



**AMERICAN CHEMICAL
SOCIETY**

PERMIAN BASIN SECTION

Newsletter

Volume 7, Number 2

September, 2014



Letter from the Chair:

The first half of this year seems to have zipped by at warped speed. I hoped all of you had a nice and enjoyable summer. The Memorial Day weekend brought us some needed rain, and we ended up with a great crop of weeds! I hope you had some rain this summer.

Many of you already may have heard or read about the safety alert regarding the “Rainbow” demonstration. The ACS Committee on Chemical Safety needs our help to get the message out to high school science and university teachers. The full alert may be found later in the newsletter. Your assistance in getting this information out will be greatly appreciated.

The American Association of Chemistry Teachers (AACT) officially launched September 2, 2014. Membership is open to educators and anyone with an interest in K-12 chemistry education. More information may be found at <http://teachchemistry.org/>.

The local section is working on the scheduling for speakers. Once we have the logistics worked out, we will announce them.

We will be holding our annual election in November. If you are interested in running for chair-elect (or chair, since we had no chair-elect this year) for 2015, let us know. If you have any questions about any of the board positions, please do not hesitate in contacting us. As always, our contact information may be found at the end of the newsletter.

The local section has other projects in the incubator and will keep you informed as they develop. Feel free to contact me if you have any suggestions or problems.

Dr. Kathryn Louie
klouie@suddenlink.net

Councilor Corner

Highlights from the 2014 Fall ACS National meeting:

1. On the recommendation of the Committee on Budget and Finance, the Board voted to approve an advance member registration fee of \$390 for national meetings held in 2015.
2. The new Meeting Abstracts Programming System (MAPS) will launch August 25 in preparation for the Denver National Meeting. Regional Meetings and specialty conferences will use MAPS starting in January 2015.
3. The Council voted to approve the Professional Employment Guidelines.
4. The Committee on Meetings and Expositions reported that 11,847 papers were accepted for the 248th National Meeting in San Francisco. As of August 13th, total attendance was 15,761. The Exposition had 432 booths with 285 exhibiting companies.
5. The American Association of Chemistry Teachers (AACT) is now accepting members and will officially launch September 2, 2014. Membership is open to educators and anyone with an interest in K-12 chemistry education.

A detailed report may be found on the website <http://permianbasin.sites.acs.org/>

Upcoming Local Meetings, Events, and Announcements

We're still working on lining up some speakers for the Permian Basin section in the fall. Updates will be posted on the Permian Basin web page (<http://permianbasin.sites.acs.org/>) when we have something scheduled.

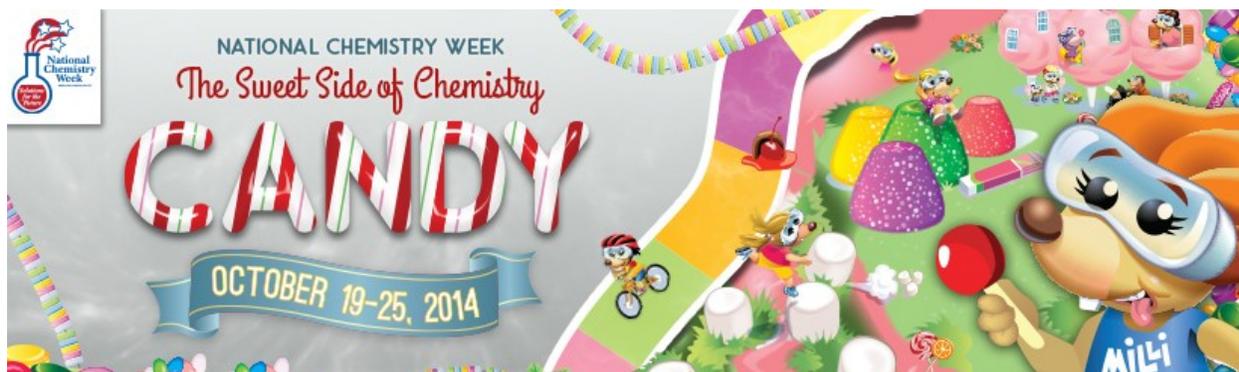
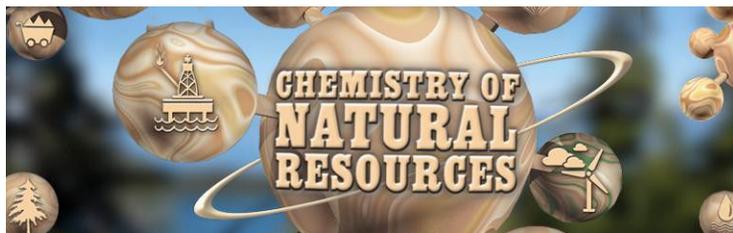
Officer elections for the Permian Basin section will be held in November. Please contact one of the current officers if you're interesting in running.

