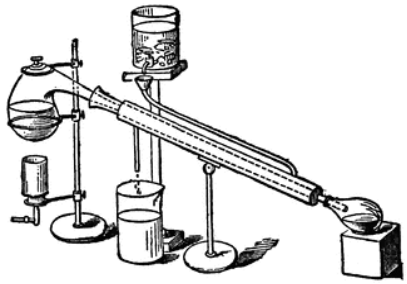
SOUTHWEST RETORT



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Published for the advancement of
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and Chemistry in this area

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Elections: candidates@acsdfw.org

Twitter: acsdfw

EMPLOYMENT CLEARING HOUSE

Job applicants should send name, email, and phone, along with type of position and geographical area desired; employers may contact job applicants directly. If you have an opening, send your listing, including contact info for your company, to retort@acsdfw.org. Deadlines are the 7th of each month.

JENKEM TECHNOLOGY

The PEG and PEGylation Technology People

Job Title: Sales/Marketing Assistant

Name of Company: JenKem Technology USA Inc.

Nature of Business: Polyethylene Glycol (PEG) Polymers for Pharmaceutical and Biotech Applications

Job ID: JKUSA-20140801

Job Type: Full-time

Salary Range: Base salary $25,000.00 to $35,000.00; plus Sales Commission

Location: United States - Texas – Plano

Additional notes: Must be legally authorized to work in the United States. Local candidates preferred, no relocation benefits are provided for the position.

Job Functions: Sales and marketing for PEGylation products and services: provides quotations and information on product availability, and provides answers to technical questions to customers, by phone or email; processes orders, shipping, and payments; develops and maintains customer relationships; identifies and develops new customers and new markets for PEGylation products and services; and performs other tasks as assigned by the manager.

Job Requirements: Bachelor's degree or higher (Chemistry/Biology/Biochemistry or similar background REQUIRED); Excellent interpersonal and communication skills; Excellent reading, speaking, and writing skills in business English; Good arithmetic skills and attention to details required; Proficiency in the use of Microsoft Word, Excel, PowerPoint, and Outlook required; English/Chinese bilingual preferred; Ability to work independently required.

To Apply:
Interested candidates should submit a cover letter including salary expectations, and an updated resume at email: hr@jenkemusa.com. Please do not call, we will contact only select candidates.

hr@jenkemusa.com.

Job Title: **Field Sales Specialist — Analytical and Process Sales**
Location: Dallas area

Summary: The successful candidate will be responsible for direct sales for both the Analytical and Process business units. Candidate must be willing to seek out and establish relationships with prospects in the chemical, general food, meat, dairy, university, and testing lab industries in order to obtain orders for CEM equipment. Territory to include: TX, OK, NM

Responsibilities: Prospecting, closing, developing markets, providing installations and operator training as well any other duties as defined to promote sales, grow the territory and achieve the territory goals on an annual basis.

Requirements: BS degree in Chemistry, Biochemistry, Pharmacy, Biology or related science
2-5 years prior sales experience in a related industry (or lab experience)
Ability to travel up 70% with overnight stays
Proven direct sales experience preferably into the above industries
Strong work ethic
Excellent communication skills
Microsoft Office and/or other computer software package aptitude
Salesforce.com training a plus

Salary: Base salary will be paid based upon market rates, experience, education and achievements.

Other: Expenses remunerated via CEM policy. Company car and employee benefits package (medical/dental/flexspending/401k/ProfitSharing).

Please forward your resume to **Greg.Barlow@cem.com**. Click the logo or the button for more information.

CEM

SERVICES

FIFTY YEARS AGO IN THE SOUTHWEST RETORT

This month's ACS tour speakers are Dr. N. B. Hannay of Bell Telephone Laboratories and Dr. Werner H. Wahl of the Union Carbide Research Centers. Dr. Hannay's two talks are "Solid State Chemistry" and "Ultra -High Purity in Solids." Dr. Wahl's talk will be "The Past, Present and Future of Neutron Activation Analysis."

E. H. Sargent & Co., a 112-year-old manufacturer of scientific instruments, apparatus, and chemicals, has purchased the Laboratory Supply Division of the Mine & Smelter Supply Co. of Denver. E. H. Sargent & Co., whose headquarters and main manufacturing plant are in Chicago, has other plants in Dallas, Detroit, Birmingham, Springfield, NJ, Anaheim, and Toronto, Canada.

The Ark-La-Tex ACS Section is a cosponsor of the Third Annual Shreveport Engineers Week Meeting. The social hour will be at the Petroleum Club. The banquet speaker will be Chester Lauch, "Lum" of the old "Lum and Abner" radio show. He is presently an executive with the Continental Oil Co., and his topic will be "Piney Ridge Engineering."

In Central Texas ACS Section activities, UT -Austin hosted the executive officers of the International Union and Pure and Applied Chemistry. From the group, Lord Alexander Todd, a Nobel Laureate from 1957, gave a popular lecture on "British Scientific Policy." Dr. W. A. Noyes, Jr. was honored by ACS with a dinner in Washington, D.C., on the occasion of his retirement as Editor of The Journal of Physical Chemistry. He had held that position since 1952. He has also served ACS as Editor of The Journal of the American Chemical Society for 12 years and as Editor of Chemical Reviews for eleven years.

At the Southeastern Texas ACS Section, Dr. Friedrich Horn, Professor of Chemical Engineering at Rice University, has been awarded the Dechema Prize for 1963. This prize, valued at $2500, is given yearly to an outstanding chemist or chemical engineer by the German Society for Chemical Equipment. The presentation was made at a colloquium held in Frankfurt, Germany. Dr. Raymond B. Seymour of the University of Houston spoke at a meeting of the Permian Basin ACS Section on the topic "Development in Polymer Science." In addition Dr. Seymour will address the Houston Section of the National Association of Corrosion Engineers on Feb. 9 on "The Need for Polymer Science in Corrosion Engineering."

