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Department of Geological Sciences

The University of Texas at Austin

NEWSLETTER

1993

Geology Foundation

40th

Anniversary
ISSUE

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The University of Texas at Austin
1993 Geological Sciences Newsletter
Volume 43

T • A • B • L • E
of
C O N T E N T S

Letter from the Chairman

Department News, p. 2-14

Research Report, p. 15-32

 Research Interests & Publications, p. 15

Bureau of Economic Geology, p. 33

Institute for Geophysics, p. 34

Vertebrate Paleontology Lab, p. 35

Walter Geology Library, p. 36

Student Activities, p. 37- 56

 Degrees, p. 49-51

Geology Foundation News, p. 57-68

Memorials, p. 69-70

Alumni News, p. 71-103

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Department of Geological Sciences

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Letter from the Chairman

THE 1992-93 ACADEMIC YEAR marks two significant anniversaries for the Department of Geological Sciences. The first is the 40th year of the Geology Foundation, established by the University of Texas Board of Regents, in order to "foster and promote the growth, progress, and development of geological education, research, and graduate study at the University of Texas." The second is the 26th anniversary of the dedication of the Geology Building. The dedication ceremony included distinguished speakers, among them, Secretary of the Interior Stuart Udall. You will find photographs of the ceremony and building construction activities elsewhere in the *Newsletter*.

The arrival of the two anniversaries is a good reminder that important benefits of investments like the Geology Foundation and the Geology Building are often not realized for many years. In this context, I would like to consider the recent (March 1993) *US News and World Report* ranking of geology graduate schools, in which our department ranked in the top ten, tied for eighth with Johns Hopkins, Cornell, and the University of California at Los Angeles. Since the last national ranking in the Jones-Lindsey Report of 1982, the Department has moved from 14th overall up to a four way tie for eighth, from sixth among public institutions to a three way tie for third, while on a regional basis it has remained clearly the best.

What does it take to make the top ten, and to move up in the ranks as we have done? In my opinion, there are two elements: *excellence* in a variety of areas, and *prominence* in national and international communities. In the business world these elements would be termed superior products and good marketing. The center of our excellent program is the faculty, who direct the resources of students, staff, and funds. Without question, however, strength to excel at critical times has come from the resources of the Geology Foundation, providing enrichment to specific areas of the curriculum, seed money for new ideas, support for students, analytical facilities, computers, and other equipment; and of course, support for the Geology Library. Our prominence has similarly been strengthened by the support of alumni and friends focused through the Geology Foundation. Obviously, prominence comes from publication and presentation of scientific papers through the AAPG, SEG, AGU, GSA and other national societies, often with Foundation support, but there are other elements. An important one is the presentation of the Department to alumni, prospective students, and the academic community in the over 4,000 copies of this *Newsletter*, an expense covered entirely by private donations to the Foundation. Subtle but impor-

tant contributions to prominence come from the positive image spread by our students after graduation, and carried home by the many distinguished visiting lecturers sponsored by the Geology Foundation. Thus, while the faculty can take credit for a strong national ranking, thanks must also go to those who 40 years ago had the vision to establish the Geology Foundation, and to the many who have invested support in the Department in the intervening years.

Having paid tribute to past investments in the Department, I would like to make note of some being made today. The development of the hydrogeology program certainly deserves note. The subject is inter-woven with traditional geological disciplines, covering the storage, interaction, and movement of fluids through the earth, like petroleum geology, but involving different densities, viscosities, chemistry, and geologic settings. We have proposed a new undergraduate major to provide a focus in this area, and are expecting approval during the fall semester. Our faculty are approaching hydrogeology from a variety of directions, including numerical modelling of fluid flow, experimental studies in the field and laboratory, bacterial experiments, isotopic studies, and field mapping. I recommend that you read the research reports of professors Sharp, Bennett, Land, and Banner to get an overview of some of these activities. To further our growth in this area, a new faculty member, Jay Famiglietti, will join us next year. Jay has an undergraduate degree in geology from Brown University, and a PhD in civil engineering from Princeton. He will arrive after a year at the National Center for Atmospheric Research where he has been investigating the connection of global scale numerical climate models to the small scale processes that control water transport at the surface of the Earth.

Another important investment is our commitment to the use of computers in education and research. We have made reasonably good progress in this area, and are ahead of many departments, in part because we have had the enriching resources of the Geology Foundation. An acceleration of this activity should result from the action taken this summer, when the Board of Regents voted to assess each student six dollars per credit hour to fund the use of computers in their education. While adding to student expenses appears to be unfortunate, the funds go to this directed purpose and will not be mingled with the general funds produced by tuition. Consequently, significant resources should become available to the Department to support this effort. These new resources will help us build upon the work described in the research report of Professor Tim Rowe, and illustrated in our cover photographs.

— Clark R. Wilson

FACULTY & STAFF

FACULTY & RESEARCH STAFF

Milo M. Backus, Professor and Shell Oil Companies Foundation Distinguished Chair in Geophysics
Jay L. Banner, Assistant Professor and Dave P. Carlton Centennial Teaching Fellow in Geology
Daniel S. Barker, Fred M. Bullard Professor in Geological Sciences and Third Mr. and Mrs. Charles E. Yager Professor in Geology
Virgil E. Barnes, Professor Emeritus, Bureau of Economic Geology
Phillip C. Bennett, Assistant Professor and John A. and Katherine G. Jackson Centennial Teaching Fellow
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Gary Kocurek, Professor and Getty Oil Company Centennial Teaching Fellow
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J. Richard Kyle, Professor and Getty Oil Company Centennial Teaching Fellow
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Lynton S. Land, Professor and Edwin Allday Centennial Chair in Subsurface Geology
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Leon E. Long, Second Mr. and Mrs. Charles E. Yager Professor of Geology
Ernest L. Lundelius Jr., John A. Wilson Professor in Vertebrate Paleontology, Getty Oil Company Centennial Teaching Fellow and Director of the Vertebrate Paleontology Laboratory
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John C. Maxwell, William Stamps Farish Chair Emeritus
Earle F. McBride, Professor and J. Nalle Gregory Chair in Sedimentary Geology
Fred W. McDowell, Research Scientist
Sharon Mosher, Wilton E. Scott Professor
William R. Muehlberger, Peter T. Flawn Centennial Chair Emeritus
Yosio Nakamura, Professor and Senior Research Scientist, Institute for Geophysics
Timothy B. Rowe, Associate Professor and William T. Stokes Centennial Teaching Fellow
Amos Salvador, Morgan J. Davis Centennial Professor Emeritus
John M. Sharp Jr., Gulf Oil Foundation Centennial Professor
Douglas Smith, Albert W. and Alice M. Weeks Centennial Professor
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John A. Wilson, Professor Emeritus
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Donna Precht - Student Development Specialist II
John Ready - Administrative Assistant
Scott Schroeder - Microcomputer Applications Specialist
Bill Woods - Executive Assistant

Personal Notes:

FACULTY

DAN BARKER taught the lower-division earth materials course in the fall and the senior elective in volcanology in the spring, and tried to keep up with his graduate students who are working on a wide range of research projects. One PhD student, Gerardo Aguirre-Díaz, completed his dissertation on the Amealco caldera magmatic system in the Mexican Volcanic Belt. Dan attended a meeting of the Geological Society of South Africa in Bloemfontein in July of 1992, the International Geological Congress in Kyoto, Japan, in September, and the Cordilleran-Rocky Mountain sectional meeting of the Geological Society of America in Reno in May of 1993. Field trips associated with these three meetings were, as always, the high points. For example, in southwestern Hokkaido, Dan saw a 400-meter-high lava dome that is 11 years younger than he is. This gives new pungency to the phrase "as old as the hills."

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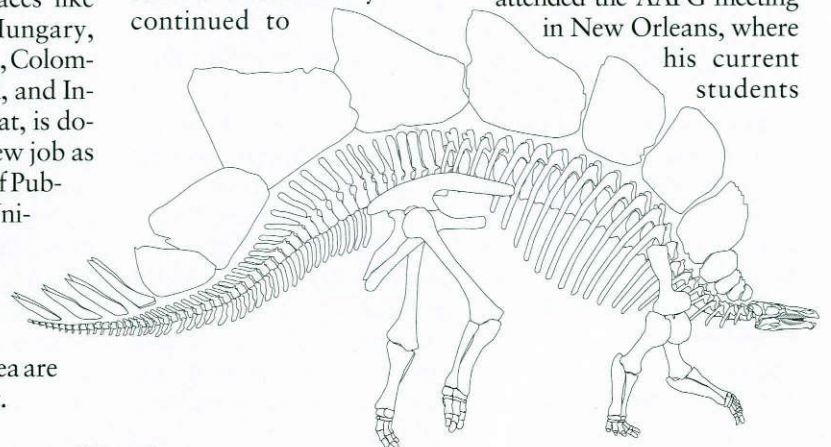
DICK BUFLER continues to enjoy his dual roles at UT, which involve conducting research programs with the Institute for Geophysics and helping teach the sequence stratigraphy graduate course for the Department. Both involve working with many wonderful graduate students, including a large international contingent from places like China, Taiwan, Hungary, Australia, Venezuela, Colombia, Brazil, Trinidad, and Indonesia. His wife, Pat, is doing great with her new job as Dean of the School of Public Health at the University of California, Berkeley. Dick is adjusting well to the commute, since Berkeley and the Bay Area are a great place to visit.

BILL CARLSON began the year with sushi, Zen, and presentations at two symposia in Kyoto, Japan, as part of the quadrennial meeting of the International Geological Congress. In January, he finished his four-year term as an associate editor for *American Mineralogist*, but continues to serve on the editorial review board of the *Journal of Metamorphic Geology*, and as a faculty advisor and seminar instructor for the Dean's Scholars honors program in the College of Natural Sciences. The highlights of Bill's year, though, were the accomplishments of his students. Cambria Denison received the biennial Mineralogy-Petrology Research Award from the Mineralogical Society of America; Carlotta Chernoff and David Hirsch were granted three-year NSF graduate fellowships (only 22 such awards were made nationwide in the earth sciences); Jonathan Blount completed his PhD dissertation on the Precambrian rocks of Chihuahua; and Jim Rougvie finished a superb MA thesis on metamorphism in the Llano Uplift. The whole year, it seems, was spent in celebration!

• • •

BILL GALLOWAY spent the past year teaching depositional systems and geology of energy minerals. The spring seminar on basin analysis has continued to

examine topics related to sequence stratigraphy and comparative basin depositional styles. Efforts to rewrite *Terrestrial Clastic Depositional Systems* (which celebrates its 10th anniversary this year) for Springer-Verlag has reunited him with co-author Dave Hobday, now living in Sydney, but somehow the six-chapter target was only half-way met by the end of the spring semester. Initiating a cooperative project in the Barrow Basin with the Australian National Center for Petroleum Geology and Geophysics took Bill to Adelaide for a first visit to Austin's sister city in South Australia. Graduate student Mac McGilvery will be working there for six months this year. Co-lecturing in industry-sponsored sequence stratigraphy workshops with Don Swift (Old Dominion University) took Bill to Bergen, Norway, and Tokyo. In Bergen, he enjoyed the hospitality of Texas Ex Ed Duncan and family. In Japan, Bill joined a field trip to look at late Neogene and Quaternary sediments of the Niigata Basin. As a past student of diagenesis, he was particularly struck by the outcrops of turbidite sands, deposited 1 km plus below sea level and now tilted and uplifted into foothills, that are totally unconsolidated. They used marvelous little garden hoes, provided by their trip leader, to smooth and carve the loose sand outcrops. Bill attended the AAPG meeting in New Orleans, where his current students



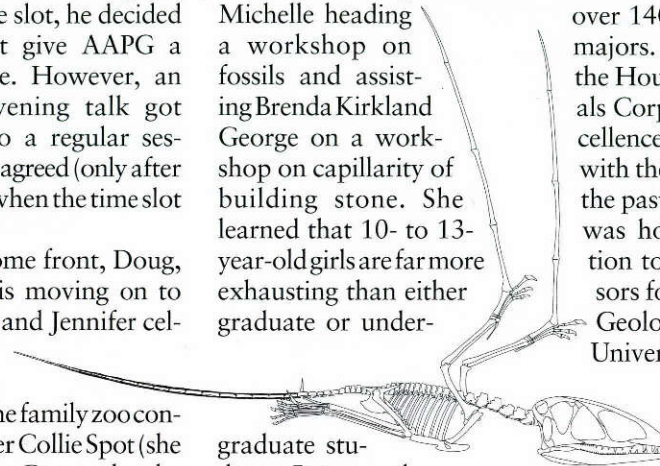
presented five poster sessions. He, on the other hand, submitted nothing; after two meetings in a row where he had been given the 4:40 p.m., last-day time slot, he decided he wouldn't give AAPG a third chance. However, an informal evening talk got promoted to a regular session, and he agreed (only after finding out when the time slot was to be).

On the home front, Doug, now eight, is moving on to third grade, and Jennifer celebrated her second anniversary. The family zoo continues. Border Collie Spot (she was named by Doug when he was five) has had a litter of pups, all sold. The guppy that came home from first grade has multiplied into a small nation, and the turtle continues to thrive in his aquarium. Deer eat everything in sight around our house.

• • •

MICHELLE KOMINZ was still in Kyoto, Japan, when the fall semester began, delivering a seminar on testing of the orbital theory of climate for pre-Pleistocene sediments. She also took a week off in mid-October to attend the Apticore/Albicore workshop in Perugia, Italy. Here she learned the cutting-edge research that is being done to study deep-sea mid-Cretaceous cyclicity. She also had the opportunity to see the K-T boundary at Gubbio and the famous Piobbico cycles in outcrop. Spring was a little bit quieter. Michelle returned to San Diego (having discovered its charms in meetings the year before) for spring break, visiting a geology UTX at Scripps and generally soaking in the sun. A 3-day weekend workshop in Los Alamos to discuss mantle convection and possible constraints for and implications to surface

geodynamics leaves her hoping to return to study large-scale basin problems soon. The February workshop for middle-school girls found Michelle heading a workshop on fossils and assisting Brenda Kirkland George on a workshop on capillarity of building stone. She learned that 10- to 13-year-old girls are far more exhausting than either graduate or under-



graduate students! Between the spring semester and first summer session, she returned to Japan, visiting her brother who is a professor of Japanese languages and literature and on sabbatical in Tokyo. This trip Michelle viewed the esthetics of the rocks and gardens, enjoyed modern and ancient theater and dance, and generally ate well. She will be teaching the introductory physical geology course this summer; it will be interesting to see how GEO 401 compares to GEO 312K.

• • •

RICH KYLE reports a busy year of teaching and research in ore deposits geology. He taught a new graduate course entitled "Regional Studies in Mineral Resources Geology," as a formal development of a course that he taught for the first time last year. This year, after the students "did their homework," they spent Spring Break on a field trip examining regional geology and mineral resources in Oklahoma, Missouri, Arkansas, and northern Louisiana. Rich also taught GEO 335, a popular non-majors course on the geology and mineral resources of Texas, during the fall and summer semesters.

He continues to serve as the Undergraduate Advisor, and reports that the undergraduate population continues to show increased strength with over 140 geological sciences majors. Rich was awarded the Houston Oil and Minerals Corporation Faculty Excellence Award for his work with the undergraduates for the past eight years. He also was honored by his selection to the Board of Advisors for the Department of Geological Sciences at the University of Tennessee.

Research continues on a wide variety of projects, including metal sulfide and industrial mineral deposits in salt-dome cap rocks and in Jurassic carbonates of the Gulf Coast, copper-gold mineralization in the Erstberg district in Irian Jaya, and regional studies of siliciclastic-hosted zinc-lead deposits in Alaska and China. Rich and former student Mark Ulrich (with Mobil in Houston) led an AAPG field trip to examine salt-dome cap-rock features in unique exposures at the Winnfield dome in northern Louisiana. Rich continues to serve as the Co-Editor for *Ore Geology Reviews*, an international journal in the field of ore deposits geology.

Late summer plans include travel in China to oversee field work of PhD student Ning Li on the Jinding lead-zinc-strontium deposit within Tertiary sandstones in the Yunnan province.

Brock and Brett advance as happy seventh- and fourth-grade students, respectively, who are busy in many extracurricular activities. Linda continues as an editor for the *Journal of Chemical Education* and as a writer with over 200 articles in local, national, and international publications. In addition, she serves on the board of directors of Prevent Blindness and also

has worked over 400 hours at Recording for the Blind. Brock and Brett, also volunteers at Recording for the Blind, have each worked 100 hours. The family was saddened by the death of Rich's mother, Hattie Kyle, in January. She devoted herself to making the life of her family better, and will be greatly missed.

• • •

MARTIN LAGOE reports that his new daughter, Elizabeth, has brought a new element of love, change, and chaos to the Lagoe-Murphy household. Elizabeth is a year old now, and very mature for her age, or so she says. Martin is not sure: while Elizabeth talks quite a bit, he doesn't understand anything she says. Perhaps she is speaking Danish, which will come in handy when Martin, Heather, and Elizabeth move to Aarhus, Denmark, for the fall semester. Martin will be a visiting professor in the Geological Institute, University of Aarhus. The visit to Denmark comes at a welcome time, as the past year has been very busy, even not counting Elizabeth's arrival. Among professional society activities, Martin finished his term as past-president of the North American Micropaleontology Section-SEPM (NAMS) and is currently a candidate for president of Gulf Coast SEPM. He also organized two symposia during the year for NAMS, one at the Calgary AAPG meeting on "Micropaleontology and Sequence Stratigraphy" and another at the New Orleans AAPG on the "Innovative Analysis and Display of Micropaleontological Data." In addition, Martin and John Anderson (Rice) organized a symposium at the south-central GSA meeting on the Late Pleistocene/Holocene climatic history of the Gulf of Mexico.

Planning for the future, Martin is SEPM program chairman for the 1994 Gulf Coast Association of Geological Societies meeting to be held in Austin. On the speaking circuit, Martin gave lectures at Texas A&M (Neogene paleoclimatic history of the Gulf of Alaska) and the University of Texas at Dallas (tectonic micropaleontology) last year, as well as teaching his short course on Quantitative Stratigraphy at Mobil in Dallas.

On the home front, Martin was involved in a project to increase the endowment of the Walter Geology Library. As chairman of the Library Committee, he gets to take some credit for our success so far, even though Dennis Trombatore and Bill Fisher have done most of the work. He looks forward to telling everyone about his Denmark adventures next year.

• • •

LYNTON LAND comments that his wife, Judy, stays busy with trips to the Bahamas to study coral bleaching, and with development of computer-aided museum exhibits. She visited an ex-student in Taiwan in May, delivering lectures on coral taxonomy and making a few dives on the reefs there. Aaron is now a "young teen," who rarely permits his parents to touch "his" powerbook and has already had requests for his software.

• • •

EARLE MCBRIDE is in his second year as counselor for the National Association of Geology Teachers (NAGT). He is

working for the NAGT on putting together several slide sets that can be used as visual aids in introductory courses. Several faculty colleagues have contributed some excellent slides from their collections. Other activities include serving on the advisory council of the geology foundation of his undergraduate *alma mater*, Augustana College; and serving on the editorial boards of *Sedimentary Geology* and *Journal of Egyptian Petroleum Geology*.

In April Earle attended the International Association of Sedimentologists Meeting in Marrakesh, Morocco, where he gave the last two talks of the meeting. He attended a field trip to the Atlas Mountains (it snowed) and the Meseta. Earle says every tourist shop in Morocco sells trilobites, cephalopods, and quartz crystals.

This summer, after teaching two weeks of the summer field course with Lynton Land and Jim Sprinkle, Earle returned to Italy to examine failed dam sites with Duke Picard and then to collaborate with Italian geologists from Bologna and Modena. Donna served as a field assistant part of the time.

In August Earle participated in the GSA-sponsored field trip to Iceland. This was a chance to see volcanoes, geysers, glaciers, black-sand rivers and beaches, basalt flows, and the mid-Atlantic rift in addition to an interesting culture. Iceland recently instituted a policy

prohibiting the collecting of rock samples and the use of geologic hammers. Earle reports that on several occasions sand from his pant cuffs had to serve as surreptitious samples.

• • •

TIM ROWE taught his freshman course, "The Age of Dinosaurs," again last fall, and began an NSF grant to write computer multimedia software to supplement the lab sections. He will have the help of several graduate students and undergraduates to develop and test the software, and to entertain a national advisory committee of dinosaur experts who will consult in the project. Tim also added a new course on vertebrate paleontology, which he taught to upper-division undergraduates. As a part of that course, the class spent several days in Big Bend National Park, where they collected several hadrosaur bones and found a broken skull cap representing the second pachycephalosaur found in the park. Tim and his wife Liz continue to raise giant tortoises and have added the small, protected Texas tortoise, *Gopherus berlandieri*, with State permits, of course, to their captive breeding research colony. If successful with the Texas tortoise, they will attempt to breed the rare Bolson tortoise, *Gopherus flavomarginatus*. It is now found only in a small part of north-central Mexico, and is generally regarded to

be a relict of a wider Pleistocene distribution. They are looking for its remains in Big Bend and, if its fossils are found there, the Park Service will pursue plans to re-release it in that part of its ancestral range.

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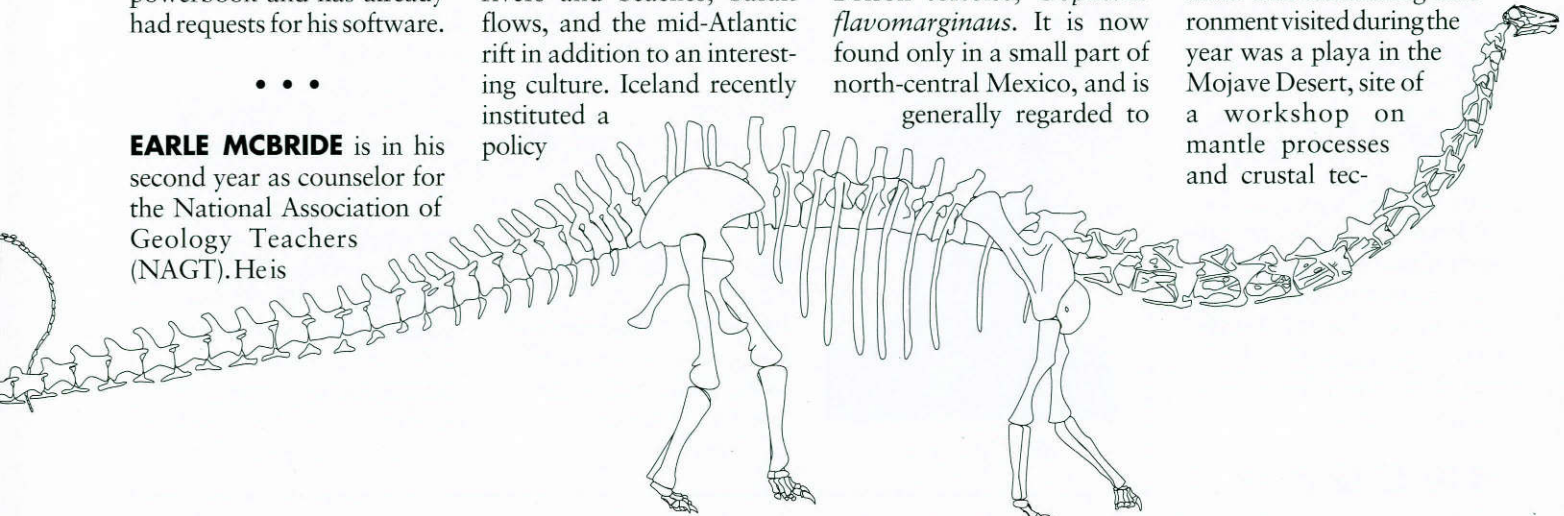
JACK SHARP comments that the past year, like a "loaded freight train going downhill," seemed to accelerate.

I has a wonderful summer experience working with 20 earth-science teachers in an NSF-funded summer institute in the Rocky Mountains. The teachers and students returned to Texas and developed local field excursions for their junior-high, senior-high, and elementary-school students.

The first AIH/Texas Hydrology Roundup was held in Austin in April. Eight of our students participated. This will be continued in coming years. I continue to be involved actively in the Geological Society of America, AIG, and IAH.

• • •

DOUG SMITH reports that the year has sped by past. Just before the start of the school year, he was in Japan, presenting research at the International Geological Congress and visiting temples and gardens. One contrasting environment visited during the year was a playa in the Mojave Desert, site of a workshop on mantle processes and crustal tec-



tonics. He finds one of the delightful parts of teaching introductory geology is to convey how geologists interpret such contrasting natural settings, and he and Leon Long cotaught GEO 303 in the fall to over 350 students. Other courses included analytical techniques and igneous petrology.

• • •

CLARK WILSON not only served as chairman, but also taught the graduate data-processing class in the fall, and in the spring taught geodesy to a small but eager group. Fall travel included a trip to New Orleans for the Society of Exploration Geophysicists meeting, serving as an SEG district representative, to Jackson, Mississippi, for the GCAGS meeting, and to San Francisco in December for the American Geophysical Union meeting. In the spring, travel included two meetings of the Committee on Earth Studies of the National Research Council, one in Irvine, California, and the other in Washington, D.C., and the spring American Geophysical Union Meeting in Baltimore. After all these meetings, it was fun to spend eight field days in West Texas after school was out in May, doing surveying with the Global Positioning System as part of one of his NASA projects. Summer plans include a trip to China for the week-long meeting of the International Association of Geodesy. At home, daughter Kirsten has just completed the second grade, daughter Sissel is preparing for the start of kindergarten in the fall, and Ellin is continuing to provide management consulting and advice for the family. Clark continues to ride his bicycle to the University as weather permits.



ENDOWED LECTURERS



Robley K. Matthews
(see photo above)
Brown University
Edwin Allday Lectureship
"Orbital Forcing of Glaciostasy Throughout the Phanerozoic," "The Quaternary: The Proving Ground of Orbital Forcing" and "Orbital Forcing in the Tertiary: Another World"

Raul Mossman
Rio de Janeiro, Brazil
Don R. and Patricia Kidd Boyd Lectureship in Petroleum Exploration
"The Onshore Sedimentary Basins of Brazil, with Emphasis on the Rift Basin Fill," "Offshore Sedimentary Basins of Brazil: Examples of Pull-Apart



Raul Mossman

Passive Margins Fill," "The Sedimentary Basin of Brazil, with Emphasis on exploration in Very Deep Water" and "Deep Water Exploration and Frontier Basins of Brazil"

Terry Engelder
Pennsylvania State University
Judd H. and Cynthia Oualline Centennial Lectureship in Geological Sciences
"Crack-Driving Stresses and the Origin of Regional Fracture Sets," "Rock Fracture Mechanics," "Stress Regimes in the Lithosphere," "Mechanical Parameters Controlling Joint Development" and "The Characteristics of Geopressure Profiles in the Gulf of Mexico Basin"

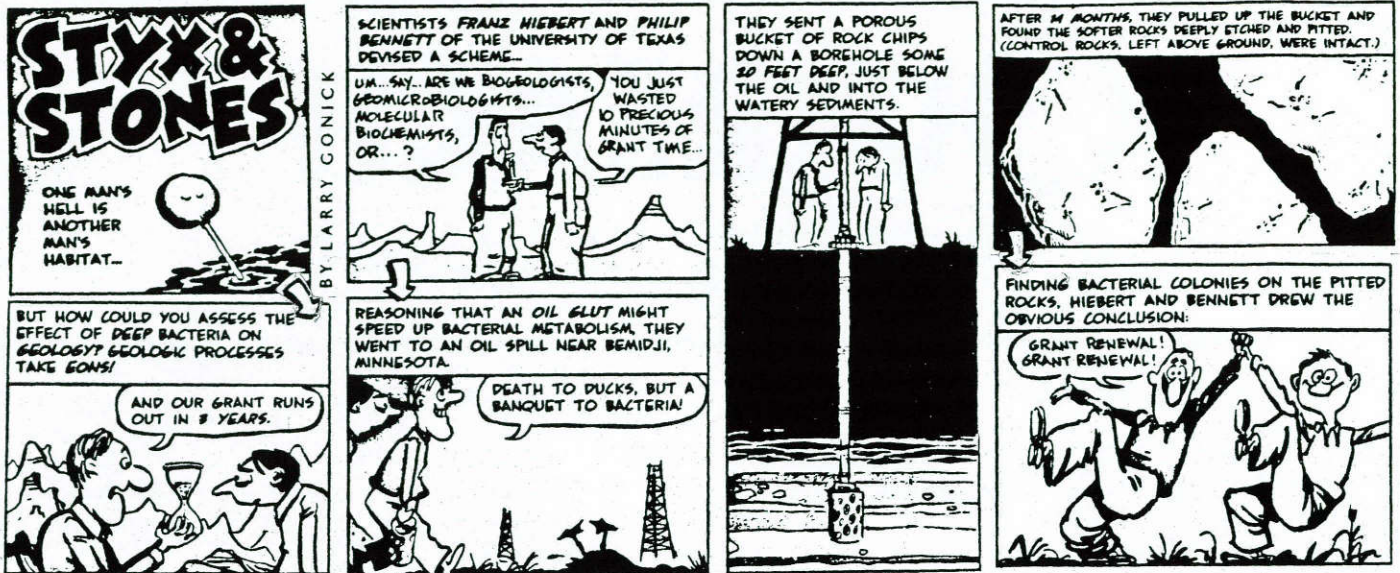
Eli Silver
University of California, Santa Cruz
Judd H. and Cynthia Oualline Centennial Lectureship in Geological Sciences
"Geological Setting of Papua New Guinea with Emphasis on Emplacement of the Finisterre Terrane" "Active Mountain Building Processes"

Malcolm McKenna
American Museum of Natural History
Clara Jones Langston Lectureship in Vertebrate Paleontology
"American Museum Paleontological Expedition to the Gobi Desert"



Terry Engelder

John Armentrout
Mobil Research Laboratory, Dallas
Judd H. and Cynthia Oualline Centennial Lectureship in Geological Sciences
"Geologic Timescales and Stratigraphic Correlation," "Parasequences and Depositional Sequence Tracts: Fundamental Stratigraphic Units of Sequence Stratigraphy" and "Paleogeography of Pliocene Gravity-flow Sand Systems, Gulf of Mexico"



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VISITING SPEAKERS

Yemane Asmerom
University of Minnesota

Peter Ballance
*University of Auckland,
New Zealand*

Craig M. Bethke
University of Illinois

Patricia Bobeck
Texas Water Commission, Hazardous and Solid Waste Division

Thure Cerling
University of Utah

Page Chamberlain
Dartmouth College

Peter Cobbold
*Universite de Rennes,
Rennes, France*

James Conca
Washington State University

J. Matthew Davis
*New Mexico Institute of Mining
and Technology, Socorro*

Mike Dorsey
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Water Resources Division, Austin*

Alan Dutton
Bureau of Economic Geology

Chris Eastoe
University of Arizona

Doug Frick
McCauley, Frick & Gilman, Austin

Alan Fryar
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Douglas Hamilton
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and State University*

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Science Education Center, UT

John Kappelman
Department of Anthropology

Karl Karlstrom
University of New Mexico

Charles Kerans
Bureau of Economic Geology

Thorne Lay
*University of California,
Santa Cruz*

Raymond Loehr
Civil Engineering, UT

Fangqiong Lu
University of Chicago

Paul Mann
Institute for Geophysics

Kim McKenna
Texas General Land Office

Isabelle Montanez
University of California, Riverside

Jeff Paine
Bureau of Economic Geology

Eric Pastor
McCauley, Frick & Gilman, Austin

Wendy Rice
University of California, Berkeley

Luis Dalla Salda
Universidad de la Plata, Argentina

Bridget Scanlon
Bureau of Economic Geology

Susan Schwartz
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Santa Cruz*

James Seigney
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Stony Brook*

Steven Shirey
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Washington, D. C.*

Don Siegel
Syracuse University

John Thompson
*University of British Columbia,
Vancouver*

Jan Tullis
Brown University

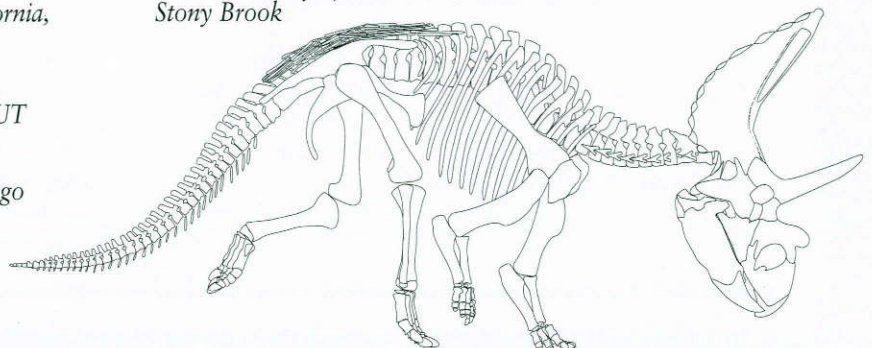
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Brisbane, Australia

Xiaomin Wang
Stanford University

Ken Wilks
University of British Columbia

John Wilson
*New Mexico Institute of Mining
and Technology*





OUTREACH

P • R • O • G • R • A • M

OUTREACH ACTIVITIES

The Department of Geological Sciences has an Outreach Committee which coordinates Department relationships with local area schools and organizations, and provides information by mail to more distant areas of the state. The Committee members are Donna Precht, undergraduate student development specialist, Leon Long, faculty member, and Rick Gerdes, graduate student.

RECRUITING OF PROSPECTIVE MAJORS IN GEOLOGICAL SCIENCES

Outreach to statewide schools includes mailings of departmental brochures to all senior high schools in Texas, and mailings of departmental Newsletters to all Texas colleges and junior colleges with an earth science program of any size. Newsletters are also mailed to several dozen major public and private universities across the United States as a recruiting tool for prospective students.

OFF-CAMPUS ACTIVITIES

For the 1992-1993 academic year a variety of lectures were offered by the Department to schools in Austin and the Austin area.

- In October Rick Gerdes, graduate student liaison for outreach activities gave four lectures to sixth graders at Porter Middle School in south Austin on plate tectonics and related geologic phenomenon. Rick was assisted by Sonya Jones (BS geological sciences, UT Austin, August 1992) who is now employed by the hydro division of the USGS in Austin.
- In the spring, graduate student Lee Potter led the 8th grade honors science class from Lake Travis Middle School on an all-day geology field trip to the Llano Uplift.
- Other lectures given during the year to schools in the Austin area included Round Rock and Anderson Mill.
- A box of llanite was donated by Dr. Leon Long to ScienTerrific Enterprises for use in a mineralogy program for students at Mountain Valley Elementary School in Canyon Lake.

ON-CAMPUS ACTIVITIES

Visitors coming to campus for tours of the Geology Building ranging in grades from elementary through high school are routinely hosted by Bill Woods, graduate students, and faculty.

- In October Bill Woods conducted a tour of the gem and mineral display for the Zavala Young Scientists from the Center for Synthesis, Growth, and Analysis of Electronic Materials.

- On December 8, 1992 Dr. Leon Long and Roger Lee (former graduate student outreach liaison) hosted 20 high school teachers from Round Rock ISD for a day-long seminar. Dr. Long presented information on the Department's educational outreach program. Other guest speakers included Dr. John Huntsberger from the Science Education Department to speak on training earth science teachers, and Dr. Jerry Wermund from the Bureau of Economic Geology who presented information on the variety of available Bureau publications.

Later, Dennis Trombatore, Bill Woods and Jeff Rubin led small sections of the group on a tour of the library and research facilities throughout the building.

After the building tour, the group joined Dr. Long, Jeff Crabaugh, Russell Hickerson, Sylvia Pope, Rick Gerdes, and Jeff Rubin for a field trip to Mount Bonnell, Shoal Creek and Zilker Park. From the field trip the group went to the Bureau of Economic Geology for a tour led by George Bush and were introduced to the mineral collection and extensive library at the Bureau. The teachers also visited the Core Research Facility.

- In the spring of 1993 graduate student Lee Potter arranged for a tour of the Geology Building for the 8th grade honors science class from Lake Travis Middle School which included the library, labs and technical equipment, and a slide show about Hawaiian volcanoes.
- In early June during the annual Texas Energy Science Symposium Bill Woods led four tours of the Geology Building for high school students and teachers, and gave talks on gems, gem minerals, and faceting.

*Notes from our***RETIRED
FACULTY**

VIRGIL BARNES relates that during the year his chief accomplishments have been finishing the Geologic Map of Texas and the revision of out-of-print 1:250,000-scale Geologic Atlas of Texas sheets. The 1:500,000-scale Geologic Map of Texas was published late in 1992. The revisions on the Lubbock and Palestine sheets of the Geologic Atlas of Texas are scheduled for publication by the end of this fiscal year.

Receiving a Public Service Award from the American Association of Petroleum Geologists was a pleasant surprise. Unfortunately, Milla and I, because of illness, could not be in New Orleans on April 25 to receive the award during the annual convention. However, our son Virgil II, professor of physics at Purdue University, accepted the award for me, along with his sisters Louise Barnes of Nashville and Elizabeth Thompson of New York City.

Milla and Virgil Barnes celebrated their 60th wedding anniversary on September 28, 1992, at Westwood Country Club, with all children and grandchildren and Milla's brother, Richard Adloff, present. At age 90, Virgil is still on modified service, one-third time, at the Bureau of Economic Geology. He recently learned from an item in the *Austin American Statesman* that, of the current State employees, he has been em-

ployed longest of anyone in the State. Virgil joined the Bureau on September 1, 1935. Previously, during 1930-31, the Bureau furnished to Virgil laboratory and office space for a project on earth temperatures and oil field waters of North Central Texas, part of an American Petroleum Institute research program financed by donations from John D. Rockefeller and the Universal Oil Products Company. Fred Plummer, of the Bureau, was supervisor for the project. This period with the Bureau was the catalyst prompting Virgil to join that organization when opportunity offered.

Other family gatherings during the year included Thanksgiving with Virgil II and family in West Lafayette, Indiana, and Christmas with Louise and family in Nashville, Tennessee. Milla and Virgil have one grandson who has finished his sophomore year at Yale, another who has finished his freshman year at Rice, and a third who will begin his college career at Amherst in the fall. The remaining grandson and granddaughter still have a few years of high school to complete.

