

California Mathematics Council Community Colleges

CMC³ NEWSLETTER

New Location for Fall Conference: Hyatt Regency Monterey Hotel and Spa

See the article “Fall Conference” for details.

Fall Conference

Mark Harbison, Sacramento City College

The 41st annual CMC³ Fall Conference will be on Friday and Saturday, December 13-14, 2013 at a new hotel! We are happy to move to the Hyatt Regency Monterey Hotel and Spa, especially since they just recently completed a \$5 million renovation. Their website is www.monterey.hyatt.com/en/hotel/home.html . More details about the hotel are

listed in the Summer 2013 newsletter, also www.cmc3.org/Newsletters/CMC3Summer13Newsletter.pdf .



Table of Contents

Fall Conference-----	1
President’s Message-----	3
New Location, Same Great Poster Session-----	4
Student Involvement at CMC ³ Conferences-----	5
Brain Strain-----	5
CMC ³ Foundation Report-----	6
Accreditation Crisis at City College of San Francisco-----	7
Sacramento Valley Conference-----	8
Through the History Glass-----	9
MAA Golden Section Award for Distinguished College Award or University Teacher of Math-----	11
Math Nerd Musings-----	12
Calendar-----	15

Change can be a good thing. It’s still in scenic Monterey with the relaxing climate. But now we get free parking, free wireless internet, more swimming pools, jacuzzi’s, tennis and golf. Even if you are not a golfer, you can appreciate some of the history of the oldest-running golf course West west of the Mississippi. Our breakout session rooms will be just on one floor of the convention center building—no crowded elevator rides between sessions, any more.

(see “Fall Conference” on p. 3)

Executive Board & Special Committees

President: Susanna Gunther, Solano Community College,
(707) 864-7000, ext. 4614,
SusannaElizabeth2020@gmail.com

Past President: Barbara Illowsky, De Anza College
(408) 864-8211, illowskybarbara@deanza.edu

President-Elect: Mark Harbison, Sacramento City College
(916) 475-9461, harbism@scc.losrios.edu

Secretary: Greg Daubenmire, Las Positas College
(925) 373-3085, gdaubenmire@laspositascollege.edu

Treasurer: Rebecca Fouquette, De Anza College
408-864-5522, fouquetterebecca@fhda.edu

Members-at-Large:

AMATYC Liaison: Marcella Laddon, Cabrillo College
(831) 479-5734, maladdon@cabrillo.edu

Adjunct Advocate: Tracey Jackson, Santa Rosa Junior
College, tkkjackson@yahoo.com

Articulation Breakfast: Steve Blasberg, West Valley
College
(408) 741-2564, steve_blasberg@westvalley.edu

Awards Coordinator: Katia Fuchs, City College of San
Francisco, (510) 325-1616, efuchs@ccsf.edu

Business Liaison: Randy Rosenberger, Sacramento City
College, rosenbr@scc.losrios.edu

Campus Reps Coordinator: Tracey Jackson, Santa Rosa
Junior College, (707) 527-4356, tkkjackson@yahoo.com

CMC Liaison: Jenny Freidenreich, Diablo Valley College,
(925) 685-1230 x2302, JTheSmith@comcast.net

Conference AV Specialist: Larry Green, Lake Tahoe
Community College
(530) 541-4660 ext. 341, drlarrygreen@gmail.com
and Steve Blasberg, West Valley College
(408) 741-2564, steve_blasberg@westvalley.edu

Fall Conference Chair: Mark Harbison, Sacramento City
College
(916) 475-9461, harbism@scc.losrios.edu

Fall Conference Speaker Chair: Wade Ellis, West Valley
College (retired), (408) 741-2568, wellis@ti.com

Foundation President: Debra Van Sickle, Sacramento City College,
(916) 558-2476 vansicd@scc.losrios.edu

MAA Liaison: Wade Ellis, West Valley College (retired)
(408) 741-2568, wellis@ti.com

Membership Chair: Joe Conrad, Solano Community College,
(707) 864-7000 x 4372, Joseph.Conrad@solano.edu

Monterey Hotel Chair: Rob Knight, Evergreen Valley College,
robknight@charter.net

Newsletter Editor: Jay Lehmann, College of San Mateo,
(650) 863-5305, MathNerdJay@aol.com

Spring Conference Chair: Larry Green, Lake Tahoe Community
College
(530) 541-4660 ext. 341, drlarrygreen@gmail.com

Spring Conference Speaker Chair: Mark Harbison, Sacramento City
College
(916) 475-9461, harbism@scc.losrios.edu

Web Page Coordinator: Larry Green, Lake Tahoe Community
College
(530) 541-4660 ext. 341, drlarrygreen@gmail.com

Follow us on Facebook



Mark Your Calendar:

Tahoe Recreational Math Conference

April 25-26, 2014

MontBleu Hotel and Spa

Volume 42, Number 3

Fall 2013

CMC³ Newsletter is the official newsletter of the
California Mathematics Council, Community Colleges,
and is published three times a year--in the spring, summer,
and fall.