Dr. Frederick G. Bordwell of Northwestern University and Dr. George S. Hammond of CalTech recently gave seminars in the chemistry department of Texas A&M.

Don W. Shaw recently completed all requirements for the Ph.D. at Baylor, and he was given this degree in January. Dr. Shaw's mentor was Dr. James L. McAtee, Jr. Dr. Shaw had received the B.S. degree in chemistry and mathematics from East Texas State College in Commerce, and then he worked three years as an industrial chemist in Dallas before entering graduate school at Baylor. He will be employed by Texas Instruments and will be working on defect structure phenomena in the semiconductor division.

Contributed by

E. Thomas Strom

Offshore Wind Turbines: Proven Technology?
By
John E. Spessard, PhD, PE

The Federal Bureau of Ocean Management (BOEM) has issued two non-competitive leases (Cape Wind in Nantucket Sound and an area off Delaware) and three competitive bid leases (two offshore Massachusetts -Rhode Island and another offshore Virginia) off the Atlantic Continental Shelf. The competitive sales were for a total of $5.4 million and cover about 270,550 acres. Additional competitive auctions for wind energy leases for offshore sites in Massachusetts, Maryland and Virginia are expected later this year. Additionally Principle Power, Inc. has been granted permission to submit a formal plan to build a 30 megawatt (MW) pilot facility off Coos Bay, Oregon. DOE has granted Principle Power $4 million to finance the preparation of the proposal. The proposed Oregon facility will be a floating platform. The Atlantic Ocean facilities will be anchored to the sea bed. None of these offshore facilities have been implemented.

Offshore turbines have the advantages that (1) offshore winds are stronger allowing for potentially more electricity generation, (2) ¾ of the Earth's surface is covered by water and (3) the surface is flat with no hills or buildings to divert the wind flow.

Offshore turbines have been used in the Baltic Sea to generate electricity for Denmark and Germany. Denmark and Germany have high electricity rates, 45 and 35 cents per kilowatt-hour, respectively. The Baltic Sea is relatively shallow, largely free of storms, and has a firm seabed to anchor the turbines. The Reader will be aware of the violent storms that travel up the Atlantic Ocean Coast. Existing wind turbines have been rated at 2 MW. The new generation of wind turbines are under development and are rated at 6 MW. Present offshore turbines are limited to a depth of 50 meters. This eliminates most Mediterranean Sea sites. Offshore wind technology has (1) not previously been implemented (2) on this scale, (3) in this country and (4) at this location. Therefore it is definitely unproven technology.

The 6 MW turbines are large, heavy and tall. For example the Enercon E-126 has a height from floor to turbine hub of 135 meters (443 feet), and a total height of 198 meters (650 feet). The weight of the foundation tower is about 2,500 tons, the tower, 2,800 tons, the machine housing, 128 tons, the generator, 220 tons, and the rotor and

blades 364 tons. The total weight is about 6,000 tons. The Siemens design's housing and generator weighs about 350 tons. Siemens states this is the lightest such unit in this class. A significant part of this weight is at a height of 135 meters. Imagine the torque generated by a 100 mph wind. The wind turbines are more top heavy than offshore oil drilling platform.

The Offshore Wind Foundation met at Georgia Tech University on May 22, 2014. This is a group dedicated to the cause of generating electricity from offshore wind turbines. The theme of the conference was to "adopt transformative design solutions for fixed foundations that build infrastructure resilience to domestic hazards, such as hurricanes, while minimizing the manufacturing, deployment and operating costs." (This is a quote.) Thirteen contributors were specifically listed. The unanimous conclusion was that many challenges needed to be met and offshore wind electricity technology was anything but proven technology.

While offshore turbines have been used in Europe for 20 years, this experience was of limited value. The European turbines were designed for stiffer ocean bed soils and shallower water than would be experienced in the U.S. Also failure data from Europe was considered to be proprietary knowledge and was rarely available.

The offshore wind turbine will have both a higher equipment cost and installation cost. The materials of construction for the offshore unit have to withstand corrosive sea water and salt spray. The offshore turbine also will be heavier, it will have to withstand waves and be securely anchored to the seabed. Typically installing a machine in a factory will cost additionally the purchase cost for a total price of double the purchase cost. I would expect the installation cost of an offshore wind turbine to be significantly more. A price quotation for a 6-megawatt turbine was $14 million.

The Federal Energy Information Administration quoted capital costs in dollars per kilowatt of $2,213 for onshore wind and $6,230 for offshore wind. Using the same methodology, the cost of offshore wind electricity is 281% higher than onshore wind electricity. The feasibility of offshore wind technology has yet to be demonstrated.

...And Another Thing…

by Denise L. Merkle, PhD

Nobel

The realization that it is highly unlikely I will ever be a Nobel Laureate was a great shock. While others may have been more realistic, the Nobel Prize on which I originally focused many of my pre-teen dreams remained a goal well past childhood. I don't doubt I will always have an emotional scar where the visions of major scientific contributions were slain by the cold, hard Zn fragments of the Real World. My disappointment aside, every year there are people who enjoy the recognition that Alfred Nobel's dreams made possible.

