

SPECTRUM

SCIENCE ADVISING CENTER



Margo Moore, Director of the Science Advising Center



Daphne Ingram advising a student

Exciting things have been going on in the Science Advising Center and the reason is that more and more science students are utilizing the Advising Center each year. The support the staff in the Advising Center continuously receives from each department is a major part of why it has become very successful. Without this support, the Advising Center cannot function.

A recent change within the Advising Center was the addition of two Academic Advisors to assist with the advising load. Leanne Rios was hired to advise Biology students. Ms. Rios is part of the Science Advising Center, but her office is within the Department of Biology. Ms. Rios works closely with the departmental faculty in assisting the students with course selection, pre-requisite requirements, overrides, etc. Daphne Ingram was hired to assist with advising within the Advising Center. Ms. Ingram also coordinates the College of Science Scholarship applications and has streamlined the process for next year.

The Science Academic Advisors are all members of the National Academic Advising Association (NACADA) and each year attend the national conference. At this conference, the Academic and Faculty Advisors are given opportunities to improve their advising skills as they gather new ideas and approaches to offering advising services at Texas State.

The Academic Advising Council continues to meet on a regular basis to discuss many items that include legislative updates and regulations, curriculum changes, policies and procedures, etc. The council continues to keep open communications with other offices on campus that affect the students and advising services. Because of this communication, a recent change made was to orientation. The Academic Advisors from each center will take turns speaking at the general session for the new freshman orientation. The goal is to make sure that the students are informed about the types of advising services that are offered on campus.

Another project of the Advising Council is the assessment of advising services across campus. This is being done in collaboration with Dr. Bob Smallwood in the Assessment Office. This assessment is going to become an ongoing process since the University is charging each student a \$40/20 advising fee for each semester of enrollment. This fee is paying for every College Advising Center, the staffing, office supplies, graduation, and other advising costs. The budget given to each center is based on a formula and is partly tied to enrollment by major.

As the College of Science continues to grow in enrollment and add more programs in the engineering fields, advising services will become a major factor in the retention of students. The staff in the Advising Center wants to continue the great working relationship between the center and the departments. This way, all of us can continue to provide quality advising for our science students.

TRAINING MODULE BEING DEVELOPED FOR MIDDLE SCHOOL SCIENCE-GRADES 6 AND 7 INSERVICE SCIENCE TEACHERS

Dr. Sandra West, Biology Department and Violetta Lien, Curriculum and Instruction Department received a highly competitive \$300,000 grant in January 2003 from the Texas Higher Education Coordinating Board to develop a training module for Middle School Science-Grades 6 and 7 inservice science teachers. Texas State University is the only university in the Texas State System to receive one of the seven grants available. The module will be used state-wide in July to train teachers who do not meet the "Highly Qualified" criteria. Districts must meet the No Child Left Behind (NCLB) requirements by 2005 by having every child taught by a "Highly Qualified" teacher. Texas will receive the federal NCLB funds if all teachers are "Highly Qualified."



The grant is a collaboration among the Biology, Physics, and Chemistry Departments, Curriculum and Instruction Department and San Marcos CISD. Faculty participating in the grant are Dr. Marianne Reese, Curriculum and Instruction Chair; Dr. Heather Galloway, Dr. Dave Donnelly, and Russell Doescher, Physics; Dr. Deborah Koeck, Chemistry; Dr. Carter Keairns, Geology/Biology; and Dr. Dana Garcia, Biology. Graduate students Cindy Nyland, Katy Furtwangler, Brandy Bagnall, Marianne Nicholson, Kristine Elliott, and John Wamsley are also members of the grant team. Texas State University alumni Emil Lazzeri, Amanda Stephenson and Nancy Nelson serve as consultants.

ANOTHER GIFT FROM THE DURRENBERGER ESTATE: THE WELDON DURRENBERGER DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY INSTRUMENTATION

Continual up grades, repairs and the purchase of innovative new equipment are on-going needs of the Chemistry and Biochemistry laboratories. Thanks to the generosity of the Weldon Durrenberger family, an endowment has been created through the sale of a gift of stock. The proceeds will be used to up-grade equipment such as the electrospray mass spectrometer and the x-ray diffractometer. Both are used extensively for analysis of new and unique materials prepared by several faculty researchers. We are grateful to the Weldon Durrenberger family for its generosity and its continued support of the College of Science at Texas State University.

