

### Chair's Corner

The spring semester has come to a close. As another class of students has graduated and the attention of the faculty shifts to the summer, it is certainly appropriate to reflect a bit on the past year.

Just as last year's *SyCHEM<sub>ore</sub> Notes* was undergoing final edits, we received word that the University had approved the renovation of our organic teaching laboratory (Science 36, for those of you who recall that wretched lab space). Twelve months and over \$0.5 million later the laboratory is nearing completion and will be ready for organic labs this summer. Before and (nearly) after pictures are shown on the right. The lab will include sufficient ventilation hood space for 20 students, four-person benches, two ADA stations, and easy access to our 400 MHz NMR in the adjoining room. We also just learned that the Indiana General Assembly has approved \$14.8 million for renovation of additional laboratories in the Science Building. These funds will likely be used to upgrade our four remaining older teaching labs. Very exciting!

I mentioned last year that ISU was engaged in a process to prioritize programs, eliminating under-performing programs and reallocating resources to stronger ones. That process is nearly complete and, I am pleased to report, chemistry fared very well, having been ranked in the top 10% of all programs in the College of Arts and Sciences. Exactly what impact this will have on our program remains unclear, but we do anticipate an enhanced level of support from the Dean's Office in the future. An outcome of the prioritization process that will certainly impact the Department is

the agreement of the chemistry faculty to merge with physics. Physics has a rather small number of faculty (four with one laboratory support person) and majors, and the administration has determined that it is unreasonable for that department to remain as a standalone unit. Details of the merger have been approved by the chemistry and physics faculty and will probably be acted upon during the forthcoming academic year.

Professor **Alan Siegel** has retired after 35 years of teaching at ISU. For the past few years Alan had been teaching organic and general education chemistry. Alan will certainly miss the stage and captive audiences he leaves behind. And the Department's character quotient has certainly diminished with Alan's departure.

I am delighted to announce that the family of Professor Emeritus **Joseph Siefker** (1962-1995) has established an endowed fund in Joe's memory to support summer undergraduate research fellowships in the Department. Joe passed away in September 2005. He was an ardent promoter of research opportunities for students during his tenure in the Department. The fund will provide fellowship support for one or two chemistry majors each summer.

We continue to depend on alumni for financial support. Donations are used for scholarships and research fellowships and to support student travel to professional meetings. At least 16 students have been awarded fellowships for work in the Department this summer and our students have regularly presented results of their work at Indiana Academy of Science and National ACS meetings for over 10 years now. Please consider making a gift to the Department so that we can

expand opportunities for students.

Many thanks, and keep in touch!

—Eric Glendening

### Science 36 Renovation

Demolition began on Lab 36 in January 2007. Renovations will be completed this May, and organic chemistry labs (CHEM 351, 352) will begin meeting in the newly remodeled lab during the summer 2007 sessions.



**The old Lab 36**



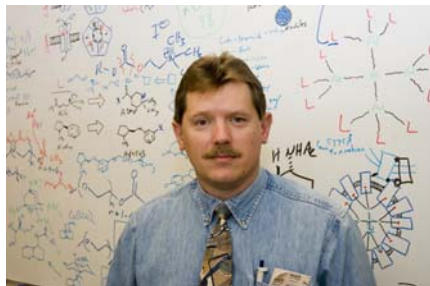
**Construction underway...**



**New lab benches and hoods in place; renovation is nearing completion.**

## Faculty Profile: Richard W. Fitch

Richard (Rick) W. Fitch is originally from Louisville, Kentucky. He received his B.S. in chemistry from Western Kentucky University in 1992, his Ph.D. in chemistry from the University of Louisville in 1998, and did a postdoctoral fellowship at the National Institutes of Health until 2003, when he joined the Chemistry Department at ISU.



**Professor Rick Fitch**

Since his arrival at ISU, Rick has been interested in the chemistry and pharmacology of natural products. He is particularly interested in alkaloids, especially those having activity at neurotransmitter receptors. He has published seven papers on the subject and just this year published his first paper from work at ISU.

Rick has mentored 24 undergraduate research students at ISU. In addition, he has worked with two local high school students and three ISU graduate students from Life Sciences, Ecology and Organismal Biology, and Geography, Geology, and Anthropology. His students present regularly at meetings including the ISU Research Showcase, Kentuckiana Undergraduate Research Symposium, Indiana Academy of Science, and National ACS meetings.