As I hope you already know, if one consults the marvelous website **www.nobelprize.org**, one can click on the Alfred Nobel tab. Under that tab are the details of Alfred Nobel's fascinating life: a move to Russia as a child, his father's engineering abilities, his own brilliant inventiveness and studies in chemistry, dynamite, his most famous invention (and only one of 355 patents)—and much, much more. Nobel's death in 1896 is a mere note, because it is his Will that dominates 1896 and beyond. That infamous Will was the vehicle by which Alfred Nobel's legacy of approximately $265 million was distributed. That Will and the recognition for significant intellectual advances established within so distressed his family that the first Nobel Prizes were not awarded until five years after Nobel's death.

Physics. Chemistry. Medicine. Literature. Peace.[1]

Jacobus Henricus van't Hoff received the 1901 Nobel Prize in chemistry for his work on osmotic pressure and chemical dynamics in solution, and his discoveries' contributions to molecular theory,[2] aka Avogadro's gas law works for solutions, also.

In 2014, Stefan W. Hell, Eric Betzig and William E. Moerner shared the Nobel Prize in Chemistry for their respective work "for the development of super-resolved fluorescence microscopy",[3] aka single molecule fluorescence. Single molecule imaging. From the solution chemistry of moles of molecules to watching individual proteins move—in 115 years.[4]

Where will science lead us in the next 115 years? More importantly, will the discoveries made and the knowledge gathered make us worthy of Alfred Nobel's dream, which he fulfilled by endowing "prizes to those who, during the preceding year, shall have conferred the greatest benefit on mankind."

What is the point of all this you may ask? The point is, although it's quite unlikely I will ever meet the King of Sweden, if you keep discovering, you just might...

Continued on page 11

From the ACS Press Room

Smart keyboard cleans and powers itself — and can tell who you are

Personalized Keystroke Dynamics for Self-Powered Human-Machine Interfacing
ACS Nano

In a novel twist in cybersecurity, scientists have developed a self-cleaning, self-powered smart keyboard that can identify computer users by the way they type. The device, reported in the journal *ACS Nano*, could help prevent unauthorized users from gaining direct access to computers.

Zhong Lin Wang and colleagues note that password protection is one of the most common ways we control who can log on-to our computers — and see the private information we entrust to them. But as many recent high-profile stories about hacking and fraud have demonstrated, passwords are themselves vulnerable to theft. So Wang's team set out to find a more secure but still cost-effective and user-friendly approach to safeguarding what's on our computers.

The researchers developed a smart keyboard that can sense typing patterns — including the pressure applied to keys and speed — that can accurately distinguish one individual user from another. So even if someone knows your password, he or she cannot access your computer because that person types in a different way than you would. It also can harness the energy generated from typing to either power itself or another small device. And the special surface coating repels dirt and grime. The scientists conclude that the keyboard could provide an additional layer of protection to boost the security of our computer systems.

The authors acknowledge funding from the U.S. Department of Energy.

Nobel continued

[1]The Sveriges Riksbank Prize in Economic Sciences has been awarded since 1969. **http://www.nobelprize.org/nobel_prizes/economic-sciences/**

[2]**http://www.nobelprize.org/nobel_prizes/chemistry/laureates/1901/**

[3]**http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2014/**

[4]Just so you know: The 19th Amendment was passed in 1920, so American women have had the Right to Vote for fewer than 100 years.

ACS DFW Local Section

Dear Colleagues,

I hope that you are all prepared for a semester of exciting programming. Local section chemists and their families enjoyed watching the Dallas Stars beat the Washington Capitals at our January outing! It was a great evening filled with good conversation and thrilling sports.

On February 25th, our section will meet on at UTD to view the documentary film ***Haber***. I hope that you all will be able to join us for this evening of good food, thought-provoking film, and interesting discussion.

Our March meeting will be held March 5 at UTA. Dr. **Daniel Rabinovich** of the University of North Carolina at Charlotte will deliver a lecture entitled ***The World of Chemistry on Postage Stamps***. Be on the look out for the RSVP email to reach you all shortly.

The month of April will host two events. On April 6 at the Saltgrass Restaurant in Lewisville, our local section will honor 50- and 60-year members of the ACS as well as student award recipients. Additionally, our Meeting in Miniature will be held on Saturday, April 25, at UTA.

We will conclude our local section meeting programming on May 11, as Dr. **Bill Carroll** will give a lecture entitled ***Statistics and the Shirelles: How Physical Sciences Thinking Informs Popular Music Analytics***. More information will follow in the coming months.

I do hope that you all are excited for the upcoming events; as always, if there are any questions or concerns, please contact me and I would love to help.

All the best,

Shana Marie Santos **shana.marie.santos@gmail.com**
Chair DFW Section

acsdfw.org

NATIONAL CHEMISTRY OLYMPIAD
Qualifying Exam
SATURDAY, MARCH 7, 2015

The DFW section of the ACS will be conducting its local qualifying exam for the 2015 National Chemistry Olympiad on Saturday, March 7, 2015 (8:30 a.m).

The exam will be given simultaneously at the following locations:

1. The University of North Texas; Chemistry Building, Room 109

2. The University of Texas at Arlington; Baker Hall, Room 114

Parking information and maps

UNT **http://www.unt.edu/transit/pdf/parkingmap.pdf**

UTA **http://www.uta.edu/maps/**

Practice Exams:

PLEASE NOTE: There is no cost to students or teachers for this or the national exams. Copies of previous years' exams are available at www.chemistry.org for practice:

http://www.acs.org/content/acs/en/education/students/highschool/olympiad/pastexams.html

Pre-registration:

While 'walk-ins' are welcome, to help the coordinators anticipate how many exams to have available at each testing facility it is encouraged to pre-register for the local qualifying exam. Please email or fax the completed pre-registration form **http://www.acsdfw.org/2015%20DFW%20Preregistraton%20Form.pdf**

to Brad Pierce (bspierce@uta.edu); FAX 817.272.3808.