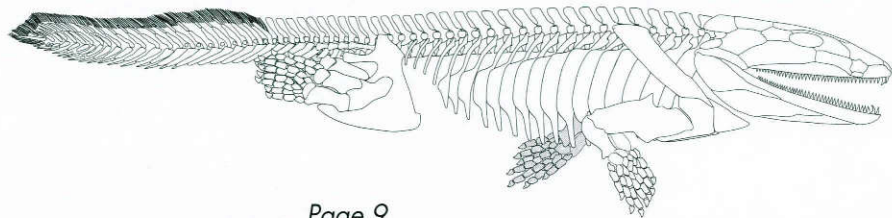
FRANK BROWN notes that his research during 1992 was focused principally on seismic and sequence-stratigraphic analysis of the passive-margin (post-Lower Valanginian) Cretaceous successions in three offshore South African basins—Bredasdorp and Pletmos basins along the southern Indian Ocean margin, and the Atlantic margin Orange Basin. Studies, sponsored by Soekor Ltd. of Cape Town since 1987, reached advanced stages in 1992-93. Topics included integration of eustatic cyclicity and tectonic episodes, subsidence and depositional rates, chrono-stratigraphy, interpretation of low- and high-frequency depositional sequences, morphology of lowstand systems tracts, and evaluation of the results of drilling of petroleum plays keyed to system tracts and second- and third-order type one unconformities.

Two manuscripts, one on the high-frequency sequences and sequence sets in the Pletmos Basin and the other on low-frequency super-sequences and sequence sets in the Orange Basin co-authored with South African colleagues, were accepted for an

upcoming AAPG memoir on siliciclastic sequence stratigraphy. The principal research and writing effort during 1992-93, however, continued to be the preparation of a large-format seismic and sequence stratigraphy atlas of offshore South African basins for AAPG. The atlas, sponsored by Soekor Ltd. since 1990, involves a text and 170 full- or half-page ("Bally-atlas scale") figures and will hopefully be completed in late 1993.

When not consulting in his office suite in "greater downtown" Georgetown, Texas, Frank continues to teach domestic and overseas seismic/sequence-stratigraphy courses for AAPG and consults internationally for Mobil Inc. and Soekor Ltd. In 1992, Frank recorded the 20th country where he has lectured or taught short courses since 1970. Especially fun this year was participation with Arnold Bouma and geoscientists of Soekor Ltd. in an AAPG International Field Conference on Permian siliciclastic systems tracts in the classic Karoo Basin of South Africa. The field conference was preceded by a short course taught for a geological congress in nearby Namibia. Frank again taught basic and advanced sequence-stratigraphy courses for the Joint Association of Petroleum Exploration Courses (UK) and AAPG at Imperial College, London, and later presented another AAPG course for Phillips in Stavanger, Norway.

To escape briefly from the Texas summer heat, Frank and wife Keith toured the foggy coastal region of north-



ern California and Oregon by car during July. But the personal highlight of the year came in November when Frank “gave away” their youngest daughter, Pam, to a just-graduated patent attorney from Cleveland, Ohio. Their wedding in the Southwestern University Chapel in Georgetown was followed by a reception at the “ranch in the woods” on Lake Georgetown, which gave the “Yankee guests” a chance to see deer in a real Texas wilderness!

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FRED BULLARD and Evelyn spent Christmas in California with Fred’s daughter Peggy and family. All members of the family were present, including daughter Thais and numerous grandchildren plus two great granddaughters.

The video tape of Fred’s Parícutin Volcano program was finally completed, and a similar project is underway of a program on Santorini Volcano, located in the Aegean sea off the coast of Crete.

February 20, 1993, was the 50th anniversary of the birth of Parícutin Volcano in Mexico. The Mexican government and the Smithsonian Institution were hosts of an International Conference to celebrate the event. Fred was unable to attend the conference, but Dr. Jim Luhr, who was in charge of the Smithsonian arrangements, came to Austin and taped some of Fred’s recollections of the time he spent at Parícutin Volcano, for possible use at the conference. The 1947 Geology Class reunion held in Austin was a most wonderful event, with the opportunity to greet many former students, especially members of the Brady Geology Field Camp.

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STEVE CLABAUGH did a few days of consulting for the engineering firm that is examining foundation and spillway conditions at the Lower Colorado River Authority dams in the Llano region. Recent erosion by the unprecedented floods of 1991-92 created fresh exposures of the metamorphic and igneous rocks on which the dams are built, and at Buchanan Dam a zone of soft altered gneiss in the main spillway area may require special attention when improvements are made. Steve says it was interesting to examine a 60-year-old report on the geology of the Buchanan Dam site written by Dr. Sellards, director of the Bureau of Economic Geology at that time.

In February Steve and Pat flew to Costa Rica to spend a couple of days exploring San Juan and the nearby Poas volcano, followed by a cruise along the Pacific coast to Panama with stops from near the Nicaraguan border to the Darien swamps of eastern Panama, ending with a transit of the Panama Canal. There were hikes into the rain forests to see the tropical vegetation, lively monkeys, iguanas, birds, and bugs, and even one immobile sloth in the high jungle canopy. While others swam, sunned, and watched birds at the rocky seashore, Steve was fascinated by superb exposures of uplifted sea-floor rocks ranging from sediments made up almost entirely of basaltic debris to an intensely deformed mixture of seamount igneous rocks.

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RONALD DEFORD has kept busy reading articles on topics as varied as tectonics, paleontology, poetry, and demography—and, of course, the bewildering U.S., Texas, and Austin politics!

The Society of Petroleum Engineers conferred on Ronald the distinction of “Legion of Honor Member” at their April 1993 luncheon meeting, in recognition of over 50 years of membership and service.

He continues to educate his last student, Marion. He sent her on another field trip, this time with the Austin Geological Society on the May 1 trip to explore geological aspects of local Texas State parks. She visited McKinney Falls, Pedernales Falls, Enchanted Rock, and Longhorn Cavern under the leadership of Ed Garner and Steve Ruppel. She thoroughly enjoyed the journey and made a full technical report to “the Professor” when she got back home!

Ronald celebrated his 91st birthday in January, and continues to participate in as many activities as his unreliable legs will allow: a few symphonies; many Austin Geological Society meetings; many dinner parties; one overnight trip to Round Top to hear James Dick’s piano performance; the Austin Gilbert & Sullivan’s production of “Iolanthe”; and giving a talk on “Sonnets” to a group of friends.

Marion and her sister had a busy time helping their mother sell her home in Tarrytown and move into Westminster Manor, where she is now quite at home and enjoying herself, even singing in the choir.

Marion had to miss the Kuwait Reunion in Houston this year, for it came on the same weekend as her 50th

high-school reunion in San Antonio. She’d never attended a school reunion, so it was fun seeing old classmates.

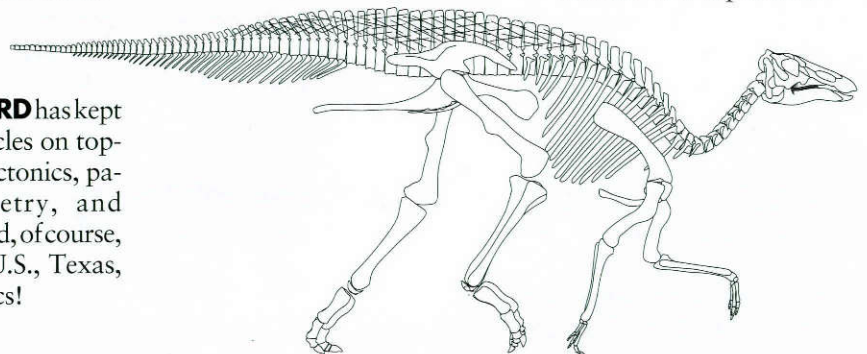
The library cataloging is going at a slow pace, for the librarian is also writing the biography of Liz Carpenter and is on a deadline, so she asked for a “sabbatical” until she gets the manuscript to the editor.

The DeFords continue to share their home and grounds with one *Canis familiaris* (Schatzie), two *Felis domestica* or *F. catus* (Deuteronomy and Rum-pole), six *Odocoileus virginianus* of the family Cervidae, one *Mus* of the family Muridae (outdoors, thank goodness), one *Rattus* of the family Muridae (ditto), three *Cyprinus carpio* and six *Carassius auratus* of the class Osteichthyes, eight (or more) *Procyon lotors* of the order Carnivora, several *Didelphis virginiana*, at least two Reptilia, and many Aves! Oh, and zillions of *Sciurus carolinensis*, and a couple of *Dasyus novemcinctus*!

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SAM ELLISON relates that two happenings this year include the move by Dottie and Sam to Westminster Manor, 4100 Jackson Ave., #303, Austin, Texas 78731, on February 1, 1993, and the sale of their home of 30 years Highland Hills Drive on April 1, 1993.

Barbara Ellison, their oldest granddaughter, is a senior honor student in architecture and Plan II at UT. Stephanie Ellison is a sophomore



at Richmond University in Virginia. Dottie and Sam remain proud of these young ladies. Field trips for L.A.M.P. (Learning Activity for Mature People) in the Extension Division of the University included an all-day trip (twice) to Enchanted Rock State Park north of Fredericksburg (46 people each trip).

The manuscript on the *Geology of Texas* has been submitted to the University of Texas Press, but at the moment awaits the completion of maps, illustrations, and photographs. Conodont studies are temporarily delayed until moving tasks into their new home are complete. Keith Young has been generous to let Sam share a portion of his laboratory in GEO 451 as a place for him to store conodont and library material.

Changing from a seven-room house to a three-room apartment has created many problems. The Ellisons now have learned that if you lay out a task to accomplish and do not finish that task but later undertake another one, then the first material must be stowed away before undertaking the second project. They both, however, are pleased to be near the city bus, near the University (library especially), and near health-care facilities.

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PETE FLAWN says his activities in 1993 are little changed from last year—committees, commissions, boards, and associated travel to meetings. “The Charles Stark Draper Prize Committee of the National Academy of Engineering is an interesting assignment that gives me an opportunity to review the great engineering achievements of our time. I was

pleased to be selected this year for the College of Natural Sciences Hall of Honor.”

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BOB FOLK tells how he came to pursue his research interests of the last few years: “It was largely a matter of dumb luck. The curious reader may wonder how I strayed so far out of my normal field of geology, into the New World of nanno-microbiology. The chain of events began in 1965, when Riccardo Assereto, of the University of Milano, Italy, came to Austin to spend a year with me. He was already an up-and-coming ammonitist and Triassic stratigrapher, and wanted to learn some carbonate petrology. He invited me for a return visiting professorship at the Università degli Studi, Milano, in 1973.

Riccardo and I worked on the Triassic Calcare Rosso. Marge and Jenny went with me, and we all fell in love with Italian culture, lifestyle, etc. I liked it so well that I suggested to Earle McBride that we work on radiolarian cherts in Italy to solve the “shallow” versus “deep” controversy about them, which had developed from our joint study of the Caballos novaculite in West Texas. We spent the summers of 1974 and 1975 in Italian field work. He was by now corrupted as well. During our work we visited Rome. Rome is mostly built out of travertine, and here I was, supposed to be a carbonate specialist, and I could not even classify the rock. Looking for a good excuse for continuing work in Italia, I contacted Hank Chafetz (who had spent a couple of years working on Idaho travertines), and suggested we work together on the travertines of Tivoli (the type locality for this rock, 30 km from Rome). We spent

two field seasons there, 1979 and 1980. While puzzling over some travertine thin sections, John Pigott, then a graduate student, stopped by for a look. At the time he was taking a course in microbiology and suggested the fuzzy spots I was looking at might be bacteria. This casual observation re-oriented Hank’s and my entire work; we realized that the Tivoli travertines were the first rocks anyone had recognized as being mainly made by the activities of bacteria—not algae at all but photosynthetic sulfur bacteria. Hank went on to carry the bacteria and carbonate precipitation flag into the geochemical and laboratory realm, and is now one of the world’s top scientists in the bacteria-geochemistry-stromatolite-pellet limestone realm.

In 1982, I was visiting Pamela Tiezzi’s field area in southwest Montana, and we took a one-day break to visit Yellowstone. We both thought this would be a great place to study hot-water travertines, and Pam persuaded her Colgate friend, Victoria Pursell, to do that for a thesis. Pam and I did the SEM work on the Tivoli travertines, and furthermore found evidence of bacterial precipitation in her own thesis rocks, Madison (Mississippian) reefs (Tiezzi, 1984). Franz Hiebert in 1988 studied fossil bacteria in the Jurassic of Germany, and later Dianne Pavlicek (1990) found fossil bacteria in Triassic Portoro limestone in NW Italy.

Vicky meanwhile (1985) discovered a petrologic wonderland in her aragonitic travertines of Mammoth Hot Springs. In her reading she came across a citation in a table of geochemical data, listing hot springs precipitating aragonite in Viterbo, Italy, about 40 miles north of Rome.

So in 1988, with Paula Noble, I decided to have a look at Viterbo, which I’d never heard of before. Viterbo turned out to be a wonderful discovery: an unspoiled 13th-Century historical center, superb restaurants in a medieval setting, a musical center (our second night there we went to a concert by “I Musici”, one of the world’s very top string orchestras)—here I was able to photograph Italy’s most voluptuous modern movie actress, Ornella Muti, covered from head to toe only in aragonite mud at the hot springs where we had gone to study. Besides that, the several springs around Viterbo provided a very instructive example of aragonite and calcite precipitation. Working on the Viterbo samples, I noticed beautifully preserved big bacterial bodies, the best so far known for any carbonates. In 1989, Mary Crabaugh and I continued the Viterbo study and, back in Texas on the SEM, I began to notice all these tiny little spheres about 1/10 the size of the big bacteria. Were they contamination, artifacts—should they be ignored—or could they possibly be “baby bacteria”? Wandering to the science library, I found that minute forms of bacteria in the 0.1-micron range did in fact exist, though very little was known about them among most microbiologists, and there was no existing literature about them in geologic settings. Well, Viterbo samples proved to be crammed with these little guys, now known as “nanno-bacteria.” The aragonite and calcite crystals apparently were built up of solid masses of nannobacteria, and these seemed to be causing the carbonate precipitation. Meanwhile I was etching other limestone—Bahama oolites, Great Salt Lake beachrock, and many ancient limestones; now

that my eyes had been opened I was seeing nannobacteria galore. At Viterbo, some native sulfur crystals are precipitated along with the carbonate. In the SEM, the sulfur crystals also appeared to be made of tightly packed 0.1-micron nanno-bacteria. Thus came the idea: if sulfur is made of bacteria, then try etching metallic sulfides and looking. And, of course, I've found pyrite, chalcopyrite, chalcocite, etc., to contain nannobacteria in varying amounts. Work by Leo Lynch on his Frio sandstone samples showed possible bacterial structures in his clay minerals. Gao Guoqi apparently had dolomite and chert made of nannobacteria as well. The list goes on and on. I think nannobacteria have played an extremely important role in triggering or catalyzing precipitation in all sorts of sedimentary minerals, carbonates, silicates, sulfides, etc. (see a forthcoming article in the *Journal of Sedimentary Petrology*). All we need is slaves and money for SEM film. Avvanti, amici!

In May Bob took off for Italy with Hank Chafetz and Rachel Eustice (Land's PhD), landing in Milano. They went immediately to their favorite hot springs at Viterbo, near Roma. There they met their English microbiology colleague,

Allan Pentecost, and discovered a wonderful new locality, Le Zitelle—free of mud-caked bathers and devoid of movie actresses. Next by train to Portovenere where they met Sydney and Gary Hemming from SUNY-Stony Brook who helped protect Bob from mafiosi, banditti, etc., the rest of the trip. After sampling the dolomite there, they proceeded to hunt for more hot-spring deposition. This hunt took them to Padova, up near Venezia, from where Hank went back to the USA. Sydney, Gary, and Bob then returned for more work at Viterbo. As bad luck would have it, all the beautiful aragonitic travertines and bacterial structures had been bulldozed away in their absence; but goodluckily, a straw stem had fallen into the water after plowing, and in 2 1/2 days had grown a 10-mm-thick crust of aragonite, calcite, and possible dolomite. A lot of Bob's recent SEM work has concentrated on this stem; and so many interesting things have turned up that one might almost say "one stem makes a summer." It goes far in favoring the catalytic role of nannobacteria in precipitating carbonate. Later, the three of them went

to Pompeii and visited sulfur hot springs at Pozzuoli and the volcanic island of Ischia, then a short trip to the archeological site at Metaponto, then to see the bones of St. Nicolas at Bari. Finally via Roma and Tivoli to Milano and Texas."

Bob has continued rabid SEM work on the relationship between nannobacteria and chemically precipitated minerals: carbonates, metallic sulfides, sulfur, caliches, cherts, clay minerals, etc. He has now found nannobacteria in modern Texas streams and spring seeps, and in Brenda Kirkland George's aquarium. So they are alive and well and thriving within the geology department. At Cincinnati GSA, Bob came out of the closet to give his story, and he's also lectured at U. Miami and Baylor on this. The work on travertines (which are not politically correct rocks) has led to the discovery of nannobacteria and the realization of their great importance in mineral precipitation in sediments. Lynton Land was very kind to give Bob's paper on possible bacterial dolomites (Holocene to Paleozoic) at New Orleans AAPG. Most people inferred that he did a much better

presentation than Bob would have done—though he remains a fruitful skeptic about the idea.

While Bob was geologizing in Italy, Marge spent June with Jenny and Steve Mann and their four grandchildren in Tuscaloosa, Alabama. They then drove over to Austin and had fun exploring Luckenbach, Boerne, and Rosanky. In August Marge and Bob took a week's vacation in Costa Rica, a beautiful country, and it was the geologic thrill of his life to stand

at the foot of Volcano Arenal at night while it threw up great chunks of glowing lava that bounded down the slopes, and gave off thunderous explosions by moonlight, all covered by summit clouds coruscating pink. Also took a bus trip through the jungle to the coast and found . . . radiolarites again, this time probably deep-water. In October they enjoyed the Cincinnati area at GSA; then later they finally made it out to Lost Maples at the height of the fall colors. They went to Fort Worth and Dallas to enjoy Egyptian and Etruscan exhibits. Bob and Marge continue to enjoy their cabin nearly every weekend—beautiful wildflowers, trees, and a nicely flowing creek this spring.

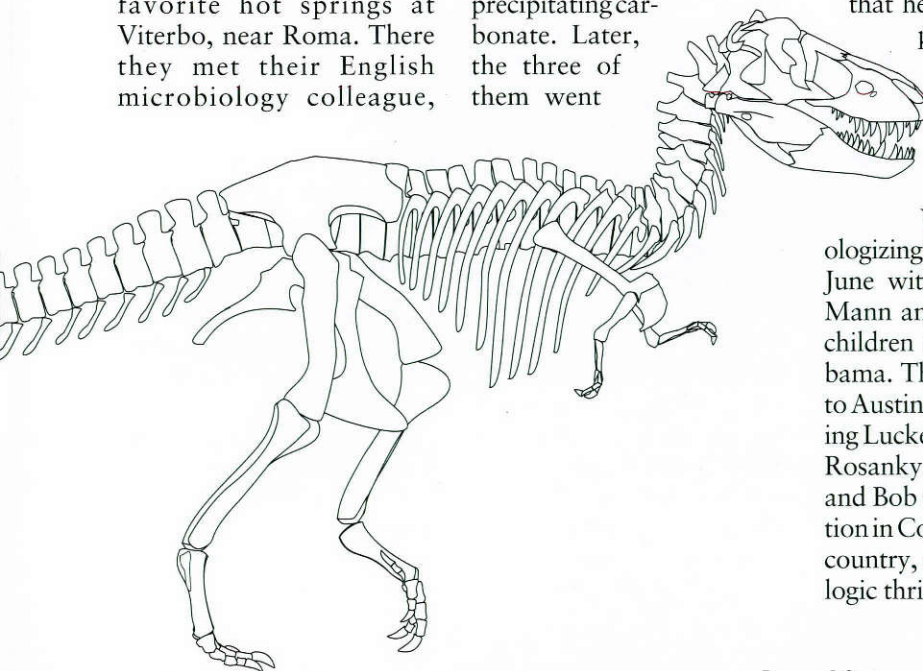
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ED JONAS says he leads "a very colorless life." He is nearing the end of his 25-year house renovation project. He took time out last year to visit Sri Lanka to buy rubies and sapphires, but otherwise he spends his time plowing, planting, and hauling hay for his wife Martha's cows. And, of course, he fondles his gemstone collection whenever he can.

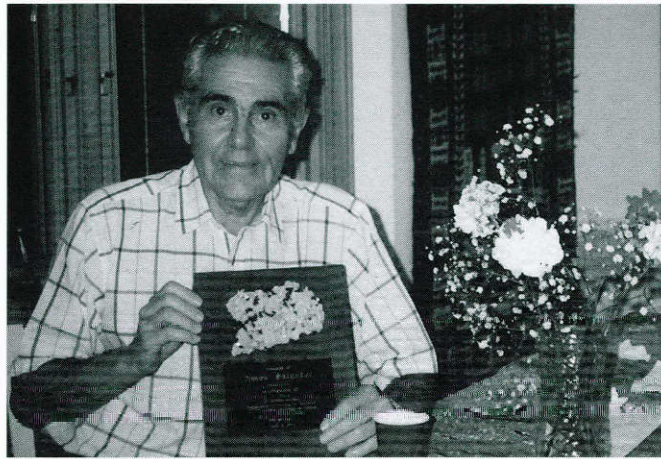
Every Tuesday at noon he helps serve a hot, home-cooked meal to homeless people in South Austin, a project he began five years ago. The project has grown from only a few guests to more than a hundred. Some meals are delivered to people who have grown too old to come to the dining room, and lots of new volunteers have joined in the fun.

Ed and Martha are nursing each other along. Grandson Adam, now 10, visits them often and keeps things lively.

(cont'd. on Page 14)



Amos Salvador Retires after thirteen years



After 13 years of teaching stratigraphy, energy resources, and petroleum geology in the Department, Amos Salvador taught his last class during the spring semester of 1993. He was recognized by the faculty and staff at a festive dinner party at the home of Dr. and Mrs. Clark Wilson on May 8. Although “retired,” Amos maintains his office in the Geology Building and keeps much the same schedule as he has in the past.

Amos was born in Madrid, Spain, and received his BS in geology in 1945 from Central University of Venezuela. He completed a PhD in geology at Stanford University in 1950. From 1945 to 1947, he worked as a geologist for MeneGrande Oil Company (Gulf) in Venezuela. Then after receiving his PhD, he rejoined Gulf and was based in New York, working as regional geologist and surface geologist in North Africa, Europe and South America. Beginning in 1955, he worked with various affiliates of Exxon Corporation, first in Venezuela, briefly in Tulsa, and from 1966 to 1980 he was based in Houston. During his early years in

Houston he was assistant chief geologist for Humble Oil and Refining Company, and manager of the Gulf Coast Exploration Division. In 1970 he became executive vice president of Esso Production Research Company, and then from 1971 until his retirement from Exxon Company, U.S.A. in 1980, he served as chief geologist.

It was the Department’s good fortune at that time to lure Amos away from Houston to teach at the University, first as the Alexander Deussen Professor of Energy Resources, and since 1990, as the Morgan J. Davis Professor of Petroleum Geology. His scientific affiliations include serving on the International Subcommittee on Stratigraphic Classification since 1952, chairing that group from 1976 until 1992. He was an AAPG distinguished lecturer during 1980 and 1981, and worked in several capacities as a member of the Geological Society of America. Most notable, he was editor and chapter author of a volume on the Gulf of Mexico Basin for GSA’s Decade of North American Geology series. He served as chairman of the Gulf Of

Mexico Planning Advisory Committee of the JOI-Ocean Margin Drilling Program from 1979 to 1982, participated on the advisory council of Stanford’s School of Earth Sciences from 1982-1985, and was a member of the National Research Council’s Board of Earth Sciences from 1987-88.

Amos has distinguished himself as a teacher who demands the best from his students in order to succeed in his classes. In addition to the geology courses he has taught, he has also served as the Department’s examiner in Spanish and French proficiency to satisfy graduate student foreign language requirements. Amos has served on the Department’s faculty search committee during his tenure in the Department, lending the benefit of his many years of experience in industry to determine the best choices for faculty positions. In appreciation of his dedication, the Department awarded Amos the Houston Oil & Minerals Corporation Faculty Excellence Award in 1988.

Faculty and former students alike wish Amos and his wife, Lynn, many years of happy retirement. ●●●

WANN LANGSTON has been busy with continuing research—a chapter for a book (Smithsonian Institution Press) to appear in 1994, and collaborative work on pterodactyls with former student Tom Lehman. His jointly authored treatise on fossil animal tracks from West Texas with Professor W. A. S. Sarjeant of the University of Saskatchewan is slowly edging its way through the press. In April he delivered the keynote address at the 25th anniversary of the Raymond M. Alf Museum in Clairmont, California, of which he is a member of the board. Naturally the talk was about Texas and its giant pterodactyl.

Wann and Marietta were favored by several long visits from daughter Sandra and grandson Stefano Alianelli from Italy. Son-in-law Francesco was also present for Christmas. Their pleasant existence changed suddenly in January when Marietta suffered what mercifully turned out to be a light stroke. She is recovering with little apparent disability, however, and is looking forward to getting back into all the exciting activities that have interested her over the years.

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JOHN MAXWELL notes, “Retirement brings certain benefits and opportunities. Through the Elderhostel program, Marian and I have particularly enjoyed foreign travel, including visits to interesting regions in Australia, New Zealand, Spain, Portugal and Mexico. Three weeks in Ireland, Wales and the London area are planned for this fall. I usually am the only geologist, but we have met a number of retired petroleum and mining people, as well as other equally stimulating people from a variety of occupations. When the opportunity arises, give it a try!”

BILL MUEHLBERGER says, “The last day of my official duty as a member of the faculty was the last day of International Geological Congress Field Trip on Kyushu, Japan. The trip ended at a Shinto shrine with a beautiful view overlooking Kagoshima and the bay (a giant caldera) with the steaming volcano of Sakurajima in it. Sally and I and Harald Drewes (USGS, Denver) then took the ferry to the island. Saw kids coming home from school wearing hard hats—the entire island is subject to bombardment when the volcano erupts. A few minutes later, it erupted! Wow! Black clouds going straight up—I have no idea how high—it just seemed to up forever. Fortunately the wind was away from us so we didn’t get a rain of volcanic ash.

Two days later Sally and I were beginning our vacation on Kauai, in the Hawaiian Islands, a place we hadn’t visited in 20 years. We were awakened by air raid sirens going off and discovered that Hurricane Iniki was coming right at the island. We were sent to the local high school gym for protection, part of the roof blew off before the eye reached us. As the eye passed over us, we were all transferred to other rooms in the school (all soaking wet) and watched the other side of the roof of the gym rip off when the ‘back’ side of the hurricane went by. If you have the opportunity to miss being where the eye of a hurricane will pass over you, DO SO!

We are enjoying retirement. We can now do things without worrying about missing classes. What I don’t miss in retirement is the making up and grading of tests of beginning geology. After 38 years, it is really difficult to develop a test that ‘looks’ dif-

ferent from all the others that were given. The teaching was fun.”

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AMOS SALVADOR says, “During the last year, most of my time not taken up by academic endeavors was devoted to completing the revision of the *International Stratigraphic Guide*, first published in 1976. The final manuscript was mailed to the International Union of Geological Sciences (IUGS), which will publish it through an agreement with the Geological Society of America (GSA). The revised edition of the *Guide* is the product of eight years of work by the International Subcommittee on Stratigraphic Classification (ISS) of the IUGS International Commission on Stratigraphy. With the completion of the revision of the *Guide*, I was able to resign from the chairmanship of the ISSC, which I had held for 16 years.

At the end of May 1993, I retired from the Department of Geological Sciences after 13 most enjoyable and interesting years. I do not plan, however, to give up work on a number of projects that have interested me during the last few years and to which I have not been able to devote as much time as I would have liked.”

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JACK WILSON comments, “I have retired from ‘retirement.’ My first retirement was in 1976 after an even 30 years of teaching and research.

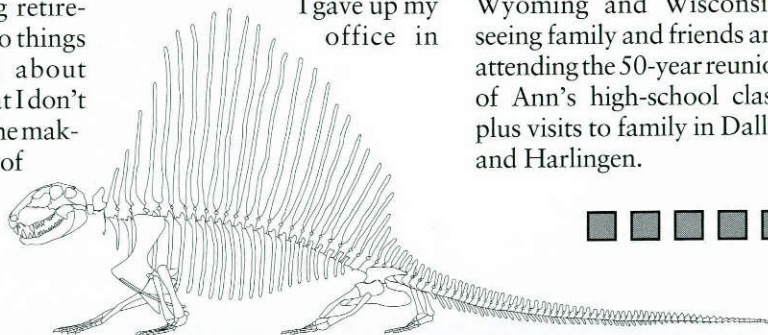
I gave up my office in

the Geology Building and left the office at the Vertebrate Paleontology Lab at Balcones Research Center. I continue to work at the VP Lab supervising two doctorals and a masters student. I taught one class and published seven or eight papers. When the Society of Vertebrate Paleontology met in Austin I served on the local committee and led a field trip to the Tertiary of the Big Bend area. After my first wife’s sickness and death I felt too far behind to confidently continue research. I have since remarried. My new wife, the former Ruth Moore, was a neighbor at Lake Travis so I now take care of two yards and travel. This second “retirement” is as enjoyable as the first.

• • •

KEITH YOUNG and Ann were in Chicago in late June, 1992, where Keith gave a paper on “The migration of exotic species of ammonites during highstands of sea level,” at the North American Paleontological Convention. In late September and early October they flew to Hamburg, Germany, where Keith gave another paper on ‘Neocomian desmocerids of Mexico,’ at the 4th International Cretaceous Symposium. Keith is now studying the Upper Cretaceous ammonites of Alabama. In February he gave a talk at Baylor University on the ‘Stratigraphy of the Fredericksburg and Trinity Divisions.’

Their travels in 1993 will be to their home states of Wyoming and Wisconsin, seeing family and friends and attending the 50-year reunion of Ann’s high-school class, plus visits to family in Dallas and Harlingen.



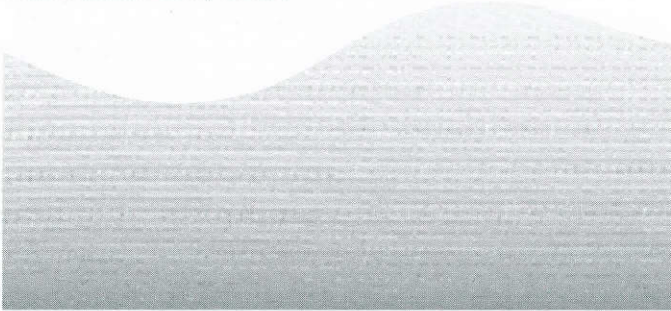
RESEARCH INTERESTS

Milo M. Backus

Professor and Shell Companies Foundation
Distinguished Chair in Geophysics
PhD—1956, Massachusetts Institute of Technology
*Exploration geophysics;
geophysical data processing and interpretation*

I have been involved in exploration geophysics since 1956. I teach undergraduate courses in geophysical data processing and geophysical data interpretation. My recent graduate courses include geophysical data-modeling and inversion, and seismic lithology. I have been working to make friendly microcomputers a routine student tool in my courses.

My students and I have been involved in the better characterization of the fluid- anomaly signal detection problem, and issues in the use of amplitude versus offset. The titles of papers presented at the Joint SEG/EAEG summer 1992 research workshop, "How Useful is Amplitude-Versus-Offset?," best describe my recent research work: A young offshore oil and gas field with students Catto, Chang, Todd, Wood, Huston, and Simmons; Sensitivity, detectability, and ambiguity (in the use of amplitude versus offset); Reflection amplitude versus angle and direct hydrocarbon detection; Resolution of P-wave velocity and density in linearized inversion; On the expected signals from pore fluids and facies: an example from Powderhorn Field, Texas.

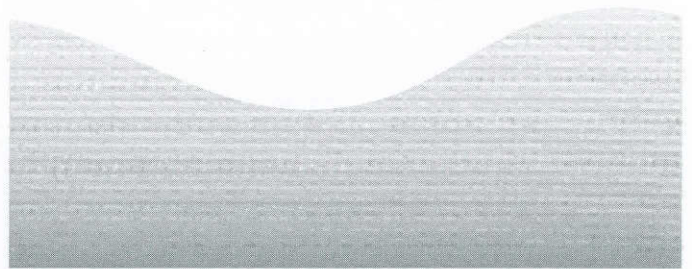


Jay Banner

Assistant Professor and Dave P. Carlton
Centennial Teaching Fellow in Geology
PhD—1986, State University of New York at Stony Brook
Carbonates; water-rock interaction; isotope geochemistry

My research and teaching interests encompass the fields of carbonate petrology, diagenesis, groundwater evolution, and isotope and trace-element geochemistry. These subjects have been addressed through the integration of field, petrographic, analytical, and modeling techniques to unravel the water-rock interaction history of modern and ancient carbonate sediments and groundwaters from active flow systems. My clean laboratory for isotope geochemistry enables the analysis of the concentration and isotopic composition of trace elements in small-rock, mineral, and water samples in a low-contamination environment.

Recent research projects center on the development of quantitative models of fluid-rock interaction in the evolution of marine carbonates and saline groundwaters in Paleozoic aquifers in the central midcontinent and the Edwards Aquifer of Texas. New case studies underway include timing and nature of carbonate deposition, diagenesis, and hydrology in Pleistocene limestone aquifer of Barbados, and the record of marine diagenesis and secular variations in seawater in Devonian reef complexes of Western Australia.



Boldface highlights the U.T. affiliates, asterick signifies a graduate student

Book Chapters:

- Cloos, M.**, 1992, Plate Tectonics: *The World Book Encyclopedia*, Chicago, p. 565-569.
- Long, L. E.**, O'Dunn, S., and Sill, W. D., 1993, *Exploring Geology*, Ginn Press, 189 p. A laboratory manual for an introductory geology course.
- McBride, E. F.**, 1992, The origin of chert, in: Schroeder, D. A., and Anderson, R. C. (eds.), *Earth Interpreters*, F. M. Fryxell, Geology, and Augustana, Augustana College Library, Rock Island, Ill., p. 159-174.
- Salvador, A.**, Westermann, G. E. G., Olóriz, F., Gordon, M. B., and Gursky, J. H., 1992, Meso-America, in: Westermann, G. E. G. (ed.), *The Jurassic of the Circum-Pacific*, Cambridge University Press, p. 93-121.
- Sprinkle, J.**, 1992, Radiation of Echinodermata, p. 375-398, in: Lipps, J. H., and Signor, P. W. (eds.), *Origins and Early Evolution of the Metazoa*, Plenum Press, New York, 570 p.

Daniel S. Barker

Fred M. Bullard Professor in Geological Sciences and Third Mr. and Mrs. Charles E. Yager Professor of Geology
 PhD—1961, Princeton University
Igneous petrology; geochemistry; volcanology

How do magmas move through the crust and interact with each other and with the surrounding rocks? My graduate students are working on that basic question, at several scales, and this year I report on this common theme in their work.

In his dissertation on a large Pliocene caldera in the Trans-Mexican Volcanic Belt, Gerardo Aguirre-Díaz found pyroclastic flow deposits (welded tuffs) containing glass shards whose compositions span a wide range even in a single thin section. These contrasting glass compositions indicate that two or more liquids had mingled during or immediately before explosive eruption.

Lars Borg is completing a traverse of the southernmost Cascades arc at the latitude of Lassen Peak, California, using trace-element and Sr, Nd, and Pb isotopic data from mafic lavas. His dissertation work shows that the magmas that fed the Cascades volcanoes in this region were derived from asthenospheric mantle, across the entire width of the arc; the subducting oceanic crust, whose influence waned to the east, lithospheric mantle and lower crust, and influential in the west and east, respectively.

Lee Potter is studying distinctive intrusive rocks in Trans-Pecos Texas. These nepheline trachytes and phonolites have K-Ar ages, mineral assemblages, textures, and major-element compositions that hardly differ by more than the analytical uncertainty through a belt more than 400 km long but less than 30 km wide, extending from the Cornudas Mountains on the New Mexico-Texas line to the Marathon Basin.

Amy Sapp is studying a sill in West Texas that is locally choked with inclusions of Precambrian basement rocks, Ouachita metasediments, and Cretaceous limestones, which promise to tell us much concerning the nature of the deep crust in the Trans-Pecos province, and about the mechanisms of intrusion and cooling of magma.



Philip C. Bennett

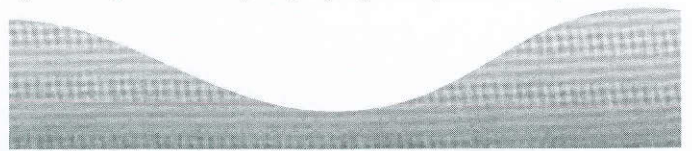
Assistant Professor and John A. and Katherine G. Jackson Teaching Fellowship
 PhD—1989, Syracuse University
Aqueous geochemistry; environmental geochemistry; kinetics of rock-water interactions

My primary research focus is the molecular nature of the silicate surface in water, and the interaction of organic electrolytes at the mineral-water interface. To characterize the silicate surface, I combine classical continuum approaches with kinetic, spectroscopic, and quantum computational chemistry. Using these approaches I am examining the fundamental controls on silicate dissolution kinetics, and the nature of the solute-surface interaction at low temperature. I am especially interested in the mechanisms of organic-acid-enhanced dissolution of silicates, and in organic sorption mechanisms on silicate surfaces.

I use the quantum computational chemistry and spectroscopy to model the nature of a surface at the *molecular* level, and providing an estimate of the bulk nature of the surface based on fundamental atomic properties. Computational chemistry can help when constrained by spectroscopic or kinetic analyses, characterize possible rate-limiting reactions, surface energies, and interfacial reactions.

I am also investigating the role of bacteria in low-temperature silicate diagenesis. With PhD student Franz Hiebert, I am using both laboratory column experiments and *in situ* methods to determine the nature of the micro-environment that surrounds a microbe or microbial colony attached to a silicate surface.

Other research involves field and laboratory investigations of the fate and mobility of organic contaminants in the near-surface soils of the Texas High Plains and the Ogallala aquifer. As part of the UT-BEG Pantex project, my students and I are investigating the mobility of high-explosive residues such as TNT and RDX in aqueous systems, and examining fate models of vapor-phase organic contaminants in the 3-phase system represented by vapor, aqueous, and solid phases.



Journal Articles:

Barker, D. S., 1992, Cenozoic volcanism in southwestern Hokkaido: IGC Excursion A03 (in Japanese): *Geological Survey of Hokkaido Bulletin*, v. 8, no. 4, p. 3-4.

Barker, D. S., 1993, Crustal abundances of elements and species diversity of minerals: *Journal of Geological Education*, v. 41, p. 35-37.

Blodgett, R. H.*, **Crabaugh, J. P.***, and **McBride, E. F.**, 1993, The color of red beds—a geologic perspective, in:

Bigham, J. M., and Ciolkosz, E. J. (eds.), *Soil Science Society of America Special Publication No. 31*, p. 135-172.

