



California Mathematics Council Community Colleges

CMC³ NEWSLETTER

President’s Message

Susanna Gunther, Solano Community College



What a year 2012 has already been, and it is not even half over yet! For me, the year began with taking the position of CMC³ President. What an honor! But I have slowly realized that this is not like the

other positions I have held on the CMC³ board. Both of the other positions I held, Awards Chair and Conference Chair (President-Elect),

had well prescribed duties with specific expectations and time deadlines. Conference Chair in particular is one of the most challenging positions on the board. Mark Harbison is now working diligently to put together an excellent conference in Monterey for this December!

By the beginning of last month I began asking myself “What have you done for CMC³ lately?” And then came the guilty question “What should you be doing for CMC³?”

Fortunately, the Tahoe Conference came, and I had the opportunity to feel useful just in time! I got to write the agenda for and lead the board meeting and muddle through getting us signed up with cccconfer so that all who wanted could attend remotely. I even got to introduce a few folks at the conference, thank our members for attending, and most importantly thank Mike Eurgubian for chairing our lovely and fun Tahoe Conference for so many years! (Sadly, he has decided to step down from this position.)

“What now?” Well, as I discussed with the board at our meeting in Tahoe, two of the things that CMC³ can always do better are to make sure to inform our membership about current topics relevant to us all, and perhaps to also come forward with a position on some carefully selected current issues or topics. Larry Green brought up that there is a bill going through committees in Sacramento to

(see “President’s Message” on p. 3)

Table of Contents

President’s Message-----	1
Online Textbooks, Free Textbooks, What is a “Textbook”?-----	3
2012 Monterey Conference Announcement-----	4
What’s Happening at City College of San Francisco-----	5
The 16th Annual CMC ³ Recreational Conference Was a Great Success-----	6
Fundraising-----	6
Accelerated Algebra at DVC and Beyond-----	7
Through the History Glass-----	8
Scholarships-----	10
Math Nerd Musings-----	12
Calendar-----	13

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Mark the Date

The Monterey CMC3
Conference will be on
December 7-8, 2012.

Attend great
presentations, meet
faculty at other colleges,
enjoy the beautiful
scenery. See p. 13 for
more details.

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President's Message

(continued from p. 1)

adopt Open Educational Resources for a large number of entry level college courses. Clearly, this could affect us all. Acceleration in its various forms for both the basic skills algebra sequence as well as the pre-stats through stats pathway was also discussed, as was the Student Success Task Force Recommendations. There are a lot of things going on in our state right now! This makes it even more important than usual to try to come to our Monterey Conference, as it is sure to be a great place to stay current. Ian Walton, the man with the best accent in our field and an equally engaging personality, has graciously volunteered to give another talk on what is happening in our state. And we are sure to have something related to acceleration and/or open educational resources. If you happen to be an expert on these or any other topic which has many of us curious, then please don't forget that it is not yet too late to submit a proposal for Monterey 2012 (but you must hurry, as there are not too many speakers' slots left! Hopefully, you won't mind if your talk is put off until 2013 if it is not that timely and would fit better then.)

What about CMC³ taking a position on an issue or two? This is something I feel a bit awkward about, for the simple reason that I see both sides to many current issues. To me, there are valid arguments in favor of acceleration, open educational resources, even some of the recommendations made by the student success task force, and also some against. The problem which arises for me is this: The board of CMC³ does not necessarily share the same views as the majority of our membership, or do we? I don't know, so I have decided that one thing I would very much like to do is to send a (Quick! Voluntary!) survey to our members

(see "President's Message" on p. 11)

Online Textbooks, Free Textbooks, What is a "Textbook"?

Wade Ellis, Jr., West Valley College

Confusion reigns in the publishing world as our society tries to cope with the rising cost of education at all levels. At the recent NCTM annual spring conference, I learned that some high schools are beginning to issue tablet computers or iPad-like devices to all students and then purchase yearly electronic subscriptions for all textbooks. Many community college mathematics students are buying online textbooks with associated websites that have video clips, online homework, and online pre-tests and tests. *Nature Magazine*, a leading research biology journal, is using a team of biologists, video technicians, and instructional designers to produce *Principles of Biology*. Lifetime access to this complete set of course materials including online textual exposition, interactive diagrams, simulations, and photographs can be purchased for a one-time \$49.00 charge. The book will be regularly updated with the very latest research-based knowledge.

