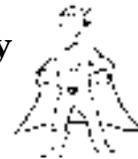




In Conjunction with the American Chemical Society
Student Affiliates at the University of Pittsburgh

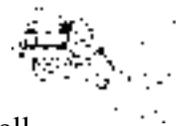


Volume 23, Issue 2

October 4, 2013

SET DATES:

REGISTRATION



- October 25:** Monitored withdrawal (2141) deadline-140 Thackeray Hall
- October 28:** Registration begins for Spring Term 2144 based on earned credits. You will receive your registration appointment from the Registrar.
- October 28:** Add/drop begins for Spring Term 2144.
- October 31:** Happy Halloween!
- November 04:** April 2014 (2144) graduation applications due in 140 Thackeray Hall.
- November 27-
December 01:** Thanksgiving Recess. **NO CLASSES!!**
Have a great Holiday!

IMPORTANT: WHEN SHOULD YOU SEE YOUR ADVISOR?

Advisees who already have a permanent advisor should make their registration appointments with that advisor on or after October 16. Remember to bring a copy of your academic record with you to this meeting.

Advisees who (via an email to be sent October 04) were asked to select their permanent advisors should do so after October 07. See George Bandik or Regina Mahouski in 107 Chevron Science Center.

New advisees (those who have NOT registered with the Chemistry Department before) should make an appointment with George (Room 107 Chevron), Dr. Huston or Dr. Ward after October 14.

2013-2014 ACS-SA Officers and Staff

Olivia Goss-Co-President

James McKay-Co-President

Keith Carpenter-Co-Vice-President

Josh Casto-Co-Vice-President

Laura Grezzo-Co-Secretary

Amy Neuburger-Co-Secretary

Bret Boyle-Co-Treasurer

Bobby Kang-Co-Treasurer

Cyrus Ramavarapu-Tech Team

Ryan Begun-Outreach Coordinator

Matt Diamond-Outreach Coordinator

Kai Gronborg-Senior Affairs Committee

Kelsey Wiggins-Senior Affairs Committee

Aric Berning-Newsletter Co-Editor

Mark Mazza-Newsletter Co-Editor

Raissa Berry-Green Chemistry Contributor

Visit us at PittACS.org

C
H
E
M

M
A
J
O
R

N
E
W
S

Our October Schedule

Everyone is welcome to attend our weekly ACS-SA meetings. Every Friday at noon we get together in 135 Chevron Science Center to hear interesting talks, learn more about science and enjoy each other's company. Come join us for all of the following meetings.

October

- 04 The Preprofessional Timeline with Ms. Andrea Abt
- 11 Spring Term Registration (2144)
- 18 Preparation for National Chemistry Week 2013
Energy: Now and Forever
- 25 Pumpkin Painting on the Front Patio



Happy Halloween

Halloween Pumpkin Fest

Come join the fun this October 25, 2013 as we drink apple cider and paint pumpkins on the patio in front of Chevron. Bring candles, dress up or do other Fall like things as the mood strikes you. BYOB (bring your own **blankets**...preferably flannel since we have a theme going and all). Come to a meeting or see George with suggestions or for more details. **Also if you have any other useful suggestions e-mail us at klc117@pitt.edu.**



Who's This BEN Guy, Anyway??!!

Benzoyl Peroxide the Free Radical Man (affectionately known as Ben) is our ACS-SA mascot. You have probably seen him around the chemistry department and on our yearly ACS-SA T-shirt. From now on when you see Ben, think of the ACS-SA. Why not come to a meeting to learn more about what we are all about. Fridays at Noon in 135 CHVRN.

Three Courses Just for You...

If you are looking for something new and different this term, why not try one of the following courses being offered this coming Spring Term (2144).

CHEM 1460—"Computational Drug Discovery"

This course for advanced undergraduates addresses the recent and emerging roles of computation in drug discovery. In addition to having the opportunity to integrate concepts from biology, chemistry, and physics toward applications in the highly interdisciplinary field of computational drug discovery, students will learn how to critically read research articles and give effective oral presentations. Students will have a hands-on introduction to the latest tools of computational drug discovery by learning how to use the MOE software package. This course will provide a valuable experience for students planning to pursue graduate school, medical school, or careers in industry. Prerequisite: Organic Chemistry.