Rick has received funding from the ISU Center for Public Service and Community Engagement, the University Research Committee, and the Office of the Provost through the Promising Scholars Program, which is co-funded by the Lilly Endowment. Fitch is also funded externally by the National Institutes of Health, the National

Science Foundation, and Research Corporation. These funds help support his postdoctoral fellow and his undergraduate research students, and enabled the Department to acquire a new 400 MHz NMR spectrometer.

In his spare time Rick enjoys hunting, fishing, camping, hiking, and martial arts. He has been married to his wife, Connie, for 15 years and lives just south of Terre Haute.

Additional information about Professor Fitch and his research group can be found at <http://www.indstate.edu/chem/fitch.html>

## Department Acquires X-ray Fluorescence Spectrometer

During fall 2006 a new energy dispersive X-ray fluorescence spectrometer (XRF) was added to the Department's arsenal of analytical instrumentation. Acquisition of the XRF was made possible through a Camille and Henry Dreyfus Foundation Grant in the Chemical Sciences. The grant was awarded to the Department on behalf of **Steve Wolf** for his proposal "Incorporation of XRF into an Interdisciplinary Undergraduate Study of the Environment." X-ray fluorescence spectrometry is one of the more widely used analytical techniques for qualitative and quantitative determination of major and minor component elements having atomic numbers greater than sodium. A particular advantage of this technique is its ability to perform multi-elemental non-destructive analysis of solid samples. Because of these capabilities, XRF is widely used in environmental, geological, and cosmochemical research. As part of this grant, Steve and his student **Matt Purcell** have been developing a laboratory-based experiment for his environmental chemistry class to illustrate the physical and

chemical processes- associated acid mine drainage pollution. This summer the XRF will be in active use by Steve's students **Ryan Galloway** and **Jennifer McKillop** in a collaborative environmental study of the impact of acid mine drainage on the spectral reflectance of tree leaves growing in reclaimed coal mine sites. This research will be performed with colleagues from Brigham Young University and ISU's Geography, Geology, and Anthropology Department.



**The Department's new energy dispersive X-ray fluorescence spectrometer.**

## 2006 Grants and Publications

The chemistry faculty have published more than eight papers, book chapters, and textbooks in 2006 in the areas of organic, analytical, physical, and biochemistry, as well as chemical education. **Steve Wolf** received a Camille and Dreyfus Foundation grant (59K) for the use of X-ray fluorescence spectrometry in undergraduate studies. **Rick Fitch** received an NIH grant (175K) to fund the study of multivalent ligands for nicotinic receptors, a Research Corporation grant (38K) to fund study of sulfur-mediated oxidation of alcohols, and several internal grants. **Eric Glendening** was awarded a Research Corporation grant to study the conversion of methane to methanol on metal oxides.

## ACS Student Affiliates Activities

The American Chemical Society Student Affiliates (ACS-SA) at ISU provides opportunities for students to become involved in the community, explore career options, serve the Department, and build friendships through social activities. Most ACS-SA members are chemistry majors, but students majoring in other disciplines are welcome and encouraged to participate in the group's activities.

The ACS-SA was involved in a number of outreach and community service projects this year. CHEM4KIDS was a one-day chemistry camp for 4<sup>th</sup> and 5<sup>th</sup> grade Vigo County students. ACS-SA members helped the children conduct ten experiments in which they learned various aspects of chemistry. The ACS-SA also organized a monthly program at the Terre Haute Children's Museum called Kids 'n' Chemistry. For the 2006 National Chemistry Week, ACS-SA members taught ISU science education students how to perform simple chemistry experiments they could use in their classrooms in the future. In addition, ACS-SA raised \$400 for the multiple sclerosis walk held annually at Rose-Hulman Institute of Technology, and sponsored a talk on campus by ISU chemistry alumna **Jennifer Gatsos Walter**.

Social events this year included "Movie & Euchre Night," a departmental BBQ for students and faculty, and a trip to the 7th Annual Kentuckiana Undergraduate Research Symposium in Louisville, Kentucky. At the end of the spring semester, the ACS-SA organized the annual senior send-off dinner, held this year at Sam's Steakhouse, to honor students graduating with a major or minor in chemistry.