Should classroom instructors develop course handbooks to give students guidance in using such materials that are so different from the standard hardcopy textbooks that we have traditionally required students to buy? How should we assess the impact of online homework? How much does such homework improve student performance? How much does it increase student ability to successfully solve multistep problems? To discuss and explain mathematical skills and concepts? In what ways can we improve the effectiveness of student use

(see "Online Textbooks" on p. 11)

2012 Monterey Conference Announcement

Mark Harbison, President-Elect, Sacramento City College

The Fall conference will be held on **Friday, December 7th and Sat., Dec. 8th, 2012**. It's our 40th annual conference! There is a special property about the number forty that is shared by very few numbers. Extra credit to the first ones to tell me what that property is and how many numbers share it.

Our website www.cmc3.org/conference/fall_con.html always has the most up-to-date information, but there will also be a printed mini-program sent to members in early October. After you use the registration form from either the web page or the mini-program, you will be sent a confirmation email from Joe Conrad, our membership chair. (Please make sure that your email address is easy to read on your registration form.) Your paper receipt can be picked up when you check-in at the conference.

Hotel reservations can be made at the Portola by calling 1-(888)-222-5851. Be sure to reserve your room as soon as possible, and to mention that you are coming for the CMC3 conference. A block of rooms are set aside for us at a discount rate, but they are available on a first-come-first-served basis, and must be booked before November 12th.

If your schedule allows it, please try to get to Monterey early. Conference registration will be available from 2:30 pm to 6:30 pm on Friday. Publishers usually host interesting workshops on Friday afternoon—sometimes with stipends. Be sure to check the “yes, I want invitations from publishers” box at the bottom of your registration form.

Our Friday night Keynote Speaker is Van Henson from the Center for Applied Scientific Computing at Lawrence Livermore Labs,

discussing applications of graph theory such as internet search engines.

After the Friday night talk will be the 4th Annual Pearson Educational Game Night from 9 pm to 12 am. Please come and enjoy a night of drinks, appetizers, games, poker, and Wii.

Saturday's Keynote Speaker is Keith Devlin of Stanford University, a.k.a. “the NPR Math guy”. His talk is titled “THE SYMBOL BARRIER - Using video games to overcome the greatest obstacle to good mathematics learning.”

A full program will cover all levels of mathematics from arithmetic to beyond calculus. There will also be Statistics, math history, “Sacramento Scene” and other general interest sessions. Part-time faculty are especially encouraged to attend the “Adjunct panel” for survival tips in the scary world of freeway flyers.

Student posters will be on display on Saturday (from 9 am to 3 pm). To participate, students need to be currently attending a community college, be sponsored by a faculty member at that college, and fill out an application, which can be found on the CMC³ website. Posters can be at any level of mathematics to be eligible but should be based on the student's original work. Registration fees will be waived for the students submitting posters, but lunch is not included. (Lunch can be purchased for \$50). Applications are due by November 25, 2012. Contact Rebecca Fouquette at rfouquette@santarosa.edu with any questions. Please encourage your students to get involved in the poster session!

Speakers for the 2012 conference are already scheduled, but applications are always welcome for future conferences at www.cmc3.org/conference/callForProposalsMonterey.html. Please feel free to contact me any time at harbism@scc.losrios.edu or call my cell # 916-475-9461 with any questions or concerns. I am looking forward to seeing all of you in Monterey!

What's happening at City College of San Francisco?

Katia Fuchs

In the Spring of 2012, City College first offered its Preparation for Statistics course, a pilot course designed to prepare students to take Statistics in one semester.

Also in the Spring, several City College Statistics instructors were experimenting with using an open-source textbook.

In the Fall of 2012, the College will be piloting a placement

experiment with San Francisco Unified School district in which criteria from students' high school experiences are formally integrated into the CCSF math placement process.

Also in Fall 2012, City College will be starting a Bridge to Calculus program called the "Accelerated Math Gateway." AMG targets students from

groups underrepresented in the STEM majors: African-American, Latino, women, veterans, and first-generation college students. In one year, AMG will take a cohort of motivated students through the Calculus prerequisite classes beginning with Intermediate Algebra. Students were encouraged to apply by their elementary algebra instructors this semester. Students selected for this program are

guaranteed enrollment in the classes, are given stipends for the textbooks and other materials they will need, and remain in one group through the process, supporting each other all the way through. The students will also experience an engineering workshop, as well as trips and activities designed to show them the possibilities of having a degree in a STEM (Science, Technology, Engineering and



Mathematics) field.