US National Chemistry Olympiad (NCO) Testing Requirements

1. Students must be U.S. citizens or legal, permanent residents of the United States (green card holders) to take the U.S. National examination. (Prior to 2014, green card holders were NOT eligible to take the National exam.)

2. Students must be younger than 20 years old.

3. Only regularly enrolled high school students, graduating no earlier than Spring semester 2015, are eligible.

4. No more than two students per teacher or per high school may be selected to take the national exam. In the case of magnet programs or split enrollment, a student's school is defined as the high school where the student takes their science courses. For example, TAMS counts as a single high school for these purposes.

Olympiad continue

5. Students who have taken advanced placement courses in chemistry are eligible.

Likewise, students who have received credit for college-level courses (limited to no more than two semesters or three quarters beyond general chemistry) are eligible.

6. Programmable calculators and cellular phones are NOT permitted during either the local or national exams. This means that **ABSOLUTELY NO GRAPHING CALCULATORS** are permitted during the exam regardless of whether the memory is cleared. Students MUST bring nonprogrammable scientific calculators with them to the exam, as the testing locations have NO calculators to loan. Students may bring pencils and erasers for marking their answers.

7. Local selection will be based upon student scores on the local NCO qualifying exam to be administered simultaneously at multiple locations in the DFW section on Saturday, March 7, 2015. There is only one day and time for the local test. THERE ARE NO MAKE-UP EXAMS! In case of tie scores, the criterion for selection of a tie-breaker system will be announced prior to the beginning of the exam on March 7. (Historically, this has been based on correct answers to selected questions.) All exams will be collected for scoring as a single group, so there is no advantage to testing at a particular site. Participants are encouraged to take the exam at the testing site closest to them.

8. For those students selected for advancement, **the National Exam will be held on Saturday, April 18, 2015, at the University of Texas at Arlington** (location/time TBA).

NOTE: Once all preliminary exams are scored, we will verify the availability and participation of qualifying students for the local NCO examination. When this is complete, we will notify the remaining students of their score. As a courtesy we also mail back each student's exam to their chemistry instructor so they can see what how they did on the exam. Please keep in mind that administering the local NCO examination is our first priority. Therefore, it is not unusual that these exams are not mailed out until after the DFW NCO exam is complete in April. Please be patient with us during this time.

2015 USNCO Coordinators

Dallas/Fort Worth Section, ACS

Kathleen Holley, Ph.D.

kkholley@yahoo.com

Brad S. Pierce, Ph.D.

bspierce@uta.edu

ACS Chemistry for Life®

Call for Speakers
Career/College Day
Trinidad Garza Early College High School

ACS speakers are needed to participate in the career/college day event at Trinidad Garza Early College High School, in Dallas, on March 6th. Below are specifics for the event. Chestnutt Association, Inc., **www.chestnuttassociationinc.com**, is a contractor with the school and will be coordinating this event for them.

Event Specifics

Location: Trinidad Garza Early College High School, 4849 West Illinois Avenue, Dallas 75211 (the school is located inside Mountain View Community College)

Date: March 6th

Time: 9:00 a.m. to 12 noon

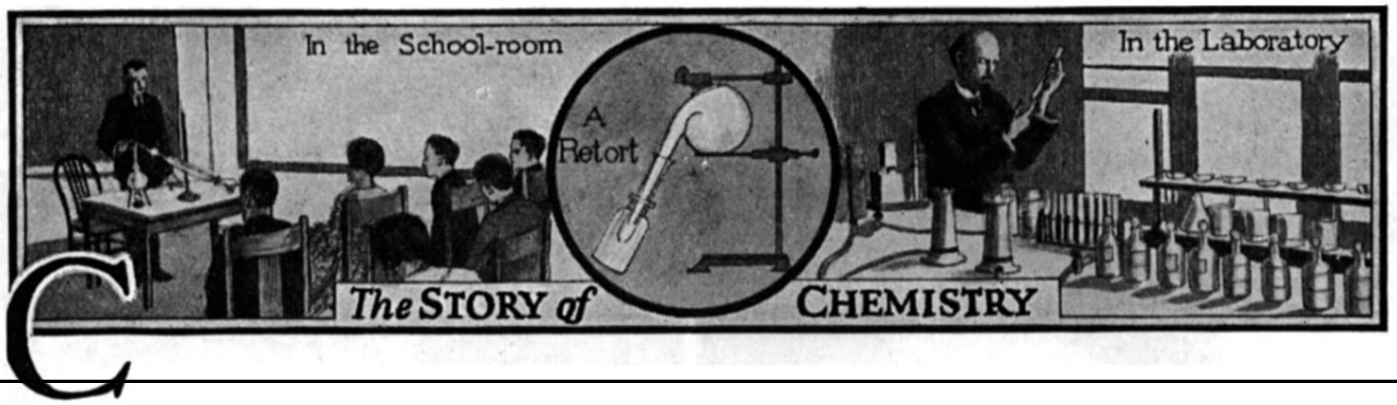
Format: Career/college speakers rotate to different classrooms, approx. every 20 minutes (Light breakfast provided)

If you can participate in this event, please contact

Peggy A. D. Chestnutt, M.H.S.

682-552-8832

peggychestnutt@gmail.com



DFW SECTION OF THE ACS
Call for Nominations
Doherty and Schulz Awards

Nominations are invited for 2015 Wilfred T. Doherty and Werner Schulz awards. Nomination forms and additional information are available online at **http://dfw.sites.acs.org/localsectionawards.htm**. This year's chair is Dr. Rasika Dias at UT Arlington (817-272-3171). Nominations are due by April 15, 2015. Each nomination should contain completed nomination form, cover letter highlighting the nominee's accomplishments, and a copy of the CV. One seconding letter may accompany nominations. The nomination package should be sent by email as a single pdf file to Rasika Dias at **utachem2015@yahoo.com**. Nominations remain active for five years but should be updated annually.

