



Chemical Bond

Volume 53
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May, 2002

St. Louis Section, American Chemical Society



Arvind Ravi from Parkway Central High School performs an experiment during the Chemistry Olympiad held at St. Louis Community College at Florissant Valley

Story on page 16



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Chemical Bond

Volume 55

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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. For more information or to make a reservation for dinner, call the Section Chair, Lisa Balbes, at 314-966-5298.

Date: May 9

Social hour: 5:30 pm

Dinner: 6:30 pm

Business meeting: 7:15 pm

Future meetings: Sep 12

Saint Louis University

Seminars start at 3:30 pm in Room 204 Macelwane Hall. Coffee and doughnuts before the seminar; refreshments after in Room 115 Monsanto Hall. For more information, contact Dana Spence, spenced@slu.edu or call 314-977-2836.

University of Missouri– St. Louis

Refreshments at 3:45; seminars at 4 pm in B-451 Benton Hall. For further information, contact Prof. Don Becker, 314-516-7345, chedbeck@jinx.umsl.edu

Monday, May 6 - **Douglas G. Nuelle, MD** - 14th Annual Distinguished Alumni Lecture
Chief of Orthopedics, Fannin Regional Hospital, Blue Ridge, GA
Serendipity

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. For up-to-date information, check wunmr.wustl.edu/Events/seminars.html

Thursday, May 2

Prof. Paul Barbara
University of Texas
TBA (Physical/Materials)

Tuesday, May 7

Prof. Stefan Franzen
NC State University
TBA (Biophysical)

Marcus Lecture

Thursday, May 16
Louderman 458, 4 pm

Prof. A. Paul Alivisatos

Univ. of California–Berkeley
*Inorganic Nanorods: Synthesis,
Properties, Applications*

Biochem/Biotech Discussion Group

Meetings every other month except during the summer. Snacks and networking at 5:30pm, presentation at 6:00pm. Contact Gerry Moskowitz at splmosk3@msn.com or 314-645-6600 x2321. Cindy Dupureur (cdup@umsl.edu) can provide location and parking info.

Tuesday, May 21

UM–St. Louis Benton Hall B-451

Dr. Cindy Dupureur

Univ of Missouri–St. Louis
*Restriction Enzymes: Structure and
Function*

Computational Chemistry Discussion Group

Meetings are held at Tripos, Inc., 1699 South 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

Wednesday, May 22

David Baker

Tripos, Inc.

*Interactive Exploration of High
Volume Datasets Using HiVol and
HiStats*

Mass Spectrometry Discussion Group

This meeting will be held at the Danforth Plant Science Center, 975 North Warson Road. Convene for refreshments at 5:30 pm, presentation at 6 pm. For more information, contact Dr. Mike Grayson at Washington University, 314-935-7486 or grayson@wuchem.wustl.edu

NMR Discussion Group

All seminars are in 241 Compton, Washington University. For more info, call Mark Conradi at 935-6418 or 935-6292. Seminars are followed by an informal discussion over beer, soda, and chips.

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Bond Briefs

Help us complete the set

The *Chemical Bond* was born in 1950, and we have an almost complete set in our archive ... almost! We'd love to fill in the few remaining holes, and we're asking for your help. If you're an inveterate squirrel, have a look in your garage, cellar, or attic, where all that forgotten paper is waiting to spontaneously combust. If you come up with any of the missing issues, please contact Lisa Balbes, 314-966-5298 or lisa@balbes.com.

1950: Jan, Feb, Apr

1951: Nov

1955: Feb, Apr, May, Oct, Nov, Dec

1968: Oct, Nov, Dec

1969: All

1971: Jan, Feb

1972: Jan

1973: Mar

1974: Dec

1975: Jan

1976: Feb

1977: Oct

1978: Oct, Nov

Board business

Ted Gast of Carl F. Gast Company was a guest at the March

board meeting. He came to report on the 2002 TIE workshop recently held in Jefferson City.

TIE (Teachers in Industry and Education) brings together numerous elementary and secondary teachers of science from around the state (about equally divided among St Louis, Kansas City, and "other" areas) to attend training sessions, learn from each other, and even share resources. This opportunity can be especially valuable for teachers in rural districts, where one person is often responsible for everything from earth science to physics.

The workshop has attracted favorable attention of our state legislators. Six state senators and several state representatives attended the concluding banquet.

The St Louis Section-ACS sponsors the attendance of two teachers at a TIE Workshop every year.

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More Congratulations for Karen!

