

Chemistry Outlook

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



Michaelleen Lee, 2007 Chair

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Notes From The Chair

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Michaelleen Lee
Bucks Community College
Newtown, PA

“The time has come. The time is now.” I believe I recall these words from a Dr. Seuss tale and they certainly apply to these notes. When we find this newsletter in our mailboxes, we will have already started, or will be about to start, the new academic year. However, at the moment, I am at the beginning of my fourth week of traveling about the country so these notes will be a collection of recollections and some thoughts that have struck me as I traveled to the Southwest and back.

We finished the past school year with a strong conference in March at Joliet College. There were lots of people and lots of presentations. It took a lot of work and we should all thank everyone who helped put it together. There truly was something for everyone. Especially interesting was the poster session highlighting the research done by the two-year college students in the Chicago area. There were numerous interesting workshops and sessions on various topics. The banquet was a special treat, as it was prepared by the college’s student chefs.

My own travels began on May 21 with a trip to Ann Arbor and a conference at the University of Michigan, “Enriching the Academic Experience of College Science Students”. There were only five or six of us from two year colleges out of around 180 participants and about half of the attendees dealt with students in settings outside of the classroom. What impressed me most was that even the elite colleges and universities find themselves needing to use new strategies to improve the success of their students. There is extensive use of learning centers with some form of peer- led team learning as well as undergraduate research experiences. The conference ran from 1 PM on the 22nd through lunch on the 24th. There were 54 presentations! It was a busy time for all and I came home with some new ideas for use in my own classroom.

After returning home for the weekend, I took off for the Southwest in my car. Last summer I drove to Yellowstone by way of Kansas and Nebraska and home through the Black Hills and was truly amazed at the scenery. However, I was totally

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2007 - 2008 Academic Year

178th CONFERENCE (Eastern)

September 28-29, 2007, Bergen Community College
Paramus, NJ

Contact: Frank Ramdayal
Phone: 201-493-3671
Email: framdayal@bergen.edu

179th CONFERENCE (Southern)

November 2-3, 2007, Durham Technical Community College
Durham, NC

Contact: Mark Matthews
Phone: 919-686-3773
Email: matthewsm@durhamtech.edu

180th CONFERENCE (Southern)

April 4-5, 2008, Baton Rouge Community College
Baton Rouge, LA

Contact: Karen Stephens
Phone: 225-216-6827
Email: stephensk@mybr.cc

181st CONFERENCE/20th BCCE

July 27-31, 2008, Indiana University
Bloomington, IN

More information can be found on page 10 of this issue of Chemistry Outlook. Proposals for symposia and workshops are currently being accepted at the website/email below.

•For information go to:
<http://bcce2008.indiana.edu>

•Inquiries and suggestions can be emailed to:
bcce2008@indiana.edu

Remember to check the web for information on future meetings! <http://2yc3.org>

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

unprepared for what I saw during the past two weeks in New Mexico, Arizona, Utah, Nevada, and a little corner of California. At every turn of the road there was a change in the land. I had never realized how beautiful mountains of stone could be. Each day contained many totally new visual experiences for me. At one point, I looked out the car window and could see three completely different landscapes in the distance. Towards the North there were snow covered peaks. Towards the South there were “traditional” peaks with forests. In between there was red rock. I began to think that there was no way that I would be able to remember everything that I had seen or would be seeing. Everything was so different and each day was a new experience.

Suddenly, it occurred to me that I was like our students who have never studied chemistry or have studied it but forgotten. Each lecture, even each paragraph in the textbook, must seem totally new and different. No wonder they are overwhelmed. And yet, I realized that all the scenery and landscapes before me were connected in many different ways. They were all connected naturally as one layer of rock blended with the next, one mountain ridge followed the other, or one low circular valley appeared after each other as I wound around the mountains made of stone and forests. But there were also the manmade connections, the roads that led from one place to another in a totally logical way. It was because of these roads that I was able to see and appreciate the beauty of nature. We, as teachers, have come to understand that all of those seemingly unconnected topics in the textbooks are really fundamentally connected. It is our task to make the connections logical, to serve as the roadmaps for our students, so that they may have the opportunity to understand chemistry just as I have had the opportunity to appreciate the natural beauty of our country.

I hope to see many of you at the conferences planned for this academic year. If you have never attended a conference, I especially invite you to come. If you have participated in the past, I know you will once again go back to your classrooms with new ideas to try and a true feeling of amazement about the many ways that your colleagues are making the connections for their students.

**180th Conference (Southern)
Baton Rouge Community College
Baton Rouge, LA**

April 4-5, 2008

Call for Presenters

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. We strongly encourage topics from all areas to give us a diverse program.

