



September 2008  
Vol. 92, Issue 5

# Central Texas ACS

Established 1917

Newsletter of the Central Texas Section of the American Chemical Society

Monday, Oct. 13<sup>th</sup>, 6:00-7:00 Social Hour, 7:00-8:00 Dinner, 8:00-9:00 Speaker

## Superconductivity and Chemical Structure

**Dr. R. Bruce King**

Regents' Professor of Chemistry, University of Georgia

**Nuevo Leon on 6<sup>th</sup>**

**1501 E. 6<sup>th</sup> St.**

(see p. 2 for directions)

\$10 for members/adults, \$5 for students

Please RSVP to (512) 968-4750 or email [malcolmdprouty@gmail.com](mailto:malcolmdprouty@gmail.com)

### Dr. R. Bruce King

R. Bruce King was born in Rochester, New Hampshire in 1938, attended Oberlin College (B. A. 1957), and was an NSF Predoctoral Fellow with Prof. F. G. A. Stone at Harvard University (Ph. D. 1961). After a year at du Pont and 4½ years at the Mellon Institute he joined the faculty of the University of Georgia where he is now Regents' Professor of Chemistry. His research interests have ranged from synthetic organometallic and organophosphorus chemistry to applications of topology and graph theory in inorganic chemistry and the inorganic chemistry of nuclear waste treatment. Prof. King was the American Regional Editor of the *Journal of Organometallic Chemistry* from 1981 to 1998 as well as Editor-in-Chief of the *Encyclopedia of Inorganic Chemistry* published in 1994. He is the recipient of American Chemical Society Awards in Pure Chemistry (1971) and Inorganic Chemistry (1991). Since 1990 he has published books entitled *Applications of Graph Theory and Topology in Inorganic Cluster and Coordination Chemistry* (1993), *Inorganic Main Group Element Chemistry* (1994), and *Beyond the Quartic Equation* (1996). Prof. King's hobbies include contract bridge, music, and travel.

### Talk Abstract

Consideration of the chemical bonding topology of the conducting skeletons in the Chevrel phases  $\text{MMo}_6\text{S}_8$  and the lanthanide rhodium borides  $\text{LnRh}_4\text{B}_4$  indicates that their conducting skeletons consist of networks of edge-localized bonded atoms. These observations suggest that superconductivity is favored when electron mobility is restricted to fewer than three dimensions—thus, the chemical bonding topologies of the highest  $T_c$  superconductors contain one of the following features: (1) Edge-localized M-M bonding in the conducting skeletons of ternary and quaternary solid state superconductors or related partially localized bonding in superconducting transition metals and their alloys; (2) Localized rather than fully delocalized bonding in copper oxide superconductors containing Cu-O-Cu linkages with appreciable Cu-Cu antiferromagnetic interactions; (3) Surface-localized bonding in fullerene superconductors containing direct C-C bonds such as  $\text{K}_3\text{C}_{60}$ . In addition, heavy fermion superconductors having considerably lower  $T_c$ 's are known in which the conducting skeleton consists of variable oxidation state lanthanide or actinide cations diluted by an anionic network of other metal atoms so that the lanthanide or actinide atoms are not within bonding distance of each other.

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## Chair's Page

### Letter from the Chair

Greetings, Central Texas ACS!

The September meeting & Science Cafe was a huge success! This gathering was one for the record books, as we had 89 ale-sippin' attendees at North by Northwest enjoying the talk by Dr. Tracy Hamilton on zymurgy. Thanks to all the ACS members and guests who attended, as well as members of the Austin Zealots, a local brewing club. I would also like to thank the ACS for supporting this event through the Science Cafe mini-grant. Please contact me if you would be interested in organizing a Science Cafe; see [www.sciencecafes.org](http://www.sciencecafes.org) for more information.

