



Chemical Bond

**Volume 54
Number 6
September 2003**

St. Louis Section, American Chemical Society

Welcome Back!

***Even if you are on the
right track, you'll get
run over if you just sit
there.***

-Will Rogers

38th Midwest Regional Meeting of the
American Chemical Society
November 5-7, 2003
Memorial Union, University of Missouri, Columbia, MO

CALL FOR PAPERS

You are invited to present a paper or poster at the upcoming Midwest Regional Meeting of the American Chemical Society. Please visit our Web site, <http://www.chem.missouri.edu/MWRM2003>, for information about the meeting and to submit your abstract electronically. The deadline for submitting abstracts is September 5.

Contributed papers and poster presentation are welcome in the areas of Analytical Chemistry, Biochemistry, Chemical Education, History of Chemistry, Inorganic Chemistry, Organic and Medicinal Chemistry, Physical Chemistry, and Surface Chemistry.

The abstract form can be accessed at the following web address:
ams.cos.com/cgi-bin/login?institutionId=1880&meetingId=150
or by visiting the meeting website.

Featured symposia include:

- Chemistry and Technology for the 21st Century
(Organizers: E. Reichmanis, ACS and J. Adams, MU)
- Biological Mass Spectrometry and Proteomics
(Organizer: J. Gross, Wash.U.)
- Towards the Ideal Synthesis (Organizer: M. Harmata, MU)
- Advances in Supramolecular Chemistry
(Organizers: J. Atwood, MU and G. Gokel, Wash.U.)
- Chemical Education (Organizer: J. Puckett, Southwest Missouri)
- Surface Chemistry (Organizers: M. Langell, NE and P. Thiel, Iowa State)
- Food Chemistry - A Myriad of Applications of Chemistry
(Organizer: I. Gruen, MU)

Special Events for the meeting include:

- Opening evening Sci-Mix Poster Session
- Workshops: Chemistry & Home Brewing; Teaching Chem. Information
- ACS Career Services and Workshops
- Midwest Award Address and Mini-Symposium
- High School Chemistry Award Address
- Regional Industrial Innovation Award
- Employment Clearinghouse
- Director's Breakfast
- Midwest Regional Steering Committee Luncheon
- Exhibition of scientific equipment, products, and services

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Meeting & Seminars

Board of Directors

St. Louis Section–ACS Board of Directors meets on a Thursday of each month, at the Alumni Center, University of Missouri–St. Louis. The usual meeting day is the second Thursday of each month, but meetings and other events have caused a change in the September and October meetings to the third Thursday of the month. 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 Leah O'Brien (lobrien@siue.edu or 618-650-3562) 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 compliments of the section.

Date: Sept. 18

Social hour: 5:30 pm

Dinner: 6:30 pm

Business meeting: 7:15 pm

Future meeting: Oct. 16
Nov. 13

Washington University

Seminars are in McMillen 311 at 4 pm unless otherwise noted. Coffee is available 20 minutes prior to the talk, and refreshments follow. For information, contact Thomas P. Vaid, vaid@wuchem.wustl.edu

University of Missouri-St. Louis

Seminars are held on Mondays at 4:00 pm in Room 451 Benton Hall unless otherwise specified. Refreshments 15 minutes prior to seminar time.

August 25

Wilfred T. Mabusela

Univ. of Western Cape, S. Africa
Synthetic Studies Towards A Diamino Sugar-Containing Disaccharide

September 15

Steven W. Buckner

St. Louis University
Chemical Sensors for Fuel Applications

September 22

Gregory H. Robinson

Univ. of Georgia, Athens, GA
Metalloaromaticity & Gallynes: Musings on Ga-Ga Multiple Bonds

September 29

Jerry L. Atwood

Univ. of MO-Columbia
Molecular Capsules: From the Origin of Life to Drug Delivery

St. Louis University

Seminars start at 3:30 pm in Room 204 Macelwane Hall, unless noted otherwise. Refreshments follow. For more information, contact Paul Jelliss, jellissp@slu.edu.

2003 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 2004.

