

A Message From the (New) Editor:

With this edition of the newsletter you will notice three major changes. First, Dr. Morrison has retired from editing the newsletter, and I have now accepted those duties. Second, we have a new look. I am using Microsoft publisher to present alumni news and events of the department. Third, we are publishing the newsletter twice a year; once in the fall and again in the spring. The purpose of this newsletter has been and will be to share news of our alumni and provide you with information about the activities of the department. We welcome any comments on the changes to the newsletter.

Your new editor,
Donald L. Batema

KRESGE GRANT UPDATE

As we mentioned in our last newsletter (Spring 2005), the University received \$114,000 from the Kresge Foundation to immediately purchase laboratory equipment. An additional \$114,000 will be received if the University raises \$456,000 by September 1, 2006. According to Lance Sittig, Assistant Director of Gift Planning, a total of \$263,525 in gifts has been pledged or received to date, putting us at more than 50 percent of the goal (see chart below).

From the initial monies received, the chemistry department has already purchased several pieces of equipment (see pictures of equipment on page 4 of this newsletter). These items, along with equipment and instrumentation our department currently operates, have greatly increased our ability to keep our students abreast of the newest technologies. Dr. Ray Lutgring, Chemistry Department Chair, has said, "UE students will have the advantage of using the kinds of modern equipment necessary to prepare them to operate advanced equipment in graduate school or professional positions in the sciences."

What is really exciting is that the endowment promises to provide even greater advantages because it will serve as a reliable funding source for maintenance, equipment upgrades, and major equipment purchases. According to interim VPAA and Dean of the College of Arts and Sciences, Dr. Jean Beckman, "The endowment fund that the Kresge grant will help establish provides a steady source of funds for major equipment purchases for the future."

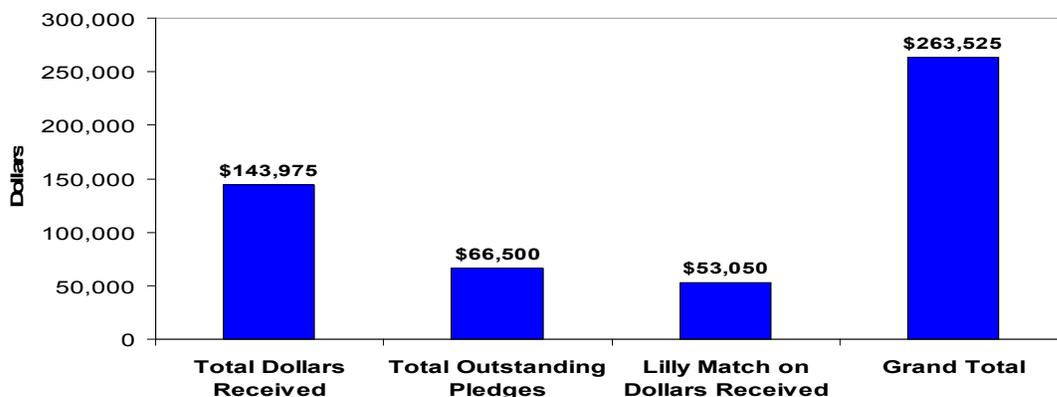
Members of the Kresge Initiative Steering Committee (including our own Dr. Phil Kinsey, Emeritus Professor, and Dr. Jean Beckman) have begun contacting UE science alumni. So, no doubt many of you have (or will be) contacted to help meet the goal of \$456,000 by September 1, 2006. For those of you who have already contributed we greatly appreciate it.

The faculty are excited about the new purchases and are working hard to implement the use of the new equipment into their courses and research. Our students will soon reap the benefits of these activities.

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**Kresge Science Initiative Endowment Gifts
(Contributions as of 9/1/05)**



GRADUATING CLASS OF 2005

As a department it is always gratifying when graduating seniors move on to graduate or professional school, or find that first job in industry, government or academia. We are especially pleased this year to learn that all of our newest alumni, the class of 2005, have decided to continue their education in graduate or professional school. Our seven graduating seniors, and the programs and schools they have joined are:

- **Brian Alberding** (Professional Chemistry); The Ohio State University; Ph.D. program in Chemistry
- **Dan Deatherage** (Biochemistry); The Ohio State University; Ph.D. program in Molecular Cellular Developmental Biology
- **Matt Jones** (Biochemistry); Southern College of Optometry, Memphis, Tenn.; Class of 2009
- **Lauren Massey** (Biochemistry); University of Kentucky College of Dentistry, Lexington, KY; Class of 2009
- **Morgan Oberle** (Biochemistry); Indiana University School of Medicine, Bloomington, IN
- **Christi Riley** (Chemistry); University of Kentucky College of Pharmacy, Lexington, KY; Class of 2009
- **David Winternheimer** (Biochemistry); UCLA; Organic Pharmaceuticals & Natural Products; Class of 2010

STUDENT PROFILE: ANGELA ELSTEN

A new feature in our newsletter, starting with this issue, is a profile of a current student, alumnus, faculty or staff, or administrator. This issue will feature a student profile of **Angela Elsten**, a senior with a double major in Chemistry and Secondary Education. Angela is originally from Middleton, IN (near Muncie) and graduated from Shenandoah High School. She has been very active in our department, including involvement in research, lab assisting and chemistry club. I caught up with Angela recently to ask her some questions about what brought her to UE and her plans after graduating next spring. Here is what Angela had to say:

Q. What attracted you to UE?

A. Honestly, I wanted to go to school outside of Indiana, but my family wanted me to stay in state. So, I looked at a map of Indiana and picked UE. However, once I began to research the school, I knew it would be a good fit for me. I was also impressed by its academic reputation.

Q. So, was UE the right choice for you then?

A. Both the chemistry and education departments have been very good for me. In chemistry, I have had the opportunity to do research and work one on one with faculty. In the education department they have given me an early opportunity to teach by offering internships (at Bosse High School and Glenwood Middle School). Next semester I will do my student teaching at Harrison High School. I have no regrets coming to UE; I can't see having gone any place else for school.

Q. Why did you major in chemistry and secondary education?

A. When I came to UE, I originally planned to go into the pre-med program (chemistry major). But I knew I wanted to teach high school because of some of the experiences I had, such as tutoring. I also know we need really good science teachers at the high school level and I feel I can be a good teacher. My passion for chemistry developed in high school; I really enjoyed it. Chemistry is something that makes sense to me because I think it explains a lot of the biological processes we observe.

Q. What are your immediate plans, and how do you see your career developing in the next few years?

A. I student teach next semester at Harrison High School and I will teach an integrated chemistry/physics class and a math class. I know I have a preference in teaching chemistry at the high school level. When I graduate I would like to teach outside of the state of Indiana to experience other parts of the country. I have no strong preference on where I go, except the North/South Carolina area is appealing because I have done some mission work there and I enjoyed the people. After teaching for a few years, I expect to go back and get a Master's Degree in chemistry. I would get a masters in chemistry over education because it would give me the option of going back to teach in high school, or to pursue a Ph.D.



Angela in the biochemistry lab working on her summer research project.

SUMMER RESEARCH STUDENTS (ON CAMPUS)

During the summer of 2005 we had seven students mentored by faculty on research projects in biochemistry, organic, physical and analytical chemistry. The following is a list of students, their faculty advisors, and their research projects:

Sean Vaughn and **Angela Elsten** (Dr. Kristy Miller): The Tissue Specific Dehydrogenase Activity of 11 β -hydroxysteroid Dehydrogenase.

Emily Maurer and **Jessica Wojtas** (Dr. Ray Lutgring): Use of Solution Phase and Solid Phase Chemistry to Create Substituted Pyrimidine Rings.

Megan Gootee (Dr. Bryan Lynch): Quantification of Mn Content in Aquatic Plants using EPR and AA Spectroscopy.

Kevin Ruble (Dr. Arlen Kaufman): Improvements in the Design of a Post-column Photo catalytic Reactor for Use with Small-volume Separations.

All of these students presented an overview of their research to colleagues and faculty at the beginning of the semester in the Koch Center. Additionally, Jessica, Emily, Sean, and Angela traveled to Rose-Hulman on October 7 to present the results of their research at the IRCBC (Interdisciplinary Research Collaboration in Biology and Chemistry) symposium. Several of these students are also applying for funds to travel to NCUR (National Council for Undergraduate Research) to present results of their work. And, the really exciting news is that we found out on November 7 that a paper submitted by Sean and Angela has been accepted for publication and will appear in the *Journal of Undergraduate Chemistry Research*. Congratulations to all our research students on a successful summer and fall.