Malcolm Prouty, Chair-Elect, will be facilitating the October 13th meeting since I will be on maternity leave; "Superconductivity and Chemical Structure" will be presented by Dr. R. Bruce King at Nuevo Leon on East 6th Street. And of course it wouldn't be October in the ACS without National Chemistry Week! This year's theme, "Having a Ball with Chemistry", focuses on sports science, including the many materials used in equipment and safety gear, as well as the chemistry of hydration and nutrition. There are many ways to get involved in NCW: volunteer at our community event (see p. 3), enter the Poster Contest or Chemagination competition, promote NCW at your place of business, or post the NCW logo on your website. I encourage you to browse [www.chemistry.org/ncw](http://www.chemistry.org/ncw) for more ideas on how to celebrate chemistry!

Until next time, remember our ACS vision, "Improving people's lives through the transforming power of chemistry."

Best regards,  
Betsy Shelton, Chair



August 2008 Meeting

**"Zymurgy: The Art and Science of Making Beer"**

For more event photos, visit <http://picasaweb.google.com/retrosynthesis/ACSMeeingZymurgyTheArtScienceOfMakingBeer>

### Directions to Nuevo Leon (Oct. 13<sup>th</sup> meeting):

Coming **north on I-35**, take Exit 234C/6<sup>th</sup>-12<sup>th</sup> Streets. Take a right on 6<sup>th</sup> Street and continue about ½ mile to the corner of Onion Street and 6<sup>th</sup>. Coming **south on I-35**, take Exit 234B/8<sup>th</sup>-3<sup>rd</sup> Streets. Take a left on 7<sup>th</sup> Street and continue about ½ mile to Onion Street. Take a right and continue to the corner of Onion and 6<sup>th</sup>.

### MAKER FAIRE INFO

#### Directions to Travis County Expo Center:

From the intersection of I-35 and US 290 East in north Austin, go 6 miles east on 290 until you come to the intersection of 290 and Decker Lane (a stop light). Turn right onto Decker Lane and go 3 miles to the front gate of the Expo Center, which will be on your left.

A map for the event site can be found at [makezine.com/go/austinmap](http://makezine.com/go/austinmap)

**Parking** will be available at the Travis County Expo Center and Fairgrounds. Public entrance will be at Gate 1. You will be directed to designated parking areas.

**Tickets** can be purchased in advance for \$20 (adult) and \$10 (student) at <http://www.makefairetickets.com/> Tickets will be \$25 (adult) and \$15 (student) on the day of the event.

**Admission is FREE for ACS volunteers (and children under 3)!**

Answers to other **frequently asked questions** may be obtained at <http://makefaire.com/austin/2008/faq/>

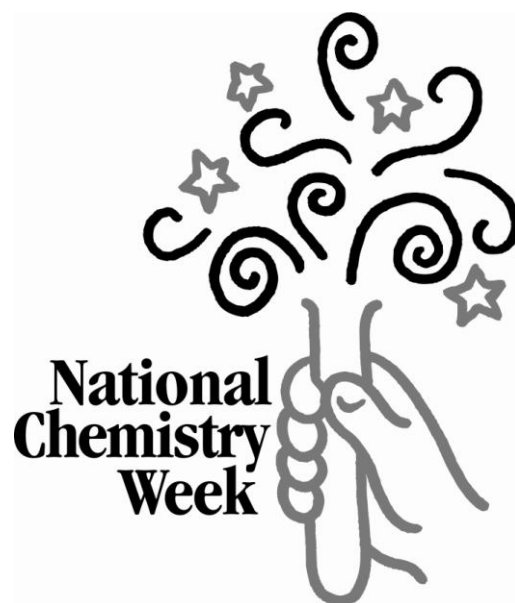
Central Texas ACS: September 2008  
Calendar of Events

# NATIONAL CHEMISTRY WEEK

**October 19-25, 2008**



**Maker Faire**  
Build. Craft.  
Hack. Play.  
MAKE.  
Oct 18 & 19  
2008  
Austin, TX  
Travis County  
Expo Center  
[makerfaire.com](http://makerfaire.com)



## “HAVING A BALL WITH CHEMISTRY”

### Central Texas ACS Event

in conjunction with the Austin Maker Faire and  
the Austin Children’s Museum/Maker Kids

**October 18, 2008**

**10:00 AM-2:00 PM**

**Travis County Expo Center**

**7311 Decker Lane**

To volunteer for this year’s NCW event, please contact Jackie Padilla:  
[jackie.padilla@gmail.com](mailto:jackie.padilla@gmail.com)

