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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 I sit down to write my final “Notes from the Chair” I realize that my time as Chair of 2YC₃ is coming to a close. It has been a wonderful year filled with interesting conferences and delightful interpersonal interactions. Thank you all for your contributions, your passion, and your hard work. It has been a great experience for me to work with you. Of course I am not going away, just changing roles. Please plan to join us at a conference next year. You can choose between Colorado, Hawaii, Missouri, and Virginia.

As I have pondered my topic for this last essay my mind kept returning to an unsettling experience I had earlier in the year. On entering a lab taught by a colleague I noticed a student wearing shorts. As I looked around at the other students, I observed that another student was wearing flip-flops and that several others were wearing their eye protection on their forehead. I located the teacher and pointed out the problems to which the instructor replied “Oh yes, I have corrected them but they don’t listen to me.”

A couple of recent high profile accidents in Texas and California have brought the issue of safety in academic labs into the limelight (see C&EN 89:43; Oct 24, 2011; pp 25-27 and C&EN 91:34; Aug 26, 2013, pp 21-23; and C&EN staff writer Jyllian Kemsley’s blogs). While both of these accidents happened in research settings, the consequences involve anyone doing lab work in any setting. In the California case both the University of California (UC) system and the professor in charge of the lab where the accident occurred were charged with felony violations of the California labor code. The charges against the UC system were dropped when the UC system struck a deal with the prosecutors that involved a significant enhancement of the lab safety program on all UC campuses. Charges against the professor were recently dropped but involved a fine, community service, and his agreement to maintain a safe lab. While some

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Chemistry for Life®



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208th CONFERENCE

November 14-15, 2014

San Jacinto College

Pasadena, TX

Contact: Dolores Aquino

Email: dolores.aquino@sjcd.edu

209th CONFERENCE

March 20-21, 2015

Front Range Community College

Westminster, CO

Contact: Denis Kissounko

Email: denis.kissounko@arapahoe.edu

210th CONFERENCE

May 22-23, 2015

Windward Community College

Honolulu, HI

Contact: Christopher Guay

Email: cguay@hawaii.edu

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

think the professor was treated lightly, none of us would have enjoyed being in his shoes for the nearly six years of the court case. The important idea here is that the law is not on the side of the instructor if established safety practices are not followed.

Whenever one of my students comes to a lab inappropriately dressed or unprepared it brings to mind an experience I had in graduate school. I had the opportunity to conduct some x-ray spectroscopy experiments at the Cornell High Energy Synchrotron Source. In the space where we working there was no ceiling and there was potential for exposure to high intensity x-rays above the wall height. On one occasion as I was setting up some equipment I was standing on a chair. An employee came by and told me that I needed to get down off the chair for my own safety. I replied, “I’m being careful.” To which the employee said, “No, you’re being stupid.” After about five minutes of anger I realized that he was right, I was being stupid. Bending or breaking safety rules is always just plain stupid.

At the beginning of every semester each of us discuss safety issues with our students but occasionally the students forget. These forgetful students often plead that they will be careful if they are allowed to stay and complete

the assignment. But staying is stupid, careful means that they leave and return next time better prepared to work in the lab. So, how can we learn and strictly enforce safety procedures? Most of us in the two-year college chemistry community don’t need specialized safety equipment or advanced safety training, we just need to focus on basic training and strict adherence to general safety procedures. Let me suggest some places to begin.

First, focus on your own safety awareness. Make sure you have completed all the safety courses offered by your school and/or state. Assess your workspace, make sure you have all the necessary safety equipment, that it is in good working order, and that you know how to use it. Make safety a priority in your classes and make sure that you are setting a proper example for your students. Learn about waste management and teach your students to dispose of their wastes properly. Regularly read about safety, a good place to start is a short two volume pamphlet entitled “Safety in Academic Chemistry Laboratories” published by ACS. Other resources are referenced in “Safety Resources for Postsecondary Educators” available from the ACS Office of Two-Year colleges. You can find still more information at www.acs.org/safety or www.acs.org/2YColleges (click on “Chemical safety” link).

Second, make sure you have administrative support. If your administration won’t back you if you discipline a student for safety violations I doubt they will support you if there is an accident. Point out the consequences of unsafe practices, have your administrators read the articles quoted above.

Third, get student buy-in. Students understand that safety practices are for their own good but the “it won’t happen to me” mentality still can govern their actions. Be firm. I have had to send students home from lab because they weren’t dressed properly. It is never comfortable but I haven’t had to do it twice in any class. As soon as students see that you are serious they become very good at remembering that they need to follow the outlined safety procedures.

