# Washington State

# Community College Math Conference

# May 20 - 22, 2010

Yakima Convention Center

Yakima, Washington

# **Conference Schedule**

Date	Time	Event
Thursday, May 20, 2010	6 – 7:30 pm	Registration and No Host Bar
	7:30 – 8:30 pm	Opening Speaker: Frank Savage
	8:30 – 9:15 pm	Registration
	8:30 – Midnight	Social - hosted by Cengage Holiday Inn Room 305
Friday, May 21, 2010	7:15 – 8: 30 am	Breakfast Buffet
	8:30 – 9:30 am	Session I
	9:45 – 10:45 am	Session II
	11 am – 12 pm	Session III
	noon – 1:45 pm	Lunch Buffet Speaker: Dr. Stephen Keeler
	2:00 – 3:00 pm	Session IV
	3:15 – 4:15 pm	Session V
	4:30 – 6:30 pm	Activities
	6:30 – 7:30 pm	Dinner Banquet
	7:30 – 8:30 pm	Speaker: Dr. James Evans
	8:45 – ??	Social – TBA
Saturday, May 22, 2010	7:30 – 8:45 am	Breakfast Buffet
	9:00 –10:00 am	Session VI
	10:15 – 11:15 am	Session VII
		Lunch on your own

# **Social Events and Activities**

# Thursday

8:45 to Midnight	Social	
	Hosted by Cengage Learning	
	Located in the Holiday Inn, Room 305	

# Friday

4:15 - 6:15 pm	Wine Tasting at Wilridge	
	Meet in Convention Center Lobby to carpool	

## Hiking in Cowiche Canyon

Meet in the Convention Center lobby to carpool

8:45 – ??? pm

Social TBA Location TBA

# **Guest Speakers**

# Thursday Evening Speaker – Frank Savage

"Teaching Math Using the Context of Video Gaming"



**Frank Savage** has been in the game development industry since 1991 when he worked on Strike Commander at Origin Systems. After leading the development of Wing Commander 3 in 1993, Frank moved to FASA Interactive in 1995 and completed MechCommander before Microsoft acquired the company in 1999. After finishing MechCommander 2 at Microsoft, he joined the Xbox Game Technology Group in 2001. Frank then joined the XNA team in 2004 and was the development manager for XNA Game Studio before working as a software architect in the XNA organization. In March of 2009, Frank joined Blade Games where he works as the Chief Technology Officer. Frank also worked as both an electrical engineer and software developer for Southern Ohio Coal Company before coming to his senses and deciding to work on games instead!

## Friday Noon Speaker – Dr. Stephen Keeler

"Flying Around Design Space"



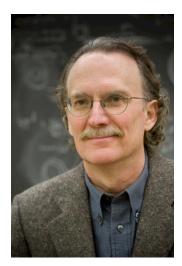
Designing an airplane takes years, costs billions of dollars and involves thousands of people. Boeing is constantly pushing for improvements in design methods which will reduce the time and cost and improve the performance of the products. We'll take a look at the overall design process in very general terms – the view from 40,000 feet – and then zoom in on what is inaccurately called "preliminary design," the

stage where fundamental decisions are made about the configuration of the airplane. In Boeing's Applied Math group we develop Design Explorer, software used to evaluate candidate designs and find the best ones, and the General Environment for Optimization and Development Using a Common Kernel, a system for creating and manipulating vehicle geometry. Yes, it's called "Geoduck." We'll look at the math used in these two systems and how we deal with "industrial strength" problems. Steve Keeler is manager of the Geometry and Optimization group in Boeing's Applied Mathematics organization, part of Boeing Research and Technology. The group specializes in geometric modeling and numerical optimization, in recent years providing technical leadership for Boeing in multidisciplinary design optimization and design space exploration. They work with engineers on the design and manufacture of commercial aircraft and military and space systems. They also conduct research and development and do consulting and software development for non-Boeing customers. In the course of a year they may work on 100 different applications of mathematics. Steve has been at Boeing for 28 years. He has a doctorate in math from the University of Washington.

