The Hyatt Regency Monterey



Welcome to the 43rd Annual Fall Conference!

The event organizers are people *just like you* from various community college mathematics departments across Northern California. We are always looking for more eager volunteers with new ideas. Please consider getting involved with CMC³ by contacting a board member any time. Enjoy the conference!

The *California Mathematics Council Community Colleges Foundation* annually provides **scholarships** to honor our mathematics and science students. We need your financial help. We rely on your generosity and donations to fund the Scholarship Program.

Please consider making a donation to our CMC³ Foundation Scholarship Fund. Contributions are tax-deductible, as provided by law. Our tax ID # is 94-3227552.

Please donate in-person at the Foundation table!

CMC³ Board and Conference Committee

President: Mark Harbison Past-President: Pres.-Elect (Conf. Chair): Joe Conrad Treasurer (Student Posters): Rebecca Fouquette Awards Coordinator: MAA Liaison: Wade Ellis Tahoe Speaker Chair: A/V Co-chair: Larry Green A/V Co-chair: Membership Chair:

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CMC³ Presidents

1973 - 1974	James Curl	Modesto Junior College
1974 – 1977	Raymond Wuco	San Joaquin Delta College
1978 – 1979	Brandon Wheeler	Sacramento City College
1980 - 1981	Hal Andersen	Santa Rosa Junior College
1982 – 1983	Art Dull	Diablo Valley College
1984 - 1985	Pat Boyle	Santa Rosa Junior College
1986 - 1987	Shirley Trembley	Bakersfield College
1988 - 1989	Wade Ellis, Jr.	West Valley College
1990 - 1991	Denny Burzynski	West Valley College
1992 - 1993	Barry Wood	Santa Rosa Junior College
1994 - 1995	Debra Landre	San Joaquin Delta College
1996 - 1997	Chris Burditt	Napa Valley College
1998 - 1999	Michael Eurgubian	Santa Rosa Junior College
2000 - 2001	Lois Yamakoshi	Los Medanos College
2002 - 2003	Randy Taylor	Las Positas College
2004 - 2005	Rick Hough	Skyline College
2006 – 2007	Rob Knight	Evergreen Valley College
2008 – 2009	Larry Green	Lake Tahoe Community College
2010 - 2011	Barbara Illowsky	De Anza College
2012 - 2013	Susanna Gunther	Solano Community College
2014 - 2015	Mark Harbison	Sacramento City College
2016 - 2017	Joseph Conrad	Solano Community College

Past CMC³ President's Awardees (selected by the CMC³ President)

2002	Barry Wood	Santa Rosa Junior College
2003	Chris Barker	De Anza College
2004	Noelle Eckley	Lassen College
2005	Barbara Illowsky	De Anza College
	Zwi Reznik	Fresno City College
2006	Sandi Nieto	Santa Rosa Junior College
2007	Randy Taylor	Las Positas College

43rd Annual Fall Conference

Past CMC³ President's Awardees (Continued)

Mark Harbison	Sacramento City College
Jim Spencer	Santa Rosa Junior College
Robert Knight	Evergreen Valley College
Larry Green	Lake Tahoe Community College
Michael Eurgubian	Santa Rosa Junior College
Ken Seydel	Skyline College
Rebecca Fouquette	De Anza College
	Mark Harbison Jim Spencer Robert Knight Larry Green Michael Eurgubian Ken Seydel Rebecca Fouquette

Past CMC³ Distinguished Service Awardees (selected by the CMC³ board)

1992	Ray Wuco	San Joaquin Delta College
1993	Frank Denney	Chabot College
u	Wade Ellis, Jr.	West Valley College
u	Brandon Wheeler	Sacramento City College
1994	Patrick Boyle	Santa Rosa Junior College
u	Arthur Dull	Diablo Valley College
1995	Hal Andersen	Santa Rosa Junior College
u	Sister Clarice Sparkman	San Jose City College
1996	James Curl	Modesto Junior College
1997	Guy De Primo	City College of San Francisco
1998	Allen Utterback	Cabrillo College
1999	Barry Wood	Santa Rosa Junior College
2000	Denny Burzynski	West Valley College
2001	Chris Burditt	Napa Valley College
2002	Wei Jen Harrison	American River College
2003	Marilyn McBride	Skyline College
2004	Michael Eurgubian	Santa Rosa Junior College
2005	Lois Yamakoshi	Los Medanos College
2006	Debra Landre	San Joaquin Delta College
2007	Dave Johnson	Diablo Valley College
2008	Chris Barker	De Anza College
2009	Rick Hough	Skyline College
2010	Jim Spencer	Santa Rosa Junior College
2011	Randy Taylor	Las Positas College
2012	Cynthia Speed	Mendocino College
2013	Rob Knight	Evergreen Valley College
2014	Barbara Illowsky	De Anza College
2015	Noelle Eckley	Lassen Community College



