

# Chemistry Outlook

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

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*Neil Bastian Chair*

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## Notes From The Chair

Neil Bastian  
Salt Lake Community College  
Salt Lake City, UT

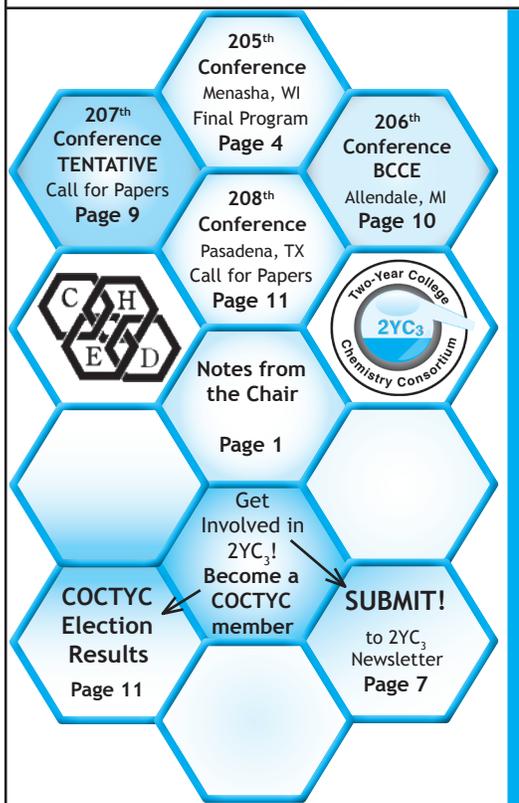
As a teacher, it is important to me to communicate effectively with my students. I find that I often teach in the same way I was taught. As I think about my many teachers I realize that while many of them taught me about their subject, many also taught me lessons about life. In this essay I want to mention a few life-lessons that I learned from my undergraduate chemistry teachers.

I started college intending to major in astrophysics. I took general chemistry for chemistry majors mainly because it fit into my schedule better than did the classes for non-majors. And although I had taken chemistry in high school I was sure that all my classmates (who were obviously chemistry majors) were better prepared and smarter than I. As a result I spent a lot of time in the professor's office. Looking back I realize that although I was an anxious and demanding student, the professor, Dr. Rex Goates, always met me with patience, kindness, and compassion. Sometimes he had to explain things several times before I caught on, but he never showed annoyance or impatience. Now as a teacher I realize that that first semester is the most important semester in a student's academic career, especially in STEM disciplines, because it becomes the foundation for every other class a student will take. Dr. Goates helped me build my foundation as a chemist and he also taught me life-lesson #1: patience and kindness cost the giver little, but can pay huge dividends to the receiver.

Later that year I had the opportunity to take a class from Dr. Eliot Butler. To me, Dr. Butler, who was at that time serving as the Dean of the School of Science, was an imposing figure. He expected excellence of his students and I always feared that I didn't measure up. Whenever Dr. Butler reviewed for an exam he would start on one end of the front row and move across the row asking questions of the students. If the correct answer wasn't forthcoming he would move down the row to the next student until the correct answer was given. Since I sat in the middle of the front row (in seats assigned on the first day of class) I knew that my turn was going to come and I certainly didn't want

### INSIDE THIS ISSUE!

Vol. 2014 – Issue II



continued on page 2

**205<sup>th</sup> CONFERENCE (Midwestern)**

May 16-17, 2014

University of Wisconsin-Fox ValleyMenasha, WI

Contact: Kristin Plessel

Email: [kristin.plessel@uwc.edu](mailto:kristin.plessel@uwc.edu)**206<sup>th</sup> CONFERENCE (Midwestern)**

August 3 – 7, 2014

Grand Valley State UniversityAllendale, MI

Contact: Tom Neils

Email: [tneils@grcc.edu](mailto:tneils@grcc.edu)**207<sup>th</sup> CONFERENCE (Southern) TENTATIVE**

October 3-5, 2014

Florida State College at JacksonvilleJacksonville, FL

Contact: John Taylor

Email: [john.taylor@fsci.edu](mailto:john.taylor@fsci.edu)**208<sup>th</sup> CONFERENCE (Southern)**

November 14-15, 2014

San Jacinto CollegePasadena, TX

Contact: Rachel Garcia

Email: [rachel.garcia@sjcdedu](mailto:rachel.garcia@sjcdedu)**“Notes from the Chair” ...continued from page 1**

to embarrass myself in front of all my classmates. I quickly learned that if I volunteered a correct answer before my turn that he would skip me as he moved down the row. That meant that I could choose my question rather than waiting for whatever came. That leads to life-lesson #2: volunteers get to choose their path.