Also in Fall, the gorgeous New City College of San Francisco Chinatown Campus will open with math classes offered on the top floor with stunning views of the Bay, Telegraph Hill, and downtown SF.

City College of San Francisco is going through the accreditation process at this time, and



the WASC commended the mathematics department.

In less wonderful news, the mathematics department will be cutting course offerings by 8.5% in the Fall Semester due to budget cuts.

The 16th Annual CMC³ Recreational Math Conference Was a Great Success

Larry Green, Lake Tahoe Community College

We had another amazing recreational math conference in Lake Tahoe in April. It began with a great presentation by Shirley Gray from CSU Los Angeles. We were given a tour of some ancient mathematics that was developed south of the boarder. CMC3 members came from all over California and a nice contingent came from Nevada too. We also had many students from several different colleges. We were all enlightened on Saturday morning with stories of how mathematics is used for geo-caching, map making, and of course gambling. We also were challenged with mathematical contest problems and the mysteries of the Pythagorean Theorem.

Saturday's keynote speaker, Robert Mathews, entertained us with music and math. Forever after, we will hear notes change from Middle C to High C and think about the exponential curve that models the change in vibrations. The afternoon sessions were filled with strange topology, witchcraft, game theory, and the cloud. The final talk was given by Jesse Cohen, a student from Santa Rosa Junior College. Jesse challenged our higher level mathematical brain cells with Algebraic K-Theory. His talk was certainly above and beyond anything that we all teach at our colleges. The conference finished with the foundation drawing. I wish to personally thank our attendees this year for their generous donations that they made to the CMC3 foundation. Thousands of dollars that will go towards scholarships for our deserving students was raised in Tahoe this year.

Mark your calendars for the seventeenth annual CMC3 recreational math conference in Tahoe in 2013. The dates next year will be April 26 and April 27. I am sure it will be as wonderful as Tahoe 2012 was.

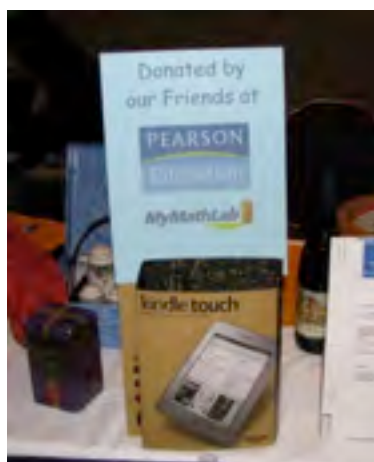
Fundraising

Debbie Van Sickle, CMC³ Foundation President, Sacramento City College

Our fundraising efforts at the Tahoe Conference in April were a resounding success with revenue of almost a thousand dollars from our raffle and merchandise sales. With a last minute rush, we sold out of our popular black T-shirt so we will have a new design at the next conference. We continue to receive generous donations from our members. I will be thanking individual donors by name in a future newsletter, but I want to thank all of you for helping us get off to a great start. The new board has been brainstorming new ideas for future fundraising activities and will be asking for help from all of you soon. To make a tax deductible donation to the Foundation, contact me at vansicd@scc.losrios.edu

I do want to thank a couple of my local book reps who came through for us in record time.

Pearson's rep Kaci Smith donated a Kindle, and Jon Akana from Cengage gave us two Best Buy Gift cards.



Accelerated Algebra at DVC and Beyond

Jenny Freidenreich, Diablo Valley College

What does “developmental mathematics,” mean to you and your college? What does it mean to the state or even the nation? Or should we ask instead, what *should* it mean? Developmental mathematics is the stuff of frustration for many: frustration that so many students assess into math courses below transfer level, and although it is grades 6-12th math concepts, so few successfully complete the sequence in college.

