



Insights

Utah State University

College of Science

Alumni Newsletter

Spring 2000 / Vol. 8 Issue 2

MacMahon's Musings

I am writing this on a Wednesday (1 March) and I anticipate that next Monday (6 March) we will finally begin moving into the new and wonderful Widtsoe Hall. I guess the old adage "better late than never" applies in this situation. A myriad of small items caused last minute snags. We are planning a dedication for the new building and groundbreaking for the Eccles Science Learning Center in April. Stop by and just walk through the new Widtsoe if you are in town. I think you will be amazed at this wonderful addition to our teaching and research programs.



Dean Jim MacMahon

Another change will occur next week. It appears that I will become the new Vice President for University Advancement. This position has responsibility for Alumni Relations, Media Relations and Marketing, and Development. It has been a hard decision for Patty and me. I love the College and my colleagues, but one thing an administrator must not do is to stay so long that he or she becomes ineffective. Ten years is a long time and the College can use fresh ideas and different perspectives. I hope that I can contribute something to the University in my new position, but it's a big change and something of a crap shoot. I will remain dean until 1 July.

After all these years it's interesting that the most common comment I got when the

MUSINGS...

Continued on page 2

History of Computer Science at USU



The IBM 1620, USU's first computer

The Department of Computer Science is one of six academic departments in the College of Science. Computer Science has 12 full-time tenure track faculty members, 2 lecturers, 310 undergraduate majors, and 132 graduate students. During the 1998 - 1999 academic year, 40 students graduated with BS degrees in Computer Science and 18 graduated with MS degrees. The program received accreditation by the Computer Science Accreditation Commission in 1998, and a PhD degree program was approved by the State Board of Regents in 1999. Clearly, Computer Science is a vital, important department of the College of Science. However, not so many years ago, Computer Science at USU had just begun.

The beginnings of computer science at USU occurred in the early 1950s when Professor Bliss H. Crandell set up a statistical laboratory in the Department of Agronomy in the College of Agriculture and was soon joined by Dr. Rex Hurst (who had earned BS and MS degrees at USU and a PhD degree at Cornell University). By 1958, the statistics group was large enough to become the Department of Applied Statistics in the College of Agriculture, and Dr. Hurst was selected as department head.

The university acquired its first computer in 1961—an IBM 1620, the first one delivered west of the Mississippi. The computer and the Department of Applied Statistics were housed in the basement of Old Main. The IBM 1620 was a fully automatic, high speed (for its time), programmable, electronic digital computer.

HISTORY/COMPUTER SCIENCE...

Continued on page 3

Widtsoe Hall Update



Photos taken in March of the exterior and teaching (left) and research (right) labs in the now completed John A. Widtsoe Hall

Widtsoe Chemistry Building
Open House & Tours

Saturday, 15 April 2000 – 2:00 to 3:00 pm
Public Welcome

Widtsoe Chemistry Building
Dedication Ceremony
Tuesday, 25 April 2000 – 10:30 am
Tours – 9:30 to 10:30 am

Eccles Science Learning Center
Groundbreaking Ceremony
Tuesday, 25 April 2000 – 1:30 pm
Tours – 2:30 to 3:30 pm

For more information, call (435) 797-2478

MUSINGS...

Continued from page 1

announcement was made was "Does this mean we will not have the College Christmas party anymore?"
You never know what your mark, if any, will be!

It is really difficult to put into words the wonderful support I have had from associate deans, staff, department heads, and faculty. They have all made this, most of the time, fun. I still plan to do some teaching and mentor some graduate students, but all of that must be cut back a bit. I know that all of you will support the new dean when one is chosen.

Let me finish by saying I hope I do not lose contact with all of you. In the new position I will be attempting to develop funds for University projects. I hope I can continue to count on your support as I move into this new assignment.

Saying thanks seems so wanting, but what the heck—THANKS!

Sincerely,



HISTORY/COMPUTER SCIENCE...

Continued from page 1

Advertised as a compact computer, it required "no more space than the average-sized desk or drafting table." Input/output was by means of punched cards or punched paper tape. It had 40,000 individually addressable storage locations each six bits long. Each location could store one decimal digit, one letter (upper case only!), or one special character. Storage locations could be linked to form numbers of arbitrary length. Because the computer performed addition by means of a table lookup, one decimal digit at a time (almost as bad as a schoolchild counting on his fingers), its developers called it the CADET, an acronym for Can't Add, Doesn't Even Try! As primitive as this computer sounds compared to today's computers, it was a great advance from the mechanical/electrical devices that preceded it.

Initially, computer programs had to be written in assembler language. FORTRAN was developed by IBM in 1959 but it was some time before a version for the 1620 became available. Operating systems (e.g., DOS) had not been developed yet, so programs had to be loaded and executed one at a time. "It was extremely tedious to do any kind of real computing," says Dr. Hurst, "but it did get us going."

When the 1620 was acquired, the only person on campus with any digital computer programming experience was Wendell Pope, who was teaching in the Department of Mathematics. Professor Pope had earned a BS degree in mathematics at USU in 1956 and an MS degree in mathematics with a scientific computing option at Stanford University in 1958. Dr. Hurst persuaded Professor Pope to work part-time in the Department of Applied Statistics to develop computer science courses and teach programming.

In 1962, the Department of Applied Statistics was transferred to the College of Science from the College of Agriculture. At this time, the department had two functional groups, i.e., the applied statistics group and the computer science group. Degrees awarded were a mixture of applied statistics and computer science, but no degree program existed for the many students who wanted a degree in computer science alone. With Dr. Hurst's vision and leadership and Professor Pope's experience and ability with computers, enough courses were soon developed to petition the Board of Regents for a bachelor of science degree program in computer science. Professor Pope remembers, "For the most part, courses had to be developed from scratch. Few, if any, texts existed for courses at this early stage of development of the discipline." In 1964, approval was given to USU for the first BS degree program in computer science in Utah.

The computer operation was separated from the Department of Applied Statistics by the organization of the Computer Center in 1966. In 1969, both the Department of Applied Statistics and the Computer Center moved from Old Main to the Computer Science Building (formerly the Rural Arts Building and now the Computer Services Building).

The computer science program grew rapidly and soon the number of students in computer science exceeded the number in applied statistics. It became necessary to impose restrictions on enrollment—only students who maintained certain academic standards would be allowed to continue in the program as juniors and seniors. The computer science and applied statistics programs remained in one department until 1982, when computer science was made a separate department. Dr. Donald H. Cooley was named department head and he remains so today. Also in 1982, the department moved to the larger University Reserve Building. The last move of the department, to its current location on the fourth floor of Old Main, occurred in 1991.

A master's degree program in computer science (plan B, no thesis) was approved by the State Board of Regents in 1980, and the first 12 candidates graduated in 1983. A plan A (thesis) master's degree program was approved in 1984. The computer science program received accreditation by the Computer Science Accreditation Commission in 1998, becoming one of only two accredited computer science programs in Utah. A PhD degree program was approved in 1999, marking the attainment of a goal that had been set in the 1970s.

Inside Insights

AIDS Lecture	12
ALUMNET Responses	26
ALUMNET Response Form	28
Alumni and Friends Web Page	12
Alumni: In Memoriam	26
Alumni Reunion	24
Alumnus Profile: Lars Hansen, 1974	9
Ask the Scientist	10
Awards, Honors, and Publications	25
Calendar of Events	17
College Award Recipients	18
College Coffee Breaks	14
College Graduation Open House Invitation	25
College Phonathon	5
College Statistics	13
Commencement 2000	23
Departmental Scholarships: Mathematics and Physics	4
Eccles Fellowship Recipient	21
Emeritus Faculty Profile: Dr. Wilford Hanson	19
History of Computer Science	1
Image Brochure	6
In Memoriam: Professor Howard Dorst	24
MacMahon's Musings	1
Molecular Biology and Biochemical Research	6
New Associate Dean: Dr. Don Fiesinger	11
New Faculty Member: Dr. Tom Chang	13
Outstanding Students	16
Retirement of Associate Dean Tony Bringham	11
Reunion in Taiwan	22
Rock and Fossil Day	21
Visiting Professors	20
Widtsoe Hall Update	2

Look for us on the Web!
www.usu.edu/~science/alumni&friends

HISTORY/COMPUTER SCIENCE...

Continued on page 8

Mathematics and Physics Scholarships Make a Difference

Editor's Note: This issue of Insights finishes the scholarship theme that started three issues ago by focusing on those privately funded scholarships benefiting students exclusively in the Department of Mathematics and Statistics and the Department of Physics.

Like every department in the College of Science, Mathematics and Statistics and Physics are extremely conscious of the role that private financial support for scholarships plays in helping to improve the educational experiences of their students. A select few students in these departments are particularly fortunate to be the beneficiaries of contributions given to create new or to enhance existing scholarships.

With one year of in-state tuition and fees at Utah State University costing \$2,314 and rising, the scholarship needs of science students have never been greater. Only a very few deserving students in science receive scholarship assistance. As a result, more science students would benefit from gifts designated for scholarship support. Gifts to establish such scholarships can be contributed and expended on an annual basis or can be contributed through a perpetual endowment whose earnings will be used to annually support students.

Department of Mathematics and Statistics

The four endowed scholarships currently benefiting mathematics and statistics students are cited below. The Department of Mathematics and Statistics has a growing need for additional scholarship support for its students.

The **Elich Scholarship Endowment** was created by and named for Joe (BS 1940) and Carletta J. Elich. Joe served as professor of mathematics at Utah State University for 42 years and this scholarship extends his service to mathematics students by providing assistance to deserving students in the department. The endowment provides annual scholarship support to a student demonstrating academic achievement, financial need, and personal integrity. *The 1999 - 2000 Elich Scholar is junior Nicole Barker, who is carrying a 3.81 GPA.*

The **Sharon Lee Gardner Ellis Memorial Scholarship Endowment** honors the memory of a gifted mathematics educator and through scholarship support encourages qualified and dedicated mathematics students to become teachers. Dr. Peter M. Ellis, professor of business administration at USU, created this endowment in his wife's name following her death in 1995. The fund provides annual scholarship assistance to a superior mathematics education student believed to have the greatest potential to challenge, inspire, and teach junior high and high school mathematics students. *The 1999 - 2000 Ellis Scholar is John R. Stevens, a senior holding a 3.964 GPA.*

"I established this endowment and continue to support it because it serves as a lasting legacy of my wife's commitment to excellence in mathematics education," offers Dr. Peter M. Ellis. "Sharon's endowment encourages students wanting to teach mathematics to focus their training on ways to excite students and bring math to life in the classroom."

The **Neville C. and Annie P. Hunsaker Scholarship Endowment** carries the names of a former department head and professor of mathematics and his wife. After teaching mathematics at USU for some 33 years and an additional 10 years as professor emeritus, Dr. Hunsaker, along with his wife, created this endowment in order to assist outstanding students having an interest in and aptitude for

"Sharon's endowment encourages students wanting to teach mathematics to focus their training on ways to excite students and bring math to life in the classroom."