As my freshman year progressed, I became more and more disillusioned with astrophysics and more enamored with chemistry. It wasn't that I didn't enjoy astrophysics; it was that I didn't see a job market after graduation. On the other hand I enjoyed my chemistry classes and did see a job market for chemistry graduates. At that crucial point, as I was deciding what to do, I received a word of encouragement from Dr. Earl Wooley during a chemistry lab. I don't remember exactly what he said but I left lab that afternoon feeling elated, with a new found confidence that I could become a chemist. The next day I changed my major to chemistry and never looked back. Life rule #3: a word of encouragement spoken at the

right time can change a life. Of course we never know when the right time is so we have to be continuously encouraging.

During the second semester of my junior year I was given the opportunity to work as a teaching assistant in several chemistry labs. That is when my love of teaching chemistry began. One of the labs I was to TA was first semester organic chemistry, taught by Dr. Leroy Nelson. While I had done well in Dr Nelson's class as a student I was by no means the star student. The only thing Dr. Nelson ever said to me about my performance as a student was "I want you to realize that this means you have to be better than you were." Apparently he was satisfied because I was his TA for two more semesters. That leads to life-lesson #4: If you give a person a chance they can rise to the occasion.

In my senior year I took an Advanced Inorganic Chemistry class from Dr. Reed Izatt. At that point I had already decided to pursue graduate studies in biochemistry. However, Dr. Izatt's passion for his subject was contagious and I found myself wavering. One day during a discussion of transition metals Dr. Izatt mentioned that there were enzymes called superoxide dismutases that contained either iron or zinc. In other words, I could combine biochemistry with inorganic chemistry. After class I questioned him further but he admitted that he didn't know much more about inorganic biochemistry. However, he could see that I was intrigued and encouraged me to study more. He directed me to journal articles that he thought would be of interest and eventually introduced me to a visiting professor, Dr. Bill Orme-Johnson, who would later become my graduate thesis advisor. Life-lesson #5: Communicate your passion; you never know who is listening.

A number of people have influenced my life and career. Only a few are mentioned here. As I instruct students I hear echoes of my teacher's voices in my teaching. As we engage our students it is important that we realize that even though we are teaching chemistry, we are also communicating our our passion and our compassion to our students. The lessons they learn may not all be about chemistry.

**Connect with 2YC<sub>3</sub> online!****Facebook:**<http://www.facebook.com/twoyearchem>

Check out our fantastic Facebook page! See photos of conferences! Get updated 2YC information! Make friends! Check it out today!

**Twitter: [twitter.com/2yc3](https://twitter.com/2yc3)**

Get short, timely messages from 2YC<sub>3</sub>. Twitter is a rich source of instantly updated information. It's easy to stay updated on an incredibly wide variety of topics. Join today and follow "@2YC3".



# 205<sup>th</sup> 2YC<sub>3</sub> Conference

## Final Conference Program

### *Active Learning: Engaging Students in the Classroom and Laboratory*

May 16-17, 2014

University of Wisconsin-Fox Valley

1478 Midway Road

Menasha, WI 54952

Conference Program Co-Chairs:	Kristin Plessel Brandon Fetterly	kristin.plessel@uwc.edu brandon.fetterly@uwc.edu
Local Arrangements:	Caroline Geary Kimberly Schatz	caroline.geary@uwc.edu kimberly.schatz@uwc.edu
Exhibits Coordinators:	Amy Kabrhel Penny Workman	my.kabrhel@uwc.edu penny.workman@uwc.edu

Located on the shores of Lake Winnebago and the Fox River, a variety of possibilities await you in addition to our stimulating program detailed below. Shopping, galleries, museums, performing arts and plenty of opportunities for a weekend getaway or family fun await you in the Fox Cities, which include Appleton and Menasha. Located directly on the UW-Fox Valley campus, you may find both the Planetarium and Weis Earth Science Museum of interest. Aviation buffs will enjoy the EAA AirVenture Museum in Oshkosh. And for the sports enthusiasts, Lambeau Field and Green Bay are only a short distance away.