CHEM 1540—"Introduction to Mass Spectrometry"

Mass spectrometry (MS) is a widely-used analytical technique that provides useful qualitative and quantitative information across several fields such as chemistry, biology, medicine, engineering, etc. This course is designed for students that want to learn more about how MS works both fundamentally and practically, become familiar with modern MS instrumentation, and explore current real-life applications of MS. Additionally, students will have an opportunity to become better verbal communicators of chemistry-related concepts in this course. At the end of the course, students will be equipped with basic skills to be familiar with MS data, to understand the utility and application of a variety of MS instruments, and to verbally share an enthusiasm for MS with others. Because MS is widely-used in the academic, government, and industrial sectors this course will be valuable to those enrolled.

CHEM 1600—"The Synthesis and Characterization of Polymers"

What makes really long molecules behave differently from short ones? How can it be that everything from your socks to your laptop is made from polymers? What changes must you make in a polymer to go from making bullet-proof vests to making teddy bear fur? Did you know that every time you paint a wall or use super-glue you are doing polymer chemistry? In this course you will get



an overview of all aspects of polymer science including synthesis (you need 99.9% yields to make polymers!); purification (you can't, so you have to make them right the first time); characterization (how can you figure out if your polymer weighs 10,000 or 1,000,000 g/mol?); thermal properties (you need to know that your plastic flip flops won't melt on hot pavement) and mechanical properties (elastic polymers make skinny jeans; rigid ones make motorcycle helmets—you don't want to mix them up!). Bonus: When you make a polymer in lab, you get to play with it!



A Few Important Reminders:

Chem 1140-Preparative Inorganic Chemistry is our advanced inorganic laboratory course offered each Spring Term. **Chem 1130**-Inorganic Chemistry is a pre or co-requisite for this course. If you are working towards an ACS-Certified degree, this course is a degree requirement.

If you have wondered about what goes on the upper floors of our building you might want to consider registering for **Chem 1700**. This one credit seminar course allows two different faculty members each week to speak on their own research interests. Over 80% of our graduating seniors in Chemistry participate in our undergraduate research program and this course is a great way to learn more about your options and your department.

Finally, if you are interested in pursuing an honors degree in Chemistry the requirements students must have are:

- (a) an overall QPA of 3.00 or better
- (b) a chemistry QPA of 3.25 or better
- (c) have completed at least 2 credits of Chem 1710-Undergraduate Research
- (d) completed Chem 1711-Undergraduate Research Writing.

Good luck as you strive towards academic excellence!



Green Chemistry

by: **Raissa Berry**, *Green Chemistry Contributor*



With summer coming to an official close, and fall being an almost nonexistent season here in the 'burgh, it is time to face the music and start getting ready for winter. For those reading this and living in a dorm, the cost of heat is more than accounted for in your room and board. As for the rest of us, broke and living the college dream in cramped houses and apartments, staying cozy all winter without starving is a serious struggle. Luckily, I have got some green living tips for staying warm this winter that will not only save you some money but will help save the environment as well.

1. Bundle up (duh).²

Yes, this one may seem pretty obvious, but we are all guilty of running around the house in shorts during a snowstorm and wondering why we are freezing. Snuggle up in a pair of over-sized sweats, a nice warm sweatshirt and throw on some slippers.

2. Make yourself something hot to drink.¹

We have all experienced the post-cup of coffee hot flash, so why not use it to your advantage this winter? Besides, I am sure you could use the caffeine.

3. Treat yourself.¹

You are going to need to eat something, so why not actually put your oven to use? Bake something for yourself and leave the oven door open after you are done.

4. Light candles around your room.¹

Not only will you eliminate the mysterious smell in your apartment, but also the flame from a few candles will make a difference in the temperature of a room. However, please be sure to put the candles in a safe area and do not forget to extinguish them, or you will have a whole new dilemma on your hands.