—Dr. Peter M. Ellis

studying mathematics at the university. All five of the Hunsaker children have supported the endowment with their own gifts which is now the largest fund in the department. The scholarship is available to both freshman and continuing mathematics majors annually. *The 1999 - 2000 Hunsaker Scholars are junior Benjamin Woodruff with a 4.0 GPA; Emily M. Thompson, a sophomore with a 3.977 GPA; Daniel E. Nye who is a sophomore holding a 3.912 GPA; and Lee Wardle who holds a 3.815 GPA as a sophomore.*

The **Department of Mathematics and Statistics Scholarship Endowment** has been established by the generous contributions of alumni, faculty, staff, and other friends of the department over a number of years. The fund was created to provide a perpetual award fund from which to provide annual scholarship support to outstanding students pursuing degrees in mathematics and statistics. The inaugural awards from the fund are anticipated in the 2000 - 2001 academic year.

Department of Physics

"The scholarships available to physics students are extremely valuable and are needed now more than ever," says Dr. John Raitt, Physics department head. "With nearly 80 undergraduate and graduate students, gifts from our alumni, faculty, staff, and friends are an increasingly important source of support for the scholarship assistance our students need."

The five privately funded scholarships currently benefiting physics students are cited below.

The **Gene Adams Scholarship Endowment** honors the 11 years Dr. Adams served as research professor in physics and electrical engineering. Family and friends established the fund that provides an annual scholarship to a deserving physics major with demonstrated academic achievement, financial need, and a high

degree of personal integrity. *The Adams Scholar for 1999 - 2000 is Devin Della-Rose, who recently completed a PhD degree with a GPA of 3.961.*

"With nearly 80 undergraduate and graduate students, gifts from our alumni, faculty, staff, and friends are an increasingly important source of support for the scholarship assistance our students need."

—Dr. W. John Raitt, Physics department head

The **Get Away Special (GAS) Scholarship Fund** receives contributions from faculty, staff, alumni, and other friends of the department in support of scholarships for selected students participating in NASA's GAS program. This special program permits USU students of all majors an opportunity to develop and place experiments aboard the space shuttle. USU was the first university to fly GAS program experiments aboard the space shuttle and, since inception of the program in 1976, has flown more GAS payloads than any other university in the country. *The 1999 - 2000 GAS Scholars are Adam Margetts who has a 3.79 GPA, Leann Moody who maintains a 3.36 GPA, and Arlynda Wright who carries a GPA of 3.66.*

The **Lawrence R. and Abelina Megill Scholarship Fund** was established by Dr. and Mrs. Megill to support undergraduate students in physics who demonstrate quality academic achievement, superior potential, personal integrity, and a high sense of social and moral responsibility. At least one-half of the scholarship support contributed to the fund is designated to benefit ethnic minority or female students in the department. Previous recipients of the scholarship have been involved in research and/or the GAS program. No Megill Scholars have been named since Dr. Megill's passing in 1998, but recipients for the 2000 - 2001 academic year are anticipated.

The **O. Harry Otteson Scholarship Endowment** memorializes alumnus, physics professor, and assistant department head, Dr. Harry Otteson (BS 1960, MS 1962, PhD 1967). He served the department and advised its students for more than 29 years and this scholarship honors his teaching, advising, and administrative work. The endowment provides annual assistance to the two physics majors achieving the highest score in the general physics course. *The 1999 - 2000 Otteson Scholars are Nathan Cannon, a senior holding a 3.96 GPA, and Sterling Smith, a junior with a 3.984 GPA.*

The **Physics Undergraduate Scholarship Endowment** was created by and continues to receive support from physics alumni, faculty, staff, and other friends of the department. The endowment is used to provide annual scholarship assistance to outstanding undergraduate physics majors. *The 1999 - 2000 Undergraduate Physics Scholars are Toby Barrus, who recently*

completed his degree with a 3.924 GPA; Ryan Sharp, a senior holding a 3.70 GPA; and Chanelle Woolf, a senior with a 3.634 GPA.

As is demonstrated by these nine departmental scholarships, students in the Department of Mathematics and Statistics and the Department of Physics are of outstanding caliber. There is currently no greater need within these departments than attracting additional scholarship support for their many deserving students. Gifts to establish or further enhance scholarship opportunities for mathematics and statistics and physics students will help the College of Science provide the kind of support that these students both need and deserve.

To learn more about how you might be able to make a difference in the lives of science students, contact Development Director Jerome Davies at jeromed@cc.usu.edu or (435) 797-3510, or use the postage-paid envelope found in this issue of Insights.

Science Alumni Respond to Phonathon



The College of Science recently completed its fiscal year 2000 Phonathon program. During the period 22 February - 4 March, nearly 2,000 science alumni and attenders were reached by telephone. Of those individuals contacted, nearly 600 pledged a contribution in support of the students and programs of the College of Science. Thank you for your generosity.

Please help ensure that we are better able to meet the needs of a growing number of science students and, **if at all possible, fulfill your pledge within our fiscal year ending 30 June 2000.** To that end, you may use the postage-paid envelope found in this issue of *Insights* to send in your gift.

If you have any questions or concerns about your phonathon pledge, please contact Jerome Davies at (435) 797-3510 or email him at jeromed@cc.usu.edu.

Molecular Biologists and Biochemists Conduct Research with Implications for Cancer Therapy/Prevention

Basic molecular biology and biochemistry research being conducted in the Departments of Biology and Chemistry and Biochemistry is helping to explain the mechanisms of cancer and has implications for cancer therapy and prevention.

Drs. Daryll DeWald, Hiroko Hama, and Jon Takemoto from the Department of Biology, along with their graduate students and researchers from other universities, are conducting collaborative



Drs. Daryll DeWald, Michele Grilley, Hiroko Hama and Jon Takemoto (left to right)

research on the activity and regulation of the enzyme phosphoinositide 4-kinase (PI 4-kinase, a phospholipid kinase) in simple bakers' yeast, *Saccharomyces cerevisiae*. In yeast and higher organisms, secretory pathway proteins are packaged into small vesicles and then moved to various sites, including outside of the cell, by a process known as protein

trafficking. What these researchers have found is that one of the key regulators controlling the movement of vesicles and their proteins is the lipid kinase enzyme PI 4-kinase. If PI 4-kinase is inactive, then the vesicles get blocked and cannot move and the cell will die rapidly.

In some cancer cells, e.g., breast and ovarian cancer cells, PI 4-kinase activity is very high, sometimes 50-fold higher than in noncancer cells, and certain proteins are secreted at a very high rate, sending very large amounts of protein outside the cells. Some of these secreted proteins are proteolytic enzymes that are capable of digesting the proteins of the extracellular matrix of tissue. With digestion of the extracellular matrix, cancer cells can be released from the tissue and spread throughout the body (metastasis). Thus, the long-term potential for this research in terms of cancer therapy is to develop an agent that could inhibit PI 4-kinase activity in cancer cells, decrease or eliminate the secretion of the proteolytic enzymes that digest the proteins of the extracellular matrix, and thereby decrease the risk of metastasis. However, Dr. DeWald

emphasizes that their research is very basic. He hopes "that information gained from these studies will uncover molecular sites, specifically related to protein secretion, that are suitable as targets for novel anticancer drugs" but says that the development of an anticancer drug based on their research is "pretty hypothetical and a long way down the road." Although these studies are being conducted on simple yeast, the researchers are confident that certain aspects of the research can be extrapolated to humans.

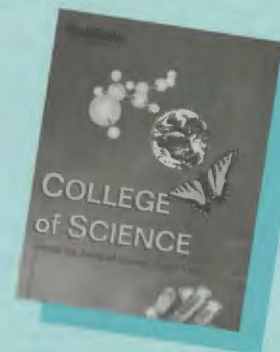
Recently, Dr. DeWald received an American Cancer Society Young Investigator Award of \$236,000 to learn how PI 4-kinase enzymes and their product, phosphatidylinositol 4-phosphate, control the secretion of proteins in yeast cells. Other sources of funding for lipid kinase research have been the National Science Foundation, the USU Vice President's Office for Research, and the US Department of Agriculture.

Dr. DeWald emphasizes strongly the collaborative nature of the research. In addition to extremely productive collaborations among the USU biologists (DeWald, Hama, Takemoto, and their graduate students), significant contributions have been made by researchers from other universities, including Dr. Jeremy Thorner, the University of California at Berkeley, and Dr. Glenn Prestwich, the Department of Medicinal Chemistry at the University of Utah.

Also in the Department of Biology, a similar project with potential cancer therapy implications is being conducted by **Drs. Takemoto, Hama, and Michelle Grilley**. Sphingolipids are another set of lipids that play important roles in several cancers, such as colon cancer. Researchers have discovered that certain forms of the sphingolipids, i.e., hydroxylated sphingolipids, are increased in cancer cells. Drs. Takemoto, Hama, and Grilley recently found enzymes that make similarly altered sphingolipids in yeast cells, and they are currently studying how these enzymes work. One goal is to learn if these hydroxylating enzymes can eventually be used as targets for anticancer drugs.

College of Science Image Brochure

The College of Science has published an image brochure to give prospective students and their parents information on pursuing a degree in the College of Science. If you are a parent of a student or know someone who might be interested in majoring in science at USU, we would like to send you our brochure. You can request one by email at scido@cc.usu.edu, telephone at (435) 797-2478, or fax at (435) 797-3378.





Dr. Rick Holz and graduate student Alicja Copik

Dr. Rick Holz and his graduate students in the Department of Chemistry and Biochemistry are also conducting basic research with potential cancer chemotherapy implications. They are working to define the reaction mechanism and substrate specificity of the metal-dependent enzyme methionine aminopeptidase (MetAP) from the bacterium *Escherichia coli*.

Aminopeptidases are enzymes that catalyze the hydrolysis of a wide range of N-terminal amino acid residues from proteins and polypeptides. Many of these enzymes have broad substrate specificities and are widely distributed in bacteria, yeast, and plant and animal tissues. Aminopeptidases function in protein maturation, protein degradation, hormone regulation, and cell cycle control processes. Abnormal aminopeptidase activity has been associated with many health conditions, including cancer; thus, their biological and medical significance is immense.

Recent research on the biochemical pathways involved in cancer metastasis has revealed a set of proteolytic enzymes and genes that play a fundamental role in cancer growth and metastasis. Aminopeptidase activity has been reported on the surface of cancer cells, and aminopeptidases are believed to play essential roles in metastasis, particularly in the steps involving the movement of cancer cells through the collagenous tissue and basement membrane of an organ. Another role for aminopeptidases, including MetAPs, in relation to cancer involves angiogenesis, the formation of new blood vessels. Without sufficient angiogenesis, tumor growth is slowed or even stopped. "Thus, inhibition of aminopeptidase activity of malignant tumors is critically important in preventing the growth and proliferation of cancer. In this regard alone, a fundamental understanding of the catalytic mechanism and substrate recognition properties of aminopeptidases is critical and will ultimately assist in the design and synthesis of new anticancer, antibacterial, and antiviral chemotherapeutic agents that specifically target these enzymes," states Dr. Holz.

