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Chemistry & Biochemistry Newsletter

Chemistry & Biochemistry

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Fall 2004

# Chemistry & Biochemistry Newsletter

Department of Chemistry & Biochemistry, South Dakota State University

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*South Dakota State University*

# Chemistry & Biochemistry

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## Message from the Department Head



The new academic year seems to be passing at a break-neck pace!

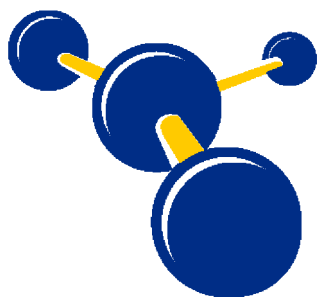
SDSU again experienced an enrollment increase; we are at just below 11,000 students. The department's new class of chemistry majors currently stands at 27 students (8 are in the ACS option) and we have 14 new Clinical Laboratory Science majors. We have 8 new graduate students which will bring the total to 25, 8 of which are on RAs.

A NSF REU proposal (Research Experiences for Undergraduates) submitted by Dr. Jihong Cole-Dai last fall was funded. To the best of our knowledge, this is the first REU grant awarded to SDSU! It brought 8 undergraduates to SDSU from all over the United States for 10-week research experiences that were supplemented with a weekly seminar series on various aspects of research and graduate school (plus some fun too!). Our hope is that this will also be a way to introduce our graduate programs to potential graduate students. The department owes a huge "thank you" to Dr. Cole-Dai for leading this effort.

This past spring we finally convinced the Board of Regents to reconsider the amount that it will cost to renovate new Shepard Hall and replace old Shepard Hall. We are hopeful that the result of this will be to increase the amount that they will provide for the project. As it currently stands, they would have provided \$11.8 million from the HEFF (Higher Education Facilities) Fund. We would have had to have raised \$8.2 million, an amount that the SDSU Foundation agreed was probably not realistic. They will reconsider the project's funding level at their December meeting and we need to have our planning document for consideration completed shortly. More about this next spring.

Please stay in touch.

Jim Rice



# chemistry & biochemistry

# CLS: Rewarding Field Looks for Increased Awareness

From the popular 1980s television series *Quincy* to the current hit *CSI*, crime scene investigators are a fascinating breed.

It's the high-tech field of forensic medicine and it's just one of several areas of concentration for a graduate of the clinical laboratory science program at SDSU.

According to Deb Pravecek, instructor of chemistry and biochemistry, the program isn't confined to careers at hospital laboratories.

"There are so many career options, so many different things that you can do with it," she says. "A person can work in a forensics laboratory, a bio-technology laboratory, teach, as well as do traditional medical laboratory testing. It's a very diverse field."

There are two types of programs in the country for students pursuing a baccalaureate degree as a clinical laboratory scientist. The two-plus-two program requires students to do two years of course work and two years of clinical rotations at hospitals.

SDSU's version is three-plus-one, which calls for three years of course work followed by a twelve-month internship at an accredited school of medical technology. Current internships are available at Sioux Valley Hospital and Rapid City Regional; Mercy Medical Center and St. Luke's Hospital in Sioux City; and Penrose Hospital in Colorado Springs.

Students receive forty credits for their internship, which completes their baccalaureate requirements. It's a grueling process that tests the mettle of most students, who pay the hospital for books and tuition. They put in forty hours every week, which consists of lab work and medically oriented lectures from doctors, medical students, and technologists who are trained in the clinical science field.

"It's course work plus work experience," Pravecek says. "It's not what most people think an internship is. They are paying to get the privilege to work. It's a very intense year."

## Challenging Courses

Students in the program are rich in chemistry and microbiology, prime requirements for the major. Since most are only a few classes short of a major in those studies, many students delay their internship for a year in order to complete degree work in both of the sciences.

Pravecek acknowledges that it takes "demanding course work" to fulfill the program, but it's all for a good reason, too, she says.

"It's very challenging and we want students who can get through those courses. Some students will drop out because they don't like handling blood samples or body fluids, and that is a big part of the job."