Contacts:

Program Chairs

Karen Stephens stephensk@mybr.cc
Rory Rice ricer@mybr.cc

Arrangements Chair

Sherry Gibson gibsons@mybr.cc

Exhibitors' Chair

Otto Goins goinso@mybr.cc

2007 COCTYC AND SUPPORT STAFF
Division of Chemical Education, Inc
American Chemical Society
2007 Roster of Committee Members

Chair

Michaelleen Lee, Bucks County Community College
 275 Swamp Road, Newtown, PA 18940
 Office: (215) 968-8364 Fax: (215) 504-8520
 Email: leem@storm.bucks.edu

Chair-Elect

Jeff Cramer, Stark State College
 6200 Frank Ave NW, North Canton, OH 44720
 Office: (330) 966-5457 Ext 4377 Fax: (330) 494-0571
 Email: jcramer@starkstate.edu

Treasurer/College Sponsors

Kelly Befus, Anoka Ramsey Community College
 11200 Mississippi Blvd., NW Coon Rapids, MN 55433
 Office: (763) 433-1863 Email: Kelly.Befus@anokaramsey.edu

Membership Co-Chairs

Lance S. Lund and Patty Pieper,
 Anoka-Ramsey Community College,
 11200 Mississippi Blvd., NW Coon Rapids, MN 55433
 Office: (763) 433-1273 Email: Lance.Lund@anokaramsey.edu
 Office: (763) 433-1354 Email: Patty.Pieper@anokaramsey.edu

Industrial Sponsor Chair

John Kenkel, Southeast Community College
 8800 O Street, Lincoln, NE 68522
 Office: (402) 437-2485 Email: jkenkel@southeast.edu

Newsletter Editor

Jim Schneider, Portland Community College
 P.O. Box 19000, Portland, OR 97280-0990
 Office: (503) 977-4618 Fax: (503) 977-8020
 Email: jschneid@pcc.edu

Immediate Past Chair

Dolores C. Aquino, San Jacinto College Central
 P.O. Box 2007, Pasadena, TX 77501-2007
 Office: (281) 476-1501 ext. 1663 Fax: (281) 478-2757
 Home: (713) 668-8215 Email: dcaquino2000@cs.com

Past Chairs (Members of COCTYC)

Ed Kremer, Kansas City Kansas Community College
 7250 State Ave, Kansas City, KS 66112
 Office: (913) 288-7111 Fax: (913) 288-7419
 Home: (816) 413-0913 Email: ekremer@toto.net

Sonja Davison, Tarrant County College, Northeast
 828 Harwood Rd., Hurst, TX 76054
 Office: (817) 515-6346 Fax: (817) 515-6601
 Home: (817) 485-7833 Email: sonja.davison@tccd.edu

2YC₃ World Wide Web Page: <http://2yc3.org>, Lance Lund
 (Lance.Lund@anokaramsey.edu) WebMaster

2YC₃ Membership Form

Please consider supporting the 2YC₃ by becoming a member or renewing your membership. Annual dues are only \$15.

Special Offer: Annual dues are \$15 for the 2YC₃ and \$20 for the American Chemical Society Division of Chemical Education (DivCHED). If you are not already a member of DivCHED, you may join both organizations today for a total of \$30, a savings of \$5.

I wish to:

- Become a member of 2YC₃
 - Renew my 2YC₃ Membership
 - Join DivCHED as a member (ACS members only) and 2YC₃
 - Join DivCHED as an affiliate* (non ACS members) and 2YC₃
- *affiliates have all membership privileges except voting and holding elective office.

I am a:

- Two-Year College Teacher
- High School Teacher
- Four-Year College 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 2YC₃ 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 _____.

Please send your check, payable to 2YC₃, for \$15 (2YC₃ only) or \$30 (joint membership) to:

Patty Pieper, Anoka-Ramsey Community College, 11200 Mississippi Blvd NW, Coon Rapids, MN 55433-3470.

178th 2YC₃ Conference (Northeast) “CHEMISTRY: LOOKING TO THE FUTURE”

Bergen Community College
400 Paramus Road
Paramus, New Jersey 07652

SEPTEMBER 28 – 29, 2007



For **registration, lodging information, travel directions** and the **latest information on the conference program**, please go to the 2YC₃ website, <http://2yc3.org>, and select “meetings” then “early fall 2007”.

Program Chair: Dr. Frank Ramdayal Email: framdayal@bergen.edu; Tel: 201-493-3671
Local Arrangements: Dr. Karen Comai Email: kcomaifuerher@bergen.edu; Tel: 201-493-3574
Exhibits Coordinator: Dr. Joan Tscherne Email: jtscherne@bergen.edu; Tel: 201-612-5392

Friday, September 28

- 8:00 – 4:00 PM **Exhibits**
- 8:00 – 9:00 AM **Registration and Continental Breakfast (Breakfast provided by John Wiley and Sons, Inc.)**
- 9:00 – 9:15 AM **Welcome and Opening Remarks**
- 9:15 – 10:00 AM **Keynote Address: Visualization Techniques for Teaching Chemistry: Relying on Old and New Technologies;** Dr. Vickie Williamson, Senior Lecturer and Chair, 2008 General Chemistry Conceptual Examination Committee, Texas A @ M University, College Station, TX.

Visualization techniques can be used in the chemistry classroom to promote more expert-like mental models in our students. A chemist holds mental models of a chemical reaction on the macroscopic level, what the reaction looks like to the human eye in the laboratory, and on the particulate level, what changes are taking place in the atoms and molecules. Techniques to help students create these mental images include laboratory simulations and demonstrations on the macroscopic level. Mental images on the particulate level can be promoted by techniques which include physical models, role-playing, fixed computer models, dynamic computer animations, student-generated drawings/animations, and interactive computer models. Implementation strategies for each technique will be discussed.