One important class of MetAP inhibitors is based on natural products of fungal origin, namely, fumagillin and ovalicin. Ovalicin and a synthetic analog of fumagillin preferentially inhibit endothelial cell growth in tumor vasculature in vivo. Based on fumagillin-specific affinity reagents and mass spectroscopic studies on MetAP-fumagillin complexes, MetAPs were identified as the specific target of fumagillins. The mode of inhibition was via the formation of a covalent bond between a conserved histidine residue in MetAPs and an epoxide carbon moiety on fumagillin. "Based on these data," according to Dr. Holz, "an understanding of the structure/function relationship within native and inhibited forms of MetAP is an important and necessary step towards the rational design of potential chemotherapeutic agents that specifically target MetAPs."

Dr. Holz and his laboratory have been collaborating on this research with Drs. Brian Matthews and W. Todd Lowther of the Howard Hughes Medical Institute at the University of Oregon. The Oregon group is doing x-ray crystallography work and providing the system for overexpression of the MetAP enzyme, while the USU group is doing the enzyme kinetics and spectroscopic work. Dr. Holz's MetAP research is currently funded by a \$656,000 grant from the National Institutes of Health and a \$96,000 grant from the Willard L. Eccles Charitable Foundation.



Dr. Ann Aust

Dr. Ann Aust, Department of Chemistry and Biochemistry, and her students are conducting biochemical research to explain the mechanism(s) by which asbestos causes cancer. With an understanding of those mechanism(s), it may be possible to prevent cancer by (1) identifying potentially carcinogenic particles and eliminating exposure before it occurs, or (2) intervening in the disease pathway. They have identified two properties of iron-containing,

carcinogenic fibers (including asbestos fibers) that they believe contribute significantly to carcinogenicity—(1) the ability to release iron from the fibers inside the cell, and (2) the ability to cause a decrease in intracellular glutathione, independent of iron associated with the particles.

Dr. Aust has observed that iron from asbestos and other carcinogenic particles is mobilized after the particles are taken into cells, and that carcinogenic particles contain a type of iron that is more readily mobilized than is the type of iron from noncarcinogenic particles. The first step in cancer (initiation) is alteration of a cell's DNA, and Dr. Aust has found that iron mobilized from asbestos fibers is necessary for the induction of oxidative damage to cellular DNA. She has also found that iron is necessary for the induction of the inducible form of nitric oxide synthase (iNOS), and that production of nitric oxide (NO) by iNOS is also required for DNA oxidation. Currently, Dr. Aust is collaborating with Dr. Michael Hochella of Virginia Polytechnic Institute to determine how iron associates and dissociates from asbestos leading to generation of reactive species that can damage DNA. There are two types of reactive species being investigated: hydroxyl radical (generated by redox reactions of iron with molecular oxygen) and peroxynitrite (generated by reaction of NO with reactive oxygen species). Because regulation of iNOS synthesis differs dramatically between rodents and humans, these studies are using human lung epithelial cell lines or primary cultures.

Another biochemical mechanism being investigated in relation to asbestos carcinogenicity is regulation of intracellular glutathione. Asbestos causes a dramatic decrease in intracellular glutathione levels (through inhibition of synthesis and stimulation of efflux)

CANCER RESEARCH...

Continued on page 8

CANCER RESEARCH...*Continued from page 7*

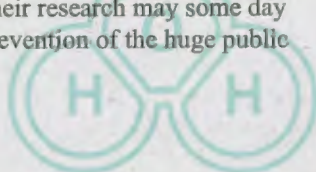
that is unrelated to the presence of increased iron in the cells. This decrease in glutathione, at the same time as an increase in redox active iron, is responsible for the transcription of proteins involved in the induction of iNOS leading to NO production. The specific mechanisms and pathways involved in the decrease in intracellular glutathione "will be a major focus in my research program for the next several years," says Dr. Aust. Another focus of her research will be determining what transcription factors are activated by the oxidizing events created by high levels of iron and low levels of glutathione in the cell.

Dr. Aust's current research is funded by a \$439,000 grant from the National Institutes of Health, and her previous carcinogenicity research was funded by the Willard L. Eccles Charitable Foundation, the Ford Motor Company, and the Elsa Pardee Foundation.

The molecular biology and biochemistry research being conducted by these College of Science researchers is high caliber work that is recognized at national and international levels. All of these scientists have presented their research at numerous invited seminars and conferences throughout the world, including the prestigious Gordon and/or Keystone Conferences in their fields, and Dr. Aust will co-chair a Gordon Conference on oxygen radicals in 2002. Dr. Aust was also one of two scientists from the US who attended an international meeting organized by the European Economic Community to define what is known about the physical and chemical properties of asbestos and man-made mineral fibers and how those properties result in carcinogenicity.

Our students benefit from the presence of these "cutting edge" researchers in the classroom. Drawing on their own research, they are able to transmit to students not only the most up-to-date information but also a glimpse of how scientific discoveries are made. As such, they serve as excellent role models for students.

These scientists are expanding the horizons of knowledge in their respective fields, and the pursuit of scientific research needs no other justification. However, their particular molecular biology and biochemical research programs may have an even greater impact than increasing scientific knowledge—their research may some day have a significant effect on therapy or prevention of the huge public health problem of cancer.

**HISTORY/COMPUTER SCIENCE...***Continued from page 3*

"I consider Rex Hurst to be the father of computing and myself the father of computer science at Utah State University," declares Professor Wendell Pope. In honor of Professor Pope's contributions to the development of computer science at USU, the Wendell L. Pope Endowed Scholarship was created in 1995.

For more on this or any computer science scholarship, refer to Spring 1999 Insights (Vol. 7, Issue 2), page 4, at <http://www.usu.edu/~science/alumni&friends/Insights.htm>

Today, the Department of Computer Science at USU seeks to develop a scientific foundation from which to pursue such topics as computer programming, computer design, computer information systems, artificial intelligence, the algorithmic solution of problems, and the algorithmic process itself. Its role is to educate

"While computer science today differs significantly from computer science of the 1950s and 1960s, we believe that we have maintained the same commitment to excellence and our students that was held by those who founded this department."

—Dr. Don Cooley, head of the Dept of Computer Science

students for employment as computer scientists, to prepare majors for graduate work, and to teach basic programming, problem solving, and computer literacy to nonmajors. The research interests of the faculty cover a wide variety of areas and are of both a theoretical and an applied nature.

Everyone is aware of the impact of computers and computing on our lives. The Internet, electronic commerce, and a phenomenal job market for graduates means that the future is very bright for the Department of Computer Science. It is with a great deal of excitement and anticipation that the department and its faculty look forward to the next 50 years.

"Over the years, this department has been fortunate to have students and faculty dedicated to excellence," states Dr. Don Cooley, head of the Department of Computer Science. "These two groups share equally in the credit to be given for the kind of department we have become. While computer science today differs significantly from computer science of the 1950s and 1960s, we believe that we have maintained the same commitment to excellence and our students that was held by those who founded this department. The future for computer science in this new millennium (which actually doesn't start until 2001) is very bright. To growth and improvement in this department there are no real obstacles, only opportunities."

(Special thanks to Dr. Rex Hurst and Professor Wendell Pope for information on the "early days" in computer science.)

Bulls, Bears, and Market Shares

(This article is reprinted with permission from USU writer, Dennis Hinkamp, after originally appearing in the Summer 1999 edition of Utah State University Magazine. It highlights College of Science alumnus Lars P. Hansen who achieved his BS in mathematics from Utah State University in 1974.)

Economist jokes are not quite as mean-spirited as lawyer jokes, but they too allude to the mystery of the profession. "If you lined all the economists in the world end to end they still wouldn't reach a conclusion."

The unpredictable rises and falls of the stock market and the fickle world economy all reinforce the challenges of confronting economics as a science. It is a volatile stew of mathematics, sociology, and psychology that often cooks down to a best guess. Even hedge funds that hire Nobel prize-winning economists sometimes lose their investors' shirts.

Lars Hansen's specialty is merging the varied theories of economics with actual data. One such project is aimed at understanding savings and investment behavior in a changing economy. How will people save money and allocate wealth when confronting an uncertain future? How will all these individual decisions influence interest rates and the stock market? Changes in productivity, confidence in the economy, and world events can all influence what each of us might do with an extra \$100 a month. Multiply this behavior by 280 million or so people in the United States and the outcome can drastically affect the national and global economy.

Contrary to paperback story lines, mathematics, not love, is the international language. Hansen says his background in math served to span the gap between economics and statistics. Mathematics also led Hansen to a PhD in economics, the prestigious Homer Livingston economics professorship at the University of Chicago, and most recently a one-day-a-week research post at the Federal Reserve Bank of Chicago.

It may not be Wall Street, but it certainly is a walled street where the Federal Reserve Bank of Chicago marks the corner of LaSalle and Jackson within the shadow of the Sears Tower. It's a brisk lunch-time stroll from the bank to the famous Picasso sculpture and the Chicago River, dyed green for St. Patrick's Day. You enter the building, get a visitor's name tag, and walk past a table where uniformed guards are selling big sheets of non-negotiable money. Something that Michael Jordan or Donald Trump might use for decorative wall paper? The building is impressive and austere with marble floors and stone walls that make your footsteps echo as you approach the elevators.

Hansen shares a small office on the 11th floor with other visiting economists. You would expect to find clutter or clanging machines in such a place, but there is surprisingly little of either. There is only Hansen, a laptop computer, and one of those dry erase boards still pock-marked with a bunch of faded equations. That is it. No



Lars P. Hansen

Photo by Jason Smith

graphs, no charts, no supercomputer mainframes, no official seals of the U.S. government. When I ask him what goes on in this building, he says "good question" in a boyish, intellectual, Bill Gates sort of way.

Hansen takes a 30-minute commuter train ride here one day a week from his Hyde Park home just a few blocks from the University of Chicago and within sight of Lake Michigan. The university where he spends most of his teaching and research time is impressive in its own way. Sixty-nine Nobel prize winners have been faculty, students, or researchers here—16 of them in economics. Probably the most notable of these economists is Milton Friedman. Other famous alums include the eclectic crew of Saul Bellow, Carl Sagan, Kurt Vonnegut, Jr., and Jay Berwanger, the first winner of the Heisman trophy in 1936.

The Federal Reserve building and the University of Chicago are probably both more prestigious and more staid places than Hansen thought he would ever frequent. His Logan High School guidance counselor predicted he would be a C-plus student in college at best.

"It's not like I was out stealing cars or anything," Hansen says. "I just had a hard time adjusting to Logan after my family moved there from Michigan. I made mostly Bs in high school, but I also got a lot of low marks in the 'does not respect authority' part of my report card. I was a little bored and unfocused. I'd get the highest grade in the class on one test and then wouldn't study for the next one. Fortunately, the problems with authority changed when I started taking classes at USU. Far from the predicted C-pluses, I got mostly As."

