

The Department of Chemistry and Biochemistry

Utah State University

FALL 2003

Dear Alum:

Allow me to be one of the first to wish you Season's Greetings as we move into the winter holiday season. I hope that 2003 has been kind to you and your family, and that 2004 will be even better.

The year that is fast drawing to a close has been a challenging one for the University and for the Department.

The budgetary problems continue, although we hope that the glimmer we think we perceive far ahead does in fact represent the light at the end of the proverbial tunnel. This year marks the third consecutive one in which no salary raises were allocated to faculty and staff. When coupled with the fact that personnel have been forced to bear a greater share of health insurance costs, compensation has actually diminished of late. Although morale has been shaken, it continues to hold steady and we have suffered no faculty departures to lusher pastures.

Despite these budgetary problems, the Department has made some progress on a number of fronts. The manager of our magnetic resonance facility is now in place. Dr. Piotr Dobrowolski, with years of NMR experience, joined the Department in July. He has already begun to exert a very positive influence on the operations of the facility, training students on new means of obtaining spectra, and making the equipment more readily available to the entire University community. The many generous donations made in memory of the late R. Gaurth Hansen have permitted us to enhance the Biochemistry segment of the Department. Last year we recruited Dr. Joanie Hevel as our first Hansen Assistant Professor, and we are currently engaged in a search for a second. The pool of candidates is first-rate and we hope to have a full complement of six biochemistry faculty in our Department by Fall 2004.

This timing has worked out well, as we anticipate formal approval of our biochemistry undergraduate major by the State Board of Regents in the very near



future. This new degree option will open up career opportunities for a large number of students who have shown a great deal of enthusiasm for such a degree. The impending biochemistry major complements another new opportunity for our students. The Department has approved a new emphasis in Environmental Chemistry.

This emphasis will encourage interested students to take courses in other branches of the University, including engineering and natural resources, so as to round out their education, in addition to a new course we have ourselves introduced in environmental chemistry.

The Department was visited in September by a panel of chemistry and biochemistry faculty from other Universities (as well as a member of the USU Physics faculty), who acted as reviewers of our Department's programs. Although we still await their formal written report, we have every reason to believe that they were impressed by what they saw, and that their review will be highly favorable. We do expect some useful suggestions to help us further improve our Department, and hope that the Administration will cooperate with us in implementing these recommendations. Indeed, one of our greatest problems has been the low level of stipends which are paid to our graduate teaching and research assistants. The Department has already taken steps to raise these stipends so as to make us more competitive with our peers; steps which we hope will be reinforced by the University.

During the month of November, the College of Science invited to campus a number of distinguished alumni to help guide the college as it moves forward into modern areas of the biological sciences. Amongst this group of visitors were a number of alumni from our own Department. David Ecker, Ned Israelson

Henry Nowak, Alan Smith, and Richard Thomas were all kind enough to spend an afternoon visiting with the faculty of the Department, and exchanging ideas about our instructional and research programs, for which we are most grateful.

From a pedagogical view, the Department is experimenting with the introduction of a new facet into our General Chemistry curriculum. After teaching this course countless times over the years, I had come to believe that the level of student comprehension could be enhanced if students were encouraged to work additional practice problems, more than just a selection of those in the back of each chapter of the text. Thanks to computer technology, I finally got my wish. (And the timing could not have been better, as this section of Chem 1210 enrolled over 400 students, the largest section in this Department's history.)

WebCT has permitted me to construct a series of quizzes that students can take online, whenever is most convenient for them. When logged on, the student is given 10 questions, dealt out randomly from a large database. After completing the quiz, and a first grade is recorded, the student is given immediate feedback as to the correct answer to each question. They may then go back to the text and class notes, look over the relevant material where they were in error, and then retake the quiz, with another 10 random questions. The student is motivated to take the quiz a number of times so as to improve their grade, and by doing so, continuously build their comprehension via this feedback loop. And indeed, I have noted that some students take each quiz quite a number of times, learning from literally hundreds of questions from each chapter of the text. It has been gratifying for me to monitor the quiz grades, and watch them improve from one day to the next, along with the student's understanding of the material. The merits of this system have been apparent on the exam grades, which have been 7-10 points higher on average than those of comparable exams from years past. It is indeed rewarding to see how advances in computer technology can be harnessed to improve student understanding of a subject like chemistry.