**ACS Student Affiliates work with local children during CHEM4KIDS camp.**

## Arthur Halpern Named Arts and Sciences Distinguished Professor

This spring **Dr. Arthur Halpern** was named the Arts and Sciences Distinguished Professor. Each year for the past two decades, this title has been given to one faculty member who exemplifies outstanding excellence in teaching, research/creativity, and service.



**Professor Arthur Halpern**

Arthur is the first member of the Chemistry Department to be given this title. During his career he has published more than 100 articles and monographs. He is the author of a well known physical chemistry laboratory textbook published by W. H. Freeman which came out in its third edition this year. Arthur served as chair of the Chemistry Department from 1990 to 2005 and interim chair of the Physics Department from 2001 to 2005. Most students know him, however, as a dedicated and caring teacher of chemistry. Please join the Department in extending your congratulations to Professor Halpern.

## Chemistry Students Take Honors at ISU Research Showcase

The ISU Research Showcase is an annual on-campus exhibition held in the spring and sponsored by the School of Graduate Studies. Eight undergraduate chemistry students presented talks or posters at the 2006 research showcase. The following students received awards for their presentations. **Rachael Chase** and **Jessica Wright**: poster entitled "Investigation of the Alkaloid Content of the Kentucky Coffeetree, *Gymnocladus dioicus*" (Rick Fitch, advisor); **Rebecca Coates**: talk entitled "Determination of the Trace Element Contents in Soil and Plants from the Green Valley Coal Mine Site by ICPMS" (Steve Wolf, advisor); and **Justin Hadar**: poster entitled "Conversion of Aldoximes to Nitriles with Trifluoroacetic Anhydride and Sodium Carbonate" (Rich Kjonaas, advisor).

Ten chemistry majors presented their work at the 2007 research showcase. This year's award winners were as follows. **Rachael Chase**: first place in oral sessions for her talk entitled "Dioicine, a Novel Alkaloid from the Kentucky Coffeetree, *Gymnocladus dioicus*" (Rick Fitch, advisor); **Stephanie Braun** and **Adam Arnold**: second place in Earth Science / Physical Science / Technology poster session for work entitled "Computational Study of Methane to Methanol Conversion on Metal Oxide Clusters" (Eric Glendening, advisor); and **Ryan Galloway** and **Michael Schulte**: third place in Earth Science / Physical Science / Technology poster session for work entitled "Studies in the Preparation of  $\alpha$ - and  $\beta$ -Phytanyl Mannoside" (Rich Kjonaas, advisor).

## Pre-Pharmacy Club

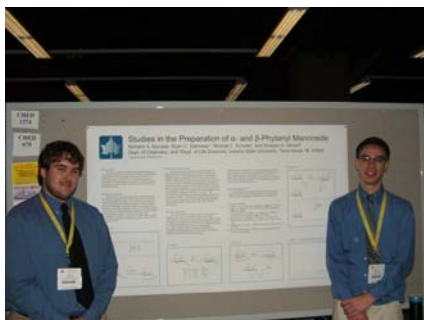
If you graduated more than three years ago, you probably don't know that ISU now has a pre-pharmacy club which is housed in the Chemistry Department. In the summer of 2004, students **Greg Harvey** and **Stacey Collins** approached **Rich Kjonaas** about starting such a club. Later that fall, after much work by these two students, the pre-pharmacy club became an officially recognized ISU student organization.

Although it is not a large club, the pre-pharmacy club is an active one. Chemistry major and Presidential Scholar **William Jackson** from Indianapolis is currently the president. He has worked out an arrangement whereby pre-pharmacy students can shadow pharmacists at one of the local hospitals. He has also secured an invitation for up to four pre-pharmacy students to attend the meeting of the Wabash Valley Pharmacists Association each month. This gives students a chance to hear a talk by a local physician concerning a new drug that is on the market. It also gives them a chance to meet and visit with some practicing pharmacists in the community while having a nice dinner.