Copyright© 2013 California Mathematics Council,

Fall Conference

(continued from front p. 1)

And that floor will have only CMC³ participants: no other group is competing for our space.

The CMC³ group rate is \$130 per night + \$10 resort fee (normally \$20) + taxes, up to double occupancy. The best way to get this rate is to visit <https://aws.passkey.com/event/10721643/owner/4475/home> and make the selection “attendee”.

If necessary, reservations can also be made by calling 1-888-421-1442 and mentioning the “CMC³ conference”. (These are the same methods as printed on the “Mini Program” that was recently published).

The full program is on www.cmc3.org/conference/Monterey13/Monterey13.html. This year’s keynote speaker is Brian Conrey, from the American Institute of Mathematics. His talk is titled “Primes and Zeros: a Million-Dollar Mystery”.

The 2013 program is full, but please consider speaking at the Dec. 5-6, 2014 Fall conference, which will also be at the Monterey Hyatt Regency. Speaker proposal forms are at:

(see “Fall Conference” on p. 10)

The President’s Message

Mark Harbison, Sacramento City College

It can get a bit dull teaching the same algebra, calculus, statistics, etc. to the same kinds of students year-after-year. At least from my personal perspective, it can be kind of tedious to see the same mistakes on exams after more than 20 years of trying to teach students not to make those mistakes. There is so much repetition.

That’s why it’s so important to network with colleagues who are going through similar struggles as you. Some colleagues are older and wiser. Some are younger and more in-touch with the mind-set of the typical 20-something-year-old student. The good news about our organization is that everybody can spend some time together sharing ideas. It’s reassuring to know that you’re not alone in your quest to make math and stats more understandable. CMC³ has a 41-year track record of encouraging innovations and networking that just can’t be found anywhere else.

Please consider attending the 18th. Annual Recreational Mathematics Conference on Apr. 25-26, 2014 at the familiar MontBleu Hotel and Casino in Stateline, NV (South Lake Tahoe, CA). The program will be available sometime around

(see “President’s Message” on p. 4)



Surrounding area of Hyatt Regency Monterey Hotel and Spa

President's Message

(continued from front p. 3)

February on www.cmc3.org/conference.html. There is also a "Call for Speakers" for the Tahoe conference, especially for sessions that are fun for math's sake—not necessarily on classroom pedagogy.

And definitely plan on attending the 41st. Annual Fall Conference on Dec. 13-14, 2013 at a new location! (See the "Fall Conference" article in this newsletter for details.). Discounted registration is due to Joe Conrad (our membership chair) postmarked by Nov. 27.

All members should have a registration form in the postal mail (or email, or both), but they are also available here <http://cmc3.org/conference/Monterey13/RegFormMont13.pdf>, if necessary.

Ballots for Board positions have been sent to regular current members. They should be returned to Barbara Illowsky, postmarked by Nov. 1, 2013 (the postal address is on the ballot). Offices will be held from Jan. 2014 to Dec. 2015.

CMC³ Board meetings are usually on Saturdays at 9 am, and are always open to anybody who is interested in participating—even if they are not on the Board. Each year, a Bay-Area college typically hosts a meeting in February, then a Sacramento-Area College will host one in September. Contact any board member for more details if you'd like to observe how CMC³ is run. We are all volunteers **just like you**, with a goal of providing professional development for our community.

Finally, I'm gathering input on the email vs. postal mail issue. How important is it to you to receive the same information in a paper envelope that could have been sent by email? Are stamps and envelopes still worth the costs? Please let me know.

Thanks to all of you for supporting CMC³. I look forward to seeing you at the Hyatt Monterey on Dec. 13 – 14, 2013.

New Location, Same Great Poster Session

By Rebecca Fouquette, De Anza College

At the great new location of the CMC³ Fall conference, we will continue to have a student poster session for our students to showcase the great work that they do beyond the classroom. Motivated students at all levels are welcome to submit a poster; all we ask is that the problem they are presenting is beyond the normal curricula. Modeling problems are encouraged! Last year, we had wonderful posters submitted from beginning algebra, statistics and calculus students and we hope to continue this wonderful diversity this year.

