



Chemical Bond

Volume 53
Number 6
September, 2002

St. Louis Section, American Chemical Society



**"The Group":
Flinn Workshop Participants and Leaders
(story and pictures on page 8)**



ANALYTICAL CHEMISTS - ALL LEVELS

QUINTILES is the world's leading full-service contract research organization specializing in accelerating the drug, biologic and device development process from pre-clinical studies through regulatory submission. At Quintiles Kansas City (home to 900+ employees) we are expanding our Analytics group within the Pre-clinical & Pharmaceutical Services division. This organization provides discovery support and early development services based on state-of-the-art facilities and globally recognized expertise in the areas of pharmaceutical sciences, toxicology, pharmacology, drug metabolism and pharmacokinetics. We have opportunities available at entry through advanced level positions for individuals with B.S., M.S. or Ph.D. in chemistry, biology, biochemistry or related fields.

In a Chemist role, you will work in one of several cGMP analytical laboratories on pharmaceutical development projects. Duties vary with position and section, but will include analytical method development and validation for active pharmaceutical ingredients and drug product (small & large molecule), clinical release testing and/or stability and dissolution testing. A solid knowledge of analytical techniques, especially in chromatography is required. The ability to maintain clear and accurate records, efficiently communicate and work well with cross-functional team members is essential. Organization, documentation and computer literacy skills are a must.

Quintiles offers competitive salaries & excellent flexible benefits. Candidates should submit resume to www.quintiles.com (Careers, Find a Job, United States, then job ID#). **If 1-3 years experience, submit to Job ID #1984; if PhD or 8+ years experience, submit to Job ID #1985.** If unable to apply online, please send resume to QUINTILES INC., attn: B3-M4964/BJB, PO Box 9708, Kansas City, MO 64134. An Equal Opportunity Employer M/F/D/V.

Chemical Bond

Volume 53

No. 7

October, 2002

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 and new address with zip codes to ACS Subscription Service Department, 1155 16th St. NW, Washington, DC 20036 or visit www.acs.org and find Members Only | Online Address Update. 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 Editorial Production Office, 125 West Argonne Drive, St. Louis, Missouri 63122 or e-mailed to the Editor.

Editor	Eric Ressner	314-962-6415 (H) 314-286-6600 x2199 (O) ressner@worldnet.att.net
Advertising Manager	Sue Saum	636-949-4735 saum@lindenwood.edu
Business Manager	Donna Friedman	314-595-4388 dfriedman@stlcc.cc.mo.us
Staff Writer	John Bornmann	636-946-5161 jbornmann@msn.com
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 © 2002 American Chemical Society and the St. Louis Section-ACS

In this issue

- | | |
|----|--|
| 4 | Meetings and Seminars |
| 6 | Letters, Words & More: It's all Just Words |
| 7 | Nominate for Tech of the Year |
| 8 | Flinn Workshop, story and pictures |
| 10 | Bond Briefs |
| 13 | Nominate a chemical technician for recognition |
| 14 | 95th Anniversary festivities |
| 15 | Molecule of the Month |

Meeting & Seminars

Board of Directors

St. Louis Section-ACS Board of Directors meets 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.

Date: September 10

Note this is the second *Tuesday* ... this month only!

Social hour: 5:30 pm

Dinner: 6:30 pm

Business meeting: 7:15 pm

Future meetings: Oct 10, Nov 14

95th Anniversary Lectures

Commemorating the St Louis section's 95th anniversary, a lecture series by **Dr. Alfred Bader**, founder of Aldrich Chemical Company.

Wednesday, September 11

Reception at 3:30, talk at 4 pm

UM-St. Louis, Benton Hall 101

Richard Anshutz, Archibald Scott

Couper and Josef Loschmidt:

A Detective at Work

Wednesday, September 11

Sigma-Aldrich R&D Bldg, 2909

Laclede

Reception at 6 pm, talk at 7 pm

History of the Aldrich Chemical

Company and Sigma-Aldrich

Thursday, September 12

Science Center Exploradome Conf

Rm 3/4

Reception at 6:30, talk at 7 pm

*The Rembrandt Research Project
and the Collector*

Saint Louis University

Seminars start at 3:30 pm in Room 204 Macelwane Hall. Refreshments follow. For more information, contact Dana Spence, spenced@slu.edu.

