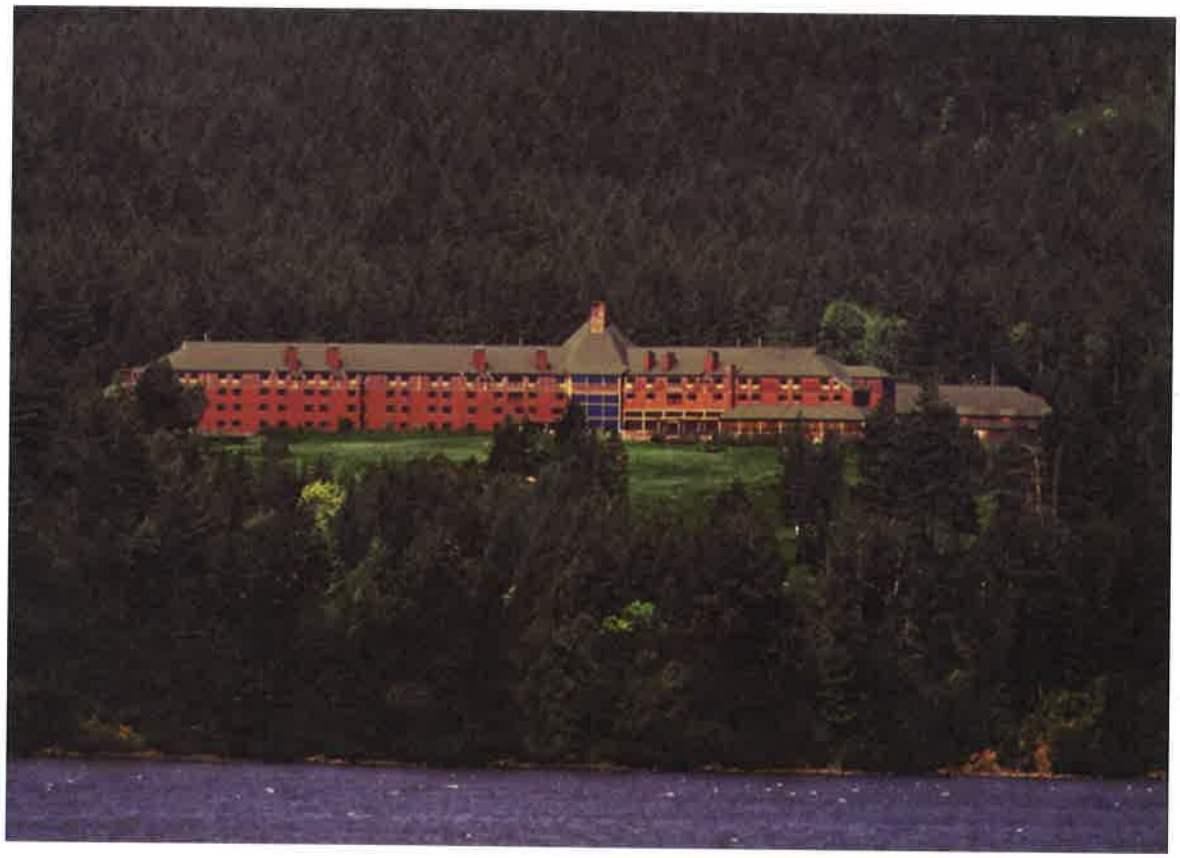
2011 NORTHWEST TWO-YEAR COLLEGE

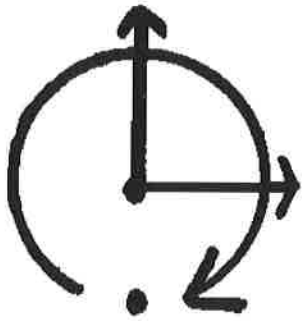
MATHEMATICS CONFERENCE



April 28 – 30, 2011

4TH QUINQUENNIAL
JOINT WASHINGTON-OREGON CONFERENCE

SKAMANIA LODGE
STEVENSON, WASHINGTON



PROGRAM HIGHLIGHTS

THURSDAY	EVENT
7:00 – 8:00 PM	OPENING SPEAKER: LEW LEFTON
8:00 – 11:00 PM	SOCIAL HOSTED BY: PEARSON EDUCATION CENGAGE LEARNING (HOOD RIVER SUITE #421)

FRIDAY	EVENT
7:15 – 8:45 AM	BREAKFAST BUFFET
11:30 – 1:00 PM	LUNCH
5:45 – 7:00 PM	DINNER BUFFET
7:00 – 8:00 PM	KEYNOTE SPEAKER: JAMES STEWART
8:00 – 11:00 PM	SOCIAL HOSTED BY: MCGRAW–HILL WH FREEMAN (HOOD RIVER SUITE #421)

Saturday	EVENT
7:15 – 8:45 AM	BREAKFAST BUFFET

CONFERENCE SCHEDULE

DATE	TIME	EVENT
THURSDAY, APRIL 28TH	5:30 PM – 7:00 PM	REGISTRATION
	7:00 – 8:00 PM	**OPENING SPEAKER: LEW LEFTON**
	8:00 – 8:30 PM	REGISTRATION
	8:00 PM – 11:00 PM	HOSTED SOCIAL
FRIDAY, APRIL 29TH	7:15 AM – 8: 45 AM	BREAKFAST BUFFET
	8:00 AM – 10:30 AM	REGISTRATION
	8:30 AM – 11:45 AM	EXHIBITS
	9:00 AM – 10:00 AM	**SESSION I**
	10:00 AM – 10:30 AM	REFRESHMENT BREAK
	10:30 AM – 11:30 AM	**SESSION II**
	11:30 AM – 1:00 PM	LUNCH
	1:00 PM – 4:30 PM	EXHIBITS
	1:15 PM – 2:15 PM	**SESSION III**
	2:15 PM – 2:45 PM	BREAK
	2:45 PM – 3:45 PM	**SESSION IV**
	5:30 PM – 7:00 PM	DINNER BUFFET
	7:00 PM – 8:00 PM	**KEYNOTE SPEAKER: JAMES STEWART**
	8:00 PM – 11:00 PM	HOSTED SOCIAL
SATURDAY, APRIL 30TH	7:15 AM – 8:45 AM	BREAKFAST BUFFET
	8:00 AM – 8:45 AM	INDIVIDUAL ANNUAL BUSINESS MEETING: ORMATYC, WAMATYC
	8:45 AM – 11:00 AM	EXHIBITS
	9:00 AM – 10:00 AM	**SESSION V**
	10:00 AM – 10:30 AM	REFRESHMENT BREAK
	10:30 AM – 11:30 AM	**SESSION VI**
	11:30 AM	CHECKOUT AND DEPARTURE

2011 Northwest Two-Year College Mathematics Conference

Invited Speakers

Thursday Evening Kickoff Speaker - Lew Lefton

Title: Infinity Bottles of Beer on the Wall - or What's so Funny about Mathematics

Lew Lefton earned his Ph.D. in Mathematics from the University of Illinois in 1987. After visiting for two years at the University of California at Riverside, he took a position in the mathematics department at the University of New Orleans. In 1999, he moved to Georgia Tech where is currently the Information Technology Director for the School of Mathematics and the College of Sciences. Lefton's research interests are in scientific computing and applied mathematics. He teaches and has authored many journal articles, and he co-authored the textbook "Introduction to Parallel and Vector Scientific Computing". At first glance, he seems like your friendly neighborhood geek, quietly doing stuff that most people don't really understand.