If you have a student or group of students that are interested in participating, please encourage them to submit a proposal at <http://cmc3.org/conference/callForPosters.html>. There is no fee to enter and the student gets free registration, excluding lunch. The first place winner receives a \$75 scholarship and the second place winner receives a \$25 scholarship. All student participants receive a t-shirt courtesy of CMC³ Foundation.

Posters will be displayed during the Saturday conference only, so student participants must attend Saturday and are encouraged to attend the entire conference. Each poster needs to have a presenter that is available to present his or her poster when the poster is being judged during the sessions before lunch and to answer general questions from 12:30-12:45. Awards will be presented during the Saturday keynote session. Posters will be judged on mathematical content, the student's explanation of poster, and overall poster appeal. Students are encouraged to prepare a 2-3 minute synopsis of their project ahead of time. Submissions will be accepted until November 18, 2013.

(see "Poster Session" on p. 11)

Student Involvement at CMC³ Conferences

Dean Gooch, Santa Rosa Junior College

I just wanted to remind everyone how important it is for you to involve your students in activities at the CMC³ Monterey and the CMC³ South Lake Tahoe Conferences.

In Monterey, the CMC³ board has provided a wonderful opportunity for students to show off their mathematical talent and creativity with a poster competition. The participants not only have the possibility of winning this competition, but those winners also receive cash prizes.

Organizer, Rebecca Fouquette, needs faculty to volunteer as judges for this competition. (See <http://www.cmc3.org/conference/Monterey13/posterFlyer2013pdf.pdf>) I helped judge the poster competition last year. It was a lot of fun looking at the work exhibited of our wonderfully talented community college students. I highly recommend that you think about volunteering!

Unfortunately, I will not be able to judge this year since I am the math club advisor for Santa Rosa Junior College and it would be a conflict of interest if I volunteered.

Our Math Club is really AWESOME this year! How's yours?

We have some very talented students who will be entering this competition. Do you have students at your college who would be able to compete with the caliber of student that we teach here at Santa Rosa Junior College? I challenge any other community college to try to win the poster competition this year!

Speaking of which, were you aware the winner of the Student Speaker Competition at

(see "Student Involvement" on p. 11)

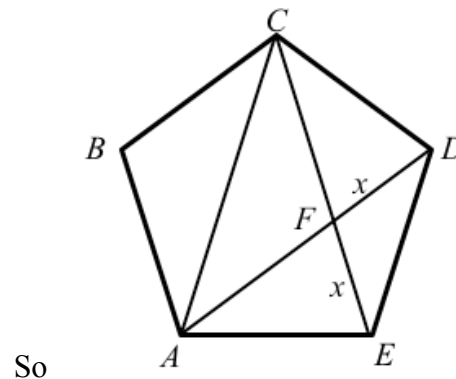
Brain Strain

Joe Conrad, Solano Community College

I hope this finds you enjoying your fall and eager to try another Brain Strain. Our new problem is to prove that if a, b, c are odd integers, then the roots of $ax^2 + bx + c = 0$ cannot be rational.

The problem from the last issue was: Without using trigonometry, find the ratio of the length of a diagonal of a regular pentagon to the length of its side.

Solutions were sent in by Kevin Olwell, Paul Cripe, Fred Teti and John Martin. We can assume that the pentagon $ABCDE$ has sides of length 1. Let F be the intersection of AD and CE . It is easy to show that $AF \cong BC$ and $CF \cong AB$. So $|AF| = |CF| = 1$. Since the diagonals have equal lengths, $|FD| = |EF|$. Call this length x . Consequently, each diagonal has length $1 + x$. It is simple to show that $\triangle ACF$ is similar to $\triangle EDF$.



$$\frac{|AC|}{|AF|} = \frac{|ED|}{|EF|} \quad \text{or} \quad \frac{1+x}{1} = \frac{1}{x}$$

Solving for x , we find that the ratio of a diagonal to a side is the golden ratio!

Enjoy the new problem and, as always, send solutions via email or USPS to:

Joe Conrad
Solano Community College
4000 Suisun Valley Road
Fairfield, CA 94534
joseph.conrad@solano.edu

CMC³ Foundation Report

*Debbie Van Sickle, Foundation President,
Sacramento City College*

Scholarships and Competitions



**Caleb Price, scholarship winner
from College of the Sequoias**

Last spring the CMC³ Foundation awarded a total of \$5,600 in scholarships to students attending 18 of our member colleges. The names of the students, chosen by the faculty at each college based on guidelines we provided, can be

found in the summer edition of the CMC³ newsletter at <http://www.cmc3.org/Newsletters/CMC3Summer13Newsletter.pdf>.

