

St. Louis Section, American Chemical Society



# Let Your Voices Be Heard!

Earlier in the year I communicated with our dear members a need for the re-evaluation of our section's activities in order to better calibrate our offerings in light of the changing times and the challenges we all face in our professional lives. I also indicated at the time that such undertaking would necessarily be predicated upon input from our membership.

The time has now come for us to seek your input and thoughts. We need you to tell us what we can do as a section in terms of programs and services in order to:

- 1. Better respond to your needs
- 2. Get you more involved in section activities
- 3. Better serve our community and our profession

To this end, the section has put together a one-page non-intrusive questionare that would require approximately five minutes to complete. Please complete this survey by June 10th, 2004, and return it to Ted Gast, our Chairelect, at the address indicated on the back by simply folding, taping and placing a stamp on it.

And...don't forget to put in in the mail! Thank you in advance for you input and your participation in this effort.

Bijan Khazai 2004 Chair, St. Louis Section American Chemical Society



P.J. COBERT ASSOCIATES, INC. • P.O. BOX 460046 • ST. LOUIS, MO 63146 1-800-972-4766 • (314) 993-2390 • FAX (314) 993-2491 EMAIL cobert@cobertassoc.com • WEB SITE http://www.cobertassoc.com

# **Chemical Bond**

## Volume 55

## May, 2004

The *Chemical Bond* is published in January Through May and September through December by the St. Louis Section-American Chemical Society. It is mailed free of charge to members of the section at their address on file at ACS National Headquarters. Changes of address for members will be made automatically upon notification to National ACS Headquarters; send old address and new address with zip codes to ACS Subscription Service Department, 1155 16th St. N.W., Washington, DC 20036 or visit chemistry.org, log in, and go to Update my Profile. Allow eight weeks for change to take effect.

The domestic subscription rate for non-members/affiliates is \$8.00 per year. Subscription orders and changes of address for non-members/affiliates should be mailed to the editor.

Editor	Andrea Reaka	areaka@charter.net
		618/656-3739
Advertising Manager	Sue Saum	ssaum@stlcc.edu
		314/595-2308
Business Manager	Donna Friedman	dfriedman@stlcc.edu
		314/595-4388
Staff Writer	John Bornmann	jbornmann@msn.com
		636/946-5161
World Wide Web		http://www.umsl.edu/~acs/
Webmaven	Lisa Balbes	lisa@balbes.com

Correspondence, letters to the Editor, etc., should be sent to St. Louis Section-American Chemical Society 125 West Argonne Drive, St. Louis, MO 63122

Copyright © 2004 American Chemical Society and the St. Louis Section-ACS

# In this issue . . .

- 4 Meetings & Seminars
- 6 Letters, Words & More: Re-Routing the Earth
- 8 Career Corner
- 12 Chemical Progress Week Schedule
- 10 Science Fair Winners
- II Career Corner
- 12 Trademarks and Material Transfer Agreements
- 13 Request for Officer Nominations
- 14 Notes from the 227th National Meeting

# Meeting Seminars

# **Board of Directors**

St. Louis Section-ACS Board of Directors meets on the second Thursday of each month, at the Alumni Center, University of Missouri-St. Louis. Meetings are open to all members, and all are encouraged to attend. Elected officers and chairs of major committees have the right to vote: others in attendance have voice but no vote. If you want to attend the dinner, please contact Bijan Khazai (bkhazai@sentortech.com or 314/497-8629) at least one week prior to the meeting date. The usual cost of dinner is \$15. Members wishing to become active in section activities are welcomed for their first dinner for free. compliments of the section.

