A WORD FROM THE 2016 CHAIR OF THE ILLINOIS HEARTLAND ACS, MICHAEL APPELL

It has been a great honor and privilege to serve as Chair of the Illinois Heartland Local Section of the American Chemical Society. Our section has a long history of serving the central Illinois community and one of the greatest treasures of our local section is the outreach activities. During the year, we received a $2,000 grant from ACS to add Personal Protection Equipment and 3D printing to our demonstrations. In September, chemists from our local section came together to provide demos for the Science Rocks! exhibit at the Peoria Riverfront Museum that served over 1,500 participants. Other events held include the Battle of the Chemistry Clubs, Earth Day Contest & Demos, Museum demos, National Chemistry Contest and Demos, Cornbelters baseball demos, Scary Night at Wildlife Prairie Park, and several Climate Science events. With the recent passing of active member Frank Shaw, we lost a great chemist, mentor, and leader of many of our section’s activities. This year, our section held several after work social events that were well attended. Many of our members won major awards this year. Congratulations to Alt. Councillor Kurt Field for winning the ‘Chemist of the Year’ Award’. Our Chair-elect Victoria Nguyen was awarded the Local Section Outreach Volunteer of the Year by ACS. Our councilor Greg Ferrence was selected a member of the 2016 ACS Fellows. When you have a chance, check out www.acs.org for the latest news in chemistry. ACS is constantly adding new resources to support chemistry. Thank you for supporting our profession.

Michael Appell Chair, ACS Illinois-Heartland Local Section

LOCAL SECTION
ILLINOIS HEARTLAND
AMERICAN CHEMICAL SOCIETY

2016 Newsletter

2016 ILLINOIS HEARTLAND ACS SECTION OFFICERS

Chairman:
Michael Appell, (NCAUR)
Chair-elect:
Victoria Nguyen, (NCAUR)
Treasurer:
Brent Chandler (Illinois College)
Secretary
Hind Abi-Akar (Caterpillar)
Councilor:
Greg Ferrence (Illinois State University)
Alternate Councilor:
Kurt Field (Bradley University)
Immediate Past-chair:
Dean Campbell (Bradley University)
**ACS FELLOW: DR GREGORY FERRENCE, ILLINOIS STATE UNIVERSITY CHEMISTRY PROFESSOR**

The IL Heartland ACS Section is proud of Dr. Ferrence’s achievement. This prestigious ACS Fellows Program recognizes and honors members of the American Chemical Society for their outstanding achievements in and contributions to the science and the profession as well as exemplary service to the society.

Dr. Ferrence has contributed enormously to the scientific community with his extensive work in X-Ray crystallography, as well as his service to the ACS, including as a member of the national Ethics Committee. Dr Ferrence is also a fellow in the Royal Society of Chemistry. He was named Illinois Professor of the Year by the Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education, and the Illinois Heartland Local Section of the American Chemical Society recognized him Chemist of the year.

**EXECUTIVE COMMITTEE ACTIVITIES**

The Executive Committee has been planning and executing activities for the Heartland Section, parallel to ACS mission and goals. The Section has engaged the community in various chemistry and science activities and worked with local organizations with similar vision. Members of the Committee have also participated in chemistry and science activities.

The Local Section had a Happy hour gathering at a Peoria restaurant in late January; more gatherings will be planned for later this year.

Section members and Committee members attended various ACS conferences and meetings. We were represented in Pittcon Conference in March, Atlanta, GA and in ACS 251st National Meeting in San Diego, California.

**2016 EVENTS**

**ACS Program-in-a-Box Webinar** “The Role of Chemistry in Global Security” was presented on February 9. This event highlighted the history of chemical and biological warfare and offered a peek behind-the-scenes at how today’s chemists and government agents are working together to counter chemical-based threats. These programs continue to be quite informative and we intend to keep offering them to our members.

**Climate Change and Environmental activities**

The Section continues in its strong tradition of leadership and education on Climate Science in various venues throughout the Midwest. This active outreach program has been initiated by a 2013 ACS Presidential grant for the dissemination of factual information. Some of the workshops were also subsidized by a 2016 grant from the ACS Committee on Community Activities.

2016 ILLINOIS HEARTLAND ACS ACTIVITIES

SERVING THE ACS MISSION

* Collaborated with regional Scientific and engineering organizations.
* Participated in Community outreach activities
* Hosted an Awards banquet
* Hosted prestigious speakers
The late Dr. Frank Shaw has been a renowned leader in this area, he lead most of these events with help from students and other members of the Section.