Planning for the 2004 Regional ACS Meeting, scheduled this June in Logan, has accelerated. We have a number of exciting symposia planned, ranging from modern views of chemical bonding, to development of bioactive compounds, studies of metalloenzymes, and

advanced methods for monitoring air pollutants. We also have symposia focusing on new materials, beyond silicon microtechnology, and another designed to enhance the training of high school chemistry teachers. If you are in the Logan area, we do hope you will drop by during the June 6-9 Meeting. You will find more information on the Department website, as planning progresses.

Once again, on behalf of the entire Department, I would like to wish you and your family the best of winter holiday seasons, and a splendid New Year.

With my most cordial wishes,



**59th Joint Regional Meeting of the
Northwest and Rocky Mountain Sections
of the American Chemical Society**

June 6-9, 2004

Utah State University
Logan, Utah

<http://www.chem.usu.edu>

ACS Meeting will link you to updated information and registration.

ALUMNI NEWS

ALUMNI ACHIEVEMENTS

Horace B. Alder (BS 1935) received a MBA at Stanford in 1938, after which he earned his DDS degree from USC in 1944. He currently resides in Pasadena, CA.

Madison Thomas (BS 1938) went on to earn a MD degree from Columbia in 1943 and a MS from the University of Michigan in Neurology in 1949. Semiretired, and currently residing in Salt Lake City, he served as Chairman of Medical Panels for the Labor Commission, and has been a member of the Utah Driver License Medical Advisory Board, as well as the American Academy Practice Improvement Committee. Very sadly, he recently lost his wife of 59 years, Marian, to illness.

Menard Heydanek (MS 1966) earned a PhD at Northwestern in 1969. He served as Vice President for Research & Development at Quaker Oats, retiring in 1994. He then started Filterfresh Coffee, for which he serves as President and Owner. His wife, Judy, received her BS in 1966 from USU in Agricultural Education. Menard and Judy reside in Hawthorn Woods, IL.

Todd M. Butler (BS 1996) received a DMD degree in 2002. He has a dental office in Providence, Utah, Spring Creek Dental. Todd is married and has two sons.



OBITUARIES

We were saddened on hearing that **Robert E. Moore** (PhD 1975) passed away suddenly in May, 2003. He had been a Professor of Biochemistry at the University of Wisconsin - Oshkosh, and had served also as Department Chair. He will be missed by his family and colleagues.

Irving Frost (BS 1931) passed away in July, 2003. He had been residing in Logan.

Craig Anderson, an undergraduate chemistry major in our department, died in a car accident in November. Craig had just returned from an LDS mission to Ireland and was scheduled to resume classes in January. Both Craig's sister (Ruth) and father (Tim, a local pediatrician) received their chemistry degrees from our department. Craig's parents were also involved in the accident but are recovering.

ALUMNI LINK

<http://www.chem.usu.edu>

- **Alumni** – Reminisce about the Widtsoe Chemistry Building as it once was and watch it transform into the new Widtsoe Hall.
- **Alumni Database** – The Department of Chemistry and Biochemistry wants to know about our alumni and any significant events in their lives.
- **Alumni Newsletter**

COMINGS AND GOINGS

Dr. Joanie Hevel joined the Department in August as the first Hansen Assistant Professor. Dr. Hevel received her PhD in 1993 from the University of Michigan, after which she served in postdoctoral appointments at Berkeley, Hawaii, and South Alabama.



She and her husband, Bennett, have a 2-year old named Bennett, and have built a house in Nibley.

Dr. Doug Harris served as a temporary Lecturer last year and did a wonderful job handling some of our general chemistry courses. He has been appointed Lecturer on a continuing basis. He and his wife Cara have three children, Ariel, 12, Justin, 11, and Clint, 3. They live on the west side of Logan City.



Professors **Ann Aust** and **Rick Holz** returned from their sabbaticals. Professors **Brad Davidson** and **Robert Brown** are learning new techniques on their sabbaticals this academic year.

Jim Tilley, the Department's Laboratory Manager, left Cache Valley this fall. His services will be missed. **Camille Miller**, who had completed our office staff triumvirate so ably for 15 months, has decided to accept a position in the President's Office, effective December. We wish her the best of luck as she moves on to bigger things.