For more information, contact Dodie Wells:  
[dodiewells4@hotmail.com](mailto:dodiewells4@hotmail.com) or (512) 369-3668

# Central Texas ACS: September 2008

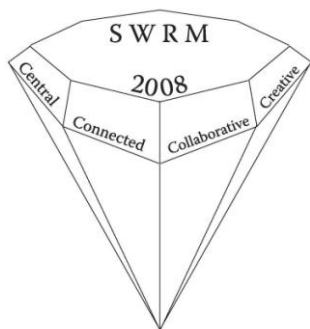
## Calendar of Events

**Monday, October 13<sup>th</sup>**  
**Nuevo Leon, 1501 E. 6<sup>th</sup> St.**  
**Dr. R. Bruce King**  
**“Superconductivity and Chemical Structure”**

**Thursday, November 13<sup>th</sup>**  
**Alamo Drafthouse, 1120 South Lamar Blvd.**  
**Dr. John Fortman**  
**"The Serious and Delirious Use of Chemistry in Movies"**

**64<sup>th</sup> Southwest Regional ACS Meeting**  
**October 1-4, 2008, Little Rock, AR**

Rock Solid  
 Chemistry



Details at [www.swrm.org/2008/index.htm](http://www.swrm.org/2008/index.htm)  
 View the meeting program at  
<http://acs.confex.com/acs/wrm08/techprogram/meeting.htm>

**Younger Chemists Committee Leadership Awards:**  
**October 8 Deadline**

Leadership awards cover the expenses of attending the American Chemical Society's Leadership Institute to be held at the Omni Ft. Worth Hotel in Ft. Worth, Texas, January 23–25, 2009. Participants will explore the behaviors and characteristics exhibited by effective leaders at any level. Potential leadership opportunities, both within and outside the workplace, will be discussed and personal plans for improving leadership skills will be developed. Participants will also work alongside other ACS local, regional, and national leaders who are looking to strengthen their own leadership, management, and communication skills. Application forms and further information about the awards are available at [www.acsycc.org](http://www.acsycc.org)

**National Chemistry Week**  
**Poster Contest:**  
**October 15 Deadline**

As part of every annual celebration of National Chemistry Week, ACS sponsors a poster contest for students in Kindergarten–Grade 12. Students are invited to create a poster that celebrates the 2008 theme, “Having a Ball with Chemistry,” focused on chemistry and sports with an emphasis on chemistry/chemical principles or concepts in different sports and sporting equipment.

Entries should be mailed to Dodie Wells at 6904 Fence Line Dr., Austin, TX 78749. Winners will be announced the first week of November on the ACS website and via email.

Rules can be found at [www.chemistry.org/ncw](http://www.chemistry.org/ncw).  
 For more information, contact Dodie Wells at (512) 369-3668 or [dodiewells4@hotmail.com](mailto:dodiewells4@hotmail.com)

**ACS National Awards:**  
**November 1 Deadline**

The continued excellence of the ACS awards program requires that a number of highly qualified chemistry professionals be nominated, so your help is needed. The deadline date for all nominating materials for the 2010 ACS National Awards is November 1, 2008. Earlier transmittal is encouraged. Visit the ACS Awards website for more information at <http://www.acs.org/awards>

**2009 National Meeting**

Abstract submittal for the 2009 ACS National Meeting opened August 25<sup>th</sup>. The 237<sup>th</sup> national meeting will be held in Salt Lake City, Utah on March 22-26, 2009. Abstracts may be submitted using OASys at <http://oasys.acs.org/acs/237nm/oasys.htm>

# Central Texas ACS: September 2008

## Announcements

### ACS Executive Committee Positions Open

#### 2009 Chair-Elect:

The 2009 chair-elect plans and coordinates meetings for 2010. The chair-elect will attend a free leadership conference at the beginning of the year to learn about ACS structure, management, planning, and volunteer coordination. The chair-elect will be in charge of choosing speakers and venues for the following year's meetings, when he or she will become chair. This position is a great way to get involved with the local section and meet new people.

