

Website: <http://2yc3.org>

# Chemistry Outlook

An Activity of  
The Committee on Chemistry in the Two-Year Colleges  
Division of Chemical Education  
American Chemical Society



*Lance Lund, Chair*

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## Notes From The Chair

Lance S. Lund  
Anoka Ramsey Community College  
Coon Rapids, MN

Let me start by saying that I am honored to serve as your 2YC<sub>3</sub> Chair for 2010. It has been an interesting journey getting to this point. My history with the 2YC<sub>3</sub> began in 1993 by attending the 122<sup>nd</sup> 2YC<sub>3</sub> Conference at Normandale Community College in Bloomington, MN near the end of my first year as a full time community college instructor. There were a couple sessions I attended during that conference that shaped my teaching career to this day. The first presentation was by John Amend of Montana State University. The second was by C. Marvin Lang and Donald Showalter, both from the University of Wisconsin - Stevens Point.

John Amend's presentation focused on the implementation of laboratory projects into the introductory chemistry courses at Montana State. Central to these projects was the utilization of data acquisition hardware and software. Inspired by John's presentation, I asked my colleagues in the physics department, Max Malmquist and the late Tom Loftus, about probeware I recalled seeing in storage that had never been used. We pulled the equipment out of the boxes, installed the software, and learned how to use the equipment together. Over a number of years, traditional experiments in the chemistry department were adapted to make use of the probeware. I had also watched Tom doing lab projects with his physics students for many years. Motivated by his success with these projects as well as John Amend's presentation, I took the plunge and started doing laboratory projects with my general chemistry students in 2000. The projects are now an integral part of our general chemistry laboratory curriculum in both the first and second semester

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## 2010

**187<sup>th</sup> CONFERENCE (Western)**

March 19-20, 2010

City College of San FranciscoSan Francisco, CA

Contact: Bob Price

Email: rprice@ccsf.edu

**188<sup>th</sup> CONFERENCE/21<sup>st</sup> BCCE**

Aug 1-5, 2010

University of North Texas,Denton, TX

Contact: Thom Jose

Blinn College, Bryan, TX

Email: tjose72@yahoo.com

**189<sup>th</sup> CONFERENCE (Western)**

September 10-11, 2010

Portland Community CollegePortland, OR

Contact: Patty Maazouz

Email: patty.maazouz@pcc.edu

**“Notes from the Chair” ...continued from page 1**

and are used by all instructors teaching these courses. I have also implemented lab projects into the teaching of my introductory online course.

It should be noted that John Amend is still active with the 2YC<sub>3</sub>. He has been a longtime member and gives occasional presentations. His company, Microlab, has been a mainstay industrial sponsor of the 2YC<sub>3</sub>. The 2YC<sub>3</sub> is grateful for his support over these many years.

The presentation by C. Marvin Lang and Donald Showalter was entitled “A World of Chemical Demonstrations”. Their presentation inspired me to organize annual elementary classroom visits that have been performed by students in the second semester of our general chemistry courses for many years. The classroom visits are comprised of a mixture of demonstrations and hands-on activities. In addition, their presentation led me to develop my own chemi-

cal magic show. Many of the demonstrations used in these activities are the same ones I saw performed at the 122<sup>nd</sup> 2YC<sub>3</sub> conference. Marv and Don gave subsequent presentations at 2YC<sub>3</sub> conferences – Anoka Ramsey Community College in 2001 and Rochester Community and Technical College in 2009 – hopefully inspiring other chemistry teachers to use more chemical demonstrations as they had inspired me years earlier.

My 2YC<sub>3</sub> conference count to date stands at 25. I still learn new and exciting things at every conference. Many of the teachers I have met at our conferences say that their first conference was the most memorable because they were unaware of everything that was taking place in the chemical education community. I have heard several first-time attendees over the years say things such as, “I learned so much that I don’t know which one I want to try first when I get home.” It’s still hard for ME to figure out which things I want to implement into MY teaching and professional development. There are so many good ideas – it’s impossible to do everything.

Our conferences are relatively small and inviting. If it has been awhile since you have been to a 2YC<sub>3</sub> conference, make it a point to get to one this year. Invite a colleague. Give a presentation. Volunteer to serve the 2YC<sub>3</sub>. Hosting a conference or serving on a Regional Advisory Board (RAB) is a good place to start. For more information, consult our website at [www.2yc3.org](http://www.2yc3.org). If you can’t do any of these things, please help us out by putting in a good word for the 2YC<sub>3</sub>.

Finally, I would like to thank our two outgoing officers for their many years of service to this organization, Dolores Aquino and Kelly Befus. Dolores has served the 2YC<sub>3</sub> for at least 11 years – as membership chair, chair, and future sites chair. Dolores provided an important link to individuals who had a long history in this organization. The slate of conferences on the calendar for the next 3-4 years is the result of her work as future sites chair. She will be missed. Kelly served as the treasurer and college sponsors chair for the past 5 years. Kelly volunteered and was appointed to take over the duties at a time when the future of this organization seemed rather bleak and uncertain. She leaves the organization in very good fiscal condition. Her service will be missed, though I will still get to see her every day as she is colleague of mine. Thanks again, Dolores and Kelly!

**2010 COCTYC AND SUPPORT STAFF**  
**Division of Chemical Education, Inc**  
**American Chemical Society**  
**2010 Roster of Committee Members**

**Chair**

Lance S. Lund, Anoka-Ramsey Community College  
11200 Mississippi Blvd. NW, Coon Rapids, MN 55433  
Office: (763) 433-1273 Email: [chair@2yc3.org](mailto:chair@2yc3.org)

**Chair-Elect 2010**

Mark Matthews, Durham Technical Community College  
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**Chair-Elect 2011**

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**Immediate Past Chair**

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Email: [pastchair2@2yc3.org](mailto:pastchair2@2yc3.org)

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Email: [pastchair3@2yc3.org](mailto:pastchair3@2yc3.org)

**2YC<sub>3</sub> Webmaster**

<http://2yc3.org>

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## 2YC<sub>3</sub> Membership Form

Please consider supporting the 2YC<sub>3</sub> by becoming a member or renewing your membership. Annual dues are only \$25.