Hansen credits personal attention from professors such as Doug Alder, Bartell Jensen, and Mike Windham who got him interested both in mathematics and social sciences. "I didn't take

BULLS, BEARS...
Continued on page 10

BULLS, BEARS...*Continued from page 9*

an economics class until I was a junior, but by the time I graduated in '74 I was already taking PhD level classes and working as a mathematics teaching assistant."

Though he had a slow start, he quickly caught up with the rest of his high-achieving family. He has two brothers: Ted, an immunologist at Washington University in St. Louis, and Roger, an environmental engineer for the Utah Bureau of Reclamation in

Orem. His father, Gaurth Hansen, is a distinguished professor emeritus of nutrition and food sciences at Utah State University and former provost. Despite all the academics in the household, his father never pressured him into any particular area.

"I actually thought about the University of Chicago when considering graduate schools," Hansen says, "but ended up at the University of Minnesota because I thought it might be more liberal. My father is a big supporter of the public school system and his good friend Glen Taggart (USU president at the time) urged me to go to a Big-10 school for graduate studies."

Eventually getting back to the "what goes on here" question, he explains that research filters down from the Chicago Federal Reserve and subsequently gets reviewed, culled, and analyzed until it finally becomes part of national monetary policy. The research department in the Federal Reserve building is a meeting place for the minds, with Northwestern University and Chicago University economists commingling ideas with full-time Federal Reserve researchers. Millions of investors, stock brokers, banks, home buyers, and anyone who uses a credit card will eventually be affected by the monetary decisions that come out of the Federal Reserve when the prime rate is minutely lowered or raised by Allen Greenspan in Washington, DC.

Despite all this heady stuff, Hansen says he prefers the day-to-day interaction with students and his research at the university. Last year he won the faculty award for excellence in graduate student teaching.

"I learn a lot from students because they are widely read and point out research connections that I might not have otherwise seen," Hansen says. "The workshop method I use to teach graduate students allows them to become junior colleagues and sometimes co-author papers with me."

Though his research papers such as "Risk and Robustness in Equilibrium" and "The Empirical Foundations of Calibration" make for uneasy chit-chat, shedding little light on what economists actually do, at least his dinner conversations at home are more relaxed.

His wife, Grace Tsiang, is the co-director of the undergraduate economics program at the University of Chicago.

**Ask the Scientist**

*Inquiries about the World,
Answered by College of Science Faculty*

What is the risk of a major earthquake in Cache Valley?

Dr. Jim Evans (Department of Geology) answers: "Geologists and geophysicists think of a major earthquake as one that causes a significant amount of damage—

magnitude 6 and above on the Richter Scale. The geologic record in Cache Valley shows that there are two major faults which can create magnitude 6.5 and larger earthquakes—the East Cache fault, at the base of the Bear River Range, and the West Cache fault, at the base of the Wellsville Mountains. Both faults have ruptured in the past. Jim McCalpin, a former USU Geology professor and now an adjunct, showed that the East Cache fault last ruptured 4,000 - 7,000 years ago. Workers at the Utah Geological Survey recently showed that the West Cache fault last ruptured 4,500 years ago. Interestingly, the recent (to a geologist, 10,000 years and younger is recent) records of both the East and West Cache faults are about the same. Because the earthquakes are infrequent, we do not have enough data points to determine how frequent the earthquakes are.

"The topography of the mountains, though, tells us that there have been a fairly large number of earthquakes to have produced the abrupt steep mountain fronts here. Thus, Cache Valley is at risk for a large earthquake—about a magnitude 7.0 or so. Because the two major faults slope, or dip, the actual point of nucleation of the earthquake, called the hypocenter or focus, will likely be under the center part of the valley. Slip would radiate along the fault and create a sharp fault scarp, or break, at the earth's surface. Such a scarp was produced in the 1983 Borah Peak earthquake in central Idaho, and it is the degrading of these scarps that geologists use to determine the history of past earthquakes."

Associate Dean Bringhurst Retires



Associate Dean
Tony Bringhurst

The College of Science and USU bid a fond farewell to **Associate Dean Antone (Tony) H. Bringhurst** at a reception in his honor at the David B. Haight Alumni Center on 13 December 1999. The reception was attended by numerous faculty and staff from the College of Science and from other colleges and offices throughout the university—a testament to the high regard in which Associate Dean Bringhurst is held at USU.

Professor Bringhurst attended elementary school in Toquerville, Utah, and high school in nearby Hurricane. He earned an associate degree at Dixie College in 1961 and BS and MS degrees from the USU Department of Mathematics in 1963 and 1965, respectively. He also studied mathematics at Indiana University in 1968 - 1969. He joined the faculty at Weber State College in 1965, and the following year accepted an assistant professor position in the Department of Mathematics at Utah State University. Professor Bringhurst was promoted to associate professor in 1974. In 1975, he served as interim assistant dean of the College of Science while Don Sisson was on leave. He was appointed assistant dean in 1982 by Dean Ralph Johnson and was made associate dean in 1984. He served as acting dean in 1987 and again in 1989.

"I appreciate this opportunity to recognize those with whom I have worked," states Tony. "I have enjoyed my interaction with personnel in the College and the University. There are many people of good will in the University with whom it's been a delight to work. I particularly appreciate the College of Science staff, faculty, and students. I will long hold fond memories of the outstanding people in the Dean's Office."

Associate Dean Kandy Baumgardner remembers: "Tony was totally unselfish in doing whatever was needed to promote the welfare of the students, faculty, and staff of the College of Science. We in the Dean's office will always remember Tony with fondness and respect because of the way he cared about each of us individually and kept us working together as a team committed to promoting excellence in the College at all levels."

Associate Dean Bringhurst worked with Deans Ralph Johnson, Thomas Isenhour, Karen Morse, and James MacMahon, four of the five College of Science deans who have served since the college was organized in 1963, and he enjoyed positive relations with each. "I've been the one who has benefitted from my years in the Dean's Office. Having the confidence of each of the deans and being able

College Appoints New Associate Dean



Associate Dean
Don Fiesinger

The College of Science welcomes new **Associate Dean Donald W. Fiesinger**, who succeeds retiring Associate Dean Tony Bringhurst. Currently, Dr. Fiesinger is also head of the Department of Geology. He will function in both positions until 1 July 2000 when a new geology department head will be hired.

Dr. Fiesinger earned a BA degree in education from State University College (Potsdam, NY) in 1966, an MS degree in geology from Wayne State University in 1969, and a PhD degree in geology from the

University of Calgary in 1975. After working at the State University of New York at New Paltz between 1974 and 1976, he came to USU as an assistant professor in the Department of Geology in 1976. In 1982, Dr. Fiesinger was promoted to associate professor and became department head.

An igneous petrologist, Dr. Fiesinger is interested in the study of volcanic rocks. He has conducted research in western Box Elder County and southeastern Idaho on the characteristics of volcanic rocks and their relationship to the Snake River Plain, Basin and Range, and the Overthrust Belt—the three major geologic regions that meet in this area.

Among Dr. Fiesinger's responsibilities as associate dean are budgetary matters, staff management, chair of the College of Science Curriculum Committee, and College representative to the Curriculum Subcommittee of the Educational Policies Committee. Also, he "inherited" a number of committee assignments from former Associate Dean Bringhurst, including representing the College in the Widtsoe Chemistry Building/Science Learning Center construction project.

After serving as a department head for 18 years, Dr. Fiesinger is "very much ready for a change" and is "really looking forward" to his new job and the new challenges that it brings. "So far, what I have seen of the job has been quite enjoyable," he says.

Dr. Fiesinger and his wife, Janet, live in Logan. Janet is a senior librarian at the Logan City Library. They have two daughters (Mandy and Linda), both of whom live in the Portland, Oregon, area.

The College of Science looks forward to its new association with Dr. Fiesinger and wishes him well in this position.

BRINGHURST...
Continued on page 12

Biotechnology Lecture by Prominent AIDS Researcher



Photo courtesy of Diane Bush and the Herald Journal

AIDS researcher Dr. David Ho

Dr. David Ho, director of the Aaron Diamond AIDS (Acquired Immunodeficiency Syndrome) Research Center and 1996 *Time* magazine "Man of the Year," presented the 1999 Distinguished Lecture in Biotechnology last fall. The lecture, sponsored by the USU Biotechnology Center and the Program in Molecular Biology, was entitled "HIV [Human Immunodeficiency Virus] and Lymphocyte Dynamics and

Implications in AIDS Therapy."

After an introduction by Dr. Joseph K.-K. Li (Department of Biology), Dr. Ho presented an overview of the AIDS epidemic in the US and throughout the world, stating that more than 35 million individuals worldwide currently live with HIV, with approximately 1 - 1.5 million cases in the US and approximately two-thirds of all cases in sub-Saharan Africa. AIDS is now the major cause of death worldwide, superceding heart disease, stroke, and other infectious disease.

Dr. Ho briefly discussed HIV structure, genetics, and life cycle, and then concentrated on the interactions between HIV and lymphocytes, particularly CD4 T lymphocytes, and the efficacy of drug immunotherapy against HIV. Because the virus is capable of frequently mutating to counter the action of any one drug, Dr. Ho and his research group pioneered the use of three or four drugs at one time, and this combination drug therapy has been able to

reduce the replicative ability of the virus and to lower the amount of virus in the body to below the limits of detection in many patients. Largely as a result of combination therapy, AIDS mortality in the US has been reduced fivefold in the last three to four years. However, numerous challenges exist in HIV therapy today, particularly because the virus cannot be totally eradicated by current combination therapies and replication-competent virus can remain at low levels in the body for years.

Another giant challenge is that AIDS/HIV therapy is expensive and is not available in most countries in the world. Therefore, Dr. Ho sees education and other preventive measures as the real solution to the AIDS epidemic.

Dr. Ho received a BS degree with honors in physics from California Institute of Technology and an MD degree from Harvard Medical School. He has been director of the Aaron Diamond AIDS Research Center since 1990 and, under his direction, researchers there have published groundbreaking studies on HIV replication in humans, identification of the gateway molecule for entry of HIV into CD4 T lymphocytes, natural resistance to HIV infection, the possible origin of the AIDS epidemic, and the efficacy of combination drug therapy. He is also a professor at The Rockefeller University.

BRINGHURST...

Continued from page 11

to learn from them has been gratifying indeed. I worked with Dean MacMahon for over nine years. One of the most difficult aspects of retiring is to have my daily association with him end," says Professor Bringhurst. He considered his role as associate dean to be that of managing routine college operations and keeping the office running smoothly, thereby freeing the dean to concentrate on policy issues.

In 1990 Professor Bringhurst was named College of Science Advisor of the Year, and in 1993 he received the Leone Leadership Award, recognizing excellence among administrators at USU. He was a member of the Utah and National Councils of Teachers of Mathematics and the College Council of Arts and Sciences. He served on technical committees of the National Universities Degree Consortium and the Coalition to Increase Minority Degrees. He also served on the Utah State Math Advising Committee.