That's not the case for juniors Kim Schlimgen of Scotland and Katie Louwagie of Milroy, Minnesota. They are looking forward to the time when they can put on their lab uniforms for real.

"I didn't know about the program until my freshman year," says Schlimgen. "I knew I wanted to do something medically related and I enjoy being in the lab. I decided this major would be good



for me. I like it and I'm confident that I'm on the right track with what I want to do."

Louwagie had her mind made up before she arrived on campus following the advice of her aunt. "She does the same thing in Minneapolis that I'm going to school for," she says. "She told me all about it and said what a good career it is."

"I love working in a laboratory, examining samples under the microscope, and being in a position to solve problems. There's pressure with the job, but I like the idea of being relied on. I've always thought it would be interesting to get into forensics so maybe I'll try and get into that later in my career."

Once students are full-fledged clinical laboratory scientists they have the major responsibility of correctly interpreting lab results, trouble-shooting equipment, and assessing quality control issues like the proficiency testing of lab results.

"When a patient is getting a blood transfusion, he or she wants someone doing the cross-matching who knows what he or she is doing. If that person isn't 100 percent sure, the patient could die from a blood transfusion that is not compatible. Well trained and qualified people are necessary for this procedure," says Pravecek.

## Jobs High In Demand

Even though a clinical lab scientist has several career options to choose from, the program has suffered from a lack of name recognition through the years. Nationally, there is a critical shortage in the profession where demand has greatly exceeded supply.

There are currently thirty-six enrolled in the SDSU program, which is "a good number," according to Pravecek. However, she says when analyzing the numbers from a national perspective, there is a growing gap between available positions and people to fill them.

"The shortage is getting worse," says Pravecek, who notes that insufficient exposure is the underlying reason why more students aren't drawn to the profession.

## Grant to Aid Ethanol Byproduct Research

A million-dollar grant will help area scientists explore making Earth-friendly, degradable plastics from the byproduct left when corn is converted into ethanol.

The research grant is funded by a joint program of the U.S. Agriculture and Energy departments. The grant is split between South Dakota State University and Iowa State University.

“Everyone loves their mocha or a good cup of coffee, but what happens to that disposable cup?” said Lisa Richardson, executive director of the South Dakota Corn Utilization Council. “Basically, anything you can make from petroleum products you could make from degradable corn byproducts.”

South Dakota’s 10 ethanol plants produce about 1 million tons of distillers dried grains, or DDG, per year, said Richardson, who also heads the state’s Corn Growers Association.

A bushel of corn, which weighs 56 pounds, produces 17 pounds of DDG and 2.7 gallons of ethanol, according to the American Coalition for Ethanol. The nutrient-rich mash makes a good cattle feed, but scientists want explore other possible uses.

The research project is one of 19 selected for funding from among 400 applications. Ten SDSU students will be involve, said James Julson, professor of agricultural and biosystems engineering at the Brookings university.

“Development of value-added products from DDG is crucial to the future profitability of the ethanol industry,” Julson said. Earth-friendly plastics could be made through a process that produces biopolymer polyhydroxyalkonates, or PHA. Potential applications include manufacturing synthetic fibers and films, and possible nutritional or health benefits for humans, Julson said.

“What we’re trying to do is create some high-value revenue streams from ethanol production and boost South Dakota’s economy,” he said.

“Anything we can find in addition to selling ethanol to make it more profitable and energy-efficient, we will keep supporting,” said Ron Lamberty, acting executive director of the American Coalition for Ethanol, based in Sioux Falls.

“We want to get the most out that kernel of corn,” said Lamberty, who also is the coalition’s market development director. “It makes it more valuable.”

Richardson agrees.

“It’s a huge idea and a huge opportunity for SDSU and South Dakota corn producers,” she said.