# Friday Evening Speaker – Dr. James Evans

### "The Antikythera Mechanism: An Astronomical Calculating Machine from Ancient Greece"

The Antikythera mechanism, a gearwork astronomical computer, was built around 150 BC, lost in a shipwreck around 80 BC, and recovered in 1901. Recent study has greatly changed our view of the mechanism. This talk will describe the current understanding of the mechanism, address the question of what it was for, and present new some new results by the University of Puget Sound Antikythera Mechanism research team.



James Evans is a historian of science and is director of the Program in Science, Technology and Society at the University of Puget Sound. He works mostly on ancient Greek astronomy and on 18<sup>th</sup>-20<sup>th</sup> century physics, and is associate editor of the *Journal for the History of Astronomy*. His publications include *The History and Practice of Ancient Astronomy* (Oxford UP, 1998); *Geminos's* Introduction to the Phenomena: *A Translation and Study of a Hellenistic Survey of Astronomy*, written with J.L. Berggren (Princeton UP, 2006); and *Quantum Mechanics at the Crossroads: New Perspectives from History, Philosophy and Physics*, edited with A.S. Thorndike (Springer, 2007).

# **Session Abstracts**

#### Tophe Anderson

Friday 2:00 PM - 3:00 PM

Everett Community College

#### **Promoting Assessment for Learning**

An overview of purposes for assessment (diagnostic, formative, summative) as well as practical ideas for incorporating alternative forms of assessment into college math classes.

Nathan Austin

Friday 2:00 PM - 3:00 PM

CASIO Education Technology

#### Using Technology to Discover Formulas

Learn how the CASIO ClassPad enables students to control and explore mathematics in a powerful handheld device -- we will be looking at the relationship between graphs, roots and equations and exploring how the ClassPad can facilitate student discovery of that relationship. A ClassPad 330 handheld will be given away.

#### Patrick Averbeck

Saturday 9:00 AM - 11:15 AM

Edmonds Community College

#### Teaching by the 'Rules'

How does understanding the brain inform and challenge us as we teach?

Stefan Baratto

Friday 9:45 AM - 10:45 AM

Clackamas Community College

#### **Content in Context: Teaching Mathematics**

We have moved beyond simply using applications to motivate topics in class. We use them to teach problem-solving strategies and critical thinking in the developmental math classroom. Participants will learn methods for selecting and using applications as teaching tools and will take these applications back to their institutions.

#### Toure Bourama

Saturday 10:15 AM - 11:15 AM

Columbia Basin College

#### **Calculator Policy**

A discussion session about policy on using calculators.

#### Helen Burn

Highline Community College

#### **Fostering Student Attributes**

Discussion and results of a year-long project at Highline focused on developing classroom tasks that foster student attributes from the College Readiness Standards (taking responsibility for learning, intellectual engagement, attention to detail, and persevering through time-consuming tasks).

#### Penny Coffman and Debra Olson

Saturday 9:00 AM - 10:00 AM

Spokane Falls Community College

#### Using "Prepare and Reflect" Worksheets

How often do math instructors ask/suggest/beg their students to read the textbook, arrive prepared, do high quality work, or reflect upon their own thinking? How do we make these skills and habits a regular and expected part of our classroom cultures? This presentation will provide participants with a brief history of where these questions and our attempts to answer them have led a number of people.

James Evans

Saturday 10:15 AM - 11:15 AM

University of Puget Sound

#### The Astrolabe

The astrolabe, the most popular astronomical instrument of the Middle Ages and Renaissance, is a twodimensional projection of the celestial sphere that can be used to solve a host of astronomical problems. This session will examine the theory and history of the astrolabe, followed by instruction on its use. Small group, hands-on session, limited to first 30 participants.

