VOLUME 39, NUMBER 2 SUMMER 2010

California Mathematics Council Community Colleges

CMC³ NEWSLETTER

President's Update

Barbara Illowsky, De Anza College

This spring has been pretty busy for the CMC³ board. It's funny how little odds and ends creep up on us. Most of what I'll refer to here you will find in more details in separate articles in this newsletter and/or on our website: http://www.cmc3.org.

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In April, co-chairs Larry Green and Michael Eurgubian planned and delivered an absolutely fabulous spring conference. For me, the biggest highlight was chatting with the many students who attended. I hope to see even more students at our future conferences. Learn about the rest of the conference in their article. Writing about conferences, this year's Monterey Conference Chair, Susanna Crawford, is busy putting together the speaker schedule with help from Wade Ellis. Be sure to read Susanna's article, along with Rebecca Fouquette's article about a new tradition for the Monterey Conference.

Aside from conferences, there have been other activities going on this spring. We produced our first CMC³ video about the founding and early years of our organization. (Of course, see the article.) Colleges are starting to hire. If you are searching for a full-time mathematics position, keep checking: https://www.cccregistry.org. My understanding is that all CA community colleges send their openings to be included in this database. It's not unusual for colleges to hire in the summer. Even my own college, De Anza, hopes to hire three full-time positions this summer, positions that have not been posted as of mid-May. (Check: http://www.fhda.edu/jobs.) The Chancellor's Office for California Community Colleges and Academic Senate for CA Community Colleges announced in April a project called CCCAssess. We are still learning about this project which is to study and develop a statewide single assessment for each discipline that has pre-transfer level courses (for mathematics, that means up through Intermediate Algebra) and a statewide warehouse to store those scores. We do not know too much more about the project, aside from what Vice Chancellor Patrick Perry presented at a meeting in May. His presentation is posted on our CMC³ web site, under "News." As we find out more information, we'll post it there. Finally, this summer we will review our by-laws and constitution, which were last updated last millennium. You can find the current versions (where else?) on our web site.

I wish you all a great summer! I will be available via email most of the summer and would love to hear from you!

Executive Board & Special Committees

Volume 39, Number 2 Summer 2010

CMC^3 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. Printing costs for this issue have been underwritten by College of San Mateo.

Adjunct Update

Tracey Jackson, Santa Rosa Junior College

While the tenure-track job prospects were bleak last year, this year appears to be slightly more promising. If you're looking for a position, keep checking the CCC Registry for current information and consider attending the panel on hiring that will be held at the 2010 CMC^3 Fall Conference in Monterey 2010 December 10th-11th. At this conference, there will also continue to be a reduced registration cost for adjunct faculty.

Speaking at a conference is a good professional development activity to add to your resume. If you have a talk that would be of interest to the CMC^3 community, especially addressing precalculus or calculus topics, consider presenting at either the Monterey conference or the Tahoe conference. Potential speakers are encouraged to fill out a speaker proposal form available on the CMC^3 website, http://www.cmc3.org/conference.html. Speakers for Fall 2010 are still under consideration, so if you're interested please submit a proposal soon.

The 14th Annual Recreational Mathematics Conference in Tahoe a Great Success

Larry Green, Lake Tahoe Community College

CMC^3 members had no troubles turning right instead of left this year into the Montbleu parking lot to meet once again this spring for the Friday evening and Saturday conference on recreational mathematics. The happy hour hosted by Pearson brought us all together and warmed us up for the magical performance presented by Alan Ackerman. I don't believe that he was actually able to read my mind when he knew what card I was thinking about, but I have yet to figure out the mathematics that he must have used to come up with the conclusion that the four of spades was the chosen card. This year, we had over 100 mathematicians including over twenty students attend the conference. The consensus was that moving to the Montbleu for the conference this year was a pleasant improvement over the previous facility.

The talks on Saturday were enjoyed by all. We were challenged with creative mathematics problems, educated on the mathematics of gaming, and entertained with the math of paradoxes, paper folding, and bubbles. The legendary Ron Graham taught us all how math can be used to understand why one juggling strategy could succeed while another is doomed to end up with bean bags plummeting to the floor. One master juggler arrived at the conference, but over one hundred aspiring jugglers left.

The foundation is thankful to all of our members who contributed to the foundation raffle. Hundreds of dollars that will go towards student scholarships was contributed to the raffle. Our members went home with raffle prizes and our students will have an easier time affording college in times of increasing tuition and decreasing part time job opportunities. Mark you calendars for the 15th Annual Recreational Mathematics Conference at Tahoe's Montbleu Hotel and Casino on April 29 – 30, 2011. I look forward to seeing you all in Tahoe next year.

Monterey Conference 2010

Susanna Crawford, Solano College

Thank you to those of you who have recently submitted proposals to speak or preside at our 38th annual Monterey Conference which will be held Friday night, December 10th, and Saturday, December 11th. Many very interesting speaker proposals have been received, and more are expected before the deadline for the second review, which is May 21st. If you would like to speak, please fill out a short required proposal form at CMC^3.org using the "Call for proposals for the Monterey Conference" link as soon as possible. It is very exciting to see our conference starting to come together!