*by Jay Kirschenmann*

Reprinted by permission of the Sioux Falls *Argus Leader*

## 2004 Chemistry and Biochemistry Students



1. Matt Miller, 2. David Cartrette, 3. Wendy Ruud, 4. Travis Clement, 5. Sarah Barfknecht, 6. Collin Eichler, 7. John Schwartz, 8. Jackie McClaren, 9. Bethany Melroe, 10. Stephanie McClure, 11. Erin Mercer, 12. Helene Grare, 13. Sharon Klein, 14. Magalie Tanguay, 15. Duane Matthees, 16. Jamie Fleiter, 17. Igor Sergeev, 18. Nancy Thiex, 19. Jay Shore, 20. Jihong Cole-Dai, 21. Jon Hansen, 22. Matt Small, 23. James Rice

## Studying World History in a Cold, Cold Place



Drew Budner and Dave Ferris, chemistry graduate students at SDSU, study samples of Antarctic ice. The pair will travel with professor Jihong Cole-Dai to Antarctica this December. *Collegian* photo by Jerry Smith.

You want to know how three SDSU chemists prepare for a trip to Antarctica?

They use a walk-in freezer.

“So we stand in there in our shorts in front of the fan and say, ‘Okay, this will be a nice day at the South Pole,’” said Dave Ferris, chemistry graduate student.

Ferris, along with graduate student, Drew Budner, and their instructor, Jihong Cole-Dai, will leave this Christmas to drill ice at the earth’s core in Antarctica.

“We’ll be in McMurdo [Antarctic’s largest city] over Christmas and in the South Pole on New Year’s,” Ferris said.

This three-person voyage is focused on studying the Earth’s atmosphere, with the help of funding from the National Science Foundation.

“My research is using snow and ice from the cold places of the world to try and understand the history of the atmosphere and the climate environment,” Cole-Dai said. “Obviously, you have to go either to Antarctica or the North Pole to get very good snow and ice samples for this type of work.”

While the North Pole would have provided results as well, Antarctica was best suited for this expedition.

“Because very little goes on there, it’s the most ideal place for this type of work,” Budner said.

The final result is data from the atmosphere.

“We’re taking out a piece of the core — about an eighth of the core — and we’re melting it on an instrument that we have,” Budner said. “Then what we’re looking for is the major volcanic events. You look at the sulfate, which is a chemical in the ice and you follow that signal. It’s got an annual signal. What we look for is a large spike in that and then we’re going to take that portion of the ice and concentrate it.”

Once the drilling is complete, the ice samples will be packaged in cardboard tubes, plastic bags and then in cardboard boxes. The samples will then be flown to McMurdo. After being loaded onto a ship, the ice samples will be taken by boat to New Zealand and then to California, where they will be stored in a truck and driven to Denver. Once in Denver, smaller samples of the core will be flown back to Jihong’s office in Shepard Hall.

Despite the 10,000 foot altitude, the 24-hour sun and the high between 20 and 30 degrees below zero, it is drilling the ice samples that is worrisome for Cole-Dai.

“I’m not worried about any physical risk,” Cole-Dai said. “I’m a little concerned about how our equipment will work in the cold. If there is any concern for me, it would be getting the work done.”

The reason for that worry stems from the fact that the machines and ice-drilling instruments will be kept outside this time around, as Cole-Dai, Budner and Ferris will be camping outside, rather than staying at the station.

“They’re building a new station, so there’s a lot of construction people down there and they asked us to camp,” Ferris said.

Differing from a regular camping trip, the chemists will sleep in translucent tents that can warm up to 30 or 40 degrees.

“There is a warming hut that we cook in, eat in, and socialize in,” Ferris said. “We sleep in the tents, though.”

Living in this unconventional lifestyle for three weeks, five layers of clothing, complete with long johns, parkas, gloves, glacier glasses and boots, will be their standard outfits.

Antarctica is in its six-month summer season during South Dakota’s winter, so the sun will shine 24/7, making it very easy to go snow blind.

“You have to wear glacier glasses whenever you’re outside,” Ferris said.

Cooking will provide a bit more leeway than the clothing options.

“They said you can go anywhere from mac ’n’ cheese up to steaks,” Ferris said. “It just depends how much work you want to put into it.”

by *Jesse Batson*

Reprinted by permission from *The Collegian*

# SDSU Research Finds Drugs React to Herbal Remedies

Herbal supplements might diminish the effects of some traditional medicines when the two are taken together, according to early research by a group at South Dakota State University's department of chemistry and biochemistry.