The detailed conference timetable will be available on the University of Wisconsin Colleges Chemistry Department website as it becomes available (<http://uwc.edu/depts/chemistry/2yc3>).

### **Friday, May 16**

8:00 – 9:00 **Registration, Refreshments, and Exhibits**

9:00 – 10:15 **Dean's Welcome and Opening Remarks**

**Keynote Address: "Real Work is Better Than Homework."**

Brian Coppola, University of Michigan

*Real Work principles are a way to think about designing assignments that feature one or more of the following strategies: (a) use of authentic sources; (b) balance of team & individual work; (c) peer presentation, review, & critique; (d) integration of student-generated instructional materials; (e) use of instructional technologies; and (f), a balance of convergent & divergent tasks.*

10:45 – 11:25 **2YC<sub>3</sub> General Membership Meeting**

11:30 – 4:30 **Parallel Presentations, Workshops, Exhibitors**

6:00 – 8:30 **Dinner Banquet with Engaging Activities**  
Dinner will be held at Riverview Gardens, 1101 South Oneida Street in Appleton, WI. The event will include a walking tour of the facility's gardens, orchard, and hoop houses, a walking tour of Stone Cellar Brewery, a catered dinner, and other hands-on activities related to the 2014 National Chemistry Week Theme: "The Sweet Side of Chemistry." *Additional registration fee is required.*

## Saturday, May 17

8:30 – 9:00 **Registration, Refreshments, and Exhibits**

9:00 – 10:15 **Opening Remarks**

### **Invited Speaker: "Scientific Teaching and Climate Science."**

*Jerry Bell, Wisconsin Institute for Science Literacy, UW-Madison Climate Science*

*The theme of this conference recognizes the important results of research in teaching and learning captured in this sentence: "... supplementing or replacing lectures with active learning strategies and engaging students in discovery and scientific process improves learning and knowledge retention." ("Scientific Teaching," Handelsman, et al., Science, 2004, 304, 521-2) This presentation will focus on "active learning strategies," including activities to engage you and exemplify the strategies in the context of chemistry and climate science. Understanding the science of climate changes becomes more and more important as the changes become more and more apparent. You can use active learning strategies to include the many connections of climate science to chemistry within the topics that are already part of every general chemistry course, and help to uncover the topics, rather than cover them.*

9:15 – 4:30 **Parallel Presentations, Workshops, Exhibitors**

### **Parallel Presentation Sessions and Workshops:**

Using Computers to Visualize Data, Cut Lab Costs, and Involve Students in Active Learning

A New Look at Spectrophotometry

*John Amend, (Montana State University)*

Workbook Activities for Active and Contextual Learning in Class and Lab

*Sharon Anthony (Northland College), Kevin Braun (Beloit College), Heather Mernitz (Alverno College)*

Connecting Researchers, Educators and Students: The CREST Program

*Margaret Franzen (Milwaukee School of Engineering), Heather Mernitz (Alverno College), and Kim Schatz (University of Wisconsin-Fox Valley)*

Dive in with Physical Models: Impact of Water on Protein Structure

*Margaret Franzen (Milwaukee School of Engineering)*

Engaging Students in Chemistry and Math through a Special Topics Course

*Amy J. Kabrhel and Megumi Onoda (University of Wisconsin-Manitowoc)*

Increasing Scientific Literacy in the Classroom and in the Community

*James Kabrhel (University of Wisconsin-Sheboygan)*

Applying the spiral curriculum to general and introductory chemistry to enhance memory retention

*Mark Klemp (University of Wisconsin-Marinette)*

Flexible chemistry in the kitchen: a competency-based direct-assessment curriculum