This year's conference will be held once again at the Monterey Portola Hotel and Spa. Please make your hotel reservations early to ensure that you are able to get the conference discount. Book your hotel room by calling (866) 711-1534. Conference registration information will be posted on the CMC^3 website (cmc3.org) soon. Once you register, Joe Conrad, membership chair, will send you an email confirmation. You will receive your official paper receipt at the conference.

Although many of the speakers are still being determined for the 2010 Monterey Conference, the keynote speakers are confirmed. For Friday night John Martin from Santa Rosa Junior College will be giving a talk titled "A Piece of Pi". Then on Saturday keynote speaker William Dunham from Muhlenberg College in PA will wow us with "Two Jaw-Dropping Gems from Euler." In addition to the keynote speakers, we will have a fabulous group of presenters scheduled. By early fall they will all be listed on the web site.

Please come early on Friday, as registration will begin at 2:30 pm this year to allow plenty of time for vendor workshops and other activities including a new "Math Trivia" event sponsored by McGraw Hill. The second annual "Game Night", sponsored by Pearson, will follow the Friday keynote speech. Also don't forget your workout clothes for the fun estimation walk/run event on Saturday morning. In the fall, more details will be made available regarding vendor events and workshops.

I am very happy to be the conference chair for our Monterey Conferences in 2010 and 2011, and I am also glad to have a wonderful conference committee to help me with this, but if there is anything which you would like to ask me or request, then please don't hesitate to email me at scrawford2@sbcglobal.net

CCC Assess Session

Katia Fuchs, Solano College

On Saturday, May 8th, I attended the CCC Assess session. The meeting started with a presentation from the State Academic Senate President Mark Wade Lieu. He spoke about Assessment statistics as found in a 2007 survey of all 109 community colleges. This survey showed some of the most popular assessment methods being used around the state. It was found that one community college had no assessment method at all for mathematics.

Mark further mentioned that another study seemed to show that students who were provided with a thorough explanation of what was expected of them largely placed themselves the same way that they were assessed.

Next Patrick Perry from the Chancellor's office spoke about some of the technological and business benefits of implementing a state-wide assessment system (in particular, the goal would be to obtain an unlimited-use license which would allow schools to test as many students as needed without cutting into already ailing matriculation budgets). Patrick also mentioned that while the test and the results from all the colleges would be centralized state-wide, individual colleges would be able to "brand" the test to their own liking. That is to say, schools could use their own logos on the test, and potentially add or modify content as they saw fit. Patrick also mentioned that while the centralized assessment would be made available to all colleges, that it would not be mandatory; however, using the centralized assessment method would be accompanied by an economic incentive. Patrick also spoke a little about the time-line of the project. The next step is for faculty to reach some consensus over how they felt the test would be best designed. Using this information, a proposal would be drafted and sent out to vendors, who would then provide us (the faculty) with products to choose from. Patrick spoke a little about the financing of the project; he mentioned that Hewlett and Gates have each donated 250, 000 dollars to fund the project, which is anticipated to pay for faculty meetings, background work, and feasibility analysis, as well as some limited piloting. Subsequent costs would have to be borne by the state.

After the general session with all of the different subject areas, we broke up into a smaller group which focused exclusively on the Math assessment exam. I will provide a much more detailed account of the discussion here, but the session lasted a couple of hours and consisted of a discussion of important points for the math assessment exam. After some important points were compiled, we compared what we were able to come up with with the points that the group from Southern California was able to come up with the day before. The next step is to reach some consensus between the two groups.

One big idea that was brought up at the math break-out session was that we would be interested in a test that was not linear but would instead show the students' capabilities in a wide range of mathematical topics; this would allow us to pick

(see " CCC Assess Session" continued on page 10)

What's Happening at DVC

Jenny Freidenreich

Diablo Valley College (DVC) is happy (and relieved) to announce that we are off our "Show Cause" status for accreditation and bumped up to a "Probation" sanction (this is good!). We are confident that we'll make the necessary changes to be removed from any probationary status by 2011.

On a lighter note, DVC would like to boast about our students' performance on AMATYC Exam for this season! Our top scorer for the AMATYC exam was Nghia Nguyen, who was recently honored at one of our Math Department meetings, and he received a scholarship check for $200. Nghia Nguyen ranked 17th in the nation for his combined round one + round two score of 53.5 He also ranked 8th in the West Region! He also ranked 14th in the nation for his round two score alone! Another one of our high scorers, Xiaolei He, ranked 18th in the West for her combined score of 49.0 As a "team" score (or our top 5 scores) for the AMATYC gave Diablo Valley College a National rank of 7th overall. Our "team" score was placed 6th in the West! Not too shabby! Go DVC!

