



# Chemical Bond

Volume 52  
Number 1  
January, 2001

St. Louis Section, American Chemical Society



*More from  
National Chemistry Week  
(story and photos on page 10)*

## From the new Chair

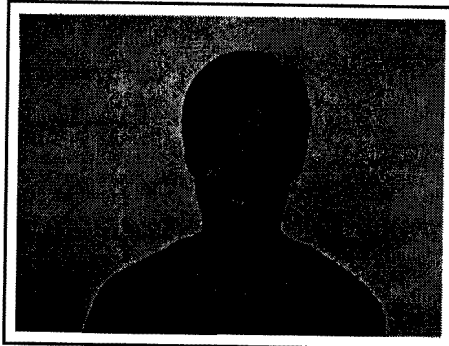
Greetings to all in the new millennium. I am honored to be Chair of one of the most active sections in the ACS. I am also very proud to be a part of the American Chemical Society as well as your award-winning St. Louis Local Section.

As Chair-elect this past year, I acquired a greater appreciation for the talent, dedication and teamwork in this organization. The St. Louis Section wins awards due to this talent, and its large variety of community outreach activities. Some of these activities have become national programs; including hands-on demonstrations at the Science Center, interacting with students and teachers in the classroom and encouraging youth to pursue science as a career by ACS-sponsored awards programs.

I'm certain all of us, at least once, have heard someone say how much they disliked or did poorly in chemistry class. Lack of understanding of basic science can lead to this unnecessary confusion and fear. One of my goals for next year is for us as chemists to try to reduce this "chemophobia". While not everyone can or should be a chemist, acquiring basic knowledge of chemistry and science cannot help but have a positive impact on responsible decision-making with regard to health, food, the environment and other issues. Since chemistry is critical to our very existence, we need to apply our professional training towards increasing the community's awareness and acceptance to improve the perception of our profession.

Increasing active participation by the membership in the various

programs sponsored by the local Section is a great means to assure the reduction of chemophobia and is another one of my goals for the Section. A new program, called "ChemInvolve", has a list of members to be called upon when a need arises for more volunteers at an outreach event. I would encourage you to get your name on this list, and join with me in as many Section activities as you can in 2001. When you are called to help with a grade school or a Science Center demo, please consider getting involved. Because of the variety of programs there is something for everyone and you'll be advancing the understanding of our profession. Not only will our students



## Sue Dudek

2001 St. Louis Section Chair

gain valuable information about the science in their everyday lives, they will become more globally competitive and you will have the satisfaction of making a contribution.

2001 is the Year of the Volunteer. Each member is important, and his or her time is valuable. The new

see *Chair Message*, page 7

# Chemical Bond

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Editor	Eric Ressler	314-962-6415 (H) 314-286-6600 x2199 (O) <a href="mailto:ressner@worldnet.att.net">ressner@worldnet.att.net</a>
Advertising Manager	Sue Saum	636-949-4735 <a href="mailto:saum@lc.lindenwood.edu">saum@lc.lindenwood.edu</a>
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Staff Writers	John Bornmann Brian Schiller	636-946-5161 618-345-0481
World Wide Web		<a href="http://www.umsl.edu/~acs">http://www.umsl.edu/~acs</a>
Webmaven	Lisa Balbes	<a href="mailto:lisa@balbes.com">lisa@balbes.com</a>

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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.

**Date:** January 11

**Social hour:** 5:30 pm

**Dinner:** 6:30 pm

**Business meeting:** 7:15 pm

**Future meetings:** Feb 8, Mar 8

## 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.

Thursday, Jan 18

**Ed Samulski**

University of North Carolina  
*To be announced*

Monday, Jan 22

**Andy Ewing**

Penn State University  
*Analysis of Single Nerve Cells*

## University of Missouri- St. Louis

Refreshments at 3:45; seminars at 4 pm in B-451 Benton Hall. For further information, Contact Prof. Keith Stine, 314-516-5346, kstine@jinx.umsl.edu.