*Kim Kostka (University of Wisconsin–Rock County), Anthony Millevolte (University of Wisconsin–Barron County), Tom Neal (University of Wisconsin–Baraboo/Sauk County)*

Bye-Bye Ball and Sticks

*Laurie Lazinski (Fulton-Montgomery Community College)*

POGILs in the Introductory Chemistry course and “Get REAL” - Get Really Engaged in Active Learning

*Nadine McGrady (Western Piedmont Community College)*

A POGIL-Inspired Flipped Classroom

*Serena Mershon-Lohkamp (Gogebic Community College)*

Permanent Magnet NMR and table top FT-IR in the Undergraduate Curriculum

*Katherine Paulson, Craig Beveroth and Bill Mohar (Thermo Fisher Scientific)*

Some Innovative, Hands-On Activities for the General Chemistry Classroom

*Cynthia Peck, Brian, Aldrich, Jonathan Gittins, and Bernadette Harkness (Delta College)*

A Flipped Organic Chemistry Classroom: What Should it Look Like and Is It Effective?

*Matthew D. Smith (Walters State Community College)*

Implementing a Collaborative Learning Exercise in General Chemistry and Introduction to Biochemistry

*Alan F. Weir (Fox Valley Technical College)*

A Green Chemistry Mini-Research Project for Organic Chemistry Students

*Penny S. Workman (University of Wisconsin–Marathon County)*

There is still some space in the schedule. Late submission proposals are invited. Please email Program Chair.

## Registration

Registration can be completed at the 2YC<sub>3</sub> website: <http://www.2yc3.org/registration205.htm>. We hope to see you there!

## Lodging Information

**Radisson Paper Valley Hotel** is located 0.9 miles from the Friday night banquet site at Riverview Gardens and 2.9 miles from the UW-Fox Valley campus. The hotel is located on a bus route. Ask for the Two Year College Chemistry Consortium Rate Code (Single Rate: \$70, Double Rate: \$97). Individual Cancellation Policy: 24 hours prior to arrival. At this time, the hotel only has rooms with one King bed available. Radisson Paper Valley Hotel, 333 West College Avenue, Appleton, WI 54911. Phone: 920-733-8000; Toll Free: 1-800-242-3499. Contact: Nancy Hollis 920-733-8000 ext. 1521 or [nhollis@radissonpapervalley.com](mailto:nhollis@radissonpapervalley.com).

**Holiday Inn Appleton** is located about 5-7 miles from the UW-Fox Valley campus (depending on route). Ask for the 20142YC<sub>3</sub> block (Single Rate: \$70, Double Rate: \$80, 3-4 people per room: \$90). Individual Cancellation Policy: 24 hours prior to arrival. Breakfast is included in the rate and more room options available. Holiday Inn Appleton, 150 S. Nicolet Road, Appleton, WI 54914. Phone: 1-855-652-1331 or use link **20142YC3**. All reservations must be made by May 1, 2014, after that date any rooms not reserved in your block will be released and made available to the general public.

## Driving Directions

Directions for those driving from out of town (for more information see <http://www.uwfox.uwc.edu/aboutfox/UWFoxMaps.pdf>).

### From North (e.g. Green Bay)

- Take US-41 South to the WI-441 South (Exit 145).
- WI-441 to Oneida Street Exit. Turn left (south) onto Oneida Street.
- Continue south on Oneida Street for 0.2 miles to the intersection of Oneida and Midway Road.
- Turn right (west) on Midway Road and proceed 0.3 miles to University Drive.
- Turn right on University Drive and proceed to the campus parking lot entrance.

### From South (e.g. Oshkosh)

- Take US-41 North to Exit 134 onto US-10 E/WI-441.
- Cross the Little Lake Butte des Morts bridge to the Appleton road (47) Exit.
- Turn right (south) on Appleton road and proceed to Midway Road.
- Turn left (east) on Midway Road and proceed to University drive.
- Turn left on University drive and proceed to the campus parking lot entrance.

### From East (e.g. Manitowoc)

- Take WI-114/US-10 West to the stoplight at Oneida Street.
- Turn right (North) onto Oneida Street, proceeding 2 miles to Midway Road.
- Turn left (west) onto Midway Road and proceed 0.3 miles to University Drive.
- Turn right on University Drive and proceed to the campus parking lot entrance.