University of Missouri-St. Louis

Refreshments at 3:45; seminars at 4 pm in 451 Benton Hall. For further information, contact Prof.

Chris Spilling, 314-516-5314, cspill@umsl.edu

Tuesday, August 27

Dr. Kamyar Afarinkia

Kings College, London

Asymmetric Induction

by Chiral Phosphorus

Monday, September 9

Prof. Dean Harman

University of Virginia

Osmium, Rhenium, and Molybdenum

Dearomatization Agents

for Organic Synthesis

Monday, September 16

Prof. Cindy Dupureur

University of Missouri-St Louis

*Biophysical Approaches to Metallo-
endonuclease Structure and Function*

NMR ANALYSIS

270 - 360 - 400 MHz • 1D/2D

Liquids/Solids • GLP/GMP Compliance

SPECTRAL DATA SERVICES, INC.

818 Pioneer • Champaign, IL 61820

(217) 352-7084 • Fax (217) 352-9748

<http://www.sdsnmr.com> sdsnmr@sdsnmr.com

Monday, September 23
Prof. James O'Brien
University of Missouri–St Louis
*Intracavity Laser Absorption
Spectroscopy of Small Molecules*

Monday, September 30
Prof. Chris Cahill
George Washington University
*Open-Structured Actinide
Compounds by Design:
A Chemist's Interest in Mineralogy*

Monday, October 7
Prof. Todd Lowary
Ohio State University
To be announced

Washington University

Seminars are in McMillen 311 at 4 pm unless otherwise noted. Coffee is available outside the seminar room 20 minutes prior to the talk, and refreshments follow.

Computational Chemistry Discussion Group

Meetings are held at Tripos, Inc., 1699 S. Hanley Road. Refreshments at 5:30, seminar at 6 pm. For more information, or if you would like to make a presentation at a future meeting, contact Philippa Wolohan, 314-647,1099, pwolohan@tripos.com

Environmental Science/Technology Discussion Group

Contact Dr. Kwok-Keung Au ("Amos") for information: call 618-239-0547 or e-mail amos@bellevillelab.com

Pickup and

Lab Support

From grunts to 0's and 1's, it's all just words

by Jack Bornmann

How much thought have you given to our art and technology of communication? In the 1930s, my family had a single telephone with

Letters & Words & More

a private line. Some of our neighbors had shared "party-lines," and many had no telephone at all. Fast forward to the 1990s; my wife and I had a telephone extension in just about every room in our house. Now we have portable phones, a special line to my computer, and two cellular phones. Both my wife and I get on the Internet. Technology has given us better ways to spread the word, but it is still the same old words.

Acquiring language is apparently an instinct with humans. At a very young age, we become ready to talk, and we learn any language that is spoken around us. Twins sometimes create their own language by listening each other's sounds. To their parents, their language is a perplexing babble, but the twins understand each other very well.

A few years later, we are sent to school to learn to read and write. Our written and printed language is a collection of symbols that represent the sounds of our speaking. I remember a third-grade teacher reprimanding the class for moving their lips when they read silently. But even when we've been browbeaten into holding our lips still, we still form the sounds in our

brains on the way between symbolism and comprehension.

Newspapers, magazines, books, and Internet messages contain representations of spoken sound. You could learn to read the binary code of computer text or even the patterns of recorded sound. These, to, represent spoken words.

In addition to our oral speech, there is another form of vocal communication that I call "grunt language." Saying "huh?" for "what?", "uh-huh" for "yes" and "huh-uh" for "no" are examples. A sharp "unh" is Grunt for "what a surprise!", but a stretched out "unh" means "that feels good." Are these the remnants of earliest language used eons ago? Do people in other countries and other cultures use grunts? the same grunts we use or quite different ones?

If you have had experiences with grunt languages in other countries or cultures, please let me know about it. Contact me by

voice phone 636.946.5161

fax 636.946.3426

email jbornmann@msn.com

or jbornmann@aol.com

or via the postal service at

Jack Bornmann

3 Briarwood Lane

St Charles, MO 63301

Thanks.

ELEMENTAL ANALYSIS

C, H, N, O, S, P • Halogens • Ash • Metals
TOC • TOX • BTU • Molecular Weights
ICP • ICP/MS • IC
Custom Analysis • Problem Solving

HUFFMAN

LABORATORIES, INC.