Finally, we are excited to announce that three of our Full-Time faculty members were approved for sabbatical to start in the Fall semester. The three faculty members are: Jenny Freidenreich, Patty Leitner, and Cheryl Wilcox. Jenny plans to implement student response systems (or "clickers") in the classroom and work with faculty who are interested in trying them out in their classrooms. She plans to create a large database of multiple-choice questions that would go with any Prealgebra, Beginning Algebra, or Intermediate Algebra course, and to create classroom activities for students to use the clickers. Patty is writing a discovery-style workbook for first semester Calculus students that will be used during class. It provides an outline of each lecture, with lots of spaces that students will fill in as the instructor guides the students towards discovery. She is also creating an enhanced podcast that has audio and the visual of the workbook, creating an interactive environment very similar to attending a live lecture. Students will hear the lecture and be able to pause the podcast to fill in the blanks, then restart the podcast to see the lecturer fill in the blanks. This way if students (in anyone's section) miss a class, or simply want to repeat a lecture of a difficult concept, they can watch a podcast on their computer, MP3 player, iPad, or smart phone. Cheryl will write a Prealgebra textbook of 60 one-hour lessons, available online and FREE to students and instructors. Yes, that means FREE you and your students, too! Go Jenny, Patty, and Cheryl! Can't wait to see the end product!

CMC³ Foundation

Cynthia Speed, CMC³ Foundation President

This year, the CMC³ Foundation awarded $7,200 in CMC³ Foundation Scholarships and $1,750 in AMATYC Student Mathematics League Competition Scholarships.

The CMC³ Foundation Scholarship winners and their colleges are

American River College	Bryn Ellison
Butte College	Jody Ryker
Chabot College	Andria Barraza
College of the Redwoods	Ian M. Snyder
College of the Sequoias	Guadalupe Garcia-Diaz
College of the Siskiyous	Kyson Culp
Evergreen Valley College	Minh Thao Luong
Feather River College	Octavio P. Flores
Fresno City College	Lucimar Myers
Hartnell College	Ryan Rimbey
Mendocino College	Shawna Byrns
Monterey Peninsula College	Willy Anderson Dinata
Ohlone College	H. Lau M. Ong
Sacramento City College	Lei Lei
San Joaquin Delta College	John Clark
San Jose City College	Alice R. Toms
Sierra College	William Allbritain
Skyline College	Daniel Mendoza

The AMATYC Student Mathematics League Competition winners and their colleges are

First Place Samuel Ahn San Jose City College
Second Place Dang Minh Mission College
Third Place Eunjee Lee De Anza College
Fourth Place Nghia Nguyen Diablo Valley College
Fifth Place Felix Sung De Anza College
Fifth Place (tie) Peter Heitmann Sierra College

The recipients of a CMC³ Foundation Scholarship must meet the following criteria:

a. Completed first semester Calculus or higher,
b. Declared Mathematics, Physical Science, Computer Science, or Engineering as a major,
c. Earned more than 30 semester or 45 quarter units and plans to transfer to an accredited college or university for the next academic year, and
d. Earned a GPA of 3.0 or higher.

The funding for our scholarships comes primarily from our member's donations, door prize proceeds, professional organizations, and business contributions. We are preparing for our fall Mathematics Conference in Monterey and are seeking donated items for our Scholarship fund-raising activities. Please contact any of the Foundation Board members if you have any prizes, puzzles, books, or any other items that you wish to donate for our drawing. The Foundation Board members for 2010 are Rebecca Fouquette of Santa Rosa Junior College, Larry Green of Lake Tahoe Community College, Wei-Jen Harrison of American River College, Debbie Van Sickle of Sacramento City College, and Cynthia Speed from Mendocino College.

We are deeply grateful to all of our Donors and acknowledged last year's 2008-2009 Donors by personal letter and in the Monterey Conference Program. This fiscal year, the donors from July 1st, 2009 until April 20th, 2010 are Charles Barker, Steve Blasberg, Edward Braunhut, Susanna Crawford, Guy DePrimo, Noelle Eckley, Wade and Jane Ellis, Michael Eurgubian, Richard Hansen, Marcella Laddon, Debra Landre, Tina Levy, Gary Ling, Anita Maxwell, Cynthia Speed, Cynthia Stubblebine, Janet Tarjan, Randy Taylor, Frederick Teti, Allyn Washington, and Raymond Wuco. Please consider joining this list of Donors by completing the attached Donation Form and mailing your donation to Rebecca Fouquette at Santa Rosa Junior College.

Former CMC³ President, Debra Landre, has donated funds to support a Student Speaker Scholarship at the CMC³ Lake Tahoe Spring Conference. Next April 2011, there will be another opportunity for one of your students to compete for this great scholarship. Applications, instructions, and selection procedures are available on our CMC³ website, http://www.cmc3.org .

The Foundation relies heavily on your generous donations to fund scholarships. Please consider making a donation to the CMC³ Foundation Scholarship Fund so that we can continue to honor our most gifted, talented, and deserving students. Whether your donation is $5, $10, $25, $100, or more, we thank you for your continued support. Contributions are tax deductible, as provided by law, and our Taxpayer ID number is 94-3227552. Please complete the attached donation form and mail your donation to

Professor Rebecca Fouquette
Santa Rosa Junior College
Mathematics Department
1501 Mendocino Avenue
Santa Rosa, California 95401

Please accept my donation payable to CMC3 Foundation in the amount of:

$10___ $20___ $50___$100 __ Other:_____

Name_____

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Through the History Glass

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

During the two days prior to the 2010 AMS-MAA Joint Mathematics Meetings in San Francisco, on January 11 and 12, the MAA held a short course titled "Exploring the Great Books of Mathematics."[1] About fifty people from across the United States—and even one from as far away as New Zealand—attended the course. Organized by Amy Shell-Gellasch, Beloit College (WI), and Glen Van Brummelen, Quest University (Canada), the course featured four presenters, each of whom spoke in depth about a book that was significant in the history of mathematics. They were

- Alex Jones, New York University, on *Ptolemy's Almagest: Greek mathematics and the heavenly bodies*.
- George Smith, Tufts University, on *Newton's* Principia.
- Robert E. Bradley, Adelphi University, and Ed Sandifer,[2] Western Connecticut State College, on *Cauchy and the* Cours d'analyse.
- Fernando Q. Gouvêa, Colby College, on *How algebra became modern* (van der Waerden's *Moderne Algebra*).

A fifth presenter, Ivor Grattan-Guinness, Middlesex University Business School, closed the short course at the end of the second day speaking briefly on *Tracking the great writings of mathematics*.

The principal presenters very kindly have made the slides they used in their talks available to HOMSIGMAA[3] to be shared; the slides can be found at <http://www.homsigmaa.org/shortcourse.html>. What follows are brief (very, very brief) accounts of each of the four talks. We hope these will pique your interest to read the presenters' slides and, better yet, to read the books themselves. It is summer, after all.

Ptolemy's *Almagest*

Not much is known about the life of Claudius Ptolemy (ca. A.D. 100–178). It is believed that he was a Roman citizen who lived in Egypt. He has been portrayed mistakenly as "King Ptolemy." Ptolemy wrote about astronomy (several works), astrology, cartography, optics, harmonics, and mechanics. He is best remembered for his astronomical work the *Almagest*, in which he deduces mathematical models ("hypotheses") to account for the observed motions and phenomena of the sun, moon, stars, and planets. Ptolemy's own title for this major work was *Mathematical Composition*; the traditional title, *Almagest*, is from the Arabic *al-majisti*. What struck us most about the *Almagest* is how a flawed model of planetary motion (geocentric), because of some very clever mathematics, was able to match observations and make predictions so well.

Newton's *Principia*

Isaac Newton (1642–1727) needs no introduction, and neither does his monumental work, *Principia Mathematica* (1687). What may be surprising to us teachers of the calculus—it was certainly surprising to us because, although we had known about the *Principia*, we had never read it—is that Newton, one of the inventors of the calculus, did not much use calculus as we would recognize it in the *Principia*; instead, the bulk of the results in the *Principia* were proved using massive doses of geometry, along with the notion of *quam proxime*.

Cauchy's *Cours d'analyse*

Augustin-Louis Cauchy (1789–1857) is another person who needs no introduction, and many of us have heard of his *Cours d'analyse de L'École Royale Polytechnique* (1821), or simply *Cours d'analyse* for short, a calculus textbook that is placed among the great continental analysis texts of the developmental period of the calculus. This is illustrated in Slide 6 of Bradley's talk:

1670s	Leibniz's discovery
1696	L'Hospital: *Analyse des infiniment petits* (geometric period)
1748	Euler: *Introductio in analysin infinitorum* (algebraic period)
1821	Cauchy: *Cours d'analyse* (arithmetic period)
1850s	Weierstrass et al.; the modern paradigm

Now, while Cauchy was a brilliant mathematician, he was apparently a horrible teacher; in fact, in Slide 23 of Bradley's talk, we see that on "4/12/1821 students 'revolt' as his 66th lecture goes into overtime. During the course of an investigation it was discovered that Cauchy has been short-changing mechanics," leaving his students unprepared for their subsequent coursework. Consequently, Cauchy's *Cours d'analyse* that he had written to be used as a textbook by students at the Ecole Polytechnique was never used as a textbook; instead, it was read by working mathematicians and impacted the development of the calculus profoundly. A German translation of *Cours d'analyse* appeared in 1828 and 1864; a Russian translation in 1885; a Spanish in 1994; and, most recently, an English in 2009. Apparently, the *Cours d'analyse* is quite readable and, we are thinking, may be the one of the four books here to be read first.

[1] The Joint Meetings were from January 13–16. <http://www.ams.org/notices/201001/rtx100100114p.pdf>

[2] Sandifer suffered a stroke a few months before the Joint Meetings and could not be there; however, we were told that he is recovering well.

[3] History of Mathematics Special Interest Group of the MAA. <http://www.homsigmaa.org>

Van der Waerden's *Moderne Algebra*

Bartel Leendert van der Waerden (1903–1995) was a Dutch mathematician who was strongly influenced by two mathematical greats in algebra, to wit, Emmy Noether (1882–1935) and Emil Artin (1898–1962). Prior to van der Waerden's *Moderne Algebra* (1930), introductory algebra textbooks typically spent a lot of time building up to the topics of "advanced algebra." *Moderne Algebra*, on the other hand, was intended to be for working mathematicians to get up to speed quickly and, thus, the traditional ordering of topics was reorganized, with "abstract structures" put at the beginning; indeed, its table of contents reads much like one in any of today's introductory modern abstract algebra textbooks. Although *Moderne Algebra* was intended for working mathematicians, students came to like this "lean and lively" algebra, and it soon became the textbook that introduced many students to modern abstract algebra and a model for future algebra textbooks.