- 10:00 – 10:40 AM **Refreshment Break and Exhibits**

Session I – Workshop

- 10:35 – 12:00 noon **John Wiley and Sons, Inc.: Increase Learning Gains by Using WileyPLUS with CATALYST**

Data over a five-year research period from University of California at Irvine proved students using *CATALYST* for online general chemistry homework had more learning gains and higher retention of chemistry concepts when tested one year later, than those using graded paper-and-pencil homework. This presentation will outline how *WileyPLUS* with *CATALYST* delivers more than just “time on task” for your students. *WileyPLUS* with

CATALYST assignments have multiple levels of parameterization, and test on key concepts from multiple points of view that move students beyond rote application of algorithms to solve problems. In this session you will learn how to easily assess student understanding and enforce retention of learned material.

Session II - Presentations

10:35 – 11:15 AM **Teaching with technology: keeping them in the game:** Dr. James Reeves, Chair of the Department of Chemistry and Biochemistry, University of North Carolina Wilmington, 601 South College Road, Wilmington, NC.

Technology offers great promise to revolutionize chemistry learning, but few of the “great ideas” developed over the last twenty years have had any real impact on teaching. Those that have had impact often address the age old challenge of keeping students engaged. In this presentation, we will review some technologies that have caught on, and discuss others that currently occupy center stage in the chemical education community theater.

11:20 AM – 12:00 PM **Activities of Penn State Center for Nanotechnology Education and Utilization;** Dr. Paul Hallacher; Director of The NSF ATE Center for Nanofabrication Education

The NSF ATE Regional Center for Nanofabrication Manufacturing was established in 2001. Through the Center, more than 50 associate and baccalaureate degree programs in nanofabrication have been established at colleges and universities across Pennsylvania, including community colleges, State System of Higher Education universities, and Penn State campuses. The key feature of the Center that enables community colleges and other partner institutions to offer degree programs in nanofabrication is a suite of six nanofabrication courses taught three times per year (fall and spring semesters and summer session) at the Penn State site of the NSF-sponsored National Nanofabrication Infrastructure Network (NNIN). The Center also offers enormously popular summer *Nanotech Camps* for middle and high school students (grades seven and above), as well as intensive, three-day professional development workshops for educators and industry personnel. The Center also assists educational institutions across the nation to develop nanotechnology programs, and works with industry partners to design and deliver incumbent workforce development programs and to develop skill standards for nanotechnology workers.

12:05 – 1:15 PM **LUNCH**

Session III – Workshop

1:20 – 2:50 PM **Prentice Hall Mastering Chemistry™ – Make Learning Part of the Grade.**

Mastering Chemistry™ (MC) is an online tutorial and homework system. MC uses the Socratic method of presenting questions to students and provides simpler sub-questions to help guide them through the problem. The system responds to students’ common wrong answers with specific students are challenged to apply the green principles to oxidize borneol to camphor. Using materials safety data sheets, students first complete a rubric to compare the hazards of solution-phase versus a solid-supported oxidants, via a guided-inquiry experiment. Given a standard procedure for the greenest oxidant, students then develop a hypothesis and a plan to green at least one aspect of the preparation, isolation, purification, or characterization of the final product through an open-inquiry laboratory. The laboratory provides an effective and convenient mechanism for students to become directly involved in the “greening process,” which empowers students to make informed decisions in this and future laboratories. Furthermore, green concepts are introduced into the organic teaching lab curriculum, by supplementing, updating and modernizing a widely adopted experiment, while minimizing cost and hazardous waste production.

2:05 – 2:50 PM **The Success Story of Nanoscience Research with Undergraduates at the Community College:** Dr. Moni Chauhan, Department of Chemistry at Queensborough Community College of City University of NY, 222-05, 56th Avenue, Bayside, NY

Nanoscience is the science of 21st century and it involves study of materials that are ultra small in size, about one millionth of a millimeter. In this presentation the results of my work with the students of Queensborough Community College in synthesis and characterization of nano metals such as Pd, Pt and Cu will be presented.

continued....

Catalysts are important in several industrial processes and nano metals have the advantage of both homogeneous and heterogeneous catalysis. They have unique electronic properties and large surface area for substrate binding. Some preliminary results on Pd, Pt nano cluster catalysis in silaesterification, reduction and hydrosilylation reactions will be shown. This work can be incorporated in General Chemistry curriculum.

3: 00 – 3:50 PM

Atmospheric Chemistry - Climate Change and Air Quality Issues: Jeffrey S. Gaffney, Chair and Professor of Chemistry, University of Arkansas at Little Rock, Chief Scientist, DOE Global Climate Change Education Program

Atmospheric chemistry is at the heart of many environmental issues facing us in the future including urban air pollution as well as regional and global climate change. An overview of some of the atmospheric chemistry of ozone formation in urban and global regions will be given that discusses the linkages between tropospheric ozone impacts as an air pollutant and greenhouse gas. The role of aerosols in climate change and air quality will also be discussed and the links to secondary organic aerosol formation to oxidant formation will be made. Time permitting recent work in Mexico City showing the role of megacities (cities greater than 10 million inhabitants) will be discussed as it relates to these topics and the global increases in population impacts on air quality and climate. Support from the DOE Atmospheric Science and Global Change Education Programs is gratefully acknowledged.