**Patrick Gardner** 

Friday 3:15 PM - 4:15 PM

Columbia Basin College

#### Singular Value Decomposition Done Better

Concluding Introductory Linear Algebra with the Singular Value Decomposition (SVD) rewards the students with a perfect application of their recently acquired skills together with insight into the mathematical modeling process. This presentation introduces that application and gives participants collaboration exercises to develop their expertise.

#### Nancy Goodisman, Pam Lippert, and Jennifer Laveglia

Friday 2:00 PM - 3:00 PM

Shoreline Community College

#### Individualized Computer-based Math Instruction

Panel Discussion: Representatives from several colleges will give short presentations of student options for Individualized Computer-based Math Instruction at their respective schools emphasizing the strengths and weaknesses, followed by comments and questions from the audience. The focus will be on the developmental pre-college level courses.

#### **Don Groninger**

Middlesex County College

#### Increasing Student Success In Developmental Math

Don Groninger, of Middlesex County College, will discuss the nuances between online homework and online learning. He will also share data showing retention rates when a text only was used in the developmental math courses vs. text with online homework system vs. text with online learning system (ALEKS). He will also discuss why ALEKS has improved student success/retention rates.

#### Gregg Harbaugh

Saturday 10:15 AM - 11:15 AM

Seattle Central Community College

#### Ugrad Research @ CCs: Examples & Issues

Three undergraduate research groups will present their projects: (1) Markov processes and student retention; (2) Cluster analysis and location of influential points in multivariate and time-series data; (3) Issues of convergence related to multivariate functions and multivariable imputation. Issues regarding mentoring and supporting ugrad research for CC students will be discussed.

Jennifer Harras

Friday 11:00 AM - 12:00 PM

Washington State University

#### **Extension Field Theory in Cryptography:**

Beginning with a field, the goal is to gain insight of the field and its structure, i.e. what elements belong to this particular field. Since often times in cryptographic applications, the field will be quite large, finding elements will be very challenging. Hence, there is a need to find an efficient way of identifying all elements. This is the task that has been accomplished.

#### Michael Jenck, Kristen Maxwell, and Sara Frederiksen

Friday 11:00 AM - 12:00 PM

Yakima Valley Community College

#### **Developing Student Habits for Math Success**

An overview of what the Toppenish Middle School teachers have implemented to change the attitudes of students towards math.

#### Alice Kaseberg

Friday 2:00 PM - 3:00 PM

Lane Community College

#### The Archemedean Screw and Helix

Come share my fascination with the ancient but remarkable and ubiquitous Archmedean screw and helix as illustrated with personal photos and recent Internet finds. Apply trigonometry in finding answers to "what if" questions. Take away a list of Internet sites to add to your own photos.

#### Pete Kaslik

**Pierce College** 

#### Math 107 with a Sustainability Theme

Under the belief that mathematics should play a central role in the analysis of important issues in society, the open source book Math in a Sustainable Society was written to help students see how this can be done. The text addresses various learning styles with the inclusion of unique projects that promote critical thinking and in-class activities that promote active learning.

#### Amelia Keeney

Saturday 10:15 AM - 11:15 AM

McGraw-Hill

#### **ALEKS 360**

What is ALEKS? Amelia Keeney, eLearning Consultant, will demonstrate the online learning product ALEKS 360, including the new feature--an interactive, integrated eBook.

John Kellermeier

Saturday 9:00 AM - 10:00 AM

Tacoma Community College

#### **Mirror Curves**

Cultures throughout the world express themselves with images known to ethnomathematicians as mirror curves. These drawings can be made with one continuous movement never retracing a path. Examples include sona, the sand drawings of the Tchokwe people of Angola; kolam, the threshold drawings done by the women of Tamil, India; and Celtic knots. This presentation will explore the use of mirror curves in a variety of cultures and look at some of the recent development in ethnomathematics on mirror curves. In addition, I will share the results of a student project from an Ethnomathematics course taught at Tacoma Community College on mirror curves utilizing Photobucket, an image hosting website.