The Doherty Award is given for excellence in chemical research or chemistry teaching, meritorious service to ACS, establishment of a new chemical industry, solution of pollution problems, and advances in curative or preventive chemotherapy. Nominees may come from industry, academia, government, or small business. The nominee should be a resident member in the area served by the DFW Section, and the work should have been done here. The award is $1500 and an engraved plaque. A photo of the Doherty Award winner will be displayed permanently in the Gallery of Doherty Award winners, Berkner Hall, UT-Dallas.

The Schulz Award is given to high school chemistry teachers, who, like the late Dr. Werner Schulz, bring that something extra to the teaching of chemistry. The nominee and/or nominator need not be ACS members. Nominees should show excellence in chemistry teaching as demonstrated by testimonials from students and fellow teachers, results in student competitions, and diligence in updating and expanding scientific/teaching credentials. A photo of the Schulz Award winner will be displayed for one year at the Perot Museum of Nature and Science in Dallas, and then displayed permanently in the Gallery of Schulz Award winners, Science Bldg., Tarleton State University. A traveling plaque stays at the winner's high school for the year of the award. Winners will normally receive their awards and give their lectures at a fall meeting of the section.

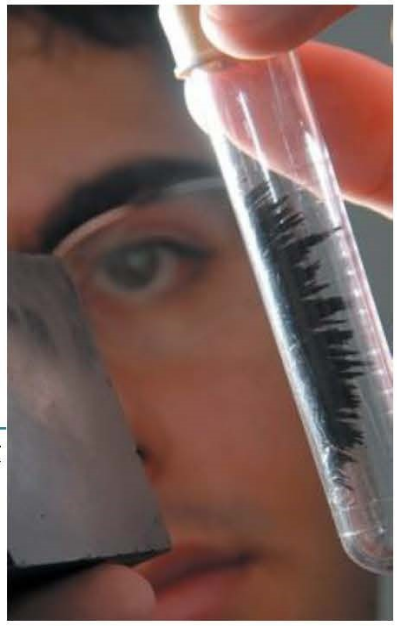
Remember, a continuous flow of nominations is needed to maintain the quality of awards.

48th Annual Meeting-in-Miniature Saturday, April 25, 2015

April 2015 Meeting Dallas-Fort Worth Section of the American Chemical Society

THE UNIVERSITY OF TEXAS AT ARLINGTON
University Center, Arlington, Texas

SAVE THE DATE: All Graduate and Undergraduate Students are invited to submit abstracts for a 10-12 minute oral presentation, allowing 3-5minutes for questions.



Abstract Deadline:
Friday, March 27, 2015

Submission: An Abstract Template can be found at http://www.uta.edu/chemistry/seminars/DFW-ACS-MIM-2015.php. Please fill out the document containing your ACS-style abstract and send it as a Word Document to chemistry@uta.edu with the subject line *"Meeting in Miniature Abstract Submission"*

Details for Abstract:

Title of Presentation
Authors (Underline presenting author and put an * next to advisor)
Affiliation (Department and University)
Division: (Analytical, Biochemistry, Inorganic, Organic, Physical, etc. There is no limit to division participants.)
Email Address of presenting author
Category: Undergraduate or Graduate
Abstract Paragraph, which should include "Motivation, Methods, Results, Conclusions" – C. Elliot; and be limited to 200 words

Awards: Multiple Awards given to top presentations from each session.

Registration: **Free!**

Schedule: Online Soon

Location/Map of UTA's Campus: www.uta.edu/maps/

Parking: Visitors may park in lots F11 and F12 for free

SCI-Southwest Holds Spring Meeting

SENCER
SCIENCE EDUCATION FOR NEW CIVIC ENGAGEMENTS AND RESPONSIBILITIES

Bringing Civic Engagement and Undergraduate Research Experiences into Chemistry Courses, and Incorporating Themes of Sustainability Across the Curriculum

On January 23, 43 attendees from seven institutions gathered in the Ann Stuart Science Complex at Texas Woman's University (TWU) for the SENCER Center for Innovation -Southwest spring regional meeting on civic engagement, undergraduate research, and sustainability.

Note: For a report of this meeting, including links to presentation slide shows, go to **http://serc.carleton.edu/sencer/newsletters/97927.html**

Cynthia Maguire, M.S. (TWU) and Dr. **Nasrin Mirsaleh-Kohan** (TWU) presided over the morning session on civic engagement and undergraduate research. The morning's talks largely focused on how the SENCER method could be applied to a wide variety of chemistry courses, including courses with large enrollment (700+ students), general education courses for non-science majors, and advanced courses on instrumentation. The morning also included a poster session highlighting faculty and student work related to SENCER and undergraduate research, and a discussion of how research within the Lower Mississippi and Pearl River systems promotes science education, volunteerism, and civic engagement.

Drs. **Richard Sheardy** (TWU; SCI-Southwest co-director) and **Reid Bishop** (Belhaven University) presided over the afternoon program, which broadened beyond chemistry to address ways of incorporating sustainability across the curriculum. Topics covered by afternoon presenters included a departmental approach to adopting sustainability on Santa Clara University's campus, the use of multimedia to engage students in civic issues, examples of sustainability in preK-12 and undergraduate non-science majors curricula, the creation of a sustainability certificate program at TWU, and an exploration of how civic engagement leads to learning that lasts.

