

# American Chemical Society – Kalamazoo Local Section Newsletter

August 5, 2014

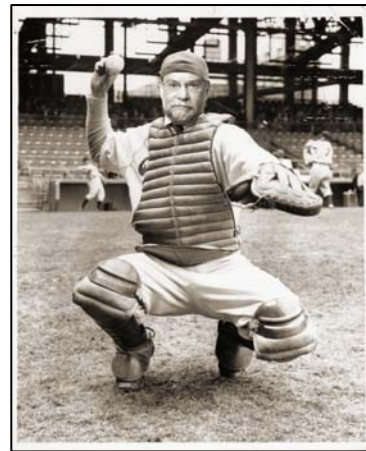
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## Chemistry of Baseball

John H. Engelmann

The baseball season is here. Baseball is all about striking out, flying out, base hits, runs batted in, and of course home runs. What makes baseball possible? It is leather and wood. The bat is wood and it receives a varnish treatment before use. The player's gloves are leather. The baseball itself is covered in leather.



John H. Engelmann, Ph.D.  
(KACS Chair)

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We take leather for granted, but where does it come from? Leather starts out as an animal hide. In baseball, the animal is often a cow or a steer. However, kangaroo hide is also used. The fresh animal hide is dried in salt to preserve it before it can be tanned. The tanning process begins by treating the animal skin with  $\text{CaCO}_3$  or  $\text{NaOH}$ , and scraping to remove the hair and any fat. The skin is soaked in water to remove the basic reagents. Bacterial growth during the soaking period is prevented by biocides such as dithiocarbamates. Fungicides, such as TCMBT, that is, 2-(Thiocyanomethylthio) benzothiazole, are used to protect wet hides from mold growth.

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KACS website: <http://kalamazooacs.org/>

Do you have questions, comments, or would like to contribute to this newsletter?  
Send an email to: [ACSkzoo@gmail.com](mailto:ACSkzoo@gmail.com)

# Miscellaneous

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Tanning can be performed by either vegetable or mineral methods. Vegetable tanning involves treating the hide with tannin. Tannin is a bitter plant polyphenolic compound that binds to and precipitates proteins. Mineral tanning involves treating the hide with chromium III salts. Either way the product is leather. Without chemistry we would have no leather. Without leather we would have no baseball. Without baseball where would America be?

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## Volunteer your Time and Expertise

By Lydia Hines

### [Share Science as a Chemistry Ambassador](#)

You can help kids learn to understand and love science as a [Chemistry Ambassador](#), and ACS is ready to help you do it. You may volunteer with youth groups, summer camps, and scouts in your community - the Chemistry Ambassadors program has tips and resources to support outreach to your neighbors or students in your area. In addition to the many sample experiments offered by the Chemistry Ambassadors program, the ACS National Office has a limited number of free "Kids & Chemistry" kits you can request if you wish to conduct hands-on activities with groups of up to 32 kids. Find out more information about the kits and [order one today](#). Once you experience the rewards of helping youngsters learn about chemistry, consider doing it again. The Chemistry Ambassadors program makes it easy to stay involved, whether you have a lot of time, or just a little. Visit [www.acs.org/chemistryambassadors](http://www.acs.org/chemistryambassadors) to get more details and get started!

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# DowBQ Report

By Amanda Bolles

On May 29th, 2014, the Kalamazoo College Chemistry Club held their annual DowBQ, where students and faculty socialize while eating some great food and playing yard games. The DowBQ gets its name from the fact that both Chemistry and Biology majors are housed in the Dow Science Building. All chemistry and biology students, as well as faculty, were invited to the barbecue; it is a great time for underclassmen to ask seniors and faculty for advice on internships, completing the Senior Individualized Project (SIP), and applying to medical school or graduate school. Over 70 students attended the event and took the time to celebrate being part of the scientific community at Kalamazoo College.





# Announcements

## **Let your children's/grandchildren's teachers know of the following resources:**

**(NEW) Coming in September, The American Association of Chemistry Teachers (AACT)**! □ Serving K–12 teachers of chemistry, AACT will offer specialized chemistry teaching resources, a periodical about teaching chemistry in the K–12 classroom, an online community for sharing, and more.

### **Career Videos for Youth**

As part of this year's "Chemists Celebrate Earth Day" effort, ACS produced three [downloadable videos that are a great, age-appropriate resource for showing an elementary/middle school audience what chemists and chemical engineers do](#). Teachers can use these videos in a career-day program or for classroom use. The three chemists interviewed provide insight on what they do in their everyday jobs. [Visit the CCED website](#) for descriptions of the videos and download links.

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## **First call for volunteers for our 2015 National Chemistry Week (NCW) outreach event at the Kalamazoo Valley Museum. We count on you to volunteer your time and engaging disposition for its success again this year!**

National Chemistry Week will be upon us before we know it; the Week itself is October 19-25 but **our annual outreach event** at the Kalamazoo Valley Museum will be on **Saturday, October 11, from noon to 4 p.m.** This year's **theme is “The Sweet Side of Chemistry – Candy”** and our hard-working collaborator at the Museum, Annette Hoppenworth, is looking forward to our participation and successful execution of this immensely popular program once again. Parents, grandparents, teachers, scout leaders and children are always rewarded with fun hands-on activities, and with written materials which they may take to their homes and their schools for encouragement in their science learning – we have all heard of STEM education; this informal science learning experience is a big part of it at an age when children are “scientists in the making” - inquisitive and truly curious. To volunteer for the event please contact Lydia E. M. Hines at [lemhwgh@gmail.com](mailto:lemhwgh@gmail.com) or 269-375-7349; if you are at a loss for an activity, she has a list she can send you, and she can train you in an activity of your choice.