3:55 - 4:40 PM

Using Case Studies to Teach General Chemistry and Organic Chemistry: Dr. Brahmadeo Dewprashad, Department of Science, Borough of Manhattan Community College, City university of NY, Chambers Street, NY, NY

Case studies are stories with an educational message and they have been used as parables and cautionary tales for centuries. In formal education, case studies are commonly used to teach law, business, and medicine. The use of case studies in undergraduate science courses is somewhat new but is gaining popularity. Instructors who have used the case-study method have noted that the exercise is an “engaging vehicle” for learning the terminology and methodology of the discipline and that it allows students to develop flexibility in their thinking processes. In the process of solving the case, students develop higher-order skills of analysis and application, which is the goal of most science courses. The use of a realistic situation also illustrates the relevance of basic science course work to society. This presentation will describe my experience developing and using case studies to teach general chemistry and organic chemistry. The case studies developed cover many of the fundamental concepts in undergraduate general chemistry and organic chemistry. Classroom experience using selected cases from general chemistry and organic chemistry will be discussed. Also, the use of technology to facilitate the use of case studies as well as the results of assessment for their effectiveness will be described. In addition, the strategies for developing and use of similar case studies will be shared.

4:40 – 5:40 PM

2YC₃ General Membership Meeting

5:45 – 6:30 PM

Cocktails (cash bar): *Biagio's Ristorante*
299 Paramus Road, Paramus, NJ 07652; 201-652-0201

6:30 – 7: 45 PM

Buffet Dinner: *Biagio's Ristorante*

7:45 – 8:45 PM

Desert and Banquet Speaker: Dr. John Penn, Department of Chemistry, West Virginia University, P.O. Box 6045, Morgantown, WV

Saturday, September 29

8:00 – 1:00 PM

Registration and Exhibits

8:00 – 9:00 AM

Continental Breakfast (Breakfast provided by Thomson)

Session V - Workshops

9:00 – 4:00 PM

Introduction to POGIL: Process-Oriented Guided Inquiry Learning.

Note: Participants must register through the POGIL website for this workshop at <http://www.pogil.org/events/2YC3atBergenCC.php> click on “go” where it says register in the center of the page.

POGIL is a classroom and laboratory technique that seeks to simultaneously teach content and key process skills such as the ability to think analytically and work effectively as part of a collaborative team. A POGIL classroom or lab consists of any number of students working in small groups on specially designed guided inquiry materials. These materials supply students with data or information followed by leading questions designed to guide them toward formulation of their own valid conclusions - essentially a recapitulation of the scientific method. The instructor serves as facilitator, observing and periodically addressing individual and classroom-wide needs. POGIL is based on research indicating that A) teaching by telling does not work for most students, B) students who are part of an interactive community are more likely to be successful, and C) knowledge is personal; students enjoy themselves more and develop greater ownership over the material when they are given an opportunity to construct their own understanding. We have found that a discovery-based team environment energizes students and provides instructors with instant and constant feedback about what their students understand and misunderstand. Students quickly pick up the message that logical thinking and teamwork are prized above simply getting “the correct answer.” This emphasizes that learning is not a solitary task of memorizing information, but an interactive process of refining one’s understanding and developing one’s skills.

9:00 – 11:00 AM

Thomson learning: Using the OWL Electronic Homework System

OWL is an acronym for the Thomson Learning University of Massachusetts, Amherst Online Web-based Learning program. Developed over the last 15 years at the University of Massachusetts and class-tested by thousands of students, OWL is a fully customizable and flexible Web-based homework system and assessment tool. With both numerical and chemical parameterization and useful, specific feedback built right in, OWL produces countless general chemistry questions correlated to Thomson Brooks/Cole general chemistry textbooks. OWL is the only system specifically designed to support mastery learning, where students work as long as they need using instantaneous feedback to master each chemical concept and skill. Instructors can select from various types of assignments including tutors, simulations, and those with short answer questions that are both numerically and chemically parameterized and can accept superscript and subscript as well as structure drawings.

10:00 AM – 12:00 PM

Foundations for Excellence: Using the ACS ChemTechStandards database for Curriculum Development: Dr. Blake Aronson; Senior Education Associate for Technician Education at the American Chemical Society (ACS)

Skill standards are compilations of the knowledge and skills industry expects of high-performing employees. Since 1993, the American Chemical Society has maintained sets of skill standards for chemical technicians. Working with local industry partners, academic chemical technology programs use the skill standards to align their curricula with local industry needs. In 2006, the on-line database supporting the ChemTechStandards underwent a series of critical upgrades, including the addition of a new set of skill standards specifically for laboratory analysts in pharmaceutical manufacturing. In this hands-on workshop, participants will learn about these upgrades and how to use the ChemTechStandards database to develop or revise their own curricula.

Session VI - Presentations

9:00 – 9:50 AM

Going Green: Why Now? And How? Professor Irvin J. Levy, Professor of Chemistry & Computer Science, Gordon College, 255 Grapevine Road, Wenham, MA

This lecture will discuss the development and pedagogy of green chemistry—chemistry designed to be inherently safer for human health and the environment. Faculty who incorporate the Twelve Principles of Green Chemistry into their teaching and practice of chemistry will help develop a new generation of leaders for a society that increasingly demands greener products and processes. The talk will discuss specific examples demonstrating natural ways that interested faculty can introduce green principles and practices into their standard lecture and laboratory curricula, and explore benefits of such efforts to both students and faculty.