SENCER leaders from across the U.S. presented at the meeting. Dr. **Joseph L. Kirsch** (Butler University; SCI-Central Plains co-director) introduced SENCER philosophies and methods to meeting attendees.

Dr. **Garon C. Smith** (University of Montana) explained his *Trojan Horse model*, useful for incorporating SENCER Ideals into a pre-existing course, with no drastic redesign or approval logistics involved. Garon uses this model to incorporate civic issues such as cyanide heap leaching; pulp, paper, and vehicle emissions; and western wildfires and other particulate sources into Introduction to College Chemistry, a high-enrollment course.

Dr. **Douglas E. Latch** (Seattle University) discussed teaching Instrumental Analysis, an upper-level chemistry course with a

typical enrollment of 10-20 junior and senior science majors, by focusing on ecological measurements of lead in soils, pesticides in water, terpenes in tree resins, and bisphenols in the environment.

Dr. **G. Reid Bishop** (Belhaven University) explained the values and challenges of research experiences in the undergraduate curriculum, and emphasized the importance of partnerships to the success of research and citizen science. Reid works with wildlife refuges, museums, higher education institutions, and private donors, among others, to study the Lower Mississippi and Pearl River systems with his students.

Dr. **Amy Shachter** (Santa Clara University; SCI-West co-director) shared Santa Clara's strategy for integrating sustainability themes across the curriculum. Santa Clara uses its Penstemon Project to help faculty outside the traditional, environmentally-focused disciplines to find ways to incorporate sustainability into their curricula, either as class content or in the way their class functions.

Dr. **Thomas C. Wood** (George Mason University) and Dr. **Julia Nord** (George Mason University) discussed their experience team teaching Mysteries of Migration, a course that uses multimedia resources provided by KQED to engage students in the curriculum. Their slideshow and other materials will be released at the 2015 SENCER Summer Institute.

Alana Presley Taylor (Interdisciplinary Studies Graduate Student, University of North Texas) helped attendees think about incorporating sustainability into preK-12 education through her work with Denton Sustainable Schools, and into undergraduate education for non-science majors through experiential learning student engagement projects.

Cynthia Maguire, M.S. (Department of Chemistry & Biochemistry Senior Lecturer, TWU), Dr. **Jeffrey B. Robb** (Department of History & Government Professor, TWU), and Dr. **David Rylander** (School of Management Professor, TWU) described how a certificate in sustainability was formed at TWU. A multidisciplinary, team-teaching approach is used in the certificate's foundation course, and a civic project capstone follows after building block courses in various disciplines. Building block courses that count toward the certificate include such topics as environmental chemistry; human perspectives of climate change; natural disasters; the history, culture, and law of our national park system; water in a changing world; and entrepreneurial service learning.

Dr. **Stephen Carroll** (Department of English Senior Lecturer, Santa Clara University) explored what learning is, asking attendees to write down their own definitions of learning, followed by a discussion about how durable learning results from civic engagement.

For more information on SCI-Southwest, contact the region's co-directors:

Dr. Richard Sheardy
RSheardy@mail.twu.edu

Dr. Ann Staton **AStaton@mail.twu.edu**

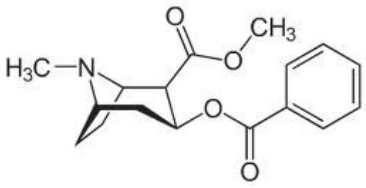
From the ACS Press Room

Addiction and Vaccines

Flagellin as Carrier and Adjuvant in Cocaine Vaccine Development
Molecular Pharmaceutics

In their decades-long search for vaccines against drugs of abuse, scientists have hit upon a new approach to annul cocaine's addictive buzz. They report in the ACS journal *Molecular Pharmaceutics* that their strategy, which they tested on mice, harnesses a bacterial protein to trigger an immune system attack on the drug if it enters the body. This response could dull cocaine's psychotropic effects and potentially help users of the drug kick the habit.

Kim D. Janda and colleagues note that



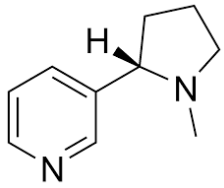
according to the 2011 National Survey on Drug Use and Health, an estimated 1.4 million people in the U.S. took cocaine. A number of therapies are available to help drug abusers quit. But addiction is extremely tough to beat. So some scientists are working on vaccines to neutralize the high-inducing effects of recreational drugs. Although vaccines are normally associated with fighting bacterial or viral infections, they can also be designed to recruit the body's immune system to recognize non-microbial substances such as drugs. None so far are widely effective, so Janda's team set out to try a new approach.

The researchers took a safe bacterial protein called flagellin that has already been incorporated in other vaccines and modified it to boost the immune response to cocaine. They tested the compound in mice and found that it worked better than a vaccine candidate they'd developed previously. The strategy, the researchers conclude, opens up a new avenue for designing vaccines against drugs of abuse.

The authors acknowledge funding from the Skaggs Institute for Chemical Biology, the National Institute on Drug Abuse and the National Institute of Allergy and Infectious Diseases.

A New Vaccine that could help you quit smoking (video)

New research from the *Journal of Medicinal Chemistry* may help millions stick to a common resolution: quitting smoking. Researchers at the Scripps Institute in La Jolla, California, are working on a nicotine vaccine that could put an end to the addiction. **Kim Janda's** approach is to get the body's immune system to treat nicotine like a foreign invader. But getting the body to respond in the right way is a big challenge. The video, the first from the newly launched ACS Headline Science series, is available at



http://youtu.be/jfbL8quK3a0.

Around the Area

Tarleton State University

Dr. **David Austin** is a new addition to our chemistry faculty. Dr. Austin earned his PhD in Chemical Engineering at University of Aston, Birmingham (England), and brings many years of experience as a working chemical engineer in various locations all over the globe to his position.