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Previous columns are on the Web at <http://ms.yccd.edu/~jb2/histglass.html>.

References

[1] Ptolemy, *Ptolemy's Almagest*, translated and annotated by G. J. Toomer, Springer-Verlag, New York (1984) <http://books.google.com/books?id=43XvAAAAMAAJ&q>.

[2] Isaac Newton, *Newton's Principia: The Mathematical Principles of Natural Philosophy*, translated into English by Andrew Motte, to which is added *Newton's System of the World* with a life of the author by N. W. Chittenden, Daniel Adee, New York (1948) <http://books.google.com/books?id=KaAIAAAAIAAJ&>.

[3] Augustin-Louis Cauchy, *Cauchy's Cours d'analyse: An Annotated Translation*, translated and annotated by Robert E. Bradley and C. Edward Sandifer, Springer, New York (2009) <http://books.google.com/books?id=M0or-HGe7D0C&>; in the French (1821) <http://books.google.com/books?id=wwAHAAAAcAAJ&>.

[4] B. L. van der Waerden, *Moderne Algebra*, unter Benutzung von Vorlesungen von E. Artin und E. Noether, Volumes I and II, Springer, Berlin (1931); review by Oystein Ore <http://www.ams.org/journals/bull/1932-38-05/S0002-9904-1932-05385-X/S0002-9904-1932-05385-X.pdf>. In English: *Algebra*, translated by Fred Blum and John R. Schulenberger, Volume I, Springer, New York (2003) <http://www.amazon.com/product/dp/0387406247>.

[5] Ivor Grattan-Guinness, *Routes of Learning: Highways, Pathways, and Byways in the History of Mathematics*, Johns Hopkins University Press, Baltimore (2009) <http://books.google.com/books?id=658APgAACAAJ&>.

Introducing the First Annual CMC³ Student Poster Session, Monterey!

Rebecca Fouquette, Santa Rosa Junior College

Starting this December, CMC³ will be offering students a chance to participate in our Monterey conference in a poster session. We are inviting all community college students to create a poster at any level of mathematics that extends the usual curricula. For a student to submit a poster, he or she should be a current community college student for Fall 2010 and a current CMC³ faculty member must sponsor the student. Students will be asked to provide an easel to display their work. Faculty sponsors are asked to ensure their sponsored student is able to attend the conference, that the student has all the materials he or she needs and supervise the set up and clean up of the poster.

Posters will be displayed during the Saturday conference. Students are asked to be available to answer questions on their poster during an assigned time. Any interested students should complete an abstract and submission form available in the Fall on our website, www.cmc3.org. Submissions will be accepted between September 1, 2010 and November 25, 2010. For more information contact Rebecca Fouquette at rfouquette@santarosa.edu.

In the Beginning … AKA Oral History of CMC³

Barbara Illowsky, De Anza College

Did you know that CMC³ came into existence before AMATYC? Did you know that current Foundation Board members Cynthia Speed and Wei Jen Harrison attended the first conference and participated in the early years? Did you know that Sister Clarice Sparkman is our oldest living member at age 92 and earned her PhD in Mathematics before almost all of our current members were born? Did you know that ….

In March, we had the privilege of recording four of our founders and earliest members who came together for the first time in many, many years. Sister Clarice Sparkman, Pat Boyle, Ray Wuco, and Jim Curl spent a day at De Anza College's Broadcast Media Center reminiscing about the beginning years of CMC³ and how they came to start our organization almost 40 years ago.

Special thanks go to our four stars, along with behind-the-scenes workers Cynthia Speed, Michael Eurgubian (who actually brought with him the very first conference program – go pack rat!), Rachel Illowsky, Larry Green, and Marty Kahn and his staff from De Anza's Technology Resources Group.

Check out our own CMC³ video! You can download this 36 minute documentary at these URLs: http://www.cmc3.org/news.html or http://www.deanza.edu/ituneU . Remember your popcorn!

Sacramento Valley CCM Conference

J. B. Thoo, Yuba College

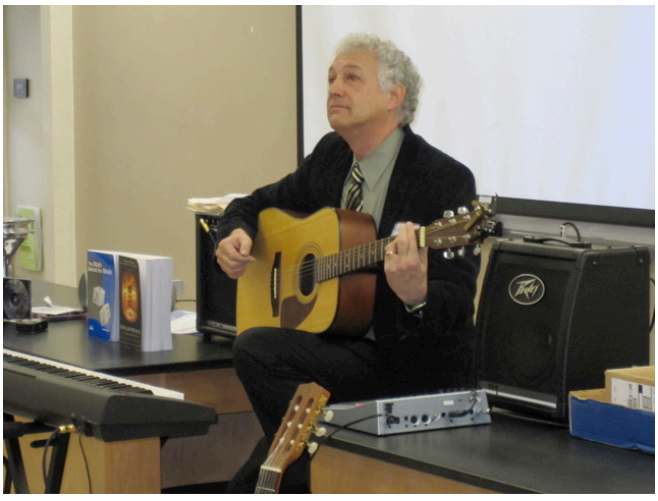
This year's Sacramento Valley CCM Conference was held at Yuba College. We were very excited about hosting the conference because it would be its first return to Yuba since 2004, after having been hosted by the original six colleges in the SVCCM (American River College, Butte College, Cosumnes River College, Sacramento City College, Sierra College, Yuba College; now we are delighted to include also Folsom Lake College and Woodland Community College, and we look forward to attending a conference there before long).