- **Climate Change & Forests** was offered by Environmental Educators Association of IL at Hickory Knolls Discovery Center, St. Charles, IL. This event was held on February 13.
- **Earth Expo** was one of the activities educating about Climate change and environmental issues. This program was held on Saturday, March 12, at Saratoga School, in Morris, IL.
- **Demonstrations for Climate Science and Climate Change** were given at Environmental Educators Assoc. of IL Annual Conference at Spoon River College & Conference Center and at The Harvester Inn, Canton, IL. This event was held on March 11-12.
- **Teaching Climate Science** (CFS & Bruce Smith of CCCD) Workshop was given in La Crosse, WI. This workshop was part of the Wisconsin Society of Science Teachers (WSST) event held on April 21-23.
- **IL Sustainable Living & Wellness Expo:** the Section was a participant in this Expo on April 9 at IL Wesleyan University.
- **Fall 2016 Chemistry Club Workshop:** This workshop was hosted by ISU Chemistry Department on September 24, 2016. Three hands-on lab sessions were conducted including demonstrations to illustrate chemical and physical properties of CO₂, changes in the oceans, and properties of water. Additionally five talks were given covering the following:
  - Climatology, Climate Change and Illinois
  - Evidence for Climate Change & Anthropogenic Contribution: Consequences & Resources
  - Next Generation Science Standards and Climate Science (for future science teachers, a parallel session)
  - El Niño and La Nina: Why do we care?
  - Implications of Climate Change for Human Health

**Annual Awards Banquet and Poster Session:**
The Banquet is one of the highlights of the IL Heartland ACS section annual events. It features the depth and breadth of the members and highlights their achievements. The 2016 annual Awards Banquet was no exception. It was well attended - more than 40 members. It entertained, educated and provided a venue for members, including student members, to network. The 2016 Banquet was held on April 6 at the Peoria Gateway Building.

Victoria Nguyen of the National Center for Agricultural Utilization Research was recognized as 2016 Volunteer of the Year.

Pictured: Professor Dean Campbell presenting the award to Nguyen
Dr. Kurt Field of Bradley University was honored as 2015 Chemist of the year. Dr. Field gave a captivating presentation highlighting his career path and research activities.

The event also hosted a poster session highlighting the research of the Chemistry students in the regional universities and colleges. The diversity and range of the research presented was quite impressive!

2015 Collegiate Scholars were introduced and presented with awards:
- Alexandra Mandl, ISU
- Bradley Musselman, Knox College
- Kyle Nottingham, Illinois Wesleyan University
- Patrick Schneider, Bradley University
- Shafer Soars, Illinois College
- Alexander Volkov, Knox College

Congratulations to all awardees! Pictured above with Section Chair Dr. Mike Appel (far left)
Technical Talks:

Dr. Dejan Nikolic of the University of Illinois-Chicago gave a talk on “Nitrogenous Metabolome of Black Cohosh (Actaea racemosa)” on Feb 16 at Bradley University. Dr. Nikolic showed the extensive work he has conducted on the extraction and identification of specific components of the Black Cohosh plant that are of significant medicinal value. The talk was a pleasure to attend by any organic and analytical chemist. The number of questions and discussion the followed was a testimony of the engaging talk.

Dr. Keith R. Cadwallader of the Department of Food Science and Human Nutrition of the University of Illinois at Urbana-Champaign gave a talk on “Occurrence, formation and stabilization of the potent odorant 2-acetyl-1-pyrroline” on Monday May 16 at Illinois State University. Dr. Cadwallader highlighted the current methods and challenges in isolating and stabilizing this potent odorant that is an important contributor to aroma of numerous foods. The most effective stabilization technique to date has been developed in Dr. Cadwallader’s lab. This method can one day enable the commercial use of this important odorant as a flavoring agent. Numerous questions followed this stimulating and educational talk.

Visiting Scholar Dr. Marsha Lester will give a Presentation on “Climate Change: Chemistry, International Assessment, and Policy” at Knox College in Galesburg on Oct 24. This public event is sponsored by the Knox Chapter of the Phi Beta Kappa. Dr. Lester is Edmund J. Kahn Distinguished Professor of Chemistry at Penn and National Academy of Sciences elected member. Lester is editor-in-chief of The Journal of Chemical Physics and founding member of the Penn Forum for Women Faculty. Her research group has developed innovative methods for stabilizing ‘entrance channel complexes’ and reaction intermediates of environmental significance.