There is no longer a special rate on joint membership with DivCHED. If you are interested in joining DivCHED, please go to <http://www.divched.org/index> and take the *Membership* link on the left.

**I wish to:** \_\_\_\_\_ Become a member of 2YC<sub>3</sub>  
\_\_\_\_\_ Renew my 2YC<sub>3</sub> Membership

**I am a:** \_\_\_\_\_ Two-Year College Teacher \_\_\_\_\_ Four-Year College Teacher  
\_\_\_\_\_ High School Teacher \_\_\_\_\_ Other

**Your Name:** \_\_\_\_\_

**Institution:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
Street City, State 9-Digit Zip Code

**Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Current Member of:** \_\_\_\_\_ ACS \_\_\_\_\_ DivCHED

Names of current members are posted on the 2YC<sub>3</sub> website. The list includes names, institutional affiliation, and membership expiration date only. Email addresses and phone numbers are NOT listed. If you do NOT want your name listed, check here \_\_\_\_\_.

- **NEW! Membership dues can now be paid by credit card or PayPal on the 2YC<sub>3</sub> website by visiting <http://www.2yc3.org/membership/>**
- **If paying by check, please send your check**, payable to 2YC<sub>3</sub>, for \$25 to:  
Frank Ramdayal, Bergen Community College, 400 Paramus Road, Paramus, New Jersey, 07652.

# 187<sup>th</sup> 2YC<sub>3</sub> Conference (Western)

## “Strategies for a New Decade: Increasing Student Success and Diversity”

City College of San Francisco - Ocean Campus  
San Francisco, CA

March 19-20, 2010

### 27 Co nference Information

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For **registration, lodging information, travel directions**, and the **latest information on the conference program**, please check the conference website at: <http://www.ccsf.edu/chemistry/2yc3/> (A link will also be provided on the 2YC3 website: [2YC3.org](http://2YC3.org)). Before that, please contact

<b>Program Chair:</b>	Bob Price	<a href="mailto:rprice@ccsf.edu">rprice@ccsf.edu</a>	415-239-3515
<b>Local Arrangements:</b>	Malinda Pauly	<a href="mailto:mpauly@ccsf.edu">mpauly@ccsf.edu</a>	415-452-5399
<b>Exhibits Coordinators:</b>	Larry Fong	<a href="mailto:lkfong@ccsf.edu">lkfong@ccsf.edu</a>	415-239-3516

#### Friday, March 19

8:00-5:00	<b>Exhibits</b>
8:00-9:00	<b>Registration and Continental Breakfast</b>
9:00-9:15	<b>Welcome and Opening Remarks</b>
9:15-10:30	<b>Plenary Session: Guided Inquiry Learning in Chemistry and the Science Writing Heuristic;</b> <u>Thomas Greenbowe, Department of Chemistry, Iowa State University Ames, IA</u>
10:30-10:45	<b>Refreshments</b>
10:45-12:15	<b>Concurrent Sessions</b>
	<b>A: The Benefits of the ACS Scholars Program to Community/Junior College Students Seeking a Pathway to Careers in the Chemical Sciences, Engineering and Education;</b> <u>Onofrio G. Gaglione, ACS Southern Nevada Section, Las Vegas, NV</u>
	<b>B: Crafting a “Green” STEM Pipeline – Preparing Students in an Emerging Economy;</b> <u>Armando M. Rivera, East Los Angeles College, Monterey Park, CA</u>
	<b>C: Workshop: Promoting Writing in Chemistry Courses Using Calibrated Peer Review;</b> <u>Tim Su, Department of Chemistry, City College of San Francisco, San Francisco, CA</u>
	<b>D: A Double Diploma Option for Biotech Students Using Modular Chem Tech Courses;</b> <u>Anu Ganguly, Department of Chemistry, Ohlone College, Fremont, CA</u>

- 12:15-1:15            **Lunch**
- 1:15-2:00            **2YC<sub>3</sub> General Meeting**
- 2:00-3:30            **Plenary Session: Do you Twitter? Using Social Media Like Flickr and Twitter in Science Education**  
Elizabeth Dorland, PARC Communications Director, Washington University, St Louis, MO
- 3:30-5:00            **Concurrent Sessions**
- A: Recruiting and Retaining High School Students in College Chemistry Programs;**  
Edward Kremer, Department of Chemistry, Kansas City Kansas Community College, Kansas City, KS
- B: Workshop: Implementing Guided Inquiry Learning in Chemistry Labs;**  
Thomas Greenbowe, Department of Chemistry, Iowa State University Ames, IA and Brandon Fetterly, Department of Chemistry, University of Wisconsin-Richland, Richland Center, WI
- C: Panel: New Chemistry Faculty—Experiences and Reflections;**  
Facilitated by Torrey Glenn, Department of Chemistry, City College of San Francisco, San Francisco, CA
- D: The Power Study Program (PSP): Variations on Supplemental Instruction;**  
Sarah R. Axford, Barbara Speidel-Haughey, Shawna Hutchins, Department of Chemistry, Southwestern College, Chula Vista, CA 91910
- 7:00-9:00            **Social and Banquet**  
Speaker: Dr. John Matsui, Co-Founder and Director of the Biology Scholars Program, University of California, Berkeley, Berkeley, CA
- Saturday, March 20**
- 8:00-2:00            **Exhibits**
- 8:00-9:00            **Registration and Continental Breakfast**
- 9:00-10:30           **Concurrent Sessions**
- A: Workshop: Using Social Media in the Chemistry Classroom;**  
Elizabeth Dorland, PARC Communications Director, Washington University, St Louis, MO
- B: How Can You Leverage and Implement the ACS Guidelines for Chemistry in Two-Year College Programs?;**  
John V Clevenger, Truckee Meadows Community College, Reno, NV (Emeritus); Dolores C Aquino, San Jacinto College Central, Pasadena, TX; Ieva Reich, University of Wisconsin, Madison, WI
- C: Student-Centered STEM Education Model at a Community College;**  
Joe Ledbetter and Seti Sidharta, Department of Chemistry, Contra Costa College, San Pablo, CA
- D: A Text, a Test, and a T-shirt: A Tale of How a New Book Can Change the Way We Teach Organic Chemistry;**  
Stephen R. Pruet, Department of Chemistry, Jefferson Community and Technical College, Louisville, KY