During the Monterey conference the Foundation sponsors a student poster contest that includes a \$100 cash prize for the winner. Please see Rebecca Fouquette's article for more information on this year's contest.

A highlight of the CMC³ Spring Conference at Lake Tahoe for the last couple of years has been a talk given by the winner of the Foundation's Student Speaker Competition. Debra Landre, a former CMC³ President, has sponsored this scholarship for the last several years, allowing us to give the winner a \$500 scholarship. Applications are open to any currently enrolled community college student in our region. More information about this competition will be available in Spring 2014 in the newsletter and on our website at <http://www.cmc3.org/foundation.html>.

Fundraising

CMC³ scholarships are only made possible because of the generosity of our members, our vendors and other contributors. Everyone who is a member of CMC³ is also a member of the Foundation. You can help us in several ways:

- Make a tax-deductible cash contribution*.
 - Donate prizes for our raffle. The value of these items is also tax-deductible*.
- Donations can include (but are not limited to):

Wine, beer, and other libations

Candy, cookies and other non-perishable food items

Gift cards for stores, restaurants, or services

New items you received as a gift and can "re-gift" to us (stationary, books, t-shirts, electronics etc.)

New gift baskets (store bought or homemade)

New items we can add to other gift baskets

Baskets (need not be new) we can use to make gift baskets

- Help us get cash or raffle prize donations from businesses or individuals. I especially would like help reaching out to publishers and other vendors that you may have an especially good relationship with.
- Purchase lots of tickets for our raffle and encourage your friends to do so as well.
- Purchase our t-shirts and other items for sale at our table during the conferences.

I would like to thank everyone who made generous donations of money and prizes over the last year. Without your support none of our work would have been possible.

Goodbye, Hello and Thank You

It is with regret that after the Monterey conference, we will be saying goodbye to our retiring board members, Barbara Illowsky, Bic Ha Dovan,

(see "Foundation Report" on p. 9)

Accreditation Crisis at City College of San Francisco

Katia Fuchs, City College of San Francisco

In the Summer of 2012, City College of San Francisco (CCSF) was put on “Show Cause” status by the Accreditation Commission of California Junior Colleges (ACCJC). The college spent the 2012-2013 academic year working to resolve the many deficiencies cited by the commission, but in July of 2013 the commission announced plans to take accreditation away from City College of San Francisco in July of 2014.

There have been many college-wide changes at CCSF since the accreditation crisis hit. One of the first things the interim leadership did was to abridge our mission statement, most noticeably by deleting lifelong learning. Next, they fired almost all the administrators and made them re-apply for their jobs. Furthermore, in response to an ACCJC-identified deficiency that CCSF had too little management, several new administrator positions were created, mostly “associate vice chancellors”.

There was a strong attempt to use data to identify several campuses to be shut down (campuses are known as “centers” to the outside world, although most of them are simply large buildings scattered throughout the city of San Francisco). However, all the data collected showed that the campuses were productive. New data was ordered and collected and still the centers were productive. Eventually the group charged with collecting and analyzing that data was disbanded. Instead, the Special Trustee has decided to abandon the long-planned, voter-approved, and fully-funded Performing Arts Center project at the main CCSF campus. His plan is to free up those funds for repairs and maintenance on existing buildings. Many employees are skeptical that bond funds can be legally re-directed that way.

Another ACCJC-identified deficiency was an overly complex governance structure. In response, the administration unilaterally abrogated our shared

governance mutual agreement (which was supposed to have the “plus 1” blessing of Title 5) and developed a new governance structure headed by a Participatory Governance Council and only four standing committees. Needless to say, already the absence of the former committees is being felt, especially for technology, program review, and facilities. Most of the Academic Senate’s committees still exist but, instead of the former convoluted council/committee/subcommittee/workgroup structure, we now have a single, flat tier of committees that are grouped into four categories.

The CCSF faculty are most proud of the progress made on SLOs. We now have two SLO coordinators who have seen us through the development and assessment of course SLOs (most of which were already in place before the crisis hit), program SLOs, institutional LOs, and general education LOs. Our incredible progress on all these is made visible on the College’s SLO website. Even the latest ACCJC visiting team described our progress as “a miracle”. Alas, the Commission itself did not share the visiting team’s opinion. Nonetheless, we proceed undaunted to ensure that we reach SLO proficiency this academic year.