5. Seal the cracks under doors and around windows.²

Whether you are in a dorm or an apartment, leaky windows and drafts under doors will forever be the bane of your existence in the winter. Grab an old towel, roll it up and place it under the door to keep the cold air out and the warm air in. As for the windows, you can use plastic film to help keep the cold air from coming in. All you need to apply the film is a hair dryer! (Check out Amazon.com for low priced film kits.)

6. Warm up a water bottle and place it at the bottom of your bed.¹

No one likes cold toes before bed. Heat up a water bottle and place it at the end of your bed before you go to sleep to keep your feet warm.

So before you crank up your thermostat or complain to Panther Central, give some of these tips a try. It will benefit the environment and help you save money for the real college necessities.

¹10 Cheap Winter Tips To Stay Warm Care2 Healthy Living. (2011, October 17). Care2 - largest online community for healthy and green living, human rights and animal welfare.. Retrieved September 21, 2013, from <http://www.care2.com/greenliving/10-cheap-winter-tips-to-stay-warm.html/toasty-tips-infographic443>

² Ascensio, Z. J. (2011, December 19). Five Tips for Staying Green This Winter - Yahoo Voices - voices.yahoo.com. Yahoo Voices - voices.yahoo.com. Retrieved September 21, 2013, from <http://voices.yahoo.com/five-tips-staying-green-winter-10692033.html?cat=57>

Pumpkin anyone?

by: Aric Berning, *Co-Editor*

It's that time of year again when I have to layer a sweater over a T-shirt and remember to pack my umbrella, because the cold, clear Pittsburgh mornings warm into tepid afternoons, and rain showers strike the city without warning. Fall is upon us.

For me, this fall is an interesting blend of firsts and lasts. It's my last autumn as an undergraduate, which means this could very well be the last fall I play intermural racquetball or TA organic chemistry. But it's also my first fall being married—and while that life change could fill several newsletter pieces, I mention it because my wife has a perhaps unhealthy obsession with all things pumpkin. Fall is, for obvious reasons, the worst season for this obsession, and our apartment has smelled like pumpkin chocolate chip cookies for days (not that I'm complaining, of course!).

I find it interesting, though, that baked pumpkin tastes so vastly superior to raw pumpkin. My inner chemist decided to find out why, and after about twenty minutes of Internet searching, I had learned two things. One, some people actually enjoy eating raw pumpkin, which I find crazy. It must be an acquired taste, but I don't think I'll be putting raw pumpkin shavings on my salad anytime soon, despite their purported health benefits. Second, and more importantly, science can't really tell us why cooked pumpkin has such a markedly different flavor than raw.

Well, science can tell us that in general terms, the flavors differ because as pumpkin cooks, the sugars inside caramelize. Caramelization as a term is familiar to us—it evokes images of candied onions or caramel candies. Chemically, caramelization is a form of pyrolysis, or when compounds degrade into simpler units in the presence of heat.

When baking a pumpkin at temperatures greater than 160°C, the complex carbohydrates in the plant tissue degrade into monosaccharides, predominantly glucose and fructose. However, this reaction isn't responsible for the flavor changes that occur during caramelization. Instead, those are the result of the pyrolysis of aptly named “flavor molecules,” whose degradation is responsible for the myriad of flavor changes that occur during cooking. Understanding these chemical changes is the thrust of an entire industry—flavor science.

Another related reaction, the Maillard reaction, describes the chemical changes that occur when amino acids in foods react with reducing sugars (such as glucose and sucrose) in the presence of heat. As it turns out, it is the Maillard reaction and not a caramelization reaction that is responsible for making caramel from sugar and milk (milk is high in protein and reacts with the sugar when heated). Score another misnomer in the annals of science.

It's probably a good thing that my wife is also a science enthusiast—I don't feel like I'm being judged when I bring up reaction mechanisms in the kitchen. So, fellow chemistry, pumpkin, and baked good enthusiasts alike, enjoy your common ground this autumn!