Monday, January 22

**Dr. Paul Jellis**

Saint Louis University  
*New Chemistry with a Vintage  
Metallacarborane*

Monday, January 29

**Dr. Bakul Dave**

Southern Illinois Univ.-Carbondale  
*Molecular Programming of Intelligent  
Responses in Silica-Based Sol-Gels*

Monday, February 5

**Dr. Eric Bosch**

Southwest Missouri State Univ.  
*Explorations in Solid State Organic  
Chemistry and Coordination Chemistry*

## 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

The Computational Chemistry Discussion is temporarily coordinator-less. If you would like to become involved in this topical group, contact Program Committee Chair Jed White: phone (618) 462-3400, email jewwhite@siue.edu.

## Environmental Science/Technology Discussion Group

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

## 57th ACS Midwest Regional Award Request for Nominations

The Saint Louis Section established the ACS Midwest Regional Award in 1944 to publicly recognize outstanding achievements in chemistry in the Midwest region. The award is conferred annually on a scientist who has made meritorious contributions to the advancement of pure or applied chemistry, chemical education, and the profession of chemistry.

To be eligible, a nominee's cited work must have been performed while he or she was residing within the Midwest Region of the ACS, which includes Missouri, Arkansas, Iowa, Nebraska, Kansas, Southern Illinois, and South Dakota. However, the nominee does not have to be an ACS member. Neither the nominee nor the nominator has to currently reside in any of these locations. Nominees can be from industry, academia, government or private practice.

Nominations include a nominating letter, two or more seconding letters, a curriculum vitae, a brief biography, documented and objective information regarding the outstanding achievements of the nominee, and if the nominee is an academician, a list of persons who

have received advanced degrees under his or her direction. Please submit nine copies of all nomination material to:

Leah O'Brien, Chair  
Midwest Award Committee  
Department of Chemistry  
So. Illinois Univ.-Edwardsville  
Edwardsville, IL 62026-1652

All nominations must be received on or before the deadline of March 31, 2001 to be considered for the 56th ACS Midwest Award. The award will be presented at the 36th Midwest Regional Meeting in October, 2001. The ceremonies will feature the Midwest Award Lecture, a dinner honoring the medalist, and the presentation of the Award which shall be a medallion and a monetary award. Questions concerning the Midwest Award may be addressed to Leah O'Brien at (618)-650-3562 or lobrien@siue.edu. ■

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## When Worlds Don't Collide

by Jack Bornmann

There might be three worlds living together right here on planet Earth. There is the almighty us, there might be a world of things that move so slowly that we cannot

## Letters & More

detect their motion, and there might be a third world of things that move so fast we cannot see them. There *might* be!

Did you ever play with time-lapse photography in which pictures of a seemingly motionless object are taken at the same time every day or once a week or once a year? Most of us do not have a life span or patience enough to take time-lapse pictures once a year. Can you imagine your biography, a moving picture two seconds long, consisting of only 70 frames?

Pictures taken of a mountaintop once a year at the same date and time might suggest that things "as steadfast as the mountains" actually change. What if the time-lapse pictures had to be taken once a decade instead of once a year in order to detect the changes? Can you imagine going into a photo shop and saying, "I bought this camera about a century ago and I just ran out of film? Can you sell me another box of plates? I prefer the glass plates, please." Camera stores filled with digital cameras don't stock glass-backed photo emulsions.

But let's suppose that you talked five generations into taking pictures once per decade. By speeding

up time would we see movements that we normally do not detect?

Suppose an elderly person returned to the home of a grandparent, a home he has not visited since going away to college. The driveway is still there with the tree and that old tire swing. But the tree seems closer to the house than it used to be. Has it moved over the years ... or is it your childhood perceptions that made you think that the tree was further away because your little legs had to take more steps to get from the house to the tree.