Finally, don’t compromise on safety. If you are always safety conscious your students will pick up on it and follow suit. If you are unsure on proper procedures take the time and effort to learn. Make sure you understand and follow your institutions chemical hygiene plan. If you don’t have a chemical hygiene plan you can volunteer to help write one.

I admit that safety is not an exciting topic, nevertheless, safety is integral to what we do as chemistry teachers. Let’s make sure that as we teach we are always careful and never stupid. - Neil

Safety Resources for Postsecondary Educators

ACS policies, publications, and information

- Chemical Safety Practices & Recommendations
www.acs.org/safety
- The Safety Zone
cenblog.org/the-safety-zone
- ACS resources
www.acs.org/education (follow the path, Standards & Guidelines> Safety Guidelines>Chemical Health and Safety Resources)

ACS short courses

proed.acs.org

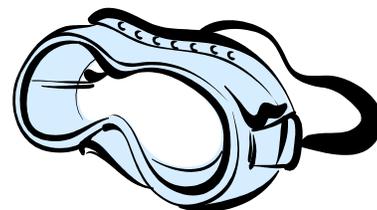
- Laboratory Safety
- Laboratory Safety & Health
- Ecological Risks of Chemicals

ACS units

- ACS Committee on Chemical Safety (CCS)
www.acs.org/safety
- ACS Division of Chemical Health & Safety (CHAS)
www.dchas.org

External resources

- Dow Safety Academy*
safety.dow.com/en
- Flinn Scientific Inc. Safety*
labsafety.flinnsci.com/Home.aspx
- Harper College Safety Resources*
dept.harpercollege.edu/chemistry/safety.html
- Laboratory Safety Institute*
www.labsafetyinstitute.org
- Occupational Health and Safety Administration (OSHA) fact sheets*
www.osha.gov/pls/publications/publication.html
- *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Version (2011)**
www.nap.edu/catalog.php?record_id=12654



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**208th 2YC₃ Conference
Program Information**

Metacognition: Think About It

November 14-15, 2014

San Jacinto College

8060 Spencer Highway, Pasadena, TX 77505

Program Co-Chair:	Dolores Aquino	dolores.aquino@sjcd.edu
Program Co-Chair:	Rachel Garcia	rachel.garcia@sjcd.edu
Local Arrangements Co-Chair:	Ann Cartwright	ann.cartwright@sjcd.edu
Local Arrangements Co-Chair:	Elisabeth Harthcock	elisabeth.harthcock@sjcd.edu
Exhibits Co-Chair:	Joyce Miller	joyce.miller@sjcd.edu
Exhibits Co-Chair:	Thomas José	thomas.jose@blinn.edu

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 “Metacognition: Think About It”. 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. The due date for submitting abstracts is October 20, 2014.

Friday Keynote Address: The Friday keynote address will be “Livewired: How the brain learns and remembers” by Dr. David Eagleman, Baylor College of Medicine, Author of the New York Times Bestseller “Incognito: The Secret Lives of the Brain”.

Friday Banquet: The Friday evening banquet will be held at Cullen’s Upscale American Grill. Ms. Pamela J. McInnis, Laboratory Director at the Pasadena Police Department Regional Crime Laboratory, will give the address, titled “Inside the Crime Lab”.

Saturday Keynote Address: The Saturday keynote address will be “Making Chemistry Relevant” by Dr. Nivaldo Tro, Professor of Chemistry, Westmont College. This will be sponsored by Pearson Higher Education.

Other highlights:

Tour of the NASA Neutral Buoyancy Laboratory (limited availability)

“Creativity in the Classroom” workshop facilitated by a panel of Chemistry faculty from Collin County College.

“The 18 Year Old Brain,” Karen Hattaway, QEP Director, San Jacinto College.

“Psychology of Teaching” workshop facilitated by Allison Montalvo, Psychology Department, San Jacinto College.

“Technology in the Classroom” workshop facilitated by a panel of faculty from San Jacinto College.

“Laboratory Instrumentation” presented by Microlab and ThermoScientific

“Assessment: An ACS Resources for Excellence Workshop”

Airports/Airlines: Houston has two major airports – George Bush Intercontinental Airport, and William P. Hobby Airport. Together they form one of North America’s largest public airport systems and position Houston as the international gateway to the south central United States.

The airport closer to the conference is Hobby Airport (Code: HOU). It is primarily served by Southwest Airlines.

Bush Intercontinental Airport (Airport Code: IAH) is a main hub for United Airlines, though service is available on nearly every major airline.

See the conference website for directions to the hotels and to the college.