> Date: May 13 Social hour: 5:30 pm Dinner: 6:30 pm Business meeting: 7:15 pm

# Synthetic Organic Chemistry (SOC) Discussion Group

The Synthetic Organic Chemistry (SOC) discussion group will hold its May meeting on:

#### Wednesday, May 19

St. Louis University Lee Lecture Hall 1 (LH1) (lower level lecture halls, just next to Chem. Dept.)

and will also be very pleased to host the following speaker on that evening:

#### Dr. Eric W. Uffman

Washington University Development of a New Class of Enantioselective Acylation Catalysts

Please convene for refreshments at 5:30 pm, general remarks and comments/suggestions from the participants will start at 6 pm, and the presentation will follow. Parking will be available at the Olive Parking Garage, corner of Olive Blvd. and N. Compton Ave. The lower level lecture halls and Chem. Dept. are located just behind the soccer stadium. If you need directions, contact Olivier Nicaise at 977-2853 or nicaiseo@slu.edu.

If you are interested in participating, and some additional activities of the SOC discussion group, or at best would like to make a presentation at a future meeting, please contact one of the organizers listed below:

> Prof. Olivier Nicaise St. Louis University (314) 977-2853

Prof. Kevin Moeller Washington University (314) 935-4270 moeller@wuchem.wustl.edu

POLYMER STANDARDS FOR GCP/SEC MOLECULAR WEIGHT ANALYSIS GPC/SEC COLUMN REPACKING

American Polymer Standards Corporation 8680 Tyler Boulevard Mentor, OH 44060 Phone: 440-255-2211 Fax: 440-255-8397 Pick up

rotating

Mass-Vac ad

from p. 10 of Feb.. 2004

# **Re-Routing the Earth**

by Jack Bornmann

In my weekly conversation with my friend Gus we would sometimes wonder what the future holds. Gus was born about 1905 and I was born in 1930; we would consider the changes that had occurred in his life and the changes that I had noticed



during my life. On the basis of those changes we guessed what changes would happen in the next 25 to 50 years. It was a nice friendly conversation because we knew that neither of us would be able to check the accuracy of our predictions.

But, what if someone wanted to predict what would happen after a million years or so had passed. This is when you turn to cosmology to discover the fate of the universe, our galaxy and our solar system. We know that the universe is expanding, but will the expansion continue or is there enough mass to slow down the expansion, halt it, and start the collapse of the universe. I used to have a secret wish that we lived in a "yo-yo universe" in which the expanding universe would reverse itself and collapse back into a single point, from which another Big Bang would emerge. And, that this would continue forever.

However, cosmologists now tell us that the universe will never reverse its direction; it not only will continue expanding forever, but that expansion will accelerate. During the next 150 billion years 99.99% of the known galaxies will slip out of view because their distances will exceed the distance that light can travel in a time period equal to the age of the universe. Only the nearest 30

Continued on page 9



**Chemical Bond** 

# 2004 St. Louis Section Chemical Technician Award Call for Nominations

The St. Louis Section Chemical Technician Award is presented to a chemical technician in the St. Louis area who has demonstrated a high degree of professionalism as a chemical technician. Criteria used to judge the award include technical skills, safety and housekeeping, relationship with co-workers, presentations, reliability, communication skills, contribution to team efforts, and additional professional activities. The award will consist of a plaque, a check for \$250.00, dinner for the awardee and a guest at the Chemical Progress Week Awards Night ceremony, and nomination for the National Chemical Technician Award. The award will be presented at the Awards Night Banquet in April of 2005.

A chemical technician is a person whose training includes successful completion of an <u>Associate</u> or <u>Bachelor Degree</u> in chemistry or a chemistry-related curriculum, or the equivalent knowledge gained by experience. The primary work of a chemical technician is conducting experimentation and/or correlating information to assist in the solving of chemical problems.

Letters of nomination must be received by Sue Dudek, Pfizer Corp., mail code T2G, 700 Chesterfield Parkway West, Chesterfield, MO 63017 by October 29, 2004. Nominations, including seconding letters, must not exceed six pages. The nominating letters should address each of the criteria above. A current work address, phone number and fax number must be provided for each nominee. Please include an e-mail address if one is available.

Chemical technicians need not be a TECH Division Affiliate or ACS member to be eligible for this award. This award is administered by the St. Louis Section of the American Chemical Society (ACS).