**Mike Kenyon** 

Friday 3:15 PM - 4:15 PM

Green River Community College

#### **Class Journals Written and Edited by Students**

Students write articles and serve as reviewers for a simulated professional journal, culminating in a class publication printed three times over the course of the quarter. This session will discuss the mechanics of the journal assignment and ways to adapt it, and also provide samples of the final products.

#### **Rachel Kingsley**

Everett Community College

#### Collaborative learning in an online environment

Studies show that when students are given the opportunity and accountability to work in teams, they tend to do well in that class. In my own experience I have found that the classes where I use group projects, students form study groups and learn well from each other. While is very easy to form such group of cohorts in face to face class it may not be as simple to do so in an online environment.

#### Tiffany Ledford

#### Saturday 9:00 AM - 10:00 AM

Seattle Central Community College

#### Condensed Intermediate Algebra/Precalc I

The first half I will discuss my experience teaching a condensed version of Intermediate Algebra and Precalculus I. The second half will be an open discussion about the pros and cons of offering a course of this nature.

Jay Lehmann

Friday 9:45 AM - 10:45 AM

College of San Mateo

#### What Every College Graduate Should Know

Would you hire a student that passed your class? Curve fitting compelling authentic data not only helps intermediate algebra students learn key concepts but also prepares them to be more effective in their personal and professional lives. The top ten things every college graduate should know will be discussed. The presenter will sing a math love song.

#### **David Lippman**

Friday 3:15 PM - 4:15 PM

Pierce College

#### Math 107 on \$10

Walk away with access to an open textbook and open course materials for an on-campus or online Math 107 course based on practical applications. Pierce College has saved students \$18,000 this year using these materials.

#### David Lippman

Saturday 10:15 AM - 11:15 AM

Pierce College

#### WAMAP: Advanced topics

Intro to public blocks, embedding videos, sharing content, wikis, student groups, conditional assessments, and other advanced features in WAMAP.

#### Eric Mack

North Idaho College

### Geometer's sketchpad in the classroom

Wish you could continuously vary the transformation parameters in college algebra instead of using comic-strip snapshots? Geometer's sketchpad is easy to learn and offers a visually appealing way to create dynamic presentations in the classroom. A few templates allow you to make on-the-fly animations of such concepts as Newton's method.

Ben Mayo

Friday 11:00 AM - 12:00 PM

Yakima Valley Community College

#### Prealgebra: Problems, Projects, and Puns

I will share some fun examples from my own prealgebra book to help challenge and appeal to your developmental math students. Topics will include ratios, rates, proportions, unit conversion factors, and percents.

**Bill Moore** 

Friday 3:15 PM - 4:15 PM

SBCTC

#### **Re-Thinking Precollege Math**

This session will describe the key principles and elements of a multi-college project begun this year engaging math departments in a collaborative effort to improve student progress through their precollege math programs to success in college-level math by addressing changes in the critical areas of classroom practice: curriculum (what is taught), instruction (how is it taught), and assessment (how do we know learning has occurred).

Lawrence Morales

Friday 2:00 PM - 3:00 PM

Seattle Central Community College

### An Online History of Math Course

An online History of Math course which is offered at SCCC will be presented, including discussion and samples of assignments, assessments, projects, forums, and course structure. This WAMAP course also has stencils available for use by interested faculty.

#### **Yves Nievergelt**

Saturday 9:00 AM - 10:00 AM

Eastern Washington University

### Documented Applications of Curves and Surfaces Fitted To Data

This talk documents applications of curves and surfaces fitted to data points: What are the data? Who measured them? What kinds of curve did they fit? Why did they choose this kind of curve? Why did they want to fit a curve? What did they do with the result? Concepts and problems are at the pre-calculus level. Some problems are still unsolved.

#### **Gail Nord**

Gonzaga University

#### The Free Microsoft Word Math Add-In

This presentation is designed to familiarize mathematics educators with the algebraic and symbolic capabilities of the free math add-in associated with Microsoft Word 2007. Special attention will be given to the power of the 'animate' command. This computer algebra system (CAS) is available as a free download to any legitimate institutional or individual license holder of Microsoft Word 2007.