But Lefton is no ordinary geek. He is also an accomplished and experienced comedian who has done stand up and improv comedy for over 25 years. Starting from his days running around to open mics as a graduate student, Lefton's comedy career has taken him around the country where he has performed at dozens of clubs (the Improv, the Laugh Factory, Comedy Gumbo, Zanies, ...), colleges (University of Illinois, University of California Riverside, Loyola University, Harvey Mudd College, ...) and concerts (Three Dog Night, Bobcat Goldthwait, ...).

Lefton is a natural teacher, and his broad experiences, sharp wit, and unique perspectives make both his classes and performances truly engaging and effective. He really likes to keep both the right and left sides of his brain working. Wherever he goes, Lefton has always been an active supporter and mentor of fledgling comedy talent. In the 1980's, he formed a regular room called "The Comedy Stop" at the Alley Cat Bar in Champaign-Urbana Illinois which gave valuable stage time to up and coming talent. Later, while living in New Orleans, he was a driving force behind "Comedy Gumbo" and the long running Improv group "Brown!" Today, in his hometown of Decatur, GA, Lefton still performs comedy shows, and also directs a youth Improv comedy troupe called D.U.C.K.

Lefton is well known as either the funniest mathematician or the most mathematical comedian in America. Perhaps his unique talents are best summed up by his business card which reads:

Lew Lefton

Mathematician/Comedian
"He's funny and he can prove it"

Friday Evening Banquet Speaker – James Stewart

Title: How to Enliven the Mathematics Classroom

Dr. Stewart will offer suggestions for engaging students' attention in the mathematics classroom in such a way as to increase their understanding and make them more active learners. The methods include physical demonstrations, digressions on fascinating mathematical facts, historical anecdotes, computer animations, contests, and musical performances.

Conference Sessions

Session / Room	I Friday 9:00 – 10:00	II Friday 10:30 – 11:30
Adams	Reflection Friday Edgar Jasso	Visual Methods: Understanding Area and the Pythagorean Theorem Barry Bergman
Cascade A	Using Elluminate to Teach Mathematics Face-to-Face and via Distance Education Ron Wallace	Open Course Library Project David Lippman
Cascade B	Mathematics Goes To Hollywood John Hornsby	Transform Antiquated Word Problems Into Lively Authentic Applications Jay Lehmann
Hood River Suite	Revamping the Precalculus Course James Stewart	Presentation will cover a basic introduction of a max algebra semi-ring Tim Melvin
Jefferson	Math is NOT a Four Letter word Paula Girourard	Revisualizing the Integral Lee Singleton
Rainier	Change 101 Helen Burn	"Focus on the Distribution, not the Syntax" Nathan Austin
St. Helens	The use and results of using technology in a lec/lab combination for developmental math Alina Coronel Commercial	"The mathematics of energy used in the USA and the world. Where are we headed?" Jim Ballard
Summit 2	A Tale of Two Colleges: Some ways CC faculty can support STEM students that reach beyond the classroom Mark Yannotta	Preparing your Students for Calculus Gibson Commercial
Summit 3	What should MTH 243 and MTH 244 BE? Sean Rule	A Tale of Two Redesigns John Squires
Summit 9	The Kepler Problem in Orbital Mechanics: Position and Speed as Functions of Time Jeffrey Hayen	Redesigning Developmental Math using the College Readiness Standards Pete Wildman
Washington	Create Your Own Animations for College Algebra and Beyond Nolan Mitchell	The Bells and Whistles of Trigonometry. Ross Folberg

Session / Room	III Friday 1:15 – 2:15	IV Friday 2:45 – 3:45
Adams	Making Math Green and Engaging! Mark Clark	Beautiful Practical Problems Doug Gardner
Cascade A	Math and Cosmic Consciousness Farshad Barman	The Value of Absolute Value Ed Miller
Cascade B	Using Geogebra Everyday John Spence	GeoGebra Primer, from linear equations to Taylor series Jeff Pettit
Hood River Suite	Calculus 1 Nirvana, Enlightenment William Weber	Calculus 2 Nirvana (escape from the early bonds through enlightenment....) William Weber
Jefferson	Developmental Math Course Redesign Discussion Deann Leoni	One week Primer Classes for Developmental Education Students Bill Jennings
Rainier	2 and Thru Statistics: What is Statway and who is doing it? David Straayer	Nspiring Times Darryl Merchand Commercial
St. Helens	Enhanced WebAssign Training: New content, new tools. Eric Ziegler Commercial	"Motivate Your Students with Mastery Learning" Anthony Belen Commercial
Summit 2	The Calculus Concept Inventory: What are your students really learning? Scott Peterson	Janus and Epimetheus: the orbital dance around Saturn. Alexander Malinsky
Summit 3	What's in a Name?: What Does/Should 'Intermediate Algebra' Mean? William Moore	A New Generation Interactive eBook for Calculus Eric Schulz
Summit 9	Raising the Bar in Developmental Math - Asking Different Questions to get Different Results Carren Walker	Embedding Students Success Skills in Precollege Mathematics Helen Burn
Washington	"On Reliability" Charles Wikman	Redesigning Math 60 Charlie Naffziger

Session / Room	V Saturday 9:00 – 10:00	VI Saturday 10:30 – 11:30
Adams	"Not Your Mother's Flashcards" Jennifer Ward	Polya, Problem-Solving, and Developmental Mathematics Laura Bracken
Cascade A	Islam and Mathematics: A Story of Cooperation and Peace Pat McKeague	Calc Potpourri Lyle Cochran
Cascade B	MAPLE Essentials for College Teachers John Mitchell	SAGE: a free open-source mathematics software system. Edgar Jasso
Hood River Suite	Getting the most out of MyMathLab Bart Stewart & Sara Swangard Commercial	Doing Math Homework Online Roland Cheyney Commercial
Jefferson	Integrating Self-Regulated Learning into Math Courses Lawrence Morales	Faculty inquiry Rachel Kingsley
Rainier	Basic Mathematics - Incorporating Study Skills in a Basic Mathematics Course Kathy Chelminiak	Data-Based Decision Making for the Lazy Educator Christopher Quarles
St. Helens	An Introduction to the ClassPad Diane Whitfield Commercial	How to Engage Students in Math John Pyktel Commercial
Summit 2	Stereotype Threats' Influence on Elementary Pre-service Teachers' Attitude towards Mathematics Katherine Valenzuela	Linking Study Skills with Algebra 1 Lawrence Morales
Summit 3	Tracing Kepler's Path Using Mathematica Dusty Wilson	Consulting the Divine: The (Ethno) mathematics of Divination John Kellermeier
Summit 9	Riordan Arrays Jennifer Harras	Fitting curves to data from biology, chemistry, and elsewhere Yves Nievergelt
Washington	Fraction and Decimal Games Burton & Beaver	Simplify: Not as easy as it sounds Michael Price

SESSION ABSTRACTS

Abstracts (in alphabetical order by presenter's last name) as given by presenters

Nathan Austin
Clark College
Focus on the Distribution, not the Syntax
Some of the challenges of using calculators to teach Statistics include convoluted menus and obscure syntax. Participants will look at the CASIO ClassPad emulator as a presentation tool to make statistics more accessible.