YOU'RE INVITED TO SUPPORT THE COLLEGE OF SCIENCE

Consider a donation to support the:

- ◇ Mariel Muir Science Scholarship
- ◇ Stan Israel Memorial Fund
- ◇ Sally Karnau Biology Scholarship
- ◇ Key-Parks Scholarship in Chemistry and Biochemistry
- ◇ Don and Helen Cude Computer Science Scholarship
- ◇ Tulloch Math Scholarship
- ◇ Robert and Fran Anderson Scholarship in Physics
- ◇ William L. Deck Scholarship in Technology

Send your check made payable to the Texas State Development Foundation to:

Dr. Kitty-Sue Schlink, Development Officer
601 University Drive
Texas State University-San Marcos
San Marcos, TX 78666

Be sure to indicate with a note along with your check that your contribution is for the College of Science; also please specify which fund or department you'd like to support. For questions contact Dr. Schlink at 512-245-1722 or kitty-sue@txstate.edu.

FEATURING FACULTY

Biology

Dr. Michael Forstner was awarded tenure, effective September 1, 2004. **Dr. Dana Garcia** was promoted to the rank of Full Professor, effective September 1, 2004. **Dr. Francis Horne** presented his research entitled "Carbonic Anhydrase in Alligator Egg Shells" in the Division of Comparative Physiology and Biochemistry at the Society of Integrated and Comparative Biology National Meetings in New Orleans in January, 2004. **Dr. Robert McLean** was promoted to the rank of Full Professor, effective September 1, 2004.

Chemistry

Dr. Chad Booth gave an invited talk at Louisiana State University on March 19, 2004 entitled "Can Copolyesters Replace Bisphenol A Polycarbonate?" In March, 2004 he presented a paper at the Spring 2004 National Meeting of the American Chemical Society in Anaheim, California. An article of his entitled "Aliphatic-Aromatic Copolyesters Derived From 2,2,3,4-Tetramethyl-1,3-cyclobutanediol," will be published in the July 14, 2004 Journal of Polymer Science; Part A: Polymer Chemistry. **Dr. Patrick Cassidy** presented a seminar at UT-PanAm on April 15, 2004 by invitation from a former visiting faculty, Dr. Javier Macossay and under the sponsorship of a Texas State alumnus, Dr. John Villareal, who is now Chair of the Department of Chemistry at UT-PanAm. In conjunction with Dr. Cletus Wilkins, an adjunct research professor at Texas State, a grant was received from NASA in the amount of \$113,000 to continue research on high-performance polymers for space applications. This grant represents the 20th year of continued funding from NASA-Langley Research Center for polymer research at Texas State. Dr. Cassidy is the co-organizer of *Fluoropolymer 2004*, the third in this symposium series scheduled for October, 2004 in Savannah, Georgia. Presentations were made for the Texas State Environmental Risk Management Program in Steamboat Springs, Colorado in March and Palm Springs in July, 2004. A workshop was organized and held at Texas State on March 16 for school districts and universities to address the issues of mold incursion in educational facilities. The Intellectual Property Colloquium was developed by Dr. Cassidy under the auspices of the Institute for Environmental and Industrial Science and held at Texas State in November, 2003. This consisted of a series of presentations by patent attorneys, IP marketers and attorneys from Texas State and the Texas State University System.

Computer Science

Dr. Moonis, Ali (chairman of Computer Science) chaired the 17th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems in Ottawa, Canada May 17-21, 2004.

Dr. Xiao Chen presented a paper titled "Maximum Necessary Hop Count for Packet Routing in MANET" at the International Workshop on Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless and Peer-to-Peer Networks. The paper will be published in book *Theoretical and Algorithmic Aspects of Sensor, Ad Hoc Wireless and Peer-to-Peer Networks*, CRC Press, later 2004. She also presented a paper titled "Reducing Connected Dominating Set Size with Multipoint Relays in Ad Hoc Wireless Networks" at the 7th International Symposium on Parallel Architectures, Algorithms & Networks (I-SPAN) held in Hong Kong, May 2004.

Mathematics

Drs. Jian Shen was promoted to the rank of Associate Professor, effective September 1, 2004. **Dr. Selina Vasquez** received tenure and was promoted to the rank of Associate Professor as of September 1, 2004.

Center for Coatings and Bio-Based Technology Institute for Environmental and Industrial Sciences

Dr. John L. Massingill, Jr. became Chair of the Industrial Oil Products Division of the American Oil Chemists Society in May, 2004. He is co-PI with Fred Budde (PI) on a USDA SBIR Phase I award to Chemical Business Development Consulting, Inc. This is an 8 month project funded in the amount of \$80,000 (\$26,600 to Texas State) to synthesize and test novel primary plasticizers for PVC plastic. Dr. Massingill was selected by the USDA Agricultural Research Service Office of Scientific Quality Review to organize and chair an Oil and Fat Processing, Quality, and Utilization Panel to peer review 13 ARS internal research programs. He attended American Chemical Society national council meeting in March 2004 in Anaheim, CA. He also attended the ACS Congressional Summit in Washington, D.C. April 19-21 to visit U.S. representatives and senators.