Readers with a keen memory will recall that Karen L. Wooley, Professor of Chemistry at Washington University in St Louis, was noted in this space last month for garnering a Cope Scholar Award from national ACS. Further honor has come her way: recognition by the St Louis Academy of Science with their Outstanding St Louis Scientists *Innovation Award*.

The Academy's citation for the award described Dr. Wolley as "central in forging a new field at the interface of polymer chemistry, molecular biology and materials science, ... recognized internationally for creative approaches toward the design, preparation, characterization and application of ... nanometer-scale materials ... leading candidates for targeted biodelivery of drugs...."

Lunch Anyone? Chemists have to eat, too!

Several members have recently expressed interest in getting together over lunch or dinner to share war stories and advice on

their particular situations. Situations like

- chemists running their own businesses
 - women chemists
- might benefit from this type of informal interaction. If you fall into one of these two categories and would be interested in participating (or even better, organizing), please contact me and we'll give it a try.

Please feel free to suggest other groups that might like to meet this way.

Lisa Balbes
lisa@balbes.com
314-966-5298

Recognizing another local winner

Christina Friedel, graduate student in the Environmental Sciences Program at SIU-Edwardsville, is a 2002 recipient of an ACS Environmental Chemistry Graduate Student Award. Christina completed the ACS approved B.S. in Chemistry from SIUE in August 2000. Christina works with Dr. Kevin Johnson at SIUE.

Orlando Business

Section Councilors Donna Friedman and Sadiq Shah report from Orlando these points of interest:

- The Council voted to increase dues for 2003 to \$116 from \$112.
- The Committee on Nominations and Elections selected Charles P. Casey, Ernest R. Davidson, William M. Jackson, and Alvin L. Kwiram as nominees for 2003 President-Elect. The Council selected Charles P. Casey and Alvin L. Kwiram as candidates for President-Elect.
- The back of your membership card now lists member benefits and phone numbers instead of national meeting dates and locations.
- Members will be able to renew their membership online beginning with the 2003 renewal. Division membership can be added or changed, as well as changes in addresses, etc.
- Electronic balloting for local section officers is being investigated.
- At the end of 2001 the ACS

membership was 163,503.

- The National Employment Clearing House reported as of Wednesday morning there were 1,311 employers registering 988 job openings, and 867 job candidates participating in 3,088 interviews. For the fall meeting in Boston, the National Employment Clearing House will be fully automated. The database will be accessible 24/7 via the internet, and there will be no on-site registration.
- As of Wednesday morning, there were 14,308 attendees (12,246 registrants and 2,062 exhibitors) at the Orlando meeting.

How much are you worth?

Available only to ACS members, the Salary Comparator will report the complete range of full-time base salaries being paid to ACS chemists in jobs like yours (or any other position for chemists which you choose to define). The comparator includes many specific factors that influence pay, including experience, level of education, professional specialties, job functions, types of employers, and geographic

location. Both academic and non-academic positions are covered.

Check it out at
<http://center.acs.org/applications/acscomparator/>

Career Day Report

The UM–St. Louis Career Day program on April 17th sounds like it was planned by an efficiency expert: no wasted moves, no wasted minutes. About 80 students from 3 different schools attended. The turnout was reduced because of a conflict with the Missouri high school test date.

Gordon Anderson, Chair of the Department of Chemistry and Biochemistry, welcomed the students to campus. On behalf of the Local Section, Lisa Balbes also welcomed the students and continued with a presentation on traditional and non-traditional careers for chemists. Professors Keith Stine and Jim O'Brien gave brief overviews of the subject areas studied by chemistry and pre-medical students in college.

The students enjoyed a 20-minute magic show presented by UMSL undergraduate chemistry majors

Kayla Gincherman and Matt Dunn.

The students then split into four groups led by graduate students Angie Schmitt, Liz Thomas, Kim Dill, and Kayla Gincherman for tours and brief overviews at each location. They visited the Mass Spectrometry lab (Joe Kramer), the NMR lab (Dr. Janet Braddock-Wilking), Professor Wes Harris's bio-inorganic research lab (Claire Brook), Professor Jim O'Brien's laser spectroscopy lab, and glassblower Ken Owens.

Then lunch. A panel of UM-St. Louis faculty—Professors Lol Barton, Don Becker, and Hal Harris—were on hand to answer questions from the students and their teachers.

When Bigger is Smaller

by Jack Bornmann

It depends on how you look at it. A lot can be learned just by looking at something from a different viewpoint. That was the start of my column in the March issue of *theChemical Bond*.