- 9:55 - 10:35 AM **Use of Forensic Science to Teach Chemistry to Undergraduates - Learning in Context:** Dr. Lisa Kaplan, Quinnipiac University, 275 Mount Carmel Ave. Hamden, CT
- The use of forensic science as a tool to get students interested in Chemistry will be presented. New models, applications and hands-on learning, coupled with learning theory will be explored.
- 10: 40 – 11:20 AM **Teaching the General Chemistry Laboratory with GenChem, a Silicon Based Instructor:** Professor Rudolph. W. Kluiber, Department of Chemistry Rutgers University, Newark, NJ
- General Chemistry Laboratory is a time consuming, labor intensive course which receives mixed evaluation as a teaching tool. Our laboratory course is designed to enhance the lecture course and act as a chemistry community. For almost two decades, we have been developing and using GenChem, a programmed computer which, from PreLabs and experiments through to course grades, takes over most of the routine teaching duties. GenChem's web address: <http://genchem.rutgers.edu>.
- 11:25 AM – 12:00 PM **An Inquiry-Based Learning Approach to Teaching Safety: Empowering Students to Seek Safety Resources on Their Own:** Dr. Robert Toreki, President of "InteractiveLearning Paradigms Incorporated"
- 12:05 – 1:15 PM **LUNCH**
- 1:00 – 1:45 PM **Using Technology to Enhance Student Success:** Steven Rowley; Middlesex County College, 2600 Woodbridge Avenue, Edison, NJ
- Does the use of current technology aid in students' understanding of chemistry? This is a question that is often asked and is very difficult to answer. There are quite a few technologies that can be used. Two such technologies will be presented: online homework and a Classroom Response System (clickers). Preliminary evidence will be presented on the effect of the use of these technologies on student grades in the general chemistry II course.
- 1:55 – 2:45 PM **Using Computers to Engage Students in Science: Some things we can learn from light and color:** Dr. John Amend, Montana State University
- 3: 00 – 4:00 PM **Assessment:** Professor Joann Marzocco; Faculty Coordinator for the Center for Institutional Effectiveness, Bergen Community College, 400 Paramus Road, Paramus, NJ
- 4:00 – 4:30 PM **Conference Closing**

REGISTRATION

Registration for the conference is by mail-in form. To fill out then print an on-line form, go to: <http://www.2yc3.org>, click on "Meetings" then on "Registration" under the 178th conference announcement. A form will be generated that you may print out and submit with your payment. Please note that your registration is not complete until your payment is received. Payment must be received by September 14, 2007 to reserve your meals.

Alternatively, you may go directly to the conference website at: <http://www.2yc3bergen178.org/> and click on the "Registraion" link. A .pdf file will open which you can print out, fill in, and mail in with your payment.

LODGING

LaQuinta Inn, Paramus NJ (Approximately 3 miles from Bergen Community College)
393 N. State Route 17, Paramus, NJ, 07652

Immediate booking (30 room block; single and double); total capacity: 80 rooms.

Conference rate: \$90/night (plus NJ tax of 15%) = \$103.50/night

To receive the conference rate, phone or fax reservation and mention Bergen Community College Conference on Chemistry.

Reservations must be made before August 28, 2007 (room block release date).

Cancellations must be made before August 28, 2007.

Phone: 1-201-265-4200 Fax: 1-201-265-0247

For more information and directions go to: <http://www.lq.com/lq/properties/propertyProfile.do?ident=LQ843&propId=843>

Crowne Plaza Hotel at Paramus Park (Approximately 3.5 miles from Bergen Community College)
601 From Road, Paramus, NJ 07652

Immediate booking at the Bergen Community College negotiated rate: \$149/night (plus NJ tax of 15%) = \$171.35/night.
To receive the Bergen Community College negotiated rate, phone or fax reservation and mention Bergen Community College.
Crowne Plaza Hotel is a full service hotel with restaurant.
Free shuttle service to Bergen Community College is available with advanced notice/request.
Phone: 1-201-262-6900 Fax: 1-201-262-4955
For more information and directions go to: www.crowneplaza.com/paramus

BANQUET MENU

The dinner is served buffet style and includes the following: salad, coffee, tea, unlimited soda, Italian pastries, penne w/vodka sauce, tortellini primavera, eggplant parmigiana, swedish meatballs, roasted chicken, pepper steak w/rice, linguine with white clam sauce, roasted potato and fresh vegetable.

ABOUT BERGEN COMMUNITY COLLEGE

Founded in 1965, Bergen Community College enrolls more than 14,000 students in Associate in Arts, Associate in Science, and Associate in Applied Science degree programs, and certificate programs. More than 10,000 students are enrolled in non-credit, professional development courses through the Division of Continuing Education. The Philip J. Ciarco Learning Center, at 355 Main Street, Hackensack, offers adult basic skills, English as a Second Language, non-credit, and credit courses.

Bergen Community College programs prepare students for transfer to four-year colleges and universities, or for immediate entry into a career. Since its inception, Bergen has offered open admissions, small classes, affordable tuition, dedicated faculty, outstanding student services, flexible scheduling, and a student centered campus.

Bergen Community College has established the Center for the Study of Intercultural Understanding as a lasting memorial that would revitalize a long standing commitment to institutional diversity.

