

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



Candice McCloskey, Chair

7

N

14.0067
Nitrogen

Notes From The Chair

Candice McCloskey
Georgia Perimeter College - Dunwoody
Dunwoody, GA

Editor's Note: Welcome to Candice McCloskey as our new Chair. Candice went to graduate school at Georgia Tech, and did research on natural product synthesis. After obtaining her Ph.D., she did some post-doc work, then started teaching. She's been at various schools, ranging from a 4-year women's college to a 2-year school in the Caribbean to a chiropractic college. Things settled into place when she got to Georgia Perimeter College about six years ago. Candice says: "I've published an MCAT study guide, worked on a GOB text, got tenured and promoted, and now I'm chair of 2YC₃! I'd say I've found the right place for me, the two-year college."

Greetings to you all in my first message as Chair of 2YC₃. I am sitting here watching my hardworking students take their Organic exam and I am thinking about how their performance in my class may well have a direct influence on their career choices and lives. It strikes me that as instructors of chemistry, we have a tremendous obligation to do the best we can for our students, and 2YC₃ is dedicated to helping us in this endeavor. I am honored indeed to be the chair of this wonderful organization.

When I was asked to consider running for Chair-elect, I had been a member only since 2003, when I went to my first 2YC₃ conference at Elizabethtown, Kentucky. It was at that conference that I discovered what a friendly and enthusiastic organization 2YC₃ is. In the years

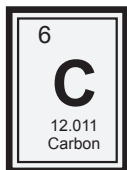
continued on page 2

INSIDE THIS ISSUE

Vol. 2009 - I

- 1 Notes from the Chair
- 2 Conference Calendar;
186th Conference- Call for
Presenters
- 3 2009 2YC₃ officers and
support staff; Memb. Form
- 4 184th Conference Program
- 7 185th Conference Prelim Info
- 8-9 News from the RABs
- 10 Conducting Research at
Queensborough CC - A Per-
spective by Paris Svoronos
- 11 Workshops! - NMR at
Salt Lake 2YC₃ Meeting;
Teaching Chem to Diverse
Students at Salt Lake ACS
Meeting
- 11 2YC₃ COCTYC Election
Results





Conference Calendar

Calendar Year 2009

184th CONFERENCE (Western)

March 20-21, 2009

Salt Lake Community College

Salt Lake City, UT

Contact: Neil Bastian

Email: Neil.Bastian@slcc.edu

185th CONFERENCE (Midwestern)

September 25-26, 2009

Rochester Community & Technical College

Rochester, MN

Contact: Jason Jadin

Email: jason.jadin@roch.edu

186th CONFERENCE (Southern)

November 13-14, 2009

Hinds Community College

Raymond, MS

Contact: Pam Clevenger

Email: pwclevenger@hindsc.edu

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

since, as I have gotten to know the Committee chairs, members and past chairs, my admiration and my own enthusiasm for what 2YC₃ does has only increased.

Each conference that I've attended has proved to be inspiring, in different ways. I've learned the value of demonstrations and animations, for instance, as a means to help students visualize chemistry. I've learned how to make organic chemistry animations for my own students. I've heard new approaches to teaching organic chemistry. I've been amazed at the level of basic research that is being done by community college students, many from disadvantaged backgrounds, at various schools around the country. And at the latest conference at Anne Arundel Community College, I learned some great techniques for assessing programs. Assessment is a hot issue lately, and there will be more on assessment as well as undergraduate research at the Salt Lake Community

College in March, the meeting that coincides with the Spring ACS meeting in Salt Lake City.

My hope is that more chemistry instructors at community colleges will be encouraged to join 2YC₃ and reap the benefits of membership. The membership and registration fees are low, and 2YC₃ tries to have a conference in each of the regions of the country each year (Southern, Western, Eastern, and Midwestern) so that there is one nearby. And besides attending conferences, there are opportunities for further involvement on the regional advisory boards (RABs) and of course, as a conference host.

I am looking forward to my year as Chair, and I thank the members of the Committee on Chemistry in the Two-Year Colleges for their support and encouragement.