Bolmer, S. T., **Buffler, R. T.**, Hoskins, H., Stephen, R. A., and Swift, S. A., 1992, The vertical seismic profile at ODP Site 765 and seismic reflectors in the Argo Abyssal Plain, in: Gradstein, F. M., Ludden, J. N., et al. (eds.), *Proceedings ODP, Scientific Results, 123*, College Station, Texas (Ocean Drilling Program), p. 583-600.

Brown, T. J.*, and **Sharp, J. M., Jr.**, 1992, A model for

the effects of point-source emissions of aerosols of ground-water systems: *Journal of Applied Hydrogeology*, v. 3, p. 33-46.

Buffler, R. T., **Rowell, P.***, and Exon, N., 1992, Seismic stratigraphy of the Site 766 area, western margin of the Exmouth Plateau, Australia, in: Gradstein, F. M., Ludden, J. N., et al. (eds.), *Proceedings ODP, Scientific Results, 123*, College Station, Texas (Ocean Drilling Program), p. 563-582.

Cambois, G., and **Stoffa, P. L.**, 1992, Surface-consistent

deconvolution in the Log/Fourier domain: *Geophysics*, v. 57, no. 6, p. 823-840.

Carlson, W. D., 1993, Mechanisms and kinetics of apatite fission-track annealing: Reply to Green et al.: *American Mineralogist*, v. 78, p. 449-452.

Carlson, W. D., 1993, Mechanisms and kinetics of apatite fission-track annealing: Reply to Kevin D. Crowley: *American Mineralogist*, v. 78, p. 213-215.

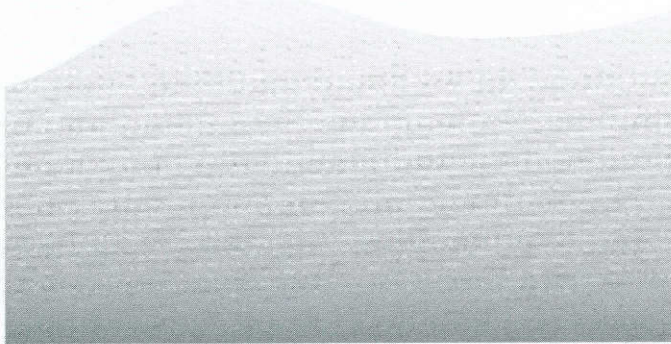
Carlson, W. D., and **Denison, C.***, 1992, Mechanisms of porphyroblast crystallization:

Richard T. Buffler

PhD —1967, University of California at Berkeley
*Marine geology and geophysics;
 seismic/sequence stratigraphy*

My main research interests involve the study of ocean basins and their margins using marine geological and geophysical tools, mainly seismic (sequence, stratigraphies) with seismic reflection data. My principal focus continues to be the geologic history of the Gulf of Mexico basin. Three major PhD projects on the Gulf are nearing completion: "Seismic Stratigraphy and Geologic History of the Post Mid-Cretaceous Rocks, Deep Gulf of Mexico Basin," by Jianhua Feng; "Regional Seismic Stratigraphy and Salt Tectonics, Continental Slope, Garden Banks and East Breaks Area, Northwestern Gulf of Mexico," by Carl Fiduk; and "Mesozoic Structural and Stratigraphic Evolution of the Southeastern Gulf of Mexico," Gyorgy Marton. A new project to study the Neogene sequence stratigraphy in the northeastern Gulf of Mexico has been funded by NSF.

In addition to Gulf of Mexico studies, I have supervised a program to apply sequence stratigraphy principles to outcrops. This has led to Master's projects on Permian carbonate rocks in West Texas/New Mexico and the Black Hills; PhD studies, on Permian carbonate rocks in West Texas and on Jurassic deep-water sands in northern California. I have also worked on extrapolation of Ocean Drilling Project drilling results from Legs 122/123 off northwest Australia using seismic reflection data.

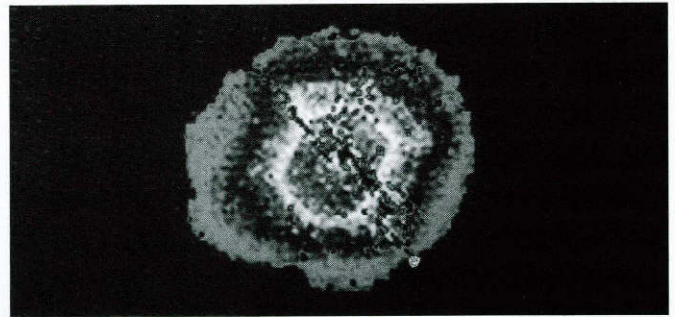


William D. Carlson

Professor and William Stamps Farish Chair
 in Geological Sciences
 PhD—1980, University of California at Los Angeles
Metamorphic petrology; experimental geochemistry; kinetics

My research group continues to work on the development of high-resolution computed X-ray tomography (X-ray CT) as a tool for quantitative textural analysis of metamorphic textures in three dimensions. With support from NSF and the Texas Advanced Research Program, PhD student Cambria Denison and I have been using X-ray CT to investigate reaction mechanisms in porphyroblastic rocks from diverse metamorphic environments. Our initial results were featured in the cover article of the 28 August 1992 issue of *Science*. David Hirsch is beginning a PhD project that will apply our new models for porphyroblast crystallization to localities with known temperature-time histories. This should place quantitative constraints on several kinetic parameters for which values have long been sought with little prior success. MA student Carlotta Chernoff has begun a comprehensive study of the relationship between garnet zoning profiles and the degree of isolation of porphyroblasts from one another, which may prove zoning to be the most robust available indicator of mechanisms of metamorphic reaction. (See figure below.)

NSF-funded work with Sharon Mosher on the Precambrian history of the Llano Uplift continues to advance. MA student Jim Rougvié has completed a detailed study of Rb-Sr and oxygen isotope systematics in the Valley Spring Gneiss, which generated new insights into the nature of fluid flow during metamorphism and provided the firmest date yet for the age of dynamothermal metamorphism in the Uplift.



evidence from high-resolution computed X-ray tomography: *Science*, v. 257, p. 1236-1239.

Cloos, M., 1993, Lithospheric buoyancy and collisional orogenesis: Subduction of oceanic plateaus, continental margins, island arcs, spreading ridges, and seamounts: *Geological Society of America Bulletin*, v. 105, p. 715-737.

Cloos, M., 1992, Thrust-type subduction zone earthquakes and seamount asperities: a physical model for seismic rupture: *Geology*, v. 20, p. 601-604.

Crabaugh, M.*, and **Kocurek, G.**, 1993, Entrada Sandstone: an example of a wet aeolian system, in: Pye, K. (ed.), The dynamics and environmental context of aeolian sedimentary systems: *London Geological Society Special Publication*, No. 72, p. 103-126.

Davies, T. A., Austin, J. A., Jr., **Lagoe, M. B.**, and Milliman, J. D., 1992, Late Quaternary sedimentation off New Jersey: new results using 3-D seismic profiles and cores: *Marine Geology*, v. 108, p. 325-345.

Davis, L. L.*, and **Smith, D.**

1993, Ni-rich olivine in minettes from Two Buttes, Colorado: a connection between potassic melts from the mantle and low Ni partition coefficients: *Geochimica et Cosmochimica Acta*, v. 57, p. 123-129.

DeBalko, D. A. and **Buffler, R. T.**, 1992, Seismic stratigraphy and geologic history of Middle Jurassic through Lower Cretaceous rocks, deep eastern Gulf of Mexico: *Transactions, Gulf Coast Association of Geological Societies*, v. 42, p. 89-105.

Elmore, R. D., London, D., Bagley, D., and **Gao, G.**, 1993, Remagnetization by basinal fluids: testing the hypothesis in the Viola limestone, southern Oklahoma: *Journal of Geophysical Research*, v. 98, p. 6237-6254.

Eyles, N., Vossler, S. M., and **Lagoe, M. B.**, 1992, Ichnology of a glacially influenced continental shelf and slope: the Late Cenozoic Gulf of Alaska (Yakataga Formation): *Palaeoecology, Palaeogeography, Palaeoclimatology*, v. 94, p.

Mark Cloos

Professor, Getty Oil Company Centennial Teaching Fellow
 PhD—1981, University of California at Los Angeles
Structural geology and tectonics

My long-term research interests continue to center on field, laboratory, and theoretical studies of the structure, metamorphism, geochronology, and sedimentation at convergent plate margins. In particular, I am interested in aspects of metamorphism and thermal history in blueschists, the formation of melanges and other chaotic rocks, and dewatering mechanisms for subducting and accreting sediment. I have active field projects in the central and northern Coast Ranges of California.

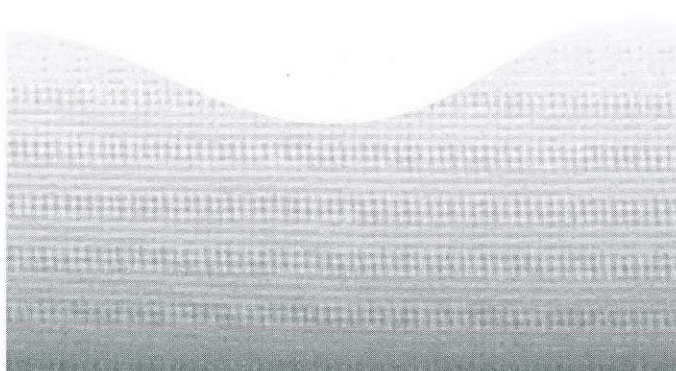
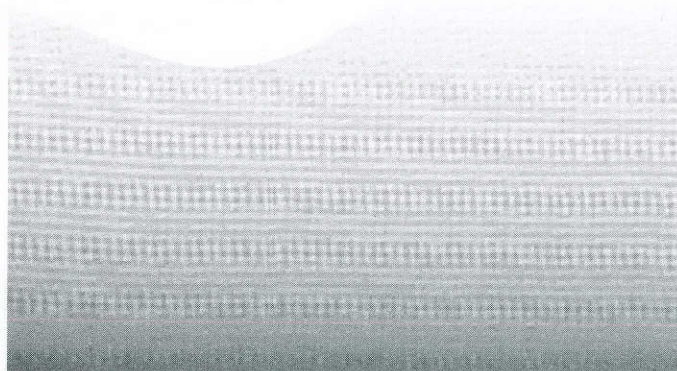
Several years ago my graduate students established a facility in the Department for apatite fission-track thermochronology. Students are applying the technique to a variety of tectonic problems and to quantify basin thermal evolution.

In 1989, with the support of Freeport McMoRan, Inc., Rich Kyle and I began field studies in the Gunung Bijih (Ertsberg) mining district in Irian Jaya, Indonesia (West New Guinea). I am now supervising students who are working on aspects there of the petrology of igneous intrusions, regional and local structural geology, fission-track thermochronology, stratigraphy, and origin of brecciated rocks.

Ian W. D. Dalziel

Professor
 PhD—1963, University of Edinburgh

The past year has been an exciting one of research on the “North America-South America” connection. Following up on the idea that western North America may have rifted from East Antarctica-Australia, my South American colleagues and I have been working on possible connections between eastern North America and the proto-Andean margin of South America. It now appears that the Grenville Province may continue into South America in the Arica bight south of Peru, and that a continuation of the Taconic Appalachians may be found in the Famatinian orogen of western Argentina. These ideas leave much testing to be undertaken and I have already spent time in the Argentine Puna where the Cambro-Ordovician benthic trilobite fauna has been known for many years to be extremely similar to that of the Oaxaca block of Mexico. On another front, graduate students Dickson Cunningham and Keith Klepeis completed their dissertation projects on Cordillera Darwin of Tierra del Fuego, work that has led to new insights into the origin of the Patagonian orocline and Andean orogenic processes in general. In Antarctica it looks as if we are finally going to get underway a long-planned project to conduct a deep seismic reflection profile across the Byrd Subglacial Basin. This is part of an ambitious effort to understand not only the structure and evolution of the Antarctic lithosphere, but also the controls on the stability of the West Antarctic Ice Sheet that contains the equivalent of a global rise in sea level of approximately six meters.



193-221.
 Exon, N. F., and **Buffler, R. T.**, 1992, Mesozoic seismic stratigraphy and tectonic evolution of the western Exmouth Plateau, in: von Rad, U., Haq, B., et al. (eds.), *Proceedings ODP, Scientific Results, 122*, College Station, Texas (Ocean Drilling Program), p. 61-81.
Fisher, W. L. and others (1992) An Assessment of the Oil Resource Base of the United States: U.S. Department of Energy, DOE/BC/1/SP, 54 p.
Fisher, W. L. (1993) The New

and Emerging Domestic Oil and Gas Industry: The Professional Geologist, v. 30, no. 3., p 8-10
Fisher, W. L., McKie, J. W., and McDonald, S. L. (1992) Oil Supplies, in The University of Texas at Austin Committee to Assess National Energy Strategy, Final Report, v. II, p. 139-153.
Fisher, W. L. (1992) Statement on Economic Growth and the President's Budget Proposals: U.S. Senate Committee on Finance, Committee Print, Senate Hearings 102-673, pt. 1,

p. 65-67, 179-186, Washington, D.C.
Fisher, W. L. (1993) Statement on the Status of the Oil and Gas Industry: U.S. Senate, Committee on Energy and Natural Resources; Committee Print, Senate Hearings 103-39, p. 12-25, Washington D.C.
 Flannery, T. F., Rich, T. H., Turnbull, W. D., and **Lundelius, E. L., Jr.**, 1992. The Macropodoidea (Marsupialia) of the early Pliocene Hamilton local fauna, Victoria, Australia: *Fieldiana, Geology* (N.

S.), v. 25, p. 1-37.
 Folk, R. L., 1992, Reply to M. Morris's discussion on pyramids: *Journal of Geological Education*, v. 40, p. 344.
 Fuller, C. M., and **Sharp, J. M., Jr.**, 1992, Permeability and fracture patterns in welded tuff: implications from the Santana Tuff, Trans-Pecos Texas: *Geological Society of America Bulletin*, v. 104, p. 1485-1496.
Gao, G., 1993, The temperatures and oxygen-isotope composition of Early Devonian oceans: *Nature*, v. 361, p. 712-714.

William L. Fisher

Director, Bureau of Economic Geology
and Director, Geology Foundation
Leonidas T. Barrow Chair in Mineral Resources
PhD—1961, University of Kansas
Energy and mineral resources

My research involves some occasional work in basin analysis and reservoir characterization, although most is related to oil and gas resource estimates and state and national oil and gas policy analysis. Particular emphasis is being placed on evaluating reserve growth potential in the U.S. and in mature exploration areas abroad.

I continued my dual role as Director of the Geology Foundation and Director of Bureau of Economic Geology. I found a little time for research in preparing a paper for the Aspen Institute's Energy Policy Forum and heading up a DOE panel estimating remaining oil resources in the U.S. During the year, I served as President of the American Institute of Professional Geologists and continued as Chairman of the National Academy of Sciences/National Research Council Board on Earth Sciences and Resources. I gave several invited lectures during the year including testimony on status of oil and gas industry to the U.S. Senate Committee on Energy and Natural Resources.



William E. Galloway

Morgan J. Davis Centennial Professor
PhD—1971, University of Texas at Austin
*Clastic depositional systems; basin analysis;
sedimentary economic geology*

During this year I have supervised nine students, working on topics related to various aspects of basin and depositional system analysis. Study areas include the Tertiary of the North Sea Basin, Wilcox, Yegua, and Miocene sections of the north-west Gulf of Mexico, and Mesozoic of the Reconcova Basin, Brazil. New studies will focus on the Cretaceous of the Barrow-Dampier subbasin, Northwest Shelf, Australia, and Miocene of the Eastern Venezuela Basin.

Along with Robley Matthews of Brown University and Cliff Froelich of the UT Institute for Geophysics, I am co-principal investigator on an NSF-funded project to evaluate the role of orbitally forced glacioeustatic sea-level change in Miocene clastic system deposition. The approach of the project is three-pronged. A sea-level curve, independently calculated from orbital parameters and tied to the limited Miocene oxygen isotope data, will be compared to a composite transect of the Miocene shorezone systems of the Gulf. Cliff's modeling program, STRATA-various, utilizing input parameters appropriate to the Gulf, will create comparative cross-sections based in the calculated curve for comparison with the "ground truth" sections.

Studies by graduate students Xue Liangqing and Lawrence Meckel III have provided detailed correlation frameworks and much improved paleogeographic resolution for the Wilcox Group and Yegua Formation. In ongoing North Sea projects, PhD candidate Xijin Liu has calculated sediment volume supply history for the Cenozoic of the North Sea basin using our framework of 15 Cenozoic sequences for mapping and analysis. Along the way, he devised a way to use tectonic subsidence history analysis to back-calculate paleo-water depth, improving on the generalized values for deep-shelf and slope settings generally provided by paleontologic analysis. Ben Sloan has found good agreement between faunal content and sequences within the North Sea Eocene succession. A sequence stratigraphic approach to analysis of the thick synrift fill of the Reconcova Basin, Brazil, was part of the dissertation completed this spring by Hercules DaSilva.

Gao, G., Elmore, R. D., and **Land, L. S.**, 1992, Geochemical constraints on the origin of calcite veins and associated limestone alteration, Ordovician Viola Group, Arbuckle Mountains, Oklahoma, USA: *Chemical Geology*, v. 98, p. 257-269.

Gao, G., and **Land, L. S.**, 1992, Early Ordovician Cool Creek dolomite, Middle Arbuckle Group, Slick Hills, SW Oklahoma, USA: origin and modification—Reply: *Journal of Sedimentary Petrology*, v. 62, p. 542.

Gao, G., **Land, L. S.**, and **Folk, R. L.**, 1992, Meteoric modification of early dolomite and late dolomitization by basinal fluids, Upper Arbuckle Group, Slick Hills, SW Oklahoma: *American Association of Petroleum Geologists Bulletin*, v. 75, p. 1649-1664.

Gose, W., and **Kyle, J. R.**, 1993, Paleomagnetic dating of sulfide mineralization and cap rock formation in Gulf Coast salt domes, in: McNeill, D. F. (editor), *Society for Sedimentary Geology*, Special Publication 49, p. 157-166.

Hiebert, F.*, and **Bennett, P. C.**, 1992, Microbial control of silicate weathering in organic-rich ground water: *Science*, v. 258, p. 278-281.

Kirkland George, B. L., Moore, C. H., and Dickson, J. A. D., 1993, Well-preserved aragonitic phylloid algae (*Eugonophyllum*, Udoteaceae) from the Pennsylvanian Holder Formation, Sacramento Mountains, New Mexico: *Palaios*, v. 8, no. 2, p. 111-120.

Kocurek, G., Townsley, M., **Yeh, E.***, Sweet, M., and Havholm, K., 1992, Dune and

dunefield development stages on Padre Island, Texas: effects of lee airflow and sand saturation levels and implications for interdune deposition: *Journal of Sedimentary Petrology*, v. 62, p. 622-635.

Kominz, M., and Bond, G. C., 1992, Documenting the reliability and utility of the gamma method as applied to cyclic sections using forward modeling: *Earth and Planetary Science Letters*, v. 113, p. 449-457.

Kreitler, C. W., Jackson, T. J., **Dickerson, P. W.***, and

Brenda Kirkland George

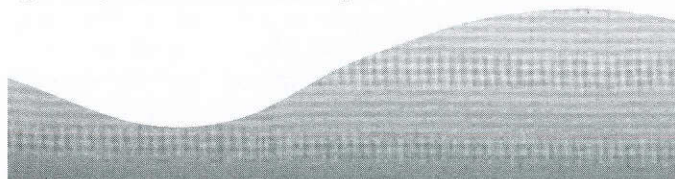
Assistant Professor and Dave P. Carlton
Centennial Teaching Fellow
PhD—1992, Louisiana State University
*Carbonate and evaporite sedimentology;
fossil algae; carbonate petrology*

I am developing research programs in three geographic areas. In the Paradox basin of southeastern Utah, two graduate students, James White and Keith Tischler, began field work along the San Juan River in the summer of 1993, to study carbonate diagenesis and organic geochemistry.

Most of my research efforts are still focused in southern New Mexico and West Texas. This year I spent time in the field with my father, Douglas Kirkland, looking at deposits of huge (1.5-m) selenite crystals. These large, sometimes perfectly clear crystals are an *in situ* replacement of the banded Castile Formation. I am also continuing work on the Capitan Formation. I am interested in the early marine diagenetic phases, particularly radial calcite, should yield some insight into the formation of this cement.

I am also involved in research projects associated with a single, remarkable, 10-cm-thick bed of the Holder Formation in the Sacramento Mountains in New Mexico, which contains well preserved, still aragonitic, Pennsylvanian cements, sponges, and phylloid algae. I am working on these fossil sponges with Tony Dickson and Rachel Wood of Cambridge University. We will also be collaborating on an exciting study of reef fabrics in the middle Capitan Formation along the Permian Reef Geology Trail in McKittrick Canyon in the Guadalupe Mountains.

As part of a group including Michelle Kominz, Jay Banner, and Richard Buffler, I have also begun looking at the Cretaceous carbonates that crop out here in Austin. The outcrops are excellent and some of them are, literally, right in my own back yard. An initial look suggests that they will provide many interesting research projects on cyclicity, diagenesis, and microfacies analysis.



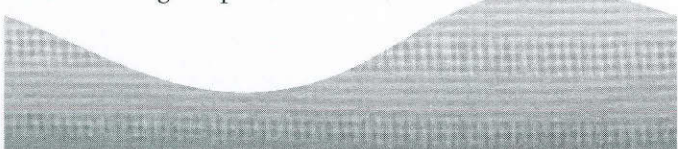
Steven P. Grand

Assistant Professor and Shell Companies
Foundation Centennial Teaching Fellow
PhD—1986, California Institute of Technology
Seismology and geophysics

I have continued studies of the deep interior of Earth during the past year. A long term project to map the three-dimensional velocity structure of the mantle is progressing quite well. Variations in seismic velocity beneath North and South America show large scale sheets of anomalously cold material throughout the lower mantle which we interpret to be the remnants of near surface rocks which subducted during the last 150 million years or so. Such seismic images should lead to a better understanding of how the Earth convects as well as potentially leading to a better understanding of the history of plate tectonic processes. During a recent leave at Caltech, I collected a large new seismic data set which will be used to examine the mantle beneath Asia and test the idea of correlating cold deep anomalies with past subduction locations.

With graduate student Xiao-Yang Ding, a project to determine the seismic structure of a deep Benioff zone has been completed. The study area was the Kurile subduction zone and we found conclusive evidence that subducting slabs do not penetrate the seismic boundary at 650 km's depth in a simple manner.

Finally, last summer a field program to image the crust and shallow mantle beneath the Rocky Mountain Front was completed. In collaboration with scientists from Columbia University and the University of Oregon, we deployed 27 broad-band seismometers across the state of Colorado from June through November. Seismic waves produced by a hundred or so earthquakes from around the world were recorded by this array. The data from this experiment are being analyzed by Duk-Kee now to determine such things as the crustal thickness beneath the Front and lateral variations in mantle properties beneath this region. We hope to understand the abrupt nature of the boundary between the Rocky Mountains and the great plains to the east.



Blount, J. G.*, 1992, Hydrogeology and hydrochemistry of the Falls City uranium mine tailings remedial action project, Karnes Co., Texas: *Texas Bureau of Economic Geology, Report for Texas Department of Health, Bureau of Radiation Control*, 322 p.

Kupecz, J. A., Montañez, I. P., and **Gao, G.**, 1993, Recrystallization of dolomite with time, in: Rezak, R. and Lavoie, D. (eds.), *Carbonate microfabrics: Frontiers in Sedimentary Geology*, New York,

Springer-Verlag, p. 187-194.
Kyle, J. R., and Ulrich, M. R., 1993, A tour of salt dome cap rock features, WinnRock quarry, Winn Parish, Louisiana: fossil analog of modern petroleum seeps associated with salt structures in the offshore Gulf: *American Association of Petroleum Geologists field trip guidebook*, New Orleans Geological Society, 48 p.

Lagoe, M. B., Gary, A. C., and **Zellers, S.***, 1992, Significance of mixed assemblages of benthic foraminifera in late

Cenozoic, glaciomarine diamictites of the Yakataga Formation, Gulf of Alaska: *Studies in Benthic Foraminifera*, Benthos '90, Sendai, Japan, Tokai University Press, p. 265-275.

Larkin, R. G.*, and **Sharp, J. M., Jr.**, 1992, On the relationship between river-basin geomorphology, aquifer hydraulics, and ground-water flow direction in alluvial aquifers: *Geological Society of America Bulletin*, v. 104, p. 1608-1620.

Lizarralde, D., and **Buffler, R.**

T., 1992, Comparison of velocities determined from sonobuoy, VSP, core-sample, and sonic-log data from ODP Site 765, in: Gradstein, F. M., Ludden, J. N., et al. (eds.), *Proceedings ODP, Scientific Results, 123*, College Station, Texas (Ocean Drilling Program), p. 625-636.

Loubere, P., Gary, A., and **Lagoe, M.**, 1993, Generation of the benthic foraminiferal assemblage: theory and preliminary data: *Marine Micropaleontology*, v. 20, p. 165-181.

Lu, F., Anderson, A. T., and Davis,

Gary Kocurek

Professor and Getty Oil Company
Centennial Teaching Fellow
PhD—1980, University of Wisconsin at Madison
Eolian sedimentology

My research is centered in sedimentology, primarily eolian or wind-blown systems, but ranges from what most might call eolian geomorphology to basin analysis. Above all, I work with processes and think any sedimentary systems, including eolian ones, have to be understood from the grain-fluid level to the basin-global scale if they are to be understood at all. I am interested in the flow of fluids and fluid-substrate interactions. This interest, in turn, leads to trying to understand the dynamics of bedforms, and the production and recognition of sedimentary structures. I work with the arrangement of sedimentary units and surfaces, and how these come to be assembled in the rock record. From a process point-of-view, I work with stratigraphic sequences—what had to have happened to give a specific sequence. At the basin-global scale, I am interested in how climate, tectonism, sea level, and sediment supply affect sedimentary sequences and, conversely, how large-scale events can be interpreted from the rock record.

My “field areas” extend from the wind tunnel, to modern dune fields in North America and Africa, to ancient sequences on the Colorado Plateau. During the past year, a project has been completed in the Sahara of Mauritania in which we were able to link specific accumulations and geomorphic features to climatic change during the past 20,000 years. Field work with eolian sequence stratigraphy has been carried to the Jurassic Entrada of eastern Utah, where we are drawing sea-level curves from eolian sequences. A two-year monitoring of conditions has begun at White Sands, New Mexico, wind, water, and dune processes precisely to the dynamics of the system. Modern air-flow work continues with a group from UT’s Department of Aerospace Engineering, in which numerical simulations and actual field data are meshed, with the goal of extracting the fundamental dynamics that apply in general.

Michelle Kominz

Assistant Professor and Shell Companies Foundation
Centennial Teaching Fellow
PhD—1986, Columbia University
Periodicity of cyclic sediment packages; tectonic and stratigraphic history of sedimentary basins

Never a dull year in the Geological Sciences at UT-Austin. My teaching load this year has included joint teaching of exploration geophysics for geophysics majors and first-year graduate students with Milo Backus. I have also begun development of a new graduate course in climate, climate modeling, and implication for high-frequency climate variations. In the spring I taught a graduate geodynamics of basins course. Students completed a thermal model to determine the effects of using realistic density, conductivity specific heat, and conductivity on extensional rifting predictions. I also team-taught a graduate course in quantitative stratigraphy with Martin Lago. The emphasis in my portion of the course included both quantitative analysis of basin subsidence and analysis of high-frequency cyclicity via spectral and linear methods.

My research in the study of high-order cyclic sediments is progressing. I have applied my gamma method to Pleistocene deep-sea sediments. This work is designed to test the procedure in cyclic sediments that are known to be periodic. An image analysis station allows for rapid acquisition of images from color slides of the cores. Results in a North Atlantic glacial debris/carbonate Ocean Drilling Project core (609) indicate that the new method does enhance the orbital signals. A composite gray-scale record from an equatorial Pacific core (577) has been generated, and analysis will begin soon. I have also begun to run forward models to test the method. Only in the case of forward modeling can the true accumulation rates of the various sedimentary facies and true periods of cycles be known. Since these are the parameters predicted by gamma analysis, forward modeling can be used to test the method. Results show that, although the gamma results are not exactly correct, they do significantly improve spectral resolution, returning the periodic component of the corrected time series nearly to that of the original, true-time series.



A. M., 1992, Melt inclusions and crystal-liquid separation in rhyolitic magma of the Bishop Tuff, California: *Contributions to Mineralogy and Petrology*, v. 110, p. 113-120.

Lundelius, E. L., Jr., 1992, Paleofaunas of the Southwest, in: Fox, J. W., Smith, C. B., and Wilkins, K. T. (eds.), *Proboscidean and Paleoindian Interactions*: Baylor University Press, Waco, Tex., p. 35-49.

McDowell, F. W., 1992, Review: Studies of Sonoran Geology, edited by Efrén Pérez-Segura and César Jacques-

Ayala, 1991; Geological Society of America Special Paper 254, Boulder, Co., 130 p.: *Journal of Sedimentary Petrology*, v. 62, no. 4, p. 748.

McDowell, F. W., 1993, The volcanic section near Yécora, Sonora, and its regional significance: *Libreto-Guia Excursiones del III Simposio de la Geología de Sonora y Areas Adyacentes*, p. 185-194.

McDowell, F. W., and Mauger, R. L., 1992, Magmatism in central Chihuahua since 70

Ma: *El Paso Geological Society, Guidebook for the 1992 Field Conference*, p. 119-126.

Milliken, K. L., 1992, Chemical behavior of detrital feldspars in mudrocks versus sandstones, Frio Formation (Oligocene), South Texas: *Journal of Sedimentary Petrology*, v. 62, p. 790-801.

Milliken, K. L., and **Land, L. S.**, 1993, The origin and fate of silt-sized carbonate in subsurface Miocene-Oligocene mudrocks, South Texas Gulf Coast: *Sedimentology*, v. 40, p. 107-124.

Misi, A., and **Kyle, J. R.**, 1992, Dados isotópicos de enxofre em sulfetos e sulfatos da Bacia de Irecê: Contribuição ao conhecimento da gênese das concentrações de sulfetos, in: *Proceedings, I Simpósio Regional de Geologia Bahia-Sergipe*, Salvador, Bahia, p. 150-154.

Musgrove, M. and **Banner, J. L.**, 1993, Regional groundwater mixing and the origin of saline fluids: Midcontinent, United States: *Science*, v. 259, p. 1877-1882.

Nakai, S., Halliday, A. N., Kesler,

Richard Kyle

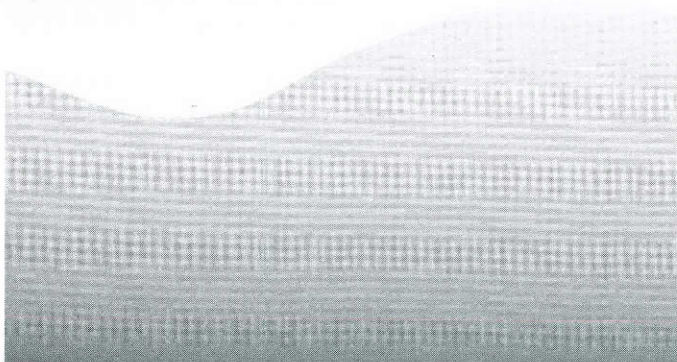
Professor and Getty Oil Company Centennial Teaching Fellow

PhD—1977, University of Western Ontario
Ore deposits geology; stable isotope and fluid inclusion studies; mineral exploration

I have a diverse program in ore deposits geology in the Department of Geological Sciences which combines many aspects of geology in the investigation of the origin of mineral resources in sedimentary, igneous, and metamorphic environments. The program involves field projects in several states and foreign countries, in addition to the Gulf Coast. Undergraduate and graduate students investigate theoretical and applied aspects of the concentration and effective utilization of mineral resources within the context of the total geologic environment.

My research colleagues, graduate students, and I are involved in a major project to investigate the tectonics and ore deposits of the Ertsberg district in Irian Jaya, Indonesia. The region consists of a spectacular Alpine terrain of folded and thrust-faulted Cenozoic carbonate rocks that form the central mountain range of the island of New Guinea. The area is a complex tectonic terrane that developed along the northern margin of the Australian tectonic plate during the late tertiary.

Other current research projects include metal sulfide and industrial mineral deposits in salt-dome cap rocks and in Jurassic carbonates of the Gulf Coast, isotopic and paleomagnetic dating of mineralization, origin of associated sulfide and phosphate concentrations in Proterozoic carbonates of Bahia, Brazil, and regional studies of siliciclastic-hosted zinc-lead deposits in Alaska and China.



Martin B. Lagoe

Associate Professor and Dave P. Carlton Centennial Teaching Fellow

PhD—1982, Stanford University
Micropaleontology

I was involved in several research projects during the past year. Work in southern Alaska continued on the Yakataga Formation. The work is focusing on the Neogene paleoclimatic record and the evolution of the Yakataga continental margin using foraminiferal biofacies, well data, and seismic data to better constrain the Neogene stratigraphy of the offshore Yakataga continental margin. This constitutes Sally Zellers' PhD dissertation. Just this past summer Sally and I became involved in some work on modern glaciomarine sediments in Alaskan fjords. Sally participated in a cruise to collect cores and high-resolution seismic data in Glacier and Yakutat bays.

New Gulf of Mexico student research projects include: studies of benthic foraminiferal distributions in cores from Baffin Bay, Texas, as a means to reconstruct late Holocene paleosalinity history (Laura Stewart, MA thesis; analysis of Holocene foraminiferal trends and paleoceanography of the Gulf of Mexico slope east of the Mississippi Delta/Fan system (Annette Marshall, MA thesis); quantitative micropaleontology and stratigraphy of Pliocene slope basin systems, South Timbalier area (Ken Barrow, PhD dissertation); and quantitative micropaleontology of the Yegua Formation, Houston salt embayment, Texas (Qing Fang, PhD dissertation).

Continuing student projects include: 1) Eocene sequence stratigraphy of the North Sea Basin (Ben Sloan, PhD dissertation); and 2) Neogene stratigraphy of lacustrine sediments and models of groundwater-fed lake systems as a means to interpret those sediments (Chris Caran, PhD dissertation).

I have also been busy with collaborative work in association with scientists at the Institute for Geophysics. These projects include: 1) the Holocene paleosalinity/ paleoclimatic history of Baffin Bay and other Texas coastal embayments (with Bill Behrens); 2) the uplift history of the Solomon Islands in response to the subduction of the Woodlark Spreading Ridge (with Fred Taylor and Paul Mann); 3) high-resolution seismic and geologic studies of Quaternary sediments on the New Jersey continental shelf (with Jamie Austin and Tom Davies); and 4) Neogene sequence stratigraphy of the north-eastern Gulf of Mexico (with Dick Buffler and Craig Fulthorpe).

S. E., Jones, H. D., **Kyle, J. R.**, and Lane, T. E., 1993, Rb-Sr dating of sphalerites from Mississippi Valley type (MVT) ore deposits: *Geochimica et Cosmochimica Acta*, v. 57, p. 417-428.

Roldán-Quintana, J., and **McDowell, F. W.**, 1992, The Baucarit Formation in the Rio Yaqui area, Municipality of Onavas, Sonora: *El Paso Geological Society, Guidebook for the 1992 Field Conference*, p. 223-228. **Rowe, T. R.**, Cifelli, L., Lehman, T. M., and Weiler, A., 1992, The Camp

The Campanian age Terling a local fauna, with a summary of other vertebrate from the Aguja Formation, Travis-Pecos, Texas: *Journal of Vertebrate Paleontology*, v. 12, no. 4, p. 405-427. **Rowe, T.**, and Gauthier, J., 1992, Ancestry, paleontology, and definition of the name Mammalia: *Systematic Biology*, v. 41, no. 3, p. 372-378. Sager, W. W., Fullerton, L. G., **Buffler, T.**, and Handschumacher, D. W., 1992, Argo Abyssal Plain magnetic lineations re

implications for the onset of seafloor spreading and tectonic evolution of the eastern Indian Ocean, in: Gradstein, F. M., Ludden, J. N., et al. (eds.), *Proceedings ODP, Scientific Results*, 123, College Station, Texas (Ocean Drilling Program), p. 659-670. **Salvador, A.**, and Leon, H. J., 1992, Quiriquire Field—Venezuela, in: Foster, N. H., and Beaumont, E. A. (compilers), *Treatise of Petroleum Geology, Atlas of Oil and Gas Fields, Stratigraphic Traps III: American Association of Petroleum Geologists*, p. 313-332. **Salvador, A.**, 1992, The teaching of stratigraphy—replies to a questionnaire: *GSA Today*, v. 2, no. 7, p. 142-143. Sen, M. K., Bhattacharya, B. B., and **Stoffa, P. L.**, 1993, Nonlinear inversion of resistivity data: *Geophysics*, v. 58, p. 496-507. **Simmons, J. L.***, and **Backus, M. M.**, 1992, Linearized tomographic inversion of first-arrival times: *Geophysics*, v. 57, p. 1482-1492. Slatt, R. M., Phillips, S., Boak, J. M., and **Lagoe, M. B.**, 1993,

Geologists, p. 313-332.

Salvador, A., 1992, The teaching of stratigraphy—replies to a questionnaire: *GSA Today*, v. 2, no. 7, p. 142-143. Sen, M. K., Bhattacharya, B. B., and **Stoffa, P. L.**, 1993, Nonlinear inversion of resistivity data: *Geophysics*, v. 58, p. 496-507.

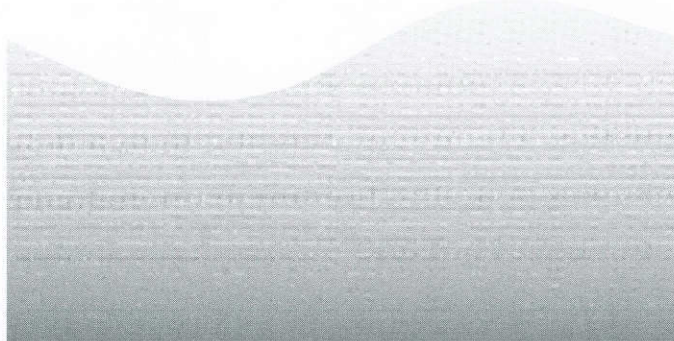
Simmons, J. L.*, and **Backus, M. M.**, 1992, Linearized tomographic inversion of first-arrival times: *Geophysics*, v. 57, p. 1482-1492.