For directions, go to: <http://www.bergen.cc.nj.us/pages/1690.asp>

179th 2YC₃ Conference (Southern)
“TECHNOLOGY AND CHEMICAL EDUCATION”
Durham Technical Community College, Durham, NC 27703
November 2-3, 2007

Preliminary Information

We are very happy to bring the 2YC₃ back to the Carolinas! The theme of our conference will focus on the ever-growing ways that technology is affecting how chemistry is taught, both in and out of the classroom. Most of us are acutely aware of the increasing expectations, by students and administrators alike, to incorporate these new technologies into our coursework. It's an era that's either very exciting or extremely intimidating, depending on your point of view. Regardless of whether you consider yourself tech-illiterate or a tech-junkie, we invite you to join us this November to share your experiences and discover new opportunities for teaching.

Call for Presenters

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. While the focus of the conference will be in the area of technology and distance learning, we strongly encourage topics from other areas to give us a broad and diverse program.

Preliminary Program

Those scheduled to present include:

- Dan Reeves, UNC-Wilmington (Keynote Speaker)
- Kevin Conley, Forsyth Technical CC
- Joel Karty, Elon University
- Maria Oliver-Hoyo, NC State University
- Dan Rosenthal, Durham Technical CC
- Tracey Cheatham, Central Carolina CC
- Peggy Geiger, Gaston College
- Microlab, Inc.
- Prentice-Hall
- Shawn Sendlinger, NC Central University

Conference Website

Please visit www.durhamtech.edu/2yc3.htm for the most current program information, including registration and hotel information and list of contacts.

20th Biennial Conference on Chemical Education

Indiana University, Bloomington, Indiana

July 27 – 31, 2008

The Biennial Conferences on Chemical Education (BCCEs), which are sponsored by the ACS Division of Chemical Education, are the largest gathering of chemical educators in the world and are designed for middle school science teachers, secondary school chemistry teachers, and college chemistry instructors. This conference emphasizes the improvement of chemistry education at all levels, the modern developments in chemistry and chemical education, and is highly respected in the chemical education community.

The organizers of the 20th Biennial Conference on Chemical Education (Steven Wietstock is the general chair) invite you to join us on the beautiful Indiana University campus from July 27-31, 2008. We are planning an exciting conference with ample time to relax, to network with your colleagues, and to explore the richness of the campus and surrounding community. Plenary sessions will be convened in the recently renovated IU Auditorium on the Arts Plaza with symposia and workshops taking place in the Indiana Memorial Union and Conference Center, Woodburn and Ballantine Halls, as well as in the Chemistry Building. These venues are within a short walking distance to downtown Bloomington and its multitude of tempting ethnic restaurants. Housing will be available in several of our newly renovated residence halls. We will also have blocks of rooms available at the Indiana Memorial Union and other local hotels. Indianapolis International Airport is a one-hour trip from Bloomington and we will have airport shuttle service available for participants.

In addition to the traditional plenary presentations, symposia, poster sessions, workshops and product exhibition, we are planning several evening activities to meet and greet each other. Included in our plans are:

- The opening ceremonies, keynote address, and reception on Sunday evening in the IU Auditorium
- An Art Walk/Pub Crawl with a reception at Bloomington's WonderLab Museum of Science, Health and Technology on Tuesday evening
- A Gala Party on Wednesday evening featuring Al D. Hyde and the Key Tones in Alumni Hall and Solarium in the Indiana Memorial Union

Many of these events will also feature musicians from the world-class IU School of Music.

Call for Symposia and Workshops

Proposals for symposia and workshops are currently being accepted through the 20th BCCE website at <http://bcce2008.indiana.edu>. Kate Reck and Regina Zibuck, program co-chairs, are looking for symposia that would fit into tracks of laboratory work, chemical education research, advances in pedagogy, green chemistry, computers and technology in chemistry, chemical informatics, global chemistry education, chemistry for the public, discipline specific symposia, and any other topics you wish to propose. One of the themes for our programming centers around the Life Sciences, building off Indiana's new Life Sciences Initiative. We anticipate showcasing biotechnology and how chemistry meets at the crossroads of biology. In addition, symposia proposals are being accepted for specific programs for Secondary Education (program co-chairs Karen Morris and Claire Baker) and Two Year College Chemistry Departments (program co-chairs Amy Jo Sanders, Tom Higgins, and Susan Shih).

I know that Amy, Tom and Susan would like to hear your suggestions for program ideas that specifically relate to the needs and issues of faculty in two-year institutions. We want this BCCE to have a strong program for the 2YC3 membership, but we need to hear from you as to what you need and what would be useful to you. So this is your opportunity to speak up or to submit a symposia proposal of your own. You can contact the organizers with your ideas at bcce2008@indiana.edu.

As the BCCEs are times for education and sharing, the BCCEs have historically offered a number of hands-on workshops relating to chemical education – laboratory, computer applications, chemical education research, etc. This tradition will be continued at the 20th BCCE at IU. Guidelines for workshop proposals are available on the 20th BCCE website. Questions about workshops can be directed to Lori Watson, workshop chair.

Visit and bookmark the 20th BCCE website for specific information about the conference. This site will be continuously updated with information pertaining to the technical program, registration, housing, and social events as we approach July 27, 2008. If you are still wondering what a Hoosier is, then we invite you to come to the 20th BCCE at IU and see them up close! Any questions, program ideas, or general suggestions for any of the BCCE program chairs can be sent to the BCCE email address: bcce2008@indiana.edu.