ALUMNI ANNOUNCEMENTS

1974

Mark Kozielski (BS Computer Science) is the Director of Information Technology with the San Antonio Police Department.

1975

Jane Hughson (BS Computer Science) is the Assistant Director of Computing Support Services at Texas State University

1982

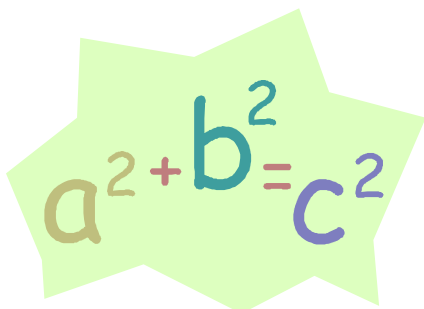
Debra Farrior (Burton) (BS Computer Science) is currently working as an Assistant Professor of Computer Science at the University of Houston.

1985

David Wegner (BS Computer Science) is now working for Ericsson, Inc. as the Senior Product Manager, Wireless Internet Applications

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WHAT IS YOUR FORMULA FOR ESTATE PLANNING?



“I wish I could do more”

Those are the words that often accompany many of the gifts we receive. The truth is that there are dozens of ways for friends to “do more” for our future ... if gifts are *carefully planned*.

Gift planning combines financial planning, estate planning and tax planning techniques that enable our friends to make gifts of sometimes surprising significance.

We all need to make plans to distribute our assets during and after our lifetimes. If you don't make your own estate plan, the state will do it for you. Of course, you'll want to include provisions for family, friends and special others. But many people choose to include charitable organizations they've supported over the years, like Texas State University.

The need for planning becomes clear when people consider the basic questions involved in making an important gift: *What* should I give, *how* should I give, *when* should I give and are there *special purposes* my gift should accomplish? For more information on including the College of Science at Texas State Univer-

SPOTLIGHT ON STUDENTS

Hiromi Hosako (B.S. Biochemistry, Spring 2004) was awarded the Outstanding Biochemistry Senior Award by the Department of Chemistry and Biochemistry.

Kim Banks (BS. Mathematics, Spring 2004), a long-time member of the Houston-Louis Stokes Alliance for Minority Participation scholarship program here on campus, was honored with the Sallie Baretta Outstanding Senior Award.

FROM THE INTERIM DEAN



In order to thrive in the twenty-first century, the State of Texas plans to develop a technological, scientific, information-based workforce. It is thought that many of the jobs that our students will hold even in the next several years don't even exist yet. Thus a major component of education is not just learning a particular set of facts and techniques, but also learning how we learn, because we will be creating our jobs as we go.

What can we as citizens do to be a factor in the development of this workforce? Perhaps the most long-lasting contribution we can make is to assist in the growth of future scientists.

By the year 2015, the Texas Higher Education Coordinating Board predicts an increase of 50%--or 500,000--in the number of students in Texas colleges and universities compared to the year 2000. Where are these students now? Counting backward, and assuming 4 to 6 years are spent in obtaining the Bachelor's Degree, those students are currently somewhere between grades 3 and 8, in Elementary or Middle School.

This is one reason that there is so much of an emphasis on the teaching of Science and Mathematics in middle school right now. In order to graduate in the minimum time and to avoid remedial classes, students in the class of 2015 entering technology-oriented careers will have to be prepared to take their math and science requirements at the time they start college. And to take their math and science requirements when they start college, they must be ready to take high school math and science when they start high school.

Many of the concepts in science classes depend on what is learned in mathematics classes. To take math in high school that is sufficiently advanced, students must be ready to take algebra in the ninth grade or earlier. In their book *Radical Equations: Civil Rights from Mississippi to the Algebra Project*, Robert Moses and Charles Cobb state that, just as literacy was the minimum requirement for citizenship during the Civil Rights era of the 60's, so algebra will be the minimum requirement for citizenship during the twenty-first century.

For readers who have pursued careers in science: If you have the opportunity, encourage a youngster who's between 8 and 12 to pursue a science career. Let them know what you enjoy about working in science—take them to work with you, if possible. And let them know what they need to do to get where you are as a working scientist.

Pose science-based puzzles to excite their imaginations. Show them that knowledge can be fun. Demonstrate to your children how you tackle new problems, and how your scientific education shapes your approach to the world. We educate our children by letting them watch us think. Ultimately, our survival will depend on the next generation. Let's make sure they have the tools to succeed in a technological world.