Slatt, R. M., Phillips, S., Boak, J. M., and **Lagoe, M. B.**, 1993,

Lynton Land

Professor and Edwin Allday Centennial Chair
in Subsurface Geology
PhD—1966, Lehigh University
*Isotope geochemistry; diagenesis;
low-temperature aqueous geochemistry*

I continue to pursue Gulf Coast diagenesis, concentrating on shales. The highlight of the year was delivery of a new VG-Prism mass gas-source spectrometer, which will be used for stable isotopic analyses of carbon, nitrogen, and oxygen (and sulfur and others?). The instrument is capable of automatically analyzing samples as small as 0.1 mg of CaCO₃ in conventional ratio-switching mode. It can also be used in "continuous flow" mode, in which a gas of interest is swept into the mass spectrometer with a stream of helium and the isotope ratio is measured "on the fly." New procedures for silicates using lasers as a heat source have been developed that permit rapid analysis of samples as small as 1 mg (20 times smaller than could be analyzed previously). A laser ablation system for analyzing approximately 50-micron-sized areas of CaCO₃ is under development and scheduled for trials during the summer.



Leon E. Long

Second Mr. and Mrs. Charles E. Yager Professor of Geology
PhD—1959, Columbia University
*Geochronology; Rb-Sr isotope geochemistry;
clay diagenesis*

Most of my research is in isotope geology, especially the use of the Rb-Sr method for geochronology and as a geochemical tracer. Applications of dating methods to igneous rocks are commonly quite straightforward, but such is not the case for sedimentary rocks which are typically complex mixtures composed of diagenetic particles and clastic particles of different ages.

Together with my students and foreign associates, I have been exploring the potential of the method in a variety of geologic settings. For years I have worked with Professor Alcides Sial to investigate igneous activity of Pan-African age (roughly 600 million years) in Northeast Brazil. The plutons there may be classified into well-characterized suites that are distinguished according to their mineral textures and geochemical and isotopic compositions. Our studies reveal that under Northeast Brazil there is a mantle source of magma that is anomalously enriched in incompatible trace elements.

Application of the Rb-Sr method to sedimentary rocks requires that first the diagenetic and detrital constituents be separated. Then the diagenetic clay particles must be treated to get rid of Sr that is loosely bound onto surfaces or in open interlayers. Only when all of the preceding has been accomplished is the sample ready for isotopic analysis. In certain environments the data from these elaborately treated samples can provide decisive ages of diagenesis. For example, in Permian evaporite sediments in the Palo Duro Basin of the Texas Panhandle, sedimentary diagenesis occurred during or immediately after deposition. Ages of diagenesis decrease up-section, and they correspond rather precisely to ages of deposition. In other sedimentary basins, such as the Tertiary Gulf Coast, diagenetic material cannot be so cleanly separated from inherited detritus.

We are extending the potential of the technique to perform analyses of very small samples in which the buildup of radiogenic Sr is possibly very small.



Scales of heterogeneity of a deep-water sand giant oil field, Long Beach Unit, Wilmington Field, California, in: Rhodes, E. G., and Moslow, T. F. (eds.), *Marine Clastic Reservoirs, Examples and Analogues*: Springer-Verlag, New York, p. 263-292.

Smith, D., and Boyd, F. R., 1992, Compositional zonation in garnets in peridotite xenoliths: *Contributions to Mineralogy and Petrology*, v. 112, p. 134-147.

Smith, D., Griffin, W. L., and Ryan, C. G., 1993, Composi-

tional evolution of high-temperature sheared lherzolite PHN 1611: *Geochimica et Cosmochimica Acta*, v. 57, p. 605-613.

Stoffa, P. L., and Sen, M. K., 1992, Seismic waveform inversion using global optimization: *Journal of Seismic Exploration*, v. 1, no. 1, p. 9-27.

Turbeville, B. N.*, 1992, ⁴⁰Ar/³⁹Ar ages and stratigraphy of the Latera caldera, Italy: *Bulletin of Volcanology*, v. 55, p. 110-118.

Turbeville, B. N.*, 1992, Relationships between chamber

margin accumulates and pore liquids: evidence from arrested in situ processes in ejecta, Latera caldera, Italy: *Contributions to Mineralogy and Petrology*, v. 110, p. 429-441.

Turbeville, B. N.*, 1992, Tephra fountaining, rheomorphism, and spatter flow during emplacement of the Pitigliano Tuffs, Latera caldera, Italy: *Journal of Volcanology and Geothermal Research*, v. 53, p. 309-327.

Turbeville, B. N.*, 1993, Petrology and petrogenesis of the Latera caldera, central Italy:

Journal of Petrology, v. 34, p. 77-123.

Turnbull, W. D., **Lundelius, E. L., Jr.**, and Tedford, R. H., 1992, A Pleistocene marsupial fauna from Limeburner's Point, Victoria, Australia: *The Beagle*, v. 9, no. 1, p. 143-171.

Wark, D. A.*, **McDowell, F. W.**, **Kempton, K.***, and Swanson, E. R., 1992, Geology and magmatic history of the Tomochic volcanic center, Sierra Madre Occidental: *El Paso Geological Society, Guidebook for the 1992 Field*

Ernest L. Lundelius, Jr.

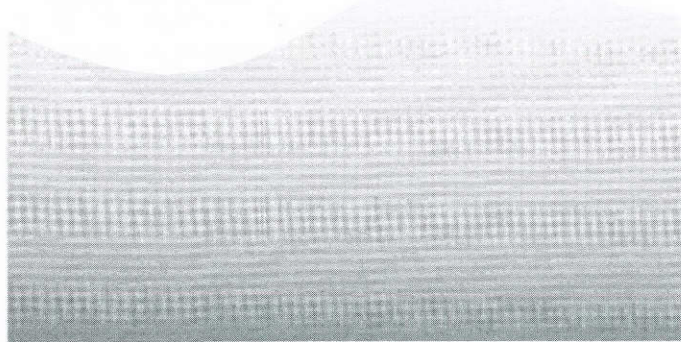
John A. Wilson Professor of Vertebrate Paleontology and Getty Oil Company Centennial Teaching Fellow
 PhD—1954, University of Chicago
Vertebrate paleontology; Quaternary faunas biometrics

I have just finished three papers dealing with Neogene mammal faunas of North America and Australia. Paleomagnetic data on two faunas from southeastern Australia have provided the first good estimates of their ages. This in turn has given information on the nature and rate of change of the mammal fauna of that part of Australia for the last three million years.

The collaborative project with Dr. Russell Graham of the Illinois State Museum on the compilation of a data base of the mammalian faunas of the last 40,000 years of North America is in its third and final year. The compilation phase is now largely complete and the analysis phase is just starting.

In October I took part in a joint (former) Soviet-American workshop on pleistocene vertebrate paleontology held at the Illinois State Museum in Springfield. Ten Russian and Ukrainian and ten American paleontologists participated to discuss the state of studies of Quaternary vertebrate faunas in the two countries and plan collaborative projects.

I taught the course, Vertebrate Paleontology: Birds and Mammals, in the fall and one on topics in quaternary geology in the spring semester.

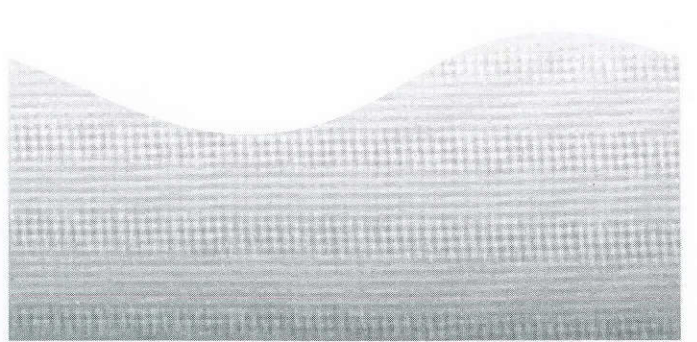


Earle F. McBride

Professor and J. Nalle Gregory Chair in Sedimentary Geology
 PhD—1950, Johns Hopkins University
Petrography and petrology of sandstones; sandstone diagenesis; evolution of porosity in sandstone; origin of chert

Most of my research efforts this year have focused on the diagenesis of sandstones from the northern Apennines in a collaborative study with geologists from the universities of Bologna and Modena. The Texas group consists of me, post-doc Kitty Milliken, grad student Stefan Boettcher, and an undergraduate student from Bologna, Judy Lunardini. Our eight collaborators are comparing the diagenesis of sandstones in several foreland basins with sandstones from several piggy-back basins (basins that developed on moving thrust sheets during and after the Miocene). In the foreland basins, porosity in sandstones was totally lost by compaction, reflecting the deep burial and subsequent tectonic compression of the sands, whereas in piggy-back basins calcite cement in the form of concretions is the major occluder of porosity.

I continue also to have collaborative projects with my good friend, Duke Picard, University of Utah. We have mapped the orientation of aligned calcite-cemented concre-



Conference, p. 139-148.

Young, K., 1992, Late Albian (Cretaceous) ammonites from Sierra Mojada, western Coahuila, Mexico: *Texas Journal of Science*, v. 44, no. 4, p. 413-420, 4 figs.

Young, K., 1992, Migration of exotic species of ammonites during highstands of sea-level: *North American Palaeontological Convention*, Chicago, Ill., pages undetermined.

Young, K., 1993, Middle Albian ammonites from El Madero, west-central Chihuahua: *Texas*

Journal of Science, v. 45, no. 2, 10 p.

Abstracts:

Banner, J. L., Capo, R. C., and **Musgrove, M.***, 1992, Sr isotopic variations in Pleistocene carbonates and groundwaters of Barbados, W.I.: implications for hydrology and diagenesis: *Geological Society of America Abstracts with Programs*, v. 24, p. A105.

Banner, J. L., Musgrove, M.,

and Humphrey, J. D., 1993, Carbon and strontium isotopic variations in Pleistocene carbonates and modern groundwaters of Barbados, West Indies: a temporal record of carbonate diagenetic fluids: *American Association of Petroleum Geologists 1993 Annual Convention Program*, p. 71.

Barker, D. S., 1992, Discriminating magmatic features in carbonatites: *29th International Geological Congress, Kyoto, Japan, Abstracts*, p. 578.

Barker, D. S., 1992, Discriminating magmatic features in carbonatites: implications for the origins of Mg- and Fe-rich carbonatites: *Geological Society of South Africa 24th Congress, Abstracts*, p. 28-29.

Boettcher, S. S.*, 1993, Mesozoic contractile and extensional structures in the Boyer Gap area, northern Dome Rock Mountains, Arizona: *Geological Society of America Abstracts with Programs*, v. 25, no. 5, p. 11.

Boettcher, S. S.*, and **Milliken, K. L.**, 1992, Apatite fission

Sharon Mosher

Wilton E. Scott Centennial Professor
 PhD—1978, University of Illinois at Urbana
*Structural petrology; deformation mechanisms;
 complexly deformed terranes*

My research program continued to be very diverse this year: structural and geochronological investigations of Proterozoic rocks in the Llano uplift of central Texas with Joe Reese, Rob Reed, and Bob Roback (now a postdoctoral scientist) and study of regional- to microscopic-scale deformation mechanisms affecting the Maria fold and thrust belt in eastern Arizona, with students Stefan Boettcher and Barb Marin. Work with student Tom Hoak on the late-stage brittle evolution of the La Spezia region of the Northern Apennines was finished this year. Physical modeling by students at the Bureau of Economic Geology in collaboration with Martin Jackson and Bruno Vendeville continued this year coupled with field work and seismic interpretation. Hongxing Ge, who is studying the evolution of the Paradox Basin, Utah, and Mary Johns, who is investigating polyphase folding, made major progress this year. I also became interested in the Mesozoic/Cenozoic evolution of southern Tierra del Fuego, Chile, while working closely with two finishing PhD's, Keith Klepeis and Dickson Cunningham.

Tim Rowe

Associate Professor and William T. Stokes
 Centennial Teaching Fellow
 PhD—1989, University of California at Berkeley
*Vertebrate paleontology and systematics;
 computer imaging*

For several years, I have been working in the Late Cretaceous sediments of the Big Bend region of West Texas. West Texas had a distinctive fauna of dinosaurs, lizards, and mammals as long ago as 75 million years. Paleontologists trying to understand the extinction event at the end of the Cretaceous will have to study the Texas faunas to get a truly representative picture of what was going on at a continental or global scale. This spring, I took my undergraduate vertebrate paleontology class to Big Bend to see for themselves how extensive and important the Cretaceous vertebrate faunas of Texas are.

I also expect to finish my first compact disc late this spring. Together with co-authors Bill Carlson (UT) and William Bottorff (Austin Business Computers, Inc.), I have built a digital atlas of the skull of *Thrinaxodon liorhinus*, an extinct distant relative of mammals. The disc includes a research library of imagery on this important fossil that was made with an ultra-high-resolution CAT scanner built by Scientific Measurement Systems of Austin. This will be the first scientific monograph ever published on compact disc, and it will be the most complete study of a fossil ever conducted, plus ten animations that show every detail of internal structure. Also included on the disc are several new articles on this technology and a reference library that reproduces all the major articles on *Thrinaxodon* published in the last 50 years—about 250 pages of information.

On another front, I have been continuing my work to bring computers into the undergraduate classroom. I am now working with a flock of graduate students and undergraduates to produce some laboratory software for my freshman course, "The Age of Dinosaurs," with sponsorship by the National Science Foundation. This project will take another year to 18 months to complete.



track evidence for post-Early Cretaceous erosional unroofing of Middle Pennsylvanian sandstones from the southern Appalachian basin in Kentucky and Virginia: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A236-237.

Borg, L. E.*, Clynne, M. A., and **Walker, N. W.**, 1992, Evidence for multiple sources from isotopic and geochemical variation of lavas across the southernmost Cascade arc, California: *EOS, Transactions of the American Geophysical*

Union, 1992 Fall Meeting Abstract Supplement, p. 646.

Buffler, R. T., 1992, Geologic history of the southeast Argo Abyssal Plain, Northwest Australia: *American Association of Petroleum Geologists Bulletin*, v. 76, p. 1092-1093.

Buffler, R. T., and Exon, N. F., 1992, Mesozoic evolution and exploration potential of the western Exmouth Plateau, Australia: *American Association of Petroleum Geology Bulletin*, v. 76, p. 1093.

Buffler, R. T., and **Feng, J.***, 1992, Recognition and sig-

nificance of sequences and their boundaries, deep Gulf of Mexico: *American Association of Petroleum Geologists Annual Convention Official Program and Abstracts*, p. 14.

Carlson, W. D., 1992, Nucleation and growth of garnet porphyroblasts: results from high-resolution computerized X-ray tomography: *Proceedings of the 29th International Geological Congress, Kyoto, Japan*, v. 3, p. 682

Carlson, W. D., and Donelick, R., 1993, Compositional dependence of apatite fission-

track annealing rates: *EOS, Transactions of the American Geophysical Union*, v. 74, p. 168.

Carlson, W. D., and **Johnson, C. D.***, 1992, Steady-state and non-steady-state mass transfer in coronal reaction textures in metamorphic rocks: *Proceedings of the 29th International Geological Congress, Kyoto, Japan*, v. 3, p. 604

Carlson, W. D., and **Reese, J. F.***, 1993, Petrologic significance of staurolites in the Llano Uplift: *Geological Society of America Abstracts with Pro-*

John M. (Jack) Sharp

Gulf Oil Foundation Centennial Professor
 PhD—1974, University of Illinois
*Hydrogeology; alluvial aquifers; regional flow systems;
 energy transport; basin analysis; fractured rock systems*

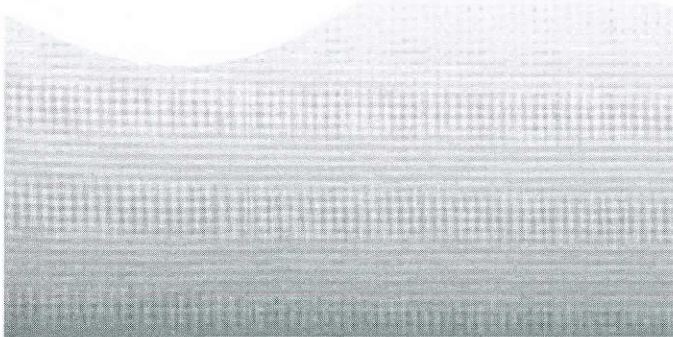
My research group completed our studies on stream/groundwater interactions along the Colorado River and the construction of the electronic minipermeameters. We installed our high-pressure mercury-injection porosimeter and are now developing a GIS capability. GIS (Geographic Information System) may become as commonly used as the pocket compass or microscope in geology. A new research initiative on the Edwards Aquifer in cooperation with the USGS, USBR, and UT Civil Engineering was funded by the Texas Water Development Board to analyze the feasibility of springflow augmentation at Comal and San Marcos springs. The employment outlook for hydrogeology students remains solid, although the demand has somewhat abated. We still need to obtain geophysical and hydrological equipment for use in field teaching and research. I'm looking forward to upcoming field studies in Trans-Pecos Texas, the presentation of our fractured tuff studies at the International Association of Hydrogeologists (IAH) Congress in Norway, and the national meeting of the

Doug Smith

Albert W. and Alice M. Weeks Centennial Professor
 PhD—1969, California Institute of Technology
*Igneous and metamorphic petrology;
 geochemistry; mantle processes*

My research interests have been focused upon processes within the Earth at high temperatures and pressures, in order to investigate why magmas are formed, what drives the plates, and how tectonic provinces are differentiated. Some clues to these processes have been sought in igneous rocks themselves; other clues have been found in the solid fragments of the lower crust and mantle carried up by magmas. Most of the igneous rocks studied in the past year have been from the southwestern U.S., where provinces with contrasting tectonic histories provide a superb natural laboratory. I have continued to try to understand why the history of the Colorado Plateau is so different from that of the Basin and Range. Mantle fragments from these regions have been analyzed by electron probe to relate their histories to the evolution of the two provinces. Further support for this research has recently been received from the National Science Foundation.

Interpretations of rock fragments from depth depend heavily upon understanding the kinetics of mineral equilibration, and so these kinetics have been investigated by analysis of textures and compositional gradients in rocks. Studies of samples from the diamond pipes in southern Africa have been helpful in showing the rates at which mineral assemblages respond to changes. One project completed during the past year was to model how changing conditions are recorded by compositional zonation in the unusual garnets of peridotite xenoliths.



grams, South-Central Section, v. 25, p. 5.

Cloos, M., 1992, Origin of the Caroline Block and Plate: tectonic response to changes in Pacific Plate motion at 43 and 4 Ma: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A185.

Cloutier, R., and **Rowe, T.**, 1992, Cladistics and rates of morphological evolution: computation and comparison: *Symposium on Rates of Evolution, North American Paleontological Convention*, pages undetermined.

Crabaugh, M.*, and **Kocurek, G.**, 1993, Continental sequence stratigraphy of a wet eolian system—a key to relative sea-level change: *Geological Society of America Abstracts with Programs*, v. 25, no. 5, p. A24.

Davies, T. A., Austin, J. A., Jr., and **Lagoe, M. B.**, 1993, Late Quaternary periglacial marine sediments on the outer continental shelf off New Jersey: characterization from high-resolution 3-D Huntex reflection surveys and cores: *23rd Annual Arctic Workshop, Abstracts and Program volume*, Ohio State University, Columbus, p. 95.

Dickerson, P. W.*, 1992, Contrasting accommodation zones linking Miocene-Pliocene basins in the Big Bend, West Texas: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A189.

Dickerson, P. W.* 1992, The volunteer scientific editor as benevolent tyrant: *Association of Earth Science Editors, Blue Line*, v. 24, p. 2.

Dutton, S. P., Cliff, S. J., **Folk, R. L.**, Hamlin, H. S., and Marin, B. A., 1993, Porosity preservation by early siderite cementation in Sonoro Canyon sandstones, Val Verde Basin, Texas: *American Association of Petroleum Geologists Annual Meeting, New Orleans, Program*, p. 95.

Elmore, R. D., Cates, K., Totten, M., **Gao G.**, and **Land, L. S.**, 1992, Remagnetizations, basinal fluids, and paleomagnetic constraints on the timing of dolomitization: *Geological Society of America Abstracts with Programs*, v. 24, p. A106.

Folk, R. L., 1992, Bacteria and

James Sprinkle

First Mr. and Mrs. Charles E. Yager Professor of Geology
 PhD—1971, Harvard University
*Invertebrate paleontology; Paleozoic echinoderms;
 evolutionary history*

I attended North American Paleontological Convention V in late June, 1992, in Chicago, where I helped with two coauthors' presentations. I worked with Tom Guensburg, Rock Valley College, on several joint papers in early July, including a GSA abstract for the Cincinnati meeting, and a manuscript for a chapter in a U.S. Geological Survey professional paper. I spent the fall semester preparing an NSF grant proposal for a three-year project to study Late Cambrian echinoderms from the Rocky Mountains (submitted December 1). We presented a joint poster session at GSA in late October on the tiering history of epifaunal and infaunal marine organisms on hard substrates. I worked with Tom Guensburg again in December and March on preparing an abstract for a spring GSA sectional meeting and a large manuscript on edrioasteroid evolution based on some of our Early Ordovician discoveries. In mid May, I presented our talk on evolutionary faunas and the early echinoderm fossil record at the Cordilleran–Rocky Mountain GSA meeting in Reno, and was awarded one year's support by NSF to search for Late Cambrian echinoderms during the summer of 1993 with Tom Guensburg and PhD student Colin Sumrall.

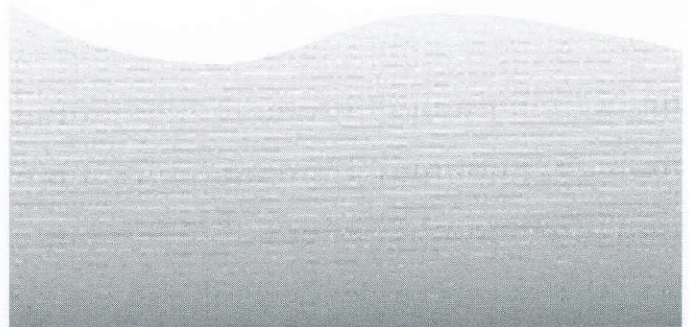
I taught 11 days of GEO 660, our senior field course, in June 1992, in Carlsbad and Alamogordo, New Mexico. I taught paleobiology, now a writing-component course, to 28 juniors in the fall, along with the graduate nomenclature and techniques course. I taught the freshman course GEO 404C, Plate Tectonics and Earth History, to 84 geology majors (1/3) and nonmajors (2/3) in the spring, along with a new version of GEO 391S, this time concentrating on weird fossil organisms and unusual faunas, to eight geology and botany graduate students. I taught 14 days of GEO 660 again, in New Mexico, Colorado, Wyoming, and Montana.

I did relatively little field work in 1992-93, except for short trips to look at Mississippian Ft. Payne buildups in Kentucky after the GSA meeting in October 1992, and Early and Middle Ordovician fossils and environments in California and Nevada after the Cordilleran–Rocky Mountain sectional GSA meeting in May, 1993.

Paul L. Stoffa

Dave P. Carlton Centennial Professor in Geophysics
 PhD—1974, Columbia University
Marine seismology

Progress has continued in applying nonlinear and linear inversion methods to seismic waveform and other geophysical data. Both simulated annealing and genetic algorithms have been pursued and combined with iterative linear inversion to speed convergence and obtain higher resolution results. Practical application of these inverse methods to real seismic data in the offshore east coast of the United States reveals the presence of gas beneath a zone of clathrates. These procedures are now being extended to the problem of pre-stack migration velocity analysis in laterally varying media. Other research in modeling wave propagation and migration in transversely isotropic media has shown that it is possible to derive information about anisotropy from the independent migration of compressional and shear wave data.



nannobacteria revealed in hardgrounds, calcite cements, native sulfur, sulfide minerals and (yes) travertines: *Geological Society of America Annual Meeting, Cincinnati, Program*, p. 104.

Folk, R. L., Picard, M. D., and McBride, E. F., 1993, Highly elongate concretions in sandstone: evidence of paleoflow directions in groundwater: *14th International Association of Sedimentologists Regional Meeting, Marrakesh, Abstracts*, p. 164.

Frank, A.* and Kocurek, G.,

1993, Wind profiles of the stoss slope of sand dunes: implications for eolian sand transport: *Geological Society of America Abstracts with Programs*, v. 25, no. 5, p. A39.

Fruit, D., Elmore, R. D., and Gao, G., 1992, Orogenic fluids and the origin of synfolding remagnetizations: *Geological Society of America Abstracts with Programs*, v. 24, p. A104.

Fu, L.*, Milliken, K.L., and Sharp, J. M., Jr., 1992, Permeability variations in liesegang-banded Breathitt sandstone (Pennsylvanian)—

diagenetic controls: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. 254.

Fu, L.*, and Sharp, J. M., Jr., 1993, Permeability variations in fractured and liesegang-banded sandstone: *Geological Society of America Abstracts with Programs (South-Central Section)*, v. 25, p. 10.

Gao, G., 1992, The implication of the oxygen isotopic composition of lower Devonian micritic limestone, Oklahoma: *Geological Society of America Abstracts with Programs*, v.

24, p. A37-A38.

Gao, G. and Land, L. S., 1993, Complex dolomitization history of the Arbuckle Group, Arbuckle Mountains, Oklahoma: *American Association of Petroleum Geologists 1993 Annual Convention*, p. 106.

Gary, A. C., Loubere, P., and Lagoe, M. B., 1992, High-resolution paleoenvironmental models based on benthic foraminifera: refined tools for deciphering late Pleistocene/Holocene history of the Gulf of Mexico slope: *Geological Society of America Abstracts with*

Willem C. J. van Rensburg

George H. Fancher Professor in Petroleum Engineering, Professor of Geological Sciences, and Director of Graduate Program in Energy and Mineral Resources
 PhD—1965 University of Wisconsin at Madison
Energy and mineral economics

I visited Australia in February where I delivered the keynote speeches on energy and minerals at the Annual Conference of the Australian Mineral Foundation.

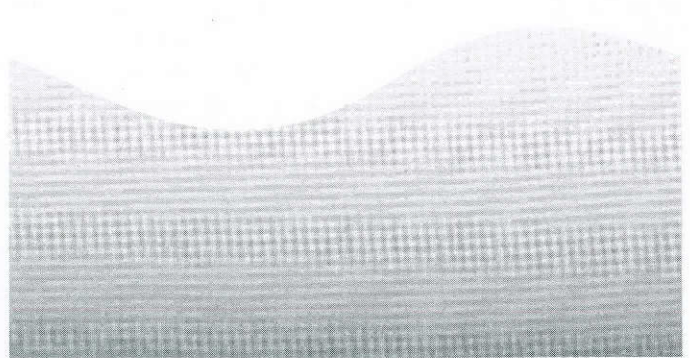
For the third year in succession, my students took all three prizes in the national competition for best student papers in mineral economics of the Mining and Metallurgical Society of America.

Ten Master's students in the graduate program in energy and mineral resources completed their studies under my supervision. I also taught courses in global mineral economics and global energy economics in the Plan II honors program, and did consulting work on platinum-group metals, gem diamonds, and unconventional oil resources.

Clark R. Wilson

Wallace E. Pratt Professor of Geophysics and Shell Foundation Centennial Teaching Fellow, and Chairman, Department of Geological Sciences
 PhD—1975, Scripps Institution of Oceanography, University of California at San Diego
Geodesy and geophysics

I have been working on various problems in geodesy over the past year with support from NASA through Global Geophysics, Earth Observing System, and Dynamics of the Solid Earth Programs. My co-investigators in these projects include faculty and staff members of the Center for Space Research. Under the NASA global geophysics program, we have been studying the very accurate space-geodetic determinations of polar motion and comparing them with meteorological data in order to understand what is forcing high-frequency polar motion, at periods of hours to more than a year. Under the NASA dynamics of the solid earth program, we are charged with installing and maintaining a permanent Global Positioning System receiver at McDonald Observatory, as part of the NASA Fiducial Laboratories International Natural Sciences Network (FLINN). To support NASA and other studies which use the GPS satellites. Our Earth Observing System (EOS) interdisciplinary project which will use space geodetic observations to determine mass and angular momentum budgets for the atmosphere, oceans, and solid earth. This project will continue through the rest of the decade, and is tied to the Federal Government's global change research project.



Programs, v. 24, no. 1, p. 11.
 Gurnis, M., Bond, G. C., and **Kominz, M. A.**, 1992, Co-operative studies aimed at fusing plate-mantle dynamics with global stratigraphy: *EOS, Transactions of the American Geophysical Union*, Fall Meeting, p. 59.

Gutiérrez, R., Wilson, C., and Schutz, B., 1993, West Texas FLINN site: comparison of OMNI, GAMIT, and MOSDP baseline solutions for the 1990 and 1992 GPS Footprint Occupations: *EOS, Transactions of the American Geophysical*

Union, v. 74, no. 16, p. 104.
Haubold, H.*, 1993, Effects of crystallization and dissolution processes on the magnetic properties of shallow-water carbonates (Enewetak Atoll, Marshall Islands): *EOS, Transactions of the American Geophysical Union (Supplement)*, v. 74, no. 16, p. 110.

Hibbs, B. J.*, and **Sharp, J. M., Jr.**, 1992, Hydrodynamics of the bank storage effect—an integrated tracer and modeling study: *Geological Society of America Abstracts with Programs (Annual Meet-*

ing), v. 24, p. 253.
Hill, D. W.*, and **Sharp, J. M., Jr.**, 1993, A theoretical model of subsidence caused by petroleum production: Bill Hill Field, Jefferson County, Texas: *Geological Society of America Abstracts with Programs (South-Central Section)*, v. 25, p. 14.
 Humphrey, J. D., Kimbell, T. N., and **Banner, J. L.**, 1992, Late Pleistocene aragonite cements of mixing zone origin, Barbados, W.I.: *Geological Society of America Abstracts with Programs*, v. 24, p. A104.
 Kimbell, T. N., Humphrey, J. D.,

Banner, J. L., and **Musgrove, M.***, 1993, Microdissolution control on distribution of Quaternary mixing zone dolomite, Barbados: *American Association of Petroleum Geologists 1993 Annual Convention Program*, p. 129.

Kirkland George, B. L., Longacre, S. A., and Stoudt, E. L., 1992, Guide to the Permian Reef Geology Trail, McKittrick Canyon, Guadalupe Mountains National Park, West Texas: *American Association of Petroleum*

RESEARCH STAFF

Guoqiu Gao

Research Associate

PhD—1990, University of Texas at Austin

Carbonate diagenesis and low-temperature geochemistry.

Wulf Gose

Research Scientist

PhD—1970, Southern Methodist University

Paleomagnetism

I continued my paleomagnetic work in Venezuela. In the spring, I presented the results from a cooperative program with Venezuelan scientists at the AAPG International Congress in Caracas. Thanks to a grant from the Mellon Foundation, I was able to collect additional samples in the Perijá Mountains in an attempt to establish the time of block rotations which we had documented previously.

Herbert Haubold's thesis research combines paleomagnetic analyses with petrological and geochemical studies to identify magnetic characteristics to help understand the diagenetic history of Recent as well as Paleozoic carbonates. He presented initial results at the AAPG and AGU meetings.

The application of paleomagnetic principles and techniques to archeological samples is becoming a new facet of my research. Together with graduate students Lori Douglass and Paul Takac (Anthropology), we collected samples at several archeological sites and studied a series of experimental fire places. Paul presented some of the results at the annual meeting of the Society for American Archaeology.

Roberto Gutiérrez

Lecturer and Research Scientist Associate

PhD—1990, University of Texas at Austin

Satellite geodesy

Aside from teaching the course Geology for Engineers, my work this year involved measuring the rates of change for two

very different geologic processes in Texas using the Global Positioning System (GPS). In January, 1993, I began working at the Bureau of Economic Geology with Dr. Robert Morton on the problem of monitoring beach erosion along the Texas Gulf coast. This April we used a vehicle-mounted GPS receiver to rapidly survey several kilometers of beach on Galveston Island with centimeter precision. We expect that comparisons with a 1991 GPS survey of the same beach will reveal changes in beach shape and sand volume, and that future surveys on Galveston Island and along other Texas beaches will provide more accurate information on rates of coastal erosion.

In 1990 we began monitoring crustal stability in West Texas using GPS, and this May several of us from the Department plus participants from UTEP and NASA measured a number of baselines across west Texas and New Mexico. Very precise measurements over several years should allow us to detect deformation rates as low as a 1-2 parts in 10^8 per year. In June, I assisted engineers from McDonald Observatory and the Jet Propulsion Laboratory in installing a permanent GPS satellite receiver at McDonald Observatory. This new GPS satellite receiver is part of a global-space geodetic network that will increase our ability to observe variations in the earth's orientation and rotation rate, monitor the movement of tectonic plates, and measure crustal deformation.

Todd B. Housh

Research Scientist Associate I

1989, PhD—Washington University

Isotope geochemistry

During the past year, since I came to the University of Texas to run the thermal ionization mass spectrometer facility, I have kept fairly busy learning the ins and outs of the Department's MAT 261 thermal ionization mass spectrometer, training and supervising new and inexperienced users, developing new analytical routines, and conducting my own research. My primary research interests involve trying to better understand the processes important in the development and modification of continental lithosphere. This last year I have continued collaborative research with Sam Bowring (Massachusetts Institute of Technology) on the Acasta gneisses, Northwest Territories, Canada. The ca. 4.0 Ga Acasta gneisses

Geologists Convention, Calgary, June, p. 66.

Kirkland George, B. L., Longacre, S. A., and Stoudt, E. L., 1992, Guide to the Permian Reef Geology Trail, McKittrick Canyon, Guadalupe Mountains National Park, West Texas: *West Texas Geological Society Fall Symposium*, November 5-6, p. 199.

Kirkland George, B. L., and Moore, C. H., Jr., 1993, Radial calcite in the Permian Capitan Formation, Guadalupe Mountains, New

Mexico: a possible indicator of sea level rise: *American Association of Petroleum Geologists Convention*, New Orleans, April, p. 130.

Kocurek, G., Havholm, K., **Crabough, M.**, 1992, Eolian event stratigraphy—a conceptual framework model based upon the conservation principle: *Applied Sequence Stratigraphy Symposium*, Rocky Mountain Association of Geologists (Golden, Col.), p. 48-50.

Kominz, M., 1993, What can really be learned from the

Gamma method? Theory and application to Albian pelagic Piobbico densitometer cycles: *American Association of Petroleum Geologists Annual Convention Official Program*, p. 131.

Kominz, M., Bond, G. C., and Goldhammer, R. K., 1992, Are cyclic sediments periodic? Application of the gamma method to cyclic sediments of Pleistocene and Cretaceous age: *American Association of Petroleum Geologists Annual Convention Official Program*, p. 68.

Kuehne, J.*, Johnson, S. and **Wilson, C.**, 1992, Atmospheric excitation of non-seasonal polar motion: *EOS, Transactions of the American Geophysical Union*, v. 73, no. 43, p. 127.

Kuehne, J.*, and Wilson, C., 1993, More on atmospheric excitation of non-seasonal polar motion: *EOS, Transactions of the American Geophysical Union*, v. 74, no. 16, p. 96.

Kyle, J. R., 1993, Winnfield salt dome cap rock, North Louisiana Basin: evidence for late Mesozoic to early Tertiary cold

are the world's oldest known rocks, and my work has focused on understanding both how the Earth's early crust was formed and what processes were important in its modification. Our work has integrated field studies, U-Pb geochronology (in collaboration with Clark Isachsen, MIT, and Ian Williams, Australian National University), petrology, geochemistry, and Nd isotopic studies. Some of the exciting results so far, beyond the recognition of the world's oldest rocks, is evidence that even older crust was involved in the formation of the Acasta gneisses and that parts of the early mantle may have been more differentiated than widely believed.

I have also been involved in collaborative work with Sam Bowring (MIT), Jim Luhr (Smithsonian Institution), and Sergei Rasskazov (Institute of the Earth's Crust, Irkutsk, Russia) on volcanic rocks in the southern part of the Baikal Rift Zone, Siberia. We are studying Oligocene to Holocene volcanic rocks on a traverse across the southern end of the Baikal Rift Zone in order to evaluate the effects of the edge of the Siberian craton on rift volcanism and to better understand the relationship between rifting, uplift history, and volcanism in the context of passive versus active rifting processes. Last September I was fortunate to get to go to Siberia for field studies in the Baikal Rift Zone.

Finally, I have also been working on volcanic rocks associated with the birth and growth of Parícutin Volcano in Michoacán, Mexico, which were erupted between 1943 and 1952. I am trying to use Pb, Sr, and Nd isotopes to better constrain the role of assimilation versus fractional crystallization and the nature of the assimilants in the development of these calc-alkaline magmas. These results are important not only for understanding the magmas at this well-documented volcano but also for interpretation of isotopic data from other volcanic centers in Mexico and the southwestern United States.

Fangqiong Lu

Research Associate
PhD—1991, University of Chicago
Igneous petrology and geochemistry

My research interests lie in the chemical evolution processes of shallow silicic magma bodies. These magma bodies

normally have long life spans and experience repeated volcanic eruptions, magma replenishings, and mineral crystallization. Practical work mainly includes detailed micro-scale chemical analyses of their eruptive products: chemically zoned minerals, melt inclusions, and matrix glasses. Techniques employed are electron microprobe, ion microprobe, and synchrotron microprobe. I am especially interested in studying melt inclusions and their host crystals. Melt inclusions are small volumes of glass (tens to hundreds of microns in diameter) included in crystals. They are samples of the melt from which their host crystals grew. Because different melt inclusions were entrapped at different stages of the evolution process, they provide us with a series of samples of the evolving magma. Also, chemical concentration ratios of melt inclusions and their host crystals yield more reliable partition coefficients for various elements, which are essential to understanding the chemical process of magmas.

Fred W. McDowell

Research Scientist and Senior Lecturer
PhD—1966, Columbia University
*Geochronology and isotope geochemistry
of continental arc magmatism*

During the past year I have continued to emphasize geochronological studies of continental arc magmatism in northwestern Mexico and in Irian Jaya (New Guinea). In Mexico, a massive study has been completed of the past 100-Ma magmatic history in the central portion of the state of Chihuahua. This study, which includes 105 K-Ar and 14 U-Pb ages, is currently in press.

Together with research colleagues in Mexico, we are proceeding with a similar effort across the state of Sonora, roughly between latitudes 28 and 29° north. Again the project combines reconnaissance field work with geochronology by K-Ar and U-Pb. We are examining a diverse assemblage of igneous rocks in Sonora, including plutons and volcanic rocks of the Late Cretaceous–Early Tertiary batholith complex, pyroclastic deposits of the mid-Tertiary ignimbrite flare-up, and Late Tertiary volcanism associated with Basin and Range faulting and with extension related to the early development of the Gulf of California. An important contribution to the

(warm?) seeps: *American Association of Petroleum Geologists Program with Abstracts*, p. 133.

Lagoe, M. B., 1992, Neogene paleoclimate of the Gulf of Alaska and regional correlations to the Bering Sea region: *International Conference on Arctic Margins, Anchorage, Abstract Volume*, p. 32.