Lodging: The Hampton Inn & Suites Houston/Pasadena is accommodating 2YC₃ travelers with a special rate of \$118. Reservations can be made directly by calling (281)-998-3300 and asking for the 2YC₃ conference rate. Shuttle service is available to attend the Friday night banquet. (This hotel is 4.5 miles from the college.)

The Hilton Houston NASA Clear Lake Hotel is also accommodating 2YC₃ travelers with a special rate of \$99. Reservations can be made directly by calling (281)-333-9300 and asking for the 2YC₃ conference rate. (This hotel is 11 miles from the college.)

Program: For up-to-date conference program and other important details access the conference web site at: <http://www.sanjac.edu/2yc3-208th-conference> (or scan the QR code below).

Registration: Register for the conference at <http://2yc3.org/registration208.htm>.



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<http://www.facebook.com/twoyearchem>

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Twitter:

twitter.com/2yc3

Get short, timely messages from 2YC₃. 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”.



An Invitation for Submissions to the Chemistry Outlook

From the Editor: Any and all members of 2YC₃ may 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 2YC₃ 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.*

Submissions should 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!

The deadline for Volume I (2015) is December 15, 2014.

**209th 2YC₃ Conference
Conference Announcement
Call for Papers**

Chemistry Education Resources

March 20-21, 2015

**Front Range Community College - Westminster Campus
3645 West 112th Avenue, Westminster, CO 80031**

We currently are looking for colleagues who would like to contribute to our program by giving a presentation, leading a workshop, or participating in a panel discussion. We especially encourage topics related to our theme “Chemistry Education Resources”. 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. The due date for submitting abstracts is March 6th, 2015.

The latest conference updates will be available on the 209th conference website:
<http://www.2yc3.org/php/meetings.php>

Conference Chairs

Denis Kissounko
Jason Jadin

denis.kissounko@arapahoe.edu
jason.jadin@rctc.edu

**Get a Jump Start Using the ACS Assessment Tool for Chemistry in Two-Year College Programs:
A Resources for Excellence Workshop**

You are invited to stay connected and develop solutions for excellence at the upcoming workshop, “Get a Jump Start Using the ACS Assessment Tool for Chemistry in Two-Year College Programs.” Two-year programs are under increasing pressure to perform self-assessments and document their outcomes. The ACS Assessment Tool for Chemistry in Two-Year College Programs is a resource to help your institution identify strengths and opportunities for growth in the context of the ACS Guidelines for Chemistry in Two-Year College Programs.

During this workshop, the assessment tool will be presented along with data as to how institutions use the assessment tool. Additional ideas on how to use the assessment tool will be discussed, and participants will have a chance to start working on a section of the assessment tool. Participants will leave with an action plan to complete part or all of the assessment tool. Our goal is to decrease the activation barrier for using the assessment tool.

“Get a Jump Start Using the ACS Assessment Tool for Chemistry in Two-Year College Programs“ will take place at the 209th Two-Year College Chemistry Consortium (2YC₃) in Westminster, CO, March 20-21, 2015. Conference attendees can participate for free.

Workshop Facilitators

Heather Sklenicka, Rochester Community and Technical College, Chair, Assessment Review Panel,
Email: Heather.sklenicka@rctc.edu

Olga Katkova, Truckee Meadows Community College, Co-Facilitator, Resources for Excellence Workshop
Email: okatkova@tmcc.edu

**210th 2YC₃ Conference
Conference Announcement
Call for Papers**

Chemistry for a Sustainable Future
May 22-23, 2015
Windward Community College
45-720 Kea'ahala Rd., Kāne'ōhe HI 96744

We invite our colleagues to contribute to our program by giving a presentation, leading a work-shop, or participating in a panel discussion. We especially encourage topics related to our theme "Chemistry for a Sustainable Future", but we welcome other topics as well in order to create as diverse a program as possible.

Check our conference website for the latest updates and information:
<http://windward.hawaii.edu/2yc3/index.html>

Please send abstracts and requests for further information to the Program Chairs:

Leticia Colmenares

leticia@hawaii.edu

Christopher Guay

cguay@hawaii.edu

Topics in the General Chemistry Sequence

DeeDee Allen, Ph.D.