SUMMER RESEARCH STUDENTS (OFF CAMPUS)

In addition to students working on campus this past summer, we had some students involved in research at other institutions. Following are the students, the department and institution where they worked, research advisor, and title of their research project:

Sheena Donald, Department of Anatomy and Cell Biology, Indiana University School of Medicine, Evansville, IN (Dr. Cezary Wojcik): Ubiquitin Ligases (E3) in Endoplasmic Reticulum Associated Degradation (ERAD).

Jessica Frisz, Department of Chemistry, University of Kansas, Lawrence, KS (Dr. Robert C. Burns): Using phospholipid monolayers to create functional patterns on the mesoscale level.

Mandir Helms, Department of Chemistry, Texas A&M University, College Station, TX (Dr. Paul Cramer): Cation effects on PNIPAN solubility.

NOBEL PRIZE IN CHEMISTRY

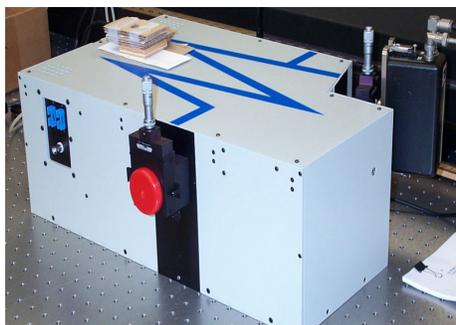
As many of you may already know the Nobel Prize in Chemistry was awarded recently to Yves Chauvin, Robert H. Grubbs, and Richard R. Schrode. Yves Chauvin is from France and works at the Institut François du Petrole, while Grubbs and Schrode are from the US. Grubbs is at Cal Tech and Schrode from MIT. All three scientists were recognized for their work in the development of the metathesis method in organic synthesis. These reactions are considered important because of the opportunities they create for producing many new molecules, including pharmaceuticals, herbicides, and polymers.

Emily Maurer and Jessica Wojtas commenting on their experience with organic synthesis "Sometimes research is frustrating when things fail, but we found that if you keep trying, and we did a lot of trial and error, eventually it all works out."

Jessica Frisz, talking about her REU research experience at Kansas: "I had a very positive experience, getting to work with graduate students and getting a sense of what their lives are like. My research went so well that my advisor is working on a paper that will soon be submitted for publication."

KRESGE EQUIPMENT PURCHASES

Thanks to the Kresge Grant our department purchased some equipment that has greatly enhanced our teaching and research capabilities. Pictured below (starting in the upper left corner) are the new additions: an Oriel 0.25 meter monochromator with computer interface to be used with our laser setup; an Eppendorf 5810R refrigerated centrifuge; a Leeman Labs Profile Plus High Dispersion ICP; a Hydra AA automated mercury analysis system; a Photon Technology International, Inc. fluorescence system; and a New Brunswick Scientific C76 Water Bath Shaker. Not pictured; an electrochemical detector and data acquisition system.



CURRICULUM DEVELOPMENT GRANTS AWARDED

Two members of our department received Curriculum Development Grants funded by Lilly Endowment, Inc. **Dr. Batema** received a grant in the amount of \$2000 for the project, "Incorporation of Project-based Learning in the Organic Chemistry Laboratory". Students will collect samples from various wetlands and then analyze for levels of atrazine comparing ELISA and GC/MS methodologies. **Dr. Lynch** received a grant in the amount of \$3000 for the project, "Development of Laser Technologies for Teaching and Undergraduate Research." Dr. Lynch will be developing a course in laser spectroscopy of small molecules during his sabbatical leave at MIT.

CHEMISTRY CLUB ACTIVITIES

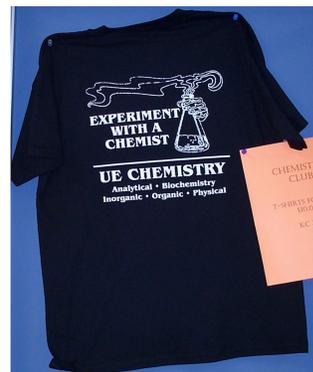
The chemistry club began the year with a picnic at **Dr. Lutgring's** house on Sunday, September 18 where the attendees enjoyed good food, fellowship and games, including badminton and ring toss.