10:30-11:00	<b>Refreshments</b>
11:00-12:30	<b>Concurrent Sessions</b>
	<b>A: Panel: Undergraduate Research at Two-Year Colleges;</b> Facilitated by Tom Higgins, Department of Chemistry, Harold Washington College, Chicago, IL and David Brown, Department of Chemistry, Southwestern College, Chula Vista, CA
	<b>B: Promises and Challenges for Minority Students in Chemical Sciences in a Community College;</b> Bal Barot, Department of Science, Lake Michigan College, Benton Harbor, MI
	<b>C: College Chemistry: The Socratic Lecturing Technique to Inquiry Based Learning;</b> Kim Nguyen, San Jose City College, San Jose, CA
12:30-1:45	<b>Lunch</b>
1:45-end	<b>Poster Session</b>
1:45-3:15	<b>Concurrent Sessions</b>
	<b>A: Panel: Deciding What to Teach in GOB Courses;</b> Featuring Textbook Authors Jim Armstrong, Department of Chemistry, City College of San Francisco, and Karen Timberlake, Emerita, Los Angeles Valley College, Valley Glen, CA
	<b>B: Center for Workshops in the Chemical Sciences: A Free Resource for Chemistry Faculty;</b> David Collard, School of Chemistry & Biochemistry, Georgia Institute of Technology, Atlanta, GA and Lawrence Kaplan, Department of Chemistry, Williams College, Williamstown, MA
	<b>C: Chemistry with Kids;</b> Mike Solow, Department of Chemistry, City College of San Francisco, San Francisco, CA
	<b>D: Helping Students Visualize Hyperconjugative Donor-Acceptor Interactions of Acetylam- ine;</b> Mohamed Ayoub, Department of Chemistry, University of Wisconsin-Washington County, West Bend, WI
3:15-3:45	<b>Closing Session</b>

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## Registration and Lodging

Registration for the conference is by mail-in form. The form is available at the conference website: <http://www.ccsf.edu/chemistry/2yc3/>. Download and send in the form with your payment. Please note that your registration is not complete until your payment is received.

Up-to-date lodging information, as well as directions to the campus can be found at the conference website specified above.

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## About City College of San Francisco

City College of San Francisco (CCSF) is a public, two-year community college accredited by the Accrediting Commission for Community & Junior Colleges of the Western Association of Schools and Colleges. Since its founding in 1935, City College has evolved into a multicultural, multi-campus community college that is one of the largest in the country. CCSF offers courses in more than 50 academic programs and over 100 occupational disciplines. There is a full range of credit courses leading to the Associate of Arts and Science degrees, most of which meet the general education requirements for transfer to a four-year colleges and universities.

The chemistry department is located at the Ocean Campus, located in the southwestern part of the city. The nearby Balboa Park station of the Bay Area Rapid Transit (BART) system provides service from the San Francisco International Airport and the ACS Conference site. While in San Francisco, be sure to enjoy the numerous and diverse dining options.



**CEB**  
**ChemEd Bridges**

American Chemical Society National Meeting  
San Francisco, March 21-25, 2010

-Announcing-

*ChemEd Bridges Symposium*  
*Sunday, March 21*

*Improving Chemical Education through Undergraduate Research  
and New Teaching Methods*

**Travel support funds are available for this meeting.**

**Apply at [www.chemedbridges.com](http://www.chemedbridges.com)**

*ChemEd Bridges will also be presenting  
at the 187<sup>th</sup> 2YC<sub>3</sub> meeting at City College of San Francisco  
March 19-20, 2010*

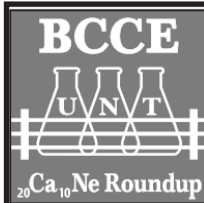


**Election Results**  
**2010 2YC<sub>3</sub> COCTYC Positions**

**Congratulations** and welcome to the following new COCTYC members

- Chair-Elect 2011: **Jason Jadin**, Rochester Community and Technical College.
- Treasurer/College Sponsors Chair: **Julie Ellefson-Kuehn**, Harper College.

*Thank you* to Candice McCloskey, outgoing Chair and Kelly Befus for her years of service as Treasurer/College Sponsors Chair.



## 21<sup>st</sup> Biennial Conference on Chemical Education

### A New Decade for Opportunity

[www.bcce2010.org](http://www.bcce2010.org)

August 1-5, 2010

University of North Texas, Denton, TX

The Biennial Conferences on Chemical Education (BCCEs) are the premier conferences on chemical education in the world. The ACS Division of Chemical Education (DivCHED) sponsors the BCCEs and the University of North Texas (UNT) in Denton will host the upcoming conference, in collaboration with Collin County Community College. The BCCE is coming of age. This will be the 21<sup>st</sup> BCCE and it is happening the same year as the Centennial Celebration of the founding of the Department of Chemistry at UNT. This BCCE also marks the **188<sup>th</sup> meeting of the 2YC<sub>3</sub>**.