James Ballard
Oregon Institute of Technology
"The Mathematics of energy used in the USA and the World. Where are we headed?"
How do we use energy in the USA, Europe, and other parts of the world? Is our energy use sustainable, why or why not? These topics, and others, will be discussed. The presenter expects input and questions from the audience.

Farshad Barman
Portland Community College
Math and Cosmic Consciousness
The presenter will summarize several cosmological discoveries from the time of the Greeks to modern times, and will discuss how mathematics has helped us discover and understand the laws of the universe including astronomy, quantum mechanics, and relativity.

Anthony Belen
"Motivate Your Students with Mastery Learning"
Commercial

Barry Bergman
Clackamas Community College (retired)
Visual Methods: Understanding Area and the Pythagorean Theorem
Developmental students often have difficulty with symbolic approaches. Visual methods can improve understanding of area, square root, and the Pythagorean Theorem. Participants will experience a series of worksheets used in small groups. Intended for instructors of Beginning Algebra and below.

Laura Bracken
Lewis-Clark State College
Polya, Problem-Solving, and Developmental Mathematics
Memorization of formulas, steps, and mneumonics is the learning strategy of choice for some developmental math students. However, overdependence on memorization can lead to "going blank" and failure to progress. In How to Solve It (and other publications), George Polya outlines a scaffold for helping students thoughtfully approach problem solving. This session will include examples of how this scaffold can be used in solving applications and when teaching other objectives at the developmental mathematics level.

Helen Burn
Highline Community College
Change 101
Calls for change in the mathematics curriculum abound, but how to effect change is not always clear to faculty. This session is for faculty members interested in facilitating change within their departments. The presentation focuses on the role of departmental culture to change strategies and predominate theories of curriculum change.

Helen Burn
Highline Community College
Embedding Students Success Skills in Precollege Mathematics
This discussion centers on how to embed "student success skills" (e.g., college knowledge, student attributes, metacognitive skills) systematically within precollege mathematics courses. A springboard for discussion is a set of learning modules developed by a team of Washington faculty in conjunction with the Academic Youth Development [AYD] program

Lauri Burton & Cheryl Beaver
Western Oregon University
Fraction and Decimal Games
Participants play dynamic fraction and decimal games designed for Mathematics for Elementary Teachers courses, but also applicable in many other courses. Games focus on fraction or decimal equality, inequality and the four basic operations. Games are reproducible for use in your own classroom.

Kathy Chelminiak
Clackamas Community College
Basic Mathematics - Incorporating Study Skills in a Basic Mathematics Course
Many of the road blocks that face Developmental Math students deal with study skills. They need to learn how to study, manage their time, take a test, and reduce math anxiety. This discussion group focuses on sharing ideas and techniques used to develop study skills for Developmental Math students.

Roland Cheyney
Doing Math Homework Online
Commercial

Mark Clark
Palomar College
Making Math Green and Engaging!
How aware are your students of green technologies? This talk will focus on applications related to green technologies and ways we can use common everyday technologies to engage our students in the classroom.

Lyle Cochran
Whitworth University
Calc Potpourri
A variety of interesting problems from calculus will be presented in this talk. Some of the examples illustrate the applicability of calculus while other problems lead to some beautiful and surprising results. Examples to be discussed include Bezier curves and graphics design; an explanation of how calculators evaluate transcendental functions; estimating the amount of water flowing through the Spokane river each month; a family of integrals that can be evaluated using neither limits nor the fundamental theorem of calculus; a telescoping series with a beautiful sum and a closed form solution to an improper integral with a beautiful pattern of binomial coefficients. Some of the examples will be illustrated using interactive animations and all of the examples presented are accessible to students taking calculus.

Alina Coronel
The use and results of using technology in a lec/lab combination for developmental math
Commercial

Ross Folberg
Portland Community College
The Bells and Whistles of Trigonometry
This presentation, normally given to students, demonstrates a variety of interesting trigonometry applications from everyday life that instructors can incorporate into their own classrooms. Applications include x-ray vision, seeing heat, making boats go faster, noise-canceling headphones, GPS, visualizing beats and chords in music, traffic flows, and more. Trig is everywhere!

Doug Gardner
Rogue Community College
Beautiful Practical Problems
The National Science Foundation funded RCC to write a basic algebra curriculum suitable for CTE (career technical education) students. The result: 220+ unique and engaging problems at no cost to motivate your students. Main topics: construction, electronics, manufacturing and automotive formulas; useful trigonometry, surface area and volume applications.

Lee Gibson
Preparing your Students for Calculus
Commercial

Paula Girourard
Bellingham Technical College
Math is NOT a Four Letter word
Discover why students at Bellingham Technical College are saying Math is NOT a 4 letter word anymore. BAS Math is now a high structure and high challenge class where students practice skills on Carnegie Cognitive Tutor software and apply their skills in collaborative groups using relevant content. You will see evidence that this new design is working to increase skill levels and change students' attitudes and opinions about what they are able to accomplish with math. Join us and experience a challenging lesson that is sure to engage your students.

Jennifer Harras
Washington State University
Riordan Arrays
As a third year graduate student at Washington State University, I have been exploring Riordan Arrays. Riordan Arrays are continuous, lower triangular matrices which are defined by the generating functions of their columns. I will introduce a new technique for examining these Riordan Arrays by describing a new, yet correlated, matrix and discuss the results of their products.

Jeffrey Hayen
Southwestern Oregon Community College
The Kepler Problem in Orbital Mechanics: Position and Speed as Functions of Time
After nearly a decade of effort on the analysis of astronomical data on planetary motions, Johannes Kepler conjectured that heavenly bodies in periodic orbits travel along elliptical paths. Later, based upon his laws of motion and his theory of gravity, Isaac Newton established this conclusion as fact. However, another century would elapse before the Kepler Problem would be solved. Remarkably, the solution of this problem is largely based upon topics and methods covered in lower-division courses in college algebra, trigonometry, calculus, and differential equations.

John Hornsby
University of New Orleans
Mathematics Goes To Hollywood
This session will present a collection of scenes from movies and television that provide "mathematics education moments." Some are good, some are bad, and some are really ugly. But they all provide a means of engaging students, who can then analyze them to determine if the mathematics is correct. Many of the scenes to be presented will be new to this conference, so if you've been to this before, come on back and enjoy the show again.

Edgar Jasso
North Seattle Community College
SAGE: a free open-source mathematics software system.
SAGE combines the power of various software packages, it is free and can be accessed from any computer with an internet connection. Its mission is to "create a viable free open source alternative to Magma, Maple, Mathematica and Matlab". This talk will be an introduction on how SAGE can be used by Math instructors to enhance their classes.

Edgar Jasso
North Seattle Community College
Reflection Friday
As part of our Rethinking Precollege Math grant, NSCC started "Reflection Friday" where a group of math faculty meets every other Friday afternoon to discuss issues involving assessment, teaching, curriculum, etc. Reflection Friday is very well attended and has become a platform from which to redefine the way our math department works together. A short presentation will be given followed by opportunities for discussion and questions.