We were worried for a bit that not too many people would show up, as registrations trickled in slowly; however,

we are happy to report that 54 of our faculty friends attended, plus one student from Yuba College and one from Yuba City High School. Moreover, we even had attendees from as far away as San Joaquin Delta College and Santa Rosa Junior College!

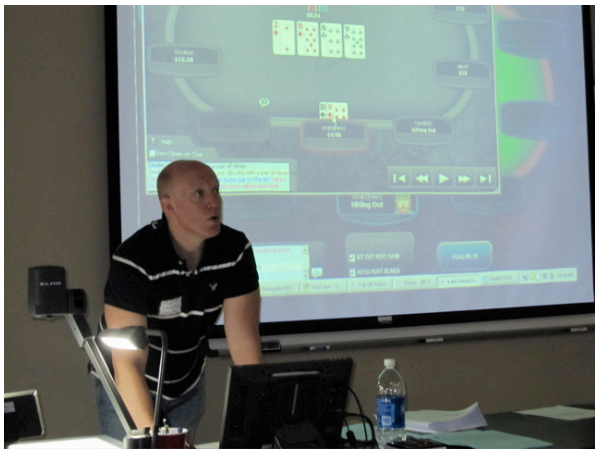
The day began with checking in, coffee, and a continental breakfast, getting reacquainted with old friends,

making new ones, and visiting the vendor booths. Soon, however, the clock would strike 45 minutes past 8 o'clock, and everyone was ushered into the lecture hall where Dr. Kevin Trutna (YC Vice-President for Academic and Student Services, and former dean of the Mathematics, Engineering, Science, and Health Occupations Division) welcomed everyone. And with that, our first speaker, Robert Mathews (YC Music Department), treated us to a musical tour-de-force with his presentation, "Letting Music Lead to Math." Robert demonstrated the many connections between music and math by humming, drumming, keyboarding, and guitaring (is that a word?)---including familiar tunes by the



Beatles, Eric Clapton, and Led Zeppelin---and even exposing us to mosquito ringtones, and ending with a beautiful rendition of the classical Malaguena. A short coffee-break-and-a-chance-to-visit-the-vendors time later

and we were all back in the lecture hall, this time to a enjoy a much different talk: "Know When to Hold 'em and Know When to Fold 'em" by Matt Mitchell (ARC) and Andy Halseth (ARC). Not only did they expound on the strategies for playing and betting in Texas hold



'em, and the underlying mathematics, but they also were brave enough to demonstrate their skills by playing and betting live online. By the end of their exciting talk, we were all ready for lunch.

Lunch was a terrific affair of delectable comestibles catered by the Yuba College Culinary Arts Program (Chef Richard Prondzinski). Lunch featured three different breads, tossed salad, vegetarian pancit (noodles), scalloped potatoes, fillet mignon, and salmon. Bam! That was a yummo experience! (The

breakfast and afternoon coffee and cookies were also catered by the Culinary Arts Program.)

After such a fabulous lunch, a siesta was in order. But we were all prevented from taking a cat nap by Harry Lyons (YC Clear Lake Campus), "Following Sam Cooke," who pumped us up with his rousing versions of popular tunes sporting mathematical lyrics during a bawdy sing-along session. He even organized a kazoo section in the audience to accompany him. After all the vocal exercising, we needed to cool down, and Janko Gravner (UCD, keynote) had just the thing for that: "Digital Snowflakes." (Did you know that there is a transition phase around -5 degrees Celsius when snowflakes change from being snowflakey to being tubular and then to being snowflakey again?) It was now time to

warm up, so off to coffee and cookies went we. During this last break of the day, giving us a last opportunity to visit the vendors' tables, there were drawings for prizes from Hawkes Learning Systems and xyztextbooks/MathTV.com. (Congratulations to Hector Rodriguez (SCC) and Amy Bailey (SCC) for winning the $30 gift cards from Hawkes Learning Systems. Congratulations to Ian Wu (Sierra) for winning a $25 gift card from xyztextbooks/MathTV.com. And congratulations to Matt Clark (WCC) for winning an iPod also from xyztextbooks/MathTV.com.) Finally, to wrap up the day, none other than John Martin (SRJC) pulled back the shades on "The Incomparable Bernoullis and a Marvelous Spiral." This would be a tale of a family of exceptionally talented mathematicians who clawed at each other through much of their lives, and of a truly marvelous spiral, the logarithmic spiral, that possesses many remarkable properties (invariance under uniform scalings, for instance).

But all things come to an end, and taps would sound on this day much too soon. We hope that everyone had a profitable day, enjoying the company of many old friends and acquaintances and making new ones, and also taking in some interesting mathematics.