Although the club normally holds monthly meetings of its own, the March meeting of this year was held jointly with the ACS Student Affiliates. The special guest speaker was **Jennifer Gatsos Walter** who graduated from the ISU Chemistry Department in 1999. Dr. Walter earned a Doctor of Pharmacy degree from Purdue in 2003, and is now working at the Community Health Network in Indianapolis. She is the sole pharmacist at an outpatient infusion center where patients receive chemotherapy and related drugs. Her presentation provided valuable and interesting information for students who plan to pursue careers in pharmacy.

## Summer Undergraduate Research Experience

This summer will mark the second consecutive year that the Chemistry Department has organized a formal summer undergraduate research experience (SURE) for students. This program provides chemistry students an opportunity to participate in an intensive research experience under the direct supervision of a faculty mentor from the Department. The students may select to apply for either full-time or half-time fellowships. Fellowships are supported by a combination of funds from the College of Arts and Sciences and the Department of Chemistry, as well as intramural and extramural funds obtained by the faculty.



**SURE fellowship awardees Ryan Galloway and Michael Schulte will be working in the Department this summer.**

The 2006 SURE ran from the middle of May through the end of July. Students who received full-time appointments typically spent 7-8 hours every weekday in the Department throughout this time period. Students spent their time principally in the laboratory, though considerable time was also taken for reading and searching the scientific literature, as well as discussing their progress with their peers and faculty in a series of informal group meetings. As a mid-summer diversion the students and faculty spent one

day canoeing down scenic Sugar Creek in Parke County. The summer program concluded with a series of formal oral presentations made by the students. Six of the

students participating in the 2006 SURE traveled to Muncie, Indiana, in early November 2006 to present the results of their work at the Indiana Academy of Science meeting, and more recently, eight presented their research at the 2007 Spring National ACS meeting in Chicago.

The 2007 SURE begins May 16. Sixteen students have been awarded either full-time or half-time fellowships to work with six faculty members in the Department. The students who have been awarded fellowships and their faculty mentors are:

2007 SURE Fellow	Research Advisor
Adam Arnold	E. Glendening
Stephanie Braun	E. Glendening
Rachael Chase	R. Fitch
Jenalee Cooksey	W. Flurkey
Mary Cox	R. Fitch
Lindsey Edenburn	R. Kjonaas
Tyler Fromm	E. Glendening
Ryan Galloway	S. Wolf
William Jackson	E. Glendening
Allen Liu	R. Fitch
Jennifer McKillop	S. Wolf
Mylaka Miller	R. Fitch
Derek Parkes	R. Fitch
Michael Schulte	R. Kjonaas
Peggy Williams	L. Rosenhein
Kiersten Yake	R. Fitch

We congratulate all of these deserving students on being selected for this program.

## Fall 2006, Spring 2007 Chemistry Graduates

The 12 graduating seniors this academic year were: Leslee Bryant, Sean Finley, Carrie Green, Joel Hallam, Melissa Mollet, Thomas Norton, Adam Pabst, Aaron Pickrell, Matthew Purcell, Amy Robbins, Gordon Sturgeon, and Brandon White. We are proud of our graduates and extend our best wishes to each of them!

## Faculty Briefs...

**John and Sandy Allen's** textbook for CHEM 100 should be in print in time for use this fall. **Rick Fitch** has been busy overseeing installation and training for the new NMR and will be teaching an expanded Organic Laboratory Techniques (CHEM 355) course this fall. The class is now two credit hours and incorporates the former Chemical Information course (CHEM 410). **Bill Flurkey** had a unique experience last summer—one of his research students was his own daughter, Allison. For 10 years now, **Eric Glendening** has accompanied a group of ISU chemistry majors to the spring national ACS meeting; this year that group included eight students. The new edition of **Arthur Halpern's** physical chemistry laboratory textbook is now out. Not surprisingly, he is already developing new experiments and tweaking existing ones for the next edition. **Jennifer Inlow** is developing a special topics course in bioinformatics which will be team-taught with Professor Gary Stuart of the Life Sciences Department during the fall 2007 semester. **Rich Kjonaas** has been doing some collaborative research with Professor Ghosh in the Life Sciences Department, and is eager to get the sophomore organic lab course moved into Science 36 this summer. "**Rama**" **Ramachandran** is now an assistant professor at St. Mary-of-the-Woods College, but he will return to our department for five weeks this summer to teach CHEM 106. **Larry Rosenhein** is still advising the ACS Student Affiliates, and he worked this spring with a research student who will continue as part of the summer undergraduate research experience (SURE) program. **Alan Siegel** has officially retired although he still intends to teach a class in the summer and work as a college-wide Sycamore Advantage advisor. He says, "Retirement is not that great. As yet, I have not had a day off." He feels that people are not fully appreciated until they are gone or retired. "Now that I am retired," he says, "I know you will appreciate it!"