Tony and his wife, Marilyn, are currently dividing their time between Logan and Hurricane, but will eventually make the latter their home. "We have a little property in southern Utah and will enjoy the warm winters. I will spend time trying to be of service, doing some writing, hobby farming, hiking, and risking my neck riding my four-wheeler." He and Marilyn also look forward to traveling, including visits to their 7 children and 17 grandchildren.



*College of Science
Alumni and Friends*

Welcome

Alumni and Friends Web Page

Please visit our Web site, established exclusively for alumni and friends of the College of Science. Information of interest to alumni and friends (including past issues of *Insights*) can be found there. If you haven't visited the site yet, we invite you to do so, and if you have visited before, please check again because our information is updated periodically. Watch for exciting real-time photos of the Widtsoe Chemistry Building destruction and Science Learning Center construction in the near future!

www.usu.edu/~science/alumni&friends

New Faculty Member Joins the College of Science



Cheng-Wei (Tom) Chang

Dr. Cheng-Wei (Tom) Chang, new assistant professor in the **Department of Chemistry and Biochemistry**, earned a BS degree in chemistry at Tunghai University (Taichung, Taiwan) in 1988, followed by two years of service in the Taiwanese army and then two years as an organic chemistry teaching assistant at Tunghai University. After coming to the US in 1992, Dr. Chang received both MS and PhD degrees in organic chemistry from Washington University (St. Louis,

Missouri) in 1994 and 1997, respectively. He then conducted postdoctoral research at the University of Minnesota.

Dr. Chang has extensive experience in organic synthesis, asymmetric catalysis, and carbohydrate chemistry. One of his specific research interests is the synthesis of antibiotic drugs. "I wish to develop a way to easily construct a new generation of antibiotics," he says. "The way I would like to do this is to generate a specific antibiotic against one or several microorganisms. Viruses and bacteria tend to generate resistance in a very short period of time. One way to make the artificial antibiotic last longer is to use a library approach. We can generate a library

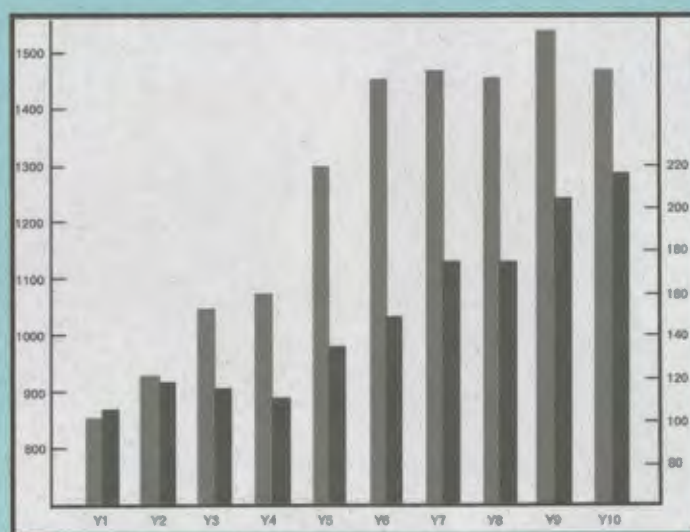
of antibiotics and screen to see which antibiotic is the most efficient one against the bacterium or virus, and in case the bacterium or virus generates resistance, we can screen our library again to see which one might be more successful at this point. We hope that by using this library approach we can expand the usage of the antibiotic."

He enjoys his affiliation with the Department of Chemistry and Biochemistry at USU with its "outstanding research facility" and "colleagues who are good researchers."

Dr. Chang will begin teaching fall semester of 2000. "I believe the most important goal in teaching is to present the beauty of science to students and to offer a link between modern technologies and life science," he states. He believes that lectures should begin with common events in life and then extend to current scientific information. Confidence in his teaching abilities comes from his successful experiences teaching students from two different educational systems and cultures (i.e., Taiwan and USA).

Dr. Chang and his wife, Hsiu-Hsing Liu, have a two-year-old son, Trenton. They find Logan "a wonderful place to live," with beautiful mountain views and nice people. Although he hasn't had much spare time for hobbies since the birth of his son, Dr. Chang likes to build model airplanes from scratch and collect stamps; he also enjoys playing table tennis, volleyball, and softball.

A Decade of Undergraduate Majors / Degrees Awarded



■ Number of Undergraduate Majors
■ Number of Degrees Awarded

USU students have increasingly sought degrees in the College of Science during the nineties. The number of undergraduates majoring in one of the six departments in the college is up 72% (overall, USU is up 39%) and the number of science BS/BA degrees awarded is also up 72%.

College of Science



Tony Bringham, Associate Dean, and
Farrell Edwards, Physics and CASS

College of Science faculty
enjoy the refreshments
and catch up on news



David Sattinger, Head of
Mathematics and Statistics,
and Jerome Davies,
College of Science
Development Director



Jan Egbert,
Mathematics and Statistics



Faculty and staff appreciate the food
and socialize with one another

Lydia Underwood and
Beverly Ridenhour, Mathematics and Statistics



Kim Sullivan, Rob Taylor,
and Jim Crane, Biology



Don Fiesinger, Associate Dean,
and Bob Heal, Mathematics and Statistics



Fall 1999 Coffee Break

Spring 2000 Coffee Break

Outstanding Students Recognized by College

The students profiled here reflect the high academic standards and love of science that we encourage in our college. Each was chosen by his department for outstanding achievement during the 1999 - 2000 academic year.

Department of Geology

Brien K. Park is this year's outstanding student in the Department of Geology. Brien earned an associate of arts degree from Snow College in 1996 and will graduate from USU this spring with a BS degree in geology. He is 25 years old and originally from West Valley City, Utah.



Brien K. Park

In the summer of 1999, Brien worked on two mapping projects as part of an internship with the Utah Geological Survey (UGS). He helped UGS geologists map sections of Zion National Park and Ashley National Forest. The maps are expected eventually to go into a book of the geological sites of Utah to be published by the UGS

and the Utah Geological Association. The internship taught Brien several new mapping techniques and reinforced techniques that he had learned during the summer of 1998 in geology field camp. "The field of mapping is really intriguing me now. The internship was probably the coolest thing I have done so far in geology," says Brien. He also helped a California geology professor map Upheaval Dome in Canyonlands National Park in the summer of 1996. Brien is a member of the USU Geology Club and enjoys going on their field trips.

"Brien has been one of our 'totally involved' geology majors, always lending a helping hand in the department and participating in department and geology club activities and field trips," relates Dr. Don Fiesinger, department head. "He has been our unofficial 'department technician' for the last two years. I was very pleased to see Brien secure an internship with the Utah Geological Survey last summer as it has really given him more confidence in his abilities as a field geologist."

Brien has always liked the landscape of Utah and wondered how it formed. When he took an introductory geology class at Snow College, he enjoyed it and made the decision to major in geology. When he took a field trip to the USU Department of Geology, he was impressed by the department and its professors and made the decision to come to USU. He feels that "the department is small enough that the professors know who you are, but big enough to give you a lot of opportunities to do your thing." He says, "I have really enjoyed my years at Utah State in the geology department and I really appreciate the great professors that they have here."

Currently, Brien is searching for an internship in the field of geology that will last for 2 - 12 months. After the internship, he would like to study geomorphology in graduate school, earn an MS degree, and obtain a position as a geologic mapper.

Running, drawing, and fly fishing are hobbies for Brien. "Fly-fishing is tons of fun. The only problem," he declares, "is I get so interested in looking at the rocks around me that I forget that I'm fly-fishing and I get my line caught in trees and underneath rocks."

Department of Mathematics and Statistics



Richard Mouritsen

The Department of Mathematics and Statistics has chosen **Richard (Rich) Mouritsen**, a 23-year-old senior, as its outstanding student. Rich is majoring in mathematics and minoring in computer science as part of the computational mathematics program.

With a perfect 4.0 GPA, Rich is a regular on the Dean's List and University Honor Roll. He is the recipient of a Robert C. Byrd Scholarship from the Utah State Board of Education and a Superior

Student Scholarship from USU, both four-year scholarships.

Dr. Chris Coray (Department of Mathematics and Statistics) says, "Richard is the kind of student every mathematics teacher admires. He loves learning, he seeks always to really understand the big ideas, and he asks good questions. Richard is also that rare student of mathematics who equally likes both the intrinsic beauty of the subject itself as well as applications to other disciplines."

Rich became interested in mathematics while in high school. "I decided that was what I really liked to do," he states. "I like the numbers. I like being able to figure stuff out. I think math is powerful—there is so much we can do with math." He decided to come to USU after attending USU's Engineering State while in high school and getting a positive impression of the University.

As a participant in the STICKS (Students Teaching in the Classroom for Kids' Success) program of the Val R. Christensen Service Center, Rich has tutored mathematics for middle and junior high school students throughout Cache Valley. He is a member of the Mathematics Association of America.

After graduation, Rich hopes to work in industry in a position that will use both his mathematical and computer science training; however, at some point in his life, he would also like to teach, probably at the high school level.

Originally from Grantsville, Utah, Rich lives now in Logan and is engaged to be married in May. He enjoys sports (particularly basketball and football), reading classic novels, and attending musical theater.

Rich expresses his thanks to the professors of the Department of Mathematics and Statistics and to his parents.

Department of Physics



Jamie B. Jorgensen

The outstanding student from the Department of Physics is 23-year-old sophomore

Jamie B. Jorgensen. Jamie has a 3.8 GPA and plans to graduate with dual BS degrees in physics and mathematics.

Currently, Jamie is working with Dr. Charles Torre (Department of Physics) on a mathematical physics project concerning general relativity and gravitation. In this project Jamie is helping to elucidate the structure of

gravitational fields with symmetry. "When Jamie first came to see me regarding doing some research in gravitational physics, I must admit I was pretty skeptical," relates Dr. Torre. "Given his relatively small amount of previous physics and math experience, given that he had no prior training in this specific subject, and given only a semester or two, how much could he really accomplish? A semester later Jamie has (1) learned the fundamentals of Einstein's general theory of relativity—from scratch, (2) become conversant with advanced (and rather idiosyncratic) algebraic computing software, and (3) used this software to perform a considerable number of computations that are contributing to an extensive research effort (undertaken by Ian Anderson, Mark Fels, myself, and various students) concerning gravitational fields with symmetry. I am no longer skeptical." Jamie also works for Dr. Bela Fejer (Department of Physics and Center for Atmospheric and Space Sciences) conducting computer analyses of large databases of atmospheric measurements.

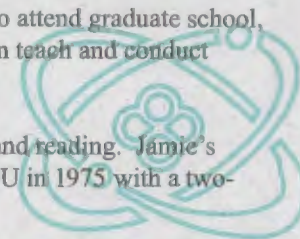
Last year, Jamie flew on the KC-135 ("vomit comet") in the Get Away Special (GAS) program. Dr. Jan Sojka (director of the GAS program, Department of Physics, and Center for Atmospheric and Space Sciences) states, "Jamie Jorgensen has single-handedly pursued an in-depth data analysis of observations made on the KC-135. His ongoing enthusiasm and scientific analysis have resulted in a rather unexpected set of findings which we hope can appear as a GAS publication in a reviewed scientific journal.