186th Conference (Southern)

Hinds Community College

Raymond, MS

November 13-14, 2009

Conference Theme:

Covalent Communities:

Sharing Ideas to Promote Chemistry Education

Preliminary Information:

The conference will include several presentations, panel discussions, and workshops. Topics will include transitioning students from science education in K-12 courses to community college chemistry courses and on to four year college chemistry courses. Also general topics of chemistry education, chemistry technology, and laboratory experiences will be included.

Call for Papers:

We extend a call for papers on the conference topic and will consider presentations on other topics that will enhance the program.

Contacts:

Program Chair

Pam Clevenger

pwclevenger@hindsc.edu

Local Arrangements Chair

Jason Webb

jawebb@hindsc.edu

Exhibitor's Chairs

Lester Harrison

lwharrison@hindsc.edu

Lou Anne Williams

lawilliams@hindsc.edu

184th 2YC₃ Conference (Western)

“Building a Foundation in Chemistry: Assessment of Student Learning in Classroom and Undergraduate Research Situations”

Salt Lake Community College
Taylorsville Redwood Campus
4600 South Redwood Road
Salt Lake City, UT, 84123

March 20-21, 2009

27 Co nference Information

58.933
Cobalt

For **registration**, **lodging information**, **travel directions** and the **latest information on the conference program**, visit the 2YC₃ website: <http://2yc3.org/Meetings/>.

Program Chair:	Neil Bastian	Neil.Bastian@slcc.edu	801-957-4405
Exhibits:	Ron Valcarce	Ron.Valcarce@slcc.edu	801-957-4830
Local arrangements:	Luther Giddings	L.Giddings@slcc.edu	801-957-5895

Friday, March 20

9:00 – 5:00 **Exhibits and Refreshments:** Student Center, Multipurpose Room (Room 002)

Session 1 **Student Center, Parlors A & B (Rooms 023 & 025)**
Session Chair: Neil Bastian

9:00 – 9:15 **Welcome:** President Cynthia Bioteau or VP Joe Peterson, Salt Lake Community College

Opening Remarks: Candice McCloskey, 2YC₃ President

9:15 – 10:00 **Keynote Speaker: Developing Assessments that Match Your Learning Goals,** Diane M. Bunce, The Catholic University of America

10:00 – 10:30 **Beverage Break:** Multipurpose Room

10:30 – 11:15 **Topic TBA:** Thomas A. Holme, Iowa State University (Tentative)

11:15 – 12:00 **Improving Understanding of Topics in General Chemistry By Implementing the Science Writing Heuristic in the Academic Laboratory,** Thomas J. Greenbowe and K.A. Burke: Iowa State University, Ames, IA

12:00 – 1:00 **Box Lunch, Membership meeting,** Student Center, Oak Room

Break-Out Session: Student Center, Senate Chambers (Room 030)

1:00 – 4:00 **Workshop:** “NMR Applications Across the Undergraduate Chemistry Curriculum” Donald Bouchard: Anasazi Instruments, Indianapolis, IN

Session 2 **Parlors A&B Session**
Session Chair: Luther Giddings

1:00 – 1:45 **Assessment of Data Gathered From Competency Quizzes Given in a General/Organic/Biochemistry I Course,** Jason Jadin, Teresa Brown, and Heather Sklenicka: Rochester Community & Technical College

1:45 – 2:30 **New Innovative Approach to Student Learning: Implementation of Classroom Performance System Technology in Basic Chemistry Courses,** Lori A. Kraft, University of Akron, Akron, OH

2:30 – 3:15 **Art Historical and Archaeological Chemistry Research For Undergraduates,** Mary Virginia Orna: College of New Rochelle, New Rochelle, NY

3:15 – 3:45 **Beverage Break:** Multipurpose Room

3:45 – 4:30 **The Chemical Education Digital Library: Web-based Resources for All,** John W. Moore: University of Wisconsin-Madison, Madison, WI