Under the direction of professor Fathi Halaweish, eight doctoral candidates and two undergraduate students work with herbal remedies in two stages. First, they break the product down to identify the active compounds; next, they test the product and the compounds to determine their effects on the body.

For the past five years, much of the group's research time has been devoted to the study of Echinacea, a root extract marketed as an immune-system booster. Halaweish said the group chose Echinacea because of its history of use by Native Americans, its status as the top-selling herbal supplement and the fact that little is known about its chemical makeup.

Eric Huntimer, a Ph.D. candidate in chemistry who has worked with Halaweish for four years, began studying Echinacea as an undergraduate student. In a study presented at national and regional meetings of the American Chemical Society, he said there were large variations in the level of antioxidant activity from one Echinacea root to the next.

As a graduate student, Huntimer found that Echinacea inhibits an enzyme called hyaluronidase — the same enzyme used to increase the effectiveness of anti-cancer medication.

"From this, we developed a hypothesis that Echinacea might interact with chemotherapy," Huntimer said. "So if patients are on chemotherapy and they're taking Echinacea, hypothetically speaking, it might be doing more harm than good. It does warrant further investigation," he added.



Dr. Fathi Halaweish

At any time, 10 to 15 research centers across the United States are studying Echinacea, Halaweish said. None studies the interactions between the supplement and chemotherapy, however.

Halaweish said studying the interactions is important because many people don't realize supplements can react with traditional medication. "We know from other studies that cancer patients take Echinacea along with other medications and don't even tell their doctors," Halaweish said.

Rick Holm, a doctor on internal medicine at the Brookings Medical Clinic, said it is difficult to determine how many of his patients are taking supplements. "They just think it's above and beyond my field, and they just take them," Holm said. "They will assume it's safe because it is not prescribed, even though some of these non-FDA-approved herbals cause problems."

Halaweish's students also have identified the active compounds in cucurbitaceous plants that might protect against liver failure, hepatitis and cancer. In collaboration with professor Chandradhar Dwivedi of SDSU's College of Pharmacy, the group at SDSU also has studied grape seed extract's possible interactions with medications to lower high blood pressure and cholesterol.

Halaweish said he is proud that SDSU can offer students training in the techniques and approaches used by pharmaceutical companies and drug discovery centers. "It is very rewarding that you can make your students curious about the science and then make it available," he said.

by John Hult

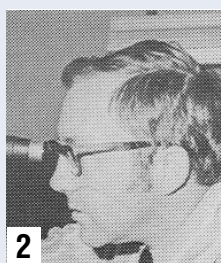
Reprinted by permission of the Sioux Falls *Argus Leader*.

## How's Your Memory?

Guess 8 out of 10 of the former Chemistry and Biochemistry Faculty and win a T-shirt. Please e-mail Natalie at (natalie.garry@sdstate.edu) or Stephanie (stephanie.jensen@sdstate.edu) with your answers.



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2



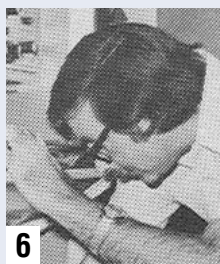
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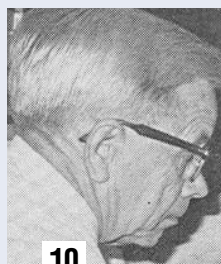
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8



9



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## Alumni News

### Scott Hallstrom

(Chemistry/Microbiology, B.S. 1984)

During my time at SDSU, Dr. Hecht was my advisor, and I worked with Dr. Matthees and others in Station Biochem, and with Drs. Pengra and Gauger in Microbiology.

After graduation I spent 5 1/2 years at the Midwest Research Institute in Kansas City, 3 1/2 years with Pace Laboratories in Minneapolis, another 1 1/2 years with MRI, then 3 years at ChemSyn Science Laboratories in Kansas City. I spent a short time at Kansas City Analytical Services before starting my own company, TerraChem, in 1997.

