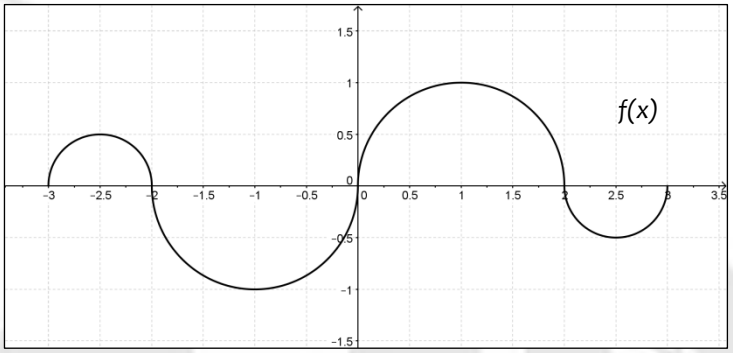
3. The following describes a number. What number is it? It is not divisible by the square of any prime, and for any prime p, p divides the number if, and only if, p-1 divides the number.

4. Assign the digits 1-9 to the letters below so that the sum is correct. Each common letter must use the same digit, and different alphabet letters should be assigned different numbers.

```
  PREC
 SINES
+SINES
------
DIFFER
```

5. What is the exact value of $\cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{5+\cfrac{1}{7+\ldots}}}}$

6. The graph of f (right) consists of four semicircles. If $g(x)=\int_0^x f(t)dt$, where is g(x) non-negative?
   a) $[-3,3]$
   b) $[-3,-2]\cup[0,2]$ only
   c) $[0,3]$ only
   d) $[0,2]$ only
   e) $[-3,-2]\cup[0,3]$ only

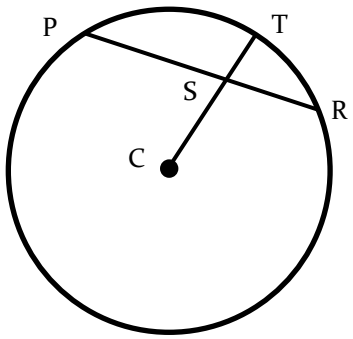


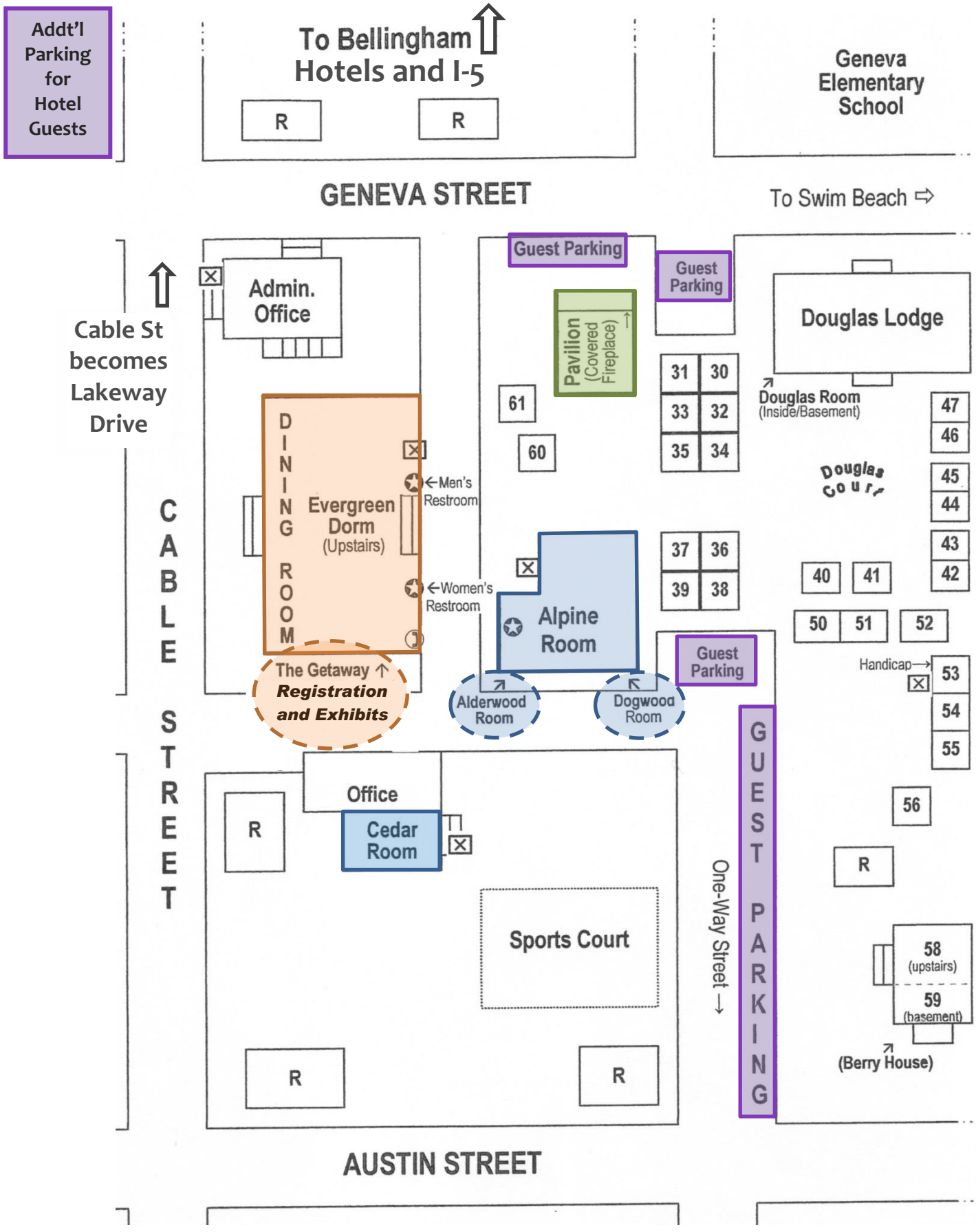
7. Two points are randomly chosen on the unit circle $x^2+y^2=1$. What is the probability that the chord joining the two points will be length 1 or more?

8. a) A pole is marked in two random places and cut at each mark. What is the probability that the three pieces will form a triangle?

   b) Another pole is cut into two pieces. One piece is picked at random and cut in a random place. What is the probability that the three pieces will form a triangle?

9. Let **C** be the center of a circle with chord **PR** and radius **CT** that intersects chord **PR** at point **S**. (see figure) If **PS** = 5, **SR** = 3, and **ST**=1, find the radius of the circle.





Session Rooms
Note: Alderwood and Dogwood are downstairs entrances.

Dining Room, Registration, and Exhibits
Note: Registration and Exhibits are downstairs entrances.

WSCCMC 2013

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45 YEARS
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