Lagoe, M. B., and Buehring, R. L., 1992, Micropaleontological characterization of parasequences in an active margin basin: Etchegoin and San Joaquin Formations, west-

central San Joaquin Basin, California: *American Association of Petroleum Geologists, 1992 Annual Meeting, Official Program*, p. 71.

Lagoe, M. B., and **Zellers, S.***, 1993, Complementary subsurface stratigraphic analysis using microfossil distributions and seismic interpretation: an example from southern Alaska: *American Association of Petroleum Geologists, 1993 Annual Meeting, Official Program*, p. 133-134.

Layman, T. B. and **Lagoe, M. B.**, 1992, Paleoenvironmental sig-

nificance of foraminiferal biofacies in genetic stratigraphic sequences of the Yegua Formation (middle Eocene), southeast Texas: *American Association of Petroleum Geologists, 1992 Annual Meeting, Official Program*, p. 74.

Liu, X.*, **Galloway, W. E.**, and Zhang, J., 1993, Lacustrine sequence stratigraphy: a theoretical consideration: *American Association of Petroleum Geologists Annual Convention, New Orleans, April 25-28*, p. 139.

Liu, X.*, and **Galloway, W. E.**, 1993, Paleobathymetry determination and restoration of depositional profile, an example from the Cenozoic North Sea basin: *American Association of Petroleum Geologists Annual Convention, New Orleans, April 25-28*, p. 139.

Lu, F., Anderson, A. T., and Davis, A. M., 1992, New and larger sanidine/melt partition coefficients for Ba and Sr as determined by ion microprobe analyses of melt inclusions and their sanidine host crystals:

study thus far has been completion of a Master's thesis by Gabriela Mora-Alvarez of the volcanic section in the Sierra Santa Ursula, located just to the north of Guaymas.

In Irian Jaya, K-Ar dating has been completed on the 3- to 4-Ma intrusives of the Ertzberg district, and a manuscript is ready to be submitted. Focus has now shifted to dating the mineralization in the district as well as to obtaining ages for regionally sampled amphibolites and intermediate-composition plutons.

Kitty Milliken

Research Associate

PhD—1985, University of Texas at Austin

Petrography and geochemistry of siliciclastic rocks

My research remains focused on the use of combined petrographic and geochemical techniques for the study of chemical history in shales and sandstones. I continue in my collaboration with Earle McBride on foreland basin rocks in the northern Apennines and the southern Appalachians. This year I've also made an excursion into hydrogeology, working with Jack Sharp and his student Fu Li on a project to examine fluid flow in fractured sandstones from the Appalachians. (One of my new goals is to turn hydrogeologists into petrographers.) Another graduate student, Stefan Boettcher, has also taken an interest in our foreland basin project, producing some really fascinating apatite fission track results that suggest a much deeper and prolonged burial history for the southern Appalachians than had been previously supposed. Gulf Coast shale work with Lynton Land and his students also continues, of course, with ongoing support from the Department of Energy. An Oxford Instruments luminescence detector installed on our SEM last November has proven to be a valuable addition to our repertoire of methods for examining silt-sized particles in shales. This spring, I sailed as a sedimentologist on Leg 149 of the Ocean Drilling Program. Five sites were drilled on the Iberia Abyssal Plain. For me, this was an opportunity to begin a study of shale samples from a burial setting that contrasts strongly with the Gulf of Mexico and, also, a way to avoid cooking, grocery shopping, and driving on Mopac for two months!

W. Bruce Ward

Post-doctoral Fellow

PhD—1993, State University of New York at Stony Brook

I have started a post-doc with J. L. Banner on secular variation in Devonian seawater and marine diagenesis of the Devonian reef complexes of the Canning Basin, Western Australia. We are researching the circulation of seawater through reef platforms and its interaction with the carbonate sediments. We are concentrating on the elemental and isotopic composition of marine calcite cements occurring in large syndimentary fractures (neptunian fractures). Graduate student M. H. Kwong and I have made salinity determinations on primary fluid inclusions entrapped within the marine cements. These have near-normal marine salinities—we believe we have actual samples of Devonian seawater! We will analyze these fluids over the next year. This summer, Banner, Kwong, and I will map and sample the neptunian-fracture networks in the remote outback of Western Australia.

Cassia H. Wolfson

Research Scientist Associate II

PhD—1988, Texas A&M University

As an analytical chemist, my primary responsibility is to assist faculty by using modern analytical methods and instruments to analyze and determine the major, minor, and trace elements in geological samples, which include igneous rocks, sedimentary rocks, groundwaters, rain waters, brines, and soils. I am responsible for the maintenance of several modern analytical instruments, including the inductively coupled plasma spectrometer (ICP), atomic absorption spectrometer (AA), and ultraviolet visible absorption spectrometer (UV/Vis.). I also supervise, instructing students in sample digestion, analysis of geochemical compositions, and operation of the analytical instruments.

My research interests focus on research and development of new, reliable, analytical methods for certain elements that are known to be difficult to determine. These elements include Fe, P, Br, and Pb.

Geological Society of America Abstracts with Programs, v. 24, p. A44.

Marton, G., and **Buffler, R. T.**, 1992, Evolution of a Mesozoic seaway, southeastern Gulf of Mexico: *Programs and Abstracts, 13th Caribbean Geological Conference*, Pinar del Rio, Cuba, p. 51.

McBride, E. F., and **Honda, H.***, 1993, Carbonate-cemented sandstones of Late Pleistocene and Holocene age, South Texas Gulf coast, USA: *14th International Association of Sedimentologists Regional*

Meeting, Marrakesh, Abstracts, p. 234.

McDowell, F. W., and Roldán-Quintana, J., 1993, Geochronology of Mesozoic-Cenozoic magmatism in south-central Sonora: a progress report: *Libro de Resúmenes del III Simposio de la Geología de Sonora y Areas Adyacentes*, p. 77-80.

McDowell, F. W., Roldán-Quintana, J., **Mora-Alvarez, G.***, and Amaya-Martinez, R., 1993, Oligocene-Miocene volcanic history of south-central Sonora,

Mexico: *Geological Society of America Abstracts with Programs*, v. 25, no. 5, p. 117.

Milliken, K. L., 1992, Regional diagenetic variations in middle Pennsylvanian foreland basin sandstones of the southern Appalachians: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. 57-58.

Milliken, K. L., 1992, Petrographic documentation of reactions affecting detrital feldspars in mudrocks: *American Association Petroleum Geologists Annual Meeting*, p. 89.

Muehlberger, W. R., 1992, Geological maps and mapping: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A39-40.

Muehlberger, W. R., 1992, Geology of the Apollo 17 site: p. 36-37 in Ryder, G., Schmitt, H. H., and Spudis, P. D., eds. *Workshop on Geology of the Apollo 17 landing site: LP1 Technical Report 92-09, Part 1, Lunar and Planetary Institute, Houston 63p.*

Muehlberger, W. R., 1993, Late Paleozoic orogenic epi-

- sodes, Trans-Pecos Texas: Geological Society of America Abstracts with Programs, v. 25, no. 5, p. 124.
- Musgrove, M. ***, and **Banner, J. L.**, 1992, Regional groundwater mixing processes in the midcontinent: origin and evolution of saline groundwaters: *Geological Society of America Abstracts with Programs*, v. 24, p. A240.
- Musgrove, M. ***, and **Banner, J. L.**, 1993, Mixing and evolution of saline groundwaters in the midcontinent, USA: implications for carbonate diagenesis: *American Association of Petroleum Geologists 1993 Annual Convention Program*, p. 155.
- Oetting, G. C. ***, **Banner, J. L.**, and **Sharp, J. M., Jr.**, 1992, Geochemical and Sr variations in groundwaters of the Edwards aquifer, central Texas: *Geological Society of America Abstracts with Programs (Annual Meeting)*, v. 24, p. A336.
- Oetting, G. C. ***, **Banner, J. L.**, and **Sharp, J. M., Jr.**, 1993, Geochemical and isotopic variations in groundwaters of the Edwards aquifer of Texas: constraints on diagenetic fluid compositions in geochemical models of water-rock interaction: *American Association of Petroleum Geologists Annual Convention Program*, p. 161.
- Nagnedra, R., and **Chunduru, R. K. ***, 1992, Inversion of resistivity profiling data over hemispherical sinks: dual electrode configuration: 62nd Annual International Meeting, *Society of Exploration Geophysicists, Expanded Abstracts*, October, p. 435-438.
- Pentecost, A., and **Folk, R. L.**, 1992, Microbial ecology of some travertine-depositing hot springs in Italy and identification of aragonite-associated nanospheres: *Meeting of British Sedimentary Research Group*, London, November.
- Porsani, M., Sen, M. K., **Stoffa, P. L.**, **Chunduru, R. K. ***, and Wood, W. T., 1993, Seismic waveform inversion by a hybrid linearized genetic algorithm: 1993 *American Geophysical Union Meeting*, Spring, Baltimore, p. 201.
- Potter, L. S. ***, 1992, Trace-element variation along strike in the eastern alkalic belt, Trans-Pecos magmatic province, Texas and New Mexico: *EOS Transactions of the American Geophysical Union, 1992 Fall Meeting Abstract Supplement*, p. 658.
- Quarles, A., Mann, P., Taylor, F. W., and **Lagoe, M. B.**, 1992, Geologic effects of Quaternary subduction of the Woodlark spreading center on the Solomon Island arc: *EOS, Transactions of the American Geophysical Union*, v. 73, no. 43 supplement, p. 536.
- Rowe, T.**, and **Carlson, W.**, 1992, Digital map of the skull of *Thrinaxodon liorhinus*: high-resolution CT imagery published on CD-ROM: *Journal of Vertebrate Paleontology*, v. 12, no. 3, p. 49A.
- Rowe, T.**, Kappelman, J., and **Carlson, W.**, 1992, New applications of digital imagery in morphology and vertebrate paleontology: *Journal of Vertebrate Paleontology*, v. 12, no. 3, p. 50A.
- Sarzalajo, S., Anderson, J. B., Coterill, K., Vail, P. R., and **Lagoe, M. B.**, 1993, High-frequency cyclicity in East Texas outer-shelf and upper-slope sequences revealed by high-resolution seismic data and platform borings: *American Association of Petroleum Geologists, 1993 Annual Meeting, Official Program*, p. 176-177.
- Sharp, J. M., Jr.**, and **Mayer, J. R. ***, 1993, Geological input into models of fractured porous media: *Geological Society of America Abstracts with Programs (South-Central Section)*, v. 25, p. 41-42.
- Sloan, B. J. ***, **Lagoe, M. B.**, and **Galloway, W. E.**, 1993, Foraminiferal analyses as constraints on sequence stratigraphic interpretations, North Sea Basin: *American Association of Petroleum Geologists, 1993 Annual Meeting, Official Program*, p. 183.
- Smith, D.**, Griffin, W. L., and Ryan, C. G., 1992, Chemical zonation of peridotite minerals and mantle dynamics: *Abstracts, 29th International Geological Congress*, p. 706.
- Smyth, R. C. ***, and **Sharp, J. M., Jr.**, 1993, Permeability controls in the Santana Tuff, Trans-Pecos Texas: *Geological Society of America Abstracts with Programs (South-Central Section)*, v. 25, p. 42-43.
- Sprinkle, J.**, and Guensburg, T. E., 1992, Tiering history of suspension feeders on hard substrates: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A98.
- Sprinkle, J.**, and Guensburg, T. E., 1993, Between evolutionary faunas: comparison of Late Cambrian and Early Ordovician echinoderms and their paleoenvironments: *Geological Society of America (Cordilleran-Rocky Mountain) 1993 meeting, Abstracts with Programs*, p. 97.
- Swezey, C. ***, and **Kocurek, G.**, 1992, Features and interpretation of the Middle Jurassic J-2 unconformity, Western Interior: *Society for Sedimentary Geology, Theme Meeting (Ft. Collins, Col.)*, p. 63.
- Turbeville, B. N., and **Land, L. S.**, 1992, Variations in boron content and $\delta^{11}\text{B}$ of ejecta from the Latera caldera, Italy: implications for the interaction of magmas and hydrothermal fluids: *EOS, Transactions of the American Geophysical Union, 1992 Fall Meeting Abstract Supplement*, p. 638.
- Vrolijk, P., Donelick, R. A., Queng, J., and **Cloos, M.**, 1992, Fission-track lengths in detrital apatites at Site 800, ODP Leg 129: a natural low-temperature annealing experiment: *Proceedings of the Ocean Drilling Program, Scientific Results*, v. 129, p. 169-176.
- Vrolijk, P., Donelick, R. A., Queng, J., and **Cloos, M.**, 1992, Testing of models of fission-track annealing in apatite in a simple thermal setting: Site 800, ODP Leg 129: *7th International Workshop on Fission-Track Thermochronology, Abstracts with Programs*, p. 48.
- Ward, W. B.**, Cox, O. A., **Kwong, M. H. ***, Meyers, W. J., and **Banner, J. L.**, 1993, Upper Devonian seawater samples encased in calcite cements: single-phase fluid-inclusion salinities and cement compositions, Devonian Reef Complexes, Canning Basin, Western Australia: *American Association of Petroleum Geologists 1993 Annual Convention Program*, p. 197-198.
- Weiland, R. J. ***, and **Cloos, M.**, 1992, Plio-Pleistocene unroofing on the Central Range fold-and-thrust belt south of the Gunung Bijih (Ertzberg) Mining District, Irian Jaya, Indonesia: *Geological Society of America Abstracts with Programs*, v. 24, no. 7, p. A185.
- Wood, J. R., and **Milliken, K. L.**, 1993, Plagioclase diagenesis in subsiding basins: *Geological Society of Canada/Mineralogical Society of Canada, Joint Annual Meeting, Abstracts*, p. _____.
- Yang, W., and **Kominz, M. A.**, 1992, Preliminary results on depositional cyclicity of the Late Pennsylvanian and Early Permian Cisco Group, Eastern Shelf, North-Central Texas: *Geological Society of America (South-Central Section) Abstracts with Programs*, p. 52.
- Yang, W., **Kominz, M. A.**, and Dharmasamadhi, W., 1993, Outcrop observation and preliminary correlation of transgression-regression cycles of the Cisco Group (Virgilian and Wolfcampian), Colorado River and Brazos River Valley areas, north-central Texas: *American Association of Petroleum Geologists 1993 meeting, Annual Convention Official Program*, p. 204.
- Young, K.**, 1992, Neocomian desmocerids from Mexico: *4th International Cretaceous Symposium*, Hamburg, Germany, pages undetermined.
- Zellers, S. D. ***, and **Lagoe, M. B.**, 1992, Stratigraphic and seismic analyses of offshore Yakataga Fm. sections, northeast Gulf of Alaska: *International Conference on Arctic Margins, Anchorage, Abstract Volume*, September, p. 65.
- Zellers, S. D. ***, **Lagoe, M. B.**, and Ray, J. C., 1992, Paleoclimatic and depositional significance of an offshore Yakataga Fm. section, eastern Gulf of Alaska: impact on a Neogene paleoclimatic framework for the far North Pacific: *Geological Society of America Program with Abstracts*, v. 24, no. 5, p. 93.



The Bureau of Economic Geology continued to maintain a healthy and expanding research program during 1992–1993. The Bureau's operating budget was approximately \$15 million from line-item State appropriations and from 61 outside contracts and grants. Of these 61 funding sources, 21 were from interagency contracts with State and local governments and 12 were with the petroleum industry and private institutional foundations such as the Gas Research Institute (GRI). The remaining contracts and grants were with various agencies of the Federal government: the U.S. Department of Energy (DOE), the U.S. Geological Survey (USGS), and the Minerals Management Service (MMS).

Several projects of interest to the Texas public and to industry were successfully concluded during 1992–1993. The Atlas of Major Central and Eastern Gulf Coast Gas Reservoirs, funded by GRI and using the same format as that of the Bureau's best-selling Texas gas and oil atlases, was published in early 1993. The atlas synthesizes geologic, engineering, and current production data on major onshore natural gas plays and their component fields/reservoirs in Louisiana, Mississippi, Alabama, South Arkansas, and the western Florida panhandle. The Atlas of Major Midcontinent Gas Reservoirs, which similarly details gas plays in Kansas, Oklahoma, and West Arkan-

sas, was published in July 1993. The new 1:500,000-scale Geologic Map of Texas, a four-quadrant map that has been several years in production, is now available for sale from the Bureau. This map supersedes the U.S. Geological Survey's Texas geologic map, which was published in 1937 and is out of print.

In 1992–1993, the Bureau conducted more than 50 research projects involving a range of geoscientific topics, including energy-resource, waste-isolation, hydrogeologic, experimental- and applied-tectonic, coastal, mineral-resource, and mapping investigations. Seventeen new projects were initiated during the year. These new projects include

- (1) reservoir characterization of a large oil field (Tirrawarra field, Cooper Basin) of central Australia,
- (2) a multi-year study of the sequence-stratigraphic and petrophysical controls on fluvial-deltaic reservoirs and their outcrop analogs,
- (3) compilation of an oil and gas resource atlas of offshore northern Gulf of Mexico, and
- (4) study of the sources of saline water discharging into the Canadian River of the Texas Panhandle.

Energy-resource investigations made up the largest percentage of projects conducted by the Bureau during 1992–1993. The Bureau's multi-year study of San Andres and Grayburg reservoirs received continued funding from industry sponsors during this period. The project involves the most detailed and comprehensive study ever conducted of the controls on San Andres and Grayburg carbonate-ramp reservoir development at all geologic scales (petrology/petrophysics to sequence stratigraphy).

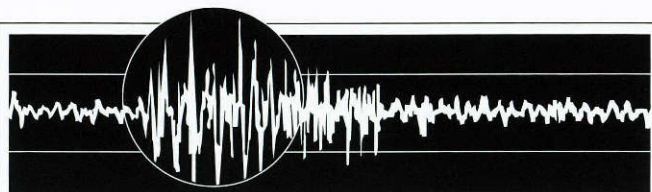
Bureau investigation of the fluvial-deltaic Upper Cretaceous Ferron Sandstone of east-central Utah will ultimately enable prediction of the geometric distribution of flow units, baffles, and barriers to natural gas so that operators can optimize infill-drilling programs for analogous mature Gulf Coast fluvial-deltaic gas reservoirs. As an outgrowth of the Ferron study, the Lower Cretaceous Dakota Sandstone (Fall River Formation) of eastern Wyoming and western South Dakota is similarly being studied as an outcrop analog of subsurface fluvial-deltaic reservoirs. The aim of this study is to determine (1) the three-dimensional architecture of depositional and diagenetic facies in the reservoirs and (2) the relation of these facies to the spatial distribution of petrophysical attributes that directly control fluid flow. In a new project for 1992–1993, Bureau researchers are aiding Venezuelan geologists in maximizing secondary oil recovery from 10 lower Eocene deltaic reservoirs in the Misoa Formation in northeastern Lake Maracaibo. Misoa reservoirs have low recovery efficiencies and retain considerable volumes of unrecovered mobile oil; deciphering the geologic heterogeneity in these deltaic reservoirs is also a primary focus of this project.

As in past years, several projects funded by the Gas Research Institute support a significant portion of the Bureau's research in natural gas. An ongoing Bureau/GRI program continues to investigate factors controlling the porosity and permeability, fracture distribution, and state of stress in low-permeability natural gas reservoirs in Texas and Wyoming. A major effort of this project in 1992–

1993 was the compilation and synthesis of data on geologic and engineering attributes of 24 low-permeability sandstones in 13 U.S. sedimentary basins. In the Secondary Natural Gas Recovery (SGR) project, Bureau geologists and engineers are developing the knowledge to efficiently produce gas from mostly conventional fluvial-deltaic reservoirs in the Gulf Coast Basin. Analysis of middle Frio Formation reservoirs of the Seeligson and Stratton fields and Wilcox reservoirs of the the Lake Creek Unit was the major focus of project research. Researchers expanded the long-term study of the geologic and hydrologic controls on production of coalbed methane by beginning examination of producing strata in the Greater Green River Basin of the western U.S.

Environmental and hydrogeologic investigations compose a significant portion of Bureau research. Twelve environmental projects that address ground-water and waste-isolation issues of importance to Texas and the nation were active at the Bureau during 1992–1993. Projects include (1) characterization of geologic suitability of the proposed site for the Texas low-level radioactive waste repository in Hudspeth County, Texas, (2) a multi-year effort that will build a comprehensive account of the occurrence and movement of ground water near DOE's Superconducting Super Collider (SSC) in Ellis County, Texas, and (3) a 5-year hydrologic/geologic assessment of contaminant movement around the DOE's Pantex Plant, the nation's site for assembly, maintenance and disassembly of nuclear weapons.

— Tucker F. Hentz,
Research Associate



INSTITUTE FOR GEOPHYSICS
THE UNIVERSITY OF TEXAS AT AUSTIN

The Institute for Geophysics (UTIG) conducts geophysical investigations of the history, structure, and dynamics of the earth's crust and of earthquake phenomena. UTIG, a leading academic Organized Research Unit in geology and geophysics, is established to serve the basic and applied geophysical research needs of The University of Texas at Austin.

Graduate student training is an important component of the research activities of the Institute. The Institute itself does not award degrees; rather the Institute maintains close relationships with the Department of Geological Sciences and the Marine Science Department through cooperative programs and joint faculty appointments. Many geophysics graduate students at UT and other universities take advantage of the opportunity to work with the staff and facilities of the Institute for Geophysics. Graduate students are offered the opportunity to work on projects related to funded research programs. In FY 92-93, UTIG provided over \$277,500 in support of graduate and undergraduate students.

Institute capabilities in geophysical research extend from problem definition to data acquisition, processing and, finally, interpretation of results. Development of new methodology and instrumentation for these studies is an integral part of the Institute's activities. UTIG provides a technical support staff to help with data processing, draft-

ing, design and engineering, and to maintain equipment which includes low-fold multichannel systems, an array of active or passive ocean bottom seismometers, magnetometers, gravimeters and geothermal probes.

Research scientists often work as part of international and national teams in large, multi-disciplinary research programs. Disciplinary areas of research interests include seismic reflection and refraction, earthquake seismology, geothermal studies, gravity, geomagnetism, aerogeophysics, laser altimetry, geodesy, and theoretical geophysics. Geographic areas of research are worldwide. The following are examples of recent UTIG research projects: Jamie Austin, Tom Davies, Craig Fulthorpe, Martin Lagoe, other staff and Department of Geological Sciences students participated on a cruise in August 1993 on the *R/V Oceanus* to image the New Jersey shelf using high-resolution (3D) reflection techniques and vibrocoring as part of a continuing project supported by the Office of Naval Research.

Supported by the U.S. Antarctic Program, Don Blankenship and technical staff have spent the last three austral summers investigating the tectonic evolution of the West Antarctic rift system. Data collected last season provides evidence of extensive active volcanism beneath the ice sheet.

Ian Dalziel undertook field work in northern Argentina and then spent the summer in New

Zealand as an Erskine Visiting Fellow at the University of Canterbury, lecturing there and at the Universities of Otago, Wellington, and Auckland.

Craig Fulthorpe was a recent participant on Ocean Drilling Program (ODP) Leg 150 where over 4 km of core from five sites on the continental slope and rise offshore New Jersey were recovered.

Jan Garmany and Yosio Nakamura with UTIG technical support staff and Department of Geological Sciences students conducted an Ocean Bottom Seismometer (OBS) experiment on board the *R/V John Vickers* along the East-Pacific Rise.

John Goff participated on a cruise aboard the *R/V Knorr* as part of ONR's Acoustic Reverberation Special Research Program. This cruise mapped several patches of seafloor in fine detail using very high resolution deep-towed instruments.

Lawrence Lawver was the Chief Scientist on the research icebreaker, *Nathaniel B. Palmer*, on a cruise around the Antarctic Peninsula with Ben Sloan, a graduate student, and Brad Wolaver, an undergraduate in the Department of Geological Sciences. Seismic reflection data and cores were collected south of the Antarctic circle in a region where no geophysical data had ever been acquired.

Paul Mann and Mark Gordon (UT PhD, 1990) conducted field work in western Cuba to define the age and nature of the major tectonic events affecting this part of the circum-Caribbean island arc. Paul Mann also worked on a study of a fault zone adjacent to Puerto Rico to evaluate the seismic hazards of the northern Dominican Republic and Puerto Rico.

Kirk McIntosh, using UT

acquired 3D seismic reflection data, is studying fluid flow paths through the offshore Costa Rica accretionary prism and will supplement the data set in March 1994 with submersible dives to identify and investigate fluid vent sites on the sea floor and detailed heat flow measurements.

Mrinal Sen and Paul Stoffa are developing methods for inversion of geophysical data using simulated annealing and genetic algorithms. They are currently writing a book based on their work on nonlinear geophysical inversion which will be published by Elsevier.

Tom Shipley and Nathan Bangs with UTIG technical support staff and UT students, both graduate and undergraduate, participated in a 30 day research cruise aboard the *R/V Maurice Ewing* to conduct a three dimensional seismic reflection investigation of the northern Barbados Ridge.

Fred Taylor continued drilling the post-glacial coral reef on SW Espiritu Santo Island, Republic of Vanuatu, to obtain coral samples for sea-level and paleoceanographic studies. Taylor also used a hydraulic drill developed at UTIG to obtain core samples from living corals. He introduced graduate student Jeff Chen to the island of Tanna in Vanuatu where Chen did field work for his Master's Thesis.

Information regarding the Institute for Geophysics' programs can be obtained from: Information Office, Institute for Geophysics, The University of Texas at Austin, 8701 N. Mopac Expy, Austin, Texas 78759-8397. Ph.: 512-471-6156, Fax: 512-471-8844, E-mail: utig@utig.ig.utexas.edu.

— Patricia E. Ganey-Curry

VERTEBRATE PALEONTOLOGY & RADIO CARBON LAB



The Vertebrate Paleontology Laboratory continues to be a very active and productive place. The collection of fossil vertebrates is being reorganized with the aid of a National Science Foundation Curation Grant. This will make the Laboratory much easier to use.

Tim Rowe and several colleagues have published a preliminary study of a new Cretaceous microvertebrate locality discovered several years ago near Big Bend National Park. The study was done collaboratively with Tom Lehman (Texas Tech University), Rich Cifelli (University of Oklahoma), and Anne Weil, who completed her master's thesis on the locality last August and is now working toward a PhD. The locality preserves nearly 40 different taxa, including new species of mammals, lizards, and a tiny fragment of one of the oldest known snakes. Master's student Hillary Tulley is currently working on the lizards from this locality. The locality is important in showing that, even in the late Cretaceous, Trans-Pecos Texas had a highly distinctive fauna. Tim's work on Cretaceous vertebrates will continue in and around Big Bend National Park this year. He has also finished the programming for his digital atlas of the skull, *Thrinaxodon*, a Triassic precursor of the mammals. This will be released on CD-ROM by the University of Texas Press in June of this year. This spring

semester, Tim taught a new course at the Lab on development and evolution of the vertebrate skeleton, an undergraduate elective with a lab that used VPL collections and made a field trip to several vertebrate fossil localities in and around Big Bend Park.

Three graduate students have finished their work and left for new positions. Rick Toomey and Gordon Bell have taken post-doctoral positions at the Illinois State Museum and the South Dakota School of Mines, respectively. Anne Weil has begun work on a PhD at the University of California, Berkeley.

Several students are continuing projects mentioned in last year's *Newsletter*. David Froehlich took some time out from his studies of the earliest horses to try his hand on the earliest elephants and their relatives. He and Jon Kalb, a research associate at the Vertebrate Paleontology Laboratory, have produced three papers on these animals from the Afar Valley of Ethiopia. Pamela Owen has started work on the evolution of the post-cranial skeleton of cats in the late Cenozoic of North America. John Chaille has begun to investigate the re-

lationship between morphometric skull characters and various climatic and environmental factors in several mammals.

The preparation of the plesiosaur skeleton collected from Shoal Creek three years ago is nearing completion, and plans for placing it on exhibit in the Texas Memorial Museum are underway. The skull of an ichthyosaur, another Cretaceous marine reptile found in the Austin area, is also being prepared.

Sam Valastro is cooperating with William C. Johnson of the University of Kansas and David W. May of the University of Northern Iowa to date the late-Pleistocene eolian record at the Eustis Ash Pit of south-central Nebraska, which consists of the regionally expressed Gilman Canyon Formation (loess) and overlying Peoria Loess. The project is

threefold: to date total humates, and to date the humin (insoluble fraction) and the humic (or soluble fraction). This project may lead to the re-evaluation of soil and sediment dating techniques to aid actively in geomorphological interpretation of Late-Pleistocene and Eocene-Recent sedimentary units with implications that lead to research in environmental, volcanogenic, glacial, archeological, stratigraphic, ecological, and other studies.

Another project of interest is mortar dating of samples from the Abbey Church of Notre Dame, Jumieges (France). The dating will help establish the time of construction or the time of remodeling of the Church.

— Ernie L. Lundelius, Jr.



Tyrannosaurus
hand



Tyrannosaurus
foot

WALTER

Geology
Library

The cost of running a research library has been escalating rapidly in an era of static budgets and declining buying power, and news from the Walter Geology Library has been increasingly bleak for several years. Thus it is with great pleasure that we thank Mr. Joe Walter and the many donors listed below for their generous efforts to help us increase the Foundation endowments that purchase library materials.

Mr. Walter's \$100,000 donation to the Walter Library Endowment in the fall of 1992 was matched by \$50,000 in University matching funds from the Dean's office of the College of Natural Science. Mr. Walter also challenged the Geology Foundation Advisory Council to raise \$100,000, which will be matched by another \$50,000 in University matching funds available to the director of the General Libraries, for a total increase in dedicated geology library endowment capital of \$300,000.

Under this plan, a \$50,000 donation from Dr. Tom Barrow and his mother, Mrs. L.T. Barrow, with its University match, will be used to create a new Foundation endowment account - the Barrow Periodical Fund. This fund will underwrite the acquisition of publications from several major geological societies, primarily those publishing in the oil and gas arena such as AAPG.

As of this writing, we are within \$10,000 of our fund

raising goal with gifts and pledges, and we are confident that we will meet Mr. Walter's challenge goal within a one-year time frame. Special thanks are due to Dean Boyer, Dr. Bill Fisher, Dr. Clark Wilson, and Harold Billings, the director of the General Libraries, for their support and assistance in meeting this challenge.

This \$300,000 increase in endowment principal will be used to defray the bad effects of the recent years. The funds generated will permit the Walter Library to make many purchases that have been deferred, to support the journal collection, and to have the flexibility to both invest in certain expensive new publications and to explore the rapidly growing world of electronic information resources without sacrificing the basic interests of students and faculty.

The willingness of the many donors to contribute is a testimony to the confidence alumni and associates of the Walter Geology Library have in our programs and services; I take this opportunity to say "thanks!" for all those who will benefit from these additional resources.

In other developments, the Walter Library survived a particularly threatening roofing operation, and got some needed plumbing and carpentry work this year—special thanks to Bill Woods for his assistance on these projects. Two other long-awaited events also came to fruition this year—the new library storage facility opened in the Spring, and the General Libraries local area network was installed in the Walter Library reading room. This network supports access to more than 30 centrally maintained CD-ROM indexes and abstracts as well as Internet connections to the

emerging global information community.

This facility is a state-of-the-art high density warehouse with carefully designed lighting, temperature and humidity control. Located at Balcones Research Center, it will store materials for all units of the General Libraries. Staff at the warehouse will pull and return to the Geology Library any materials requested by users in about two working days.

Clearly this new warehouse is just in time, and the ability to spread out the most used part of the collection will make life easier for everyone who uses the library. We hope this will offset any inconvenience to users caused by materials being stored off site. One warning to visitors coming from out of town to use historical resources: this might be a good time to explore how you can dial in to UTCAT to check in advance where materials are currently shelved so you can make advance preparations before you visit the campus.

In staff news, Dennis Trombatore is still a member of the Geoscience Information Society's Best Paper Committee, and has been asked to join an ad-hoc work group to investigate adding South America to the next edition of the Union List of *Geologic fieldtrip Guidebooks*. Anyone who has references to geologic fieldguides for areas south of Mexico, please send the reference or a copy of the title page to Dennis in care of the Department.

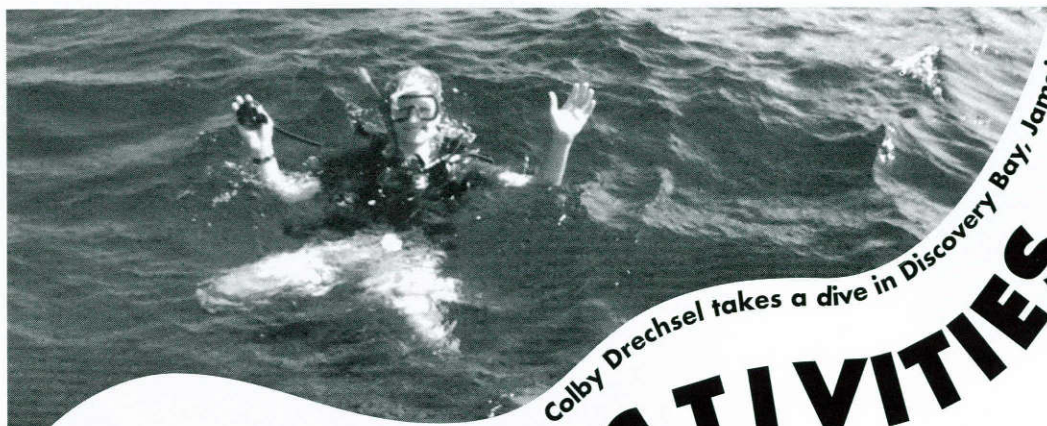
In other staff news, Jim McCulloch has completed data entry and indexing on a much enlarged and improved edition of our 1989 publication *Graduate Degrees Conferred in Geological Sciences at the University of Texas at Austin*. This comprehensive guide to student research in

the Department of Geological Sciences now contains over 1500 MA and PhD references, complete through 1992, and an expanded index. Copies will be available in the fall on an on-demand basis, on paper or disk. Please contact Dennis Trombatore or Jim McCulloch for more details at (512) 495-4680.

Carol Russell has begun a project as time permits to continue the full cataloging of parts of the Tobin Map Collection. Despite several appeals, no funds have been found to hire a temporary cataloger to complete this task, so Carol has started with several of the large national geologic map sets. The benefit of this is that one cataloging record will provide access to many map sheets, helping us make progress toward both goals for the map collection: coding all map sheets for automated check-out, and full cataloging for improved intellectual access on UTCAT. We have so far coded about 20,000 sheets and cataloged about 1,000 map titles.

As we enter the 40th year of the Geology Foundation, it seems appropriate to once again say thank you to all the individuals who have worked over the years to provide the Walter Geology Library with a share of the Foundation's resources. The staff of the Walter Library is cognizant of the large role played by the financial and gift materials support of students, faculty, Advisory Council members, and all the alumni. Together we have built a tremendously valuable resource for education and research. With such continued support and an ongoing dedication to strong public service, we hope to ensure that the investment pays off.

—Dennis Trombatore



Colby Drechsel takes a dive in Discovery Bay, Jamaica

STUDENT ACTIVITIES

- Hydrology On The Move..., p. 39
- Research & Teaching Assistants, p. 40
- 660 Report, p. 42
- 1992-93 Scholarships, p. 45-46
- Japan and Back Again, p. 47-48
- 1992-93 Degrees, p. 49-51
- R.V. Nathaniel B. Palmer, p. 51-52
- Student Speakers, p. 55

GSEC ANNUAL REPORT

The Graduate Student Executive Committee (GSEC) is the means by which graduate students get things done around the department. In addition to organizing social events, GSEC acts as the voice of the graduate student body to anyone who wants to hear it, such as faculty, staff, and the UT administration, and probably some who don't. GSEC coordinates the "Czars" program, in which students take responsibility to do various odd jobs around the department, such as keeping the thesis board up-to-date, supplying cookies and coffee before Tech Sessions, and as-

sembling the student address list. In all, there are about 30 posts which are filled by student volunteers, whose only reward is the gratitude of their peers. GSEC also occasionally purchases small-ticket items to improve the lot of the graduate student body. GSEC also organizes a fall CPR/first aid class for any grad students who need to take it, ensuring that graduate student-led trips will be safe. Finally, GSEC raises funds for its various activities and acquisitions, mainly through stuffing envelopes for Geology Foundation mailings (in fact, this *Newsletter* was probably mailed by a graduate student volunteer).
 During the past year, GSEC, with input from the graduate student body, department faculty, administration, and staff set about revising the graduate student office policy. The office situ-

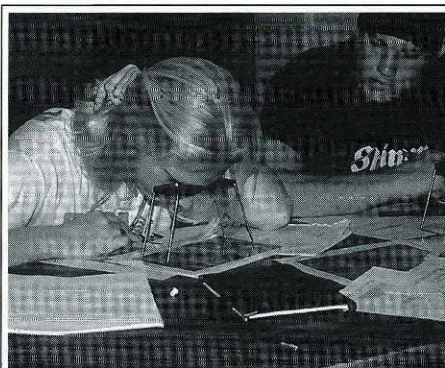
ation was nearing crisis, with enrollment steadily rising and available space remaining static. With the creation of a "common room," some form of office space is ensured into the future for all graduate students.

This year, GSEC continued the Graduate Student Service Award, in recognition of the outstanding volunteer spirit pervading the Department, and in particular certain individuals who go above and beyond the call of duty. Award winners this year were Cambria Johnson, and F. Leo Lynch. The ways in which both have served the graduate student body, unceasingly, during the years of their residence here is greatly appreciated by their peers.

Thanks to the funds allocated by the Geology Foundation, GSEC was able to continue its successful prospective student hospitality program, including defraying some costs of visiting students and their hosts. The Hospitality Program takes care of arranging interviews with professors, giving departmental tours, and providing housing for prospective students visiting the department. Also, the students can get a feel for Austin and what culinary and cultural opportunities abound here. We have received a very positive response from prospective students regarding our program, and many of those who visited in the spring are here now as fall graduate students.