Bill Jennings
Klamath Community College
One week Primer Classes for Developmental Education Students
For the past four years Klamath Community College has offered a four day workshop during the week prior to Fall term. The purpose of these workshops is to encourage mathematical thinking prior to the first day of class in September. This presentation will outline topics we cover in our four day workshop along with techniques we have learned to encourage enrollment and participation.

John Kellermeier
Tacoma Community College
Consulting the Divine: The (Ethno) mathematics of Divination
Divination has been practiced by practically every human culture for at least three thousand years This presentation will explore four forms of divination paying particular attention to the ways in which logic and mathematical thinking are inherent in these methods.

Rachel Kingsley
Everett community college
Faculty inquiry
On our coffee break one day we chatted some common mistakes that students often make in basic math classes. The chat developed into a longer discussion and we decided to include the exact same problem on both of our midterm exams, would solve a problem with one of the common mistakes students are known to make and ask the students to catch the mistake and fix it. The exercise gave us very interesting results and we learned a lot as we compared the data. We decided to continue this exercise on each of our next exams. This faculty inquiry approach has benefited our students learning as well. We would like to share the story of how this faculty inquiry started with a simple discussion about common student mistakes in a basic math class, the things we learned and how this changed our teaching. We will provide examples and data for discussion.

Jay Lehmann
College of San Mateo
Transform Antiquated Word Problems Into Lively Authentic Applications
Antiquated, contrived word problems such as value problems and interest problems can be transformed into authentic applications by using functions rather than equations in one variable to analyze a multitude of scenarios within one situation. Curve fitting applications will also be discussed. The presenter will sing a math love song.

Deann Leoni
Edmonds Community College
Developmental Math Course Redesign Discussion
This discussion group invites everyone who is currently involved with, or is interested in, redesigning their pre-college-level mathematics courses. The facilitators will share information about a project that just started at Edmonds Community College to redesign Beginning and Intermediate Algebra. Please come share what is happening at your school!

David Lippman
Pierce College Ft Steilacoom
Open Course Library Project
The Washington Open Course Library project strove to produce quality open courseware packages with a price cap on course materials. The presenters will share their products from this project, including free and open materials for elementary and intermediate algebra, precalculus and trig, and calculus. 45-90 minutes needed.

Alexander Malinsky
Bellevue College
Janus and Epimetheus: the orbital dance around Saturn
This is a case study of the orbit order switching between Saturn's satellites Janus and Epimetheus. Variations on the parameters of the phenomenon and the numerical methods used to produce the results are explored. Animations make it accessible to both the professional and general audiences.

Darryl Merchand
Texas Instrument
Nspiring Times
Commercial
Come and see the newest and latest products and services from Texas Instruments. See how to integrate this technology using compatible software and technology you may already have in your classroom.

Pat McKeague
MathTV.com
Islam and Mathematics: A Story of Cooperation and Peace
Enter the city of Baghdad in the year 760 and begin an interesting journey that includes Euclid and Fibonacci, allows us to reinforce some of the concepts in developmental algebra, and paints a picture of diverse cultures cooperating to advance mathematics throughout the world.

Tim Melvin
Washington State University
Presentation will cover a basic introduction of a max algebra semi-ring
Presentation will cover a basic introduction of the max algebra semi-ring $\left(\square^{+}, \oplus, \square\right)$ where $a \oplus b = \max\{a, b\}$ and $a \oplus b = ab \forall a, b \in \square^{+}$, how to define matrix multiplication over this semi-ring, and how to define eigenvalues and eigenvectors of this semi-ring. It will also cover what properties of homogeneous, order-preserving operators and linear operators are preserved and lost when switching from the standard algebra to the max algebra on $\square^{+}$.

Ed Miller
Lewis-Clark State College
The Value of Absolute Value
From algebra to multivariable calculus, the analytic and geometric aspects of absolute value are fresh opportunities for students to understand fundamental properties and definitions. Topics will include bounded interval solutions, extraneous solutions, geometry of graphs, and points of nondifferentiability. Participants will construct examples and exercises for their classes.

Nolan Mitchell
Chemeketa Community College
Create Your Own Animations for College Algebra and Beyond
This presentation demonstrates the use of interactive applets in College Algebra, Elementary Algebra and Calculus. Participants will learn to create animations using the FREE program GeoGebra. Intended for instructors who want to give their students a new way to visualize, explore and discover mathematical concepts. No special computer skills needed.

John Mitchell
Clark College
Maple for College Instructors
As an instructor who uses Maple extensively in his classes, as well as a former software engineer, I have thought extensively about how other instructors can get up and running with maple quickly and make effective use of it in their classes. This presentation will focus on a small set of essential commands, as well as style suggestions for templates that can be reused and extended.

William Moore
Washington State Board for Community & Technical Colleges
'What's in a Name?': What Does/Should 'Intermediate Algebra' Mean?
With the increasing national attention to innovations in precollege math, it's time to revisit the issue of "Intermediate Algebra" as the common gatekeeper course for all students--how is it defined across the system and how should it be defined in order to best serve the diversity of students in community and technical colleges?

Lawrence Morales
Seattle Central Community College
Linking Study Skills with Algebra 1
Presenters will discuss how they have linked a 2-credit study skills course with Algebra 1. They will discuss what the study skills course looks like (assignments, topics, etc.) and how it is tightly integrated to the math course.

Lawrence Morales
Seattle Central Community College
Integrating Self-Regulated Learning into Math Courses
This presentation will discuss the efforts at Seattle Central Community to integrate Self-Regulated Learning (SRL) Theory into math courses at all levels and help students become more effective learners. The presenter will provide an overview of SRL and give examples of resource that have been created at SCCC.

Charlie Naffziger
Central Oregon Community College
Redesigning Math 60
Presenters will explain the history and the process of a major redesign of math 60 and 65. Who was involved, why, and how it came to be. Presenters will also talk about the trials, tribulations, and successes in the entire process.

Yves Nievergelt
Eastern Washington University
Fitting curves to data from biology, chemistry, and elsewhere
If you ask a computer to fit the best-fitting logistic curve to data, then it will spit out a logistic curve even if no such curve fits your data best. Algebraic transformations solve this problem and clarify the underlying biology, etc. Prerequisites: some exposure to algebra, limits, and linear regression at the level of pre-calculus would help.

Scott Peterson
Oregon State University
The Calculus Concept Inventory: What are your students really learning?
The presentation will begin with a short overview of the history of concept inventories and the development of the Calculus Concept Inventory (CCI). Several of the questions included on the CCI will be shared with time for discussion. Data collected from several institutions across the US will be presented including preliminary conclusions.

Jeff Pettit
Portland Community College
GeoGebra Primer, from linear equations to Taylor Series
An introduction to the use of this free software for classroom demonstrations, activities, generating graphics for exams, function animation and student explorations. The presentation will be split into three parts: 1. A demonstration on generating families of functions in real-time, inspiring students to appreciate the beauty hidden within graphing functions. The demonstration will walk through generating the following family of functions: slope-intercept form of linear equations, standard form of quadratic equations, vertex form of quadratic equations, exponential functions (a*b^x), sine functions and the normal distribution "bell curve." 2. Creating graphs for exams or demonstrations as clip art that can be inserted into documents. 3. Creating dynamic interactive on-line activities. You are welcome to bring a laptop to follow along during the presentation, and/or a jump drive for copies of activities and java applets.