Dr. Piotr Dobrowolski joined the Department in August as Manager of our Magnetic Resonance facilities. Piotr received his PhD from Southern Illinois University in 1993, after which he served in a number of capacities, all involving the use of NMR spectroscopy. He and his wife Margaret, and two children Jan (13) and Joanna (11), are living in River Heights this first



year, occupying Brad Davidson's home while he is on sabbatical.

Dr. Zhang Yingjie, from the Northeast China Institute of Electric Power Engineering in Jilin, has been visiting the Department this Fall semester. She has come over to observe the techniques used to teach our undergraduate students, in particular the General Chemistry class for nonscientists, and has consequently been working closely with Dr. Harris.



THE CHEM CLUB



OUTSTANDING UNDERGRADUATE STUDENT



Jessica Gardner is a senior chemistry major, preparing to graduate in May. She has generated an extraordinary academic record, an Honors student who has received a grade of A in every course she has taken here at USU, and impressing every instructor with her intellect and hard work.

Jessica's academic prowess is a natural outgrowth of her parents, Diana and DelRay Gardner of South Jordan, Utah. Diana is a resource teacher at an elementary school and DelRay teaches science at a middle school. Jessica has two brothers: Eric, 23, is studying wildlife conservation at BYU, and Bret is an 18-year old student at Bingham High School.

Jessica has liked chemistry since she was in high school, and settled on this subject for her major as a sophomore here at USU. She chose chemistry as she finds the topic "interesting", and "enjoys learning about it". She found her interest drawn in particular to biochemistry and inorganic chemistry, so much so that she is presently enrolled in a graduate biochemistry course in metabolic regulation.

Jessica began an undergraduate research project this semester, working in the lab of Dr. Scott Ensign, so that she might "get experience, and see what it was like". She feels that she "learns better by doing, than just reading in a book." Her project deals with the workings of acetone carboxylase in bacteria. She is sequencing the relevant gene, and introducing point mutations to get a better grasp on how this enzyme functions.

When she is not studying or performing research, Jessica enjoys reading, music, and camping. Jessica has not yet fully formulated her future plans. She will

likely attend graduate school, in either chemistry or biochemistry. Judging by her academic record, her proclivity toward research, and her attitude, it would be safe to characterize her future in science as "can't miss".

ALUMNI ACHIEVEMENT AWARD NOMINEE



The Department is proud and delighted to announce that **David J. Ecker** is the recipient of our 2004 Alumni Achievement Award. David received his PhD in Biochemistry here at Utah State in 1982, after a BS degree from the College of New Jersey. After completion of his doctorate, David served two years as an American Cancer Society Postdoctoral Fellow in the Chemistry Department at UC, Berkeley. Since that time, he first spent five years at Smith Kline and French. David then became Co-founder of Isis Pharmaceuticals and Founder of the Isis Therapeutics Division. He serves as Editor, and is on the Editorial Boards, of a number of journals, having published nearly 80 articles in peer-reviewed journals, and holds numerous patents. David will receive his award at the Department's annual Awards Ceremony in April.

Nominations for the 2005 Alumni Achievement Award are currently being accepted. All that is required is that the nominator contact the Department Head and provide some biographical material about the person being nominated. The criteria specify that the nominee has received a degree, undergraduate or graduate, from this Department, and has achieved notable accomplishments in their field.

DEPARTMENT HAPPENINGS

SCIENCE JOURNALIST: MADELEINE JACOBS

Madeleine Jacobs, editor-in-chief of the weekly newsmagazine of the American Chemical Society, *Chemical & Engineering News* interacted with faculty and students during her visit through sessions focusing on:

- Job Opportunities in the 21st Century
- Women in Science
- Research Discussions



GRADUATE STUDENT ORIENTATION



FALL COFFEE BREAK



GRADUATE STUDENTS

Eight students arrived at USU in August 2003 to begin work on their MS or PhD graduate degree. Five more will arrive in January 2004. These graduate students come from all over the United States and Puerto Rico. The international graduate students come from Venezuela, Kenya, Cameroon, Poland, and India.

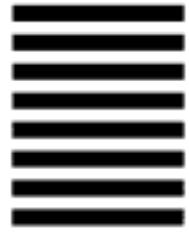


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We are interested in any news about yourself, your career, your family, etc. that you would care to share with other alumni: (Detach and mail, postage paid)