### From West (e.g. Stevens Point)

- Take WI-10 East (becomes WI-10/441 as it crosses US-41).
- Cross the Little Lake Butte des Morts bridge to the Appleton road (47) exit.
- Turn right (south) on Appleton road and proceed to Midway Road.
- Turn left (east) on Midway Road and proceed to University drive.
- Turn left on University drive and proceed to the campus parking lot entrance.

## You Can Be a Part of 2YC<sub>3</sub> An Invitation for Submissions to the 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. *Do you have an interesting and relevant story to tell about your past 2YC<sub>3</sub> experiences?* 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.

I would ask that submissions be fairly short so that we can include more in the newsletter. 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. I look forward to hearing from you!

### **Deadlines for submissions for 2014:**

Issue III (due out mid-July 2014): June 15, 2014

## THE ENERGY OF LIGHT



Students use **MicroLab's Model 214 Energy of Light module** to measure the band-gap energy of a series of visible and IR LED's.

They can visualize, understand, and quantify the relationship between energy, color, wavelength, and frequency of light.

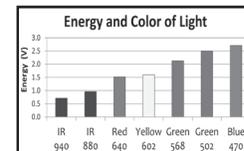
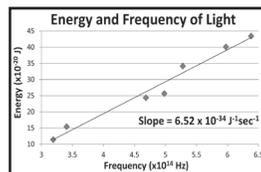
The 214 can be used with a MicroLab FS-522, or as a "stand-alone" experiment or demo using an inexpensive digital voltmeter readout.

### **Concepts Students Can Develop:**

- Energy of light increases IR to violet.
- Energy is inversely proportional to wavelength.
- Energy is directly proportional to frequency.

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## 207<sup>th</sup> 2YC<sub>3</sub> Conference (*Tentative*)

Conference Announcement/Call for Papers (*Tentative*)

### *Since Sputnik-Exploring e<sup>5th</sup> : Entropy, Energy, the Environment, the Extraordinary, and Exodus Earth through Chemistry*

October 3-4, 2014 (*Tentative*)

Florida State College at Jacksonville (*Tentative*)

North Campus (*Tentative*)

4501 Capper Road

Jacksonville, FL 32218

**Please note our hosting this event is still tentative awaiting administrative approval of our new President as of February 1. Please check the 2YC<sub>3</sub> Website for the latest updates.**

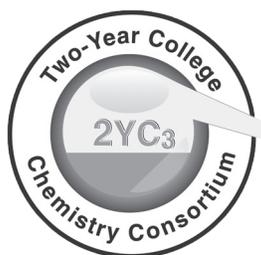
We would like invite 2YC<sub>3</sub> faculty and friends to join us the celebration of the 57<sup>th</sup> anniversary of the event that rocked the world in 1957: Sputnik (October 4<sup>th</sup>, 1957). We have selected a theme to take us from 1957 to 2057 through the eyes of the chemical world and faculty who teach chemistry. We are currently looking for colleagues who would like to contribute to our program by giving a presentation, leading a workshop, or participating in panel discussions. We especially encourage topics related to our theme: *Since Sputnik Exploring e<sup>5th</sup> : Entropy, Energy, the Environment, the Extraordinary, and Exodus Earth through Chemistry*. (I have my college chemistry text published in 1957: 1<sup>st</sup> edition of Keenan and Wood to share with the participants) What will we be teaching in 2057? Will we own the water, the food, and the energy to continue as a world power? What role will chemistry play if we again try to leave earth for the moon, Mars, or the stars. If you would like to present on a different topic, please do not hesitate to submit an abstract, as we encourage as diverse a program as possible. We are also planning the Friday night event at our MOSH (Museum of Science and History) located near downtown Jacksonville.