**Call for applications for the office of
Chair-Elect
of 2YC₃ for the year 2009**

Application for Chair-Elect for 2009 must include:

- A. Pertinent personal data such as name, college, job title, address, etc.
- B. Brief statement of pertinent qualification, signed by the nominee.
- C. A statement indicating a willingness to serve signed by the nominee.
- D. A statement of support from an appropriate person in the applicant's school.
- E. To be eligible to be nominated an individual must:
 1. be a two-year college chemistry teacher
 2. have been a dues paying member of 2YC₃ a minimum of three years prior to nomination
 3. be a member of DivCHED
 4. have demonstrated leadership and organizational ability by serving as Chair or Co-Chair for a conference and in one or more of the following capacities:
 - a. served three years on the Executive Committee
 - b. served as Local Arrangements Chair for a Conference
 - c. chaired a sub-committee
 - d. contributed within the past three years two or more ways such as:
 - acted as local industrial sponsor coordinator,
 - chaired a conference section,
 - presented a paper at a conference,
 - moderated a panel at a conference,
 - other ways an individual has contributed

-Applications must be received by the Chair no later than September 1, 2007.

-The COCTYC will serve as a nominating/screening committee to generate a slate of two candidates.

-Each 2YC₃ member shall vote for one nominee and the candidate who receives the greater number of votes shall be declared elected.

-Ballots must be received by the Chair postmarked no later than 12/31/2007.

**Call for applications for the office of
Membership Chair
of 2YC₃ beginning in 2008**

Application for Membership Chair beginning 2008 must include:

- A. Pertinent personal data such as name, college, job title, address, etc.
- B. Brief statement of pertinent qualification, signed by the nominee.
- C. A statement indicating a willingness to serve signed by the nominee.
- D. A statement of support from an appropriate person in the applicant's school.
- E. To be eligible to be nominated an individual must:
 1. be a two-year college chemistry teacher
 2. have been a dues paying member of 2YC₃ a minimum of three years prior to nomination
 3. be a member of DivCHED

-Applications must be received by the Chair no later than September 1, 2007.

-The COCTYC will serve as a nominating/screening committee to generate a slate of two candidates.

-Each 2YC₃ member shall vote for one nominee and the candidate who receives the greater number of votes shall be declared elected.

-Ballots must be received by the Chair postmarked no later than 12/31/2007.

-The results of the election will be reported in the first possible newsletter.

Thank You 2YC₃ College Sponsors for 2007

There's still time to get your institution's name added to this list. Thank you to all of the College Sponsors who contribute in so many ways to the successful programs in 2YC₃. Many of these colleges have been supporting our efforts for over 30 years, not only with membership, but by supporting their faculty as they participate in 2YC₃ activities.

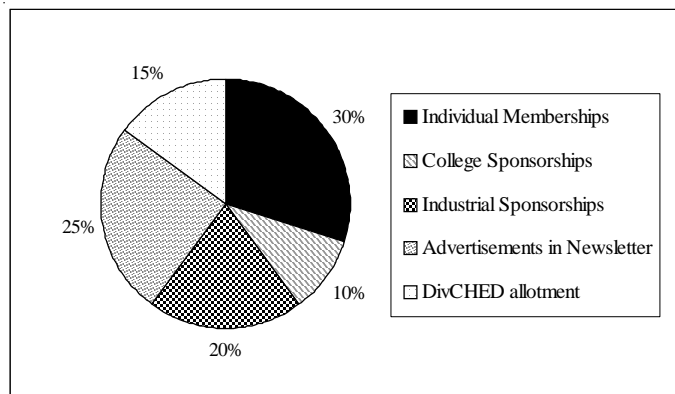
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Atlantic Cape Community College	NJ	Kansas City Kansas Community College	KS
Bellevue Community College	WA	Kilgore College	TX
Bismarck State College	ND	Kingwood College	TX
Black Hawk College	IL	Kirkwood Community College	IA
Blinn College	TX	Lewis & Clark Community College	IL
Bucks County Community College	PA	Linn-Benton Community College	OR
Burlington County College	NJ	McHenry County Community College	IL
Central Oregon Community College	OR	Miami-Dade Community College - Kendall	FL
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College of Dupage	IL	Mohawk Valley Community College	NY
College of Eastern Utah	UT	Monroe Community College	NY
College of Lake County	IL	Montgomery College	TX
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El Camino College	CA	South Arkansas Community College	AR
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Essex County College	NJ	Southwestern College	CA
Gainesville State College	GA	Stark State College of Technology	OH
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Gloucester County College	NJ	Vincennes University	IN
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Harford Community College	MD	Waubonsee Community College	IL
Harper College	IL		

“Hey...I already paid my membership, what’s this college sponsorship thing for?”

Unfortunately, the individual 2YC₃ memberships do not pay all our bills and our organization depends on a variety of income sources. We acknowledge the support of Div CHED, who annually contributes to the 2YC₃ budget. 2YC₃ is a standing committee of Div CHED and we are grateful for their support financially and otherwise. So when you support Div CHED, you are also supporting 2YC₃ indirectly. To keep individual membership dues low, we ask two year institutions as well as private industry and universities to support the mission of 2YC₃ through college sponsorships and industrial sponsorships. The college sponsorships are only \$25 per institution but combined, they keep our organization strong and running in the black. We feel it is important to keep individual memberships as low as possible because some two year college faculty have little or no resources for professional organizations and therefore, pay for their 2YC₃ membership out of their own pocket.