> For more information contact Sue Dudek at 314-274-2464, FAX 314-274-4426, susan.dudek@pfizer.com

## Replica Instruments from the Cavendish Laboratory on Display at Washington University

The American Society for Mass Spectrometry has mounted an exhibit and poster on three instruments that played a mojor rone in the discovery of the elctron, proton, and neutron. The instuments are replicas of those in the Museum at the Cavendish Laboratory in Cambridge England. These replicas and explanatory posters will be on display in the Quadrangle Foyer Entrance to the new Laboratory Sciences Building on the Washington University Campus and can be viewed during normal school hours from the 26th of April to the 10th of May. For more information, contact Mike Grayson at (314) 935-7486 or grayson@wustl.edu

# Winners

The winners of this spring's **Outstanding Junior Chemistry Student Award** goes to:

> James Prell from Washington University Maria B. Thorson from St. Louis University (Dr. Dana Spence was the Faculty Advisor) Christopher Korves from Southern Illinois Univ. at Edwardsville (Dr. Nahid Shabestary was the Faculty Advisor) Shu Yao from Univ. of Missouri, St. Louis Ruth Jarrett from Lindenwood University Tiffany Brown from Maryville University (Dr. Kim Kilgore was the Faculty Advisor) Robyn Goacher from Principia College (Dr. Joseph Ritter was the Faculty Advisor) Thomas Pieper from McKendree College (Dr. Myron Reese was the Faculty Advisor)

The **Outstanding Chemical Technology Student Award** was awarded to: Daryl R. Budd from St. Louis Community College - Florissant Valley (Tom Mines was the Faculty Advisor)

# The Local ACS needs your help at the Illinois State Fair

Some Illinois ACS member sections go together in Peoria recently and decided to ask the ACS for a grant to have a booth at the Illinois State Fair on August 13-22, 2004. We are recruiting volunteers to attend the fair and help us put on demonstrations for the public. We are looking for suggestions for demonstrations that would appeal to all ages, volunteers to carry them out, and a supply of materials. We need 4 hour time blocks for commitments, but we are hoping for more. Many details have yet to be worked out. However, this will be a great venue for Sections to work together.

Our target audiences are school aged kids, their parents, and K-12 teachers of science. If you have been to the Fair, you know what fun it can be. If you have not been to the Illinois State Fair, then you should give it a try.

If you can help out in any way or know someone who could help, please contact:

Frank Salter Continental Cement Co. 10107 Highway 79 Hannibal, MO 63401 (573) 221-1740 ext. 264 fsalter@continentalcement.com

## Continued from page 6

galaxies will remain visible in the nearly starless sky.

What will happen to the earth and our solar system? Our sun, which is now 4.6 billion years old, has been producing the energy that has made life on earth possible. It does this by converting hydrogen into helium deep in its inner core. This energy production has steadily increased over the eons. In a billion years the sun will be 10% brighter than it is at present. Pessimists predict that this will boil away our oceans and transform Earth into another Venus, which has a surface temperature of 800 degrees Fahrenheit. If Earth continues to harbor intelligent life... measures can be taken to counteract the increase in solar energy.

A million years or so ago our very primitive ancestors were living in Africa (Did you realize that you are an Afro-American?) Consider how much we have evolved in a million years, then consider how much we will evolve in a 1000 million years. We will have the technology to do amazing things, like building a parasol in space between the earth and the sun, or nudging the earth away from the sun.

Our present sun is converting hydrogen into helium in its compressed central core. When that hydrogen is consumed, the central core will cool and shrink and the hydrogen of the outer layer will begin to fuse, the outer layers will expand to engulf Mercury and Venus and bake the Earth unless something is done.