COMEDY CORNER



"What if you could talk to the boy who scooped out your insides right now. What would you say?"

A Joke or Two for You!

Two atoms are sitting at a restaurant carrying on a conversation.

"I think I've lost an electron"

"Are you sure?"

"No, I'm positive!"

(laugh now!)

An atom is at its neighborhood bar. "What'll it be?" asked the bartender. "I'll have a neutron" replied the atom, "what's the charge?" "No charge" answered the bartender.

If you know any chemistry jokes (no matter how sublime or ridiculous) please share them with us at the Chem Major News. We'll be happy to subject others to weird science humor in upcoming editions of our newsletter.



Spicy Foods and Nightmares

People sometimes equate eating spicy foods with having nightmares. The main reason people think spicy foods create bad dreams is because the foods can cause discomfort which can lead to a restless sleep. Another possibility is that spicy foods are often eaten with alcohol, which is known to cause intensity of dreams in the last half of the night.

Certain medications prescribed by doctors are known to cause dreams and nightmares in some patients. Therefore, it is not a far stretch to claim that it is possible for spicy food to cause bad dreams for some people.

The best way to avoid the spicy food/nightmare connection is to be wary of the time you eat spicy foods and drink alcohol. Turbulent stomach storms will be noticed more if you eat or drink closer than three to four hours before bedtime. Milk may calm the dreams. It's a source of tryptophan, an amino acid that helps the brain produce serotonin, a chemical that turns on the brains' sleep switch.



TRICK OR TREAT?

History of Halloween

Halloween has its roots in the Celtic culture. Over 2000 years ago, the Celts celebrated a holiday called Samhain (pronounced Sa-wan). Samhain was the God of the Dead. On the last day of October when the harvest season ended and the days were getting shorter and colder the god Samhain allowed the souls of the dead to visit the homes where they once lived. The Celts were terrified on this night and would gather in a field and build a huge bonfire to scare away all the evil spirits, ghosts, goblins, and demons.

When the Romans conquered the Celts they added 2 festivals to the holiday of Samhain: Ferialia, a festival in honor of the dead, and Poloma, named after the Roman goddess of fruit and trees.

The Celtic religion was taken over by Christianity. The Christians declared November 1 All Saints Day in honor of the Saints who did not have a special day of their own. The old customs from the Samhain and Roman festivals became part of the All Saints' day rituals.

The mass said on All Saints Day was called Allhallowmass. The evening before, October 31, became known as All Hallow Eve. Eventually the name was shortened the Halloween.

Today we celebrate Halloween with candy and costumes. But the spooks, ghosts, and goblins are still a part of the holiday.

Happy Halloween!



Bettis Summer Intern Program

Laboratory internships offer students a unique opportunity to participate in the important work done at Bettis and a chance to work with some of the finest technical people in the country.

Candidates for internship positions should be undergraduate (completing at least their sophomore year) and graduate students majoring in engineering, science, or business. Specific internship opportunities are based on Laboratory hiring needs and will vary annually. Details regarding the internship positions which we will interview for can be found in the summer internship position postings on our Career Site, hosted by Monster.com.

Internships have flexible beginning and ending dates, however, interns usually work from May through August.

All candidates must be U.S. citizens. Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter.

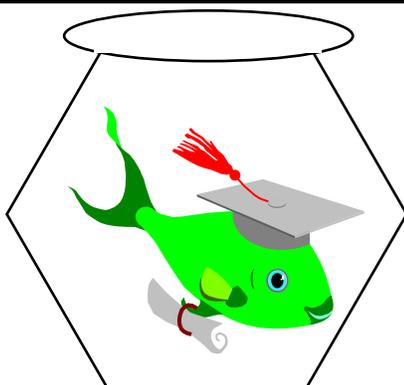
An Equal Opportunity Employer

Uncle Sam's Hoagies!!



Remember...The ACS-SA will be selling hoagies every Tuesday. Please support our ACS-SA.

STOP AND GAIN!