When I go back to my hometown, the street by the high school is much narrower than it used to be; it is now impossible for two cars to pass in opposite directions. Or are there just more parked cars and are the cars wider now than in the 1940s? We cannot depend upon our memories when we observe change over a long time span. We need some records that will survive the passage of time.

My perception of the world around me is tinted by my lifetime. An insect with a life span of only one day might assume that I live a very dull life because I haven't done much or gone very far in its lifetime. I look out at a rock or tree and assume that it stays rooted to one spot forever, whereas in actuality it is moving in its lifetime. Trees do move, although they do so slowly.

We might have a whole new world right here amongst us but ignored by us.

Now consider rapid motion. Things that move fast enough can become invisible. People have gotten splitting headaches from walking into whirling propellers that have become invisible. We know

better today; when people exit helicopters, they bend over so much they look like Cro-Magnon men with their knuckles almost dragging on the ground. My parents warned me that although invisible, there actually was a blade inside the wire cover of the fan. I could make the fan blade appear and disappear by turning the switch off and on.

What if there were another world of fast moving creatures living here on earth with us. "But," you ask, "why don't I bump into these fanciful creatures?" Do you, when you are sober, bump into trees? Well, I presume these fast-moving creatures are smart enough and quick enough to avoid nearly stationary humans just as we avoid nearly stationary trees.

When I was little, my brother, sister, and I used to enjoy playing "Les tend like" (Let's pretend like)

and "What if." These games are still fun although I wonder if I am childlike or childish. It is good to be childlike, but bad to be childish.

### Chair Message from page 2

year brings new opportunities for involvement and contribution in your Section. I would encourage you to get ChemInvolved. New ideas are always needed to maintain the high quality programs provided by the Section. I am looking forward to an active year as Chair. By working together we can sustain the excellence the Section has established. For questions or concerns you may have regarding Section activities or ChemInvolve, I can be reached at 314-694-9821, or [susan.dudek@pharmacia.com](mailto:susan.dudek@pharmacia.com). Thank you in advance for your support.

Sincerely,

Sue Dudek

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## Project SEED Opportunity

Your organization is invited to participate in Project SEED, the American Chemical Society's social action program that places economically disadvantaged high school students in academic, industrial, and government research laboratories for eight to ten weeks during the summer. The program was established in 1968 to provide opportunities for students who historically lack exposure to scientific careers.

Project SEED offers high school students two exciting research opportunities.

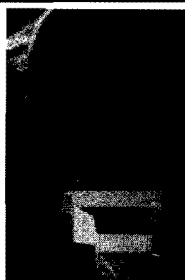
- The Summer I program will provide first-time participants (rising juniors and seniors) a fellowship award of \$1,750 with matching funds strongly encouraged.

- The second-year program, Summer II, supports previous Project SEED Summer I students for an additional summer scientific research opportunity. These students will receive a fellowship award of \$2,000 with matching funds strongly encouraged.

Each student conducts a scientific research project in chemistry or in a related field under the supervision of a scientist/mentor in the sponsor organization. The students must have taken one year high school chemistry. If you would like to mentor and sponsor a student in your organization, please call Dr. Sadiq Shah, St. Louis Section Coordinator for Project SEED, at 314-290-4796 for additional information and application materials.

The deadline for receipt of applications is February 2, 2000.

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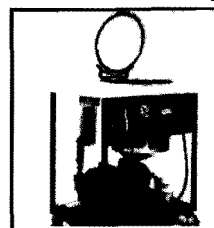
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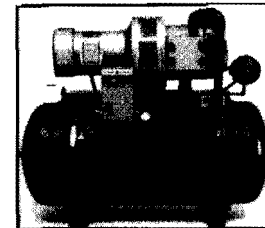
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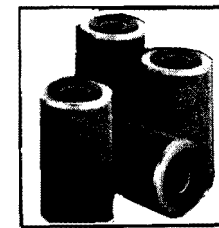
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## Highlights from NCW '00