If you've never attended a BCCE, now is the time! The BCCEs are the largest gatherings of chemical educators in the world, designed for all levels of chemistry: secondary school, 2-year college and university. This conference emphasizes the improvement of chemistry education and modern developments in chemistry and chemical education, and is highly respected in the chemical education community. The commitment of UNT to chemistry education is exceptional, and we have an excellent working relationship with the City of Denton community and the surrounding venues in the Dallas-Ft. Worth Metroplex. The <sub>20</sub>Ca<sub>10</sub>Ne Roundup Committee is working hard and would like to take this opportunity to extend our Texas hospitality to you!

#### **Preliminary Program / Call for Abstracts**

The 21<sup>st</sup> BCCE 2010 will focus on a wide range of critically important issues in chemical education that address the complex and subtle relationships of teaching, learning and research with particular focus on what will be happening in the next decade. You do not have to be a member of the ACS or DivCHED to attend or to present at the BCCE, but you do need to register. ***The time has come for you to share!*** Abstract submission is now open and closes February 12<sup>th</sup> 2010. ***Do not forget to submit!*** The Two-Year College Chemistry Program coordinators Thom José and Susan Shih have assembled a program that addresses the needs and issues of faculty in two-year institutions. The preliminary program is as follows:

- Assessment at the Two-Year College Level: Opportunity and Success
- ChemEd Bridges: A Retrospective On Its Impact
- Community College and University: Sharing Funding, Research, Students, Faculty, Instruments and Expertise
- Practices and Policies that Foster Excellence in the First Two Years
- Supporting and Engaging Two-Year College Programs: Exploring the ACS Role
- The Art of Teaching Chemistry at a Community College
- Undergraduate Research that Engages Community College Students
- Where is Chemical Technology Education Headed in 2010?

Submissions to these symposia or any of the other 60 + symposia can be made at the 21st BCCE Website: <http://bcce2010.org> (look for the "Submissions" bottle in our virtual chemistry set). We want this BCCE to have a strong program for the 2YC<sub>3</sub> membership, and we need your participation and attendance to accomplish this. Any questions, program ideas, or general suggestions for the BCCE program chairs can be sent to the BCCE via email, [program@bcce2010.org](mailto:program@bcce2010.org).

To receive the most current information and deadline notifications relating to the Conference, please join the 21<sup>st</sup> BCCE listserv by adding your name to our list: <http://chemed.tamu.edu/bcce2010>.

#### **Conference Registration/Lodging/Travel**

Early registration should begin March 2010 through the 21<sup>st</sup> BCCE Website. Early registration fees are \$250. At the close of early registration a \$50 fee will be added. Housing will be available in several of our new residence halls and at several local hotels that have agreed to honor the Texas state employee rate. Dallas/Fort Worth International Airport and Love Field are less than one-hour trip from Denton. The Roadrunner shuttle service will be available for participants.

For specific information about the conference, visit and bookmark the 21st BCCE Website: <http://bcce2010.org>. This site will be continuously updated with information pertaining to the technical program, registration, housing, and social events as we approach August 1, 2010.

**ABSTRACT SUBMISSIONS: NOVEMBER 23, 2009 – FEBRUARY 12, 2010**

**Y'all come on down now, ya hear, and let's raise a little CaNe in Texas!**



# 189<sup>th</sup> Conference Preliminary Information and Call for Papers

## *Kaleidoscope: Celebrating New Innovations in Two-Year College Chemistry Programs*

September 10-11, 2010  
Portland Community College  
Sylvania Campus  
Portland, OR



### Location Information

Join us in the beautiful Pacific Northwest at the largest institution of higher learning in the state of Oregon. Our conference will be located at the Sylvania Campus, just 10 minutes from downtown in southwest Portland. The campus opened in 1968 and rests on Mount Sylvania, bordered by a Douglas fir forest and several quiet neighborhoods. Situated approximately 70 miles from the Pacific Ocean where the Columbia River meets the Willamette River, Portland has a magnificent setting, combining sparkling waterways with lush greenery rarely found in urban settings. Portland is just a short distance from the spectacular Columbia Gorge and Multnomah Falls, windsurfing at Hood River, touring at many Willamette valley wineries, enjoying a fresh microbrew at one of the many local brewpubs, skiing at Mt. Hood, fish watching at Bonneville Dam, and all of the excitement of the Oregon coast.

### Preliminary Information

The conference will include simultaneous symposia, panel discussions, workshops, and local industrial and recreational tours. Planned topics include distance learning in college chemistry, POGIL, the Science Writing Heuristic, incorporating nanotechnology into the community college curriculum, community outreach programs, sustainability, innovative pedagogy, and research at community colleges.

### Call for Papers

We are currently looking for colleagues who would like to contribute to our program by giving a presentation or leading a workshop or round-table discussion on any topic that will enhance our conference.

### Contact Information

Program Chair:	Patty Maazouz	patty.maazouz@pcc.edu	503-977-8209
Local Arrangements Chair:	Kenneth Friedrich	kenneth.friedrich@pcc.edu	503-978-5660
Exhibits Chair:	Gabriele Backes	gbackes@pcc.edu	503-614-7315

## **Bubbling Over with Excitement?**

### **An Invitation for Submissions to the 2YC<sub>3</sub> Chemistry Outlook**

*From the Editor:* I would like to invite any and all members of 2YC<sub>3</sub> to consider submitting interesting and relevant articles, commentary, announcements, job postings or photographs for inclusion into the Chemistry Outlook. As our organization grows, the Outlook is hoping to grow as well, and it can serve as a convenient means of sharing information with your colleagues around the country. Do you have an interesting classroom activity you'd like to share? How about a demonstration or a teaching technique that you think works especially well? In the past we have published conference commentary, "It Works for Me", photographs of students excelling at presentations and workshop announcements. Submissions may be published on an editorial appropriateness and space-available basis, and should be typed in Times New Roman font, single-spaced, 12-pt.