Jamie's analysis has extracted a second order micro-gravity effect out of a noisy system much like a magician pulling a rabbit out of a hat, only in Jamie's case we did not know if the rabbit was actually there." In April, Jamie and his wife, Arlynda, will present results of the analysis to the National Conference on Undergraduate Research in Missoula, Montana. Arlynda Wright Jorgensen is a senior physics major and was last year's Outstanding Student in the Department of Physics.

"I would like to thank the physics professors who have been really good to me, helping me to get going and involving me with research, especially Dr. Torre and Dr. Sojka. It's been really great. I've gotten a lot of support from them," declares Jamie. Jamie's initial interest in physics was inspired by Richard Bradford, his physics teacher at Logan (Utah) High School.

After graduation from USU, Jamie hopes to attend graduate school, earn a doctorate degree in physics, and then teach and conduct research at the university level.

His hobbies include hiking, backpacking, and reading. Jamie's father, Jerry Jorgensen, graduated from USU in 1975 with a two-year degree in aeronautics.



USU 2000 Calendar of Events

College of Science Awards Program	7 April
Widtsoe Chemistry Bldg Open House & Tours	15 April
Aggie Day	21 April
Senior Send-Off	26 April
Widtsoe Chemistry Building Dedication and Science Learning Center Groundbreaking & Tours	25 April
University Hooding Ceremony	5 May
College of Science Graduation Open House	5 May
University Graduation	6 May
College of Science Graduation	6 May
Class of 1950 Reunion	20 - 21 July
Aggie Family Day	9 September
Homecoming (versus University of Utah)	30 September
County Aggie Day	21 October

The 1999 - 2000 College of Science Awards

Teacher of the Year **E. Robert Heal**
Department of Mathematics and Statistics

Advisor of the Year **David B. Drown**
Department of Biology

Researcher of the Year **Charles Torre**
Department of Physics

Graduate Student
Teacher of the Year **Scott B. Smith**
Department of Mathematics and Statistics

PhD Graduate Student
Researcher of the Year **Sedonia D. Sipes**
Department of Biology

MS Graduate Student
Researcher of the Year **Xiaoxin Chen**
Department of Computer Science

Valedictorian **Tasha VonNiederhausern**
Department of Biology

Scholar of the Year **Tyler L. Christensen**
Department of Biology

*These individuals will be honored at
The College of Science Awards Program
Friday, 7 April 2000
3:30 - 4:30 p.m.
David B. Haight Alumni Center*

Emeritus Biologist Wilford J. Hanson Still Working in Insect Collection

Today, life for **Dr. Wilford J. Hanson** (emeritus associate professor in the Department of Biology and former curator of the USU Insect Collection) is much the same that it was before he “retired” in 1995. He comes to school every morning (maybe a bit later than he used to); spends most of his day on the “never-ending” job of preparing, classifying, and cataloging insects; and on occasion travels to South America and other wonderful places to gather insects for his research and the collection.

In 1963, when Dr. Hanson joined the USU Department of Zoology and became the first official curator of the insect collection, the collection contained about 500,000 specimens and was housed in a few wooden cabinets in the halls of Old Main. Today, the collection numbers over 2 million specimens (many collected by Dr. Hanson himself) and is bulging at the seams in its area on the second floor of the Biology and Natural Resources Building. The largest insect collection in the intermountain region and one of the largest neotropical insect collections anywhere, it is used for scientific study by entomologists throughout the world. The collection also serves as a teaching tool and as a reference for identifying insects sent in by the public. “My work on the insect collection has been very satisfying,” states Dr. Hanson. “When I first arrived, I could see how the earlier entomologists, especially Dr. George F. Knowlton, had developed it into a very important research facility. I therefore have considered its maintenance and growth as being a major part of my assignment.”

Dr. Hanson’s interest in entomology began at an early age as he helped his six older siblings collect insects for high school biology. Later, he took the same biology course and was positively influenced by the teacher. He still has the small candy box with his first insect collection. And, his early interests were not limited to insects. In those days, bird field guides were not available, so he wrote and illustrated a small bird field guide himself. Dr. Hanson’s enthusiasm for entomology continued in college—he graduated from USU in 1953 with a BS degree in entomology, followed by MS and PhD degrees in entomology from the University of Kansas in 1955 and 1968, respectively.

As a graduate student, Dr. Hanson spent three years at the Gorgas Memorial Laboratory in Panama working on disease-transmitting sand flies and associating with world-renowned experts in that field. “This was truly a wonderful and educational experience, and it gave me a taste of the tropics that I had to experience again and again,” he declares. He has been on 27 foreign trips to collect insects, going to Mexico eight times, Panama twice, Costa Rica four times, Trinidad once, Brazil seven times, Peru twice, and Ecuador three times. He has also collected insects throughout the western US. On these trips, Dr. Hanson collects all types of insects for the USU collection and soldier flies, in particular, for his personal research. He has been studying the taxonomy of soldier flies in the western hemisphere since 1953 and finds discovering species new to science “particularly exciting.”



Wilford J. Hanson

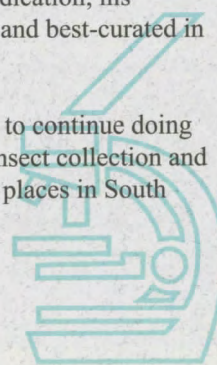
In addition to curating the insect collection, Dr. Hanson taught entomology courses before he retired. “Although teaching several courses each year was a challenge and very time-consuming, the association with enthusiastic students and being a positive factor (I hope) in their development was very rewarding,” he says.

Currently, there are approximately one million named species of insects; however, some experts believe that perhaps 10 - 15 times that many remain undiscovered, particularly in the tropics. Dr. Hanson is hopeful that the current decline in the number of jobs and graduate students in the field of entomology will soon be reversed; otherwise, “science is going to suffer.”

Dr. Hanson still conducts insect collection tours, leading more than 100 tours last year, mostly for elementary school students from various parts of Utah and southern Idaho. He enjoys seeing the excitement of the children and hopes to kindle a lasting interest in entomology in some of the young students.

“We are exceptionally fortunate to have Dr. Hanson continue his association with the collection after retirement, since we don’t yet have the funds for a full-time curator,” says Dr. Carol von Dohlen, current director of the collection. “Dr. Hanson works with student help to manage the daily operations of the facility, and is a priceless resource with his near-encyclopedic knowledge of intermountain and other insects. The organization, quality, and size of the collection is due in great part to his years of dedication; his inventory of soldier flies is perhaps the largest and best-curated in the world.”

What’s in the future for Dr. Hanson? He plans to continue doing what he has always enjoyed—working in the insect collection and going on collecting trips. “There are plenty of places in South America I haven’t been to yet,” he reports.



Visiting Professors

Visiting professors from universities all over the world are collaborating with College of Science professors on various research projects.

Dr. Thomas Bartsch, from Giessen University (Giessen, Germany), collaborated with Dr. Zhi-Qiang Wang (Department of Mathematics and Statistics) for three weeks in the fall on a joint project supported by the NATO Collaborative Research Program. Dr. Wang: "The project is on the solutions structure of nonlinear elliptic problems in the entire space, which arise naturally when looking for standing wave solutions of nonlinear Schrödinger equations. Similarly, the search for standing (or traveling) waves in nonlinear equations of the Klein-Gordon type leads to the same type of problems. These problems also appear in other contexts as models of several physical phenomena, for example, when one studies reaction-diffusion equations."

Dr. Nikolai Dobrynin, from the Department of Plant Protection of Voronezh State Agricultural University (Voronezh, Russia), is currently working with Drs. William Kemp and Jordi Bosch (US Department of Agriculture/Agricultural Research Service Bee Biology and Systematics Laboratory and adjunct professors in the Department of Biology). Dr. Dobrynin is funded by the Fulbright Senior Scholar Program and will be working here for six months on preparation of a book on landscape-level agricultural management and policy for bee pollinator conservation.

Dr. Yong-Xing Li, a research leader at the Institute of Botany of the Chinese Academy of Sciences (Beijing, China), spent a six-month sabbatical leave last year working with Dr. Anne Anderson (Department of Biology). Dr. Li heads a team that studies a free-living nitrogen fixing bacterium that he isolated from soil, an *Enterobacter gergovia* strain. He has run many field tests that

demonstrate improved yields when plants are inoculated with this bacterium. During his stay at USU, Dr. Li gained experience with biochemical and molecular techniques.

Dr. John Meissner, physician, worked for three months in the laboratory of Dr. Joseph Li (Department of Biology) on two projects: (1) molecular phylogenetic analyses of Bluetongue viruses, and (2) development of polymerase chain reaction probes to identify a unique *Mycoplasma* bacterium that has infected desert tortoises in southern Utah and northern Nevada.

Professor César Noguera, from the Department of Applied Physics at the Universidad Central de Venezuela (Caracas, Venezuela), is currently working with Dr. Vincent Wickwar (Center for Atmospheric and Space Sciences and Department of Physics). They are trying to determine whether there is a secular variation or trend in the mesospheric temperature using data obtained with the Rayleigh backscatter lidar, of the Lidar Consortium in the Center for Atmospheric and Space Sciences. They hypothesize that because of heating, the big eruption of Mt. Pinatubo early in the decade, and global warming, there should now be evidence of significant cooling in the temperature of the mesosphere.

Professor Krzysztof Walczak, of the Institute of Organic Chemistry and Technology at the Silesian Technical University (Gliwice, Poland), is currently working with Dr. Lance Seefeldt (Department of Chemistry and Biochemistry). He will spend six months at USU working on a National Science Foundation-funded project, ATP (adenosine 5'-triphosphate) signal transduction in nitrogenase catalysis.

If you are aware of anyone who is not receiving *Insights* and would like to, please contact us at *Insights*, Office of the Dean, College of Science, Utah State University, 4400 Old Main Hill, Logan UT 84322-4400; email us at scido@cc.usu.edu; or fax us at (435) 797-3378.

1999 Willard L. Eccles Foundation Science Fellowship



Yaodong Liu

Each year, the Willard L. Eccles Charitable Foundation provides a generous scholarship to an entering graduate student in the College of Science who has high academic and graduate research potential and who plans to conduct research to benefit mankind. The fellowship is designed to attract the finest academic minds with a creative and ambitious approach to solving research problems. With a stipend of \$15,000 per year for three years, the fellowship enables the recipient to focus talents and time on graduate

studies and thesis research projects.