This sequence is commonly referred to as the “pipeline,” with apparently terribly leaky pipes, since those who start at the very first entry (3 levels below transfer) have only a 10% chance of exiting the pipeline. There may be numerous responses to this unacceptable loss in student success and retention. One response would be to accept the losses as necessary, justifying one’s stance by declaring those who don’t succeed can find unskilled work somewhere in America. This might be referred to as the “tough love” response. Another response would be to find the losses unacceptable, but with no solution. It is what it is and won’t change: a “powerless” response that holds us hostage to the status quo. Yet a third response would be to find the losses unacceptable and to seek some solution. The latter response is the cornerstone belief of the California Acceleration Project and the 3CSN initiative: stop much of the pipeline leakage by creating new coursework that feeds students directly to statistics.

Los Medanos College in Pittsburg, CA was the first community college to address the unacceptable losses in this manner with

Path2Stats, a one-semester pathway to college statistics with no minimum placement score. Myra Snell is the brainchild of this endeavor and student success in this alternative sequence at LMC is intriguing and exciting. Eight more colleges have created similar pre-statistics courses to challenge the usual prerequisite pathways to statistics, (including my own college Diablo Valley College), all modeling their classes much like Myra Snell’s Path2Stats.

The curriculum for the pre-statistics course is designed by asking statistics instructors: “what are the required skills of your students when they enter a statistics class?” The curriculum is thus designed backwards around these skills. The remediation is inserted into the curriculum within a larger context, giving students reason and motivation for learning ratios, proportion, percentages, and the like. Diablo Valley College has

piloted our own version of the pre-statistics course we call, “Jump to Stats.” The course has an admirably high success rate of nearly 80%, whereas we have yet to discover these students’ success rates in the subsequent statistics course (the verdict is out until the end of next week!).

Professionally, these are exciting times when we, as educators, accept our challenges and seek creative solutions. My students have been extraordinarily grateful, recognizing the opportunity they have been afforded, and the hard work of the faculty that make it happen. Although still in its infancy and experimental as it is at this stage, I am hopeful that successful programs are adopted widely and readily, challenging the status quo for paltry student success rates in the developmental education sequence.

Professionally, these are exciting times when we, as educators, accept our challenges and seek creative solutions.

Through the History Glass

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



“Everyone” knows Pythagoras’s theorem. Euclid stated and proved it in the last two propositions in Book I of his *Elements*, and Elisha Loomis [3] (1940) collected 255 different proofs of the theorem—even one by President James A. Garfield, our 20th President, about 1876.

The early Egyptians are generally credited with the beginnings of geometry. The geometry of the Egyptians was completely practical, however, and there is no evidence that they generalized any of the results they used. For example, it is commonly thought that the *harpedonaptai* or “rope stretchers” (surveyors) used a 12-knotted rope to create a (3, 4, 5) right triangle for surveying; however, there is no evidence that they knew Pythagoras’s theorem at all [4].



Figure 1: Image from The Rare Book and Manuscript Library of Columbia University. <<http://www.columbia.edu/acis/textarchive/rare/2.html>>

There is evidence, however, that the Babylonians knew Pythagoras’s theorem at least empirically. For example, the cuneiform tablet Plimpton 322 of the Plimpton collection at Columbia University (figure 1) contains a list of numbers from which



Figure 2: Image from Bill Casselman, Mathematics Department, University of British Columbia.

<<http://www.math.ubc.ca/%7Ecass/Euclid/ybc/ybc.html>>

one can easily produce Pythagorean triples (right triangles with sides of integral lengths). As another example, YBC 7289 from the Yale Babylonian Collection (figure 2) depicts a square with one side marked 30 and one marked $1\ 24\ 51\ 10$ ($= 1 + \frac{24}{60} + \frac{51}{60^2} + \frac{10}{60^3} = 1.41421 \approx \sqrt{2}$) and below that $42\ 25\ 35$ ($= 42 + \frac{25}{60} + \frac{35}{60^2} = 42.42639 \approx \sqrt{1800}$). Noting that $\sqrt{2}$ is the length of the diagonal of a square that has side 1 unit, and that $\sqrt{1800}$ is the length of the diagonal of a square that has side 30 units, we conclude that the Babylonians were aware of Pythagoras’s theorem.