On October 5, the chemistry club sponsored a speaker, **Dr. Tom Geoghegan**, Associate Professor from the Department of Biochemistry and Molecular Biology at the University of Louisville's School of Medicine. The title of his talk was, "Regulation of 11β hydroxysteroid

dehydrogenase I gene expression: Implication for Metabolic Syndrome and Type II diabetes."

As a fund raiser this year the club is selling T-shirts. As you can see in the photo below, the back of the shirt has a flask and it says, "Experiment with a Chemist".



DEPARTMENT VISITS

Dr. Jerry R. Mohrig, Professor Emeritus of Chemistry, Carleton College and **Dr. John W. Emert**, Professor of Mathematics, Ball State University visited our department on September 19-20 at the invitation of the PKAL Leadership Initiative Committee. The UE PKAL committee is composed of Dr. Ray Lutgring, Dr. Jean Beckman, Dr. Cris Hochwender (Biology), and Dr. Talitha Washington (Math). The purpose of the visit was to have an outside review of the work of the PKAL committee concerning their vision of the natural sciences and mathematics at UE. The vision of the PKAL committee is to strengthen and expand undergraduate research in the natural sciences and mathematics in order to provide a more effective life-transforming educational experience for our students. They observed that the University has made some excellent hires in finding people who have the ability and passion to transform students and that the faculty are dedicated to their students' success.

On Monday, November 7, we had two important visits. For one visit, sixteen cub scouts from Den #3 and Den #4, along with alum **Crystal Steinmetz** ('02), descended on the Koch Center. After 45 minutes of chemical demonstrations, including color changes with red cabbage as an acid/base indicator, and a glowing luminol fountain, each scout built a carbon dioxide propelled rocket out of a 35 mm film canister and construction paper. All the rockets were successfully "launched" in the large area outside room 100 in Koch Center.

Also on Monday, **Dr. Robert Plane** and his wife visited the University for the day, and they spent much of their time visiting the Department and seeing the new facilities in Koch Center. Dr. Plane is a former alum who has had a very distinguished career in chemistry and is most noted for the Seinko and Plane chemistry textbook. It was the first modern general chemistry text, and many authors still follow its basic format.

ALUMNI NEWS

Kurt Oldenburg ('92), recently transferred from the chemical plant to the Optical Systems Division at 3M. In his old duties he supported 400 products and supervised 10 technicians. In his new position as a quality assurance specialist he is involved in optical films which are used for a number of products ranging from cell phones to big screen TVs. Kurt is working on products that use mirror and durable mirror films. He is providing analytical support and works with manufacturing engineers to make sure products are ready for customers. In his new position Kurt expects to do some traveling to the Far East.

Lauren Massey ('05), one of our May graduates, has been named a National Health Service Scholarship recipient. Lauren was selected out of 1,500 applicants from across the U.S. this year to receive one of 300 awards.

The award includes a full tuition academic scholarship given to students pursuing careers in healthcare in exchange for two to four years of work in a city in need of healthcare in the United States. Lauren is currently a student at the University of Kentucky, College of Dentistry.

Department of
Chemistry
Alumni Newsletter

Fall 2005

Name _____ Year Graduated _____

Email Address _____

Current Position _____

Address _____

Education Since Leaving the University:

Travel/Hobbies/Honors/Family News:

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TORNADO HITS EVANSVILLE/NEWBURGH

In the early morning hours of Sunday, November 6 a tornado struck the Evansville area. It touched down near Smith Mills, KY and began traveling northeast through the Ohio River floodplains until it came to Ellis Park where it caused extensive damage to several buildings at the track. It then hit Eastbrook mobile home park in southeast Evansville, destroying several mobile homes. The tornado then traveled to the Bell road area of Newburgh where many

homes were also destroyed. After Newburgh it moved on to Degonia Springs continuing its destructive path until it finally lifted, 41 miles later, near Gentryville, IN.

It started as an F2, but intensified to an F3 tornado, with maximum wind speeds recorded at 200 mph. A total of 24 people were killed in Vanderburgh and Warrick counties.

We made the national news and most of us in the department

received calls from family, friends and alumni asking how we were doing. So I have included this little update to let all our alumni and friends know that we are alright. Although some had close calls, we all managed to avoid damage to our homes. It was also comforting to know in a time like this that the emergency response was great. In fact, FEMA officials and national news media lauded the efforts of personnel from Vanderburgh and Warrick counties.

We're on the web:
chemistry.evansville.edu