One option is to move the Earth to an orbit around Saturn. Eventually our giant red Sun will begin to cool and the Earth will have to be confirming the expanding universe. Andromeda's blue shift tells us that it is approaching the Milky Way. It is approaching us with a velocity of 6 million miles per day, but that is only the component of the velocity vector. We will need the y- and z-components to determine if Andromeda will hit us squarely or pass "over our heads."

If there is a collision the intergalactic hydrogen will be sucked out of each galaxy to form many new stars. Spiral galaxies such as ours (Milky Way) contain hydrogen in the space between the stars and this hydrogen can be used to start new stars. When the free hydrogen is all consumed, and after the two galaxies have merged to form one, the result will be no longer a beautiful spiral galaxy, but an elliptical one with no special features. Elliptical galaxies have consumed all the loose hydrogen and no longer create new stars.

Cosmologists make these dire predictions using three values: the Hubble Constant, the Matter Density Ratio, and the Cosmological Constant. The values of these constants are given in the table below. Note the question mark after each value. It is said that cosmologists are never unsure, and frequently wrong. Relax and stop holding your breath; maybe you don't have to worry about our universe, our galaxy, or our earth.

The Observable Universe: Temperature: 2.73 K Hubble Constant 65 Km/sec/ megaparsec ? Matter density, Omega 0.3 ? Cosmological constant, lambda 0.7 ? Age 14.5 billion years ? Source: The Universe at Midnight by Ken Croswell

# Update on the 2004 Science Fairs

I would like to update the St. Louis section of the ACS about the status of our special prizes in chemistry at the science fairs in the St. Louis area this spring.

The first fair was the St. Charles/Lincoln County Science and Engineering Fair, at St. Charles Community College on March 8. I would like to thank all those who helped me in judging projects: Karl Markl, Greg Wall, Tony Bahinski, and Khuram Chaudhary. We presented 62 participation ribbons to students in grades K-5 who had chemistry and biochemistry projects. We awarded first, second, and third prizes to students in both the Middle School (grades 6-8) and High School (grades 9-12) divisions, as well as a first place prize in the International division. The winners were:

International Division: First Place: Elizabeth Zerr, St. Charles West High School High School Division: First place: Stacy Goodman, Buchanan High School Second Place: Alan Spires, Buchanan High School Third Place: Meghan O'Connor, Orchard Farm High School Middle School Division: First Place: Ashton Green, Wentzville Middle School Second Place: Sarah Arnack, Hardin Middle School Third Place: Brittney Crocker, Saeger Middle School

The second fair was the Illinois Junior Academy of Science Region 12 Science Fair, at SIUE on March 20. I would like to thank Alexa Serfis and Andrea Reaka who helped me in judging projects. Participation ribbons were given to 47 grade school students who had projects in the areas of chemistry and biochemistry. We awarded first, second, and third prizes to students in the Middle School division (grades 6-8) and first and second place prizes in the High School (grades 9-12) division; some projects were presented by pairs of students. The winners were:

High School Division: First place: Heather Collins, Alton High School Second Place: Emily Sinclair, Alton High School Middle School Division: First Place: Regina Lengermann and Briana Martin, St. Paul Catholic Sch. Second Place: Lisa Straub, Columbia District #4 Third Place: Dustin Diemert and Dustin Oakley, Red Bud School

The third fair was the Greater St. Louis Science Fair at Queeny Park. The Elementary division was held separately and, on April 12, Sue Dudek, Cindy Jo Fryer, and I distributed 473 participation ribbons to students with projects in chemistry and biochemistry (this was up by almost 50 from last year). The Secondary division was judged on April 16; Pat Burrell-Standley organized the judges at the fair since I was out of town. Pat was joined by George Cadwallader, Frank Stary, Jo Holt, and Der-Chyan Hwang to evaluate the Middle School, High School, and Honors division projects. I would like to

thank all those who helped in this, the largest of science fairs of the year. The winners from this years fair are:

Honors Division: First Place: YunXiang Chu, Ladue Horton High School High School Division: First Place: Rishi Ghosh, Parkway West High School Second Place: Julie Winkler from St. Joseph's Academy Third Place: Samira Safari, from Soldan International High School Middle School Division: First Place: Sneha Viswanathan, from Wydown Middle School Second Place: Alison Wild, from Villa Duchesne Third Place: Andy Swafford, from St. Raphael School

All winners received a science-themed book, an award certificate, and a congratulatory letter. In addition, the first place winners also received a one-year membership to the St. Louis Science Center.