by Greg Wall

### Most Creative Event

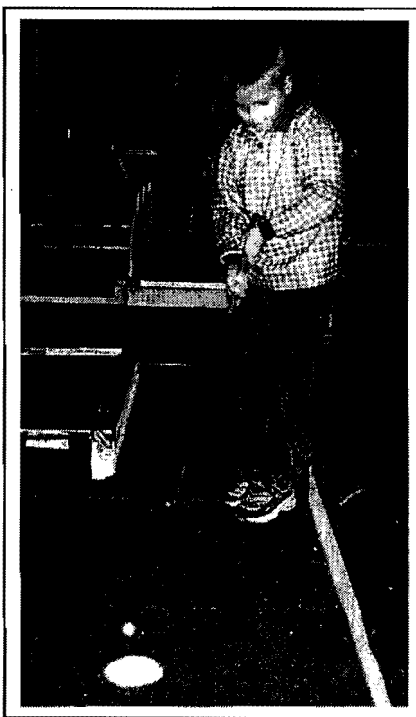
Atomic Mini Golf: a nine-hole miniature golf course. Each hole taught basic concepts of the composition, structure, and properties of a different element. Enlightening and challenging.

### Most Imaginative Periodic Table Display

Chemistry on the Internet: an interactive exploration of the properties of the elements. Lisa Balbes presented this computer demonstration that highlighted the Periodic Chart in a way that has not been done before. The demonstration featured the first Periodic Table on the World-Wide Web ([www.webelements.com](http://www.webelements.com)), authored by Mark Winter, Royal Society of Chemistry 1998 Teaching Award winner. Visitors could select their favorite element, explore its properties, and hear it pronounced.

### Greatest Industrial/Institutional Involvement

ChemExpo drew exhibitors from the Missouri Botanical Garden, Monsanto, Paternity Testing (bet that got the kids' attention), Saint Louis Police Department Crime Lab, Sigma, Steris and the USDA, plus education exhibitors Principia College,



Jake Young going for the Au in Atomic Mini-Golf. It looks like it's going to fall.

Saint Louis Community College at Florissant Valley, Saint Louis University, and Southern Illinois University at Edwardsville. Visitors



Doug Eatherton of the St. Louis Crime Lab shows budding crimefighter Ray Townsend (6) how it's done.


joined in hands-on activities and interactive displays.

All of these highlighted activities have been entered for Phoenix Award consideration by the national ACS.

Cover photo: Jessica Copeland takes Mariam Ajose (3) through some chem-fun.



We're not sure who they all are, and we don't know exactly what they're doing ... but it's a busy day at ChemExpo.



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## Career Musings

by Jerry Hook

In my short, incoherent article last month, I managed to blame lack of jobs for "bench chemists" on computational chemists. This is not well-founded, and neither is the rumor that they created the

## Career Corner

hole in the ozone. There is job growth, and it gains nothing to speculate that the growth might have been more if only we could continue to have to synthesize pharmacologic agents for trial-and-error testing.

Does increased regulation force companies to hire more chemists to stay within the lines, or do they pull back from innovation and hire fewer? I bought one last bottle of diazinon; production support chemists won't be needed to make the stuff, but everyone will want to know how much is in the water, soil, and dog food.

What I wanted to get across is that your education as a chemist brought out many transferable skills. You can be a QC Manager, a QA Director, or a Regulatory Specialist. For you to learn to analyze COGS (Cost of Goods Sold) to help the business team is a shorter path than for most other degrees.

The 21st century mega-trend of globalization is just beginning; not

many years ago, a mere 250 corporations did 95% of American export trade. With the Internet, a completely different worldview is coming on. Short-term assignments overseas will become a normal part of a greater proportion of professional careers.

As I am writing, we don't know who will be President. When you are reading, it is a new millennium. That's too big for me to think about. But going into the 21st century, the United States will lead the world. The President's actions are modified by Congress and other powers. Still, he provides a direction to the government, which, with its awesome budget and employment, provides some direction to the economy and the nation, and the world follows. Ultimately, a staggering amount of money and even historical trends do depend on which candidate wins.