Dr. Marsha Lester
Dr. Yufeng Jane Tseng, visiting professor from National Taiwan University gave a talk titled “Social interactions, verbal, and task memory enhancer drug development and discovery” on Oct 28 at Bradley University. Dr. Tseng detailed the process of expedited drug discovery enabled by computational modeling, an approach that can replace animal testing. This approach was used to discover RS-D7, a small molecule drug that proved very effective to treat negative symptoms of schizophrenia in initial trials. The lecture highlighted the depth and breadth of knowledge needed to bring effective and transforming drugs to the market.

Community Outreach: Continuing in its tradition of participation in community events and outreach in the community, the Heart of Illinois Section was an active part of a number of events and showed off its chemistry demos and passion to educate at these events.

- The Section participated in the Day of Play at Children’s Discovery Museum on February 29 in Normal, IL. Demos catering to the kids were offered.

- The Section gave a Climate Change demo and education at the SWE Girls_in_STEM Boot Camp at Quest Charter High School, Peoria, IL. This event was sponsored by Society of Women Engineers and was held on March 12.

- The Section ran chemistry demos at the Annual Earth Day Festival at Forest Park Nature Center on April 23. The demos were “chemistry from around the house” demonstrating the earth friendly and ubiquitous chemistry around us. Kids of all ages left the table with the white “obelic” on their hands and excitement on their faces.

- The section had a very busy table at the IL Cornbelters game on May 21. Professor Dean Campbell and Bradley student Dannielle Wentzel showcased UV beads and helped close to 400 participants make bracelets of these beads. These bracelets were very popular and demonstrated the chemistry around us that the Section will continue to use them in future activities.

- The Section provided assistance to the ACS tent at the Illinois State Fair, Springfield that was held on Aug. 13 – 23. This is a major outreach and exposure for the Section.
The signature event for IL-Heartland Section “Battle of the Chemistry Clubs” was held on Saturday, March 26, at Illinois State University. Victoria Nguyen directed this engaging event.

The Illinois Heartland ACS was an active participant in Science Rocks annual event held by The Peoria Riverfront Museum on Saturday, September 3. Dr. Dean Campbell managed this event and directed the chemistry demonstrations. This was a great opportunity to reach out to the community and to educate about chemistry and sciences.

Demos were held also at The Peoria Riverfront Museum on Saturday Nov 12. Dr. Dean Campbell led chemistry students in the demos as part of the Titanic exhibit.

Pictured: Dr. Campbell (center) with student volunteers at the Peoria River Front Museum.

NATIONAL CHEMISTRY WEEK (NCW) 2016

This week is a delight for chemists everywhere! Our local section celebrated this special week with activities and talks.

The Bradley Chem Club ran demos at the Peoria Riverfront Museum from 1-2 pm on Saturday Oct 22. Demos were held indoors and outdoors featuring the Mentos in soda on the museum’s Sun patio and UV-activated color changing beads. Over 50 attended this hour of demos.
Guest speaker from Caterpillar, Inc. on Thursday, October 20. Aaron Amstutz gave an engaging talk at Bradley University. Amstutz is the Technical Steward for Plastics, Adhesives, and Composites at Caterpillar. He has worked in product design roles and material development roles including efforts in rubber compounding, polyurethane compounding, and most recently in Macro-Defect-Free Cement development (an organic/inorganic chemistry hybrid system that relies on mechano-chemical processing). He shared insights from his recent development work in materials and how a strong fundamental knowledge of chemistry translates into being able to function as an internal consultant.

The ISU’s Chem Club ran an Innovation Station event at the children’s discovery museum Normal, IL on Saturday, October 22 from 10am - 1pm. Again this event was an attraction and left a nice impression on all who attended the demos.

FINAL WORDS
Dr Frank Shaw will be deeply missed. He was an exemplary member of our Section. His enthusiasm and dedication were a model and a big asset to the Section.

AND KEEP IN MIND...
We are always looking for involvement and ideas from our members. Please contact any of the Executive Committee members. We would love to hear from you!

And, visit the ACS web site - ACS offers resources to help members in a myriad of areas.
Halloween Inspired Chemistry Demos   Try at home!

Perfect Fake Blood – Easy Recipes

Amazing, realistic looking fake blood mixtures for Halloween or fun parties.
Source: https://www.stevespanglerscience.com/lab/experiments/fake-blood-recipes/

What would Halloween be without fake blood? Steve Spangler shares his favorite blender blood recipes. There’s a science to making realistic looking fake blood, but like any good scientist, it takes a little experimentation.

The recipes below are designed to give you the tools needed to make up your own recipe based on your particular application. Most of these recipes only require ingredients found at a grocery store and the final product is completely edible – just in case you need a little dribble of blood coming down the side of your mouth!