So where does all the money come from? The chart at right shows the distribution of income sources for 2YC₃. Is your institution’s name on the college sponsor list in this issue? If not, you are invited to consider supporting 2YC₃. In a time of budget cuts, equipment and supply cost overruns, class-size increases, online chemistry courses, accreditation, assessment mandates, program review and chemical hygiene plans, 2YC₃ may be one of the most cost effective resources for your chemistry department.



Top 5 Benefits of Being a College Sponsor.....drum roll please...

- #5 Your institution gets an official copy of all our Outlook newsletters chocked full of advertisers and upcoming 2YC₃ meeting schedules and agendas in addition to the individual member copies.
- #4 Your institution gets to advertise chemistry positions in the Outlook as well as on the 2YC₃ website....and it’s free if you are a college sponsor! What a deal compared to the cost advertising in C&E News and The Chronicle of Higher Education.
- #3 Your institution gets an official 2YC₃ College Sponsor Certificate with an authentic signature from the 2YC₃ treasurer. (okay, so maybe this isn’t a top 5 reason).
- #2 The name of your institution will be recognized in the Outlook and 2YC₃ website.
- #1 Your College Sponsorship keeps individual membership costs at the rock-bottom annual rate of \$15.



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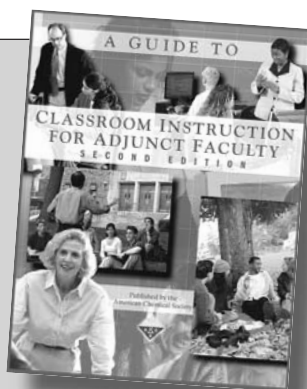
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Submission Deadlines for Chemistry Outlook

I would like to extend an invitation for submissions to future issues of Chemistry Outlook. Articles of interest, including "It Works for Me!," photos from 2YC₃ conferences, or conference announcements are welcome. Deadlines for submissions to future issues of the Chemistry Outlook are listed below. For more information, please contact Jim Schneider, newsletter editor: jshneid@pcc.edu. Thank you!

Volume	Submission Deadline	Anticipated Arrival Date	Conference Information
2007-IV	July 15, 2007	Aug. 15, 2007	179 th Durham 180 th Baton Rouge
2008-I	Dec. 15, 2007	Feb. 15, 2008	180 th Baton Rouge 181 st BCCE
2008-II	March 15, 2008	May 15, 2008	181 st BCCE 182 nd Las Vegas

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Applications Are Being Accepted for The Dorothy and Moses Passer Education Fund

Editor's note: This exceptional funding opportunity is open to 2-year college faculty to help fund a specific goal that you are working on; you can't fund a trip to a conference, but funding support for travel to workshops, etc. are eligible. Two-year college faculty have a great advantage of teaching first generation/underserved populations/non-traditional students and they should make note of that in their application.

This Fund was established by a generous donation of Dorothy and Moses Passer. Moses (Mike) Passer was for many years the head of the ACS Education Division. The Fund supports grants to provide support for teachers in programs at two- and four-year colleges or universities that do not have any advanced degree programs in the chemical sciences. The awards are to support continuing education activities that must be directly related to the applicant's teaching and must take them away from their campus. The applicant must be a full time faculty member at his or her institution. The applications are reviewed by a committee. There is no application form but the application must include a description of the proposed activity and how it relates to his/her teaching with dates, locations, titles and contacts; a brief description of the applicant's institution and department; a short curriculum vita; an itemized estimate of expenses, amount of aid requested and sources of all supplemental funds. No support will be given for general attendance at national, regional or local ACS meetings nor for any sabbatical support.

Closing dates are three times each year: **January 1, April 1, and September 1.** All applications must be received electronically. For further information or inquiries contact **Richard Jones, richard.jones@sinclair.edu**; mailing address: **Sinclair Community College, Dayton, OH 45402.**

Funds Available for Collaborative Career Development Activities Chemical Workforce Technology Mini-Grants

Proposals are being sought for Equipping the 2015 Chemical Technology Workforce mini-grants. Up to \$500 will be awarded to collaborative activities that support technician education and career development.

Recognizing a need to support chemical technicians in the rapidly evolving chemical enterprise, several ACS units joined together in 2006 to start Equipping the 2015 Chemical Technology Workforce. The initiative kicked off at the 232nd ACS National Meeting with a Presidential Event highlighting its goals:

- 1) Raise awareness of the changing needs of chemical technicians
- 2) Highlight opportunities for industry, academia, professional societies, and the community to collaborate on meeting those needs
- 3) Increase involvement of technicians in the American Chemical Society

The winners of the first round of mini-grants, awarded in Spring 2007, are collaborating with industry, academia, and ACS local sections on such activities as chemical technology career fairs for high school students, discussion panels on employability skills for technicians, and technical programming at regional and national meetings on the vital role technicians play in the chemical enterprise.

Equally compelling proposals are being sought for a second round of mini-grants to be awarded in October 2007.

To qualify for a mini-grant, activities must involve one or more sectors of the chemical enterprise (industry, academia, etc.) and be completed by the summer of 2008. Activities must also support one or more of the goals of Equipping the 2015 Chemical Technology Workforce. Proposals must be received by 26 September 2007.

To learn more about Equipping the 2015 Chemical Technology Workforce and the mini-grants, to get ideas for activities, or to gather information about the chemical technology profession in today's marketplace, please visit **www.ChemTechLinks.org** and click on "Equipping the 2015 Chemical Technology Workforce," or email **ChemTechLinks@acs.org**.

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