GSEC OFFICERS

- Fall 1992:**
 President ••• Russell Hickerson
 Vice President ••• Sylvia Pope
 Secretary •••••••• Jeff Chen
 Treasurer •• Carlotta Chernoff
 Members •• Denise Harrington
 Dave Hirsch
 Karen Jarocki
- Spring 1993:**
 President •••••••• Dave Hirsch
 Vice President ••• Sylvia Pope
 Secretary •••••••• Heidi Mertig
 Treasurer •••••• Karen Jarocki
 Members ••• Russel Hickerson
 Carlotta Chernoff
 Yang Cheng

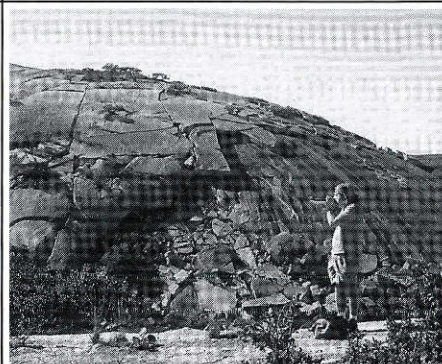


◀ **Geology for Engineers Lab (Geo 312K) students Neil Sheffield and Mike Matola interpret an aerial photograph. Photo by Lis Konnecke, fall, 1992.**

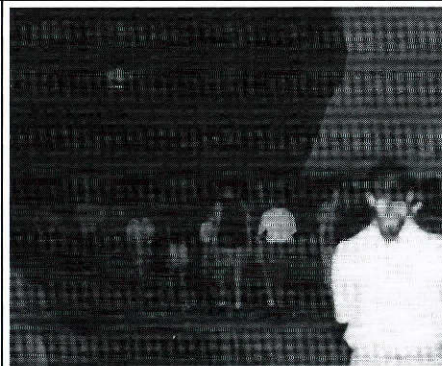
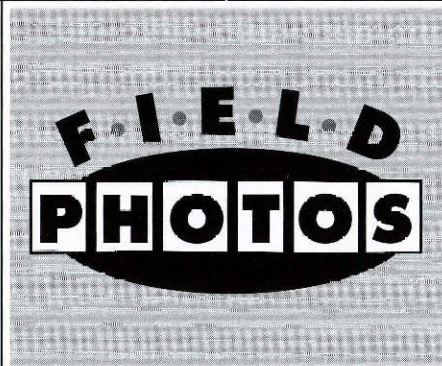


▲ **PhD candidate John Merck meets *Alamosaurus*. This thigh bone belonged to the extinct sauropod dinosaur buried about 66 million years ago in what is now Big Bend National Park. Photo by Tim Rowe.**

North end of main dome, Enchanted Rock State Park, Texas. Jim Rougvie in foreground. Photo by Rob Reed.



▼ **Students visit a factory in Llano, Texas, where granite gravemarkers are made. Photo by Lee Potter.**



▶ **Brad Wolaver in the lab aboard the *RVIB Nathaniel B. Palmer*, collecting seismic reflection data and cores south of the Antarctic circle. Photo by Tom Williams.**

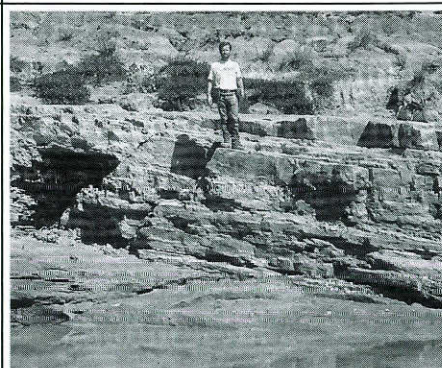


▲ **Students in Geo 320L, elementary field geology, visit a cave. Photo by Lee Potter.**

▼ **Mark Gordon at Early Eocene outcrop in Cuba. Photo by Paul Mann.**



◀ **Large ejected "bomb" (about 2 meters across) near the active crater of Rincon de la Vieja volcano, Costa Rica. The breadcrust texture formed as the slightly molten block cooled and contracted.**





HYDROLOGY

On The Move...

The first Texas Hydrology Roundup was held on April 16, 1993, at the Balcones Research Center. The Roundup, sponsored by the American Institute of Hydrology, was held in conjunction with the American Water Resources Association, Texas Section, spring meeting. Fourteen students (from UT, A&M, Rice, and Texas Tech) contributed papers. UT geological sciences PhD students Jim Mayer, Robert Mace, and Tom McKenna, and MA student Dave Hill presented their research results. A team of four UT undergraduates (Carolyn Cooper, Jason Bontrager, Chock Bailey, and Peter Rung) participated in the Texas Hydrology Challenge. They took first place in the competition with their poster session on the estimation of recharge to the Edwards Aquifer in the Seco Creek watershed.

The UT student chapter of AIH contributed in many ways to the Roundup and managed the registration table. We are pleased to note that The University of Texas at Austin has the largest student chapter in the nation. Graduate and undergraduate students from civil engineering, geological sciences, and public affairs participated. Karl MacArthur (CE senior), Dave Hill (GS graduate student), and Joy Sisolak (Public Affairs and CE graduate student) served as the first officers. The AIH student chapter and the weekly Hydrogeology Brown Bag Seminar provide a unique forum for interdisciplinary discussions on scientific, engineering, and policy issues in hydrology and geology.

This growth in student interest in hydrology reflects the interest of our students. Thirty to forty percent of our undergraduates and over twenty percent of our graduate students indicate hydrogeology or environmental geology as their primary interest. Employment opportunities in these fields remain solid, but can't continue to expand at recent historical rates.



AIH winners, left to right: Carolyn Cooper, Pete Rung, Chock Bailey and Jason Bontrager.

USGS OFFICERS

President • Amanda Casebier
 Vice President Kevin Pasternak
 Secretary •• Patrick Hempton
 Treasurer ••••• Egan Jones

DISCOVER

MAGAZINE

RECOGNIZES

F R A N Z

H I E B E R T

Franz Hiebert (MA '88, current PhD candidate) was named runner-up by *Discover* magazine (October, 1992) for *Discover's* annual Award for Technological Innovation. These awards were designed to recognize outstanding technical innovations, and the scientists and inventors who created them. Franz was cited for the development of the Alpha BioSea bioremediation process to clean up oil spills. Quoting from the citation in *Discover*, "This system accelerates natural cleansing processes by applying oil-eating microbes at the site of a spill. The naturally occurring microorganisms are combined with a soup of special nutrients called biocatalysts, resulting in a population explosion of the hungriest, most efficient oil-eating microorganisms. These transform hazardous oil into harmless, nontoxic components. The technology was tested successfully after the Gulf War to clean Saudi Arabian wetlands and beaches." Franz is director of geoscience programs at Alpha Environmental in Austin.



Film Wins "Emmy"

TEACHING ASSISTANTS

In early 1991, the Institute for Geophysics and Columbia University's Lamont-Doherty Geological Observatory were jointly awarded funds from the National Science Foundation to study mountain building processes in West Antarctica (see article in 1991 *Newsletter*). The Geology Foundation provided \$2,000 to partially defray costs of filming the expedition.

Frank Barnas, a UT graduate student from the Radio-Television-Film Department, wrote, produced, directed, photographed and edited a 60-minute video entitled *Antarctic Voyage: Imaging Unseen Earth*. Barnas and an assistant accompanied the research team on a seven week expedition of Antarctica. His video won first place in the education category in the 1992 College Television Awards of the Academy of Television Arts and Sciences. Winners received \$1,000 and were honored on March 14 at a black tie gala at the Beverly Hilton Hotel, where they mingled with celebrities such as Faith Ford, Michelle Lee and Marion Ross. Tim Allen, the star of ABC's *Home Improvement*, hosted the event.

More than 350 films and videos were received from 115 colleges throughout the United States for the competition. Of the six first-place categories, UT won for education, Northwestern University won for comedy, and New York University won for drama, music, news/public affairs, and documentary.



- Adrian, Joel M.
- Akbar, Faruq
- Balinsky, Robin L.
- Baumgartner, Scott D.
- Bowling, Doug
- Brochu, Christopher A.
- Chen, Jeffrey
- Cheng, Yan
- Chernoff, Carlotta
- Clague, Alistair S.
- Crabaugh, Mary C.
- Crowe, Joanna
- Czebieniak, Andrew
- Ferris, Malcolm
- Gan, Stoney
- Gerdes, Frederick P.
- Grimes, Stephen W.
- Hansen, David S.
- Harrington Ketcham, Denise
- Haubold, Herbert
- Hickerson, Russell L.
- Hoffman, Cory L.
- Jarocki, Karen E.
- Johns, Mary K.
- Kishi, Kyoko
- Klepeis, Keith
- Konnecke, Lis K.
- Kwong, Milton
- Lundquist, Jason
- Mahler, Barbara
- Marshall, Annette
- Mayer, James R.
- McGilvery, Thomas A.
- Merck, John W.
- Molineux, Margaret A.
- Nyffenegger, Paul A.
- Nigudkar, Ravi V.
- Owen, Pamela R.
- Potter, Lee
- Priday, Elizabeth J.
- Rasbury, E. Troy
- Reed, Robert M.
- Reiber, Derek N.
- Reese, Joseph
- Reinsborough, Brian C.
- Roback, Robert
- Roska, Julie A.
- Ryder, Daniel M.
- Sapp, Amy K.
- Sen, Vikramaditya
- Smith, Merrie J.
- Stewart, Laura B.
- Sumrall, Colin
- Tischler, Keith L.
- Uliana, Matthew
- Warren, Paul Q.
- White, James V.B.
- Zellers, Sarah D.

RESEARCH ASSISTANTS

Department of Geological Sciences

- | | |
|----------------------|------------------------|
| Boettcher, Stefan S. | Lynch, F. Leo |
| Choi, Wan-Joo | McKenna, Thomas E. |
| Crabaugh, Jeff P. | McMahon, Timothy P. |
| Crabaugh, Mary C. | Merck, John W. |
| Denison, Cambria | Mertig, Heidi |
| Ding, Xiao-Yang | Moore, James |
| Edgerton, David G. | Musgrove, MaryLynn |
| Eustice, Rachel A. | Oetting, Gregg C. |
| Frank, Andrew | Pope, Sylvia R. |
| Fu, Li | Quarles, Andrew I. |
| Gonzalez, Daniel M. | Reese, Joseph P. |
| Harun, Nina T. | Romanak, Katherine D. |
| Hibbs, Barry J. | Roska, Julie A. |
| Hiebert, Franz K. | Rougie, James |
| Hill, David W. | Rubin, Jeffrey N. |
| Hirsch, David M. | Sapiie, Benjamin |
| Hoar, Timothy J. | Sloan, Benjamin J. |
| Hua, Hsiao-Peng | Smyth Boulton, Rebecca |
| Hutson, Frederick E. | Tulley, Hillary |
| Ketcham, Richard A. | Weiland, Richard J. |
| Kishi, Kyoko | Yang, Wan |
| Klepeis, Keith A. | Zellers, Sarah D. |
| Lee, Duk Kee | Zhou, Ran |

Bureau of Economic Geology

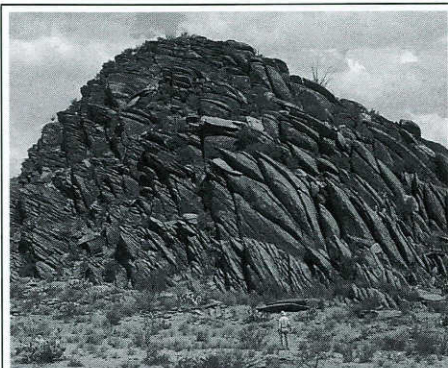
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|---------------------|---------------------|
| Allen, Stephen R. | Klimchuk, Glenn A. |
| Barton, Mark D. | Li, Ning |
| Boghici, Erika | Liao, Jun |
| Boghici, Radu | Lin, Shing-Tzong |
| Choh, Suk-Joo | Mace, Robert E. |
| Czebieniak, Andrew | McMurry, Ronald |
| Darling, Bruce | Nigudkar, Ravi V. |
| Davis, Linda L. | Pendleton, Virginia |
| Fang, Qing | Single, Robert S. |
| Fiduk, Joseph C. | Xue, Liangqing |
| Fitchen, William M. | Ye, Quicheng |
| Ge, Hongxing | Zeng, Hongliu |
| Johns, Ronald A. | Zhou, Ran |
| Kattah, Senira | |
| Kempter, Kirt A. | |

Institute for Geophysics

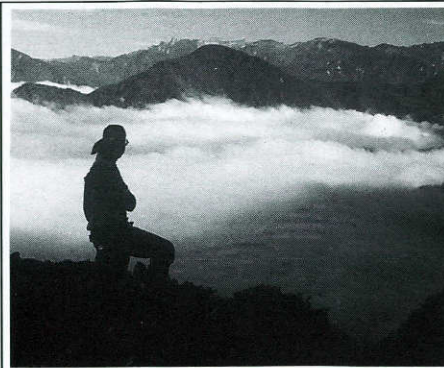
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| Barker, Daniel | Konnecke, Lis K. |
| Chunduru, Raghu K. | Marton, Gyorgy |
| Cunningham, William | Nyffenegger, Paul A. |
| Feng, Jianhua | Oh, Jinyong |
| Fitchen, William M. | Sen, Vikramaditya |
| Gan, Stoney | Simmons, James |
| Hoar, Timothy J. | Sloan, Benjamin J. |
| Jervis, Michael | Tanis, Mehmet C. |
| Klepeis, Keith A. | Ye, Quicheng |

ASSISTANT INSTRUCTORS

- Noble, Paula



◀ Graduate student Dan Barker in front of Eastern Black Hill. Photo by Lee Potter

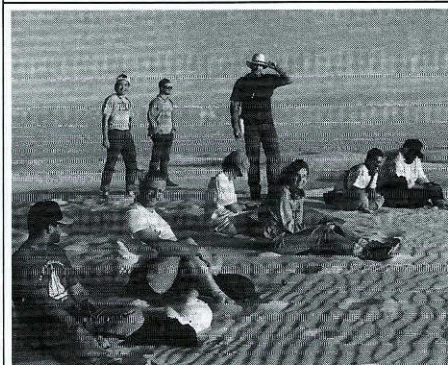


Tim McMahon overlooking mountains in Irian Jaya. Photo by Andrew Quarles. ▲

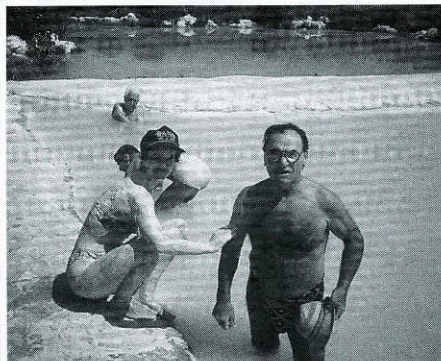
Tim Rowe and students search for bone fragments in Big Bend National Park. Photo submitted by Tim Rowe. ▶



Geo 383N class enjoys a trip to White Sands, New Mexico. Photo by Brenda Kirkland-George. ▼



Carbonate geochemistry can be fun! Troy Rasbury and Pensionato Sconosciuto in Viterbo hot springs and aragonite mud. Photo by Bob Folk. ▶



Jeff Chen at the continuously active volcano, Yasur, on the island of Tanna in Vanuatu. Photo by Fred Taylor. ▲

Ellenburger Limestone at Pfluger Ranch near London, Texas. Photo by Lee Potter. ▼



◀ Andrew Quarles examines turret of a Japanese WWII tank on Guadalcanal. Andrew was working with others from the UT Institute for Geophysics on a study of uplifted late Quaternary coral reef terraces in the Solomon Islands. Photo by Paul Mann.



GEO 660

Southeastern Montana was the location for most of field camp (Geo 660) this year. Projects primarily involved mapping structures in the Paleozoic rocks of the Big Belt Mountains near Helena and the Elkhorn Mountains near Three Forks with Mark Helper, Sharon Mosher, and Bob Roback. We also did a short project mapping multiply deformed Archean metasediments in the Gravelly Mountains along the Madison River, and Jim Sprinkle had the students measure the Paleozoic section in preparation for mapping. The new areas in the fold and thrust belt turned out to be ideal for learning to map. The topography reflected the structures, and there was enough outcrop to be able to map folds and faults with confidence. The hardest part was distinguishing the Paleozoic carbonates, which, in the end, resulted in the students (and staff) learning a tremendous amount about carbonates. field trips included a visit to the Madison

slide, a transect across the Big Belts, a day in Yellowstone National Park, and a trip through the Tetons. (Rumor among the students was that Teton National Park contained mountains, but the cloud cover didn't allow this to be confirmed!)

Unfortunately, we decided to try Montana as a possible site for field camp in the *wettest* year in over a decade! During the four weeks spent in Montana, there were only six days when it did *not* storm. Weather was generally very cold with severe storms, high winds, lightning, rain, sleet, hail and snow flurries. Winds were sufficient to blow staked-down tents containing suitcases across campgrounds. Oddly enough, most weekends had glorious, sunny, warm weather. The students learned to survive the

elements and to camp and cook in harsh conditions. The rugged terrain and spectacular scenery added to the adventure, and the students ended up more seasoned and physically fit than usual. Despite the weather, the terrific geology made Montana a success.

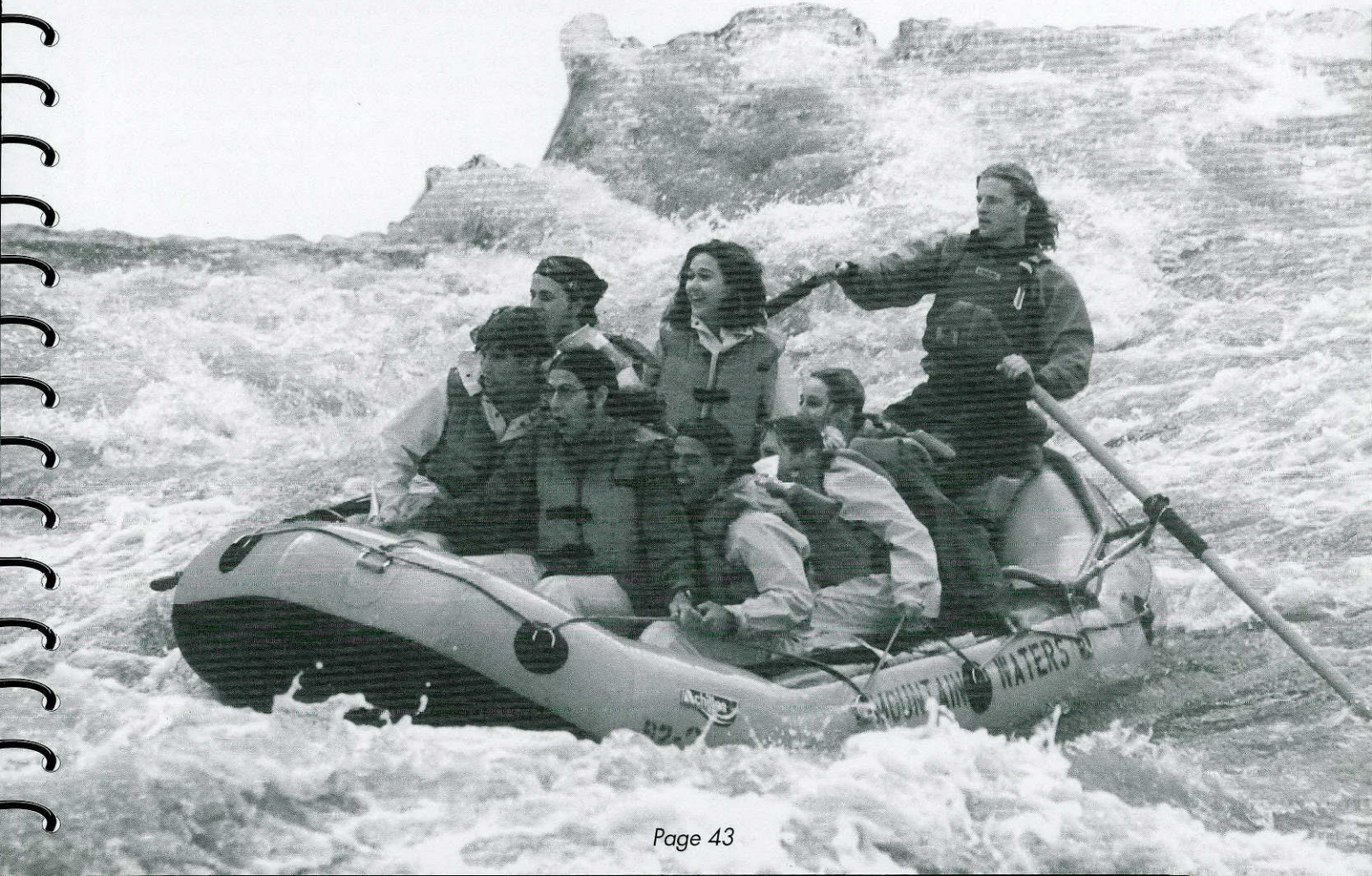
For the first two weeks the group went to traditional favorites with Lyn-ton Land, Earle McBride, and Jim Sprinkle and concentrated on sedimentology and paleontology. The students studied the Permian reefs in the Guadalupe Mountains, carbonates and bioherms in the Sacramento Mountains of New Mexico, and clastic sedimentation in the San Juan Basin near Durango, Colorado. Field trips included visits to Carlsbad Caverns, White Sands National Monument, and Mesa Verde National Park. On a rare day off, many students shot the rapids on the Animas River in Colorado.





PHOTOS:
(top left) Measuring section of 660, Durango, Colorado; (above) "Girls, Girls, Girls!" Mirage at White Sands, NM; (left) Gravelly Range, Montana; Photos by Colby Drechsel.

(below) 660 fieldcampers rafting on the Animas River in Durango, Colorado; Photo by Mary Crabaugh.



BIG BEND

PERSPECTIVES

THANKS TO THE GEOLOGY FOUNDATION's generous contribution the USGS was able to organize a Spring Break trip to Big Bend last March. Twelve students left from the Geology Building on Saturday, March 13th for a six-day/five-night stay at the national park. Upon reaching Big Bend on Saturday evening we camped on the desert floor of the park about eight miles west of park headquarters in primitive camping. Only in the morning, which was heralded by a combined cacophony of coyote howling and vulture screeching, did we realize that we had camped not 200 yards away from one of the major park dumps. You figure that driving nearly 600 miles into emptiness of West Texas that it would be unlikely to camp near a landfill. In any case it provided us with ample opportunity to see and hear a large portion of the park animals during the next couple of nights that we were camped there.

During the days we toured the park, making it to all the major picturesque locales we could find on our tourist map. We hiked several trails in the park, including Boquillas (near the Mexican border on the south side of the park), and several in the Chisos Mountains (Lost Mine Trail, Emory Peak, and the Windows). Although the Chisos Mountains represent only about 3% of the parks area we spent half our time there. It is sort of an island in the sense that it has a microclimate that is more amenable than the surrounding desert, which can get obscenely hot even in the springtime. After camping in the desert for three days we decided to spend Tuesday night in the Chisos at a campsite we designated as "hard-core primitive." It

required us to hike about a quarter of the way up Emory Park (highest mountain in the park at nearly 8,000 feet) with all our camping gear. We spent quite a cool night on the mountain, making for near coma-like sleeping. In the morning we realized how worthwhile it was to have made the effort at camping so far removed from the Winnebagos and Airstreams of the Chisos Basin. It was still and silent in a way that is really unimaginable and unattainable when surrounded by Boy Scout troops and a score of families. Camping there rejuvenated us and made it possible for a group assault on Emory Peak that morning. Two hours and more than a few miles later we had a birdseye view of the park, surveying all the places we had visited as if we were looking down at the plaster topographic map in park headquarters. Right now, sitting in front of a computer in some campus building, I can think of no place I would rather be than atop Emory Peak.

Going five days without bathing is a grimy experience best not shared with comrades in the cramped confines of an automobile. The novelty of not being clean had faded and we thought it would be a treat to take a shower before we returned to Austin. On Wednesday evening we drove to Terlingua to dine at the world renowned La Kiva RV Park and Restaurant. In store for us was a shower, barbecue, and two-stepping to a live band—a nice end to a relaxing week. The next morning we packed and made the stupefyingly long trip back to Austin. We arrived and began slowly gearing up for the remainder of the spring semester, savoring the precious time we had spent at Big Bend.

— Marshall Taylor

IT BEGAN WITH AN EARLY MORNING ROUND-UP of campers the first Saturday of Spring Break. We were a motley crew of twelve undergraduates with no graduate students or professors looking over our shoulders. After a short eight hour jaunt to the park we began to see just how popular Big Bend National Park is getting to be. There were not campsites available upon arrival so we all roughed it near Grapevine Hills. The next day we started things with a hike on Lost Miner's Trail in the Chisos Basin. Along the hike we examined variations in the basalt and noted unconformities. At the top we admired the elevation changes (cliffs and dropoffs) and marveled at the scenery and the view of the rest of the park.

The next day we traveled to the Rio Grande and visited Boquillas Canyon. We observed the variety of cobbles and pebbles, thinking back to our sedimentology class, and joked about the point bars. There was an interesting indentation in the cliff wall with a large, steep cone of fine to medium grained light grey sand which many people were laboriously climbing and then racing down. After collecting sand samples for Dr. Carlson, we joined in the festivities. After running (and falling) down the cone of sand we noticed geology students from other universities inspecting the cliffs, streams, and its cobbles. Shortly thereafter we became curious about the geology of Mexico on the other bank, so we headed over to Boquillas where we found many samples of ammonites and purple fluorite in a bar. That night we moved camp up the road to Painted Springs under Painted Mountain.

On Tuesday, we hiked up into the awe-inspiring (and much cooler) Chisos Basin where we set up camp on the side of a mountain. That night we saw what seemed to be either a flashing satellite or the fabled Marfa Lights.

Wednesday was the day of the "holey" showers. After hiking out of the Chisos, we went on a quest for cleaning. Our trek brought us to near-inoperable and literally shocking showers at La Kiva, home of the whachamacalitosaur. The completion of our quest called for celebration with Bar-B-Q, Shiner, and dancing with the locals.

The next morning, we packed up and headed for home to return to the joys of our geology classes.

— Egan Jones

SCHOLARSHIPS

September 1, 1992 through August 31, 1993

UNDERGRADUATE:

Amoco Foundation, Inc.

James Farmer, Summer 1993
Alberto Jimenez, Fall 1992
Roberto Trevino, Fall 1992

Bloomer Fund for Motivated Students

Keith Ging, 1992-93
Cynthia Mauk, Spring 1993
Tammy Pierce, 1992-93
Roberto Trevino, Spring 1993
Thomas Warren, 1992-93

John F. Bookout Jr. and Carolyn Bookout Scholarship

Stephen Leslie, 1992-93

Wayne F. Bowman Endowed Presidential Scholarship

Chris Sagebiel, 1992-93

Champlin Petroleum Scholarships

Sharon Bruyere, Spring 1993
Jennifer Califf, Spring 1993
Eric Matzner, Spring 1993
Paul Murray, Fall 1992
Kristan Staudenmayer, Spring 1993
Frank Wagner, Fall 1992

W. Kenley Clark Memorial Endowed Presidential Scholarship

Joseph Rank, 1992-93
Thomas Stidham, 1992-93

R. H. Cuyler Endowed Presidential Scholarship

Carolyn Cooper, 1992-93
Jennifer Wilson, 1992-93

Guy E. Green Endowed Presidential Scholarship

Michael Harren, 1992-93

Karl F. Hagemeyer Jr. Endowed Presidential Scholarship

Alison Teagan, 1992-93

John H. and Lujza P McCammon Scholarship

Peter Rung, Spring 1993
Frank Wagner, Spring 1993

Mr. and Mrs. L. F. McCollum Scholarship

Michael Brown, Spring 1993
Peter Rung, Fall 1992

Frank W. Michaux Scholarship

Paul Murray, Spring 1993

Carroll C. Miller Endowed Presidential Scholarship

Jim Gharib, 1992-93

Wes Ogden Memorial Scholarship in Geophysics

Frank Wagner, Spring 1993

Oryx Energy Company Scholarship

Emilio Carmona, Spring 1993

Pennzoil Company Scholarship

Sharon Bruyere, Fall 1992

Petrography Award

Jennifer Wilson, Spring 1993

Phillips Petroleum Company Scholarship

Emilio Carmona, Fall 1992
Jennifer Ericsson, Spring 1993
Emiliano Garcia, 1992-93
Emiliano Garcia, Summer 1993
Jolyn Piercy, Fall 1992
Ishmael Rosas, Fall 1992
Kristan Staudenmayer, Fall 1992

Louis and Elizabeth Scherk Geology Scholarship

Colby Drechsel, Spring 1993
Patrick Hempton, Spring 1993
Egan Jones, Spring 1993
Cynthia Mauk, Fall 1992
Daniel McConnell, Spring 1993
Jennifer Walker, 1992-93
Brad Wolaver, Fall 1992

F. W. Simonds Endowed Presidential Scholarship

Darcy Brooks, 1992-93

Udden Memorial Scholarship

Lance Christian, Fall 1992
Nicholas Hazel, Spring 1993

USX Foundation Inc.

Jennifer Califf, Fall 1992

Glenn and Martha Vargas Gemological Scholarship

Nicholas Hazel, 1992-93

Mr. & Mrs. Albert W. Weeks Scholarship

Hector Becemberg, Summer 1993
Jason Bontrager, Summer 1993
Michael Brown, Fall 1992
Michael Brown, Summer 1993
Lance Christian, Summer 1993
Colby Drechsel, Fall 1992
Colby Drechsel, Summer 1993
Jennifer Ericson, Fall 1992
Jennifer Ericson, Summer 1993
Roger Gary, Summer 1993
Jim Gharib, Summer 1993
Allison Gore, Summer 1993
Nikolas Hazel, Summer 1993
Treavor Kendall, Summer 1993
Matthew Landon, Summer 1993
Eric Matzner, Fall 1992
Daniel McConnell, Summer 1993
Peter Rung, Summer 1993
Clayton Thorp, Fall 1992
Clayton Thorp, Summer 1993
Brad Wolaver, Summer 1993

F. L. Whitney Endowed Presidential Scholarship

Sneha Dholakia, 1992-93

Charles E. Yager Undergraduate Field Scholarship

Sharon Bruyere, Summer 1993
Carolyn Cooper, Summer 1993
Christopher Sagebiel, Summer 1993
Thomas Stidham, Summer 1993
Thomas Warren, Summer 1993

GRADUATE:

Amoco Foundation, Inc.

David Hicks, 1992-93
John Kuehne, 1992-93
Matt Ralston, 1992-93

ARCO Scholarships

Phillip Rowell, 1992-93

Laura Thomson Barrow Graduate Fellowship

Alex Riter, 1992-93

Wayne F. Bowman Scholarship

Stefan Boettcher, 1992-93

BP (Sohio) Exploration Scholarship

Gyorgy Marton, 1992-93

Jesse L. Brundrett Memorial Endowed Presidential Scholarship

Matt Ralston, 1992-93

The Dorothy Ogden Carsey Memorial Scholarship

Chris Caran, Fall 1992

Chevron Fellowship

David Froehlich, 1992-93

Ronald K. DeFord Field Scholarship Fund

Joel Adrian, Summer 1993
Stefan Boettcher, Fall 1992
Doug Bowling, Summer 1993
Suk-Joo Choh, Summer 1993
Widya Dharmasamadhi, Summer 1993
Rachel Eustice, Summer 1993
Hongxing Ge, Spring 1993
Herbert Haubold, Spring 1993
Richard Ketcham, Spring 1993
Ning Li, Spring 1993
Milton Kwong, Summer 1993
James Mayer, Spring 1993
Ann Molineux, Summer 1993
Brian Reinsborough, Fall 1992
Alex Riter, Fall 1992
Julie Roska, Fall 1992
Rebecca Smyth, Spring 1993
Wan Yang, Summer 1993
Ran Zhou, Spring 1993

Michael Bruce Duchin Centennial Memorial Endowed Presidential Scholarship

David Hicks, 1992-93

John E. "Brick" Elliott Academic Activities Fund

Brian Reinsborough, 1992-93
Ben Sloan, Fall 1992

Exxon Education Foundation Scholarship

Dickson Cunningham, Fall 1992
Tom Hoak, 1992-93
Khib Kugler, Fall 1992
Ann Molineux, Fall 1992
Lee Potter, Fall 1992
Andrew Quarles, 1992-93

Peter T. Flawn Centennial Professorship Grant

Su Lun Ba, 1992-93
Gordon Bell, Jr, Fall 1992

Hogg-Cullinan Scholarship

Xijin Liu, Fall 1992

Hogg-Sharp Scholarship

Xijin Liu, Fall 1992

Howard R. Lowe Fund in Vertebrate Paleontology

Christopher Brochu, Fall 1992
David Froehlich, Spring 1993
John Merck, Spring 1993

Oryx Scholarship

Glenn Klimchuk, Fall 1992
Phillip Rowell, 1992-93

Petrography Award

Carlotta Chernoff, Spring 1993

Phillips Petroleum Fellowship

James Mayer, Fall 1992
Warren Wood, 1992-93

Shell Oil Foundation Centennial Teaching Fellowship in Geophysics Grant

Barbara Marin, Spring 1993
MaryLynn Musgrove, Spring 1993

H. Tod Sutherland Memorial Scholarship

Chris Caran, Summer 1993
Joe Reese, Summer 1993

John and Elizabeth Teagle Scholarship Fund

Eric Beam, 1992-93
Pat Dickerson, 1992-93
Xijin Lui, Fall 1992

Technical Sessions Best Speaker Awards

Li Fu, Fall 1992
Leo Lynch, Fall 1992
Timothy McMahon, Spring 1993
Heidi Mertig, Spring 1993

Texaco Scholarship Fund

Glenn Klimchuk, Fall 1992
Kevin Lyons, 1992-93
Phillip Rowell, 1992-93

Various Donors Scholarship

Daniel Gonzalez, 1992-93

Albert W. and Alice M. Weeks Fund in Geology

Ann Molineux, 1992-93
Wan Yang, 1992-93

Arno P. (Dutch) Wendler Professional Development Fund Grant

Stefan Boettcher, Fall 1992
Stefan Boettcher, Summer 1993
Pat Dickerson, Fall 1992
Li Fu, Fall 1992
Hongxing Ge, Fall 1992
Barry Hibbs, Fall 1992
David Hirsch, Fall 1992
Herbert Haubold, Summer 1993
Ronald Johns, Fall 1992
Keith Klepeis, Fall 1992
Tung-Yi Lee, Fall 1992
Kevin Lyons, Summer 1992
Barbara Marin, Summer 1993
Ann Molineux, Fall 1992
MaryLynn Musgrove, Fall 1992
MaryLynn Musgrove, Summer 1993
Gregg Oetting, Fall 1992
Gregg Oetting, Summer 1992
Troy Rasbury, Fall 1992
Joe Reese, Fall 1992
Robert Roback, Fall 1992
Rebecca Smyth, Summer 1992
Wan Yang, Fall 1992
Hongliu Zeng, Summer 1992

Our apologies to ROBERT REED for failing to cite him in the 1992 Newsletter as the winner of the 1992 Petrography Award

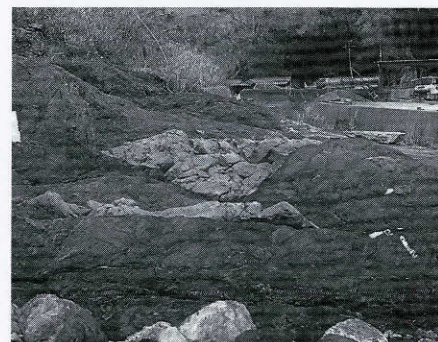
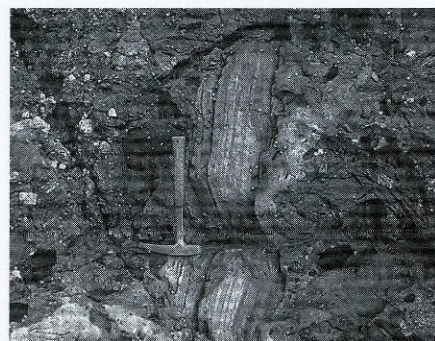


A watchful sentry stands guard at the entrance to a wooden Buddhist shrine on Yokokureyama.

LAST AUGUST I HAD THE OPPORTUNITY TO VISIT JAPAN for the 29th International Geological Congress and to begin some field work on Silurian volcano sedimentary sequences exposed on the islands of Honshu and Shikoku. My game plan was to arrive the week before the Congress to meet up with some Australian colleagues at Nagoya University for field work and to have a look at the fossils in the Nagoya museum collections. At Nagoya, we enjoyed the hospitality of Dr. Mizutani, who, during the mid-70's, had been a guest of Dr. McBride's in Austin. The trip to Nagoya was an adventure in itself. I had been FAXed detailed directions on how to get to Nagoya University from the Osaka airport that consisted of several transfers from the bullet train (Shinkansen), to the local train, to the subway (Chikatetsu), and then finally to the city bus (Busu). The signs in the big train stations were in both Japanese and English, but as I got further along route, the English signs disappeared and I was left trying to match the ideographic symbols on the platform signs with those in my Japanese-English dictionary. Luckily for me the Japanese travelers are helpful and friendly; without their help, I would still most likely be stuck in the Chikatetsu trying to find the university line.

The Japanese take great pride in the efficiency of their trains, to the point where the numbers for the trains are the departure times. This was a hard concept for me to grasp because my only other foreign travel experience had been in Italy with R. L. Folk, where the trains do practically anything but run on time. In Japan, the 5:29 to Nagoya really does come at 5:29. If you mistakenly catch the 5:24, as I did, you'll find someone sitting in your reserved seat as you stand foolishly by, everyone knowing that yet another helpless foreigner has taken the wrong train. We left Nagoya and headed for fieldwork in the Tokai Central highlands. We stayed in the town of Hiraji, which is a favorite weekend get-away for the Japanese because of its volcanic hot springs. All of the local inns have onsens, naturally fed hot baths. The scalding temperature is controlled, mercifully, by a cold water spigot you can run to cool the hot spring water.

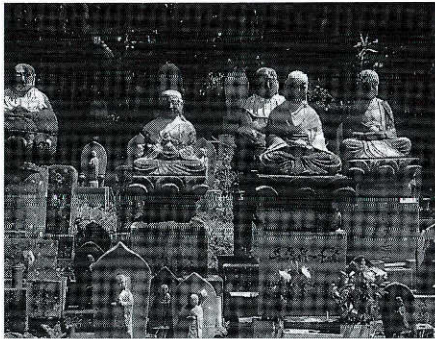
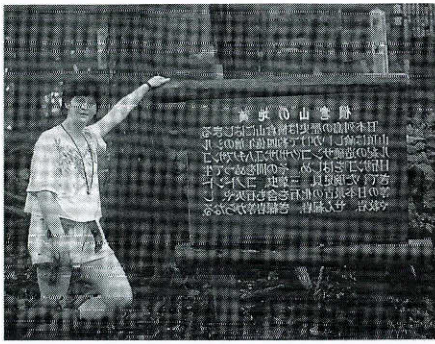
After the conference, we met up with Drs. Hada and Yoshikura at Kochi university in Shikoku to do fieldwork in the Kurosegawa Tectonic Zone. The countryside was beautiful and lush, but the weather paralleled East Texas in July, and the outcrop exposures are akin to those in any



PHOTOS:

(top) Metasedimentary clast eroded from the Sambagawa belt that has been incorporated in Late Cretaceous marine sediments of the Shimanto belt, along the beach, Kochi Prefecture, Shikoku.