Letters & More

We all have heard that the universe is expanding. It started with the Big Bang and has not stopped yet. Cosmologists are wondering if the universe will someday stop expanding. They are trying to measure the mass of the whole universe to see if gravitational attraction will eventually cause the universe to start contracting. Maybe we will have or have always had a “yo-yo universe” that expands from a Big Bang, and then contracts to a tiny point from which there is yet another Big Bang. Which universe are we on today?

I used to think that the *whole* universe was expanding. But that cannot be. Suppose that the whole universe expanded 10%. That would mean that the distances between the galaxies, the distances between the stars, the distances

to the planets, and the distances here on earth would all expand by 10%. If our measuring devices expanded by 10%, how would you measure the expansion? If today some distance out into space takes 10 million meter sticks and if everything expanded by 10%, it would still require 10 million meter sticks to cover the same distance.

If we can detect an expansion of the universe, then our measuring devices must not be expanding. Where is the boundary between expansion and constant size? I have been told that the distances between galaxies are expanding, but the distances within a galaxy remain constant. This answers the problem, but I am uncomfortable with such a solution because I want to know why. Why aren't the galaxies expanding just like everything else? What is good for the goose is good for the gander.

Let's look at that boundary from a different viewpoint. Instead of everything above galaxy-size expanding, what if everything *intragalactic* were contracting! Our galaxy would appear the same size to us, but it would take more meter sticks to reach the next galaxy. Wouldn't that look the same as *intergalactic* expansion?

It depends on how you look at it.



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**Request for Nominations
for 2003 Officers
St. Louis Section–ACS**

The St. Louis Section of the American Chemical Society requests nominees to stand for election in the fall of 2002. If you know of individuals who are qualified and willing to serve, please fill in and mail the nominating ballot, postmarked no later than May 31, 2002, to:

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

For the first time this year, we are also accepting e-mail nominations. While it will be difficult for you to assure your anonymity as a nominator, your identity will be removed from the email before it is forwarded to the Nominating Committee. Send e-mail nominations to lisa@balbes.com no later than May 31, 2002.

Self-nominations are welcome.

Nominating Ballot
St. Louis Section–ACS
Officers for 2003

Chair-Elect _____

Secretary _____

Treasurer _____

Directors _____

(up to three) _____

Councilors _____

(up to two) _____

Alternate Councilors _____

(up to two) _____

Outstanding Students

We have a winner, or more precisely, lots of winners. The following students have been selected by their respective institutions as *Outstanding Junior Chemistry Student* awardees:

- Yekaterina Gincherman, University Of Missouri–St. Louis
- Jennifer Gruneich, Southern Illinois University–Edwardsville
- Paul Hohler, Washington University
- Jared B. Jones, Saint Louis University
- Paul C. Richardson, Lindenwood University
- Jirasak Sakulsom, Maryville University
- Alison Wiegand, Principia College

And the *Outstanding Chemical Technology Student* is

- Steven M. Borgmeyer, St. Louis Community College–Florissant Valley

Congratulations to all, and thanks to the faculty sponsors for their mentoring and their help in the selection process.

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Celebrating 95 Years with Dr. Alfred Bader

The St. Louis Section was founded in 1907. A special seminar series featuring Dr. Alfred Bader will help recognize the milestone. Dr. Bader is founder of Aldrich Chemical Company and a collector of and authority on Renaissance art.

On Thursday, September 12, Dr. Bader will present a talk at the St. Louis Art Museum entitled *The Rembrandt Research Project and the Collector*. It will be held in the Friends' Room with a reception at 6:30 pm and the talk at 7:00 pm.

On Friday, September 13, Dr. Bader will speak on *History of the Aldrich Chemical Company and Sigma-Aldrich* at the University of Missouri–St. Louis Chemistry Department, Benton Hall 101 at 1:00 pm.

Later the same day, at the Sigma-Aldrich Research & Development Building auditorium, 2909 Laclede, Dr. Bader's subject is *Richard Anschutz, Archibald Scott Couper and Josef Loschmidt: A Detective at Work*. Reception at 6:00 pm, talk at 7:00 pm.

Come join us in celebrating the 95th anniversary of the St. Louis Section at one of these events and enjoy one of the interesting talks presented by Dr. Bader. Other special activities are being planned, so check the website at www.umsl.edu/~acs for the latest information on these events. The final program will also be printed in the September issue of the *Chemical Bond*. All events are open to the public.

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2002 St. Louis Section Chemical Technician Award Call For Nominations

The St. Louis Section Chemical Technician Award will be 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 2002.

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.