Noelle Eckley teaches math at Lassen College. Born and raised in San Francisco's Mission District, Noelle wanted to be a math teacher from age 14. Her roots were blue collar; one grandfather was a range cook on cattle drives. Noelle attended Lowell High School, went to S.F. State University, earning a B.A. and M.A. in mathematics.

Noelle visited India, the Middle-East, Canada, Mexico, and spent two summers in Hawaii. She danced Polynesian-style, performing at the World's Expo in Spokane. She enjoys backpacking and sailing.

Noelle sees teaching math as a way to repay what public education has given her; helping students achieve their goals in a region that is economically challenged.

Noelle joined CMC³ in 1992, served on the executive board for 10 years as Campus Rep., Business Liaison/Exhibiter Chair and helped put on 15 conferences. The current CMC³ Board congratulates Noelle on this recognition and thanks her for her years of valued service!

CONFERENCE PROGRAM - FRIDAY				
4:30 - 6:30 pm Registration		Regency Foyer		
7:00 - 8:00 pm Dessert Receptio	n	Regency IV - VI		
8:00 - 9:00 pm Ignite!		Regency IV - VI		
Five-Minute Speedy Presentations				
The "Ignite" motto: Enlighten us, but make it quick!				
AMATYC Student Math League Competition: Great Problem-Solving Activity for Students	A Steve Blasberg	West Valley College		
Teaching a Prestatistics Course: Propelling Non-STEM Students Forward	Jay Lehmann	College of San Mateo		
Setting the Beat in Statistics: TANGO	Monica Dabos	College of the Canyons		
Where Are They Now?	Debbie Van Sickle	Sacramento City College		
Education Behind Bars: Teaching Math to Incarcerated Students	Bruce Armbrust	Lake Tahoe Community College		
Building Community with the OEI	Larry Green	Lake Tahoe Community College		
The Supreme Awesomeness of the Order of Operations	Denny Burzynski	College of Southern Nevada		
Ignite the WOW	Karl Ting	Mission College		
Solving Equations Visually: Functions & Mapping Diagrams	Martin Flashman	Humboldt State University		
How Open Licensing Brings on Innovation	Barbara Illowsky	De Anza College		

9:00 pm – 9:30 pm

Regency IV - VI

Reception for Travel Grant Awardees, Their Mentors and Campus Reps

Come and meet other grantees, mentors and campus reps!

9:00 pm – Midnight

Windjammer Room

7th Annual Pearson Education Game Night

This event is open to everyone. The Pearson Math & Stats team invites you to an evening of games, hors d'oeuvres, and drinks at the CMC³Monterey Conference! Join our team and our authors for food, conversation, and fun.

9:00 pm – 1:00 am Free shuttle downtown Front Entrance of Hotel Lobby

Registration

cnelson@marin.edu

Students and Shortages

In this talk, I will share some tricks I've learned that make teaching more efficient. I will include a formula that will allow teachers to come up with two rational expressions that add to another rational expression in which the numerator and denominator have a common factor. Afterwards, I will focus on economics and explore why markets naturally drift towards the equilibrium point as well as what causes shortages and surpluses. Teachers will learn about how the economics we teach in math classes differs from that which students learn in economics classes.

Regency II Helen Burn

Highline College

hburn@highline.edu

The MAA-CSPCC Study: Two-Year Colleges Findings

Understanding how institutions manage to keep students in the calculus track is an issue of national importance. This was the impetus behind the study of Characteristics of Successful Programs in College Calculus undertaken by the MAA. This session presents findings from the two-year colleges included in the national study.

Regency III Martin Flashman

Humboldt State University

flashman@humboldt.edu

Making Sense of Solving Linear and Quadratic Equations with **Mapping Diagrams**

Solving linear and guadratic equations with algebra is often taught with algorithms that are not connected to functions or a visualization. I will demonstrate how using mapping diagrams to visualize functions can connect and make more sense of these algorithms.