# Special Event

**Plan to attend the next KACS Local Section Meeting on the ever-current topic of SAFETY at 6:00 p.m. on Tuesday, September 23, 2014, in the Dow Science Building Lecture Hall at Kalamazoo College**

We have scheduled **Dr. Kenneth Fivizzani**, Nalco Company (retired) and Chair, ACS Division of Chemical Health & Safety as our speaker.



Dr. Kenneth Fivizzani

## **Who pays for safety failures in the chemistry laboratory?**

The chemistry community and the general public have become more aware of incidents in chemical laboratories. Some serious accidents in both academic and industrial laboratories have had widespread repercussions to the organizations in which these accidents occur. If a regulatory agency, such as OSHA or EPA, cites a violation of a law or regulation, fines and remediation costs can be significant. Legal expenses for responses, trials, and appeals can grow quickly. But there are broader costs to the reputations of principal investigators, departments, institutions, and even for the science of chemistry. If students do not feel safe in undergraduate and research laboratories, they will be less likely to choose a career in science. If the general public does not trust chemical professionals to work safely in laboratories, there could be calls for more regulation of lab activity, and funding for chemical research might be reduced. There are many good reasons for organizations to establish strong safety cultures and ensure that laboratory personnel are well trained in lab safety procedures and policies.

There will be time at the end for questions.

Dr. Fivizzani will meet with graduate and undergraduate students before his lecture for a “roundtable discussion” concerning the large variety of “non-traditional” careers available to students who earn degrees in chemistry. Please let me know ([lemhwgh@gmail.com](mailto:lemhwgh@gmail.com)) if you are interested in participating. For additional career-related information see the “careers” page in the first monthly issue of C&ENews, and visit [www.acs.org/careers](http://www.acs.org/careers)

# ChemLuminary Awards

## Good news about us!

Based on our **KACS 2013 Annual Report submission**, our Section has been nominated as a **Finalist for ChemLuminary Awards in 3 categories**:

- Outstanding Local Section Industry Event (Recycle-a-poster event)
- Outstanding Performance by a Local Section (Medium Size)
- Best New Public Relations Program of a Local Section (Elements of Dance)

If you will be at the **ACS Meeting in San Francisco, plan to attend the ChemLuminary Awards Party on Tuesday evening (August 12) at the Palace Hotel from 8 pm to midnight to find out whether or not our Section was selected as a winner in any or all of those categories!** Here is the schedule:

- 8:00 - 8:45 pm, you may look at all the finalists' posters and enjoy hors d'oeuvres.
- 8:45 pm, the doors open to the awards ceremony (which lasts about one hour)
- 10 pm to midnight, the floor opens to those who want to celebrate by dancing.

*Below is what our LSAC (Local Section Activities Committee) reviewer, Lucy Eubanks, had to say about our Section after reading our Annual Report:*

"The Kalamazoo Local Section's website states: 'We are a dynamic and visionary organization committed to improving people's lives in our community through the transforming power of chemistry. We strive to advance the broader chemistry enterprise and its practitioners for the benefit of Kalamazoo, Allegan and Van Buren counties'. That vision and mission are being fulfilled and your Section continues to impress me with the scope and quality of your many activities. Several significant anniversaries were celebrated in 2013, including the "Awards Ceremony" (40 years), "High School Chemistry Symposium" (40 years), "Chemistry Day at the Museum" (as part of NCW, 27 times over 26 years), "Project SEED" (23 years), and "Chemists Celebrate Earth Day" (10 years)! What a splendid record of continuous effort and yet these activities and events continue to grow and improve. "Chemistry Day at the Museum" featured nearly 30 hands-on activities or displays and reached over 700 visitors this year with 87 volunteers, including new student helpers. The innovative Chemistry & Culture event, *Elements of Dance*, was held again this year and attracted more than 200 participants. Inviting the Mayor of Kalamazoo to be the Celebrity MC certainly did increase the Section's visibility! A Science Café Mini-Grant resulted in "Horticultural Chemistry— Color in Flowers" event. The innovative "Recycle a Poster" event is one that would fit well into many Local Sections seeking to increase industry involvement. The stated plan of the ACS Climate Science Grant is to integrate the ACS Climate Science Toolkit into its educational outreach activity involving education directors or mission leaders in faith-based congregations with middle and high school science teachers, and with Scout leaders. In partnership with the WMU Climate Science Study Group, this ambitious and innovative plan is slated for implementation in 2014. It will provide an interesting model for other Sections to consider. Many more examples of the Kalamazoo Section's activities could be cited, but it is clear that the Kalamazoo Section sets and achieves a high standard of activity. KACS goals are also well coordinated with the goals of the ACS Strategic Plan ([www.acs.org/strategicplan](http://www.acs.org/strategicplan)). Congratulations on all of your high-impact events that both serve your members and involve your local community."



# CGSA BBQ Report

## Report from the 2014 WMU Chemistry Graduate Student Association (CGSA) picnic

By Sarut Jianrattanasawat

On June 6, the CGSA hosted its 4th annual cookout for local chemists at the Oshtemo Township Park. First and foremost, CGSA would like to thank KACS for the generous financial support. The event was successful. We had more than 40 attendees, including faculty, staff, undergraduate and graduate students from WMU, and KACS members from around Kalamazoo, as well as some chemists-to-be. Many participated in activities such as tennis and soccer. We are glad to see this event gaining popularity as a local tradition.

Here are some pictures from the event (photographer: Minglian Lin)



Jared Wabeke and Brianna Hyder making ice cream using liquid nitrogen



Future chemist? With grad student dad



Future chemist?



Grilling burgers