Quality Analytical Services Since 1936

4630 Indiana Street • Golden, CO 80403
Phone: (303) 278-4455 • Fax: (303) 278-7012
Chemistry@huffmanlabs.com
www.huffmanlabs.com



Pickup ALMA ad
from Page 2 (IFC)
of May, 2002 issue

Flinn Comes to St Louis

by Hal Harris

Mighty Eskimos are not fool-hardy enough to visit St Louis in summer. But 38 high school science

teachers here in the labs and lecture halls of UMSL, the teachers were led by Bob Becker of Kirkwood High School, Penney Sconzo of Westminster Schools, Atlanta, Georgia, and Ed Brogie of Laurel, Nebraska.



Bob Becker props a simple demonstration while onlookers ... look on.

teachers braved our inhospitable climate to attend a Flinn Summer Chemistry Workshop co-sponsored by the local ACS section, the University of Missouri–St Louis, and Sigma Chemical Company.

Flinn Scientific Company is a Chicago-area chemical and scientific supply house specializing in the secondary school market. The associated Flinn Foundation sponsors 15 week-long workshops each year for high school chemistry teachers at locations throughout the United States.

Attendees receive over 40 hours of instruction and inspiration about demonstrations and lab experiments and take home materials for use in their schools. Teams of three master teachers lead the workshops at each site.

The myriad local arrangements were ably handled by UMSL graduate student Elizabeth Hansen, whose work was essential to the success of the workshops.

The workshops at UMSL were filled with participants faster than at any other site in the

country, and a waiting list of over 20 developed. The lucky 38 were very enthusiastic about the opportunity. One teacher, Becky Beal of Edwardsville High School, sprained her ankle in the parking lot on the first day, but hobbled on crutches the rest of the week so as not to miss any of the activities.



Two participants puzzle over their results.



Workshop participants before laboratory exercise

The presentations and laboratories began early each morning, and ending late in the afternoon. On Friday, work ended at noon, when

participants visited the Planetarium and the Puzzles exhibit at the St Louis Science Center.



micron inc.

Analytical Services

Complete Materials Characterization

Morphology Chemistry Structure

**SEM - TEM - EPA - ESCA - AUGER
XRF - XRD - FTIR - DSC - TGA**

3815 LANCASTER PIKE, WILMINGTON DE. 19805
PHONE 302 - 998 - 1184, FAX 302 - 998 - 1836
E-MAIL MICRONANALYTICAL@COMPUSERVE.COM
WEB PAGE WWW.MICRONANALYTICAL.COM

Bond Briefs

Plan ahead to be part of NCW

Why has National Chemistry Week been ousted from its traditional spot at the beginning of November? Perhaps it's so Mole Day (10/23) can be included in the festivities. At any rate....

National Chemistry Week will be held October 20-26 this year. The theme is "Chemistry Keeps Us Clean". In addition to many scattered observances, the section will celebrate at the St Louis Science Center on Saturday, October 19. Volunteers are needed for the Industrial/College Exhibition, to man the section booth, to pass out fliers, and *especially for chemical demonstrations*.

If you are interested in participating in this always fun event, please contact

Alexa Serfis (314)977-2842
barnoski@slu.edu

YCC issues wake-up call

The St Louis Chapter of the American Chemical Society announces the re-establishment of the Younger Chemists Committee (YCC) of St Louis.

The YCC is a group of young professionals just beginning their careers in chemistry or chemistry-

related fields. The missions of the group are to promote personal business contacts, to educate mem-

YOUNGER
CHEMISTS COMMITTEE
NEWS

bers on career opportunities, and to provide community service to the St Louis region. The first activity of this newly reorganized group is an informal event geared towards encouraging interaction between young scientists. Join us for a bowling party at Tropicana Bowl on September 9, 2002, 7:30 pm. RSVP to kemarz@artsci.wustl.edu

If you are interested in obtaining more information about this event or about the Younger Chemists Committee in general, contact Karla Marz, kemarz@artsci.wustl.edu

This just in from Lisa Balbes, Chair

I learned today that the St Louis Section of the ACS has been selected as a finalist for the following 2001 calendar year awards:

- Activity or Program in a Local Section that Best Addresses the ACS Strategic Thrusts (for Chemical Progress Month)
- Most Innovative Use of Technology
- Outstanding Performance by a Local Section, Large Size

Wow! Congratulations to Sue Dudek [2001 Chair (ed.)] and her crews for all their hard work. It certainly shows! *Lisa*

MWRM @ Lawrence, KS

This year's Midwest Regional Meeting is hosted by the Univer-

POLYMER STANDARDS FOR GPC/SEC
MOLECULAR WEIGHT ANALYSIS
GPC/SEC COLUMN REPACKING
American Polymer Standards Corporation
8680 Tyler Boulevard, Mentor, OH 44060

Pickup

MassVao ad

from page 8, March, 2002, issue

sity of Kansas, scheduled for October 23-25 in Lawrence, Kansas.

Please visit the meeting web site, <http://www.kuce.org/app/acs>, for information about the program and special events, including the Midwest Award, sponsored and administered by the St Louis Section.

For questions not answered at the web site, contact

Robert Carlson General Chair

rcarlson@mwrm2002.org

Free ACS Technical Booklets

National ACS has available a series of publications about federal laws and practices related to environmental, health and safety, and patents. While some must be ordered, the following can be freely downloaded from their web site.

- Guide for Chemical Spill Response Planning in Laboratories
- What Every Chemist Should Know About Patents
- Electronic Record-Keeping for Patent Purposes: Cautions and Pitfalls
- Record-Keeping Fact Sheet—A Guideline for Maintaining Research Records for Patent Purposes
- Chemical Risk: A Primer
- Chemical Risk: Personal Decisions

- Chemical Risk Communication
- Global Climate Change
- Ground Water
- Hazardous Waste Management

Check them out at <http://chemistry.org/portal/Chemistry?PID=acsdisplay.html&DOC=government%5Cpublications%5Ctechnical.html>

We're Sorry to Report...

...that we've lost a Bondmate. David Baker, our new assistant editor, has taken on new job responsibilities (not his ACS job, but the one that pays the bills), and has had to withdraw from his duties on the *Bond* staff. Thanks, David, for your efforts over the past year.

Meanwhile...is there anyone among you fellow ACS members with good language (writing and editing) skills, general science/technical knowledge, and some experience with desktop publishing or a sincere willingness to learn? That doesn't seem like an implausible list of qualifications, now does it?

If you'd like to try your hand at editing the *Chemical Bond* and commune with a fine group of local chemist-colleagues at the same time, contact the Editor for a possible LTR (in the singles ads, that's Long Term Relationship ... but this proposition is purely professional).



COBERT ASSOCIATES

QUALITY PRODUCTS FOR CHROMATOGRAPHY

XPORTEK® • CAPILLARY COLUMNS • HPLC COLUMNS • SPE • VIALS AND ACCESSORIES • FILTRATION PRODUCTS

Stocking Distributor For More Than 75 Manufacturers, Including:

• ABI-Brownlee	• Keystone	• Rheodyne	• Upchurch
• Agilent/J&W	• Pierce	• Shodex	• Vydac
• Hamilton	• Optimize	• Synchron	• Whatman



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>

Chem Tech Award Call For Nominations

The St. Louis Section Chemical Technician Award is presented by the St. Louis section-ACS 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, dinner for the awardee and a guest at the Chemical Progress Week Awards Night ceremony (April, 2003), and nomination for the National Chemical Technician Award.

A chemical technician is a person whose training includes successful completion of an Associate or Bachelor Degree in a chemistry or 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. A nominee need not be a TECH Division Affiliate or ACS member to be eligible.

Letters of nomination must be received by Sue Dudek, Pharmacia Corp., mail code T2J, 800 N. Lindbergh Blvd., St. Louis, MO 63167 by October 25, 2002. 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.

For more information contact Sue Dudek at
phone 314-694-2464
fax 314-694-5216
e-mail susan.dudek@pharmacia.com

Pickup

Chemist Polytech ad

from film provided

1907– and Going Strong, Section Celebrates 95 Years

It was 1907 when the St. Louis Section was officially recognized as a local section of the American Chemical Society.

In commemoration of this event, there will be a special seminar series featuring Dr. Alfred Bader, founder of Aldrich Chemical Company and collector of Renaissance art. Dr. Bader mixes his art and science interests in all his topics, and all are accessible to a general interest audience.