Regency IV Tim Melvin

Santa Rosa Junior College

tmelvin@santarosa.edu

6

The Limit of Humanly Knowable Mathematical Truth, Gödel's Incompleteness Theorems, and Artificial Intelligence

In 1931, Kurt Gödel published one of the most infamously not-famous (enough) works in mathematics: his incompleteness theorems. During this talk we will explore the history behind his incompleteness theorems, the ideas behind them, and how they relate to artificial intelligence and the limits of humanly knowable mathematics.

(Issues and Panel)

(Developmental Ed.)

(Precalculus and Above)

2:00 pm – 5:15 pm First Session: 9:00 - 10:00 am **Regency I** (General Interest) **Cliff Nelson** College of Marin

7:30 am

8:15 am – 10:00 am

8:30 am – 1:00 pm,

Meet by the Front Desk **Regency Fover Regency Fover**

CONFERENCE PROGRAM - SATURDAY

Estimation Walk/Run

Exhibits open

First Session: 9:00 - 10:00 am, continued

Regency V

(Technology)

(Statistics)

Linda Hoang

Cosumnes River College

hoangl@crc.losrios.edu

Yes, You Can Make the Whole Math Class Tweet!

You have probably brought your math class outside for a physical excursion. How about bringing your class to the cyber land? Most students tweet, so why not let them tweet about their awesome math class?

Regency VI Robin Donatello *Cal*

California State University Chico

rdonatello@csuchico.edu

What's the Big Deal with BIG data? The Rising Importance of Training New Data Scientists

This talk is designed to fill in some knowledge gaps about what big data, data science, and data analytics are. I will discuss why there is a need for strong computational ability when dealing with real BIG Data. I will discuss why Data Science is interesting and important, and cover some of the skills that are needed for students to be able to derive valuable information from data. I will summarize various Data Science/Analytic programs across the country, and want to engage the audience in discussion as to how we can rethink or redesign the way we teach our introductory classes to best prepare students to enter higher level degree programs in these computationally and mathematically heavy fields.

Reminders:

8:30 am - 1:00 pm and 2:00 pm - 5:15 pm **Exhibits open** Regency Foyer

9:30 am - 1:00 pm **Student Posters on Display** Regency Foyer

The American Mathematics Association of Two-Year Colleges (**AMATYC**) will hold their next annual conference in Denver, CO on November 17 – 20, 2016.





Second Session: 10:30 - 11:30 am

Regency I

(General Interest)

Lalu Simcik

Cabrillo College

lasimcik@cabrillo.edu

Responding to Disruptive Student Behavior: Experiences Common to Mathematics Instructors

Any instructor who has ever felt conflicted or unsafe when dealing with a disruptive student is encouraged to attend this session. This talk and later discussion will delve into the common experiences that faculty members face when reporting a student whose behavior has become disruptive.

Regency II

(Issues and Panel)

(Developmental Ed.)

Larry Green

Lake Tahoe Community College

drLarryGreen@gmail.com

Mathematics in Non-Mathematics Classes

Will I ever need to use this worthless math? This question, asked by many of our students, will never be asked again after watching the video clips shown in this talk. We will explore a collection of hundreds clips from course lectures from Biology, Economics, Physics, Psychology, etc. that directly use what is taught in our community college math classes.

Regency III Ken Rand Johnny Perez

Hartnell College Hartnell College krand@hartnell.edu jrperez@hartnell.edu

Innovation + Inspiration = Math Academy

= Student Success

The Math Academy at Hartnell College is a two-week, intensive, pre-semester Math Camp that incorporates innovative instruction, collaborative learning, social and study skills into a fun and effective preparatory math class. This interactive workshop will demonstrate our innovative games and tools to use in their classes and will also show how to start a Math Camp.

Regency IV Kevin McCandless (Precalculus and Above*)

San Jose City College

kevin.mccandless@sjcc.edu

Investigating the Effects of Instructional Practices on Student Outcomes in Developmental Mathematics

The effects of a varied method of instruction on student achievement, situational interest, knowledge transfer, and course retention were investigated using six sections of Beginning Algebra and the main finding was that the method of instruction had no effect on students' procedural or conceptual mathematics knowledge.

*Note: This talk is out of its thread because it is a replacement for a late cancellation. (Thanks, Kevin!)

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Second Session: 10:30 - 11:30 am

Regency V

(Technology)

(Statistics)

ghagopian@collegeofthedesert.edu

Reclaiming Computer Science with Stroustrup's Programming Principles and Practices

College of the Desert

Computer Science was invented by mathematicians. Donald Knuth and other pioneering computer scientists were mostly trained in mathematics. Unfortunately, many computer science programs have drifted away from the mother's milk of mathematics and it has become somewhat of a Frankenstein in consequence. In this talk we will explore how Stoustrup's text, "Programming Principles and Practices in C++" can be used to explore mathematics using games and graphics.