When you’re mixing up a batch of fake blood, remember that what you see in the mixing bowl or blender is not what the blood will look like on your skin or dripped onto a piece of fabric. Real blood is not really red… it’s reddish-brown and opaque; an quality that you’ll need to duplicate in your fake blood recipe.

One final word of warning... making fake blood is totally fun and can be very messy. Since the main color agent is a food-grade coloring, these fake blood recipes will likely stain anything and everything! Your hands will be a red mess at the end of your mad scientist mixing session, but don’t worry. Mix up a small batch of OxiClean® and use it to wash your hands, your clothes and your friends’ clothes.

Believe it or not, our secret tool for making great fake blood is the kitchen blender. Blending the ingredients saves time and helps cut down on the overall mess of making fake blood.

1- BLENDER BLOOD - This is the sickest you can make.

- 16 Ounces of powdered sugar
- 1 Ounce of red food coloring
- 1 Tablespoon of cocoa powder
- 8 Ounces of water
- Blender
- Paper towel for cleanup
- Tablespoon measurer

1. Add 8 ounces of water to the blender.
2. Add 16 ounces of powdered sugar to the blender (you can find a 16 ounce box of sugar at the store). Blend it up. You may need to turn the blender on and off a few times to make sure it blends well.
3. Add 1 ounce of red food coloring (you can also purchase a 1 ounce jar at the store). Blend it up. Make sure it blends well.
4. Add 1 tablespoon of cocoa powder. Blend it up. Make sure it blends well.
5. Use a spoon to scoop out some of the fake blood. Drip it on a paper towel our your hand.

This is completely edible and actually tastes pretty good!
2- Corn Syrup Fake Blood
This is one of the most common recipes, but you’ll see that it doesn’t really look anything like blood. That’s okay… go ahead and make the batch because you’ll use the ingredients a little later.

- 1 cup corn syrup (commonly sold as Karo Syrup) 1 tablespoon water
- 2 tablespoons of red food coloring A few drops of green food coloring

Combine all of these ingredients in the blender and blend away for a few seconds. You can adjust the amount of green food coloring to make the blood a little more brownish-red in color. However, you’ll notice that the blood is a little too transparent.
Take the white towel test… drip a few drops of blood onto a white towel to see how realistic it looks.

3- The Cornstarch Secret
Cornstarch is a common thickening agent for gravies, pie filling, and other goodies. It’s also a great ingredient for fake blood because it adds a little opacity to the liquid.

- Use the mixture of the corn syrup recipe above
- 2 tablespoons of cornstarch

Place all of the ingredients in the blender and mix until the cornstarch dissolves. If the solution is too thick, add a tablespoon of water and blend the ingredients. Keep doing this until the blood is the perfect consistency.
Take the white towel test… drip a few drops of blood onto a white towel to see how realistic it looks.

4- The Chocolate Syrup Secret
In the days before color television, chocolate syrup was the perfect solution to the problem of making fake blood. On a black and white screen, chocolate syrup looked just like real blood. Even though times have changed, chocolate syrup is still an important ingredient in making great edible fake blood.

- 1 cup corn syrup 2 tablespoons water
- 2 tablespoons of red food coloring 1 tablespoon of chocolate syrup
- 2 tablespoons of cornstarch

Mix all of the ingredients in the blender for a few seconds. Watch as the fake blood oozes down the inside wall of the blender to get a good idea of what it will really look like on the white towel. Each of the ingredients in this recipe adds its own special quality to the fake blood – thickness, color, and transparency.
Take the white towel test… drip a few drops of blood onto a white towel to see how realistic it looks.

5- The Best Fake Blood... So Far
This recipe combines everything you’ve learned so far about making fake blood and adds a few ingredients that pack a great punch (pun intended… as you’ll see below).

- 1/2 cup Tropical fruit punch (Hawaiian Fruit Punch® works great) 1 cup corn syrup
- 2 tablespoons of red food coloring 2 tablespoons of cornstarch
- 1 tablespoon of chocolate syrup 1 tablespoon of powdered cocoa

Combine all of the ingredients in the blender and mix for 10 seconds. Since different brands of fruit punch vary in color, you’ll need to use your vast experience in making fake blood to tweak the recipe to arrive at your perfect batch of fake blood.
Some fake blood connoisseurs recommend a cup of coffee in place of the fruit punch. You may need to reduce (or eliminate) the amount of chocolate syrup and powdered cocoa used in the recipe. Remember, it’s all about experimentation!
Take the white towel test… drip a few drops of blood onto a white towel to see how realistic it looks. Or better yet… roll up your sleeve and drip a little on your arm if you run into a neighbor!