John Pyktel

Friday 9:45 AM - 10:45 AM

eInstruction Corporation

#### Using Technology in Math Education

We will discuss the latest technology that can be used to more effectively teach math in higher education. This will be a hands-on class with various discussions and activities, and equipment, at not cost to the school or department.

#### Melonie Rasmussen

Friday 11:00 AM - 12:00 PM

Pierce College

#### **Open Course Library Discussion**

Open forum discussion for those who received an open course library grant or would like to give input to those who did.

Angie Redmon and Sharon Wiest

Friday 8:30 AM - 12:00 PM

Wenatchee Valley College

#### Fathom

Learn about Fathom Dynamic Data software, an inexpensive, easy-to-use software program. You'll learn how to drop in data, create a variety of graphs including linear regressions, work with a motion detector and conduct hypothesis tests. Interactive demonstrations will range from examples for beginning algebra through statistics and calculus.

#### Angela Russell

Friday 8:30 AM - 9:30 AM

Wenatchee Valley College

#### Using Youtube to Nudge your students

I'll show you how to create mini Youtube lectures and how to give access to your students. I've set up a Youtube account where we can pool our efforts.

#### Lee Singleton

Whatcom Community College

#### **Subbing for Yourself**

How to create online videos for your students to watch if you need to be gone from the classroom. I will demonstrate screencasting using Jing/Camtasia with Powerpoint and Mathematica.

#### Tyler Wallace

Friday 9:45 AM - 10:45 AM

Big Bend Community College

#### **Elluminate: Bring Instruction to Student**

How can Elluminate be used to bring instruction to students? I am using this software, which is already paid for by the state, to give my traditional courses a hybrid option, to help students review, to make my online course delivery easier, and to meet students wherever they are at. We will discuss the advantages of this software and discuss any questions that may arise about its use.

#### William Webber

Friday 9:45 AM - 10:45 AM

Whatcom Community College

#### Calculus 1 Nirvana

Nirvana: The attainment of enlightenment. There is a day in Calculus 3 that I call Calc 1 Nirvana. Every derivative rule that we ever learned is summed up in a single statement. Join me as we take the path that leads from single variable to multivariable calculus, and eventually ... to enlightenment.

Jane Whitmire

Friday 8:30 AM - 9:30 AM

Central Washington University

#### Fitch Cheney's Five Card Trick

If you missed the presentation last year, this is the best time to learn Fitch Cheney's Five Card Trick. This is a wonderful application of modular arithmetic, counting methods, and permutations. An outline of card trick procedures will be provided.

#### **Dusty Wilson**

Friday 8:30 AM - 9:30 AM

Highline Community College

#### Certainty, mystery, and the classroom

What is mathematics? Where does it come from? What is its purpose? Each educator has a philosophy of mathematics that impacts teaching. Most are unaware of assumptions passed on to students. Could the philosophy of mathematics be what is missing in efforts to breathe life back into community college mathematics?

#### Luke Wolcott

University of Washington

#### The Codependent Arising of Math and Mathematicians (and Where Do We Go From Here?)

Mathematicians create mathematics, but mathematics also creates mathematicians. The body of knowledge we call mathematics and the community that does mathematics have been codependently evolving for millennia. I'll try to describe, from a sociological perspective, several prominent characteristics of the math culture, and suggest how aspects of math itself may have helped to bring about these characteristics. Conversely, I'll suggest ways that our methods of doing math have affected the development of mathematical knowledge. Along the way, I'll discuss possible implications for the future of mathematics.

#### **Eric Ziegler**

Friday 8:30 AM - 9:30 AM

Cengage Learning

#### **Digital Solutions for Enhancing Student Outcomes**

Today's students need a variety of learning resources to learn math successfully. Cengage Learning has a number of options available including new the new online video solutions manual Studious, Tools for Enriching Calculus and new developments to our online homework system, Enhanced WebAssign. Whether you are a current user of WebAssign, or a non-user, you will benefit from learning about the new options for next year.