Natural Sciences Department

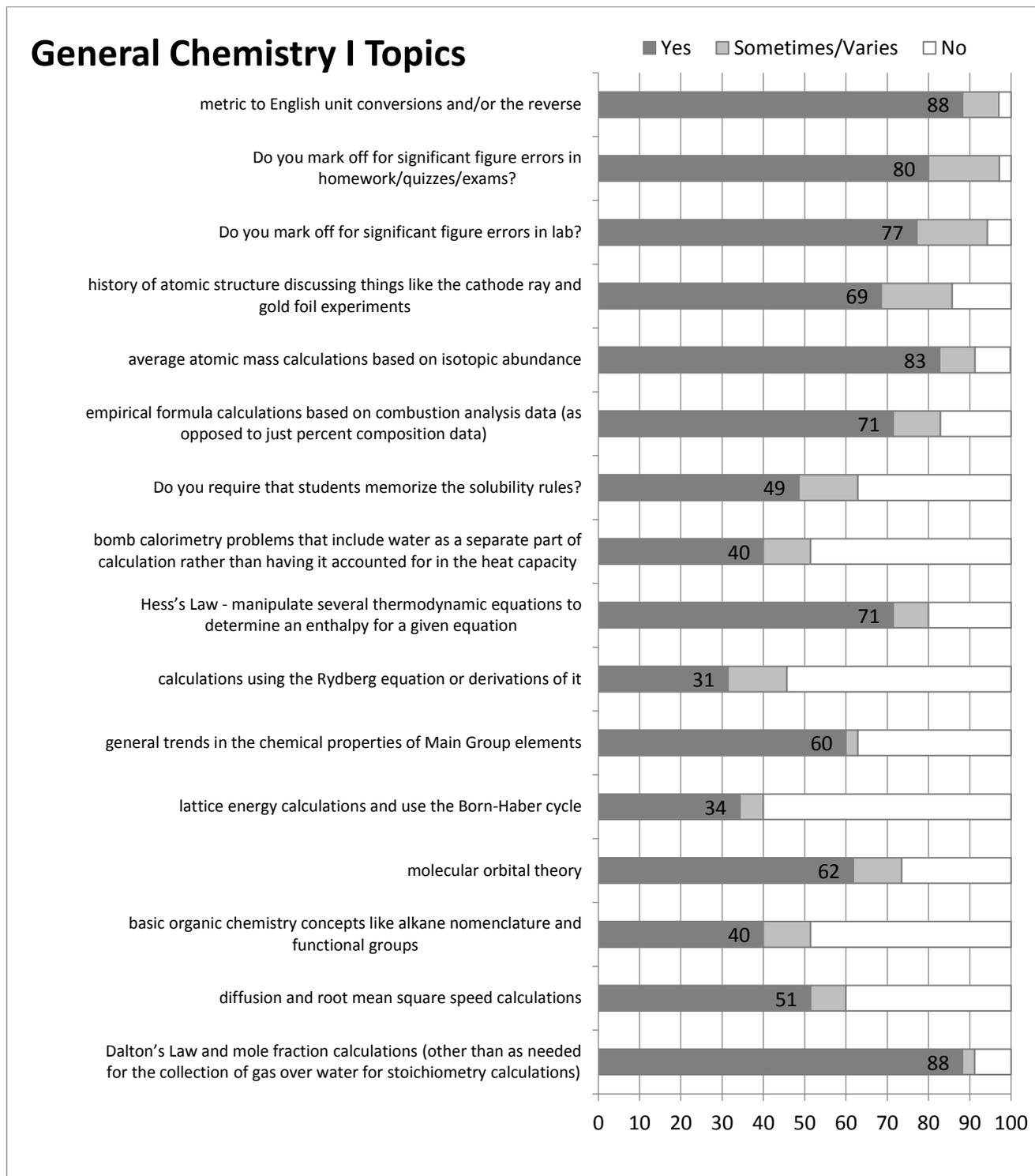
Wake Technical Community College, 9101 Fayetteville Rd., Raleigh, NC 27603

Wake Tech recently initiated an applied benchmarking project in which employees identify a problem and contact outstanding folks in the field to determine best practices. One of my projects addressed a question about what topics my peers are covering in general chemistry. We all know that there are a few areas in chemistry where topic coverage can greatly vary. For example, some instructors may go into great detail about weak acid/strong base titrations and calculate the pH at incremental additions of titrant and some may only cover these titrations conceptually. In order to answer the question about what my peers are covering, I immediately turned to the wonderful instructors involved in 2YC₃. I used an old contact list from the conference we held in 2010. Several of the participants asked me to share the results when I got them, but I think it is interesting information for all of us.

The survey was created using Survey Monkey and the link was sent to 274 faculty in the Southern Region. There were 33 responses from nine different states including Arkansas, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, and Texas. Obviously, that is a low participation rate, but still a good representation.