#### Awards Chair:

The awards chair is responsible for contacting the chemistry, biochemistry, and engineering departments of colleges and universities in the Central Texas Area and requesting nominations for our outstanding senior awards. The awards chair also arranges for the certificate and gift presentations to 50-year members.

For more information on the chair-elect or awards chair positions, contact the current chair-elect, Malcolm Prouty, at malcolmdprouty@gmail.com or (512) 968-4750.

#### Councilor:

Anyone interested in running for councilor should contact one of the following Nominating Committee members by October 10<sup>th</sup>.

Barry Streusand: 339-1462, bjs@applanal.com  
Denny Wagoner: 385-5886, dewchem@analysisinc.com  
Kenneth Pavlat: 339-1462, kpavlat@applanal.com

### Birth Announcement

Congratulations to Executive Committee member Linette Watkins and her husband Mark Smith on the birth of their son, Nicholas Korby Smith, on July 31, 2008 at 1:46 pm.



### Project SEED

Project SEED is an ACS-supported educational program that matches high-achieving students from low socioeconomic backgrounds with scientist-mentors in a paid lab-based internship. The goal is to increase awareness of career and educational opportunities in the sciences among students who historically have lacked exposure to scientific careers. This summer, two outstanding Travis High School students participated in chemistry internships as part of Central Texas ACS's new Project SEED program. Sophomores Dalia Carranza and Miguel Patino worked with UT Austin chemists Dr. David Graham and Dr. Ron Elber on their respective projects, "Enzymatic Analysis of UDP-Glucose" and "Computational Analysis of RNA in Aqueous Solutions." Next summer the program hopes to expand if matching funds can be found to pay for half of the internship costs.

### ACS Network



On August 1, 2008, ACS launched its initial release of the ACS Network, a member directory and networking site to help make it easier for members to connect. The site is free and available to ACS members and student affiliates, who are invited to create a profile, post a photo and search the site for other members by local section or technical division or by selecting keywords. Members can also highlight their publications and invite others to join their network. Register at <http://www.acs.org/MemberNetwork>

# Central Texas ACS: September 2008

## 2008 Executive Committee: Officers and Program Directors

Chair	Betsy Shelton	Applied Nanotech, Inc.	chair@	centraltexasacs.org	636-1905
Chair-Elect	Dr. Malcolm Prouty	SMRC	chairelect@		968-4750
Past-Chair	Jackie Padilla	URS	pastchair@		653-6311
Secretary	Dr. Deborah A. Hess	Signature Science	secretary@		586-6314
Treasurer	Dr. Stan Hajost	Applied Analytical, Inc.	treasurer@		339-1462
Councilor 1	Dr. Barry Streusand	Applied Analytical, Inc.	councilor1@		339-1462
Councilor 2	Prof. Jim Boggs	University of Texas	councilor2@		466-9145
Alt. Councilor 1	Dr. Linette Watkins	Texas State University	altcouncilor1@		245-3125
Alt. Councilor 2	Dr. Denny Wagoner	AnalySys Inc.	altcouncilor2@		385-5886
National Chemistry Week	Dodie Wells	Retired	NCW@		369-3668
Public Relations Chair	Jackie Padilla	URS	media@		653-6311
Women in Chemistry	Larisa Watson	University of Texas	wic@		471-7680
Awards Chair	VACANT		awards@		
Membership Chair	Dr. Linette Watkins	Texas State University	membership@		245-3125
Nominations Chair	Dr. Diane Kneeland	University of Texas	nominations@		232-0680
Chemistry Olympiad	Dr. Neal Grice	Dept State Health Service	chemolympiads@		926-7844
Girl Scout Program	Betsy Shelton	Applied Nanotech, Inc.	girlscouts@		636-1905
Boy Scout Program	Dr. Barry Streusand	Applied Analytical, Inc.	boyscouts@		339-1462
High School Coordinator	Dr. Neal Grice	Dept State Health Service	webmaster@		926-7844
Webmaster	Dr. Neal Grice	Dept State Health Service	webmaster@		926-7844
Newsletter Editor	Leila Henley	Applied Analytical, Inc.	editor@		339-1462

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