A CHAMPION OF DIVERSITY IS RECOGNIZED

You will remember that we were shocked and deeply saddened last fall with the sudden death of Dr. Stanley Israel, former dean of the College of Science at Texas State. Stan was chair of the American Chemical Society (ACS) Board Task Force on Minorities in Academe, and also served as a consultant to the Minorities in Academe Implementation Project. He was an ardent champion of diversity. At the November 2003 meeting of the Minorities in Academe Implementation Project Team meeting, the team recommended the development of the Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences. The award would recognize individuals and/or institutions that advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region.

Nominees for this award may come from an professional setting: academia, industry, government or other independent facility. ACS local sections and divisions are also eligible for nomination. The awardees will have increased the participation and leadership of underrepresented minorities, persons with disabilities, and women through mentoring, hiring, promotion and/or other activities that lead to greater inclusiveness within the chemical sciences.

At the December meeting of the ACS Board of Directors, the board endorsed the award and agreed to fund it for 2004 and 2005. Canvassing will begin in 2004 and the awards will be presented at the regional meetings in 2005. The first award will be presented to Stan (posthumously) with the receipt by his wife Sonja at the Anaheim meeting.

Stan's interest in diversity and specifically increasing minority participation in academe have led to several new initiatives through the Minorities in Academe Implementation Team. Stan will be missed, however, the legacy of his contribution to the promotion of these important issues of inclusiveness will continue through the recognition of individuals and institutions that will be honored with this award.



ALUMNI ANNOUNCEMENTS

(continued from page 4)

1990

Rodney Rohde (BS Microbiology, and 1992 MS Biology), currently a faculty member in the Clinical Laboratory Science Department at Texas State, and Bonny Mayes have published an article entitled "Bat Rabies, Texas, 1996-2000," in the internationally acclaimed journal *Emerging Infectious Diseases* (www.cdc.gov/EID) May 2004 issue. Mr. Rohde has also been appointed to the ACC Biotechnology Advisory Board. He recently presented a paper on diagnostic virology at the Texas Association of Clinical Laboratory Science State Conference on April 1, 2004 in Houston, and received a TDH contract to perform a MRSA prevalence study in a Texas correctional facility this summer.

1991

Jennifer Irvin (BS Chemistry '91 and MS Chemistry '93, Texas State; Ph.D. Organic Chemistry Univ. Florida '98) is currently employed as a civilian research chemist in the Chemistry and Materials Division at the U. S. Navy's Naval Air Warfare Center Weapons Division (NAWC WD) located in China Lake, CA. Her primary field of research is in new polymeric materials for lithium ion batteries and fuel cells. She was selected as one of six recipients from the United States to participate in the "US/UK Department of Defense Young Scientist Exchange Program" and is one of two scientists representing the United States Navy. The recipients are selected by the Under Secretary of Defense from recommendations of each branch of the Department of Defense (DoD). The program annually selects outstanding scientists from the Navy, Army and Air Force (two from each) and six members of the United Kingdom's Ministry of Defense civilian researchers. As a group, the members toured of the US DoD research facilities for two weeks in May 2004 and will tour of United Kingdom's Ministry of Defense research facilities for two weeks in September 2004.

CAGLE'S MAP TURTLE REDISCOVERED IN THE BLANCO RIVER

Francis L. Rose and Thomas R. Simpson

Cagle's map turtle is a small riverine turtle that inhabits the Guadalupe and San Antonio rivers. There are historical records from the San Marcos River but after several searches, researchers came to believe that this species was extirpated from the San Marcos and Blanco rivers. The Texas Parks and Wildlife Department currently list the species as Threatened, and efforts are underway to have it listed as Endangered by the U.S. Fish and Wildlife agency.

During the summer of 2003, two specimens were captured in the Blanco River approximately half-way between San Marcos and Wimberley. As these two specimens were collected within several minutes of each other, we anticipate that the population there is significant.

We anticipate a three-pronged approach to study the Blanco River population. The first is a survey conducted over a year to ascertain distribution and approximate numbers. Captured animals will be marked conventionally and released after pertinent data and blood samples are taken. If appropriate, individuals will be fitted later with telemeters that will allow us to monitor their movements, especially after large flood pulses.

DNA analysis of the obtained blood will be compared to samples already obtained from animals inhabiting the Guadalupe River. We expect a high degree of relatedness. Future studies stimulated from this research will allow us to more accurately formulate continued studies.