CMC^3 – Not Just for Teachers Anymore

Andrew Gabriel, Santa Rosa Junior College

This year's conference theme of "Recreational Math" was a welcomed break for 15 members of the Santa Rosa Junior College Math Club. Most of our members had never been to a math conference and were pleasantly surprised. "The conference was great! I was able to sit back and enjoy the math without scrambling to take notes," said Georgie Larkin, a club member.

We were also pleased with the enthusiastic response from the instructors. They were clearly excited to have us there and welcomed us into their world outside of the classroom. "I was glad to see that part of our mission – bridging the gap between students and instructors – was fulfilled," said Emily Dreyer, the club's Vice President. In future years, we would like to see the Saturday reception become more of a social event with music and beverages, similar to the President's Party at the CMC Asilomar conference.

In addition to the conference lectures, SRJC Math Club members enjoyed a couple of nights "on the town." Waiters and blackjack dealers quickly recognized the CMC^3 nametags that we proudly displayed at all hours. "SRJC Math Club did a fantastic job of representing Santa Rosa Junior College and CMC^3. I couldn't be more impressed," said Andrew Gabriel, the club's President.

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CCC Assess Session

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up on students who had decent algebra skills, but lacked any proficiency in basic arithmetics. Another big point was the issue of placement vs. assessment. The consensus in the group was that the test should assess and each college should decided individually on placement. In the opinion of the group this would allow the test to be more centrally use-able because it would take out the potential difficulty of students "shopping around " for the lowest cut scores.

Overall, the meeting was extremely interesting. It was interesting to get many colleges' perspectives on the issue of student assessment and placement, and witness the brain-storming that took place in an effort to being finding a solution.

Math Nerd Musings

Jay Lehmann, College of San Mateo

I taught the most bizarre class last semester. I could never find my footing.

On the first day of class, my students displayed all the markings of being a challenging class to teach. A couple of students were staring out the window, there were no students who remotely approximated my age (older students often set the maturity level for the entire class), and there was an uneasy quality, something hard to identify on that first day.

Yet by the third day of class, I thought I'd misdiagnosed my class. Attendance was strong (one would hope!) and participation was energetic--if not a little manic--but in a good way. Sometimes it takes a few days for a class to find its stride and it was looking more and more that this was what was going on. I started experiencing that wonderful teacher buzz where things were starting to click.

That is, until a student walked out in the middle of that third day of class. Usually when a student tries to leave my class before it's over, I request that in the future students tell me in advance if they have to leave early. But in this case, I didn't bother because I could just see in the purposefulness of the student's stride that he was never coming back. Ever.

What had happened? I looked at the example I'd just written on the board. It was a tough problem, sizably harder than the rest we'd done that day. It's fun to push students once a day, especially if they understand that such a challenging problem will be limited to a spice of the course. Apparently, the student who bolted thought such problems were going to be the main course.

I was already starting to feel that with this class anything might happen. Worst case, a critical mass of my students might follow suit and get up and leave. For good. So, for the next couple of days leading up to our first quiz, I tread a bit more lightly. I still hit all the content, but backed off from discussing any zingers, just to make sure I wasn't freaking anyone out.

And then came the moment of truth: the first quiz. In some ways it's the first meaningful check that my students are on the same train that I'm on. While drafting the questions in my office, I tried to block out the personality of the class and wrote a quiz that was in the ballpark of difficulty of first quizzes I'd written in past semesters.

An hour later, when I returned to my desk, about to grade their completed quizzes, I braced myself, fearing the worst. But as I graded the papers, I was stunned by the number of solid performances. There were a few low scores, but there were an amazing number of perfect scores. I smiled, realizing I'd let one student who dropped so early in the semester falsely color my impression of the entire class.

Well, at least I now knew what kind of class I was dealing with: an energetic crew with generally strong

mathematical ability. I charged into class, ready to treat them as such. But when I entered class, I had to employ every facial muscle I had to keep from letting my mouth drop open: only half the students were there. I passed back quizzes to those who were present and scanned the scores of the quizzes still in my hand. Most of the scores were high, some were perfect.

I was frustrated, but maintained my poker face that day. After all, the students in attendance weren't the ones who needed a lecture on the need to be there every day. Wrong again. Turns out every day, only half the class attended, but a different half each day. To be sure, this wasn't the first class where this had happened. But it hadn't happened in a long time. Somehow by way of my tone or other subtle clues I had learned how to communicate to students that attendance was critical to their success.

Subtlety failing, I reached for my last tool: The Speech. On the day of the second quiz (when everyone was in attendance), I laid out the importance of attendance and why poor attendance would guarantee student frustration and failure.

Well, The Speech had no impact. But even though a different half of the class was attending each day, there was about a third of the class who *was* attending class every day. With no options left, I'd just have to put my attention there. Again, this wasn't the first time I'd had to make this sort of refocus, but it was the first time in a long time.

But even within that third of the class, there were problems, such as talking during class (which I quickly squashed) and lack of homework completion. There was absolutely no doubt in my mind that this was the worst class of my entire career. Halfway through the course, my best estimate was that a mere 7 students would pass (C or better) out of 35 students. How incredibly depressing.