TerraChem is a domestic and international distributor of chemicals and lab supplies. Our primary product line includes reference standards (Canadian manufacturer) of environmental pollutants, many including an isotopic label such as Carbon-13 or deuterium. We also work with custom synthesis groups, and market radioisotope (mostly Carbon-14 or tritium) synthesis for toxicology studies. If you are interested in halogenated dibenzo-p-dioxins, dibenzofurans, biphenyls, diphenyl ethers, naphthalens, or the like, I'm the guy you want to talk to. . . .

Currently there is quite a bit of work being done related to brominated flame retardants. Wellington Laboratories, our manufacturer, just came out with a new product line of standard solutions for instrument calibration (HRGC/HRMS), sample recovery and quantitation, and QC monitoring of these analyte congener in environmental samples. It's exciting stuff!

During my early career days, I married my SDSU sweetheart (Jean Sanborn, Microbiology '84) and had two boys (now 14 and 12). We divorced a few years back; I remarried last year and added two more kids (14 and 17). Life is great and I love what I do. It's always fun to think fondly of my naïve, exciting, challenging, care free, growing-up days at SDSU.

*Each newsletter will contain information on alumni and their activities. If you would like to share something about yourself and what you are doing, please send us a note and we will include it in the next issue. You can FAX to us at (605) 688-6364, e-mail us at James.Rice@sdstate.edu, and mail is always welcome.*

## Dean's List – Spring 2004

Nicole Marie Becker	Randi Lynn Nielsen
Julie Anne Garry	Dana D. Ries
Ihab F. Halaweish	Jeremy Scott Seeman
Jon Dana Hansen	Cory Eugene Smith
Benjamin Arthur Heitz	Suzanne E. Somsen
Casey C. Jenks	Courtney Beth Wettlaufer
Patrick Henry Kappel	Whitney Marie Wettlaufer
Kelly Joanne Kyro	Clayton Joseph Wulf
Katie Ann Louwagie	Brandi Lynne Zerfoss

## Faculty and Staff News

### Faculty

#### Nancy Thiex

The Study Director of the Year Award is presented to Nancy Thiex for multiple topics under Feeds for the Methods Committee on Feeds, Fertilizers and Related Agricultural Topics. She was Study Director for the methods, "Crude Fat, Hexanes Extraction, in Feed, Cereal Grain, and Forage (Randall/Soxtec/Submersion Method)." Both methods were adopted First Action Official Methods<sup>SM</sup> in May 2003. Her significant efforts have contributed to the Association for several years. She is currently the General Referee for Feeds and serves as Chair of the Editorial Board. She was also named Study Director of the Year in 2001, received the Collaborative Study of the Year in 1997, and honored as an AOAC Fellow in 1998.

## Scholarship and Award Winners

*As of May 2004*

### Undergraduate University and College Recognition

*Briggs Scholars:* Nicole Becker, Sarah Cady (graduating), and Patrick Kappel (new)

*Dora Aarnes Swanson Scholarship in Arts and Sciences:* Ihab Halaweish

*Schultz-Werth Award for Undergraduate Creativity and Research:* Angela Carlson

### Departmental Awards

*CRC Press Chemistry Achievement Award:* Julie Garry

*Phi Lambda Upsilon Award for Achievement in Organic Chemistry:* Patrick Kappel

*Analytical Chemistry Award:* Jon Hansen

*Merck Index Award:* Timothy Hindbjorgen and Angela Carlson

*Hypercube Scholar:* Nathan Jacqua

### Departmental Scholarships

*Eugene Burr and Ella Burr Schultz Scholarships:*

Malissa Eng and Darci Nelson (continuing)

*Elmer and Roberta Johnson Leaders for Tomorrow:*

Sherif Halaweish and Andrew Millar (incoming majors),

Julie Garry and Matthew (continuing majors)