4:30 – 5:15 **Discussion and workshop regarding a grant received from the Great Lakes Fuel Cell Education partnership,** Jeffrey Cramer: Stark State College, Canton OH

6:30 **Banquet:** Student Center, Oak Room

Saturday, March 21

9:00 – 5:00 **Exhibits and Refreshments:** Multipurpose Room

Session 3 **Parlors A & B**
Session Chair: Ron Valcarce

9:00 – 10:00 **ACS Guidelines for Chemistry Programs in Two-Year Colleges,** John V. Clevenger, Truckee Meadows Community College (retired)

10:00 – 10:30 **Beverage Break:** Multipurpose Room

10:30 – 11:15 **Outcomes of Re-structuring an Introductory Chemistry Course: Incremental Changes, Measurable Results,** Thomas Jose, Blinn College, Bryan TX

11:15 – 12:00 **The Use of Educational Games to Teach Chemical Nomenclature,** Joseph Chimeno, College of Eastern Utah, Price, UT

12:00 – 1:00 **Box Lunch:** Oak Room

Break Out Session: Student Center, Senate Chambers (Room 030)

1:00 – 1:30 **NSF: Programs and Proposal Writing,** Harry Ungar, Cabrillo Community College, Aptos, CA

Continued next page...

- 1:30 – 2:00 **Panel Discussion: “Our Future: the New Faculty”**
- Session 4** **Parlors A & B,**
Session Chair: Sesh Seshadri
- 1:00 – 1:30 **Incorporating Electronic Submissions Into the Organic Chemistry Lab Course,** C. Michelle Turner, The University of Akron Wayne College, Orrville, OH
- 1:30 – 2:00 **Presentation on use of student teams to solve “crimes” involving chemical and biological analyses,** Laurie LeBlanc and Kathryn Nette, Cuyamaca College, San Diego CA
- 2:00 – 2:30 **My Fullbright Experience in South Africa,** Ken Capps, Central Florida Community College, Ocala, FL
- 2:30 – 3:00 **Topic TBA,** Brian Glaser, Black Hawk College, Moline IL
- 3:00 – 3:30 **Beverage Break:** Multipurpose Room
- 3:30 – 4:00 **Exploring the Chemistry of Carbenes with Natural Bond Order,** Mohamed Ayoub, University of Wisconsin-Washington County, West Bend, WI
- 4:00 – 4:30 **Topic TBA,** Armando Rivera, East Los Angeles Community College, Los Angeles, CA
-

REGISTRATION

Registration for the conference is by mail-in form. The form is available at the 2YC₃ website: <http://2yc3.org/Meetings/>. Download and send in the form with your payment. Please note that your registration is not complete until your payment is received.

LODGING

A special conference rate of \$82/night + tax is available at the Crystal Inn West Valley City. Ask for the Salt Lake Community College rate when booking.

Crystal Inn West Valley City
2254 W. City Center Ct.
West Valley City, UT 84119-5404

Reservations: 1-888-988-9400
Hotel direct: 1-801-736-2000
Website: <http://www.crystalinnwesvalley.com>

About Salt Lake Community College

Salt Lake Community College is an accredited, multi-campus college serving the diverse needs of the Salt Lake City community. With an open-door enrollment policy, the College serves more than 60,000 students through credit and non-credit courses and workshops each year, making it the largest institution of higher education in Utah.

To accommodate student needs, SLCC has three full-service campuses: South City, Taylorsville Redwood (main campus), Jordan; eleven teaching centers located throughout the Salt Lake Valley and an eCampus for distance learning..

For directions and maps to the college, please visit: <http://www.slcc.edu/locations/redwood.asp>
The Conference will take place at the Taylorsville Redwood Campus

News from the Regional Advisory Boards (RABs)

Western RAB

David R. Brown, Ph.D.