The 1999 recipient of the Willard L. Eccles Foundation Science Fellowship is **Yaodong Liu**, a graduate student in the Department of Computer Science. Yaodong is a 21-year-old native of Xiangtan, China (Hunan Province). Last spring, he graduated with honors with a BS degree in computer science from Wuhan University (Hubei Province), where he maintained a 92/100 GPA and was ranked first among students in the computer science department. While at Wuhan University, Yaodong received the Excellent Freshman Scholarship (awarded to the best freshmen of the university), three First-Class University Scholarships (awarded to the top five percent of students), first prize in China's College Student English Contest, the Tengfei Scholarship from the Department of Computer Science, and a Computer World Scholarship (awarded to only 50 students throughout China). In addition, he was certified as a software engineer by the National Computer Industry Association of China and represented his university in the National Mathematical Modeling Contest.

Yaodong was involved in several computer science projects while in college. His senior project implemented a promising cryptography algorithm and compared it to the old standard. He says, "My program in assembler language runs eight times faster than the algorithm's original implementation in C, and the module was adopted in some of the department's database projects." Yaodong helped with the installation and maintenance of the campus computer network system and participated in the design and implementation of the campus computer network supervising system. In addition, as a summer project, he independently designed and implemented a computer game in C (*Block War*).

Coming from a relatively poor region of China, Yaodong did not see his first computer until he attended a demonstration at age 16. "I fell in love with the computer at first sight," he relates. "Ever since then, there is only one way ahead of me, and I pursue it with all my dreams and determination."

Yaodong has not yet decided on the research that he will pursue at USU. "I have a very good foundation in computer science but I still have a lot of things to learn here, and there are so many interesting things," he says.

After he earns an MS degree in computer science from USU, Yaodong hopes ultimately to get a PhD degree. Then he plans "to go back to my homeland to do research work and teach, and help other Chinese students who have the same dreams as I do. It's my responsibility. I am extremely grateful for the Willard L. Eccles Fellowship here at USU and the opportunity it presents to help me realize my goals."

When not working with computers, Yaodong enjoys basketball, table tennis, reading, movies, and stamp collecting.

Rock and Fossil Day

The Department of Geology held its fourth Rock and Fossil Day on 6 November 1999 in the Geology Building. Approximately 125 persons of all ages attended the free event that featured hands-on examination of fossils, rocks, and minerals; satellite maps; microscopic views of rocks and minerals; ground water displays; demonstrations of how to identify minerals with x-ray diffraction; a traveling exhibit from the Utah Museum of Natural History, and an exhibit about faults and earthquakes from the Utah Seismographic Center.

In addition, geology faculty and students were on hand to identify rocks and fossils brought in by visitors. The "original rock videos" (geology documentaries) played in the Geotheater throughout the three-hour period.

The department aims many of the activities of Rock and Fossil Day toward children in an effort to get young people interested in science, specifically geology.

"It takes a lot of work to coordinate the publicity and activities, and to bring in various outside displays, but we all agree that it is a very rewarding experience," states Dr. Don Fiesinger, head of the Department of Geology. "The people who come to Rock and Fossil Day always express their appreciation for our efforts and it has an added benefit for our students: people view them as experts; it gives them a sense of professionalism."

Numerous display cases, mounted maps, and photographs are located in the Geology Building throughout the year. The Department of Geology invites alumni and other visitors to view their displays during regular office hours, 8 a.m. - 5 p.m.

Reunion in Taiwan



Dr. Joseph Li (seated, right) at reunion dinner in Taiwan

After organizing and participating in the Eighth International Symposium of the Society of Chinese Bioscientists in America, held in Hong Kong during August 1999, **Dr. Joseph K.-K. Li** (Department of Biology) had a reunion in Taiwan with many of his former graduate and undergraduate students and their families and also visited other Taiwanese colleagues.

Among those attending a special reunion dinner with Dr. Li in Taipei were **Dr. Yi-Yuan Yang** (MS 1988, Biochemistry; PhD 1993, Biology), chairman of the Department of Medical Technology at Taipei Medical College; **Dr. Christine Sy-Jye Leu** (MS 1989, Biology; PhD 1994, Biology), associate professor at the Institute of Cell and Molecular Biology at Taipei Medical College; **Dr. Denis Guang-Yuh Hwang** (MS 1989, Biology; PhD 1994, Biology), associate professor of biology at Tunghai University; **Dr. Bruce I-Jen Huang** (MS 1991, Biology; PhD 1996, Biology), division head in molecular biology at the Taiwan Sugar Research Institute; **Sonny Huang (formerly Jo-Tsui Chang)** (BS 1992, Marketing; MAcc 1994, Accounting); **Dr. Jwo-Farn Chiou** (who worked in Dr. Li's lab while on sabbatical in 1991), National Taiwan University College of Medicine; **Ms. Jennifer Jui-Fen Cheng** (MS 1994, Biology), China Petrochemical Development Corporation; **Ms. Hsiu-Hui Wang** (BS 1997, Nutrition and Food Science; BS 1999, Applied Biology), Taiwan Pig Research Institute; and **Mr. Pei-Jung (John/Payton) Ho** (BA 1995, Marketing), marketing specialist at Yee Young Industry Co., LTD.

While in Taiwan, Dr. Li visited Dr. Yang's research laboratory at Taipei Medical College and discussed research projects with several graduate students. Dr. Li toured Tunghai University (in Taichung) with Dr. Hwang and **Dr. Adam Huang** (who had also

previously worked in Dr. Li's laboratory). Dr. Bruce Huang hosted a visit to the Taiwan Sugar Research Institute (in Tainan) where Dr. Li presented a seminar on "Biotechnology 99: Prospects in the New Millennium in Taiwan" and also presented data on the use of synthetic peptides synthesized in the multiple antigen peptide (MAP) format to develop diagnostic and clinical tests for Bluetongue and Epstein-Barr viruses and their diseases via molecular mimicry. He also met with several research groups at Taiwan Sugar Research Institute and inspected their impressive greenhouse facilities. In addition, he visited the huge Biotechnology Industry Park in Tainan. At another dinner, Dr. Li met with two more former USU graduate students, **Wen-Chiung (Fred) Shieh** (MBA 1990) and his spouse **Christine Shieh (formerly Yen-Chi Kuo)** (MBA 1988).

Dr. Li says, "My trip was very exciting. Not only did I fulfill my promise to visit this group of former graduate and undergraduate students who had obtained their degrees from the Department of Biology at USU, it was very fulfilling to see how well these former USU students have performed since they left USU. Each and every one of them is doing well and has been very productive. They have spread the name and reputation of USU to all their colleagues and collaborators. This experience also helped me talk to many young and intelligent students in four different universities and one research institute, and convince them to consider USU for either undergraduate or graduate education in their future career development."

Commencement 2000

The One Hundred and Seventh Annual Commencement of
Utah State University
5 & 6 May



Wednesday, 26 April

Senior Send-Off

7 - 11 p.m., Nelson Fieldhouse.

Friday, 28 April

ROTC Commissioning Ceremony

9:00 a.m., David B. Haight Alumni Center. Reception follows.

Friday, 5 May

Spouse Recognition Ceremony

10:00 a.m., Chase Fine Arts Center, Morgan Theatre.

Hooding Ceremony for Master's and Doctoral Degree Candidates

12:30 p.m., Assembly of Candidates, Tunnel of Dee Glen Smith Spectrum.

1:30 p.m., Ceremony, Dee Glen Smith Spectrum.

College of Science Open House

3:30 - 5:00 p.m., David B. Haight Alumni Center. *Alumni are encouraged to attend.*

Graduation Dinner and Concert

6:00 - 7:45 p.m., Dinner (tickets required), Taggart Student Center, Evan N. Stevenson Ballroom.

8:00 p.m., Collage of Sounds Concert, Chase Fine Arts Center, Kent Concert Hall.

Saturday, 6 May

Assembly

8:00 a.m., Taggart Student Center, Juniper Lounge, for graduate students; University Quadrangle for undergraduate students; Taggart Student Center patio for faculty.

Academic Procession

8:30 a.m., Taggart Student Center and University Quadrangle to Dee Glen Smith Spectrum.

Commencement Ceremony

9:30 a.m., Dee Glen Smith Spectrum. Dr. Kip Thorne will present the keynote address.

Dr. Kip Thorne is the Feynman Professor of Theoretical Physics at the California Institute of Technology. His research has focused on gravitational physics and astrophysics, with emphasis on black holes and gravitational waves. He has received numerous academic/research honors. Dr. Thorne's father was the late Dr. D. Wynne Thorne, USU's first vice president for research, and his mother is Dr. Alison C. Thorne, emeritus professor in the College of Family Life.

College of Science Graduation Ceremony

12:00 p.m., Taggart Student Center, Evan N. Stevenson Ballroom.

Alumni Graduation Picnic

11:00 a.m. - 2:30 p.m., University HPER Field (tickets required).

Alumni Reception

11:00 a.m. - 3:00 p.m., Open House, David B. Haight Alumni Center.

For additional information regarding Commencement
see <http://www.usu.edu/~edserve/commencement2000.htm>

USU Alumni Reunion

Class of 1950

20 - 21 July 2000

Utah State University will be hosting a reunion this summer for graduates of the class of 1950. All class members are cordially invited to attend. Activities will include a luncheon, campus tour, attendance at the opera, brunch with a guest speaker, golf, and the Golden Aggie Reunion Banquet.

Living USU science graduates from 1950 are listed below. If you are not listed and are a 1950 graduate, or know of someone who is, please contact USU Alumni Relations.

For more information on the reunion, please contact Alumni Relations at alumni@cc.usu.edu or 1-800-291-ALUM.

Norman A. Allridge
 Russel M. Barakat
 John Johnson Bateman
 Dean Lenord Benson
 Donald G. Bickmore
 Thomas J. Binnall
 Earl J. Blommer
 Betty J. Bohman
 John V. Bruce
 Lawrence D. Bruesch
 Erwin E. Cameron
 Donald Johnson Campbell
 Glen Horace Cannell
 Dan C. Cavanaugh
 George R. Chlarson
 William J. Clark
 Eugene H. Cronin
 Newel G. Daines Jr.
 Gerald Leo Dean
 Madeline Houy Dilley
 Burton Hanks Duke
 Nylan J. Ellsworth
 John W. Emmett
 Alban Robert Essbach
 Anna R. Field
 Wayne M. Fannesbeck
 Walter Fox
 William Elton Fox
 Lewis Edwin Fronk
 Charles Wesley Galloway
 Wayne Scott Gardner
 Ivan De Var Geary
 William E. Harper
 Dorothy K. Hoeffling
 Robert S. Hoffmann
 Deorr E. Holmes
 Nolan Stephens Hughes
 Rex L. Hurst
 Frank C. Jackson
 Emron Alfred Jensen

A. Earl Johnson
 Reah Brown Keaton
 Walter James Kochan
 Reuel E. Lamborn
 Robert E. Lee
 Robert James Leonard
 Ray Dean Lowe
 R. Tex Luthi
 Peter A. Madden
 Farrin L. Mangelson
 Charles Ben McComb
 David McComb
 Robert A. McCullough
 Eugene Arthur Moore
 Walter L. Moore
 M. W. Nielson
 Jay Ward Palmer
 Richard W. Perkins
 Daryl E. Peterson
 Robert Henry Peterson
 Harlan G. Pulsipher
 Gaylord Lowell Quincy
 Dale O. Richards
 Thomas J. Riordan
 Lawrence T. Rollins
 Richard J. Shaw
 Ferrol B. Simpson
 Orval D. Simpson
 Calvin B. Skotland
 Roger W. Slade
 Charles James Stewart
 John W. Thieret
 Mildred Wolf Thieret
 Dale Leland Tribe
 Faye Bateman Walch
 Wilford O. Watkins
 Rex G. Welty Jr.
 Carvel W. Wood
 Ben F. Zundel

In Memoriam: Howard E. Dorst



Howard E. Dorst

Howard E. Dorst, emeritus professor of zoology, died on 11 December 1999. Born in 1904 in Pomeroy, Ohio, he was 95 years old.