A chemical technician is a person whose training includes successful completion of an Associate or Bachelor Degree 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, Pharmacia Corp., mail code T2J, 800 N. Lindbergh Blvd., St. Louis, MO 63167 by October 31, 2003. 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@pharmacia.com



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Sex Education & More

by Jack Bornmann

In the 1940s, when I was 13 or 14, I developed an interest in sex. I was too young (in those days) to participate in the laboratory course and there were no lecture courses available. As a consequence, I began a thorough library research program

Letters & More Words & More

in which I read nearly all of the biology and medical books having sections on sex. In those days people did not talk about sex, except in hushed, embarrassed tones. As a consequence of this attitude, I took my knowledge of sex from the biology and medicine area over to the history area.

I have continued my interest in sex, both theoretical and experimental, and here are some things that I have learned.

When an egg is about to be launched from an ovary it divides into two identical egg cells and then divides again to four identical egg cells. Then a fascinating thing happens. Three of the cells give up their cytoplasm to the fourth egg cell. Three shrunken cells remain containing only cell walls and nuclear material. The fourth cell contains four times as much cytoplasm as it did originally and is now ready to start the process of reproduction by moving into the Fallopian tubes and head for the uterus.

I shall skip the fun part of how the sperm cells get introduced into the vagina only saying it, s a good thing there are so many sperm cells -

because they won't ask for directions. By chance some of them manage to find the way through the cervix and into the uterus. Then they must find their way to the opening of the Fallopian tube. There are two Fallopian tubes, one for each ovary, and a lucky sperm cell will find the correct tube, the one containing the egg.

Using their little tails the sperm cells swim toward the egg cell. Since the egg cell is being swept toward the uterus by cilia, the sperm are swimming upstream. The cilia are trying to sweep the sperm cells out of the Fallopian tube, but if all goes well the sperm(s) and the egg cell meet.

One sperm manages to penetrate the cell wall of the egg and immediately the tail breaks off and releases a chemical that hardens the cell wall of the egg and prevents any other sperm cells from entering the egg. Only the body of the sperm cell is important because it contains the chromosomes that will pair up with the chromosomes of the egg.

If the penetration was successful and if everything is hunky-dory in the now fertilized egg, the egg will begin to divide. The fertilized egg will replicate itself many times making identical cells that become so numerous that the mass of cells forms a hollow ball. The mass of identical cells from fertilized egg to hollow ball is called the zygote.

The hollow ball of identical cells begins differentiation forming a hollow ball with two kinds of cells, the outer layer and the inner layer. This is how the clump of cells begins to make the different parts of the body and to form the placenta and umbilical cord. At this stage when differentiation has begun that the clump of cells is referred to as an embryo and not a zygote. Failure to

begin differentiation results in a failed pregnancy.

The cells need nourishment in order to continue cell division and the lucky clump of cells finds a place on the uterine wall. Failure to find a place results in a failed pregnancy.

At this time the cells are differentiating. The cells separate into those that will become top or bottom, left or right, front and back. Sometimes errors at this point can be tolerated to give intestines wrapped in the wrong direction with an appendix on the left side or a heart and the lobes of the lungs on the wrong side. But a mistake at this point usually results in a failed pregnancy.

All along the way there are missed opportunities, missed cues, mistakes and miscarriages. On the other hand

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perhaps this is a good thing. Imagine the population explosion if every close encounter of an egg and a sperm resulted in a birth. As it stands now every four minutes a woman in the United States is giving birth . . . We have got to find her and stop her!



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Bond Briefs

St. Louis Section Finalist for 4 ChemLuminary Awards

We are pleased to announce that the St. Louis Section has been selected as a finalist for the following ChemLuminary Awards:

- Best Activity or Program in a Local Section Stimulating Member-ship Involvement Award
- Most Innovative Use of Technology
- Outstanding Performance by Local Section Large Size Category Award
- Outstanding Kids & Chemistry Program Award

Please join me in congratulating Lisa and the many hard-working members of our section who have contributed in so many ways.

The ChemLuminary Awards ceremony will be held on Tuesday, September 9, 2003 at New York's Hotel Pennsylvania in the Penntop Ballroom. The schedule for the evening is:

- 7:30 pm Poster session
- 8:30 pm Doors open to Awards
- 9:00 pm Presentation of Awards
- 10:00 pm Celebration

We hope everyone going to the ACS meeting will be able to attend the night's festivities.

NEW Synthetic Organic Chemistry Discussion Group

We are in the process of initiating a synthetic organic chemistry (SOC) discussion group. The meetings, which will occur once a month (third Wednesday of the month) will focus on current issues in organic chemistry, and serve as a vehicle for bringing together synthetic chemists within our community. Current plans call for an organizational meeting plus our first presentation to be held on:

Wednesday, October 22.