Regency VI Gene Sellers

Sacramento City College

stasellers@frontiernet.net

Using Student Statistics to Verify the Meanings of a Confidence Coefficient and Level of Significance

This presentation will demonstrate my favorite method of teaching the meaning of a confidence coefficient by using a large set of data, and the individual work of every student in the class. A copy of the data set with N = 2,538 records will be given to session attendees. Each student computes xbar and S for a different randomly-selected sample, and constructs a 90% confidence interval for the mean. Based on the Standard Normal Distribution, about 10% of the entire list of intervals should fail to contain μ . Similar methods estimate proportions, also.

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43rd Annual Fall Conference

Luncheon: 11:45 am - 12:45 pm				
11:45 am - 12:45 pm	Buffet (tickets required)	Regency Main		
(Mention to one of the servers if you have special dietary needs not met by the buffet.)				
12:30 - 12:45 pm	Students Discuss Their Posters	Regency Foyer		
General Session: 1:00 - 2:15 pm				
1:00 - 1:15 pm	Poster awards, CMC ³ awards	Regency Main		
1:15 - 2:15 pm	Keynote	Regency Main		
	Erica Flapan Pomona College ELF04747@pomona.edu			
	How I Developed My Teaching Style			

I spent much of my early career trying to find the algorithm for how to be a good teacher. I read articles about pedagogical techniques and talked to successful teachers about their methods. But nothing seemed to work quite as well for me as it did for the person describing it. Then I began to compare being a good teacher with being a good parent. I had never sought an algorithm for good parenting, so why should I expect there to be one for good teaching? In fact, there is no teaching technique that will work at all institutions, for all teachers, all classes, and all students. Rather, each person's teaching methods should fit their personality and their mathematical preferences as well as the needs and goals of their courses and their students. In this talk, I will describe some pedagogical techniques that have worked for me and others that have not.

2:00 - 5:15 pm

Exhibits open

Regency Foyer

Third Session: 2:30 - 3:30 pm

Regency I

(General Interest)

Barbara Illowsky

De Anza College

illowskybarbara@fhda.edu

Teaching Mathematics or Statistics Online? Building a Community for Faculty

More and more faculty are teaching online. Some of us have studied pedagogy for teaching online. Some of us have taken certification courses. Many of us have no formal training. Let's join together and build a community to share effective practices and support each other.

Regency II

(Issues and Panels)

Phil Smith

American River College

smithp@arc.losrios.edu

Flipping the Gradebook: Concept-Based Grading

Concept-based grading is an alternative approach for computing student grades. It reorganizes your gradebook to focus directly on the concepts you want students to learn rather than indirectly via assignment scores. Students are provided with multiple opportunities to demonstrate understanding of concepts, and the focus is on what students know by the end of the term more than an average of assessments across the term. This presentation describes how the system has worked over two semesters in six different classes.

Third Session: 2:30 - 3:30 pm, continued

Regency III

(Developmental Ed.) West Valley College

wade25@sbcglobal.net

Learning to Learn in Developmental Mathematics Courses

Many Developmental Mathematics students have few skills for learning mathematics. Such at-risk students come to class unprepared, don't schedule time to complete assignments, don't read mathematics textbooks, and don't feel the need to validate their work. The presenter will address these issues from a Learning to Learn perspective.

Regency IV John Thoo

Regency V

jthoo@yccd.edu

Teaching Differential Equations the SIMIODE Way

Yuba College

SIMIODE flips the traditional differential equations course. Using data from a hands-on activity or narrative, students first develop a model that introduces a type of DE. Then students use technology or learn techniques to solve DE's of that type. This talk features a hands-on activity and discussion of this approach.

Howard Blumenfeld

Wade Ellis

Best Practices in Using Social Media in the Mathematics Classroom

This talk will be instructive in the use of social media in the mathematics classroom. We will look at how to set up Facebook groups to facilitate modern and effective communication between students and other students as well as between students and faculty. Best practices, privacy concerns, and group dynamics will also be discussed in detail. You are encouraged to bring a laptop or tablet with you.

Las Positas College

RegencyVI

Charles S. Barnett

Leslie Banta

Las Positas College

cjbarnett2@comcast.net

Did You Sample the Relevant Population? Subtitle: Why Are Handsome Men Such Jerks?