(bottom) Lenticular sandstones encased in mud-matrix melange in the Shimanto belt at Cape Oyama, Shikoku



other tropical jungle. Roads and rail-ways cut through the steep mountain-sides exposing outcrops, but many of the roadcuts have been covered with a layer of concrete to stabilize them from rock slides. My companion's former field stops of a few years back now appeared as a smooth and uni-form coat of gray. Undaunted, we visited Yokoku-rayama, a mountain near Kochi which is one giant tectonic block caught up in the Kurosegawa Tectonic Zone. There are several steep trails up the mountain with a burlap rope alongside the trail that you can grab to help pull you up in case you should slip on the moss. Yokokurayama has historical signifi-cance too. It is the final resting place of a medieval Shogun and it is a popular pilgrimage place for Japanese tourists because of the historical shrines found on the mountain and its pure and delicious spring water.

As is the case of many visitors to Japan, the cuisine was quite an expe-rience. I soon found out that no fish is too small to be eaten and virtually no part of the fish is considered inedible. This is also true of the chicken. I ate a few dinners in a yaki bar in Kochi, where meats and vegetables are skewered on bamboo sticks and grilled before you on a hibachi. You can get yaki of chicken meat, chicken skin, chicken hearts, or chicken gizzards.

By the way, I hear it is impolite to not eat something when somebody else has ordered it for you. A typical break-fast consisted of a grilled whole fish served with a side of rice, dried sea-weed strips (nori), and a raw egg. The egg was cracked over the rice and eaten with the nori strips. The Japa-nese also like their drink. Japanese beer is much better than Italian beer (sorry, Dr. Folk), and the sake is either stronger in Japan than it is here, or the sidewalks are terribly uneven. I visited a temple with Dr. Imoto in Kyoto and stopped for some hot tofu and a hot drink that tasted like sake. I was told the drink is called something else because sake is forbidden in the temple. I also en-joyed a lot of Japanese green tea, which is sometimes as strong as the sake. Mrs. Yamamoto performed the tea ceremony for me at her home in Fukui and afterwards tried to walk me through the ritual steps. The green tea is a fine powder that is very pungent and is whisked into a green froth. For southpaws, like me, whisk-ing with your left hand is not al-lowed, and sloshing green tea on the tatami mat floor is considered bad form. All in all, I recommend a trip to Japan for those who like new cul-tural experiences. Bring plenty of dollars, though, and prepare for a culinary adventure.

PHOTOS:

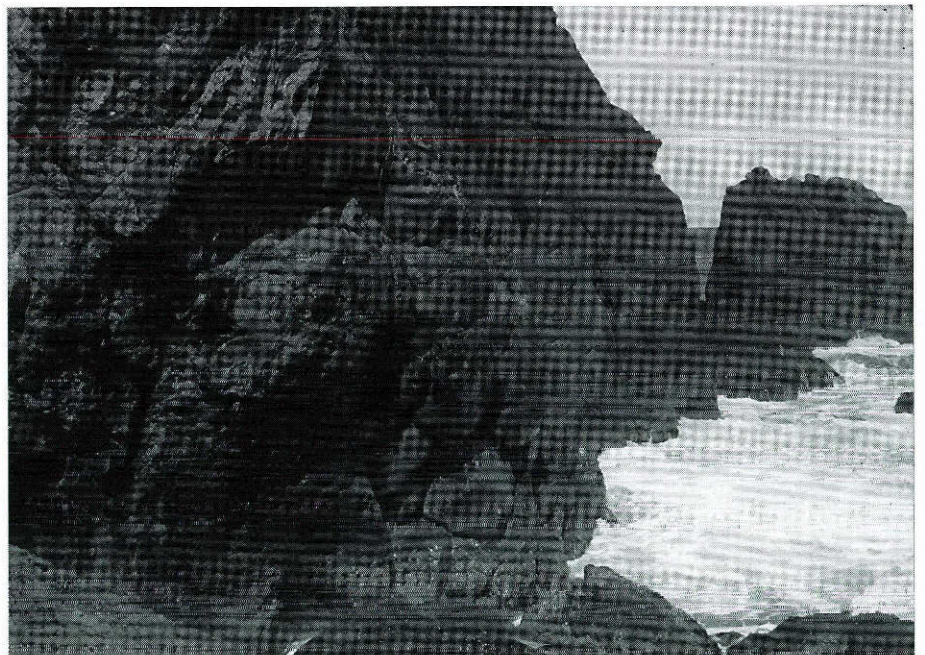
(top) Paula Noble pauses near the Temple on Yokokureyama.

(next) Entrance to shrine at Yokokureyama.

(next) Sailor's graveyard along the southern coast of Shikoku.

(bottom) Ginkaku-Ji Temple, Kyoto.

(right) Pillow basalts exposed on the Muroto Peninsula, Shikoku.



DEGREES

AUGUST, 1992 thru May, 1993

as conferred by
The University of Texas at Austin
Department of Geological Sciences

UNDERGRADUATE

BACHELOR OF ARTS - AUGUST 1992

Merrily N. Eickbusch

DECEMBER 1992

Randy L. Remington
Doris Jeanne L. Tischler
Kevin D. Williams

MAY 1993

Nikolas A. Hazel
Corbin D. Smith

BACHELOR OF SCIENCE - AUGUST 1992

Robin L. Balinsky
Craig E. Bennett
Darrel R. Corcoran
Karen E. Jarocki
Sonya A. Jones
Catherine E. Patterson
Kevin D. Reid
Christian V. Shorey
Jennifer E. Winkler
Kirby H. Wynn
Anish M. Deshpande*
Scott W. Rubin***

DECEMBER 1992

Ignatius Girendroheru*
Stefan K. Schuster*
Evan S. Anderson
Michelle L. Town

MAY 1993

David J. Dieball
Darcy M. Brooks*
Keith D. Ging*
Michael R. Harren*
David M. Mackintosh*
Francisco Spano Bonuglia*

*with honors
** with high honors
*** with highest honors

GRADUATE

MASTER OF ARTS, AUGUST 1992 (7)

Bilir, Sevin I.
BS, Geology, 1987,
Texas A & M University
*Hydrogeologic Characterization of a
Glacial Aquifer Contaminated by
Crude Oil Near Bemidji, Minnesota.*
Supervisor: Philip Bennett
Committee Members: Rainer Senger,
John M. Sharp Jr.

Davenport, Howard E.
MA, Economics, 1981,
The University of Texas at Austin
*The Influence of Eolian Stratification
Types on Diagenesis.*
Supervisor: Earle F. McBride
Committee Members: Gary Kocurek,
Robert L. Folk

Fitchen, William M.
BS, Geology, 1987,
The University of Wisconsin-Madison
*Sequence Stratigraphy of the Upper San
Andres Formation and Cherry Canyon
Tongue (Permian, Guadalupian), South-
ern Brokeoff Mountains, New Mexico.*
Supervisor: Richard T. Buffler
Committee Members: Charles Kerans,
William E. Galloway

Lin, Shing-Tzong
BS, Geology, 1988,
National Taiwan University
*Experimental Study of Syndepositional
Gravity Spreading of a Brittle Over-
burden and Viscous Substratum.*
Supervisor: Sharon Mosher
Committee Members: William R.
Muehlberger, Martin P. Jackson

Linares, Luz M.
BA Geology, 1981, Universidad de Oriente
*Sequence Stratigraphy of Late Miocene-
Pliocene of Northern Mon-agas, East-
ern Venezuela Basin.*
Supervisor: Amos Salvador
Committee Members: Eric Rosencrantz,
William E. Galloway

Tsai, Heng
BA, Geology, 1988,
National Cheng Kung University
*Rb-Sr Isotope Systematics of the Burro
Mesa Rhyolite, Big Bend National
Park, Texas.*
Supervisor: Leon E. Long
Committee Members: Daniel S. Barker,
Christopher D. Henry

Weil, Anne I.
A.B., English, 1988, Harvard University
*Multituberculate Mammals and Bio-
stratigraphic Correlation of a
Campanian Microvertebrate Site.*
Supervisor: Timothy B. Row
Committee Members: Thomas H. Lehmar,
Ernest L. Lundelius Jr.

DOCTOR OF PHILOSOPHY, AUGUST 1992 (1)

Ramirez-Ramirez, Calixto
Ingeniero Geologo, 1974, Uni-versidad
Nacional Autonoma de Mexico
*Pre-Mesozoic Geology of Huizachal-
Peregrina Anticlinorium, Ciudad
Victoria, Tamaulipas, and Adjacent
Parts of Eastern Mexico.*
Supervisor: Amos Salvador
Committee Members: Douglas Smith,
Wulf Gose, John A. Maxwell,
Rodger E. Denison

**MASTER OF ARTS,
DECEMBER 1992 (3)**

Brochu, Christopher A.
BS, Geological Sciences, 1989,
The University of Iowa
*Ontogeny of the Post-cranium in
Crocodylomorph Archosaurs.*
Supervisor: Timothy Rowe
Committee Members: Wann Langston,
Ernest L. Lundelius Jr.

Holzmer, Frederick J.
BS, Zoology, 1979,
The University of Texas at Austin
*Hydrogeologic Characterization and
Geochemical Evolution of the Saturated
Zone at a Reclaimed Lignite
Surface Mine, East Texas.*
Supervisor: John M. Sharp
Committee Members: Philip Bennett,
Earle F. McBride

Mora-Alvarez, Gabriela
Ingeniera, Geological Engineering, 1980
National Autonomous, Univ. of Mexico
*History of Cenozoic Magmatism in the
Sierra Santa Ursula, Sonora, Mexico.*
Supervisor: Fred W. McDowell
and Leon E. Long
Committee Member: Christopher Henry

**DOCTOR OF PHILOSOPHY,
DECEMBER 1992 (2)**

Lee, Tung-Yi
BS, Geology, 1982, National Taiwan Univ.
MA, Geological Sciences, 1987,
The University of Texas at Austin
*Cenozoic Plate Reconstruction of South-
east Asia and Sequence Stratigraphy
and Tectonics of the Tainan Basin,
Offshore South-western Taiwan.*
Supervisor: Richard T. Buffler
and Leonard F. Brown
Committee Members: C.H. Tang,
William E. Galloway, Lawrence Lawver

Pittman, Jeffrey G.
BS, Geology, 1981, Centenary College
MS, Geology, 1984,
Southern Methodist University
*Stratigraphy of Vertebrate Ichnology of
the Glen Rose Formation, Western
Gulf Basin, U.S.A.*
Supervisor: Timothy B. Rowe
and Wann Langston Jr.
Committee Members: Keith Young,
Theodore Delevoryas, John Ostrom,
Ernest L. Lundelius Jr.

**MASTER OF ARTS,
MAY 1993 (10)**

Black, Jeffrey W.
BS, Geological Sciences, 1987,
The University of Texas at Austin
*Hydrogeology of the Lobo and Ryan
Flats Area, Trans-Pecos Texas.*
Supervisor: John M. Sharp Jr.
Committee Members: Lynton S. Land,
Charles W. Kreidler

Council, Todd A.
BS, Geology, 1986,
University of North Carolina-Wilmington
*The Role of Ikaite in the Formation of Tufa
Deposits at Mono Lake, California.*
Supervisor: Philip C. Bennett
Committee Members: Robert L. Folk,
Lynton S. Land

Ferris, Malcolm
BS, Environmental Sciences, 1984,
University of Massachusetts-Amherst
*Distribution of Permeability Patterns –
Upper San Andres Formation Outcrop,
Guadalupe Mountains, New Mexico.*
Supervisor: John M. Sharp
Committee Members: Larry W. Lake,
Charles Kerans

Li, Fu
BA, Hydrogeology, 1984,
Nanjing University
*Instrumentation of an Electronic
Permeameter and Controls on Per-
meability Variations in the Fractured
and Liesegang-Banded Breathitt
Sandstone, Eastern Kentucky.*
Supervisor: John M. Sharp
Committee Members: Rainer Senger,
Earle F. McBride

Marin, Barbara A.
BA, Geosciences, 1990,
The Pennsylvania State University
*Kinematic Evolution of a Ductile Shear
Zone System, Granite Wash Moun-
tains, West Central Arizona.*
Supervisor: Sharon Mosher
Committee Members: Stephen Laubach,
William R. Muehlberger

Meckel, Lawrence D. III
BA, Geology, 1989, Williams College
*Stratigraphy and Sedimentology of the
Eocene Yegua Formation, Texas
Gulf Coast.*
Supervisor: William E. Galloway
Committee Members: Martin B. Lagoe,
Earle F. McBride

Musgrove, MaryLynn
BS, Geology, 1986, University of Florida
*Origin, Evolution, and Mixing of Saline and
Dilute Ground Waters in Three Regional
Flow Systems, Midcontinent, U.S.A.*
Supervisor: Jay L. Banner
Committee Members: John M. Sharp,
Philip C. Bennett

Sheldon, Mary A.
BS, Biology, 1975,
University of South Alabama
*Ontogenetic Study of Selected
Mosasaurs of North America.*
Supervisor: Timothy Rowe
Committee Members: David Nelson,
James T. Sprinkle

Tanis, Mehmet C.
BA, Geophysics, 1988, Istanbul University
*A Comparison of Migration Methods in
Laterally Varying Media.*
Supervisor: Paul L. Stoffa
Committee Members: Stephen Grand,
Mrinal Sen

Weiland, Richard J.
BS, Geology, 1986, University of Wyoming
*Plio-Pleistocene Unroofing of the
Irian Fold-and-Thrust Belt, South of
the Gunung Bijih (Ertsberg) Mining
District, Irian Jaya, Indonesia: Apa-
tite Fission-Track Thermochronology.*
Supervisor: Mark P. Cloos
Committee Members: William D. Carlson,
William R. Muehlberger

**DOCTOR OF PHILOSOPHY,
MAY 1993 (9)**

Bell, Gordon L. Jr.
BS, Geology, 1981,
University of Alabama-Birmingham
A Phylogenetic Revision of Mosasauroida.
Supervisor: Timothy B. Rowe
Committee Members: Keith Young,
David M. Hillis, Jacques Gauthier,
Ernest L. Lundelius Jr.

Blount, Jonathan G.
BS, Geology, 1978, East Carolina University
MS, Geology, 1982, East Carolina Univ.
*The Geochemistry, Petrogenesis, and Geo-
chronology of the Precambrian Meta-
Igneous Rocks of Sierra Del Cuervo and
Cerro El Carrizalillo, Chihuahua, Mexico.*
Supervisor: William D. Carlson
Committee: Fred W. McDowell,
Nicholas W. Walker, Eric W. James,
Richard Mauer

Da Silva, Hercules T.

BS, Geology, 1979,

Universidade Estadual Paulista

Flooding Surfaces, Depositional Elements, and Accumulation Rates-Characteristics of the Lower Cretaceous Tectonosequence in the Reconcavo Basin, Northeast Brasil

Supervisor: William E. Galloway

Committee Members: Noel Tyler, Richard T. Buffler, Michelle A. Kominz, Jorge C. Della Favera, William L. Fisher

Hoak, Thomas E.

BA, Geology, 1985, Carleton College

MS, Geology, 1987,

State University of New York-Albany
Mesostructural, Isotopic and Geochemical Constraints on the Brittle Tectonic Evolution of the La Spezia Region, Northwest Apennines, Italy.

Supervisor: Sharon Mosher

Committee Members: Mark P. Cloos, Mark A. Helper, Roy Kligfield, William R. Muehlberger

Noble, Paula J.

AB, Paleontology, 1985,

University of California-Berkeley

Biostratigraphy and Depositional History of the Caballos Novaculite and Tesnus Formation, Marathon Uplift, West Texas.

Supervisor: Martin B. Lague

Committee Members: Richard Casey, Earle F. McBride, Emile A. Pessagno

Roback, Robert C.

BA, Geology, 1981,

University of California-Santa Barbara

Late Paleozoic to Middle Mesozoic Tectonic Evolution of the Kootenay Arc, Northeastern Washington and Southeastern British Columbia

Supervisor: Nicholas Walker

Committee Members: Mark P. Cloos, William R. Muehlberger, Ken Fox, Randy Parrish

Squires, Livia J.

BA, Geology, 1983, Barnard College

MS, Geophysics, 1986,

University of Houston

Reducing Artifacts in Tomographic Velocity Reconstructions.

Supervisor: Paul L. Stoffa

Committee Members: Milo M. Backus, Clark R. Wilson, Jan D. Garmany, Mrinal K. Sen

TALES of the R.V. Nathaniel B. Palmer

In February and March of this year, Lawrence Lawver of the University of Texas Institute for Geophysics led a geophysical research cruise to the coast of Antarctica. The Nathaniel B. Palmer, a 300-foot, NSF icebreaker based out of the port of Punta Arenas, Chile, was used as the platform for the studies. The primary mission was to utilize heat flow equipment to date the Powell Basin, a feature to the northeast of the tip of the Antarctic Peninsula. The cruise also collected multi-channel seismic data in areas never before imaged, operated piston and gravity cores, dredged basalt volcanos, and studied bathymetry, gravity and magnetics. Several people from the University of Texas worked on the cruise, including Lawrence Lawver, Ben Sloan, Mark Wiederspahn, Keith Najmulski, Brad Wolaver, and UT geology graduate, Tom Williams. These excerpts are from Brad Wolaver's journal...

February 5

(off the east coast of South America)
One day at sea now—no problems with sea sickness. Esta bien. We now are simply lolling about gently in the small swells. The ship is so large (60,000 tons), it is not affected much by the waves- at least not yet.

February 11

Our first core is now en route to the seafloor. Coring is a riotous procedure. First, we must stop the ship and “hover” over the coring site. To do this, the blast of the propellers is directed forward, creating a wondrous rush, much the same as the thunderous roar of a landing jet. The entire ship roars and shakes with slow deceleration. Once in position, thrusters located around the ship employ G.P.S. data to hold us steadily over our position. Each passing wave causes these engines to roar and moan. The coring device we employ is simply a 3-meter long metal tube attached to a one-ton steel weight. A crane, pulleys, and the ship's A-frame (a tall pivoting support used for lifting equipment off the deck and moving it over the water) are used to slowly pull the coring device off its deck track and hoist it up over the end of the deck. At this point, its safety protection is removed while it swings wildly about, steadied by two deck hands. Gingerly the core is lowered out of sight until it hits bottom. Once on deck again, the plastic liner containing sand, mud, and unlucky sea-life is removed, capped, and stored. The thermal conductivity of the sediment will be tested for calibrating the heat flow equipment.

cont'd. on next page ▶

Toomey, Rickard S. III

ScB, Geological Sciences, 1985,

Brown University

Late Pleistocene and Holocene Faunal and Environmental Changes at Hall's Cave, Kerr County, Texas.

Supervisor: Ernest L. Lundelius Jr.

Committee Members: Robert L. Folk, Timothy B. Rowe, Stephen A. Hall, Russell W. Graham

Wood, Warren T.

BS, Geology, 1984,

University of Michigan-Ann Arbor

MA, Geological Sciences, 1989,

The University of Texas at Austin
Least Squares Inversion of Field Seismic Data for an Elastic 1-D Earth.

Supervisor: Paul L. Stoffa

Committee Members: Milo M. Backus, Clark R. Wilson, Mrinal K. Sen, Thomas H. Shipley

February 16

Yesterday, we made a brief stop at Base Marsh, the primary Chilean base in Antarctica. This base is located on King George Island, which is to the north of the Antarctic Peninsula. The ride in was wicked: windy, cold, and bitter with spray and water washing the rubber boat (Zodiac) and all in it. We landed directly on beach, as the dock was in ruin. We loaded the cargo into the boat, except for the 150-plus pound back-up seismic streamer that would wait for an empty boat. Two people returned to the *Palmer* as we waited on the beach. As the full Zodiac returned to the *Palmer* with cargo, we heard later that the tiny boat was nearly swamped by waves and wind. We were stuck for a time to wait out the weather, so we explored the base.

Base Marsh is a great hodge-podge of seemingly randomly placed trailer homes and out-house looking buildings lining a pot-holed, muddy road up the hill to the airstrip. This base is home to about 70 Chilean families, and even has a banco and correo (post office). Even more obscure is the presence of a souvenir shop selling \$22.00 US camisetas (T-shirts). The Chileans invited us to warm up in one of their rec rooms, where we sipped warm, black, sweeter-than-nectar coffee, served in tiny, white, porcelain cups and saucers, set on a silver serving tray with a burgundy-colored linen.

February 25

Worth noting is the Fanta Morgana we saw yesterday. This optical illusion occurs on cold, clear days and has the effect of refracting light waves up and over the horizon. We saw a phantom image of the Larson Ice Shelf even though it was 50 miles away and beneath the horizon. The Shelf appeared as a vertically-stretched image, wavering like an illusion in the desert. Closer icebergs were similarly stretched to look disproportionately tall and vertically lined.

March 4

Today, King Neptune unleashed his fury in the form of 60 knot (approx. 70 mph) winds and 20-26-foot waves, causing general havoc. We now are steaming at a modest three knots, keeping our bow into the wind, allowing the wind minimal purchase. Any other course would be a rolling nightmare. Up on the bridge is a fantastic ride. Every time the ship encounters a slow-moving wave, the bow raises up and over the crest, slamming down into the trough with tremendous force, propelling seething froth 70 feet in the air, which hits the bridge like an enormous shotgun blast.

March 20 (after midnight)

Lights of Tierra del Fuego oil rigs burning in the Strait of Magellan night. We will pick up the Chilean pilot, who will guide us into Punta Arenas, at 2:00 am. Six hours to port and all experiments have been tremendous successes.

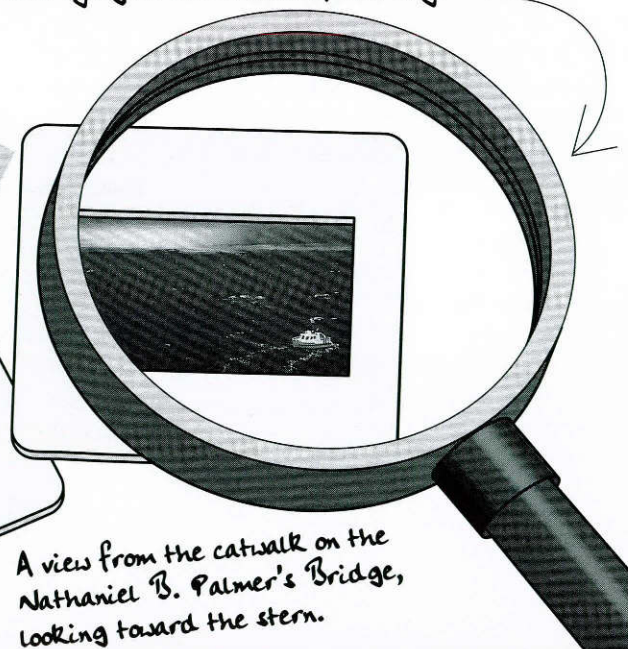


Tom Williams with dredge full of Bransfield Strait Basalt, Heat flow equipment and airguns are also on deck



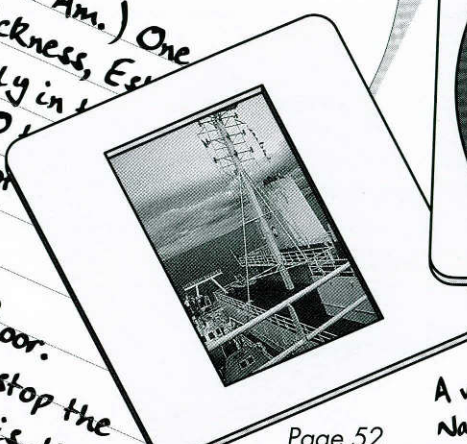
Base Marsh, the primary Chilean Antarctic Base, located on King George Island

The workboat, "The Cajun Cruncher," maneuvering to untangle the *Palmer's* anchors which had caught on a cable lying on the bottom of the bay.



A view from the catwalk on the Nathaniel B. Palmer's Bridge, looking toward the stern.

February 5 (off the east coast of S. Am.) One sea now - no problems with sea sickness, Es... now are simply rolling about gently in... The ship is so large (60,000... and much by the waves - at least not... core is now en route to the seafloor. otious procedure. First, we must stop the 'r' over the coring site. To do this, the pellers is directed forward, creati... much the same as the thi... et. The entire shi... eleration



STUDENT SPEAKERS

Student presentations listed here were given during Technical sessions or at one of the weekly Soft Rock, Hard Rock, Hydrology or Sequence Stratigraphy lunch-time seminars

Ken Barrow, PhD aspirant

"Gas Production and Reservoir Characteristics of the Downdip Olmos Fm. (Upper Cretaceous), South Texas"

Mark Barton, PhD candidate

"Stratigraphic Controls of Permeability Variation in Distributary Channel Sand Bodies, Cretaceous Ferron Sandstone, Central Utah"

Eric Beam, PhD candidate

"Contact Metamorphism and Rates of Pluton Crystallization"

Eric Beam, PhD candidate

"Thermal Nucleation of Shear Zones"

Gordon Bell, Jr., PhD candidate

"A Phylogenetic Revision of Mosasauridae (Squamata)"

Stefan Boettcher, PhD candidate

"Apatite Fission Track Evidence for Post-Early Cretaceous Erosional Unroofing of Middle Pennsylvanian Sandstone"

Stefan Boettcher, PhD candidate

"Mesozoic Contractile and Extensional Structures in the Boyer Gap Area, Northern Dome Rock Mountains, Arizona"

Lars Borg, PhD candidate

"Spinels as Petrogenetic Indicators: An Example from the Lassen Region of Northern California"

S. C. Caran, PhD candidate

"Late Cenozoic Lacustrine Deposits of the Southern Great Plains Stratigraphy, Paleohydrology, and Paleoenvironment"

Jeff Chen, MA aspirant

"The Ups and Downs of Research in the South Pacific: A Study of Uplifted Coral Terraces, Tanna Island, Vanuatu"

Jeff Crabaugh, PhD candidate

"Intracratonic Uplift and Continental-Margin Sedimentation: Integrating Tectonics, Climate, and 'Sea-Level' in the Early Cenozoic"

Mary Crabaugh, PhD candidate

"Continental Sequence Stratigraphy of a Wet Eolian System—A Key to Relative Sea Level Change"

Dickson Cunningham,

PhD candidate

"Orogenic Studies at the Southern Tip of the Americas: The Development of the Patagonian Orocline and Uplift of the Cordilleran Darwin Metamorphic Complex"

Hercules T. F. DaSilva,

PhD candidate

"Flooding Surfaces, Depositional Elements, and Accumulation Rates—Characteristics of the Lower Cretaceous Tectonosequence in the Reconcavo Basin, Northeast Brazil"

Eduardo Lopes De Faria,

PhD candidate

"Modeling, Migration and Focusing Analysis in Transversely Isotropic Media"

Xiao-Yang Ding, PhD candidate

"Slab Penetration and Slab Related 3-D Velocity Structure of the Kurile Subduction Zone"

Rachel Eustice, PhD candidate

"Cyclicality and Diagenesis of Lower Ordovician Carbonates of the Franklin Mountains and the Llano Uplift"

Jinhua Feng, PhD candidate

"Post Mid-Cretaceous Seismic Stratigraphy and Depositional History, Deep Gulf of Mexico Basin"

Bill Fitchen, PhD aspirant

"Controls on Stratigraphic Variability of Leonardian Carbonate and Strata in the Permian Basin: Topography, Tectonic Subsidence, and Terrigenous Clastic Supply"

Andy Frank, PhD candidate

"Eolian Sedimentary Processes: The Answer (My Friend) is Blowin' in the Wind"

David Froehlich, PhD candidate

"Travels in Egypt"

Steve Grimes, PhD aspirant

"Structure and Tectonics of the Bloody Bluff Fault Zone, Massachusetts"

Russell Hickerson, MA aspirant

"Pennsylvanian Fault Movement in the Southern Area of the Llano Uplift and its Tectonic Significance"

Franz Hiebert, PhD candidate

"Microbial Diagenesis"

David Hill, MA aspirant

"Land Subsidence in the Big Hill and Fannet Oil and Gas Fields in Jefferson County, Texas."

David Hill, MA aspirant

"A Theoretical Model of Subsidence Caused by Petroleum Production: Big Hill Field, Jefferson County, Texas."

David Hirsch, PhD candidate

"Ostwald Ripening as a Texture-Controling Process"

Hsiao-Peng Hua, MA aspirant

"Vapor Phase Sorption Equilibria of Organic Contaminants"

Fred Hutson, PhD candidate

"Provenance: Of What Use to Petrologists, Structural Geologists, Etc.?"

Kirt Kempter, PhD candidate
"Sex, Lies, and Costa Rican Volcanoes"

Rich Ketcham, PhD candidate
"Geothermal Gradients: What you Don't Know Can Hurt You and/or Who Needs a Real Rock When a Fractal One Will Do?"

F. Leo Lynch, PhD candidate
"Frio Diagenesis"

F. Leo Lynch, PhD candidate
"Fear and Loathing in the Oligocene-Savage Diagenesis of the Frio Formation Sandstones and Shales Beneath Corpus Christi, Texas"

Barbara Marin, MA aspirant
"Kinematic Evolution of a Ductile Shear Zone System, West-Central Arizona"

Tom McKenna, PhD candidate
"Constraints on a Thermal Anomaly in South Texas"

Timothy McMahon, PhD candidate
"Magmatism in an Arc-Continent Collision Zone: Pliocene Intrusions in the Ertzberg (Gunung Bijih) Mining District, Irian Jaya, Indonesia"

Heidi Mertig, MA aspirant
"Geology, Mineralogy, and Formation of the Totally Awesome Dom Copper-Skarn Deposit, Irian Jaya, Indonesia—Mineral Adventures in Rugged Terrain"

Gregg Oetting, MA aspirant
"Tracing Groundwater Evolution in the Edwards Aquifer, Central Texas, Geochemical and Sr Isotopic Evidence"



Minature "mud volcano" at Las Pailas, Costa Rica. Boiling water a few feet below ground forms a spatter cone of mud. Photo by Kirt Kempter

Junyong Oh, PhD candidate
"The Origin of the Southeastern United States Continental Rigid Margin: Volcanic or Non-volcanic?"

Lee Potter, PhD candidate
"Trace-Element Variation Along Strike in the Eastern Alkalic Belt, Trans-Pecos Magmatic Province, Texas and New Mexico"

Andrew Quarles, PhD candidate
"Geologic Effects of Quaternary Subduction of the Woodlark Spreading Center on the Solomon Island Arc"

Troy Rasbury, PhD candidate
"Implications of SM-Nd Model Ages and Single-Grain U-Pb Zircon for the Age and Heritage of the Swakane Gneiss, Yellow Aster Complex, and Skagit Gneiss, North Cascades, Washington"

Joe Reese, PhD candidate
"Grenville Ductile Thrusting, Regional-Scale Polyphase Folding, and Extension in the Southeastern Llano Uplift: O-o-oh What a Mess We've Made"

Joe Reese, PhD candidate
"Structural Evolution of the Southeastern Llano Uplift, Central Texas"

Brian Reinsborough, MA aspirant
"Sequence Stratigraphy and Depositional Systems of the Paleocene Andrew Fm., Central North Sea: The Evolution of a Shelf to Basin Systems"

Katherine Romanak, PhD candidate
"Unsaturated-Zone Processes Beneath High Plains Playas: Evidence from Soil-Gas and Sediment Geochemistry"

James Rougvie, MA aspirant
"The Effects of Variable Metamorphic Fluid Flow on Rb-Sr Systematics of the Valley Spring Gneiss, Llano Uplift"

Jeff Rubin, PhD candidate
"Hydrothermal Zr mobility: It's Everywhere"

Dan Ryder, MA aspirant
"Biometrics: Uses and Implications in Echinoid Classification"

Ben Sloan, PhD candidate
"Eocene Stratigraphy of the North Sea Basin"

Ben Sloan, PhD candidate
"Fur and Loafing in Antarctica: A Fantastic Journey to the Heart of a Marine Geologist's Dream"

Livia Squires, PhD candidate
"Reducing Artifacts in Tomographic Velocity Reconstructions"

Rich Weiland, MA aspirant
"Plio-Pleistocene Unroofing of the Central Range Fold-and-Thrust Belt South of the Gunung Bijih (Ertzberg) Mining District, Irian Jaya, Indonesia: Results from Apatite Fission-track Thermochronology"

Rich Weiland, MA aspirant
"Use of Apatite Composition and Zircon Fission-Track Data for Refined Thermal History Interpretation, Irian Jaya, Indonesia"

Warren Wood, PhD candidate
"Linearized Least Squares Inversion of Field Seismic Data"

Liangqing Xue, PhD candidate
"Genetic Sequences and Depositional Systems of the Middle and Lower Wilcox Strata in the Northwest Gulf of Mexico Basin"

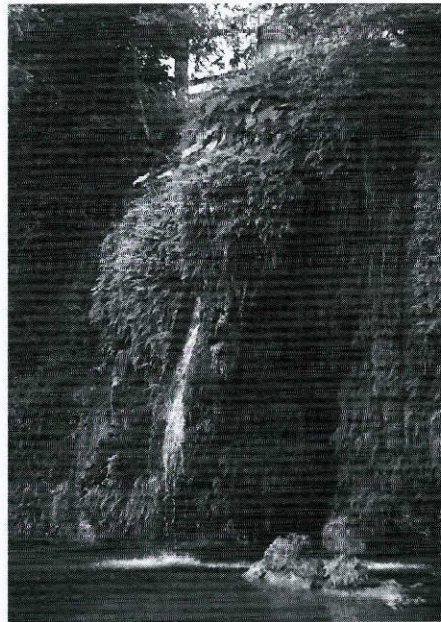
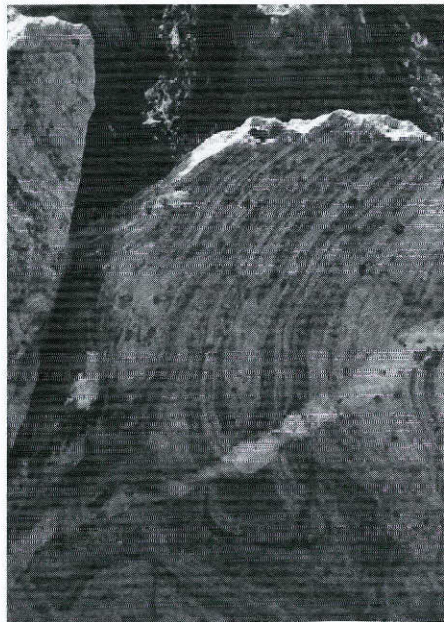
Wan Yang, PhD aspirant
"Are Cisco Strata (Later Pennsylvanian to Early Permian) Cyclic and/or Gamma-Tuned Devonian Carbonate Record?"

Sally Zellers, PhD candidate
"BRS's, Hydrates, and Bugs... My Adventures on ODP leg 146 Along the Cascadia Margin"

Hongliu Zeng, PhD candidate
"Facies-Guided 3D Seismic Modeling—Potential and Pitfalls"

PLACEMENT

The Geological Sciences Placement Office was staffed during 1992-93 by Kathy Yule, who joined the Department in September 1992. The year began with an orientation seminar for 62 students who were seeking permanent or summer employment. Fourteen of those interviewing were candidates for the BS or BA degrees, 23 for the MA, and 25 for the PhD degree. During the fall semester representatives from Amoco, Arco, Exxon, Marathon, Mobil, Radian, Shell, Texaco, and Western Geophysical visited the Department. Spring visits included Roy F. Weston and Western Geophysical. Students from geological sciences also used the services of the new College of Natural Sciences Placement Office. The number of permanent job offers was small, but there were a fair number of summer jobs, mostly for graduate students. Salaries for permanent positions were offered in the range of \$21,000-38,000 for students with Bachelor degrees, and \$30,000 and above for students with graduate degrees.



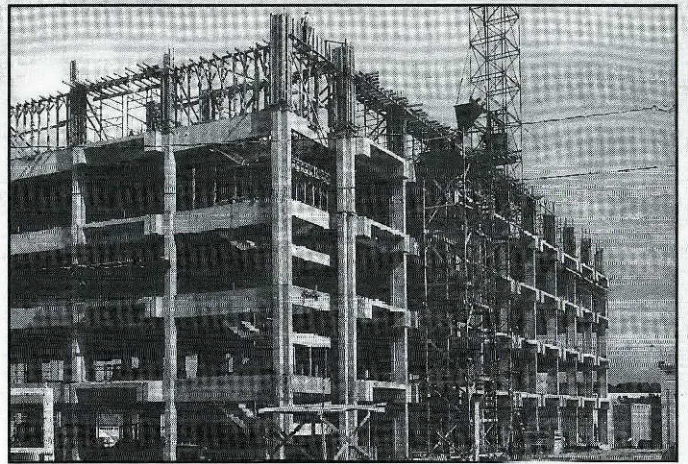
PHOTOS:

(above) Colby Drechsel hanging out in Teton National Park, WY.

(above left) 320L at Blount Mountain

(above middle) 320L at Krause Springs

(left) Students and teachers of Geology 320L (Introductory Field Geology), taken at the Pfluger Ranch near London, Texas. Big Saline Creek in background.



View of construction of the current Geology Building from the southwest corner.



Secretary of Interior Stewart Udall speaks at the dedication of the Geology Building, November 1967

View of an almost completed Geology Building.

40 YEARS

of building
for the future!

GEOLOGY FOUNDATION NEWS...

*“... to foster and
to promote the
growth, progress and
development of
geological education,
research and
graduate study
at The University
of Texas...”*

The University of Texas
Board of Regents

October 24, 1953

A SIGNIFICANT EVENT FOR the Geology Foundation in 1993 is the recognition of the Foundation's 40th Anniversary. The late Hal P. Bybee was the visionary who hoped to find a way to endow the Department of Geology. Letters to E. L. DeGolyer and P. T. Moore in early 1939 reflect his strong desire to build such an endowment. Sam Ellison, who became chairman of the Department in 1952, guided the small group of alumni and faculty by whose efforts the Geology Foundation came into being. Officially established by the Board of Regents on October 24, 1953, the Geology Foundation was the first Foundation on the UT campus, and the model for those which followed. The Geology Foundation's stated purpose is to “foster and to promote the growth, progress and development of geological education, research and graduate study at The University of Texas...” That purpose has been fulfilled beyond all expectations over the past 40 years.

During that first year of its existence, the Geology Foundation received just over \$7,000 in gifts. Those gifts were to benefit approximately 275 undergraduate majors, 70 graduate students, and 14 professors. In contrast, during the 1991-92 academic year, the Geology Foundation received almost \$885,000 in gifts for the benefit of 128 undergraduate students, 178 graduate students, and 30 active faculty members. Direct support to students totalled \$339,600; expenditures for faculty needs were \$469,300; equipment, visiting lecturers, library, alumni and Foundation operational needs totalled about \$228,500. This amount (almost \$1,038,000) includes not only annual gifts, but also earnings from an endowment with a market value of almost \$22 million. In terms of the Department's overall expenditures, the Foundation during 1991-92 provided 22% of funding, with 54% provided by the State of

Texas and 24% provided by external contracts and grants.