The Tarleton State University Student Affiliate Chapter will be attending the Denver National Meeting to receive recognition as a Commendable Chapter and also as a Green Chemistry Chapter.

UT Arlington

Dr. **Purnendu (Sandy) Dasgupta** has been given the 2015 J. Calvin Giddings Award for Excellence in Education. This award is given by the Analytical Division of the ACS. The award was first given in 1983 with Isaac M. Kolthoff the first winner. The award consists of a plaque and $2500. The awards ceremony typically takes place at the ACS fall meeting. Dr. Dasgupta was honored for authorship of analytical chemistry textbooks.

Dr. **Robin Macaluso** joined the UTA chemistry faculty in January as Associate Professor of Chemistry. She received her B.S. degree in education with almost a second major in chemistry from LSU. She taught high school chemistry for two years and then returned to graduate school at LSU. She received her Ph.D. in solid state chemistry in 2004, with Julia Chan as her mentor. She then did a post doc with the Materials Research Division at Argonne Laboratories.

Dr. Macaluso joined the faculty of the University of Northern Colorado in 2006. She was promoted to Associate Professor in 2011. An important hobby for them both is running. Her research deals with the synthesis of intermetallic materials along with exploring their electrical and magnetic behavior. She also has a PRF grant to study oxides and oxynitrides.

Undergraduate student **Eliezer Alvarado** has just been admitted to the UTA McNair Scholars Program.

Send your seminar schedules for the semester or the year to the RETORT.

retort@acsdfw.org

Date	Speaker	School
January 23	Dr Eduard Chekmenev	Vanderbilt University
January 30	Dr Donovan Haines	Sam Houston State University
February 6	Dr Wei Zhang	University of Colorado
February 13	Dr Ivan Aprahamian	Dartmouth
February 20	Dr Susan Kauzlarich	University of California Davis
February 27	Dr Wei Chen	University of Central Oklahoma
March 6	Dr Jose Gutierrez-Gonzales	University of Texas Pan American
March 13	Dr Richard Willson	University of Houston
March 27	Dr Saiful Chowdhury	University of Texas Arlington
April 6	Dr Ali Trabolsi	New York University Abu Dhabi
April 10	Dr. Warren Chan	University of Toronto
April 17	Dr Gang-Yu	University of California Davis
April 24	Dr Nathaniel Rosi	University of Pittsburgh
May 1	Dr Jennifer Irvin	Texas State University

800 West Campbell Rd. Richardson, TX Contact: gassensmith@utdallas.edu

FIVE QUESTIONS FOR…

Our February interviewee is **R. G. (Bob) Landolt**, Ph. D., Emeritus Professor of Chemistry at Texas Wesleyan University. Dr. Landolt was a 1985-86 ACS Congressional Fellow and served at ACS/DFW Section Chair from 1990-91.

1. How old were you when you realized you wanted to be a scientist?

Early in my teens.

2. What aspects of your career do/did you enjoy the most?

Teaching and doing research, largely with directing undergraduates, primarily in organic chemistry.

3. Would you change any of your education if you had a chance? If yes, what would you do differently?

My high school had very limited coursework available in science, which left me at a disadvantage in college. In fact, my first chemistry course was taken as a college sophomore. I'm mightily impressed by the results of better HS science preparation than was available to me.

4. You're very involved in climate science and have focused a lot of your energies on the Climate Change Toolkit. What exactly is this project? And how will it be used in the future?

In 2013-14, I directed a program funded by ACS grants and the DFW Section to introduce North Texas Community College Faculty and others to climate change challenges. A major focus was the ACS Climate Science Toolkit (**www.acs.org/content/acs/en/climatescience.html**), about which we organized symposia at Texas Wesleyan and the 2014 Southwest Regional ACS Meeting in Fort Worth. The former featured presentations from the Texas State Climatologist, me, and a representative of the North Central Texas Council of Governments, as well as a teleconference on climate change simulation programs (**http://www.climateinteractive.org**).
Rudy Baum, Editor of *C&EN*, provided the keynote for the SWRM symposium, which included a Climate Toolkit discussion as well as general research topics.
Our original proposal envisioned expanding similar programming for secondary education teachers, and plans are underway to provide activities focusing on climate change issues for the upcoming Conference for the Advancement of Science Teaching (CAST) scheduled for Fort Worth next autumn. In addition to the ACS Climate Toolkit, an extensive series of web links to climate resources will be available to anyone who contacts me: **rlandolt@txwes.edu**.

5. The ubiquitous 5th of the 5 Questions must be: Who is your Science Hero? and why?

I'd like to acknowledge as many as four, for very different reasons:

Professor **Royston Roberts**, my Ph.D. research advisor at UT Austin, who set a high standard as a gentleman as well as a scientist;

Muskingum College Ecology Professor **'Wild Bill' Adams,** a fearless defender of academic freedom, who promoted "meeting students where they are and taking them as far as they can go";

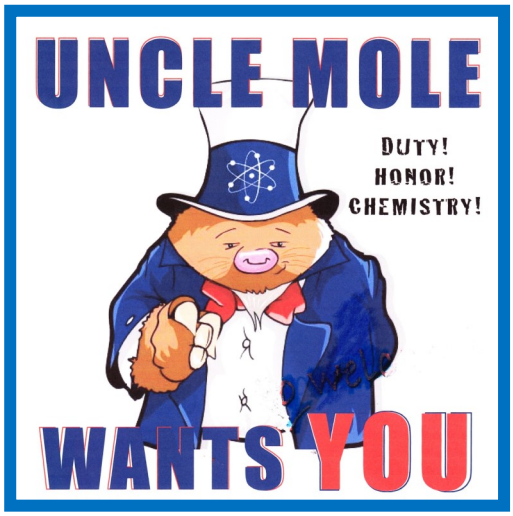
Isaac Asimov, before and after our meeting and correspondence, for providing unlimited horizons (have you read *The Gods Themselves*?); and

Norman Hackerman, who provided me the challenge of directing the 1991 Texas ARP/ATP grant competition for the Texas Higher Education Coordinating Board.