#### **Deadlines for submissions:**

Vol I (due out mid-Feb): Dec. 15  
Vol II (due out mid-May): March 15  
Vol III (due out mid-Aug): June 15  
Vol IV (due out mid-Sept): July 15

## Conference Report

### Balancing Lab Content, Inquiry Skills, and Increasing Enrollment New Educational Strategies to Improve Learning

Doug Schumacher, Luther College, IA, Rosemary Rader, Washentaw CC, MI,  
and John Amend, Montana State University (Emeritus) and MicroLab.

Did you ever worry about keeping the white tablecloths on your lab benches clean? We did at a workshop in Bozeman this past summer!

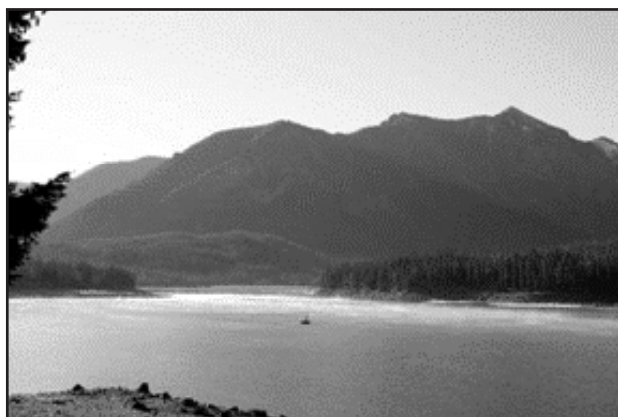
Most of us who teach college chemistry feel like we are running a balancing act. Our enrollments are up. Our lab space is static. The pressure is on for shorter lab periods, reduced chemical cost, less chemical waste, and improved safety. NSF, our professional organizations, and our administrations are encouraging us to improve our course content and to be serious about developing inquiry skills.

This past July a group of college and high school chemistry faculty and national leaders in Chemical Education gathered in Bozeman. We considered ways of using new educational strategies and computer technology to meet these challenges.

This 2-1/2 day conference was organized as a sequence of lectures, discussions, and five “hands-on” two-hour laboratory sessions. To demonstrate that computer technology and small, safe chemical samples can compensate for limited

*This is one conference I wish time could have been on hold for a while—we had such a great group of people to work with... I didn't want it to end!*

-Conference participant



lab facilities, we met in the Bozeman Grantree Inn's conference center. Experiments were drawn from first-year chemistry: thermo-chemistry, gas laws, acid-base chemistry, spectrophotometry, equilibrium, and electrochemistry. The Grantree did insist on white tablecloths, and we used just 3 gallons of distilled water in ten hours of lab!

Speakers were Dr. Tom Greenbowe, Professor of Chemistry at Iowa State University and past Chair of the ACS Division of Chemical Education (The Science Writing Heuristic), Dr. Norb Pienta, Professor of Chemistry at the University of Iowa and the new Editor of the Journal of Chemical Education (Visualization) and Dr. John Amend, Professor of Chemistry Emeritus, Montana State University and President

of MicroLab (Computers as Tools for Inquiry). New educational strategies and technology were introduced, discussed, and then immediately applied and evaluated in the laboratory.

Participants, families, and staff took advantage of Bozeman's mountain location with a Monday evening picnic at nearby Hyalite Lake.

The workshop will be held again July 19-21, 2010, this time at the Alumni Conference Center at Montana State University, Bozeman. Added to the 2010 conference staff will be Dr. Mike Seymour, past Head of the Department of Chemistry at Hope College, MI (Integrating Research Strategies into Lab). The Masters of Science in Science Education Program at Montana State University and MicroLab, Inc. will again sponsor the conference. Two optional graduate credits are available through the MSSE program. Faculty interested in participating may contact Diana Paterson, MSSE ([dianap@montana.edu](mailto:dianap@montana.edu)) or John Amend ([jamend@microlabinfo.com](mailto:jamend@microlabinfo.com)). The 2010 conference flyer is available on the MicroLab web site, [microlabinfo.com](http://microlabinfo.com).

# Center for Workshops in the Chemical Sciences Announces 2010 Workshop Schedule!

**David M. Collard**

Professor and Associate Chair  
School of Chemistry and Biochemistry  
Georgia Institute of Technology  
Atlanta, GA 30332-040

It is a pleasure to announce the 2010 schedule of workshops organized under the auspices of the NSF-sponsored Center for Workshops in the Chemical Sciences (CWCS). These workshops provide a background and modern perspective on various topics in the chemical sciences, along with methods to introduce these topics into the college curriculum. Attendance at the workshops is FREE. More information and the online application are available at: <http://chemistry.gsu.edu/CWCS>

- Nucleic Acids – May 23-28 NEW!
- Teaching Guided-Inquiry Organic Labs – June 6-11
- Research Based Laboratory Curriculum – June 13-18
- Introductory Forensic Science – June 20-25
- Chemistry of Art – June 20-25 NEW LOCATION!
- Renewable Energy – July 11-16 NEW!
- Supporting Student Lab Learning – July 11-16
- Green Chemistry – July 17-23
- Food Chemistry – July 25-30 NEW!
- Computational Chemistry – August 1-7 NEW LOCATION!

In addition, we are continuing our series of “advanced” workshops. These are designed for returning participants with some experience using the topics as a foundation for teaching science.

- Advanced Chemistry of Art – June 2-7

The CWCS workshop program is open to faculty and instructional staff at two-year and four-year colleges, and universities, as well as post-docs and advanced graduate students who plan to embark on a career in teaching college-level chemistry. Registration, accommodations and a per diem for food are provided at no cost to participants. Some assistance to cover the cost of travel to the workshop might also be available.