Turtles hatched in the laboratory and maintained for a year have a greatly enhanced survival potential over those hatching in the wild. In addition, nest predation by raccoons, foxes, and dogs is high because this species tends to nest on sandy beaches, which are few on the Blanco River. We propose a longer-term study that will allow us to propagate the species and release year-old animals to the wild.

RECOLLECTIONS OF MY DAYS AS CHEMISTRY STOREROOM KEEPER

Robert C. Fain, Ph.D.

I entered Texas State University as a chemistry major in the Fall of 1955, when it was still Southwest Texas State Teachers College. Toward the end of my freshman year, I applied for and accepted the job as storeroom keeper for the following year. The pay of \$75 a month was enough to pay my room and board with a little left over and it allowed me to stay in school.

The experience was truly a significant part of my education. I was fortunate to have a good mentor, an advanced Chemistry student by the name of James Duey.

In those days there was no central system for distributing distilled water. It was kept in large carboys and transported from a homemade still on a dolly. It took two people to lift a filled carboy to the tables in the labs where they were kept. When the need arose, I would start the still early in the day and come back later to turn it off. Normally I would have more carboys hooked up than the still could fill in a day so I didn't have to worry about an overflow.

On one particular Friday morning I set the system up with the intention of turning it off later that day and then, apparently, forgot about it. Early Saturday morning I headed up to the department to get chemicals out for the next week. As I was going up the stairs the thought "STILL" popped into my mind. I ran up the last stairs, headed to the still, and found the quant lab afloat in distilled water. I took my shoes and socks off, rolled up my pants legs, and got to work. I had several inverted six inch funnels hooked up to aspirators pulling water into four-liter bottles and was busy with a mop. I remember very clearly thinking how lucky I was to be the only one in the department that early on a Saturday and that maybe I could get it cleaned up before anybody knew about it. About that time I heard the door to the lab open and there stood Dr. C. L. Key, the department head, and Dr. J. G. Flowers, president of the University. I said good morning, Dr. Key said good morning, and then he quickly closed the door and ushered the president down the hall. He was clearly as surprised as I was. I have no idea what he might have said to Dr. Flowers in the way of explanation. Dr. Key never asked me what I was doing and can only assume he didn't want to know.

Essentially all the lab experiments were done on the macro scale, especially in the organic lab. As a result, there were any number of bottles of "Student Prep" chemicals in the storeroom that I had no idea what to do with. As an example, there were two or three bottles of student prep aspirin that had been made in the organic lab over the years. Most of it was discolored because of its lack of purity. I decided to "clean that stuff up." I re-crystallized it and when I collected it by filtration I had a lot of product, probably a pound or two. I decided to dry it in the drying oven in the quant lab overnight. When I went to get it the next morning, I was surprised to find long, thin, beautiful crystals extending from the crack around the door of the oven. When I opened the door there was nothing inside! All of it was gone! Talk about a problem evaporating!

Dr. Winfred Harding had a sense of humor that would often play on the meaning of words. On occasion he would come by and ask for an evaporating dish, a watch glass (am I supposed to watch it, or does it watch me?), a stirring rod, etc. You get the picture. After he asked for a bottle of fire polish one day I decided to see what I could do. I made a gas that spontaneously combusts on contact with air and collected a bottle of it by displacement of water, put a rubber stopper on it and a label that said "Fire Polish." The next time he came down the hall I told him that I had his fire polish for him. He took the bottle and looked at it, then at me, then started to remove the stopper. I couldn't see exactly what happened, but he looked startled and I thought I saw a little puff of smoke. Then he looked at me, looked at the bottle, and decided not to open it all the way. I'm not sure he fully appreciated the humor of my little joke.

There are many more memories that I could relate. If all of this sounds sophomoric, please remember that at the time I was a sophomore! I can honestly say that both the chemistry I learned in that job and the experience that I had have certainly served me well over the years.

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Dr. Gregory B. Passty—Interim Dean, College of Science
Barbara Pascoe--Newsletter Editor

ALUMNI—LET US HEAR FROM YOU

Please keep us informed on what you are doing and offer suggestions for future issues!

Current Name: _____ Name when at TXState: _____

Address: _____

Home phone number: () _____ Business phone: () _____

Is spouse an Alumnus? Y N If so, name when at TXState: _____

Year of your graduation: _____ Type of Degree earned at Texas State: _____

Your current business and position: _____

Professional news of interest to share with classmates: _____

Comments: _____

Address Referral: Do you know of any alumni who are not on our mailing list but should be? Is one of your classmates living in another state or abroad? Help them keep in touch by sending us their information:

Name at TXState: _____ Address: _____

Please cut out and mail to Barbara Pascoe, College of Science, Texas State University, 601 University Drive, San Marcos, TX 78666-4616. Thank you!