But sometimes when things are at their worst, the magic begins. About that time, one of the students who was doomed to fail approached me. He had an athletic scholarship at a four-year school, contingent on him passing my class. Ah, traction! But given that half the semester was over, I wondered if he could pull it off. He visited my office on Thursday, the day before our next quiz. I drilled him for an hour. He is a bright student, but due to his struggles up until then, I was surprised when he got a perfect score on the quiz.

Performing well on the quiz was great, but there was another seven weeks to go, plus the student would have to learn the first half of the semester largely on his own. With Fridays being devoted to quizzes and tests, Thursday meetings with the student became our ritual. His scores skyrocketed, so much so that two of his athlete buddies joined us, and their scores shot up as well.

I can't explain why, but somehow these positive interactions mirrored other positive shifts in the class. I saw this most significantly in a student who had scored 95% on the first test but had performed inconsistently on tests since and also had poor attendance. Suddenly, he began coming to class every day, and he began consistently scoring in the B range.

I wish I could say that somehow half the class rallied and passed the class. That truly would have been a miracle. But even the transformation I'd observed qualified as a small miracle in my eyes: my small troop of seven succeeding students had grown to eleven by the time we'd reached the end of the course. It was nothing I'd want to rave about to my dean, but still, to see that kind of improvement that late in the semester made me mildly pleased.

So, what have I learned from the experience? I'm not sure, but it's definitely got me thinking. Mostly about that one student with the athletic scholarship. He passed the course, by the way. Earned a C with 10 points to spare. As much as it pleases me that he passed--and I really do feel incredibly happy that he did--that's not what intrigues me the most.

What really grabs me is that his success sparked the investment of two of his buddies to come by for help as well. Was it that he kindled hope in the other two? Was it his leadership on the field and success in the classroom that inspired his friends to try harder? Or, was it as simple as the three friends usually hung out together after class, so why not do so in my office? Well, given I was pummeling them with math problems, it might be hard to imagine that they'd characterize our meetings as hanging out.

But we did have fun. Because even when you're working hard trying to achieve something challenging, if you're working with friends, there's always room for laughs. And what can be more fun than succeeding at something that seemed impossible before?

It's important to highlight that the student with the scholarship was able to do what I could not. First, he got himself working. Then, he inspired his buddies to get working. In contrast, The Speech on the day of the second quiz did nothing, as far as I could tell. But I knew that going in. For the most part, speeches to the entire class never work. It's just too easy for students to shrug off; they've heard it all before. One-on-one interactions are much more effective. They don't always work, of course, but sometimes they do.

However, the thought of approaching all students who need an individual pep talk can be overwhelming, especially in a class where many students need to be approached. But what if key students could somehow be identified? I'm thinking in terms of students who are likely to influence other students in the class. I wouldn't be able to enhance the motivations of all such key students, but perhaps enough of these students would change to then lead to a critical mass transformation of an uninspired class.

I've learned something else from this experience. Just when I was thinking there was no hope for my class, things got better. Not a total turn around, but better. I hope I never have another class that challenges me so much, but if I do, I'll be keeping my eyes open for that spark that might ignite at least a partial turnaround.

In our line of work, past teaching successes do not guarantee future ones. Nothing is constant. But that's one of the many things that makes our job so engaging: you never know when that next small (or large) miracle is going to happen.

Calendar

July 11-16, 2010 8th International Conference on Teaching Statistics (ICOTS-8), Ljubljana, Slovenia. Contact John Harraway, email: jharraway@maths.otago.ac.nz

August 5-7, 2010 MAA MathFest, Pittsburgh, PA

September 5, 2010 UMATYC Meeting, Dixie State College, St. George, UT. Contact: Clare Banks, banks@dixie.edu

October 2, 2010 LaMsMATYC 11th Annual Conference, Hattiesburg, MS. Contact: Sharon Clark, sharon.clark@jcjc.edu

October 8, 2010 IMATYC Meeting, Hawkeye CC, Waterloo, IA Contact: Rod Holke-Farnam, rholke-farnam@hawkeycollege.edu

October 15-16, 2010 FTYCMA Fall Retreat, Polk State College, Lakeland, FL. Contact: Don Ransford, dransford@edison.edu

October 16, 2010 CMC3-South Fall Miniconference, Norco College, Contact: Patty George, pgeorge@cerritos.edu

October 17-19, 2010 ArkMATYC Meeting, hot Springs, AR. Contact: Nanette Berry, berry@uaccme.edu

November 11-14, 2010 AMATYC 36th Annual Conference, Boston, MA. Contact: AMATYC Office, (901) 383-4643, email: amatyc@amatyc.org

December 10-11, 2010 CMC³ 38th Annual Conference, Portola Hotel and Spa, Monterey, CA. Contact: Barbara Illowsky, (408) 864-8211, email: illowskybarbara@deanza.edu

January 6-9, 2011 MAA-AMS Joint Mathematics Meeting, New Orleans, LA

March 4-5, 2011 CMC3-South Spring Miniconference, Norco Doubletree Hotel, Anaheim/OC, Contact: Sherri Wilson, swilson@craftonhillls.edu

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