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. 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 314-694-2464, FAX 314-694-5216
susan.dudek@pharmacia.com

Chemical Progress Week Report Awards and Food Dominate Festivities

by Lisa Balbes

The week began on Sunday, April 14th, with the 6th Annual **Women Chemists Luncheon**. Twenty three section members gathered at the St Louis Art Museum to enjoy good food and good company and to listen to Dr. Catherine Didion, Exec. Director of the Association for Women in Science speak on *Advancing Women in Chemistry: Strategies for Success*. Needless to say, a lively discussion ensued!



Bonnie Ayden, Nahid Shabestary, Pat Hutchison, and Annette Dixon socialize before the event.



Suzanne and Garland Marshall relax before dinner.

Awards Night followed on Monday, April 15th. Over 85 people posted their tax returns early and enjoyed a nice meal, then heard Dr. Garland R. Marshall of Washington University talk about *How does your eye detect light and signal the brain?* Afterwards, awards were presented to

- the Outstanding Junior Chemistry Student from each local college and university
- 30 winners of the High School Chemistry Contest
- the winners and finalists in the Leopold Marcus Award competition
- High School Teaching Award winner Marilyn Ackerman
- Chemical Technician of the Year Award winner Anahid Birdwell

- Christina Friedel, an Environmental Chemistry Graduate Student Awardee (national ACS).

The next event was the **ADACIOM luncheon** on Tuesday, April 16th. We again enjoyed a fine meal, then thanked ADACIOM for their



Christina Friedel, recognized for receiving an Environmental Chemistry Graduate Student Award from National ACS, and Lisa Balbes

sponsorship of the High School Award competition, and listened to Jack Daley of Daley International talk about the pitfalls of buying and selling small businesses.

Wednesday morning dawned bright and early for UMSL's **Career Day**. Over 80 inquiring



Keynote Speaker Jack Daley talks about rules for buying companies.

young minds learned what types of chemical careers are available and what is necessary to have a successful one. Of course the highlight of the morning was the chemical magic show, followed by tours of UMSL's labs and a pizza lunch with real chemists available to answer questions.

Thursday was a **day of rest**.

Friday, April 19th, brought the **St Louis Award Symposium**. Four well-respected researchers from around the country came to speak on new methods in organic synthesis and perhaps poke a little fun at the award winner in the process. Professors Craig Forsyth, Mark Snapper, William D. Wulff, and Scott R Gilbertson each presented the current state of the art of their research to a recep



UMSL Department Chair Gordon S. Anderson welcomes the students

tive audience, followed by a nice reception in the Millstone Lounge.

Chemical Progress week culminated on Saturday night with the **St Louis Award Banquet**. Traditionally held at Kemoll's downtown, the view was breathtaking and the meal



“Rational” and Parallel Approaches to Catalyst Development
Professor Scott R Gilbertson,
Department of Chemistry, Washington University in St. Louis

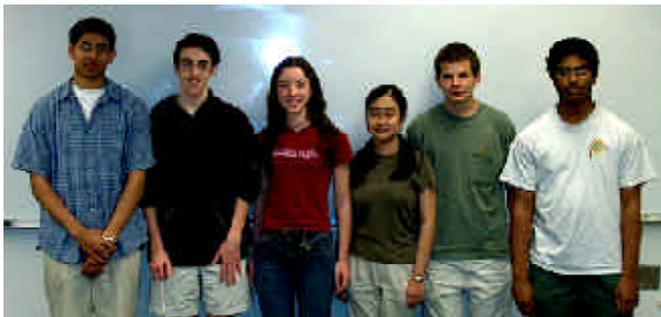
superb. After dinner, Chair Lisa Balbes presented the St Louis Award to Dr. Scott R. Gilbertson of Washington University. Professor Peter Gaspar introduced the winner and gave us some insight into his personality, then Dr. Gilbertson himself addressed the



Julia Zhu from Clayton High School performs an experiment in the Chemistry Olympiad.

audience on *The Four C's: Chirality, Catalysis and Combinatorial Chemistry*, an after-dinner talk that included bathroom plumbing fixtures and audience participation: sniffing enantiomers.

As the lights of the city twinkled below our feet and the rain started coming down, we said goodbye to friends, and bid farewell to another successful Chemical Progress Week.



Chemistry Olympiad Participants

Arvind Ravi (Parkway Central High School), Peter Scully (Parkway Central High School), Christine Kalcic (Mary Institute Country Day), Julia Zhu (Clayton High School), Jonathan Ray (Clayton High School), Karthikey Ponnusamy (Parkway South High School).



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