The fishbowl is a great place to gain information about internships, job opportunities and other things of interest to science majors. Stop and check the bulletin boards for the latest information. Things are added on a regular basis.

A Reflection in the Midst of Digression By: Mark Mazza – *Co-Editor*

As midterms, lab reports, and extensive research papers begin to creep around the corner, I have found this as a perfect opportunity to momentarily take our minds off such stressful tasks. At this time, you may rightfully be asking yourself, “Mark, what could possibly free our minds from learning some of the most important mechanisms in all of Organic Chemistry?” Well, the answer is quite simple – the reading of a poem! Before your very eyes, I have presented a poem that I have grown so very close to throughout the years. The poem, by John Newlove, is entitled “Why Do You Hate Me?” Following the reading, I have provided a short reflection in which I do my absolute best in explaining my personal interpretation of this deeply heartfelt poem. With that being said, let’s get started!

Why Do You Hate Me?

John Newlove

So you live of the sea;
and I am the dry acrid land.

You have the sweet fish swimming
and dull mannerly grain grows in me.

Your blood shines in curving darts;
I grow in calculated rows.

So I say I love you,
and you say, Why do you hate me?

I speak in a foreign language.
You don’t know what I say.



Upon first glance of this title, I figured that the poem would describe that of an individual who feels betrayed by another; one in which a man, or possibly a woman, experiences a life of trouble; a life in which he/she comprehends the ordinary as being absolutely unordinary. However, once I read the first several lines, “So you live of the sea; / and I am the dry acrid land. / You have the sweet fish swimming / and dull mannerly grain grows in me,” I was surprised to learn that this was a poem very different from what I had expected. As I read through the stanzas, I felt the desperate need to describe a sense of feeling that I am often struck with as an individual; a sense of feeling that I experience when the pressures of life come barreling down upon me. Whenever I am struck with a feeling of pressure, whether caused by that of an immense amount of schoolwork or that of a troubling friendship, I am often brought to the question, “When will others worry of my sorrows? When will others stop and question themselves of my daily troubles?” Although I ask myself these questions, the answers continually strike me with a sense of emotion; the type of emotion in which I am forced to wonder why some people refuse to accept me as a friendly person. Often times, I will meet an individual who believes I am a difficult person to talk with; one who believes I am shy and timid. However, what these people cannot seem to understand is that I am, in fact, a very simple to person to associate with. Even though I may come across as being rather stern in nature, I feel that my sense of humor adequately makes up for this seriousness. For instance, when I first met my freshman Seminar in Composition professor at the University of Pittsburgh, I could tell that he was having a difficult time in reading me as a student. And, as surprising as it may sound, I also felt a feeling of difficulty in reading him as an instructor. I was initially unsure of his sense of humor. I began to ask myself, “Will this be a solemn individual who refuses to engage in acts of cheerfulness, or is he one who has vivacious side, as well?” However, as I soon discovered, he was both vibrant and knowledgeable. And, as the years have gone on, I am pleased to say that I have grown much attached to this very inspiring and motivational man.

In the end, I hope this poem, as it had done for me, shed new light into your eyes – the type of light that will allow you to make your very own interpretation when it comes to meeting new people in life.

<http://www.library.utoronto.ca/canpoetry/newlove/poem6.htm> (poem)

https://www.google.com/search?hl=en&q=poem+clipart&bav=on.2.or.r_qf.&bvm=bv.52434380.d.dmg.pv.xjs.s.en_US.RJfod4swqLE.O&biw=1366&bih=667&dpr=1&um=1&ie=UTF-8&tbn=isch&source=og&sa=N&tab=wi&ei=He89UtHeEq6p4AOLmoCOBA#facrc=_&imgdii=_&imgrc=7cOx0FHG-Jj0TM%3A%3BSSndgieWk4YhuM%3Bhttp%253A%252F%252Fbestclipartblog.com%252Fclipart-pics%252Fpoetry-clip-art-1.gif%3Bhttp%253A%252F%252Fbestclipartblog.com%252F27-poetry-clip-art.html%3B360%3B332 (picture)