The College remains open, and students are learning, though enrollment has taken a hit. However, mathematics courses fill quickly, and new sections have been opened to accommodate demand. On October 14th, 2013, the College must make public its “Closure Report”. Though possible to interpret as a definitive plan to close, this is merely the College’s contingency plan, part of the requirements set forth by the ACCJC, and should not be seen as anything other. While the ACCJC decision seems frighteningly final, the college has already appealed the decision, and intends to take all the steps necessary to enter into compliance with ACCJC recommendations, and remain open.



2014 Sacramento Valley Conference,
Saturday, March 15, 2014

Woodland Community College
2300 East Gibson Road
Woodland, CA, 95776

For any questions please contact

Matt Clark

Email: mclark@yccd.edu

Phone: 530-661-5764

Look for an email in January 2014 with more details !

Through the History Glass

J. B. Thoo, Yuba College, jthoo@yccd.edu



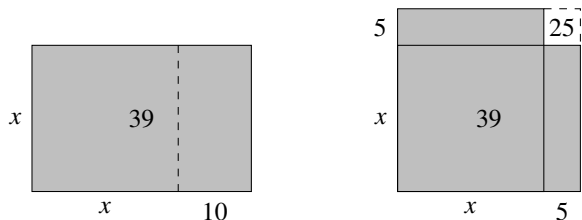
In the Fall 2006 installment we wrote about how the method of completing the square to solve quadratic problems has been known for a long time, and we gave two examples to illustrate this. The first example was a problem that was recorded by a Babylonian scribe [2, p. 29].

The length and width of a canal are together 6;30 GAR; the area of the canal is 7;30 SAR. What are the length and the width?

The scribe’s solution, given rhetorically, can be interpreted today to be $l = \sqrt{(b/2)^2 - c} + (b/2)$, where l denotes the length, w denotes the width, and $l + w = b$ and $lw = c$. The second example came from al Khwārizmī’s (ca. A.D. 780–850) *The Condensed Book of Completion and Restoration* that was written around A.D. 825 [2, p. 247].

One square, and ten roots of the same, amount to thirty-nine dirhems...

$[x^2 + 10x = 39]$. One proof of his solution, illustrated below, is often used today to introduce the method of completing the square.



In this installment we present the method of completing the square to solve quadratic problems found in *Vija-ganita* (or *Bijaganita*; A.D. 1150) [1] by the Indian mathematician Bhāskara II (1114–1185). In his work, Bhāskara II gives the following formula for solving the quadratic equation $ax^2 + bx = c$ [1, pp. 209-210].

131. ŚRĪD’HARA’S rule on this point: ‘Multiply both sides of the equation by a number equal to four times the [coefficient] of the square, and add to them a number equal to the square of the original [coefficient] of the unknown quantity. (Then extract the root.)

In modern notation, this is what Bhāskara II says to do to solve $ax^2 + bx = c$.

$$4a^2x^2 + 4abx = 4ac$$

$$4a^2x^2 + 4abx + b^2 = 4ac + b^2$$

$$\left[(2ax + b)^2 = 4ac + b^2 \right]$$

$$2ax + b = \sqrt{4ac + b^2}$$

At this point, it is understood that the solution is

$$x = \frac{\sqrt{4ac + b^2} - b}{2a}$$

—the quadratic formula!

Bhāskara II then gives this example [1, pp. 211–212] that illustrates the use of Śrīd’hara’s rule or the quadratic formula.

132. Example: The square-root of half the number of a swarm of bees is gone to a shrub of jasmin; and so are eight-ninths of the whole swarm: a female is buzzing to one remaining male, that is humming within a lotus, in which he is confined, having been allured to it by its fragrance at night. Say, lovely woman, the number of bees.

Here is his solution, where we have replaced the Indian convention for expressions and equations with our modern equivalents.

Put the number of the swarm of bees $2x^2$. The square-root of half this is x . Eight-ninths of the whole swarm are $\frac{16}{9}x^2$. The sum of the square-root and fraction, added to the pair of bees specified, is equal to the amount of

the swarm, namely $2x^2$. Reducing the two sides of the equation to a common denominator, and dropping the denominator, the equation is $18x^2 + 0x + 0 = 16x^2 + 9x + 18$ and, subtraction being made, the two sides are $2x^2 - 9x + 0 = 0x^2 + 0x + 18$. Multiplying both of these by eight, and adding the number eighty-one, and extracting both roots, the statement of them for an equation is $4x - 9 = 0x + 15$. Whence the value x comes out 6. By substituting the square of this, the number of the swarm of bees is found 72.