Further details will be published in the October issue of the Chemical Bond. If you are interested in participating, and would like to make suggestions regarding the organization of the SOC Discussion Group, please contact of the organizers listed below.

Prof. Oliver Nicaise
St. Louis University
(314) 977-2853
nicaiseo@slu.edu

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

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ACS on the Hill

Bringing Together Experts on

Capital Hill: A heavily attended Science and the Congress briefing was held on June 27. The topic was an update on the science and technology efforts and challenges at the new Department of Homeland Security (DHS).

3 Days, 3 Cities, and 6

Congressional Office Visits: The democratic process was at work during the most recent July 4 congressional recess when three groups of ACS members advocated for increased funding for the National Science Foundation and the Department of Education's (DoED) Math and Science Partnership program.

2003 DVD Program Launched: The American Chemical Society has established a District Visits Days (DVD) program to facilitate meetings between the scientific community and legislators who make crucial funding decisions.

Coming Next Month...

Coming next month we will be running a series of short articles on intellectual property as it relates to our jobs. This information is very helpful in academic, business, government, marketing, and management roles. These will be short, not too detailed articles, but may be of use to those of you who have little knowledge of these subjects. The following is a list of topics:

- **Intellectual Property:** Legal ownership rights to ideas and know-how.
- **Invention:** How do I know if I have invented something?
- **Co-Inventors:** Who they are or are not.
- **Public Disclosure:** Does it end the ownership rights?
- **Laboratory Notebooks:** Legal significance.
- **Copyrights:** Who is the owner and what are their rights?
- **Copyrights & Copywrongs:** What is a Fair Use exclusion?
- **Trademarks:** Who needs them?

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CAS Expands Patent Coverage and Currency

Chemical Abstracts Service (CAS), the leading provider of chemistry-related patent information, has announced several enhancements that build upon its unique patent offering: CA patent coverage has been expanded by the addition of patents from 6 more countries; the UK and French patent offices have been added to the group of “Core” patent issuing authorities for which CAS delivers patent information within 2 days of issuance; in addition, CAS has broadened its selection criteria to include the US National Patent Classification codes.

The six national patent authorities added to CAS’ regular patent coverage are New Zealand, Estonia, Monaco, Bulgaria, Slovenia and Hong Kong in addition to the African Regional Industrial Property Organization (ARIPO). In total, CAS now offers patent information for 44 active patent issuing authorities.

CAS now offers ultra fast delivery of information from the UK and French patent offices, which have been added to a group of 7 Core patent issuing authorities that also includes the United States Patent & Trademark Office (USPTO), German Patent and Trademark Office (GPTO), Japanese Patent Office (JPO), European Patent Office (EPO) and the World Intellectual Property Organization (WIPO). For these offices, patent bibliographic information and abstracts are available in CAS electronic services within 2 days of the patents’ issuance. Fully indexed records for these patents appear within 27 days.

Additionally, CAS is extending its patent selection criteria by including more classification codes: the US NPC, which began in January 2003, and the ECLA codes and Japan F-Terms to be added to patents in the CA/CAPLUS files in the near future.

“This latest slate of enhancements builds upon our strength as a unique scientific information resource, and the only one that integrates both journal literature and patents in a comprehensive database with extraordinary currency,” said CAS Editorial Operations Director, Matthew J. Toussant. “The unsurpassed currency of the chemistry-related patent information in the CAPLUS file continues to be a key reason for STN’s standing as the leading sci-tech information service.”

More information is available on the CAS web site at <http://www.cas.org>, via email to help@cas.org, or by calling 1-800-753-4227.

The Wooden Periodic Table Table

No, it’s not a typo. More than the average periodic table, this is an actual table (used as a conference table) with pockets carved out of the wood to keep the elements in their respective places. The table was built by Theodore Gray in 2002 when his group needed a new conference table for the office area and he didn’t want to get an “ugly one from the office supply catalog”. It was even awarded a Nobel prize in chemistry - Ig Nobel prize, that is. This led to an interview on NPR’s Science Friday and, starting in June 2003, a column in Popular Science. Here’s the web site: www.theodoregray.com/PeriodicTable/ Check it out!

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