Michael Price
University of Oregon
Simplify: Not as easy as it sounds
A discussion of the problems inherent in asking students to "simplify" without further direction. Intended audience is algebra instructors of two- and four-year institutes. The length of time can be as short as half an hour, but an hour would allow for more participation from the group.

John Pyktel
How to Engage Students in Math
Commercial

Christopher Quarles
Everett Community College
Data-Based Decision Making for the Lazy Educator
Making decisions about how to run your classroom without using data is like taking exam without doing your homework. With very little work, you can do your own research to decide how to run your class and make some department decisions.

Sean Rule
Central Oregon Community
What should MTH 243 and MTH 244 BE?
MTH 243 and MTH 244, Oregon - wide, vary as a result of the Community College at which the course is being taken. This group will attempt to hash out standard outcomes for these two courses.

Eric Schulz
Walla Walla Community College
A New Generation Interactive eBook for Calculus
Eric is the creator of a new generation eBook for calculus containing 650 interactive 2D/3D figures along with all of the content normally expected in a calculus textbook. The eBook is designed to help students develop an intuitive, geometric understanding of important calculus principles while providing instructors with time-saving and powerful teaching tools.

Lee Singleton
Whatcom Community College
Revisualizing the Integral
The picture most associated with the integral is area under a curve. There is another overlooked visualization that provides more insights into why the FTC should be obvious and how to see integrals of vector functions. Interactive animations relating areas and the new visualization will be shared and explained.

John Spence
Columbia Basin College
Using Geogebra Everyday
Geogebra is a free computer program that can be used to produce professional quality illustrations and interactive demonstrations for your class or your course website. Participants will create illustrations and manipulatable diagrams as a means of introduction to the Geogebra software. This session will be a demonstration followed by a mini–workshop. A laptop is not required but hands–on experience with help is available to those who wish to bring their own computer.

John Squires
Chattanooga State Community College
A Tale of Two Redesigns
Show the results of a formal statistical study of the Cleveland State math project. Discuss the common features and differences of the redesign projects from Cleveland State and Chattanooga State, while emphasizing the principles of course redesign and how these principles can be used in future projects.

Bart Stewart and Sara Swangard
Pearson Higher Education
Getting the most out of MyMathLab
Commercial
Join the Pearson Math Team as we discuss how you can get the most out of your MyMathLab course. Topics will include gradebook usage, expanded communication tools, new delivery options and design and recently released & upcoming new features. MyMathLab is a series of online courses that accompany Pearson's textbooks in mathematics and statistics. Since 2001, MyMathLab--along with MyStatLab andMathXL, have helped over 9 million students succeed at more than 1,900 colleges and universities.

James Stewart
McMaster University
Revamping the PreCalculus Course
Ten years ago an NSF-funded conference "Rethinking the Courses Below Calculus" took place. The recommendations (emphasis on conceptual understanding, data analysis, mathematical modeling,...) were laudable. But how should these ideas actually be implemented? Participants will be invited to help answer the question "What would an ideal Precalculus course look like?"

David Straayer
Tacoma Community College
2 and Thru Statistics: What is Statway and who is doing it?
Statway, funded through the Carnegie Foundation, is designed to take students in developmental mathematics to and through statistics in a shortened pathway. Tacoma and Seattle Central Community Colleges are two of nineteen colleges across the nation engaged in this project. We will report on what we have done, and what we expect to do.

Katherine Valenzuela
Washington State University
Stereotype Threats' Influence on Elementary Pre-service Teachers' Attitude towards Mathematics
Ms. Valenzuela and Dr. Vincent analyzed hundreds of autobiographies collected over the past 15 years. We used emergent theory to evaluate pivotal experiences and how these have influenced pre-service elementary teachers' attitudes and approaches to mathematics. We will discuss patterns that emerged and how they are related to stereotype threats.

Carren Walker
Clark College
Raising the Bar in Developmental Math - Asking Different Questions to get Different Results
The 50 minute presentation will present results of student work impacted from the current RPM grant at Clark College. The presentation will offer practical suggestion on how to change a procedural question from a typical textbook homework assignment into a more complex task for student inquiry. The work shop is intended for teachers of developmental math and teachers interested in instructional design.

Ron Wallace
Blue Mountain Community College
Using Elluminate to Teach Mathematics Face-to-Face and via Distance Education
This presentation will demonstrate the many ways Elluminate is being used as a tool to enhance the teaching of all levels of Mathematics at Blue Mountain Community College and Big Bend Community College. Other software and hardware tools used with Elluminate will also be discussed.

Jennifer Ward
Clark College
Not Your Mother's Flashcards
This presentation will offer hands-on, meta-cognitive strategies for students to engage in productive struggle that leads to the deeper understanding of the mathematics at hand. Participants will leave with the tools to use this technique next week.

William Webber
Whatcom Community College
Calculus 1 Nirvana
Escape from earthly bonds through enlightenment. There is a day in Calculus 3 that I call Calc 1 Nirvana. All of the derivative rules are explained in a single statement. We will go on the journey that leads to this day of enlightenment.

William Webber
Whatcom Community College
Calculus 2 Nirvana
Enlightenment. There is a day in Calculus 3 that I call Calculus 1 Nirvana. We will take the journey to this day of enlightenment to see how a single statement explains a large portion of calculus 1.

Diane Whitfield
Casio MRD Center
An Introduction to the ClassPad
Learn basic features of the ClassPad and begin exploring math a new way! Participants will do trigonometry level activities using the ClassPad as they learn how this tool can be used in lectures or in a classroom. One ClassPad handheld will be given away during the presentation.

Charles Wikman
Everett Community College
On Reliability
This half hour presentation is meant for thirty college math instructors. It is on how features of test reliability can be used to continuously improve multiple choice and constructed response tests. The history of the theory of test reliability is used as a backdrop to these technical matters.

Pete Wildman
Spokane Falls Community College
Redesigning Developmental Math using the College Readiness Standards
For the past three years SFCC has implemented a redesigned developmental math program based on the college readiness standards. At this presentation we will discuss our course redesign and how we have implemented techniques in these classes to improve student retention and performance at this level.

Dusty Wilson
Highline Community College
Tracing Kepler's Path Using Mathematica
Kepler's Laws of planetary motion radically altered the course of history and provided a framework for the early calculus. This provides the backbone of an honors project in which advanced students developed a model for the Solar System using Mathematica.

Mark Yannotta
Clackamas Community College
A Tale of Two Colleges: Some ways CC faculty can support STEM students that reach beyond the classroom
This presentation is primarily targeted at faculty who teach classes in the calculus sequence and beyond. The presenters will share some ideas they have implemented to support STEM students at their respective schools and will also encourage audience members to share what is being done at other community colleges.