We also find Pythagoras’s theorem in the earliest Chinese texts, where it is called the *gou-gu theorem*; in reference to a right triangle, the *gou* is the base, the *gu* is the height, and the *xian* is the hypotenuse that joins the *gou* and *gu* [1, p. 215]. For example, we find the *gou-gu* theorem in the *Zhou bi suan jing* (*Mathematical Classic of the Zhou Gnomon*), whose author is unknown, but was most likely compiled no later than the first century BC (see figure 3). Interestingly, we hear from Dauben [1, p. 215] that

As for the applications of the “Pythagorean theorem” in the *Zhou bi*, these led the historian of mathematics Mikami Yoshio to conjecture that Pythagoras may indeed have learned his famous theorem from the Chinese: “is he not said to have traveled in the east to Babylon and perhaps further on probably to India? Will it not be probable that

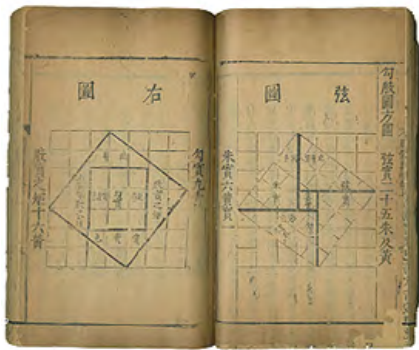


Figure 3: Image from Sacramento Chinese Culture Foundation: Science and Mathematics in China. <http://www.sccfsac.org/science_math.html>

he had seen the theorem that was destined to be connected with his name on his travel? Might he not have encountered it brought from China in some unknown way? The lapse of time between him and Chou-Kong (Zhou Gong) justly makes the matter an open question” [5, 7]. More blatantly, this idea served to provoke the same possibility in the title of a translation of Chapter 9 of the *Jiu zhang suan shu* published in 1977: *Was Pythagoras Chinese? An Examination of Right Triangle Theory in Ancient China* [6]. Although the translators insist their title was meant only half-seriously, more to provoke readers’ interest . . . the fact remains that from a very early date Chinese mathematicians seem to have appreciated the special properties of right triangles.

We also find Pythagoras’s theorem in early Indian and Arabic mathematics [4].

There are several formulas for generating Pythagorean triples (a, b, c) . Here is one that Heath [2, pp. 79–80] attributes to Pythagoras:

$$a = m \text{ (an odd number)}, \quad b = \frac{m^2 - 1}{2}, \quad c = \frac{m^2 + 1}{2}.$$

Heath posits that Pythagoras likely discovered this formula by his knowing that the sum of the first n odd natural numbers is a square number and choos-

ing the gnomon that is to be added to produce the next square number itself to be a square number.

square number

$$\underbrace{1 + 3 + 5 + \dots + (2n - 3)}_{\left(\frac{m^2-1}{2}\right)^2} + (2n - 1) = \underbrace{\left(\frac{m^2+1}{2}\right)^2}_{n^2}$$

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

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Scholarships

*Debbie Van Sickle, CMC³ Foundation
President, Sacramento City College*

We have nearly completed the process of awarding our CMC³ Scholarships for the 2011/2012 academic year. This year we awarded a \$400 scholarship to one outstanding student at eighteen of our member colleges. Faculty at each college selected their student recipient using criteria we provided (see <http://www.cmc3.org/foundation.html#scholarships>).

This year's winners:

Bakersfield College	Emilee Miller
City College of San Francisco	Huiting Zheng
Contra Costa College	Maja Jennifer Oblepias
Cosumnes River College	Kim Angel Solania
Cuesta College	Mami Saito
DeAnza College	TBA
Diablo Valley College	Nick Sabatini
Gavilan College	Samantha Saenz
Laney College	Erik Aldape
Las Positas College	Andrew Koth
Los Medanos College	Ryan Gewondjan
Merced College	Resham Sandhu

Mission College	Ahn Le
Modesto Junior College	Mike Aljamal
Napa Valley College	Maria Garibay
Reedley College	Julio Zepeda
Santa Rosa Junior College	Jared Carr
Shasta College	TBA
West Valley College	Andrew Keeslar

CMC³ Foundation Welcomes New Team and Says Goodbye to Old Friends

Debbie Van Sickle, CMC³ Foundation President, Sacramento City College

In January Foundation Board new members:



Illowsky from De **Ha Dovan** from College and

2012 the CMC³ welcomed three

Barbara Anza College, **Bic** Santa Rosa Junior **Hsiao Wang** from

Sacramento City College. We also welcomed back our treasurer Rebecca Fouquette from Santa Rosa Junior College.