Similarly, the ACS is arguably the premier scientific association in the world, and can provide a model to all others. The winningest large Section is St. Louis! Archimedes said about leverage, "Give me a place to stand, and I will move the world." I urge you to be active in the ACS in the New Year and new century, and so move your world.

Make some resolutions to preserve and enhance your health. With continued increases in medical knowledge, perhaps some of us will see the 22nd century! If it happens, we can "blame" that on the (computational) chemists, too!



## Research Positions

Insituform Technologies, Inc., a St. Louis-based worldwide leader in its field, is seeking qualified candidates for several positions in its Research and Development department. Insituform is a leading company in the design and installation of pipe rehabilitation products made from modern composite materials.

### Product Development Engineer

This person will work with a group of scientists and engineers developing composite materials and methods of manufacturing unique types of composite pipe products. The successful candidate will have experience in designing, fabricating and testing composite materials and products and possess a high degree of innovative thinking. Knowledge of fibers, fabrics and their role in composites, the ability to work in a multidisciplinary, teamworking environment and strong project management skills are a must. A graduate degree in mechanical or composites engineering is a plus.

### Materials Characterization Lab Supervisor

Applicants must have experience with physical and mechanical property test methods and a knowledge of modern computer-based instrumentation interfaces. Knowledge of polymer and composites testing is a plus. Applicants with experience in quality control methods, ISO 9000 procedures, supervisory experience and good communication and teamwork skills are preferred. The successful candidate will have a BS in a scientific or engineering discipline and 5-10 years industrial experience in a related field. An advanced degree or graduate level course work in an engineering or polymer science field is preferred.

### Research Technician

The successful candidate will be a person looking to apply scientific principles and techniques acquired in an academic course of study or other appropriate training. Candidates must have successfully completed college level courses in a technical discipline. We seek technicians for assisting senior research staff in conducting quality control tests, determining mechanical properties of plastics using state-of-the-art test equipment and conducting research on resins and composite materials. An Associates degree in Chemical or Engineering Technology, familiarity with PC's and an aptitude for working with mechanical devices are a real plus.

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## Two Events to Warm to on a Cold Winter Day

**Minority Scientists Showcase**, January 13-15, 2001, will be held at the St. Louis Science Center from 11:00 a.m. to 5:00 p.m. in the May Special Exhibit Hall. This three-day event features minority scientists, engineers and other science-related professionals. Youth and their families interact one-on-one with the scientists. Plan on attending this event.

**Community Science Day**, January 20, 2001, will be held at the St. Louis Science Center throughout the whole building. Come enjoy this event with your family and interact with numerous organizations, school groups and families as you explore the many facets of chemistry. Learn how everything can be related back to chemistry

and that this chemistry is all around us. Hope to see you there.

To volunteer to help at the Section's booth at either of these events, contact Greg Wall, 800-325-5832 ext. 3139 or e-mail gwall@sial.com.

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## Who's Responsible?

Here are the people who have taken on responsibilities for the governance and programs of the St. Louis Section. If there's something you want to know about Local Section activities, or if you wish to get involved, these are some folks to contact. Full contact information and a complete list of committee members can be found on our website: [www.umsl.edu/~acs](http://www.umsl.edu/~acs)

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S. Allen Heininger (ACS President, 1991)	Lifetime

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### Alternate Councilors

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Alexa Serfis	2001-2003
Bob Friedman	2001-2003
Bill Welsh	1999-2001
Chris Spilling	1999-2001

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### Steering Committee

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Lisa Balbes	Chair
Pauline Bellavance	Ex officio
Jerry Hook	Ex officio
Sue Dudek	Ex officio
Eric Voss	Appointed
Sadiq Shah	Appointed

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## Chemical BOND

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