Thank you, Dr. Landolt, for participating in '5 Questions'!

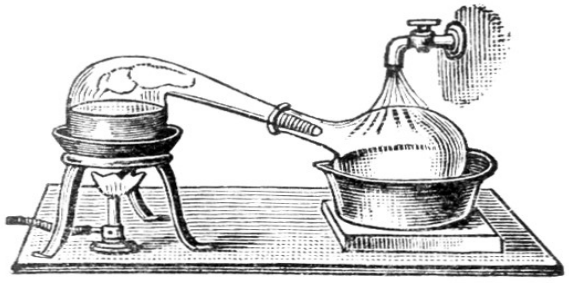
If you've read this article and want to volunteer to be interviewed, send an e-mail with 5Q in the title to retort@acsdfw.org.

Editor's note: I tried to find a link to *The Gods Themselves* for you, and found several, but I felt the claims of "free" ebook might be not quite legal, so I'll let you do that yourself.



to send your articles, news items, and opinion pieces to the Southwest **RETORT!**

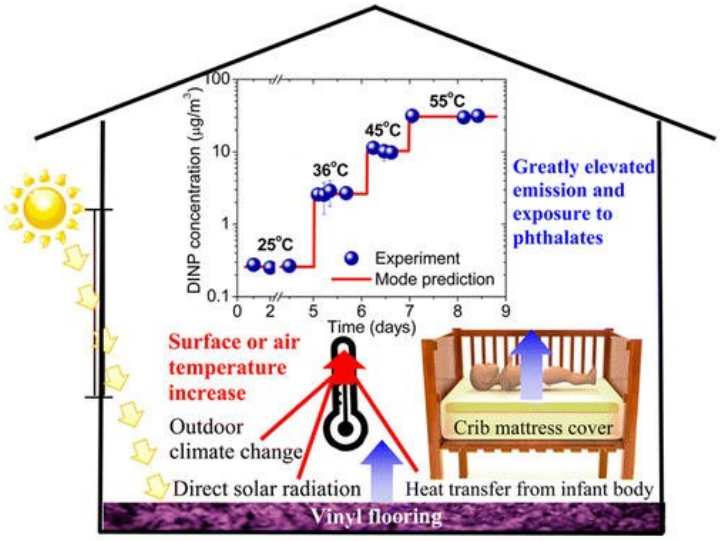
Click on the retort to access email.



Heat boosts phthalate emissions from vinyl crib mattress

Emission of Phthalates and Phthalate Alternatives from Vinyl Flooring and Crib Mattress Covers: The Influence of Temperature
Environmental Science & Technology

The U.S. continues to look at the use and regulation of phthalates, which have been associated with health problems. Of particular concern is the safety of these plastic additives to children. A new study aims to improve our understanding of one possible exposure route for babies: vinyl crib mattress covers. Scientists report in ACS' *Environmental Science & Technology* that as these covers warm up, they emit more phthalates into the air.



Ying Xu and Yirui Liang note that previous studies have linked phthalates, which soften plastics, to potential health effects, including reproductive issues and an increased risk for asthma and allergies. In response, the U.S. Congress banned six kinds of phthalates from toys in 2008, and manufacturers have been turning to alternative plasticizers, which are different phthalates. But little is known about the toxicity of these replacements or whether they waft into the air infants breathe for 12 to 14 hours per day at potentially harmful levels. Xu and Liang decided to find out whether infants, who breathe in far more air (given their low body weight) than adults, might be getting exposed to high levels of alternative phthalates.

The researchers tested the amounts of the alternative-phthalate plasticizers released from vinyl crib mattress covers at different temperatures and estimated how much of that the infants might breathe in. They found that, under warm conditions, the covers emitted significantly higher levels of phthalates that could cause a baby's exposure to increase fourfold. They say the preliminary study is an essential first step to investigating the potential risk posed by these new phthalates.

The authors acknowledge funding from the National Science Foundation.

From the editor

SWRM has flown by, but the February issue always brings a plethora of meetings and announcements:

♦The March meeting will be held March 5 at UTA. Dr. Daniel Rabinovich of the University of North Carolina at Charlotte will deliver a lecture entitled *The World of Chemistry on Postage Stamps*.

♦Speakers are needed at the college and career day at Trinidad Garza Early College High School (Mountainview College, March 6).

♦The National Chemistry Olympiad qualifying exam will be held on March 7 at UTA and UNT.

♦The DFW Section Meeting-in-Miniature is coming up in April, with an abstract deadline of March 27. Judges will be needed for this event.

♦Also in April, our local section will honor 50- and 60-year members of the ACS as well as student award recipients (April 6 at the Saltgrass Restaurant in Lewisville).

♦The Awards Committee chair has issued the call for nominations for the Doherty and Schulz awards (deadline April 15).

For me, the most significant article from the ACS Press Room this month concerned vaccines for addictions...making the immune system treat drugs like nicotine and cocaine as foreign proteins and eliciting an immune response seems to be a great step in the direction of dealing with addictions. Kim Janda and his group at the Scripps Research Institute are making great headway in this direction.

I hope you enjoy the events in March and April…and my favorite Retort illustration on page 24.

Best regards,
Connie