Eric Ziegler
Enhanced WebAssign Training: New Content, New Tools
Commercial

2011 NORTHWEST TWO-YEAR COLLEGE MATHEMATICS CONFERENCE CONTEST

Turn in completed contest to the registration desk by Friday, 7:00 PM. Winners will be announced at 8:00 AM, during Saturday breakfast prior to the business meetings.

1. Two primes p and q are said to be **sexy primes** if their difference is 6 (sex being Latin for six). Find the greatest pair of sexy primes where both primes are less than 2,011.

2. Find 11 consecutive prime numbers whose sum is 2,011.

3. Four people, all wearing hats, attend a math conference in a building which does not permit hats. Upon entering the building, they relinquish their hats to the hat-taker for safe-keeping. When the hat-taker returns the hats, the hat owners discover that none of them received the correct hat. In how many ways can this happen?

4. A **Harshad number** is a positive integer which is divisible by the sum of its own digits. How many Harshad numbers are less than 100?

5. If p and $p+2$ are both prime, then they are said to be **twin primes**. Prove that if $p>3$ and p and $p+2$ are twin primes, then the sum of p and $p+2$ is a multiple of 12. (Extra credit: Prove that there are infinitely many pairs of twin primes.)

6. Solve this system of equations.

$$a + c = 1$$
$$ac + d + b = 3$$
$$ad + bc = -2$$
$$bd = 4$$

7. A circle is inscribed in a square of area 4 square units. A smaller circle is placed inside this circle in such a way that it is tangent to both the square and the inscribed circle. Find the area of the smaller circle.

8. The ratio of the radius of the larger of two concentric circles to that of the smaller is $\sqrt{2}$. Find the ratio of the area of the smaller circle to the area of the resulting annulus.

9. The sum of the reciprocals of the first N prime numbers is greater than $\sqrt{2}$. Find the least value of N for which this statement is true.

10. Determine if this sequence converges. If it does, find its limit.

$$\frac{1}{1}, \frac{3}{2}, \frac{7}{5}, \frac{17}{12}, \frac{41}{29}, \ldots$$

11. What is the least non-trivial (i.e., not 0 or 1) triangular number which is also a square number?

2011 Exhibitors

Carnegie Learning
Dave McMullen

Casio
Diane Whitfield
Saturday morning refreshment break

Cengage Learning
Brittney Bent, Eric Englund, Debbie McFarland, Josh Fletcher
Co-host of Thursday evening social

eInstruction
John Pyktel

Hawkes Learning Systems
Anthony Belen

iLearn
Mike Jackson

McGraw-Hill
Marija Magner, Molly Campbell
Co-host of Friday evening social

OpenTextBookStore.com
David Lippman

Pearson Education
Peter Harris, Maureen Rachford, Dwayne Coy, Melissa Yokell, Kari Smith
Co-host of Thursday evening social

SECUWA Credit Union
Jill Warneke

Texas Instruments
Rick Tunstall, Darryl Marchand
Friday morning refreshment break

WH Freeman
Steve Thomas, Bill Davis
Co-host of Friday evening social

Washington Conference History

The first Washington State Community Colleges Mathematics Conference and Retreat was held in 1969. The organizers were Phil Heft, Jim Relf, 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 past 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 Columbian 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 & Tacoma CC	Lake Chelan
1992	Yakima CC	Yakima
1993	Highline CC	Wenatchee
1994	South Seattle CC	Silverdale
1995	Skagit Valley & Whatcom CC	Wenatchee
1996	Spokane Falls CC & 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 & ORMATYC	Skamania Lodge
2002	Clark CC	Yakima
2003	Spokane CC & North Idaho CC	Wenatchee
2004	Pierce CC	Yakima
2005	Highline CC	Ocean Shores
2006	Olympic College & ORMATYC	Skamania Lodge
2007	Wenatchee Valley CC	Wenatchee
2008	North Seattle CC	Lake Chelan
2009	Columbia Baqsin College	Pasco
2010	Yakima Valley Community College	Yakima
2011	Green River CC & ORMATYC	Skamania Lodge
2012	Tacoma Community College	Wenatchee May 10–12, 2012

ORMATYC *is a non-profit educational association. Its purposes are:*

- *To encourage the development of effective mathematics programs*
- *To afford a state forum for exchange of ideas*
- *To further develop and improve the mathematics education and the mathematics-related experience of students in two-year colleges*
- *To promote the professional welfare and development of its members*
- *To afford a forum for input at the state level concerning mathematics education*

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President:	Jerry Kissick, Portland Community College
President–Elect:	Charlie Naffziger, Central Oregon Community College
Secretary:	Frank Goulard, Portland Community College
Treasurer:	Lisa Folberg, Portland Community College
Technology:	Bill Jennings, Klamath Community College

Special Assignments

Historians:	Ken Anderson, Chemeketa Community College
	Wayne Barber, Chemeketa Community College
Newsletter Editor:	Pat Rhodes, Treasure Valley Community College

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1987-88: Jim Streeter	1997-98: Frank Goulard
1988-89: Roger Judd	1998-99: Lynn Trimpe
1989-90: Mary Ellen White	1999: Marveen McCready
1990-91: Dorothy Beaufait	1999-01: Doug Nelson
1991-92: Dick Clark	2001-02: Dennis Kimzey
1992-93: Dick Holliday	2002-03: Renae Weber
1993-94: Gary Grimes	2003-05: Kurt Lewandowski
1994-95: Wally Waldman	2005-07: Ronda Kingstad
1995-96: Tom Reimer	2007-09: Pat Rhodes
1996-97: Don Hutchison	2009-11: Jerry Kissick