Upcoming National and Regional Meetings and Programs

2014 Southwest Regional Meeting
Fort Worth, Texas, USA
Renaissance Worthington Hotel
November 19 - 22, 2014



**249th ACS National Meeting &
Exposition – Spring 2015**
Denver, Colorado, USA
March 22-26, 2014
**Theme: Chemistry of Natural
Resources**



This year, National Chemistry Week will run from October 19 to October 25. The theme of NCW this year is “The Sweet Side of Chemistry: Candy,” which should be welcome news to any chemist with a sweet tooth (and possibly unwelcome news to those on diets!).

Permian Basin News

Mr. Kevin Boudreaux from Angelo State University performed some chemistry demonstrations at the Stephens Central Library in downtown San Angelo during four weeks in June, as part of the Library’s “Fizz Boom Read” summer program. The audience at each of the shows consisted of about 100 to 150 children and parents. The kids were entertained with Elephant Toothpaste, the Blue Bottle and Traffic Light color-change demos, a homemade Lava Lamp, a simple Vinegar/Baking Soda Rocket, the Nonburning Dollar, Luminol, the Ethanol Poppun, the Jet Engine, Guncotton, and even a Hydrogen Balloon. (Setting fires in a library, though, is a good way to experience a *Fahrenheit 451* flashback!)

Angelo State University (ASU) chemistry students and faculty hosted an Art and Science Family Day on Saturday, April 12, at the San Angelo Museum of Fine Arts (SAMFA). This also coincided with the opening weekend of the 20th San Angelo National Ceramic Competition.

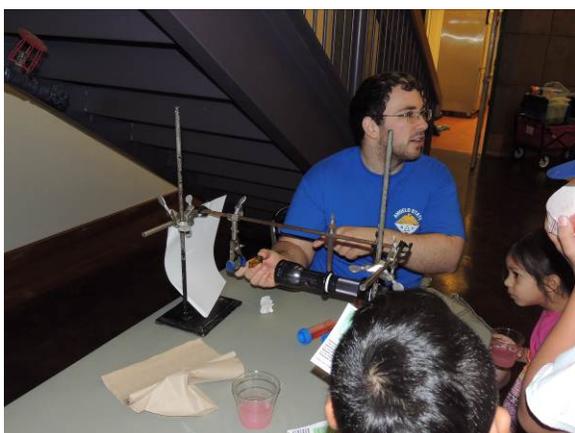
The students led tours of the SAMFA's galleries and talked about the connections between art and chemistry. There were also tables set up with activities relating to art and science, and a couple of Magic Shows.



Porcelain and Ceramics



A Fiestaware plate with uranium glazing



A homemade spectrometer



Magic Show



Blue Bottle



Lava Lamp



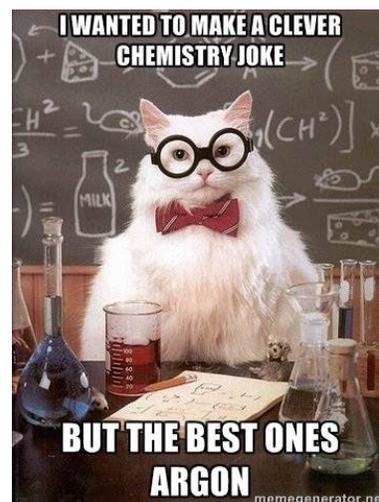
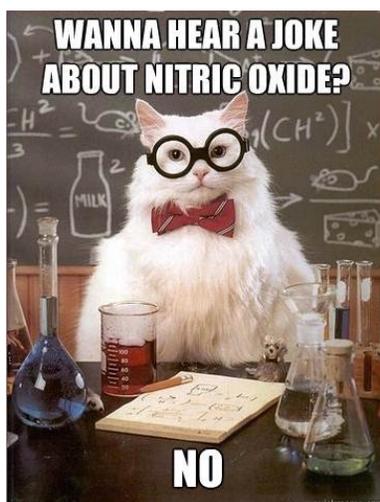
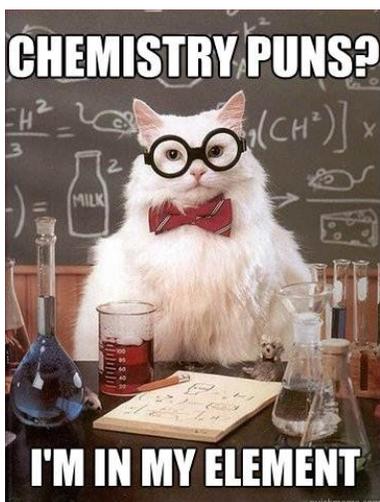
Jet Engine



Guncotton

Chemists Just Want To Have pHun

A few jokes from the Chemistry Cat:



A Chemical Thought

We don't know what astatine looks like, because, as [Derek] Lowe put it, "that stuff just doesn't want to exist." It's so radioactive (with a half-life measured in hours) that any large piece of it would be quickly vaporized by its own heat. ... There's no material safety data sheet for astatine. If there were, it would just be the word "NO" scrawled over and over in charred blood.