We have been through our first round of fundraising and scholarships. We look forward to

working together with everyone in CMC³ to continue to support the next generation of young math students.

As I begin my tenure as the President of the Foundation, I would like to take a moment to offer my heartfelt thanks to four board members who finished successful terms in 2011. **Cynthia Speed** served as president of our board for six years. Her hard work and dedication cannot be overestimated. Only now as I am completing my



first cycle of scholarships and fundraising in a tight economy do I begin to recognize how much we owe Cynthia for her many years of service to our organization and to our students.

She worked year round bringing money in and sending it back out to deserving students. It was my pleasure to work under her leadership for four years and I only hope I can do half as good a job. **Wei-Jen Luan Harrison**, from American River College, also served on the foundation board for six years. Many of us best remember Wei-Jen for spearheading our extremely successful (not to mention fun) special Numb3rs raffle. This gave two winners the opportunity to appear in the popular drama and brought the series star David Krumholtz to our winter conference. Her enthusiasm will be missed. **Larry Green** from Lake Tahoe Community College came to us officially in the role of CMC³ past-president. I think I expected this to be somewhat of an honorary position, but Larry was invaluable to us in many ways including helping with our website, serving as temporary treasurer, providing institutional memory and offering sound counsel as we tried to do more with less. I still call him for help and advice and have to remind myself (he has had the good grace not to do so) that he doesn't work for us anymore. And finally I'd like to thank **Wade Ellis** from West Valley College, who came in as our treasurer in the final months of 2011. I think

it is very possible that Wade spent more than half of his time with us sitting in various branches of the Bank of America helping us follow rules that bank officers seemed to keep changing. Like a good relief pitcher in baseball, it was not how many innings he played but the fact that he got the job done and gave us the win.

President's Message

(continued from p. 3)

about some things... I'd love your suggestions about potential questions you think would be interesting to include! And I will share the results!

Everyone is going wherever they go for the summer soon, so I won't be emailing our membership until the fall. If you would like to contribute your ideas, then I would love to hear from you so please email me at susannaelizabeth2020@gmail.com

Have a fantastic end of the school year and a wonderful summer!

Online Textbooks

(continued from p. 3)

of online mathematical materials and homework by our interactions with students in class?

The new online world of mathematics education gives many opportunities, possibilities for abuses, and pitfalls. If textbooks are free, who will update the written materials, the homework, the websites, the video clips? Will this magically become a free professional obligation of community college instructors? Will the government pay for the hardware and the development?

Many questions, not so many answers. If we don't begin to address and answer these questions, who will?



Math Nerd Musings

Jay Lehmann, *College of San Mateo*

The past few days I've been revising some global warming labs I wrote eight years back. It's a fascinating process, to see all that's changed, like looking at a photo

album from years back.

In 2004, the United States had the troubling distinction of being the largest emitter of carbon dioxide. Now, China has that trophy (8.2 billion metric tons) and the United States is runner up (5.6 billion metric tons). However, if we consider emissions per capita, the United States is very much still in the lead (18.1 metric tons versus 6.15 metric tons). If current emissions patterns continue, China might win the per-capita emissions race in 2029.

When I wrote the labs, I didn't think twice about referring to China as a developing country. That's not so clear now. When a country has the second largest GDP in the world, just recently nosing out Japan, it does seem belittling to call it

developing. However, with China's GDP per capita in 92nd place, it's hard to know what label to use.

So much has changed, I even had to change the title of the labs from "Global Warming Labs" to "Climate Change Labs." We all know that climate

change embraces what's at the heart of the matter: it's not just about warming trends; it's about the weather getting weird. And weirder. The latest change in my neck of the woods is wind. I've been biking the same route for the past fourteen years, but man, has it gotten wild of late, with gusts of wind slinging me into traffic.

Writing the labs in 2004 was totally depressing. The scientific community was making gloomy predictions about the climate, pleading with countries to act immediately and in big ways, but many of the largest emitters of carbon dioxide were doing very little, including—you guessed it—the United States. Revising the labs was less depressing, even uplifting at times. For decades, U.S. carbon dioxide emissions have been climbing linearly, but the emissions actually declined in the past decade. Sure, the recession is a big part of that reason, although scientists now predict U.S. emissions will stay approximately constant for the next twenty years, thanks to coal use being replaced with natural gas. Emissions may even decline, due to federal incentives to enhance use of alternative energy sources as well some states passing climate legislation.