Please contact either of the program co-chairs (*Tentative*):

John Taylor            [John.Taylor@fscj.edu](mailto:John.Taylor@fscj.edu)

Kathleen Laurenzo    [Kathleen.Laurenzo@fscj.edu](mailto:Kathleen.Laurenzo@fscj.edu)

Joseph Langat        [Joseph.Langat@fscj.edu](mailto:Joseph.Langat@fscj.edu)





**23<sup>rd</sup> BCCE**  
**at**  
**Grand Valley State University**

***Greener on the Grand:***  
***Empowering Chemical Educators for a Greener Tomorrow***

<http://www.bcce2014.org/>

**2YC<sub>3</sub> co-chairs**

Bal Barot

Tom Neils

Michele Turner

The Biennial Conference on Chemical Education (BCCE) is a national meeting sponsored by the Division of Chemical Education (DivCHED) of the American Chemical Society (ACS). It is designed for those who teach chemistry at all levels: secondary school science teachers, undergraduate and graduate students, and post-secondary chemistry faculty. The Conference provides anyone teaching chemistry opportunities for interacting with like-minded colleagues in both formal and informal settings. Teachers who are about to launch their careers, those who are new to teaching chemistry, and those who have teaching experience will find this conference to be an excellent source of materials, techniques, and chemistry content. The BCCE helps teachers make connections with others equally committed to teaching chemistry. The Department of Chemistry at Grand Valley State is proud to host the 23<sup>rd</sup> BCCE, ***Greener on the Grand: Empowering Chemical Educators for a Greener Tomorrow***, from August 3 – 7, 2014. Sherril Soman is the general chair of the conference.

Visit and bookmark the 23<sup>rd</sup> 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 August, 2014. Any questions, program ideas, or general suggestions for any of the BCCE program chairs can be sent to the BCCE email address, [bcce2014@gvsu.edu](mailto:bcce2014@gvsu.edu).



## 2YC<sub>3</sub> Conference Announcement

Call for Papers

### *Metacognition: Thinking About Chemistry*



**NOVEMBER 14-15 2014**



San Jacinto College  
8060 Spencer Hwy.  
Pasadena, TX 77505

**Keynote speaker: Dr. David Eagleman, Professor of Neuroscience, Baylor University and author of a New York Times bestseller *Incognito: The Secret Lives of the Brain*.**

We are seeking colleagues who would like to contribute to our conference program with presentations addressing metacognition and student success strategies. Workshops, panel discussions, and other presentation styles are welcome on various topics. The deadline to submit an abstract is August 1, 2014.

*About San Jacinto College: The College is located near the greater Houston area and enrolls more than 30,000 students. Nearby landmarks include the NASA's Johnson Space Center, the Texas Medical Center – world's largest hospital, and a nationally recognized museum district with over 25 museums in the area.*

Contact Program Chair: Rachel Garcia    email: [rachel.garcia@sjcd.edu](mailto:rachel.garcia@sjcd.edu)    phone: 281-476-1501 X1665

## 2YC<sub>3</sub> Election Results

Commentary by Pam Clevenger, Past Chair 2YC<sub>3</sub> COCTYC 2013

The election results are totaled and I am pleased to announce that Tamika Duplessis, Delgado Community College, has been elected Chair-Elect 2015 and Jon Gittins, Delta Community College, has been elected to the Newsletter Editor position. As officers rotate in, I would like to thank Lance Lund (Past Chair) and Jim Schneider (Newsletter Editor) for many great years of service on the executive committee of 2YC<sub>3</sub>. Serving as an officer in a volunteer organization like 2YC<sub>3</sub> takes an incredible amount commitment, determination and support from the membership. Lance and Jim – Y'all are just GREAT!

At the 203<sup>rd</sup> conference in Memphis, COCTYC voted to restructure the Regional Advisory Boards (RAB) into Task Advisory Boards (TAB). As past chair, I will begin to identify needs that groups of our membership can work towards and then define the actions to accomplish these goals. This is a work in progress and also a great way to get involved in 2YC<sub>3</sub>.

**Vincennes University**  
**Committee on Chemistry in the Two Year College**  
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Vincennes, Indiana 47591-5201

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**Neil Bastian, CHAIR**  
**Jim Schneider, EDITOR**  
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**IN THE TWO-YEAR COLLEGE**  
Division of Chemical Education  
American Chemical Society

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