We hope that you will consider attending one of the workshops and that you will also bring this program to the attention of your colleagues. Some of the workshops have a long history of engaging faculty in new areas and providing great support for enhancing the curriculum at a variety of colleges.

We hope to meet you and your colleagues at workshops in the near future.

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The Center of Workshops in the Chemical Sciences (CWCS) is supported by the NSF CCLI program as a Phase III project.

The Center is co-directed by:

J.C. Smith, Georgia State University  
David M. Collard, Georgia Institute of Technology  
Lawrence J. Kaplan, Williams College  
Pat Hill, Millersville University.

>From 2002 to 2009, more than 1500 individuals have attended 98 CWCS workshops at 28 different locations. Aspects of the impact of the program at a wide variety of institutions are discussed on the CWCS website: [www.chemistry.gsu.edu/CWCS](http://www.chemistry.gsu.edu/CWCS)

Be on the lookout for CWCS-sponsored symposia at both national ACS meetings and the BCCE in 2010!



## What's Happening in My Area?

### News From the Regional Advisory Boards (RABs)

#### Western RAB Dick Gaglione, Chair

On Thursday, November 19, 2009 the ACS Santa Clara Valley Section (SCVS) held a Meeting at the Biltmore Hotel in Santa Clara, CA to honor the first-ever Teacher-Scholar Award for Community College chemistry instructors. ACS President Thomas Lane (left) presented the Award to Jeanette Medina (center) of Cañada College in Redwood City, CA. SCVS Alternate Councilor, Harry Ungar (right) of Cabrillo College (Aptos, CA) who brought this project to a wonderful fruition, also participated in the presentation of the Award.



Dr. Lane's Talk focused on the importance of community college education not only to the academic world, but also to the chemical industry. He also spoke of his own experiences throughout his career that have forged his strong support for the two-year college chemistry enterprise. Ungar spoke of how the idea of the Teacher-Scholar Award began at a 2YC<sub>3</sub> Meeting in Las Vegas, NV in 2008 and his wish to see it become an annual award in other regions throughout the country.

Dr. Jeanette Medina brings to the two-year college table those ingredients that are required to make Cañada College a legitimate pathway in the pipeline of chemical science education and 21st century careers. She not only possesses a scholarly background in chemistry and research, she is also aware of the factors that promote learning and success in the chemistry education enterprise. She has a diverse experience in the profession of teaching and research in organic chemistry and has learned how to seek and obtain external funding and to direct projects in a way that will make them sustainable. She is a scholar, a master teacher and a master team builder and worthy of this recognition.

An overflow crowd of SCVS members included also Dr. Bonnie Charpentier, ACS Director District VI, members of the faculty and administration of Cañada College in addition to 2YC<sub>3</sub> members from other ACS local sections in the Western Region.

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#### Midwestern RAB Amy Jo Sanders, Chair

Season's Greetings from your Midwestern RAB. This is the first newsletter since the 185<sup>th</sup> conference took place in Rochester, MN. Thanks to all who attended. Jason Jadin and his team did an outstanding job of hosting this informative and well-attended conference. It is such an enlightening experience to interact with so many chemistry instructors from across the nation and discover what is happening in their classrooms. Here are just a few ways our region has benefited from 2YC<sub>3</sub> conferences: Ron Budhram at Kansas City Kansas Community College has just received the Quality Matters (QM) Certification and Seal of Approval for his online College Chemistry courses. Quality Matters (<http://www.qualitymatters.org/>) is an inter-institutional organization based in Maryland. Getting a class through the rigors of a peer-review team designed to certify the quality of online courses and components is no small feat. Professor Budhram notes that "during the past years the 2YC<sub>3</sub> conferences have provided the perfect outlet for expression and development of ideas for online teaching of Chemistry. My presentations at several conferences including Georgia Perimeter College and at the 161<sup>st</sup> conference here at KCKCC in 2002, have provided invaluable feedback for the development of online chemistry courses." Professor Bal Barot at Lake Michigan College recently celebrated National Chemistry Week by visiting Benton Harbor's Hull Middle School. Exciting chemistry demonstrations similar to those seen by Professor Barot at the MN conference were well received by the students.

I would like to introduce you to one of the Midwestern RAB's newest members: Dr. Steven Socol (at right). He received his bachelor's degree from the University of Wisconsin-Milwaukee and his PhD from Iowa State University. He is currently the Department Chair of Chemistry, Engineering and Physics at McHenry County College in Crystal Lake, IL. We are very grateful to have him join our RAB.



Finally, I would like to ask that if you are interested in forming an Associate's Degree in Computational Science (Biology, Chemistry, or Physics), please consider attending our upcoming workshop: [www.starkstate.edu/csworkshop](http://www.starkstate.edu/csworkshop).

## What's Happening in My Area?

### News From the Regional Advisory Boards (RABs)

#### Eastern RAB Brahmadeo Dewprashad, Chair

The 2010 ACS Mid-Atlantic Regional meeting (MARM) will be held at the hotel Du Pont in Wilmington, Delaware from 10-13<sup>th</sup> March 2010. The theme of the meeting is "Chemistry in the First State." Topical symposia planned for the meeting include sessions on medicinal chemistry and the pharmaceutical industry; environmental chemistry; physical/analytical chemistry; materials science/polymer chemistry and engineering; fluorine chemistry; materials science/nanochemistry; sustainability, green chemistry and policy; computers in chemistry; chemical education; food chemistry; issues and resources in chemical health and safety; and more. Additional information can be obtained from the ACS website at <http://www.marmacs.org/2010/submit.html> or by emailing Dr. Martha Holloman ([marthahollomon@comcast.net](mailto:marthahollomon@comcast.net)).