I will discuss four counterintuitive situations that arise in probabilistic and statistical contexts. One appears in some elementary texts, but I will add a twist to it that leads to a rather startling result. The other cases are less well known; some have important realworld implications. Enliven our discussion by bringing your favorite paradox.

Fourth Session: 4:00 - 5:00 pm

Regency I

(General Interest) Mendocino College

lbanta@mendocino.edu

Get Your All ACCCESS Pass!

Are you in your first three years of full-time teaching? Do you have new faculty who are? If so, this session is for you! Learn about the amazing opportunities that abound in Project ACCCESS, a mentoring and professional development initiative sponsored by AMATYC. California has had 18 ACCCESS fellows since 2004. Let's keep the tradition going! ACCCESS alumni welcome.



(Technology)

(Precalculus and Above)

hblumenfeld@laspositascollege

CSU/UC

Mathematics Diagnostic Testing Project

MDTP tests measure readiness for mathematics courses and are approved for use by California Community Colleges

- The Algebra Readiness Test assesses preparation for first year algebra courses.
- The Elementary Algebra Diagnostic Test assesses preparation for second year algebra courses.
- The Intermediate Algebra Diagnostic Test assesses preparation for precalculus and other courses at that level
- The Precalculus Diagnostic Test assesses preparation for calculus. This test is available in a 40-item version and a 60-item version.

MDTP has two online practice tests available to anyone with Internet access. Students can use the online tests to prepare for precalculus and calculus level courses. http://mdtp.ucsd.edu/OnlineTests.shtml

MDTP California Community College Coordinator MaryAnne Anthony - (714) 564-6646 cccmdtp@gmail.com http://mdtp.ucsd.edu

Research Showcase: Web-based Activity & Testing Systems (WATS)

How do researchers find out what works? For whom? Under what circumstances?

Visit us in the Exhibit Hall!

Learn more about ongoing research, including opportunities to participate in current studies.

Also, look for the WATS research study workshop on Friday 12/11 presented by Shandy Hauk.



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* AMATYC

[tote bags]

* **Pearson Higher Education** [Friday "Game Night"]

* Wei-Jen Harrison

[Subsidizing the Travel Grants]

Thanks to our Exhibitors!

CMC³ Foundation Hawkes Learning CSU/UC MDTP WebAssign Macmillan Education WestEd McGraw Hill Pearson Cengage Thinkwell XYZ Textbooks

* Our two pre-conference presenters:

* High Tech Center Training Unit (HTCTU) of De Anza College (Math Accessibility)* Carnegie Foundation Pathways (Quantway and Statway)

* All of our Door Prize and Foundation Donors!

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Fourth Session: 4:00 - 5:00 pm, continued

Regency III

(Developmental Ed.)

George Woodbury

College of the Sequoias

georgew@cos.edu

The Importance of Discovery and Reflection in Developmental **Mathematics**

This session will focus on classroom techniques designed to include students in the discovery of developmental mathematics rather than simply lecturing to students. There will also be a discussion of the importance of student reflection as a part of the cycles of learning to increase student understanding.

Regency IV

(Precalculus and Above)

Marc Frodyma Sandy Rosas

Lynn Marecek

San Jose City College San Jose City College

marc.frodyma@sicc.edu

sandy.rosas12@yahoo.com

Using Math Symmetry Operations to Solve a Problem in Elementary **Physics**

We present a novel solution to an elementary problem in electromagnetism using translations and rotations of two long, parallel current-carrying wires with respect to a fixed point P to find the unknown current in one of the wires. Our technique provides a simple introduction to powerful symmetry methods.

Regency V

(Technology)

marecek_lynn@sac.edu

Creating an iPad Classroom for Redesign and Innovation

Advances in technology and classroom learning management systems as well as economic constraints are affecting the classroom implementation of Redesign and other innovations. This session will help faculty see an iPad classroom as a viable possibility by sharing logistics, classroom management techniques and strategies used in a Redesign iPad classroom.

5:00 – 6:00 pm Reception (with door prizes!) **Regency Foyer** Free shuttle downtown Front Entrance of Hotel Lobby 6:00 – 10:00 pm

Mark Your Calendar!

CMC³ 20th Annual Recreational Mathematics Conference Fri., April 22 to Sat., April 23, 2016 MontBleu Hotel and Casino, Stateline, NV (South Lake Tahoe, CA)

Sacramento Valley CC Math Conference (SVCCM): March 12, 2016 **Cosumnes River College** http://ms.yccd.edu/sacvalleyccm.aspx



Santa Ana College

- NOTES -