On the global level, some progress has also been made. European countries continue to reduce their carbon emissions. And the United Nations is working on the Durban Platform, a climate-change agreement that will go into effect in 2020 and be legally binding for *all* countries; the United States never signed on to the Kyoto Protocol, which will expire at the end of this year. One part of the Durban Platform is that developed countries will assist developing countries in using clean energy for their growing economies. Given the United States' and some other developed countries poor track record with climate change, this is ironic, but nonetheless, there is good logic to this strategy, because another thing that has changed in the past eight

From a teaching standpoint, what I love about this topic is that it is incredibly important and it is playing itself out right now. No one knows what our future holds, yet it is critical that we forecast as best we can and act accordingly.

years is that total carbon dioxide emissions for developing countries now exceeds those for developed countries. And their emissions only stand to increase significantly unless they receive financial and technical support.

Putting my instructor hat on, there is one key aspect to climate change that has stayed the same: it is amazing how much of the above estimates and predictions can be made using linear, exponential, and quadratic models. The eight labs I've written are jam-packed with curve fitting that is completely within the scope of intermediate algebra. In fact, most of the modeling can be addressed with elementary algebra.

What I love about this topic is that it is incredibly important and it is playing itself out right now. No one knows what our future holds, yet it is critical that we forecast as best as we can and act accordingly. Far too many Americans have far too little faith in our scientists. According to a Gallup survey, only 64% of Americans believe climate change is a serious threat, and only 61% believe climate change is caused at least in part by humans. That's where we as educators can make a difference. Every student that steps foot on our campuses should learn about this crisis and what they can do about it.

What's fascinating about climate change is that it's a rich mixture of science, politics, and economics. Talk about the perfect opportunity for writing across the curriculum! It's amazing how well students can perform on projects if you provide ample structure such as breaking the assignment into smaller chunks, giving feedback before the last project due date, and providing a detailed rubric.

Many of our algebra students won't use that much of the math they learn, but all will be confronted with climate change, and if they are well-educated on the topic, there will be that much more hope we all can turn things around.

Calendar

July 8-15, 2012 12th
International Congress on
Mathematical Education
(ICME12), Seoul, Korea.
Contact: Sung Je Cho, email:
sungjcho@snu.ac.kr

September 15, 2012: UMATYC
Conference, Snow College,
Ephraim, UT. Contact: [Cindy
Alder](#)

September 22, 2012,
WisMATYC Fall Conference,
UW Manitowoc, Manitowoc,
WI. Website: [http://
www.wis.matyc.org/](http://www.wis.matyc.org/)

September 29, 2012 –
LaMsMATYC Conference; New
Orleans, LA. Contact: [Susan
Santolucito](#) Website: [http://
web.lsu.edu/LaMsMATYC/
LaMsAnnualConference.htm](http://web.lsu.edu/LaMsMATYC/LaMsAnnualConference.htm)

October 12, 2012, IMATYC
Conference, Indian Hills
Community College, Ottumwa
Iowa. Contact: [Diane Mason](#).
Website: [http://www.niacc.edu/
math/imatyc/](http://www.niacc.edu/math/imatyc/)

November 8-11, 2012 AMATYC
38th Annual Conference,
Jacksonvil - le, FL. Contact:
AMATYC Office, (901)
383-4643, email:
amatyc@amatyc.org

**December 7-8, 2012 CMC³
40th Annual Conference,
Portola Hotel and Spa,
Monterey, CA. Contact:
Susanna Gunther, (530)
864-7000 x-4614, email:
susanna.crawford@solano.edu**

January 9-12, 2013MAA and
AMS Joint Mathematics
Meeting, San Diego Convention
Center, San Diego, CA. Website:
[http://www.maa.org/meetings/
jmm.html](http://www.maa.org/meetings/jmm.html)

April 12, 2013: NEBMATYC
Conference, Central CC.
Contact: [Bonny Rainforth](#) &
[Amy Wahlmeier](#). Website:
[www.northeast.edu/
Organizations/NEBMATYC](http://www.northeast.edu/Organizations/NEBMATYC)

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