*Olive Burke Crary and Gerald D. Crary, Jr. Scholarship:*

Leslie Harer

*Herbert H. Hodgeson Award:* Randi Nielsen

*Webster-Klug Award:* Clayton Wulf

*Arthur W. Dobberstein Achievement Award:*

Courtney Wettlaufer and Whitney Wettlaufer

*Guss Memorial Award:* Ihab Halaweish

*Oscar and Elaine Olson Scholarship:* Benjamin Heitz and Holly Donnelly

*E. R. Binnewies Memorial Award:* Cassandra Herschman

*Drs. Raymond and Magnhild Greb Scholarship:* Holly Donnelly

*Alan A. Nord Award:* Darci Nelson

*Joseph and Coral Bonnemenn Scholarships in Medical Technology:* Mandy Siefert

### Graduate Students

*Philip and Eleanore Haskett Award:* Eric Huntimer

## New Grad Students



### Amanda Appel

I'm a new graduate student in the chemistry department working toward a M.S. in Chemistry. I come from Hendricks, MN, and I received a BA degree from the University of Minnesota, Morris in May 2003. I enjoy watching the Vikings football and spending time with my family.



### Julee Driver

I came to SDSU to pursue my Ph.D. in Chemistry after working for two years in research and development at a pharmaceutical company – DPT Laboratories in San Antonio, TX. I was part of an analytical group that worked on method development and method validation. The company specializes in gels, lotions, creams and foams and analyte extraction from those complex medias was usually the greatest challenge for any particular method. My interest lie in environmental analytical chemistry, especially the analysis of industrial pollutants or microbiological metabolites that have cytotoxic characteristics.



### Jessica Goert

I am originally from Sauk Centre, MN, a small farming community in the central part of the state. In 2003, I graduate from Carthage College in Kenosha, WI, with a B.A. in chemistry. I am currently working towards a master's degree in Environmental Chemistry and a doctorate in Chemical Education.



### Nathan Jaqua

I received my B.S. in Chemistry from SDSU in May 2004. I grew up in Sioux Falls, and lived in Minneapolis for about four years before returning to school. My interests include science, music, computers, movies, and collecting gadgets for either their utility or novelty. I play drums, guitar, and bass. I am in the Ph.D. program working in Dr. Halaweish's natural products chemistry.



### Christina Reecy

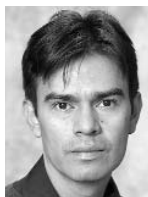
I grew up in eastern South Dakota and graduated from Leola High School. I received my undergraduate degree, B.S. in Chemistry, in May 2004 from SDSU. I am currently working towards a doctorate in Chemical Education and a master's in Analytical Chemistry.



### Patrick Youso

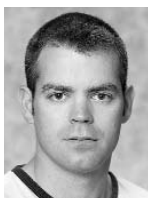
I grew up in International Falls, MN. I attended Bemidji State University in Bemidji, MN, and received a B.S. degree in Chemistry. I am working for Dr. Utecht. I enjoy the outdoors, hunting, fishing and reading novels.

## New Faculty



### Daniel Cervantes Laurean

Daniel Cervantes Laurean is originally from Mexico. He received his Ph.D. in Biochemistry from the University of North Texas in 1992. Before coming to SDSU he has been a research associate at the University of Kentucky, an Intramural Research Training Assistantship Fellow at the NIH in Bethesda, MD, and an Assistant Research Scientist at the University of Arizona. He likes sports in general and soccer in particular having played it most of his life. He and his wife say they enjoy Brookings' small town atmosphere.



### Brian Logue

Brian Logue is from Wakonda, SD, and attended SDSU where he received a B.S. degree in Chemistry while on an ROTC scholarship. He was commissioned into the U.S. Army, received his Ph.D. in Analytical/Environmental Chemistry from Oregon State, and then spent four years on active duty including being deployed to Qatar in Operation Enduring Freedom. He directed a research group for the U.S. Army Medical Research Institute of Chemical Defense as a bioanalytical chemist. His research centers on the development of chemical and biological sensors for environmental-analytical and bioanalytical applications. His interests also include integrating nanoscale technology, where practical, into these analytical sensors. Brian and his wife, Maureen, have two daughters, Tayler (6) and Morgan (4).



### Provi Mayo

Provi M. Mayo's interests fall under the chemical education heading. She is interested in developing better examples to explain abstract and difficult concepts in textbooks and manuals and how they relate to culture and language. She's also interested in what effects models (computerized or molecular) used in general, organic, and inorganic chemistry have on the students' learning. Provi was born in Puerto Rico and she earned a B.S. in Chemistry (minor in literature) from the University of Puerto Rico. She earned an M.S. in Science Education and a Ph.D. in Chemical Education from Purdue. Her hobbies include reading (fiction, historical fiction, classics), movies, body surfing, and playing with her four-year-old son.