Highlights from the 182nd 2YC₃ at the ACS WRM 2008 in Las Vegas, NV, September 26-27, 2008

For the first time an ACS Western Regional meeting (WRM2008) included a formal meeting of the Two Year College Chemistry Consortium (2YC₃). The theme for the 2YC₃ Sessions was the “Challenges and Benefits of Undergraduate Research at the Two Year College” and featured a keynote address by David Brown of Southwestern College, Chula Vista, CA and a keynote report panel discussion on the Revision of ACS Guidelines for Chemistry Programs in Two Year Colleges led by John Clevenger of Truckee Meadows Community College, Reno, NV. A 2YC₃ banquet address by Carlos Gutierrez of California State University, Los Angeles focused on collaboration between two-year and four-year college faculty as a recipe for student success at both institutions. Approximately 74 2YC₃ members and their students attended and participated in paper, workshop and poster presentations along with other WRM 2008 events. The Meeting reported a total attendance of 550 and 392 abstracts from presenters traveling from places as far away as Korea, Canada, and New York. There were approximately 30 poster presentations by two year college students and faculty on undergraduate research at their institutions.

ACS President Bruce Bursten, President-Elect Thomas Lane and Past President E. Ann Nalley all participated along with recently elected Nevada Congresswoman Dina Titus. ACS Directors Bonnie Charpentier, Kent Voorhees and Janan Hayes attended and participated in the overall proceedings of this Meeting which was co-sponsored by the ACS Southern Nevada Section and the 2YC₃. At this Meeting the following awards were presented:

- Stanley C. Israel Award to William A. Lester Jr of University of California, Berkeley
- E. Ann Nalley Award to Boyd Earl of University of Nevada, Las Vegas and Onofrio (Dick) Gaglione of College of Southern Nevada
- Award for Excellence in High School Teaching to Judith Ann Flint Baumwirt of Granada Hills, CA.

Eastern RAB

Brahmadeo Dewprashad, Chair

The 183rd Conference of 2YC₃ was held on November 21 and 22, 2008 on the scenic campus of Anne Arundel Community College in Arnold, Maryland. The meeting was well attended and was a great success. The keynote presentation “Funding Opportunities for Community Colleges: The National Science Foundation - Division of Undergraduate Education” was delivered by Dr. Eun-Woo Chang, Program Director, Division of Undergraduate Education, National Science Foundation. The presentation provided attendees with very useful information on funding opportunities available to STEM faculty members at two-year colleges. In addition, attendees had the opportunity to review, critique and contribute to “The

ACS Guidelines for Chemistry Programs in Two-Year Colleges: A Resource for Enhancing Chemistry Programs” being prepared by John Clevenger, Emeritus Professor of Chemistry, Truckee Meadows Community College, Reno, NV.

Linda N. Fanis, Assistant Editor, Journal of Chemical Education held workshops on “Journal of Chemical Education Online Resources” and “Explore the Chemical Education Digital Library.” Both of these workshops were well attended and provided attendees with hands-on training in accessing and using valuable online pedagogical resources. There were also a number of additional engaging and informative presentations and workshops. These include “POGIL – Hyuh, What is it Good For? Absolutely Something!”, “Chem Ed: Increase Conceptual Understanding in Chemistry and AP Chemistry — Activate Inquiry and Inspire Discovery!”, “Students Taking Ownership of The Class and Spreading it Further for a Positive Outcome” and “Building Partnerships to Facilitate Undergraduate Research.”

Attendees had many opportunities to socialize and network and even had the pleasure of sampling unique blends of chocolate during the educational and entertaining banquet presentation “Producing Chocolate: From the Trees to the Table” by James A. Saunders of Towson University. The success of the meeting was in a large part due to the excellent organization done by Dr. Lynn Tracey, Ms. Debbie Reader and Dr. June Bronfenbrenner, the Program Chair, the Local Arrangements Coordinator and the Exhibits Coordinator, respectively. We congratulate them and thank them for all the hard work they did.

There are many exciting happenings on campuses of two year colleges in the Eastern Region. For example, Dr. Moni Chauhan of Queensborough Community College in NYC is an active researcher in Nanoscience. She is from a Department that has been exemplary in taking a lead in undergraduate research at two year colleges. Dr. Chauhan has mentored numerous students in research projects in this area and her students have made presentations on their research at national meetings. Dr. Chauhan has shared her success with us at the 182nd 2YC₃ conference in Las Vegas, Sept 26-27th 2008 and 178th 2YC₃ conference in NJ, Sept 28-29th 2007. We commend her on the excellent work she is doing with student.