Many thanks to all who participated in the Science Fairs.

David Haselbauer ACS St. Louis Section Science Fair Coordinator

# CAREER CORNER...

To enhance career assistance to ACS members, the Depatment of Career Services has launched the Advanced Career Tools (ACT), a suite of services, which includes nearly 300 articles of frequently asked questions (FAQ's) about carer-related issues; access to professional career coaches; products such as career CD's and books; and customized featrues such as e-mail alerts. The FAQ's in ACT are available at http://chemistry.org/careers at no cost, while the professional career coaching is offered to ACS members at a discount over the market rate.

The Career Consultant Program continues its long history of success with

one-on-one, member-to-member, free, confidential career counsiling. Members are now able to view consultant profiles and self-select consultants online. This ability reduces the response time to members and puts the consultants and members directly in contact with each other to initiate career-focused communication.

For questions or to find out more contact Lisa at lisa@balbes.com or 314/966-5298.



# Trademarks: I Thought Only Businesses Use Them?

Sadiq Shah Office of Technology Transfer Western Illinois University

So what is a trademark? A Trademark is an indicator of the source of a product or service. They are a quick way to communicate certain attributes, create an image, and facilitate instant recognition of the products and services or their source. It can be a word, a name, a symbol, a slogan, a design, or a combination of those items. The slogan above and the university logo below are only two examples among many that we use at WIU. A trademark often contains letters such as TM or a symbol such as â. If the trademark is registered with the US Patent and Trademark Office then the symbol â is used. If it is not registered, but the owner has established the use of the trademark, then it can be signified by TM. Registered trademarks give owners or organizations certain enforceable ownership advantages. The registration must be renewed every ten years and the trademark *must* be used, otherwise the ownership rights are lost. The use of trademarks without permission from the original owners is an infringement and can carry significant penalties in court.

# Material Transfer Agreements (MTA's): Prevent Disputes and Protect Against Liabilities

Sadiq Shah Office of Technology Transfer Western Illinois University

Quite frequently research efforts require the acquisition of samples of materials from other research institutions or it may involve the transfer of samples to other researchers at another institution. The samples involved could be chemicals, plants, microorganisms, or biological materials such as antibodies, genes, cell lines, etc. The transfer of a sample is generally accompanied by privileged information. Such a transfer of sample from a provider to a recipient should always accompanied by the execution of a Material Transfer Agreement (MTA) between the two parties. The MTA's are designed to define the confidentiality of privileged information, intellectual property rights, permission for specific use, obligations, issues related to publications or transfer of materials to third parties, the liability issues, and the time period the agreement will be in effect. If an MTA is not executed any of the above issues could be the source of future disputes and liabilities for the institutions involved, which is generally a very costly proposition.

This is the last in the series of articles about ownership rights by Sadiq Shah. We hope you have enjoyed the series. Thank you for reading.

# St. Louis Section-ACS Request for Nominations for 2005 Officers

The St. Louis Section of the American Chemical Society requests nominations for officers, directors, councilors, and alternate councilors to stand for election in the fall of 2004. If you would like to nominate someone for any or all of these offices, please fill in this nominating ballot and mail it, postmarked no later than June 10, 2004 to:

Dr. Keith J. Stine Department of Chemistry and Biochemistry University of Missouri-St. Louis St. Louis, MO 63121

You may also e-mail your nominations. While it will be dificult to assure your anonymity as a nominator, your identity will be removed from the e-mail before it is forwarded to the Nominating Committee. Send e-mail nominations to bkhazai@sentortech.com.