On Wednesday, September 11, Dr. Bader will speak at UM–St Louis, Benton Hall Room 101 at 4 pm. His topic here is *Richard Anshutz, Archibald Scott Couper and Josef Loschmidt: A Detective at Work*. There will be a reception before the talk at 3:30.

Later the same day, Dr. Bader speaks on *History of the Aldrich*

Chemical Company and Sigma-Aldrich at the new Sigma-Aldrich R&D Building, 2909 Laclede St (near Harris-Stowe College); reception at 6 pm, talk at 7 pm. The Section has some limited editions of Dr. Bader's book, *Adventures of a Chemist Collector*, for sale during the reception. This will probably be your last chance to get a personally signed copy of Dr. Bader's book.

Completing a tour of the city on Thursday, September 12, in the Science Center's Exploradome Conference Rooms 3/4, the title is *The Rembrandt Research Project and the Collector*. A reception at 6:30 pm precedes the talk at 7 pm.

Come join us in celebrating the 95th anniversary of the St. Louis Section at one or all of these events. All are open to the public.

Molecule of the Month

by Eric Ressler

Let's start by clearing the air. I'm a new g-g-g-g-g- ... my son has a new baby boy. That's why the article, "Something special in diapers" caught my eye.

It seems American ingenuity and chemical technology have joined forces to improve the lives of parents everywhere by building the better pee-trap. "Ultra-absorbent" disposable diapers, with long use, get amazingly heavy with urine, yet nary a drop appears outside. Even the baby's skin stays pretty dry.

Cute trick, made possible by this month's molecule. It's a big one: sodium polyacrylate, a simple polymer of acrylic acid with the majority of the acid groups neutralized by sodium ions. Diaper manufacturers add sodium polyacrylate beads to the diapers' innards. The beads are so highly ionic that they powerfully draw in water by osmosis to hydrate and dilute the ions. Those babies (the beads) can absorb up to 800 times their weight in distilled water, less (about 300 \times) tap water, and still less—but enough—urine.

As water is absorbed, the beads swell and take on a gel-like consistency that is 99+ % water.

Like a sponge, these beads would normally let go of absorbed water when they are compressed by, say, Grandma's hug. A nasty surprise for

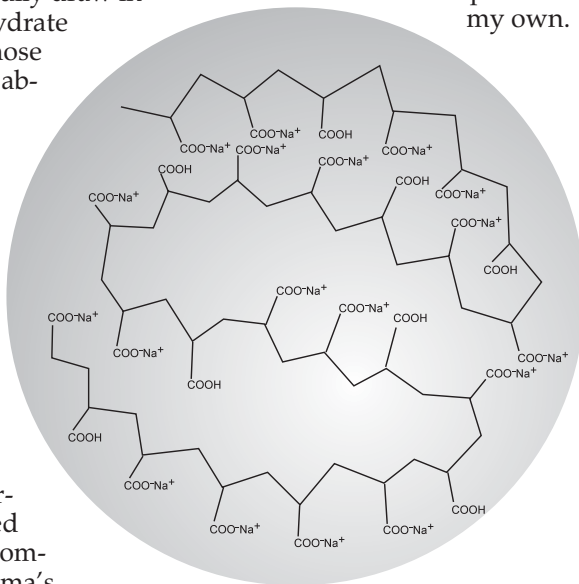
Grandma! In another leap of ingenuity, chemists have modified the outer layer of the beads by highly cross-linking the polyacrylate. More cross-linking means greater rigidity. Now the beads are harder to compress, and Grandma's bodice stays dry.

Much of the world staggers under the weight of enormous problems: starvation, endemic disease, oppressive and corrupt government. Our lives are so good, so comfortable, so lacking in generalized disaster, that the best minds are put instead toward making diapers work better.

I don't mean to trivialize the progress made possible by sodium polyacrylate. But it does make an unmistakable statement about the quality of life we enjoy ... and expect.

Much of this material was freely borrowed from a feature on the ACS website, "Something special in baby's diaper," by Kevin McKue.

The politics are my own.



St. Louis Section
American Chemical Society
125 West Argonne Drive
Kirkwood, MO 63122

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

Rush—Dated Material Inside

Pickup

Sigma ad

from back cover

of previous issue