**Steve Wolf** has been busy with his research in cosmochemistry. He recently presented his work on the distribution of volatile trace elements in primitive meteorites at the annual Meteoritical Society Meeting in Zürich, Switzerland.

## Retired Faculty Briefs...

**Myong Ahn** and Mrs. Ahn are living in the Midland Michigan area. Myong has been teaching there as an adjunct professor. **Marlowe Owen** has been doing a lot of traveling lately. In fact, she and Joyce Siefker recently returned from a Caribbean cruise. **D. J. Reuland** was back in the Department this past spring teaching CHEM 105 labs. **Pat Tatum** is enjoying retirement and is still doing a lot of traveling. **W. A. Trinler** and his wife Jacquelyn live in the Seelyville area. They will soon be welcoming a son-in-law into the family.

## Staff Briefs...

**Patti Archer** and **Mitzi Nichols** are happy that the office area will be remodeled this summer. **Erik Ingebrigtsen** has been kept busy making room for newly acquired instruments and reorganizing to accommodate the remodeling of Science 36.

## Alumni Notes...

**Lauren (Heemer) Dixon** is currently working as a chemist at Praxair Surface Technologies with a specialty in X-Ray Fluorescence. Praxair Surface Technologies manufactures metallic powders used in the production of coatings for airplane and engine parts. She is also currently halfway through an MBA program in Operations Management at American Intercontinental University Online. She enjoys working with XRF, ICP, and LECO equipment to test inorganic metallic powders.

**John Beerbower** recently graduated from Indiana University School of Medicine and will be a

resident at the St. Francis Hospital Family Practice Residency Program from 2006-2009. He and his wife Hannah (B.S. in Science Education, 2003) had their first son, Nathan Ray, on April 22, 2006.

## Attention alumni!

If you would like your information included in the next issue, please send it by email to Jennifer Inlow (inlow@carbon.indstate.edu) or complete the form on the insert and mail it to the Department.

## Faculty and Students Attend National ACS Meeting in Chicago

Eight chemistry majors presented posters at the 223<sup>rd</sup> National Meeting of the American Chemical Society, held March 25-29, 2007, in Chicago, Illinois. **Eric Glendening** and **Rick Fitch** chaperoned the group. In addition to presenting their own research, the students attended poster and oral presentations at the meeting and enjoyed some site-seeing during free time.

Funding for the students' travels was provided by the ISU Office of Sponsored Programs, the College of Arts and Sciences, the Department of Chemistry, and the Wabash Valley section of the ACS.



*ISU chemistry students at Navy Pier during the 2007 Spring ACS meeting in Chicago.*

Indiana State University  
Department of Chemistry  
Terre Haute, IN 47809



## SyCHEMMore Notes

### We want to hear from you!

Future issues of *SyCHEMMore Notes* will include an "Alumni Notes" section featuring a summary of recent activities of ISU chemistry alumni. If you'd like your information included in the next issue, please send it to Jennifer Inlow (inlow@carbon.indstate.edu). Want to look up an old friend or read about the careers of other ISU chemistry grads? The alumni link

on the departmental Web page (<http://www.indstate.edu/chem/alumni.html>) provides the contact information of many of our alumni, as well as brief descriptions of the career paths and current work of some of them. To have your own contact information added to the Web site, contact Eric Glendening (ericg@carbon.indstate.edu) or Jennifer Inlow (inlow@carbon.indstate.edu).

### Check out the Department's Web site...

For more information and recent photographs of our students and the Department, visit our Web site at <http://www.indstate.edu/chem/>

### Questions or comments?

Contact  
Eric Glendening, chairperson, at:  
ericg@carbon.indstate.edu or  
812-237-2239.