### Jodi Niemoth-Anderson

Jodi Niemoth-Anderson earned a Ph.D. from the University of Nebraska-Lincoln in Inorganic Chemistry. After two years in Massachusetts completing post-doctoral research in Bioinorganic Chemistry, she returned to Lincoln to start her family and to teach at both UNL and at Nebraska Wesleyan University. Jodi accepted a full-time teaching position at SDSU this year where she is teaching internet CHEM 106, CHEM 750 (inorganic), and the undergrad inorganic lab along with some 112 labs. Jodi and her husband Scott (a design architect in Sioux Falls) have two rambunctious boys: Jaden, 4, and Derek, 18 months, two dogs and a fish. Family hobbies include boating, camping, wrestling (folkstyle, not pro!), and football. The entire family is greatly enjoying the small town life in South Dakota so far.



## Exciting New Era for Development



Greetings! My name is Patty Bacon and I am the new Director of Development for the College of Arts and Science.

The SDSU Foundation has launched an exciting new era by hiring development directors to work specifically with a college at SDSU. The development directors will collaborate with their assigned college to identify project needs and fund raising opportunities. Our job will include matching alumni and friends, who are interested in investing in SDSU, with appropriate projects and scholarship opportunities.

The focus for the new development directors at the SDSU Foundation is to build partnerships to enhance educational excellence. My role is to strengthen relationships between alumni, friends, and the 15 diverse departments of the College of Arts and Science.

I received my bachelor's and master's degrees in Communication Studies and Theatre from SDSU. My two children, Jeramy and Melissa Boik, attended SDSU and Jeramy graduated from here in 1998. My husband, Richard Larson, is an analytical chemist at Station Biochem and an SDSU alum. We live on a beautiful acreage west of Volga, SD.

My passion for this University and my belief in the significance of a liberal arts education are helpful to my position as I re-connect our alums with their department, their college and their love of SDSU.

It is more important than ever for our students to receive an education that enables them to be competitive in the marketplace. This University has always strived for excellence, and we must meet the challenges of providing those opportunities for our students.

I want to thank all of you who have given generously to this department and to SDSU's College of Arts and Science. I look forward to working with the department and building on the great relationship we have with our alumni and friends, who strengthen the College in accomplishing its mission of education, research, and service.

### Foundation Donors

*from January 2003-October 2004*

Keith A. Bartels	Lawrence Novotny
Joel W. Beckmann	Elaine M. Olson
Jyh-Fa Kuo	Paul E. Palmer
John Yuchu Lee	Stephanie L. Russo
Donald E. McRoberts	Irwin and Carol J. Scott
Leslie P. Miller	Terri and James Van Erem
Joseph and Karen Morse	Marvin L. and Anne Withrow

### Chemistry Department Identifies Investment Opportunities

During her first few months at the Foundation, Patty Bacon spent considerable time visiting departments and discussing development needs throughout the college. Dean Jerry Jorgensen and Chemistry Department Head Jim Rice have determined that graduate research fellowships, summer research fellowships, and pre-research opportunities funds are the highest priority at this time.

Your investment in these projects will enable the Chemistry Department to solidify the foundation of lifelong careers in critical fields. This gift will have significant impact on our students' lives and on the world.

If you are interested in contributing to these projects, please contact Patty Bacon at 888-747-7378 or [patty.bacon@sdsu-foundation.org](mailto:patty.bacon@sdsu-foundation.org).

### You Can Go Anywhere From Here



Noelle Umback (B.S., ACS Chemistry, 1992) is one of the graduates featured in SDSU's series of "You Can Go Anywhere From Here!"® television ads. The ads feature SDSU grads whose training has led them to interesting careers all over the world. Noelle works for the Chief Medical Examiner of New York City performing DNA tests on evidence from crimes with biological evidence and she testifies as an expert witness on DNA results.