The Eastern Regional Board has been strengthened by the addition of two new board members, Janet Graden of Montgomery County Community College and Steven Hedrick of New River Community College. We welcome them to the Board and look forward to working with them to ensure a vibrant Eastern Regional Board.

CONTINUED NEXT PAGE...

Renew Your 2YC₃ Membership Online!

NEW!! Electronic payments (credit card, bank transfer, PayPal) are now accepted! Fill out the form on the 2YC₃ website first (<http://2yc3.org/Membership/MemberRegForm1.asp>) and you will be sent to PayPal to complete your transaction. Or, you may continue to mail a check for your payment if you like.

News from the Regional Advisory Boards (RABs), continued

Southern RAB

Mark Matthews, Chair

As I mentioned in a previous newsletter, the Southern RAB is currently in the process of compiling a database of two-year college chemistry instructors in our region. This list is for 2YC₃ purposes only, such as promoting upcoming meetings in or near our region, etc. You may have already received an email from one of us. If not (or if you don't recall getting one), please take a moment and send your contact information to the board member responsible for your state.

- Mississippi and Alabama: Pam Clevenger (pwclevenger@hindsec.edu)
- Texas: Nancy Faulk (nfaulk@blinn.edu)/Sheli Hull (shelli.hull@tccd.edu)
- Florida: John Hawes (hawesj@lakecitycc.edu)
- South Carolina: Mark Matthews (matthewsm@durhamtech.edu)
- Georgia : Glen Nomura (gnomura@gpc.edu)
- Louisiana and Oklahoma: Karen Stephens (stephensk@mybrcc.edu)
- Tennessee and North Carolina: Martin Stewart (mstewart@mtsu.edu)
- Kentucky and Arkansas: David Vogel (david.vogel@kctcs.edu)

Please pass this information on to any colleagues and adjuncts that would like to be included in our database. We'd like our list to be as comprehensive as possible.

Finally, I'd like to welcome Elijah Pugh (epugh@wccs.edu) from Wallace Community College Selma as our Alabama representative of the Southern RAB. The board is still seeking members from Arkansas, Oklahoma and South Carolina. If anyone is interested, please let me know (see above for my email address).

Midwestern RAB

Jason Jadin

Jason Jadin has been a Midwestern RAB member for the past 3 years. He is a chemistry instructor at Rochester Community and Technical College in Rochester, MN. He is also the program chair for the 185th 2YC₃ conference hosted by RCTC.

The start of the New Year is always an exciting time. I like to reflect on the events of the previous year and look forward to upcoming events. For me, a major event that will occur this year is the 185th 2YC₃ conference which is only 9 months away! The time has quickly passed since our college's president gladly accepted the invitation to host the conference in September, 2006. Not a lot needed to be done in 2007 so the year was spent attending conferences, taking notes, and gathering ideas. Most of 2008 was spent developing a conference theme, booking hotels, reserving classrooms, and generating a list of potential speakers. We are still in the process of lining-up speakers. Several people have accepted our offer to present, but we certainly are looking for more. I know that you all do great things in your classrooms. Why not share them with your colleagues at a 2YC₃ conference? The next couple of months will be exciting as we put the final program together. Look for the final program in the next Chemistry Outlook.

If anyone approaches you to host a conference, please give it serious consideration. I have found that college administrators love hosting these conferences. It gives the college great publicity. If you are worried about the planning, there are many people willing to offer suggestions and even help out. I appreciate the help and advice I have received from the Midwestern RAB members and previous program chairs.

I hope to see many of you in September 2009!