In other words, Bhāskara II begins by letting $2x^2$ equal the number of bees in the swarm, and obtains the equation $x + \frac{16}{9}x^2 + 2 = 2x^2$. He then solves the quadratic equation as follows.

$$\begin{aligned} \frac{9}{9}x + \frac{16}{9}x^2 + \frac{18}{9} &= \frac{18}{9}x^2 \\ 18x^2 &= 9x + 16x^2 + 18 \\ 2x^2 - 9x &= 18 \\ 16x^2 - 72x + 81 &= 144 + 81 \\ [(4x - 9)^2 &= 225] \\ 4x - 9 &= 15 \\ x &= 6 \end{aligned}$$

It then follows that the number of bees in the swarm, $2x^2$, is 72.

You may find other colorful examples such as this in [1].

Previous columns are on the Web at <http://ms.yccd.edu/history-glass.aspx>.

References

- [1] Brahmagupta and Bhāskara, *Algebra, with Arithmetic and Mensuration, from the Sanscrit of Brahmagupta and Bhāskara*, John Murray, London (1817). Translated by Henry Thomas Colebrooke, Esq. <http://books.google.com/books?id=QJ5BAAAAAYAAJ>
- [2] Jeff Suzuki, *A History of Mathematics*, Prentice Hall, Upper Saddle River (2002).

Foundation Report

(continued from p. 6)

and Hsiao Wang. I literally could not have done this job without them and I will miss them more than I can say. In addition to welcoming Susanna Gunther to our board in 2014 we will be appointing 2 new members. If you would like more information about the board and the possibility of being appointed for a two-year term starting in January of 2014, please contact me by e-mail or stop by and see me or one of the other Foundation board members in Monterey.

Last, a very, very special thank you to our one continuing board member and treasurer Rebecca Fouquette. I truly don't know how she does it all.

*CMC³ Foundation is a nonprofit charitable organization under section 501(c)3 of the Internal Revenue Code. Contributions are tax deductible to the extent allowable under federal law (as long as no goods or services are provided in exchange for the donation). Our Tax Identification Number is 94-3227552. Cash donations can be made in three ways:

- At the time you register for either conference (There is a box to check on the registration form. Please use a separate check, but mail it in the same envelope as your registration form.)
- In-person at one of our conferences either by check, cash, or credit card.
- By mailing a check to our treasurer Rebecca Fouquette, 595 Gettysburg Drive, San Jose CA, 95123

MAA Golden Section Award for Distinguished College or University Teacher of Mathematics

Nominations for the 2014 MAA Golden Section (your MAA Northern California Section) Teacher Award are now being accepted. (The 2013 Award was presented to our own Steven Blasberg of West Valley College.)

To streamline the nomination procedure, the Golden Section's Selection Committee asks that a rather brief initial form be returned by 20 December, 2013. The Selection Committee will review it and decide whether to ask that a full nomination package be prepared for later submission, by 24 January 2014.

The Selection Committee will choose for the award from the full nominations. He or she will be honored at the Section's 2014 section meeting, with a certificate and a \$300 prize. The awardee will then become the Section's official candidate for one of the MAA's National Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics. There will be at most three National awardees, who will be honored at the National MAA meeting in January 2015 and receive a certificate and a \$1000 prize. (One of the National winners may be selected from another source.)

Consider nominating eligible, qualified teachers. Anyone may do so, but self-nomination is not permitted, and current students should nominate through another faculty member.

Eligibility

Nominees must

- Be assigned to teach a

mathematical science in a public or private college or university in the U.S. or Canada, at least half-time, during the current academic year. Those on approved leave (sabbatical or other) qualify if they fulfilled the requirements in the previous year.

- Have at least five years' teaching experience in a mathematical science.
- Be members of the Mathematical Association of America.

For more information and guidelines for nomination, please consult the Golden Section website: <http://sections.maa.org/golden/>

AMATYC CONFERENCE
is at Anaheim, CA
this year!

October 31-November 3, 2013
See the Calendar for details.

Fall Conference

(continued from p. 3)

www.cmc3.org/conference/callForProposalsMonterey.html .