# Participants

**University of Alaska - Kodiak** 

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# **Exhibitors**

### Convention Center Lobby

Exhibit hours are Friday from 8:30 am to 5 pm and Saturday from 8:30 a.m. to 11:30 am

### Casio Education Technology

Nathan Austin

*Casio MRD Center* Diane Whitfield

### Cengage Learning

Brittney Bent, Bryan Endreson, Eric Englund, Josh Fletcher, Debbie McFarland, Tom Tucker

### elnstruction Incorporation

John Pyktel

### McGraw-Hill Higher Education

Peggy Lucas, Amelia Keeney

### Pearson Higher Education

Teri Orr, Dwayne Coy, Kari Smith, Bart Stewart,

# **Conference History**

The first Washington State Community College Mathematics Conference was held in 1969. Organized by Phil Heft, Jim Relf, Larry Larson, and John Van Duff, it was held at "The Lodge" at Ashford where accommodations required sleeping bags. Legend has it that 33 people attended the first conference, at a cost of \$16.68 per person, but the menu for the first banquet and the name of the first guest speaker remain unsolved mysteries. 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, with no rule for who hosts when; nor where the meetings are held. As if by magic, volunteers appear and destination meeting sites are found in the Cascade Mountain corridor, on the Olympic Peninsula, or in the Columbian Gorge. A traveling fund helps the host institution with start-up costs. This year there are over 200 registered participants!

Year	Conference Host Schools	Location of Conference	
1969	Green River/Highline/Ft. Steilacoom	The Lodge	
1970	Spokane Falls	The Lodge	
1971	Everett	Snoqualmie Pass	
1972	Everett	Snoqualmie Pass	
1973	Seattle Central	Snoqualmie Pass	
1974	Green River	Lake Wilderness	
1975	Highline	Providence Heights	
1976	Bellevue	Snoqualmie Pass	
1977	Shoreline	Providence Heights	
1978	Edmonds	Providence Heights	
1979	Olympic	Port Ludlow	
1980	Spokane Falls	Sun Mountain	
1981	Spokane Falls	Sun Mountain	
1982	Highline	Lake Chelan	
1983	Olympic	Port Ludlow	
1984	Green River	Alderbrook	
1985	Shoreline	Sun Mountain	
1986	North Seattle	Alderbrook	
1987	Lower Columbia Alderbrook		
1988	Olympic Port Ludlow		
1989	Bellevue	Lake Chelan	
1990	Clark	Alderbrook	
1991	Pierce & Tacoma	Lake Chelan	
1992	Yakima	Yakima	
1993	Highline	Wenatchee	
1994	South Seattle	Silverdale	
1995	Skagit Valley & Whatcom	Wenatchee	
1996	Spokane Falls & ORMATYC	Skamania Lodge	
1997	Green River Lake Chelar		
1998	Tacoma & Big Bend	Lake Chelan	
1999	Edmonds	Ocean Shores	
2000	Bellevue	Wenatchee	
2001	Peninsula & ORMATYC	Skamania Lodge	
2002	Clark	Yakima	

2003	Spokane & North Idaho	Wenatchee	
2004	Pierce	Yakima	
2005	Highline	Ocean Shores	
2006	Olympic & ORMATYC	Skamania Lodge	
2007	07 Wenatchee Valley Wenatchee		
2008	North Seattle	Chelan	
2009	Columbia Basin	Pasco	
2010	Yakima Valley	Yakima	
2011	Green River & ORMATYC	Skamania Lodge	
2012	Tacoma		
2013	Whatcom		

The 2011 Conference will be held April 28-30 at Skamania Lodge.