Travel Grant Opportunity for 2-Year College Faculty!! Applications Are Being Accepted for The Dorothy and Moses Passer Education Fund

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 applicants 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**

Conducting Research at Queensborough Community College: A Unique Experience for a Recent Immigrant

Part A: The Hiring and Involvement of Faculty

Queensborough Community College, one of the six community colleges that are part of the City University of New York, is located in Bayside, Queens a few miles west of Long Island. The ethnicity of the approximately 13,000 full and part time students who attend the college every semester is roughly one quarter each White, African American, Hispanic and Asian. The Chemistry Department is composed of nine full-time faculty (plus a substitute Assistant Professor), three college lab technicians and approximately 25 adjuncts.

In the early Spring of 2000 Queensborough had its first ever student conduct faculty supervised research that she orally presented at the 48th Undergraduate Research Symposium (URS) of the American Chemical Society-New York section. The project was simple- studying the product distribution of the pinacol-pinacolone rearrangement via ¹H NMR using different acids and buffered solutions. The results were also presented in a poster form at the National ACS Meeting in Washington DC that August and were eventually published in *Tetrahedron Letters* two years later. Dr. Sasan Karimi, Dr. Gopal Subramaniam and the author of this article were the faculty who mentored that student and several others who continued working on the project for the next eighteen months or so. This was the beginning of an extraordinary research development in a community college setting.

At that time the department had no instrumentation and the administration was not willing to invest into anything more elaborate than condensers and separatory funnels. However retirements and the subsequent hiring of young, well-credentialed and diverse faculty enhanced the drive towards establishing research as an option to good students. These faculty members include Dr. Moni Chauhan (2002), Dr. Sharon-Lall Ramnarine, Dr. David Sarno and Dr. Jun Ho Shin (2004), Dr. Mihaela Bojin (2007) and Dr. Tirandai Hemraj-Benny (2008). Moreover adjuncts expressed interest in joining the group as long as they could do most of their teaching at Queensborough instead of other institutions and they would have a desk and the permission to use our facilities. We currently have five adjunct faculty mentoring students, Dr. Subramaniam (since 2002), Dr. Luis Vargas (since 2003), Professor Syamala Ranganathan (since 2006), Dr. Soraya Svoronos and Dr. Jordan Verdis (2008). In addition our full –time college lab technicians Pedro Irigoyen and Bruce Montalbano have also co-mentored various students for several years.

The result of this concerted effort by all members of our department has led to an ever increasing number of research students and presenters in various conferences with the number estimated to be at 34 this year. Queensborough students have presented at every single URS meeting since 2000 and have had the largest number of presentations every year since 2003. They have also presented in all Middle Atlantic Regional Meetings (MARM) held since 2003 as well as the Northeastern Regional Meeting (NERM) in 2006 and the Southwest Regional Meeting in Las Vegas (2008). Poster presentations were also made at the National ACS meetings in New York (2003), Washington DC (2005), Boston (2007) and Philadelphia (2008). Since 2002 ten peer-reviewed papers bearing our students' names were published the latest appearing in November 2008. Pertinent information appears in our department's website <http://www.qcc.cuny.edu/Chemistry/>

In subsequent issues of this newsletter factors that contributed to the progress of research in our campus will be discussed. These include grants awarded, equipment purchases, our own honors program, PLTL workshops and the establishment of an undergraduate research lab in the department.

Paris Svoronos, Ph.D.
Professor and Chair- Chemistry Department
Queensborough Community College
Bayside NY 11364
PSvoronos@qcc.cuny.edu

**Special NMR Workshops
at 184th 2YC₃ Conference
Salt Lake Community College**

Anasazi Instruments will be presenting a workshop titled, "NMR Applications at Community Colleges." Three talks will be given by recognized experts in the field addressing pedagogy, funding, and novel applications to non-majors. Dr. Charles Abrams, Truman College will present pedagogical tools to introduce students to the basics of NMR spectroscopy. Dr. Tom Higgins, Harold Washington College will present funding opportunities for NMR instruments at community colleges, and Donald Bouchard of Anasazi Instruments will present applications of NMR for the study of foods and consumer products to create interest for non-science majors.