Randall Munroe, *What If?: Serious Scientific Answers to Absurd Hypothetical Questions* (2014)
"Periodic Wall of the Elements"

Permian Basin ACS Local Section Officers 2014

<p>Chair: Dr. Kathryn Louie Angelo State University phone: (325) 942-2181 e-mail: klouie@suddenlink.net</p>	<p>Treasurer: Dr. Kyle Beran University of Texas of the Permian Basin phone: (432) 552-2238 e-mail: beran_k@utpb.edu</p>
<p>Secretary: Mr. Kevin Boudreaux Angelo State University phone: (325) 942-2181 ext. 6623 e-mail: kevin.boudreaux@angelo.edu</p>	<p>Alternate Councilor: none at the moment</p>
<p>Councilor: Dr. Kathryn Louie Angelo State University phone: (325) 942-2181 e-mail: klouie@suddenlink.net</p>	

If you have news about local activities, student activities, new employees, new members, good (or bad) science/chemistry jokes, or any other events related to the local section that you want to be included in the newsletter, please send the information to Kevin.Boudreaux@angelo.edu.

Safety Alert Rainbow Demonstration



On January 2, 2014, a demonstration known as the “Rainbow” experiment using a flammable solvent on an open bench resulted in a tragic incident with two high school students from New York being burned. In early December 2013 the U.S. Chemical Safety and Investigation Board (CSB) released a video that featured Calais Weber, a burn victim of a similar demonstration in 2006 (www.csb.gov/videos/after-the-rainbow). The video emphasized that the incident was preventable – safer practices were not followed.

The “Rainbow” demonstration performed on an open bench using a flammable solvent is a high risk operation. When this “Rainbow” is carried out on an open bench, the conditions for a flash fire or deflagration are easily met – a fuel, oxygen, and a source of ignition. Highly flammable solvents, such as methanol, can produce heavier-than-air vapors that move across surfaces and down toward the floor where they spread undetected among unsuspecting viewers of the demonstration. A flame, spark, or even very hot surfaces can ignite the vapors resulting in a sudden flash fire or worse if a nearby open container of solvent is located. Laboratory operations involving flammable solvents should be carried out in a properly functioning chemical hood – not on an open bench. Even carrying out this demonstration in a chemical hood poses risks if fuel sources are not controlled, but doing this in a hood is surely safer than an open bench. Teachers, having an inadequate understanding of the hazards and risks presented by this demonstration, put themselves and their students at unnecessary risk during the conduct of this demonstration.

We chemists all love chemistry and we know the great satisfaction and reward that chemistry has provided to us and we want to share it with our younger generation. Many of us have seen the joy of students with great demonstrations that thrill and grab their interests in chemistry and science. However, this demonstration presents a conundrum for teachers – it offers the “wow” factor that interests and delights students, but this demonstration carries with it, a “whoa” factor of very

significant risk to students and teachers. The “whoa” factor clearly outweighs the “wow” factor for this demonstration.

We – the American Chemical Society (ACS) Committee on Chemical Safety – need your help in getting a message out to high school science teachers and university teachers to prevent further injuries from this Rainbow Demonstration. The ACS alone simply cannot reach all of our nation’s science teachers without your help. We are asking you to pass on the following message to your local science-chemistry teachers in high schools or colleges – please do not assume that they have gotten this message:

Safety Alert – Stop Using the Rainbow Demonstration

The American Chemical Society Committee on Chemical Safety recommends that the “Rainbow” demonstration on open benches involving the use of flammable solvents such as methanol be discontinued immediately. When carried out on open benches (outside of a chemical hood) these demonstrations present an unacceptable risk of flash fires and deflagrations that can cause serious injuries to students and teachers. On an open bench, invisible flammable vapors can flow across and off of the bench to the floor where they can be ignited by a flame, a spark (even static electricity), or even a hot surface. Even carrying out this demonstration in a hood poses risks if solvents are not adequately controlled. If you are considering this “Rainbow” demonstration or have used it in the past, we urge you to stop using this demonstration. There are alternatives available that demonstrate the same rainbow colors but don’t use flammable solvents on an open bench. These alternate demonstrations involve soaking wooden splints in salt solutions and then placing the splints in a Bunsen burner to observe the salt’s characteristic color.

Rainbow Demonstration Alternatives

- [Flame Tests without Nichrome Wire](#)
New Zealand Association of Science Educators, *Science Teacher* 2011, Number 126, p. 45
- [University of Manitoba, Flame Tests, Atomic Spectra & Applications Activity, C12-2-02&03 The](#)
- [Flame Test Student Work Sheet](#)