# **Special Thanks**

The YVCC Conference Committee extends a special thanks to:

Casio

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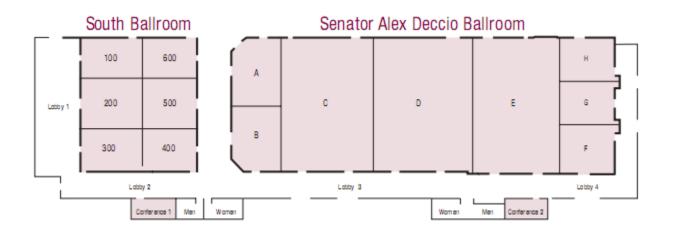
YVCC Jazz Band

for contributions toward the hosted social events and door prizes.

Session	Suite 100	Suite 200	Suite 300
l Friday 8:30-9:30	Fitch Cheney's Five Card Trick (Jane Whitmire)	Digital Solutions for Enhancing Student Outcomes (Eric Ziegler)	Using Youtube to Nudge your students (Angela Russell)
ll Friday 9:45-10:45	Re-Thinking Precollege Math (Bill Moore)	Calculus 1 Nirvana (William Webber)	The Free Microsoft Word Math Add-In (Gail Nord)
III Friday 11:00-12:00	Developing Student Habits for Math Success (Jenck, Maxwell, Frederiksen)	Extension Field Theory in Cryptography: (Jennifer Harras)	Open Course Library Discussion (Melonie Rasmussen)
IV Friday 2:00-3:00	Individualized Computer- based Math Instruction (Goodisman, Lippert, Laveglia)	The Archemedean Screw and Helix (Alice Kaseberg)	An Online History of Math Course (Lawrence Morales)
V Friday 3:15-4:15	Class Journals Written and Edited by Students (Mike Kenyon)	The Codependent Arising of Math and Mathematicians (and Where Do We Go From Here?) (Luke Wolcott)	Singular Value Decomposition Done Better (Patrick Gardner)
VI Saturday 9:00-10:00	Documented Applications of Curves and Surfaces Fitted to Data (Yves Nievergelt)	Condensed Intermediate Algebra/Precalc I (Tiffany Ledford)	Increasing Student Success In Developmental Math (Don Groninger)
VII Saturday 10:15-11:15	Calculator Policy (Toure Bourama)	Ugrad Research @ CCs: Examples & Issues (Gregg Harbaugh)	ALEKS 360 (Amelia Keeney)

Suite 400	Suite 500	Suite 600	Session
Fathom (Redmon, Wiest)	Certainty, mystery, and the classroom (Dusty Wilson)	Math 107 with a Sustainability Theme (Pete Kaslik)	l Friday 8:30-9:30
What Every College Graduate Should Know (Jay Lehmann)	Content in Context: Teaching Mathematics (Stefan Baratto)	Elluminate: Bring Instruction to Student (Tyler Wallace)	ll Friday 9:45-10:45
Subbing for Yourself (Lee Singleton)	Fostering Student Attributes (Helen Burn)	Prealgebra: Problems, Projects,and Puns (Ben Mayo)	ا   Friday 11:00-12:00
Using Technology to Discover Formulas (Nathan Austin)	Geometer's sketchpad in the classroom (Eric Mack)	Promoting Assessment for Learning (Tophe Anderson)	IV Friday 2:00-3:00
Collaborative Learning in an Online Environment (Rachel Kingsley)	Math 107 0n \$10 (David Lippman)	Using Technology in Math Education (John Pyktel)	V Friday 3:15-4:15
Using "Prepare and Reflect" Worksheets (Coffman, Olson)	Mirror Curves (John Kellermeier)	Teaching by the 'Rules' (Patrick Averbeck)	VI Saturday 9:00-10:00
WAMAP: Advanced topics (David Lippman)	The Astrolabe (James Evans)	Continuation of Teaching by the 'Rules' (Patrick Averbeck)	VII Saturday 10:15-11:15

# CONVENTION CENTER FLOOR PLAN



Hosted by the Mathematics Faculty of Yakima Valley Community College