**Election Results
2009 2YC₃ COCTYC POSITIONS**

Congratulations to the following new COCTYC members

- **Chair-Elect 2010:** Mark Matthews, Durham Technical Community College.
- **Industrial Sponsors Chair:** Michelle Turner, University of Akron - Wayne College.

Thank you to Jeff Cramer, outgoing Chair and John Kenkel for his years of service as Industrial Sponsors Chair.

ANASAZI INSTRUMENTS 60/90MHz FT-NMR

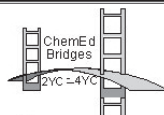
The Eft makes FT-NMR

New 60MHz Aii Magnet

affordable
accessible
manageable
possible
reliable
usable

toll free: 866.494.9369
office: 317.783.4126
fax: 317.783.7083
sales@ainmr.com
www.ainmr.com/2yc3

CRYOGENS



ChemEd Bridges

and

the ACS Committee on Minority Affairs

are proud to present a half-day symposium on

**Teaching Chemistry
to a Diverse Audience**

New pedagogies from two year and four year college perspectives

**Salt Lake City
ACS National Meeting
Sunday 3/22/09**

Community College Chemistry faculty can apply for travel support at

www.chemedbridges.com

This work is cosponsored by CHED, WCC, and YCC; and supported by NSF Grant DUE-0737166.



The freedom to inquire. The technology to excel.



Engage your students with hands-on science using the Vernier LabQuest and sensors in your classroom or in the field.

- Color touch screen
- Use as a stand-alone device or with computers
- Easy-to-use built-in graphing and analysis software
- Six sensor ports compatible with **over 60** existing Vernier sensors
- On-board applications including a periodic table and scientific calculator


Go to www.vernier.com/chemistry to take a product tour, and learn more about products for your chemistry courses.

Vernier Software & Technology • www.vernier.com • Toll Free: 888-837-6437

Vincennes University
Committee on Chemistry in the Two Year College
1002 North First Street
Vincennes, Indiana 47591-5201

Nonprofit Org.
Auto
U.S. Postage
PAID
Permit #85
Vincennes, IN 47591

Candice McCloskey, CHAIR
Jim Schneider, EDITOR
COMMITTEE ON CHEMISTRY
IN THE TWO-YEAR COLLEGE
Division of Chemical Education
American Chemical Society

 SHIMADZU
www.ssi.shimadzu.com

Quick...and to the Point

Weigh your options, you'll choose Shimadzu.

For over a century, the Shimadzu name has been synonymous with precision scientific instruments. Shimadzu's continuous research and improvement on analytical balances has produced patented technology and innovations for the benefit of industry and research.


Shimadzu's UniBloc Design: One-piece manufacturing assures reliability, excellent response, and a long operational life.

Windows® Direct Communication: No communication software is needed to integrate weighing results with laboratory software.

Our balances offer:

- Speed
- Durability
- Functionality
- Stability
- Communication
- Reliability

You demand performance, productivity and value, Shimadzu delivers.



For more information, call (800) 477-1227 or visit us online at

www.ssi.shimadzu.com/BALANCES

Shimadzu Scientific Instruments
7102 Riverwood Drive, Columbia, MD 21046, USA

Order consumables and accessories on-line at <http://store.shimadzu.com>

ACID-BASE CHEMISTRY

Students can use titration curves to...

- Differentiate between strong and weak acids
- Observe the reaction of polyprotic acids
- Determine K_a 's and buffer regions
- Determine to within one drop the end point of a reaction



With 3% of the pressure head change of a burette, 50% smaller drop size, and a multi-turn Teflon needle valve to control drop rate, **MicroLab's** unbreakable **Constant Volume Drop Dispenser** produces a volume / drop count graph that is linear with five 9's in its correlation coefficient.

MicroLab's IR reflective drop counter automatically corrects for background light and fragmented drops. Students quickly create text-book titration curves.



MicroLab's FS-522 includes FASTspec™ capability and will make almost every instrumental measurement needed in general and environmental chemistry and biochemistry.

microlab

Designed and Manufactured in the United States

For complete product information
www.microlabinfo.com

e-mail: info@microlabinfo.com 888-586-3274