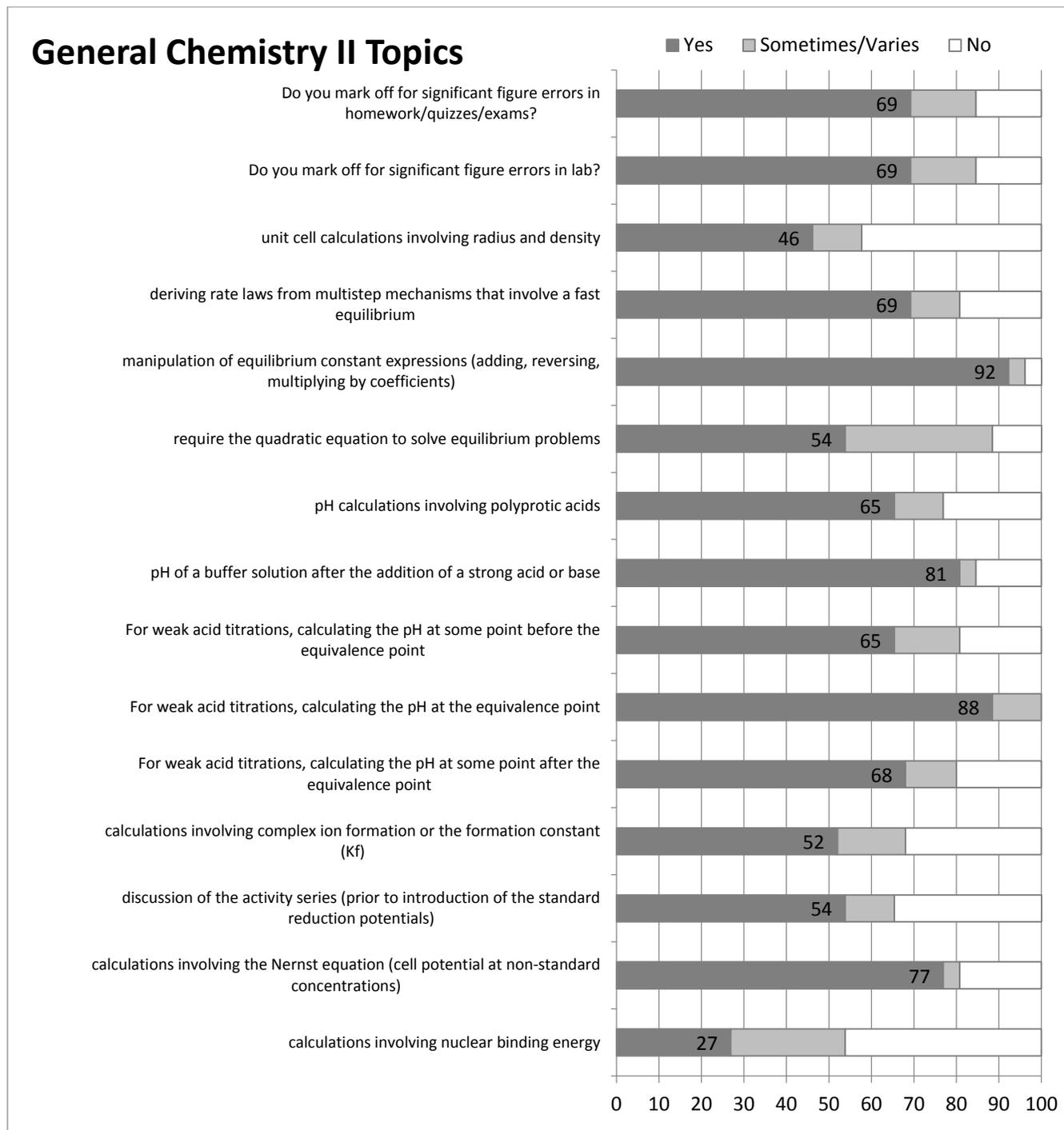
Topics in the General Chemistry Sequence (continued from page 9)

Figure 1. Responses to the question 'In your General / College Transfer Chemistry Level One course, do you require your students to be able to demonstrate knowledge of the concepts listed below?'



Topics in the General Chemistry Sequence (continued from page 10)

Figure 2. Responses to the question ‘In your General / College Transfer Chemistry Level Two course, do you require your students to be able to demonstrate knowledge of the concepts listed below?’



After analyzing the results of the survey for about 30 topics that span the General Chemistry sequence, I found that I am right on target for things that my peers do and do not emphasize in their classes. However, there were a few areas where I found I need to devote more attention. I hope a few of you find this information useful.

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Jon Gittins, EDITOR
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