It would also help me if everybody who reads this article would kindly **mention the new location** to at least one colleague. Please try to spread the news, so that there are fewer surprises. It would be awkward if anyone showed up at the old hotel and asked their staff, "Where's CMC³?".

I'll see you on Dec. 13-14 at the Hyatt!
Thank you very much.

Poster Session

(continued from p. 4)

Requirements: For a student to submit a poster, he or she

- should be a current community college student for Fall 2013
- have a current CMC³ faculty member who will attend the conference agree to sponsor them
- provide an easel to display their work
- must be able to attend the Saturday conference

We are also looking for volunteers from our membership to help judge the wonderful submissions we receive. You will be asked to judge each poster ranking them, on a scale from 1 to 5, in each of the above mentioned areas. Judging will take place during one of the morning sessions.

If you are willing to volunteer to be a judge or have any other questions, please contact me at fouquetterebecca@fhda.edu.

Student Involvement

(continued from p. 5)

the Tahoe Conference has been from Santa Rosa Junior College for the last four years? I think other community colleges need to attempt to upset this record, but like I said, we have a really awesome math club this year. They are confident that one of them will win, but would appreciate having to work harder to earn the Student Speakership and the prize money that goes with it!

I am looking forward to seeing more student involvement at both our conferences this year.



Math Nerd Musings

Jay Lehmann, College of San Mateo

I don't remember much about my first two semesters of teaching, but I'll never forget my third semester. I was doing the highway shuffle, teaching as an adjunct instructor at three community colleges, which made for a 112-mile commute. It took several shortcuts and plenty of high-speed driving to make it from Diablo Valley College to College of San Mateo within an hour window between classes. Even the slightest backup in traffic threatened to make me late. Talk about a stressful drive!

But things were going good in my classes—or so I thought. I had great rapport with my students, and they seemed to be doing pretty well on quizzes and tests. But I never saw such long faces when they turned in their final exams. Somehow what they'd learned during the semester hadn't stayed with them. Or maybe they hadn't learned as much in the first place as I'd thought.

The next semester I tried to do better. I attempted to improve my lecture notes and go into more detail when lecturing, but my students didn't do much better. I was at a loss what else to do. I'd always thought that the key to teaching was to avoid skipping steps, to make sure students understood the logic. What was I doing wrong? Maybe I wasn't cut out for teaching, after all.

Despite my doubts, I wasn't about to give up. Tenacity is one of my better attributes. Some might call me stubborn.

I started asking other instructors for advice. David Burton at Chabot College was especially helpful. He was into collaborative learning long before the reform math movement in the 90s. I started experimenting with collaborative and directed-discovery learning, which enlivened students and helped enhance their conceptual understanding, but that alone didn't bring students

to the level I was seeking. With the limited progress I was making, my worries about not having the raw materials to teach well grew.

It's ironic that in the midst of all my frustration and confusion about teaching, I was offered full-time teaching positions at two colleges, Mission College and College of San Mateo. I accepted the job at College of San Mateo—where I still work. I couldn't believe I'd fooled not one, but two hiring committees of experienced instructors.

Even though I was mystified by teaching, I was pretty sure I was saying good things in the classroom. So, why were my students falling so short?

Maybe *they* weren't applying themselves well enough. I certainly had plenty of students would show up to class late, miss class, and/or not do the homework. But how could I turn that around?

I kept asking my fellow instructors at College of San Mateo for advice. But because I didn't know what I was doing wrong, it was hard to address how I was falling short, and so our conversations quickly steered toward concrete things, such as policies about attendance, homework, and grading.

In subsequent semesters, I experimented with various policies, hoping that I'd find the right combination that would enhance my students' motivation. With time, I found policies that better motivated my students, and as a result, they performed a bit better. But one look at my colleagues' exams and the success rates in their courses told me I had a ways to go.

Realizing that there might be more to teaching than policies and showing every step when lecturing, I started visiting my

colleagues' classes. It was amazing how varied their styles were. I experimented with their approaches and even found myself imitating the way they talked. I was so desperate to improve, I was up for trying anything.

The more I visited my colleagues' classrooms, the more I realized how much teaching is an art form. That one instructor's style couldn't possibly work for another. That I could experiment with other instructor's methods, but in the end, I'd have to discover the ideal mix for me, and

hopefully come up with a few effective moves of my own.

In one of several conversations with Mohsen Janatpour, an instructor at our college who taught physics as well as mathematics, he'd asked me if I was confident when I lectured. I said not particularly. Without hesitation, he said, "Then you can't teach." Out of context, this might sound like a harsh thing to say, but it was anything but. In that moment it hit me. Confidence is a choice. I could choose to be confident if I dared.