Oregon Conference History

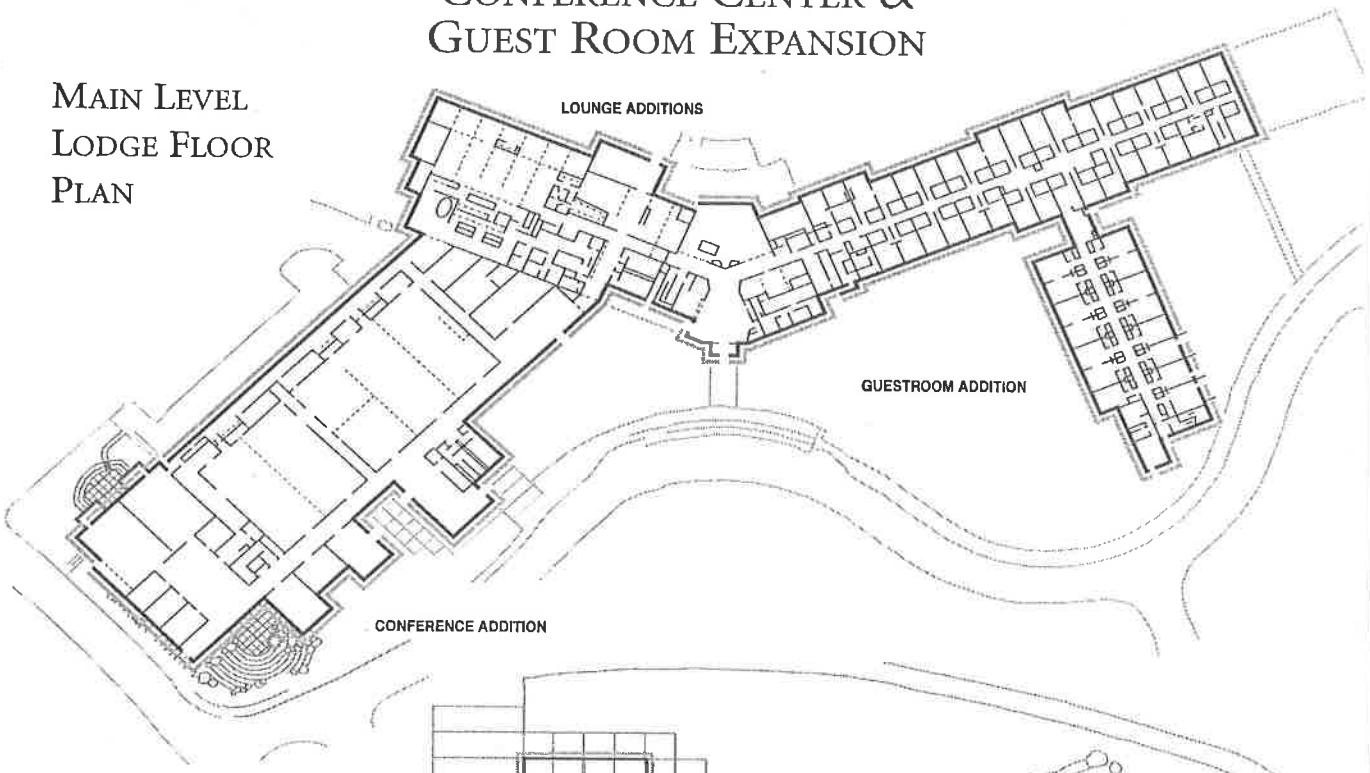
Year		Location of ORMATYC Conference
1987		Eugene
1988		Newport
1989		Newport
1990		Newport
1991		Newport
1992		Newport
1993		Newport
1994		Newport
1995		Newport
1996		Skamania Lodge
1997		Salishan Lodge, Gleneden Beach
1998		Inn at Spanish Head, Lincoln City
1999		Inn at Spanish Head, Lincoln City
2000		Inn at Spanish Head, Lincoln City
2001		Skamania Lodge
2002		Inn at Spanish Head, Lincoln City
2003		Inn at Spanish Head, Lincoln City
2004		Inn at Spanish Head, Lincoln City
2005		Inn at Spanish Head, Lincoln City
2006		Skamania Lodge
2007		Inn at Spanish Head, Lincoln City
2008		Inn at Spanish Head, Lincoln City
2009		Inn at Spanish Head, Lincoln City
2010		Inn at Spanish Head, Lincoln City
2011		Skamania Lodge
2012	April 26-28	Inn at Spanish Head, Lincoln City