Nominating Ballot St. Louis Section-ACS 2005 Officers		
Chair-Elect		
Secretary		
Treasurer		
Directors(up to three)		
Councilors(up to two)		
Alternate Councilors(up to two)		

# Notes from the 227th National Meeting

#### 2005 Member Dues

• The Council voted to set the member dues for 2005 at the fully escalated rate of \$123.00.

#### **Member Statistics**

• Membership in the American Chemical Society was 159,332 as of year-end 2003. This number represents a decline of 1% in the overall membership. However, the number of student members increased by 3.7% and the number of recent graduates increased by 50%.

#### **Division Request and Action**

• The Council voted to formally dissolve, as of June 30, 2004, the probationary Division of Laboratory Automation. This action was taken at the request of the Division's leadership.

#### **Special Discussion Item**

• ACS President Charles Casey and Board Chair James Burke briefed the Council on the status of partnership efforts between the American Chemical Society and the American Institute of Chemical Engineers (AIChE) and noted the implication of these efforts for ACS. Councilors then participated in a discussion of this issue. Currently the ACS and the AIChE are pursuing a programmatic alliance that will more fully serve the needs of their members and the chemical enterprise, while enhancing both organizations' abilities to achieve their missions. Consideration also is being given to a membership alliance that could include expanded opportunities for members to participate more fully in both organizations.

# Chemical Analysis Services Materials Identification and Deformulation Product Defects / Failure Analysis Thermal and Physical Testing (ASTM) Polymer Analysis and Testing Weight CHEMBIR Analytical Services Chemir.com (800) 659-7659

#### Page 14

## **Chemical Bond**

#### ACS Awards

• The Board of Directors voted to select recipients of the 2005 Priestley Medal, the 2005 Parsons Award and the 2005 Award for Volunteer Service to the ACS. The Priestley Medal recognizes distinguished services to chemistry; the Parsons Award recognizes a Society member's outstanding public service; and the Volunteer Service Award recognizes volunteer efforts of an ACS member who has significantly contributed to the goals and objectives of the Society.

#### The Society's Interactions with its Members

- The Board voted to approve nominal cosponsorships of the American Oil Chemists Society Conference on Industrial Applications of Renewable Resources and the 2004 International Conference of Computational Methods in Science and Engineering as organized by the European Society of Computational Methods in Science and Engineering. The American Oil Chemists Society Conference will be held in Chicago, Illinois, October 11-14; and the International Conference of Computational Methods in Science and Engineering will be held in Attica, Greece, November 19-23.
- The American Chemical Society was the lead organizer of the very successful December 2003 conference entitled, *Frontiers of Chemical Science: Research and Education in the Middle East*, held in Malta. . The Board voted to approve Society sponsorship and involvement with a second international conference on research and education in the Middle East.

#### A Society Public Outreach Project

• In 2002, the Society embarked on a project with NOVA and other organizations for the development of a film biography recognizing the contributions of Percy Julian to the advancement of science. In anticipation of the 2005 release of this documentary, the Board voted to appoint a board task force to explore ways to organize and plan a prescreening event of the Julian Biography Project and to develop estimates as to cost, number and nature of guests, and type of program.

#### **Updating Society Regulations**

• An October 2000 Agreement of Transfer of Trust between the Attorney General of New York, Morgan Guaranty Trust Company and the American Chemical Society dissolved the Petroleum Research Fund Trust and transferred the assets to the Society to establish the ACS- Petroleum Research Fund (ACS-PRF) - an endowment with the same purpose as the trust. An important difference, however, is that the ACS-PRF uses a spending rate approach to determine the annual amount to be distributed for grant funding whereas the PRF Trust restricted distributions to actual income. St. Louis Section American Chemical Society 125 West Argonne Drive Kirkwood, MO 63122

#### **Rush-Dated Material Inside**

Non-Profit U.S. Postage PAID St. Louis, MO Permit No. 850

Pick up

Sigma ad

from back cover

of previous issue