Professor Dorst completed his undergraduate and graduate education at the University of Kansas, ultimately earning an MS degree in entomology in 1930. After serving as an entomologist for the US Department of Agriculture, he came to USU in 1936 to conduct research on

control of insects that damage sugar beets and tomatoes. Throughout his career, he published more than 50 articles in the *Journal of Entomology*. Professor Dorst also received a Presidential Citation Award for outstanding service to Utah State University. He retired in 1965 as senior entomologist.

He served during World War II as reserve captain in the Medical Service Corps and was reactivated in 1946 as lieutenant colonel in the Army Reserves. He retired as colonel from the Army Reserves in 1964.

Active in a large number of organizations, Professor Dorst served in administrative positions in the Logan Junior Chamber of Commerce, Utah Reserve Officers Association, Logan Rotary Club, Logan Golf and Country Club, Masons, Eastern Star, Scottish Rite, York Rite Shriners, Sigma Xi Scientific Research Society, Cache County American Red Cross, Cache County American Cancer Society, and Logan First Presbyterian Church. He was awarded an honorary doctorate from Westminster College (Salt Lake City, Utah) after serving for 17 years on its board of directors.

He was actively involved in eradication of the noxious weed dyer's woad in Cache Valley, particularly at one of his favorite locations, the Logan Golf and Country Club. He spent many early morning hours digging weeds off the side hills of the golf course, followed by playing a round of golf. He continued to play golf up to age 93, always walking and carrying his own clubs.

Professor Dorst is survived by his son, Dr. Ronald V. Dorst (BS 1959, Predental), three grandchildren, and three great-grandchildren. He was preceded in death by his wife of more than 60 years, Martha Hauserman Dorst.

Awards, Honors, and Publications

Insights welcomes news of alumni awards, honors, and publications. Please mail announcements to Insights, Office of the Dean, College of Science, Utah State University, 4400 Old Main Hill, Logan UT 84322-4400, or use the ALUMNET form in this publication. Please include book covers if available. Announcements may also be emailed to scido@cc.usu.edu or faxed to (435) 797-3378.

Alumni Awards and Honors

Idaho State Senator **Robert Geddes** (BS 1981, Geology) was elected in January 2000 as Senate President pro tem by the Republican majority in the Idaho Senate. Mr. Geddes is an environmental engineer at Solutia (Monsanto's agricultural chemical division) in Soda Springs, Idaho.

In January 2000, the board of the Utah Geological Survey selected **Craig V. Nelson** (BS 1982, MS 1986, Geology) as its chairperson. Mr. Nelson is a senior engineering geologist with Dames & Moore geologic consulting firm. He has expertise in project management, engineering geology, environmental geology, and geologic hazards, and is author of several publications on seismic hazard, soil strength, and rockfall analyses. Before joining Dames & Moore, he served a seven-year term as Salt Lake County Geologist.

In January 2000, the board of the Utah Geological Survey selected **Robert M. Robison** (MS 1986, Geology) as vice chair. Mr. Robison is assistant manager of Continental Lime's Cricket Mountain plant near Delta, Utah. He has expertise in mining and processing, environmental compliance, mine safety, hydrogeology, and geochemistry, and is author of several publications on hazards ordinances and geologic studies. He served six years as county geologist for Utah and Juab counties.

Faculty Awards and Honors

The Manual of North American Grasses, edited by **Drs. Mary Barkworth and Kathleen Capels** (Intermountain Herbarium, Department of Biology) and Dr. Linda Vorobik (University of Washington), has been adopted as Volumes 24 and 25 of the *Flora of North America* series, and the Intermountain Herbarium of Utah State University has been designated as the Editorial Center for Grasses for *Flora of North America*. Dr. Barkworth will serve as head of the Editorial Center for Grasses and as such will be a member of the *Flora of North America* management committee. *Flora of North America*, published by Oxford University Press, began publication in 1993 and is expected ultimately to comprise 30 volumes. It is considered the definitive tool for identifying, understanding, and conserving North America's floristic heritage. Dr. Barkworth anticipates publication of the grasses volumes by 2003.

Dr. J.R. Dennison (Department of Physics) was one of eight USU professors selected as first to receive a USU Alumni Association Professorship Award. The award is given to recognize those professors who have positively touched the lives of students.

Dr. Susanne Janecke (Department of Geology) has begun a three-year term as a member of the US Geological Survey's EDMAP (Educational Mapping Program) review panel. This panel recommends funding of proposals to support geologic mapping by graduate and undergraduate students.

Dr. Joseph K.-K. Li (Department of Biology) received a Service Award from the Society of Chinese Bioscientists in America (SCBA) for his contributions in organizing the eighth SCBA International Symposium in Hong Kong in 1999 and for his continuous efforts to promote networking and collaboration between Asian and international scientists.

Dr. Peter Ruben (Department of Biology) was honored as a Top Prof by the USU Mortar Board Honor Society at its annual recognition dinner on 17 February 2000. Top Profs are professors and instructors who have had a positive effect on the lives of individual Mortar Board members.

Dr. William Scouten (Department of Chemistry and Biochemistry) was nominated to the governing board of the Council for Chemical Research. He is also Editor-in-Chief of the *International Journal of Bio-Chromatography*.

Dr. Greg Swain (Department of Chemistry and Biochemistry) received a Young Investigator Award from the Society for Electroanalytical Chemistry.

Alumni & Guests

are invited

to attend an

Open House

in honor of our

Year 2000

College of Science Graduates

Friday, 5 May 2000

3:30 - 5:00 p.m.

David B. Haight Alumni Center

ALUMNET Responses

1930s

G. Fred Somers (BS 1936, Plant Pathology) is retired and living in Newark, Delaware. A Rhodes Scholar, he earned BA and BSc degrees from Oxford University in 1938 and 1939, respectively, and a PhD degree from Cornell University in 1939. In 1951, he published (with J.B. Sumner) *Chemistry and Methods of Enzymes*, 3rd edition.

1940s

Don W. Gay (BS 1942, Chemistry/Biochemistry) is retired from his position as marketing manager of textile fibers with Dupont Co. During his career, he "made major contributions to the development of the atomic bomb." He lives on a golf course in Greenwood, South Carolina, and often shoots his age (81).

1970s

Susan G. Kelley (BS 1970, Bacteriology; MS 1972, Zoology) earned a PhD degree in 1975 from Texas Woman's University and an MD degree in 1999 from Saba University School of Medicine (Saba, Netherlands Antilles). Last July, she began a three-year residency in internal medicine at St. Elizabeth Health Center/Northeast Ohio Universities College of Medicine in Youngstown, Ohio.

1980s

Steven R. Allen (BS 1983, Biology) earned an MD degree from the Medical College of Wisconsin in 1987 and an MPH from the University of Utah in 1997. He is a pediatrician and clinic chief of staff at the University of Utah Health Network, West Valley City, Utah. In 1997, he published a two-part review article on neonatal infection in the medical journal *Clinical Pediatrics*. He is married, has two boys and two girls, and resides in Taylorsville, Utah.

Rocky Baum (PhD 1985, Chemistry) is laboratory manager at TerraLab Engineers International in Salt Lake City, Utah. He resides in Provo, Utah.

Glenn Berg (BS 1985, Electrical Engineering/Physics; MS 1989, Physics) received a PhD degree in electrical engineering from Cornell University in 1993. He is a senior scientist/engineer with the Boeing Company and lives in Aurora, Colorado.

1990s

Doug Goodwin (PhD 1996, Biochemistry) is an assistant professor in the Department of Chemistry at Auburn University (Auburn, Alabama). He is a former recipient of the Willard L. Eccles Foundation Science Fellowship.

Travis Talbot (BA 1993, Biology) received a DDS degree from Creighton University. He is currently completing a master's degree specialty program in orthodontics at the Mayo Clinic and plans to return to Utah to practice orthodontics.

Alumni: In Memoriam

The College of Science extends its deepest sympathy to the families of the following alumni:

Lynn H. Stauffer—BS 1927, Physics

G. Gibbs Smith—BS 1933, Chemistry

Willard K. Hill—BS 1938, Bacteriology

Edgar Hayes—BS 1939, Public Health

Chester Slaugh—BS 1939, Botany

Vaughn M. Pond—BS 1940, Zoology

Robert A. Lawrence—BS 1947, Physics

John Chappell—BS 1961, Geology

Larry L. Cox—BS 1964, Predental/Biology

Rick L. Turnquist—PhD 1972, Zoology

Robert W. Toole—BS 1976, Mathematics

Paul R. Cazier—BS 1987, Biology

Buford Gregory—BS 1992, Public Health

From _____

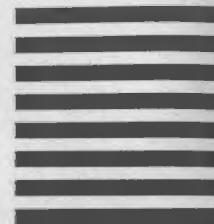


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A L U M N I E T

Dear College of Science Alumni and Friends,

We always enjoy hearing from you and hope you will take a moment to complete and mail this alumni information form. Please note the postage-paid format—simply cut off this last page of the newsletter, fold along the lines marked on page 27, tape it shut, and drop it in the mail. You can also email your information to scido@cc.usu.edu or fax it to us at (435)797-3378.

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Mailing address _____ City _____ State _____ Zip _____

Home phone () _____ Work phone () _____

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USU degree(s) _____ Year(s) _____ Major(s) _____

Other degree(s) _____ Year(s), school(s) _____

Profession/employer _____

Professional/personal awards _____

Books Published _____

About yourself _____

Question for "Ask the Scientist" _____

Insights, the alumni newsletter of Utah State University College of Science, is published twice a year. Its purpose is to inform alumni and friends of current events, projects, and changes within the College. The newsletter also provides a forum for alumni to follow one another's careers and professional development. This issue of Insights was produced under the direction of Judy Brodie, editor, and Colette Yates, project coordinator and editor. Contributors include Development Director Jerome Davies, Dean James MacMahon, and Dr. Jim Evans (Geology). Special thanks to Diane Bush (Herald Journal), Ronald Dorst, Wilford Hanson, Joe Li, Keith Mott, Dawn Stanford (IBM Archives), Nadene Steinhoff (Bear Mountain Graphics), Glen Thornley, Gene Underwood, and USU Photo Services for photographs or illustrations. Special thanks also to Associate Dean Kandy Baumgardner and Linda Keith for editorial assistance.

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