There is good news from the Borough of Manhattan Community College (BMCC) of the City University of New York. A student, Kwame Amin won "Fist Prize" in the Chemical Sciences Division for sophomores for his poster presentation "Medicinal Chemistry of *Colubrina arborescens*" at the Annual Biomedical Research Conference for Minority Students held in Phoenix, Arizona, November 7-10, 2009. Kwame competed with students from not only two-year colleges, but also from four year and PhD granting institutions nationwide. Kwame was mentored by chemistry faculty Brahmadeo Dewprashad.

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#### Southern RAB Ken Capps, Chair

The 186<sup>th</sup> Conference of the 2YC<sub>3</sub> was held on November 13 and 14, 2009 in historical Raymond, Mississippi. Events were held at the Eagle Ridge Conference Center on the campus of Hinds Community College. The theme for the sessions was "Sharing Ideas to Promote Chemistry Education" and featured a keynote address from Onofrio G. Gaglione, Councilor of the ACS Southern Nevada Section and past 2YC<sub>3</sub> chair. His address focused on the growth of two-year college chemistry education and what will be needed for associate degree chemistry education to be perceived as a legitimate pathway for high school graduate and returning students. This was followed by a very informative presentation session by Dr. David Brown and Dr. Tom Higgins on "The ChemEd Bridges Project" that aims to increase the participation of two-year college chemists in the national chemical education community. The 2YC<sub>3</sub> banquet capped off the evening and featured a talk by Mark Michalovic of Bucks County Community College (Pennsylvania) that focused on the contributions in anti-fungal pharmaceuticals by Mississippi born scientist, Elizabeth Lee Hazen. Dr. Michalovic's talk was preceded by a fabulous concert by the "Jubilee Singers", an all male African-American group originally formed in the 1920's that performs plantation spirituals and other traditional music. The conference continued the next day with an opening address by Dr. Ben Fatheree from Hinds Community College on the Mississippi system of junior colleges. Presentations sessions followed that included Dr. Jacob Clark Blickenstaff's (University of Southern Mississippi) talk on women in science and initiatives to retain young women in STEM, as well as Dr. Armando Rivera's (East Los Angeles College) talk on efforts to promote STEM outreach and recruitment of minority high school students through a series of planned activities and events.

Overall, this conference was a big success with approximately 43 2YC<sub>3</sub> members and their students attending and participating in paper, workshop and poster presentations. Not only did attendees have many opportunities to socialize and network, but it was also a great opportunity to tour and to learn about the history of Raymond, MS to include the Shelton House, the Chancery Building, and St. Mark's Episcopal Church. By and large, a great conference and a superb job by Hinds Community College and program chair, Pam Clevenger and her coordinators. We congratulate and thank them for all the hard work they did!

#### Submit News from Your Area!

Do you have interesting news to share with the rest of the 2YC<sub>3</sub> membership? Your RAB chairs welcome and encourage you to send interesting news from your area to them for compilation and submission to the Chemistry Outlook Newsletter. The RAB chair email addresses are:

Western RAB: Dick Gaglione, [oggag@aol.com](mailto:oggag@aol.com)

Southern RAB: Ken Capps, [cappsck@cf.edu](mailto:cappsck@cf.edu)

Eastern RAB: Brahmadeo Dewprashad, [BDewprashad@bmcc.cuny.edu](mailto:BDewprashad@bmcc.cuny.edu)

Midwestern RAB: Amy Jo Sanders, [ASanders@starkstate.edu](mailto:ASanders@starkstate.edu)

# It Works for Me!

## Preparatory Chemistry from the Top Down

**Michaeleen Lee**

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Are you frustrated? Do you feel that you are trying to teach many students in your general chemistry for science majors who just do not have the skills needed to succeed in your class? Have you and your colleagues determined that a “prep” course is needed but don’t know what it should contain? Does your department have a chemistry course that you are using as a “prep” course but that just isn’t working the way it should? Perhaps the GOB course taken by your nursing students is doubling as a prep for general chemistry. Maybe an Introductory Chemistry course taken by non-science majors is doing double duty. Over the last several years at 2YC<sub>3</sub> meetings we have talked about these concerns.

We found ourselves in all three of the above positions at various times over the years at Bucks County Community College. In 1975, when I began teaching here, there was a Preparatory Chemistry course. It was a one semester course without a laboratory component and used a standard Introductory to Chemistry text. Students who did not pass the Toledo Placement Exam were required to take this course. While it offered a partial solution to the under prepared student problem, it was not really accomplishing its purpose. In the mid 1980s we determined that we needed a laboratory component and turned to our one semester GOB course taken mainly by the nursing students. This course gave the necessary laboratory experience but did not sufficiently prepare the students in the quantitative areas. We then instituted an additional one credit course called Chemical Problem Solving for students taking the GOB course who also needed general chemistry for science majors. The students did get the necessary preparation but it was cumbersome for them to schedule. Thus, we began another conversation about how best to help our students succeed in general chemistry.

Continued next page...