The very next day, I taught my classes, exuding as much confidence as I could muster. I started using more metaphors to illuminate concepts, sometimes even telling somewhat amusing stories to grab students' attention, which I'd then direct to the concept at hand. With students paying better attention, the good things I'd been saying all along were better received.

I wish I could say that my teaching went well from that point on. I was certainly improving, but even after five years of teaching, I still felt like a fraud. Only after another five years would I start to feel fairly competent.

In the spring issue of the newsletter, I plan to share some of the insights I picked up in those

In that moment it hit me. Confidence is a choice. I could choose to be confident if I dared.

next five years. But for this issue, I'd like to close with three thoughts that might be useful to new instructors.

First, teaching is hard. It's normal to do poorly in the beginning and it may take years to significantly improve, although I hope you feel successful long before I did!

Second, since teaching is hard, your failings are not evidence that you're not cut out for the job. Through hard work, you will gradually improve. Believe me, if I could make significant progress, so can you.

Third, your colleagues are an incredible resource. They will be more than happy to help. After all, our job is all about helping others, and that can include your colleagues helping you. Visit their office hours and discuss policies and pedagogy, but also ask if it's okay to visit their classrooms. They'll be quick to say yes. But don't go once. Go several times. And seek help from more than one instructor. Then you'll have a larger palette of approaches and styles to gradually form your right mix.

In that spirit, if you're up for visiting College of San Mateo's beautiful campus, I invite you to drop by and visit one of my classes. Even after twenty-three years of teaching, I still struggle at times, but I'd be happy to pass along one of the many gems I've picked up from other faculty throughout the years.

Calendar

October 23-25, 2013 NCTM Western Regional Meeting, Las Vegas, NV. Contact: NCTM Office (703) 620-9840, email: regconf@nctm.org

October 31-November 3, 2013 AMATYC 39th Annual Conference, Anaheim, CA. Contact: AMATYC Office, (901) 383-4643, email: amatyc@amatyc.org

December 13-14, 2013 CMC³ 41st Annual Conference, Hyatt Regency Monterey Hotel and Spa, Monterey, CA. Contact: Mark Harbison, (916) 558-2687, email: harbism@scc.losrios.edu

January 15-18, 2014 MAA-AMS Joint National Meeting, Baltimore, MD. Contact: MAA Office (202) 387-5200, email: maahq@ma.org

February 22, 2014 MAA Northern California Section Meeting, Sonoma State University, Sonoma, CA. Contact: Edward Keppelmann (775) 784-4445, email: keppelma@unr.edu

February 28-March 1, 2014 CMC³-South 29th Annual Conference, DoubleTree Hotel, Orange, CA. Contact: Art Nitta, (909) 594-5611 x-5386, email: anitta@mtsac.edu or springconference@cmc3s.org

March 3-9 2014 Teachers Teaching with Technology, Fort Worth, TX. Contact: Renee Hartshorn, (888) 282-8233, email: rhartshorn@ti.com

March 20-23, 2014 26th Annual International Conference on Technology in Collegiate Mathematics (ICTCM), San Antonio, TX. Contact: Joanne Foster (800) 472-6288 or (207) 676-8688, email: joanne.foster@pearson.com

April 4-6, 2014: 47th NYSMATYC Annual Conference, Treadway Inn, Owego, NY. Contact: Russ Penner. Website: www.nysmatyc.org

April 9-12, 2014 NCTM 92nd Annual Meeting, New Orleans, LA. Contact: NCTM Office (703) 620-9840, email: annlmtg@nctm.org

April 25-26, 2014: CMC³ 18th Annual Recreational Mathematics Conference, MontBleu Resort Casino and Spa, South Lake Tahoe, NV. Contact: Dr Larry Green. Website: www.cmc3.org

May 8-10, 2014: Washington Community College Math Conference (WCCMC), Wenatchee, WA. Website: www.wamatyc.info

July 1-5, 2014 International Conference on Technology in Mathematics Education (TIME-2014), Krems, Austria. Contact: Peter Baumgartner, +43 (0)2732 893-2350, email: peter.baugartner@domau-uni.ac.at

July 13-18, 2014 International Conference on Teaching Statistics (ICOTS-9), Northern Arizona University, Flagstaff, AZ. Contact: Roxy Peck, rpeck@calpoly.edu

Jay Lehmann

Editor

CMC³ Newsletter

MathNerdJay@aol.com