Skamania Lodge

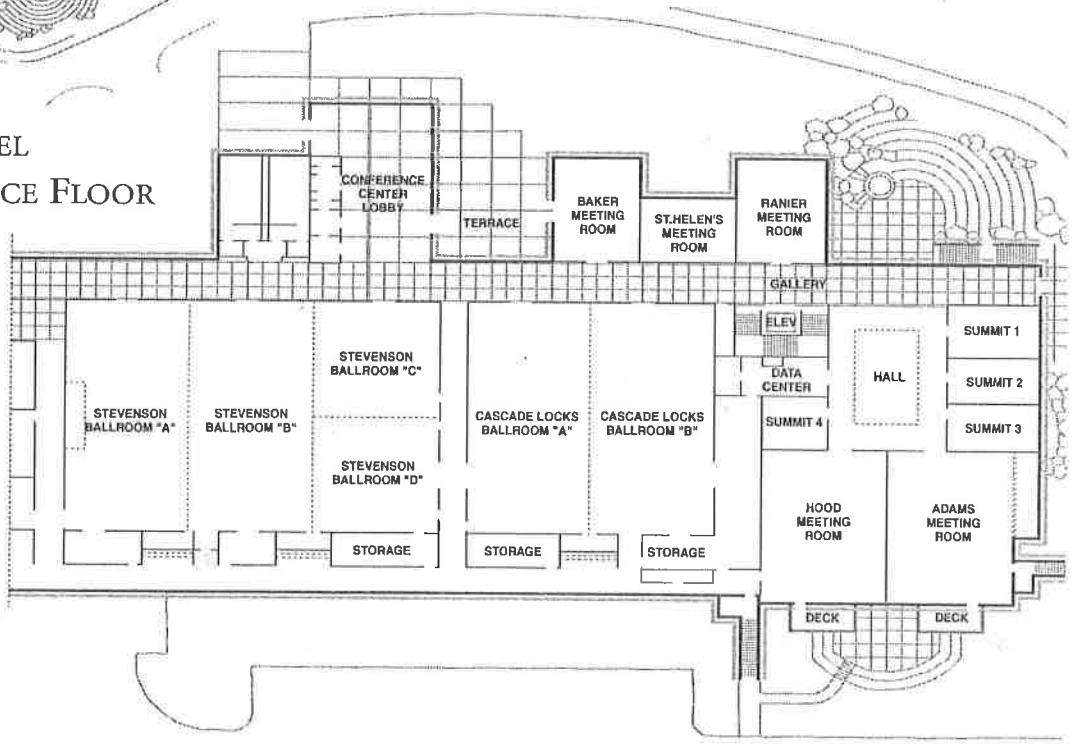
In The Columbia River Gorge

Conference Center & Guest Room Expansion

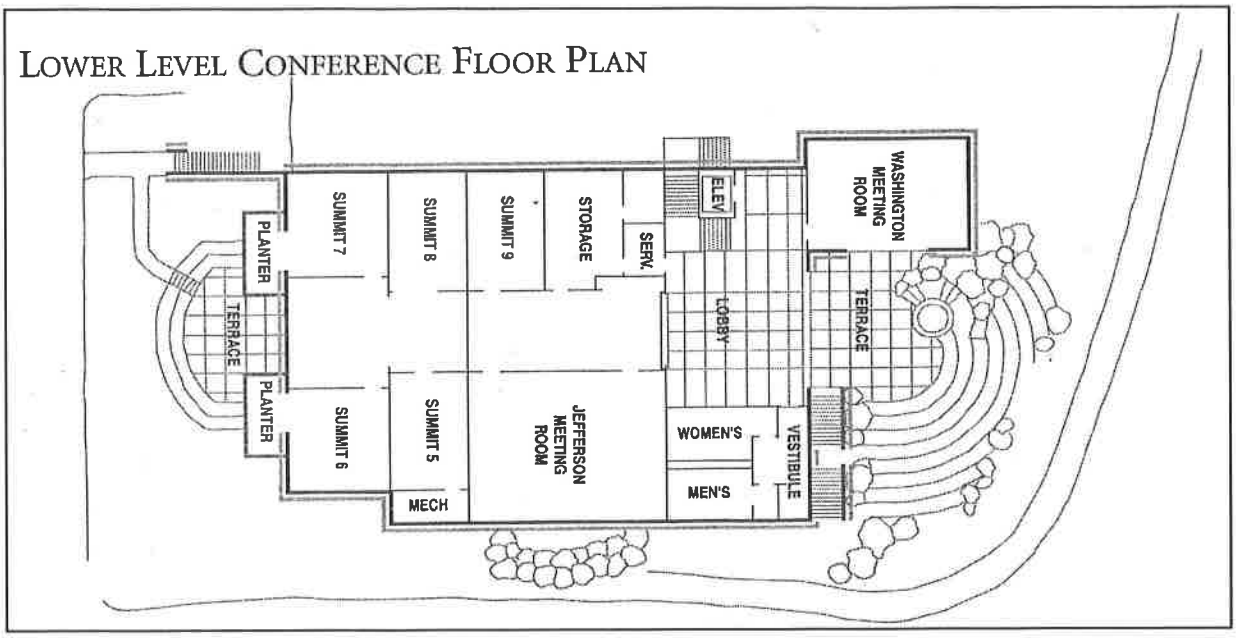
Main Level Lodge Floor Plan



Main Level Conference Floor Plan



Lower Level Conference Floor Plan



ROOM	THEATRE	ROUNDS OF 8
ADAMS		80
CASCADE LOCKS A		96
CASCADE LOCKS B		96
HOOD RIVER SUITE	20	
JEFFERSON		64
RAINIER		40
ST. HELENS		24
SUMMIT 2	25	
SUMMIT 3	20	
SUMMIT 9	20	
WASHINGTON		40

Special Thanks to

The Conference Committee extends a special thanks to:

Exhibitor Liaison	**Frank Goulard**
Historian/Photographs	**Ken Anderson, Wayne Barber**
Math Contest and Prizes	**Mike Kenyon**
Answers and Dispute Settler	**Rob Jonas**
Web Registration and Name Tags	**Lisa Folberg**
Printing	**Portland Community College**
Program Schedule	**Kris Kissel, Jerry Kissick**
Web Design and Media Service Liaison	**Bill Jennings**
Program Booklet and Design	**Jerry Kissick**

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2011 Presenters

Nathan Austin ntaustin@gmail.com
"Focus on the Distribution, not the Syntax"

Jim Ballard james.ballard@oit.edu
"The mathematics of energy use in the USA and the world. Where are we headed?"

Farshad Barman fbarman@pcc.edu
Math and Cosmic Consciousness

Anthony Belen
Motivate Your Students with Mastery Learning

Barry Bergman bergmanbarry@comcast.net
Visual Methods: Understanding Area and the Pythagorean Theorem

Laura Bracken bracken@lcsc.edu
Polya, Problem-Solving, and Developmental Mathematics

Helen Burn hburn@highline.edu
Embedding Students Success Skills in Precollege Mathematics

Helen Burn hburn@highline.edu
Change 101

Laurie Burton & Cheryl Beaver burtonl@wou.edu
Fraction and Decimal Games

Kathy Chelminiak kathyc@clackamas.edu
Basic Mathematics – Incorporating Study Skills in a Basic Mathematics Course

Ronald Cheyney
Online Homework Systems:WebAssign

Mark Clark mclark@palomar.edu
Making Math Green and Engaging!

Lyle Cochran lcochran@whitworth.edu
Calc Potpourri

Alina Coronel alina.coronel@yahoo.com
The use and results of using technology in a lecture/lab combination for developmental math

Ross Folberg ross.folberg@pcc.edu
The Bells and Whistles of Trigonometry

Doug Gardner dgardner@roguecc.edu
Beautiful Practical Problems

Lee Gibson lrgibs01@gmail.com
Preparing your students for calculus

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Math is NOT a Four Letter Word

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Riordan Arrays

Jeffrey Hayen jhayen@socc.edu
The Kepler Problem in Orbital Mechanics: Position and Speed as Functions of Time

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Mathematics Goes To Hollywood

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Reflection Friday

Edgar Jasso ejasso@sccd.ctc.edu
SAGE: a free open-source mathematics software system

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One week Primer Classes for Developmental Education Students

John Kellermeier jkellermeier@tacomacc.edu
Consulting the Divine: The (Ethno) mathematics of Divination

Rachel Kingsley rkingsley@everettcc.edu
Faculty Inquiry

Jay Lehmann MathNerdJay@aol.com
Transform Antiquated Word Problems Into Lively Authentic Applications

Deann Leoni dleoni@edcc.edu
Developmental Math Course Redesign Discussion

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Open Course Library Project

Alexander Malinsky sashaq@mildwild.net
Janus and Epimetheus: the orbital dance around Saturn

Darryl Marchand dmarchand@ti.com
Nspiring Times

Pat McKeague pat@mathtv.com
Islam and Mathematics: A Story of Cooperation and Peace

Tim Melvin tmelvin@math.wsu.edu
Presentation will cover a basic introduction of a max algebra semi-ring

Ed Miller edmiller@lcsc.edu
The Value of Absolute Value

Nolan Mitchell nolan.mitchell@chemeketa.edu
Create Your Own Animations for College Algebra and Beyond

John Mitchell jmitchell@clark.edu
MAPLE Essentials for College Teachers

William Moore wsmoore51@comcast.net
What's in a Name?: What Does/Should 'Intermediate Algebra' Mean?

Lawrence Morales lmorales@sccd.ctc.edu
Integrating Self-Regulated Learning into Math Courses

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Linking Study Skills with Algebra 1

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Redesigning Math 60

Yves Nievergelt ynievergelt@ewu.edu
Fitting curves to data from biology, chemistry, and elsewhere

Scott Peterson speter@math.oregonstate.edu
The Calculus Concept Inventory: What are your students really learning?

Jeff Pettit jeffrey.pettit@pcc.edu
GeoGebra Primer, from linear equations to Taylor series

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Simplify: Not as easy as it sounds

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How to Engage Students in Math

Christopher Quarles cquarles@everettcc.edu
Data-Based Decision Making for the Lazy Educator

Sean Rule srule@cocc.edu
What should MTH 243 and MTH 244 BE?

Eric Schulz ericschulz@mac.com
A New Generation Interactive eBook for Calculus

Lee Singleton lsingleton@whatcom.ctc.edu
Revisualizing the Integral

John Spence jspence@columbiabasin.edu
Using Geogebra Everyday

John Squires John.Squires@ChattanoogaState.EDU
A Tale of Two Redesigns

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Revamping the Precalculus Course

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2 and Thru Statistics: What is Statway and who is doing it?

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Stereotype Threats' Influence on Elementary Preservice Teachers' Attitude towards Mathematics

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Raising the Bar in Developmental Math – Asking Different Questions to get Different Results

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Using Illuminate to Teach Mathematics Face-to-Face and via Distance Education

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"Not Your Mother's Flashcards"

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Calculus 1 Nirvana, Enlightenment

William Webber wwebber@whatcom.ctc.edu
Calculus 2 Nirvana (escape from the early bonds through enlightenment...)

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An Introduction to the ClassPad

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"On Reliability"

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Redesigning Developmental Math using the College Readiness Standards

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Tracing Kepler's Path Using Mathematica

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A Tale of Two Colleges: Some Ways CC Faculty can support STEM students that reach beyond the classroom

Eric Ziegler eric.ziegler@cengage.com
Enhanced WebAssign Training: New Content, new tools

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