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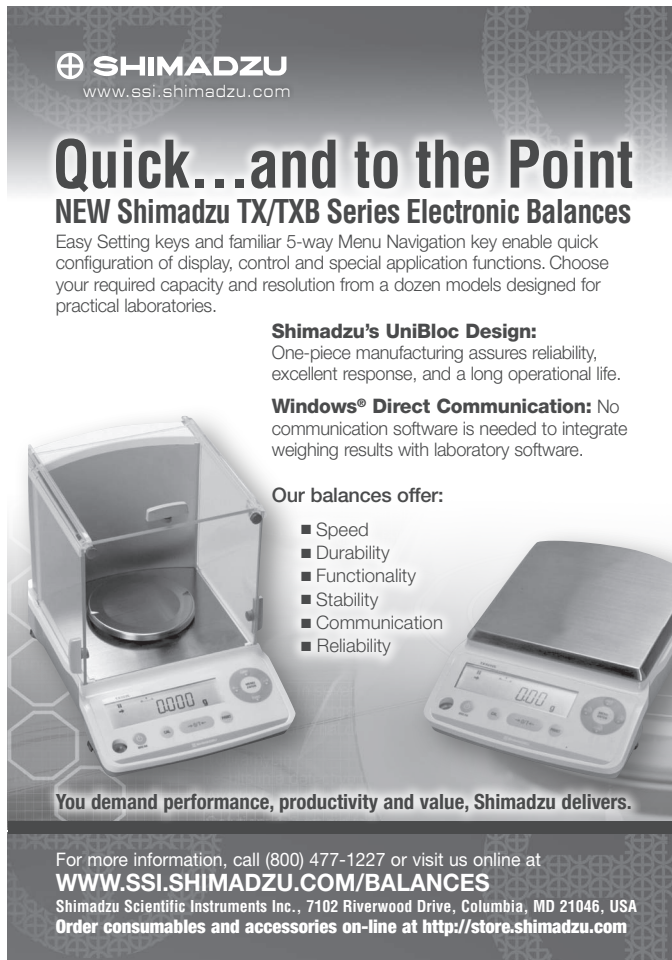
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How did this work? We realized that the main difficulty in the first semester of general chemistry was the large number of topics needing to be covered in detail in a single semester. Perhaps, if we could teach a few of these topics in depth in a prep course, then our students would have a better chance of success in general chemistry. How did we decide on what these few topics should be? We began with the organic chemistry course at the top of our chemistry sequence. Our organic professor identified the topics that were absolutely necessary for students to understand before coming to the organic class from the second semester of general chemistry. If the students did not have a sufficient understanding of these topics, then valuable time had to be taken from the organic curriculum to teach general chemistry topics. If students needed to be proficient in certain topics before coming to organic, then what had to be covered in the first semester of general chemistry in order to insure sufficient time in the second semester to complete their preparation for organic? It soon became apparent that in order to give our students adequate preparation in the first semester of general chemistry that students needed sufficient understanding of a few key concepts and needed to have a few key skills before coming to general chemistry. These key concepts and skills became our preparatory chemistry course.

Instead of an overview of many topics, we focus on a more detailed study of a few topics. These topics include graphing, the understanding of what a percent means and percentage as applied to chemistry, dimensional analysis as a problem solving technique, the reading of word problems and translating them to math, nomenclature, the mole concept, beginning stoichiometry but not including limiting reactants, and very fundamental atomic structure. The number of topics covered is very manageable in four hours per week of classroom meetings. There is sufficient time for lots of practice and group activities designed to both introduce a topic and to reinforce the topic. A modified POGIL approach can work well in the class as well as a more traditional teaching style. We use selected chapters from a typical basic chemistry text. In addition, there is a two hour per week laboratory component designed to give students the basic laboratory skills needed in general chemistry. These labs were written by our department and are of the guided inquiry type. They are designed to make the students think but provide the necessary guidance for students to be successful. More guidance can be given if determined necessary by the instructor. A key to the success of this course is the fact that all instructors cover the same material during the same week. The homework is the same for all sections. All sections follow the same laboratory schedule. In addition, all instructors give the same tests at the same time in the course. The point distribution for homework, labs, tests, attitude towards course, and the final exam are uniform for every instructor. This uniformity is key to the course's success. There is also a college algebra co-requisite for this course if the student has not already completed it.

After designing our preparatory chemistry course, we developed our own chemistry placement exam reflecting exactly what is taught in the course. Now, all students, with no exceptions, who need to take general chemistry for science majors must have completed college algebra, or tested out of it, and must have passed our chemistry placement exam. The exam is given at the end of the preparatory chemistry course, as well as in our college testing center for students who believe they have sufficient knowledge to bypass the preparatory course. Students who do not pass the placement exam are required to take the preparatory course and must then retake and pass the placement exam before proceeding to general chemistry.

We have successfully used the placement exam and the preparatory course for the past ten to fifteen years. Our general chemistry students are more capable of successfully completing the course and the retention of students in the first semester of general chemistry has increased. This approach worked for us. It might work for you.

## Using Clickers in the Chemistry Classroom

### **Lori Kraft**

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Have you ever given your class a group activity only to find one group finishing in record time and another group still talking about next Friday's party? I liked the idea of group activities but had problems keeping the less-motivated groups on task. I tried to assign each group member specific tasks but the conversation always seemed to fall off-topic.

Then I tried an idea using CPS or "clickers." I began the class with a multiple-choice question that required some "group research" to answer. With clickers at each group, I gave them a time limit to click in a response. With the pressure of a time limit, the less-motivated groups seemed to stay on task much better. I didn't track the specific answers given by each group but it was easy to see how many groups had clicked in. I repeated this procedure throughout the lecture. The students learned more effectively, actively participated, and demonstrated conceptual understanding through insightful discussion.

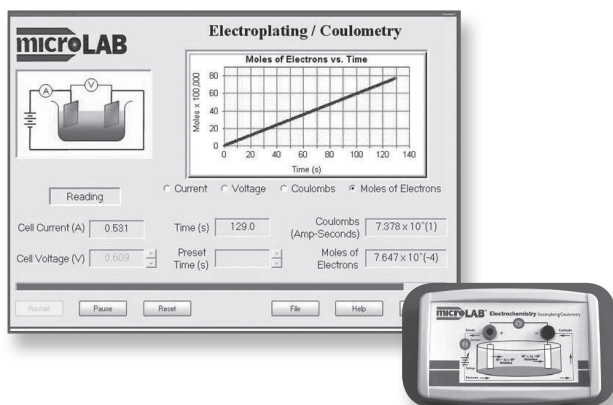
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