Fundraising for the Robert H. Cuyler and F. W. Simonds scholarships was actually begun in the late 1940's, under the leadership of Fred Bullard and Guy Green. About the time the Geology Foundation was established, the “Various Donors” endowment was started, to accept gifts for a variety of purposes. In 1956, the Robert H. Cuyler, F. W. Simonds (both for student scholarships), and Carolyn G. and G. Moses Knebel (originally for unrestricted purposes, later designated for teaching recognition) endowments were established.

In 1957, Mr. and Mrs. L. T. Barrow funded an endowment that would become a cornerstone in the building of the Geology Foundation. The Hal P. Bybee Memorial Fund was started by Mr. and Mrs. Barrow “for the benefit of the faculty in any and all ways.” The original goal of the fund was \$100,000, which was raised to \$200,000 within a few years. Then in 1969, with the \$200,000 goal in sight, Mr. Barrow asked that the Bybee Fund goal be raised to \$500,000. In Mr. Barrow's words, “I am not optimistic that the larger amount will ever be reached, but it is not too large an amount for an endowment for the use and benefit of the faculty.” Over the years, the Bybee Fund has played a crucial role in providing for the travel and research needs of our faculty. Its importance to faculty development cannot be overstated. Through substantial gifts from the Barrow and Bybee families and others, along with significant reinvestment of income, the Hal P. Bybee Fund has reached Mr. Barrow's \$500,000 goal during the Geology Foundation's 40th anniversary year.

Through the ensuing years dozens of endowments have been added to address specific needs of the educa-

(Continued on page 59)

Geology Advisory Council

Membership, 1956-1993

M - Member; HL - Honorary Life; C - Chairman; VC - Vice-Chairman

- Alcorn, Jr., Charles W., M 1976-present
 Ames, Jr., Eugene L., M 1977-present
 Asbury, Larry M., M 1988-1990
 Babisak, Julius, M 1968-1973
 Barbisch, Joseph Wm., M 1973-1977
 Barrow, L.T. (Slim), M 1956-1968;
 HL 1963-1977
 Barrow, Thomas D., C 1966-1969;
 M 1965-1984; HL 1985-present
 Berthiame, Sheridan A., M 1961-1963
 Birsa, David S., M 1986-1991
 Bloomer, Richard R., M 1982-present
 Bookout, John F., M 1967-1983
 Bowling, Leslie, C 1970-1973;
 M 1964-1975; HL 1976
 Bowman, Wayne F., M 1956;
 HL 1966-1968
 Box, Jerry, M 1989-1991
 Boyd, Don R., C 1980-1982;
 M 1976-1984; HL 1985-present
 Bricker, John F., M 1973-1976
 Burke, Ray A., M 1967-1977
 Burke, Thomas M., M 1985-present
 Cannon, Robert L., M 1956-1960
 Cardwell, Henry, M 1976-1981
 Carsey, J. Ben, M 1972-1980;
 HL 1981-1988
 Clark, W. Kenley, C 1975-1976;
 M 1973-1979
 Coates, George, M 1956-1972; HL 1973
 Crawford, Weyman W., M 1985-present
 Davis, Irion G., M 1966-1971
 Davis, Morgan J., C 1956-1961;
 M 1956-1977; HL 1979
 Dawson, L. Decker, M 1977-present
 Denison, Rodger, C 1989-1990;
 VC 1987-1988; M 1970-present
 Donnelly, Jr., George A., M 1976-1991
 Dougherty, W.E., M 1964
 Eaton, Robert W., M 1970-1978
 Ellison, Jr., Samuel P., M;
 HL 1981-present
 Fanning, Thomas E., M 1988-present
 Flawn, Peter T., M 1987-present
 Frasher, James H., M 1975-present
 George, Clement E., M 1970-1975
 Gibson, George R., VC 1972-1973;
 M 1968-1979
 Gipson, William, C 1987-1988; VC 1985-
 1986; M 1969-1990; HL 1991
 Gittelman, Joseph N., M 1985-present
 Goldstone, Frank, M 1958-1959
 Green, Guy E., C 1962-1965;
 M 1956-1965
 Gregory, J. Nalle— M 1960-1969;
 HL 1969-1947
 Hager, Dilworth S., M 1962-1967
 Ham, William, M 1970-1971
 Hamm, W. Dow, M 1956-1968
 Hanson, Neil E., M 1982-1984
 Hall, Douglas, M 1992-present
 Harwell, George M., M 1982-present
 Heggland, R.W., M 1973-1977
 Hensarling, Larry, M 1985-present
 Heroy, Jr., William B., M 1968-1969
 Holland, David S. (Scotty)—C 1991-1993;
 VC 1989-1991; M 1986-present
 Hooper, Charles J., M 1983-present
 Jackson, John A., M 1975-present
 Kay, John A., M 1956-1961
 Kern, Jr., Jack C., M 1956-1975
 Knebel, G. Moses, M 1956-1969;
 HL 1969-1974
 Langston, J. Donald, M 1979-present
 Larsen, Jack K., C 1983-1985;
 VC 1982-1983; M 1972-1985
 Loftis, Jr., John, C 1974; M 1970-1978;
 HL 1980-present
 Longacre, Susan, M 1992-present
 Lowe, Howard R., M 1979-1986
 Lynch, Vance M., M 1988-present
 Martin, Ken G., M 1977-1991
 Martineau, David F., M 1990-present
 McBee, Jr., Frank W., M 1981-1985
 McCarver, Holland C., M 1971-1979
 McCollum, Leonard F., M 1956-1969
 Michaux, Frank W., M 1972-1974
 Miller, Jr., Harry A., M 1979-present
 Moffett, James R., M 1972-1985
 Moody, Jr., John D., M 1969-1974
 Moore, Jr., William W., M 1956-1970
 Morris, Michael B., M 1981-present
 Moss, Joseph F., M 1977-1979
 Neuhaus, Vernon F., M 1982
 Nielsen, Arne, M 1965
 Oliver, Fred L., M 1977-1985
 Ottmann, Robert D., M 1989-present
 Oualline, Judd H., C 1985-1986;
 VC 1983-1984; M 1980-1990;
 HL 1991-present
 Owen, Ed W., M 1956-1970;
 HL 1970-1980
 Oxley, Philip, M 1980-1985
 Patterson, James, M 1989-present
 Petty, O. Scott, M 1956-1969;
 HL 1969-present
 Petty, Jr., Scott, M 1969-1989
 Phillips, Jack, M 1979-1981
 Pichel, George B., M 1981-1986
 Plummer, Jr., Rodger S., M 1970-1974
 Pratt, Wallace E., M 1956-1958
 Reagan, Jr., M.A., M 1973-1978
 Reese, D. Gale, M 1983-1985
 Reynolds, W.F., M 1976-present
 Rouse, John T., M 1966-1969
 Schneider, Jr., George W.,
 M 1979-present
 Schneider, Tom, M 1979-1981
 Scott, Wilton E., M 1971-1975
 Seamans, F. Augustus, M 1979-1986
 Sheffield, Don B., M 1980-present
 Smith, William, M 1965-1970
 Steer, Robert K., M 1984-1989
 Stokes, William T., VC 1993;
 M 1978-present
 Story, David, M 1992-present
 Thompson, Sheridan A., M 1956-1970
 Turner, Jr., Edd R., M 1971-1978;
 HL 1982-present
 Van den Bark, Edwin, M 1974-1982
 Wallner, Jack D., VC 1979;
 M 1975-1980
 Walter, Jr., Joseph C., C 1977-1979;
 M 1975-1983; HL 1984-present
 Weiner, Charles, M 1990-1991
 Wendlandt, E.A., M 1964-1968
 Wessely, Arthur J., M 1985-1987
 Williamson, Eddie A., M 1988-present
 Wilson, James L., M 1964-1966
 Wyche, Phillip E., C 1993;
 VC 1991-1993; M 1977-present
 Yager, Charles, M 1956-1966;
 HL 1971-1991

tional programs in the Department. Each endowment is significant in providing for those particular commitments, and the Geology Foundation Advisory Council frequently discusses the Department's goals and what new endowments may be needed to reach them, or targeting existing endowments for which additional funds are needed.

Certainly the success of the Geology Foundation cannot be celebrated without acknowledging the influence and guidance of the many members of the Geology Foundation Advisory Council who have served over the years. More than 115 individuals have served on the Council since the first group met in the fall of 1955. The first Council was chaired by Morgan J. Davis, and included Wayne F. Bowman, Robert L. Cannon, George Coates, Everett DeGolyer, Guy E. Green, W. Dow Hamm, John A. Kay,

G. Moses Knebel, Leonard F. McCollum, Ed W. Owen, O. Scott Petty, Wallace E. Pratt, Sheridan A. Thompson, and Charles E. Yager. One of the charter members of the Advisory Council, Mr. O. Scott Petty, is still living, and has been an Honorary Life Member since 1969. The foresight and dedication of this first group and all of those who have succeeded them have contributed immeasurably to the strength and effectiveness of the Foundation. During the construction of the present geology building, the Advisory Council was instrumental in bargaining with the UT administration for added space for the library, and several members donated funds for air conditioning, heating, and other aspects of the building for which funds were inadequate.

Another important aspect of the existence of the Geology Foundation

is the distribution of the annual *Newsletter*. The first issue of the alumni *Newsletter* was published in June, 1953, with Fred Bullard as editor. The initial mailing list included 1,500 names (we now have over 3,700 current addresses). About 500 responses were received to the initial request for alumni news (a return rate of 33%). In 1993 we received 650 responses (a return rate of about 18%). Though the format of the *Newsletter* has changed over the years, its primary purpose remains the same—to keep those in the Department in touch with you, and to keep all of you in touch with each other. The best history of the Department can be found in the annual *Newsletters*, which reach alumni and friends free of charge.

by *Joyce Best*



Chancellor Harry Ransom speaks at an Advisory Council meeting in 1966. Council members are G. Moses Knebel (left foreground), Morgan J. Davis (center), Bill Smith and Leslie Bowling. Faculty shown in background from left are Bill Muehlberger (partially hidden), Ross Maxwell, Bob Boyer, Ernie Lundelius, and Ken Fahnstock.

New Endowments

CAPITALIZING ON THE Board of Regents Matching Funds program, five new endowed accounts were established in the Geology Foundation during the 1992-93 academic year. One account has been established for the benefit of the Walter Geology Library, and four endowments are for student support in the Department.

BARROW PERIODICAL FUND

As noted in the Geology Library report elsewhere in this issue, Dr. Thomas D. Barrow and his mother, Mrs. L. T. Barrow, have pledged \$50,000 to establish the Barrow Periodical Fund. Contributions to the Barrow Periodical Fund will be matched 50% by funds provided by the General Libraries. The Barrow gift fulfills half of the \$100,000 challenge for the Walter Geology Library proposed by Mr. J. C. Walter Jr. last fall. The Advisory Council in November accepted Mr. Walter's gift of \$100,000 and his challenge to raise an additional \$100,000 within the next year. These gifts of \$200,000 will be matched by \$50,000 from the College of Natural Sciences and \$50,000 from the General Libraries, adding a total of \$300,000 to existing endowments for the Walter Geology Library.

JOHN A. AND KATHERINE G. JACKSON FELLOWSHIP IN GEOHYDROLOGY

Based on a gift of \$25,000 from Mr. and Mrs. John A. Jackson of Dallas, the Board of Regents in February, 1993, approved the establishment of the John A. and Katherine G. Jackson Fellowship in Geohydrology, to support students who are studying ground water and pollution. A subsequent gift of \$25,000 from the Jacksions, along with Regents matching funds and other gifts, have increased the endowment to more than \$75,000. The Jacksions have established this fund in recognition of the rapidly expanding program in geohydrology.

GEORGE W. MARSHALL JR. MEMORIAL ENDOWED PRESIDENTIAL SCHOLARSHIP

Mrs. George W. Marshall Jr. and her family made a gift of \$25,000 in September, 1992 to establish the George W. Marshall Jr. Memorial Endowed Presidential Scholarship. The scholarship was formally established by the Board of Regents on December 3, 1992.

George Marshall received a BA in geology in 1948 from the University of Texas, where he was a member of Phi Beta Kappa. He worked for Conoco for 35 years, retiring in 1983. He died on January 31, 1991, survived by his wife, Ada Mae, three sons and their families.

The Marshall Endowed Presidential Scholarship was established to benefit graduate students in the Department of Geological Sciences. In addition to the \$25,000 from the Marshall family, the Regents have provided a 50% match, bringing the total endowment to almost \$38,000. Income generated from the endowment will be used to support one graduate student each academic year.

WILLIAM R. MUEHLBERGER FIELD GEOLOGY SCHOLARSHIP FUND

In the spring of 1992, former students, family and friends of Bill Muehlberger began contributing funds to establish an endowment in Bill's honor. Formal announcement of the proposed scholarship was made on the occasion of Bill's retirement in May of 1992. Led by Dr. David Dunn and Dr. Tim Denison, both former students of Bill's,

a campaign was launched to raise \$25,000 to establish the William R. Muehlberger Field Geology Scholarship Fund. Almost exactly one year later, the minimum endowment of \$25,000 had been reached. The Board of Regents approved the establishment of the Muehlberger Scholarship Fund on June 10, 1993. The Board of Regents has agreed to match these gifts on a one-half basis. Scholarships from the Muehlberger Fund can be used to assist graduate students conducting field work for advanced degrees, or for senior geology majors enrolling in Geology 660.

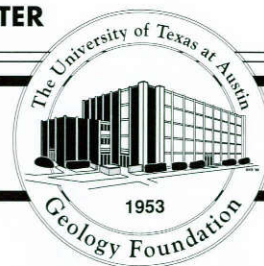
GLENN AND MARTHA VARGAS ENDOWED PRESIDENTIAL SCHOLARSHIP

On June 10, 1993, the Board of Regents approved the establishment of the Glenn and Martha Vargas Endowed Presidential Scholarship in the Department. For many years Mr. and Mrs. Vargas have contributed their time and equipment to teach faceting in Geology 347K, Gems and Gem Minerals. Because UT is one of only a few schools offering such a course, and also because of the interest of so many students, Mr. and Mrs. Vargas established a scholarship for persons interested in gems in 1986, and in 1988 also endowed a fund for gems and gem minerals instruction in the Department. Observing a need for broader support for graduate students in the Department, Mr. and Mrs. Vargas have now pledged \$25,000 for an endowed presidential scholarship to assist geological sciences graduate students.



UT President Robert M. Berdahl presents endowed presidential scholarship plaque to Kenneth R. Marshall, Mrs. George W. Marshall Jr., and George W. Marshall III.

Advisory Council News...



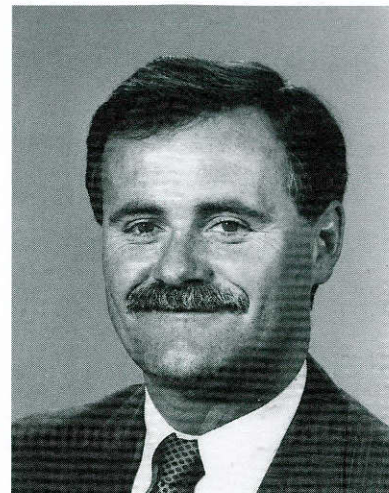
IN SEPTEMBER, 1993, the Advisory Council welcomes a new member: Mr. Richard M. (Mike) Coffelt, of Houston. Mr. Coffelt is manager of North America Exploration for Phillips Petroleum Company. He received a BA in geology from the University of California at Berkeley in 1971, and his Master's degree in physical science at California State University at San Francisco in 1973. Mr. Coffelt began his career with Phillips in 1973 as a development/exploration geologist in Stavanger, Norway. He then worked in London, England; Bogota, Columbia; Denver, and Bartlesville before moving to Houston in 1988. Mr. Coffelt and his wife, Alice, have a daughter, Alex, and a son, Luke.

At the spring meeting on April 30, the Council thanked Mr. Scotty Hol-

land for chairing the Council for the past two years. His leadership is reflected in the growth of endowments and other types of support during his tenure as chairman. Mr. Phil Wyche was unanimously elected chairman for the coming year, assisted by Mr. Bill Stokes as vice chairman.

During the 1992-93 academic year the Council's focus was on raising \$100,000 for the Walter Geology Library challenge, and on providing additional support for the geohydrology program in the Department, specifically encouraging gifts to the John A. and Katherine G. Jackson Fellowship in Geohydrology.

More than \$91,000 has been raised for the Walter Geology Library challenge, with about \$9,000 still needed in contributions to qualify for \$50,000 in University matching funds.



Richard M. Coffelt

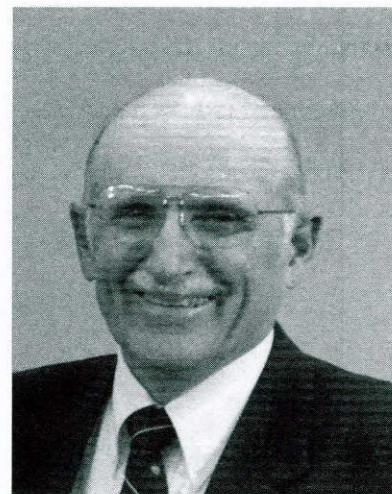
Peter Flawn Receives College of Natural Sciences Hall of Honor Award

THE LONG LIST of accolades which have been presented to Dr. Peter T. Flawn over the years grew last April when he was named to the Hall of Honor in the College of Natural Sciences. Others named along with Dr. Flawn at the April 1 awards ceremony were Dr. Jack E. Myers, professor emeritus of botany and zoology, and Mr. Curtis T. Vaughan, Jr., Chairman of the Board of Vaughan & Sons, Inc., a corporation in the lumber industry.

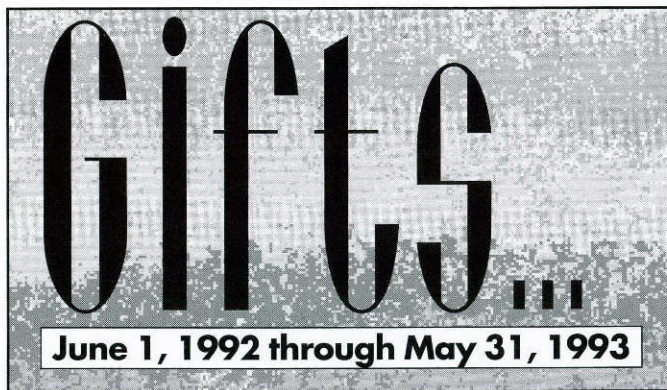
Dr. Flawn served as president of UT Austin from 1979-85, having previously served as the president of UT San Antonio, and executive vice president and vice president for academic affairs at UT Austin. Before serving in those administrative positions, he served as director of the Bureau of Economic Geology from 1960-70, having joined

the Bureau in 1949. A member of the National Academy of Engineering since 1974, Dr. Flawn is active in the scientific community and has published numerous articles in the field of mineral resources. He received his Bachelor's degree from Oberlin College in 1947, and his MS and PhD degrees from Yale in 1948 and 1951, respectively. He was appointed to the Geology Foundation Advisory Council in 1987, and became an Honorary Life Member in 1991.

Dr. Flawn is joined as a Hall of Honor Award recipient by three other distinguished gentlemen who have served on the Geology Foundation Advisory Council: Dr. Thomas D. Barrow and Mr. John F. Bookout Jr., who were chosen in 1991, and Mr. Jim Bob Moffett, who was named to the Hall of Honor in 1992.



Peter T. Flawn



Individuals...

Peyton O. Abbott
 Floyd J. Adcock
 C. W. Alcorn Jr.
 Eugene L. Ames Jr.
 David L. Amsbury
 Nancy J. Anderson
 D. R. Andress
 Anonymous
 John M. Armentrout
 John E. Atkins
 Arten J. Avakian
 Herbert Babione
 Andrew Bagot
 Carol S. Baker
 Donna F. Balin
 Mrs. L. T. Barrow
 Mr. and Mrs.
 Thomas D. Barrow
 Robert H. Bartels
 Gerald S. Barton
 Mr. and Mrs. Fred H. Becker
 Richard E. Bennett
 Mr. and Mrs.
 Edmund B. Berry III
 Veta S. Berry
 Edward C. Bingle
 David S. Birs
 Thomas K. Bjorklund
 William D. Blankenship
 Jeff L. Blass
 Mr. and Mrs.
 Richard R. Bloomer
 John F. Bookout III
 John F. Bookout Jr.
 Clint Booth
 Douglas L. Bostwick
 Herbert L. Brewer
 Thomas E. Bridge
 Mr. and Mrs.
 Ben M. Brigham
 David A. Bristol, Jr.
 Larry Browning
 Mrs. Jesse L. Brundrett
 Wallace E. Brunson
 Leonard C. Bryant

Ray A. Burke
 Thomas M. Burke
 Mr. and Mrs.
 Robert W. Bybee
 Mrs. Hal H. Bybee
 Mr. and Mrs.
 Warren J. Cage Jr.
 Frank K. Cahoon
 Rodney J. Camp
 Donald H. Campbell
 Jose D. Carballo Jr.
 Mr. and Mrs.
 Robert D. Carter
 Mr. and Mrs. Dwight Cassell
 Charles A. Caughey
 Edward C. Cazier III
 Robert Chapin
 Walter Chatham Jr.
 Daryl Scott Chicken
 Mr. and Mrs.
 Stephen E. Clabaugh
 Robert T. Clarke
 Russell E. Clemons
 George B. Coffin
 H. Grady Collier
 Janet Combes
 H. C. Cooke
 Henry C. Cortes Jr.
 Weyman W. Crawford
 James H. Davis
 Ross M. Davis
 Dodd W. DeCamp
 William D. Demis
 John L. Denson III
 Mr. and Mrs. Gilbert J. DePaul
 Patricia W. Dickerson
 Mr. and Mrs.
 William F. Dingus
 Randy Dishongh
 Hugh H. Doney
 George A. Donnelly Jr.
 William E. Dougherty
 James D. Doyle
 Mr. and Mrs.
 Ralph C. Duchin

Charles M. Duke Jr.
 Edward A. Duncan
 William R. Dupre
 Connie M. Dyer
 G. K. Eifler Jr.
 Mr. and Mrs. J. A. Elkins Jr.
 Ruth P. Elliott
 Mr. and Mrs.
 Thomas L. Elliott
 Mr. and Mrs.
 Samuel P. Ellison Jr.
 Peter A. Emmet
 Mr. and Mrs.
 A. Gordon Everett
 Rizer Everett
 Robert H. Fakundiny
 Thomas E. Fanning
 Monica M. Farek
 Irma M. Feibelman
 Richard C. Finch
 J. D. Finley
 Mr. and Mrs.
 William L. Fisher
 Peter T. Flawn
 Jose A. Flores Jr.
 Hewitt B. Fox
 J. H. Frasher
 W. D. Frazell
 Iacopo Gambini
 William J. Ganus
 Armando O. Garza
 Mr. and Mrs. Henry Gayle
 Clem E. George
 Fred M. Gibson
 Edwin Gilbert
 Gretchen M. Gillis
 William E. Gipson
 Phil Goodson
 Mark B. Gordon
 Volker C. Grasso
 Redge Greenberg
 Robbie Gries
 Furman A. Grimm
 Kathryn L. Gryta
 Roy H. Guess
 Walter T. Haenggi
 John W. Hampton Jr.
 Jim Hardwick
 Richard E. Hart
 George M. Harwell Jr.
 Peggy Harwood
 Kristopher K. Hefton
 Grant Heiken
 Mark Helper
 Cornelia Henderson
 Peter Hennings
 Jon Herber
 Janice L. Hill
 R. J. Holasek

Mr. and Mrs. Bill D. Holland
 Richard T. Holt
 James W. Hood
 Eleanor M. Hoover
 Richard A. Hoover
 Richard T. Houser
 Douglas J. Howard
 J. R. Jackson Jr.
 Leslie Hay Jackson
 Russell W. Jackson
 Marshall E. Jennings
 Bridget L. Jensen
 Charles G. Johnson
 L. Chris Johnson
 James J. Johnston
 Gene F. Keyser Jones
 L. G. Jones Jr.
 Gary A. Keller
 David L. Kirchner
 Walter L. Knighten
 J. Richard and Linda Kyle
 George A. Laguros
 Mr. and Mrs. Lynton Land
 J. Donald Langston
 Mr. and Mrs.
 Wann Langston
 Randy Larkin
 Jeffrey L. Lawton
 Robert C. Laudon
 Robert L. Layden
 Mr. and Mrs.
 Thomas B. Layman
 David H. Lehman
 Raymond C. Leonard
 Max Levin
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 John F. Ligon
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Geology Foundation Endowed Accounts

Values as of May 31, 1993

	<i>Book Value</i>	<i>Market Value</i>	<i>Book Value</i>	<i>Market Value</i>
Edwin Allday Centennial Chair in Subsurface Geology Income supplements salary and supports research of recipient	\$628,59	\$865,168	Jesse L. Brundrett Memorial Endowed Presidential Scholarship Graduate student scholarship	\$29,707 \$35,581
Edwin Allday Lectureship in Geological Sciences To provide for guest lecturers in geological sciences	\$96,815	\$121,795	Fred M. Bullard Professorship Excellence in teaching, income supplements salary and supports research of recipient	\$75,676 \$108,325 ⁺⁺
Alternative Energy Research and Development Fund For study of energy sources other than petroleum	\$401,600	\$417,673	Thomas M. Burke Student Job Program Jobs for students in geologic work related to faculty research	\$14,619 \$16,240
E. M. Barron Trust For support of the Barron Mineral Collection	\$106,686	\$152,653	Hal H. Bybee Memorial Fund Student field support, or support of students researching geologic issues related to public policy	\$47,719 \$57,765
Leonidas T. Barrow Centennial Chair in Mineral Resources Development of program of excellence in mineral resources; income supplements salary and supports research of recipient	\$987,012	\$1,424,756	Hal P. Bybee Memorial Fund Faculty use-research, travel, study, etc.	\$502,524 \$670,615
Laura Thomson Barrow Graduate Fellowship To support graduate students specializing in natural resources; special consideration for female students and students concentrating in field-oriented studies	\$217,253	\$252,969	L. W. Callender Memorial Fund Department use, unrestricted	\$52,906 \$82,505
Bloomer Fund for Motivated Students Financial aid for students not qualified for scholarships	\$101,922	\$128,172	Dave P. Carlton Centennial Professorship in Geology Income supplements salary and supports research of recipient	\$508,539 \$803,494
Leslie Bowling Professorship To attract persons from industry and government for short-term appointments on the faculty	\$104,233	\$145,910 ⁺	Dave P. Carlton Centennial Professorship in Geophysics Income supplements salary and supports research of recipient	\$488,377 \$731,536
Wayne F. Bowman Endowed Presidential Scholarship Unrestricted geology scholarships	\$97,407	\$149,826	Dorothy Ogden Carsey Memorial Scholarship Fund Geology scholarships, any level; special consideration to micropaleontology students.	\$85,214 \$129,533
Don R. and Patricia Kidd Boyd Lectureship in Petroleum Exploration To provide for guest lecturers in petroleum exploration	\$44,640	\$62,082	J. Ben Carsey Sr. Special Maintenance Fund To maintain teaching and research equipment	\$87,415 \$107,381
Brahman Energy Scholarship Senior field course scholarship	\$16,717	\$26,294	S. E. Clabaugh Fund in Hard-Rock Geology To support research in hard-rock geology	\$27,416 \$41,722
			W. Kenley Clark Memorial Endowed Presidential Scholarship Geology scholarship, any level	\$44,783 \$64,376
			Robert H. Cuyler Endowed Presidential Scholarship Undergraduate (upper-division) and graduate scholarships	\$51,603 \$79,955

⁺Does not include \$41,069 held in unitrust.

⁺⁺Does not include \$45,261 held in unitrust.

1993 • GEOLOGICAL • SCIENCES • NEWSLETTER

	<i>Book Value</i>	<i>Market Value</i>		<i>Book Value</i>	<i>Market Value</i>
Morgan J. Davis Centennial Professorship in Petroleum Geology Income supplements salary and supports research of recipient	\$709,279	\$1,020,704	Getty Oil Company Centennial Chair in Geological Sciences Income supplements salary and supports research of recipient	\$856,892	\$1,237,272
Ronald K. DeFord Field Scholarship Fund Field studies for graduate students	\$167,600	\$243,866	Miss Effie Graves Memorial Fund Department needs (faculty support, student aid, special equipment, etc.)	\$24,990	\$43,193
Alexander Deussen Professorship Energy Resources Development of program of excellence in energy resources; income supplements salary and supports research of recipient	\$148,326	\$202,957	Guy E. Green Endowed Presidential Scholarship Geology scholarships, any level	\$29,860	\$45,536
Michael Bruce Duchin Centennial Memorial Endowed Presidential Scholarship Scholarships for Master's candidate with preference toward general geology	\$37,473	\$52,858	J. Nalle Gregory Chair in Sedimentary Geology Development of program of excellence in sedimentary geology; income supplements salary and supports research of recipient	\$663,702	\$840,707
Elf Aquitaine Petroleum Faculty Fellowship in Geological Sciences Income supplements salary and supports research of junior faculty member	\$130,219	\$168,048	J. Nalle Gregory Regents Professorship in Geological Sciences Income supplements salary and supports research of recipient	\$284,004	\$317,933
John E. "Brick" Elliott Centennial Professorship in Geological Sciences Income supplements salary and supports research of recipient	\$271,738	\$432,571	Gulf Oil Foundation Centennial Professorship in Geology Income supplements salary and supports research of recipient	\$245,036	\$304,130
Samuel P. Ellison Jr. Endowment Fund For Department <i>Newsletter</i> and support of faculty-alumni functions	\$67,447	\$105,666	Karl F. Hagemeyer Jr. Memorial Endowed Presidential Scholarship General geology scholarship, any level, with preference to students from Brazoria or Kerr counties	\$40,526	\$47,082
Energy and Mineral Resources Fund Support of programs and students in energy and mineral resources	\$26,940	\$42,610	George S. Heyer Memorial Fund Any purpose of the Foundation	\$89,378	\$146,614
William Stamps Farish Chair in Geology Income supplements salary and supports research of recipient	\$374,587	\$568,161	Hogg-Cullinan Scholarship in petroleum or field geology in honor of Joseph S. Cullinan	\$40,586	\$63,691
Peter T. Flawn Centennial Chair in Geology Income supplements salary and supports research of recipient	\$696,390	\$971,946	Hogg-Sharp Scholarship in petroleum or field geology in honor of Walter Benona Sharp	\$40,586	\$63,691
Geology Foundation Advisory Council Centennial Teaching Fellowship in Geological Sciences Income supplements salary and supports research of junior faculty member	\$68,912	\$96,333	Houston Oil & Minerals Corporation Faculty Excellence Awards In recognition of outstanding service and special contributions to the teaching and research programs	\$44,295	\$70,013
			F. Earl Ingerson Graduate Research Assistance Fund in Geochemistry Research assistance to graduate students in geochemistry	\$14,320	\$18,992

	<i>Book Value</i>	<i>Market Value</i>		<i>Book Value</i>	<i>Market Value</i>
John A. and Katherine G. Jackson Centennial Teaching Fellowship in Geological Sciences	\$122,542	\$170,272	Carroll C. Miller Endowed Presidential Scholarship	\$31,222	\$47,283
Income supplements salary and research of junior faculty member			Geology scholarship to students pursuing careers in energy industries; preference to students from South Texas		
John A. and Katherine G. Jackson Fellowship in Geohydrology	\$51,325	\$51,654	Wes Ogden Memorial Scholarship in Geophysics	\$11,521	\$13,137
Fellowship to graduate students studying geohydrology			Geophysics scholarships to students interested in practical applications in oil and gas industry		
Carolyn G. and G. Moses Knebel Teaching Award	\$75,312	\$118,004	Fred L. and Frances J. Oliver Lectureship in Texas Hydrology and Water Resources	\$52,634	\$68,210
Annual Distinguished Teacher Award, New Course Development			To provide for guest lecturers in water resources		
Clara Jones Langston Centennial Lectureship in Vertebrate Paleontology	\$21,152	\$30,355	Judd H. Oualline Endowment Fund	\$19,705	\$26,738
To provide for guest lecturers in vertebrate paleontology			For special needs of the Department		
J. Donald Langston Special Operations Fund	\$133,861	\$169,558	Judd H. and Cynthia S. Oualline Centennial Lectureship in Geological Sciences	\$44,211	\$61,510
Purchase teaching and research equipment			To provide for guest lecturers in geological sciences		
Wann and Marietta Langston Research Fund in Vertebrate Paleontology	\$93,901	\$138,506	Judd H. and Cynthia S. Oualline Centennial Lectureship in Petroleum Geology	\$41,347	\$54,625
Faculty research in vertebrate paleontology			To provide for guest lecturers in petroleum geology		
Jack K. Larsen-Mesa Petroleum Company Fund in Sedimentary Geology	\$119,871	\$185,526	Ed Owen-George Coates Fund	\$108,311	\$161,335
Support of student field work in vertebrate paleontology			Publication of geological research by faculty and graduate students		
Howard R. Lowe Vertebrate Paleontology Endowment	\$28,911	\$44,594	Bill R. Payne Centennial Teaching Fellowship in Geological Sciences	\$62,556	\$96,116
Support of student field work in vertebrate paleontology			Income supplements salary and research of junior faculty member		
Hoover Mackin Memorial Scholarship Fund	\$21,804	\$33,221	Joyce Bowman Payne Centennial Teaching Fellowship in Geological Sciences	\$67,499	\$93,579
Graduate geology scholarship			Income supplements salary and research of junior faculty member		
George W. Marshall Jr. Memorial Endowed Presidential Scholarship	\$37,028	\$37,615	Pennzoil and Pogo Producing Companies—William E. Gipson Scholarship	\$142,008	\$173,155
Graduate geology scholarships			Scholarships for UT graduates seeking Masters degrees at UT		
John H. and Lujza P. McCammon Endowed Scholarship	\$11,131	\$17,580	O. S. Petty Geophysical Fund	\$134,810	\$208,522
Upper-division undergraduate scholarships			Development of program of excellence in geophysics		
Mr. and Mrs. L. F. McCollum Endowed Scholarship	\$18,972	\$30,542	Frank W. Michaux Scholarship Fund	\$10,902	\$16,385
Geology scholarships, any level			Geology scholarship, any level		

1993 • GEOLOGICAL • SCIENCES • NEWSLETTER

	<i>Book Value</i>	<i>Market Value</i>		<i>Book Value</i>	<i>Market Value</i>
Wallace E. Pratt Professorship in Geophysics Income supplements salary and supports research of recipient	\$166,503	\$244,567	Glenn and Martha Vargas Gemological Scholarship Scholarships for students interested in gemology or mineralogy	\$15,830	\$19,883
Louis and Elizabeth Scherck Geology Scholarship Undergraduate (upper-division) and graduate scholarship	\$104,780	\$127,169	Vargas Endowment for Gems and Gem Mineral Instruction For course-related materials and instruction on gems and gem minerals	\$65,653	\$73,715
Wilton E. Scott Centennial Professorship Income supplements salary and supports research of recipient	\$253,395	\$381,401	Various Donors (General) For any purpose of the Foundation	\$31,970	\$62,368
The Shell Companies Foundation Centennial Chair in Geophysics Income supplements salary and supports research of recipient	\$1,080,906	\$1,378,111	Joseph C. Walter Jr. and Elizabeth C. Walter Geology Library Fund Acquisition of books, maps and other library materials	\$297,907	\$345,995
The Shell Companies Foundation Distinguished Chair in Geophysics Income supplement salary and supports research of recipient	\$888,626	\$1,199,170	Albert W. and Alice M. Weeks Centennial Professorship in Geological Sciences Income supplements salary and supports research of recipient	\$145,203	\$208,157
Frederick W. Simonds Endowed Presidential Scholarship Scholarships to undergraduate (upper division) and graduate students	\$27,404	\$45,618	Albert W. and Alice M. Weeks Fund in Geological Sciences Student support, any level	\$353,511	\$572,146
William T. Stokes Centennial Teaching Fellowship in Geological Sciences Income supplements salary and research of junior faculty member	\$132,836	\$189,274	E. A. Wendlandt Fund Purchase of books and journals in German or English translations	\$7,686	\$11,488
Structural Geology and Tectonics Fund For support of faculty and student research in structure and tectonics	\$102,971	\$112,103	Arno P. (Dutch) Wendler Professional Development Fund Support of graduate student presentations at professional meetings	\$105,831	\$153,581
H. Todd Sutherland Memorial Scholarship Fund For summer research support for graduate students	\$34,995	\$44,377	Francis L. Whitney Endowed Presidential Scholarship Geology scholarships, any level	\$43,395	\$66,702
Estate of Elizabeth M. Teagle For scholarships to students with interest in petroleum geology	\$666,013	\$754,535	Francis L. Whitney Memorial Book Fund Purchase of paleontological books for library	\$20,317	\$27,850
David S. Thayer Memorial Scholarship Fund Senior field course scholarship	\$27,751	\$42,419	John A. Wilson Professorship in Vertebrate Paleontology Income supplements salary and supports research of recipient	\$111,146	\$171,319
Tobin International Geological Map Collection Purchase and storage of maps and photos	\$74,949	\$122,502	Charles E. Yager Undergraduate Field Scholarship Fund Support for students taking GEO 660	\$47,983	\$73,284
Udden Memorial Scholarship Fund Geology scholarships at any level	\$11,191	\$15,734	Mr. and Mrs. Charles E. Yager Professorships Three professorships for faculty who participate in field instruction	\$418,905	\$663,507

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Memorials...

Jerald H. Bartley

Jerald H. Bartley died in Midland, Texas on April 15, 1993. Jerry was born in 1913 in Springtown, Texas. He received his BS degree in geology from UT Austin in 1937. For several years he worked for University of Texas Lands and the U.S.G.S., then entered the U.S. Navy in 1941. In 1946 he returned to Midland and worked for University Lands until 1950. At that time he became an independent geologist, and continued in that capacity until his death.

Jerry was very active in the Society of Independent Professional Earth Scientists, serving on the board of directors for three years, and serving as national vice president in 1972. He was the first recipient of the SIPES Outstanding Service Award, and was also the first recipient of the SIPES Foundation's Outstanding Award.

Jerry was preceded in death by his wife in 1991; he is survived by two sons, Steve and Bruce, one daughter, Ann, and two brothers.

Leo C. Gravis

Leo Gravis died on July 16, 1993 at the age of 76 in Austin. Leo graduated from Lon Morris College in Jacksonville, Texas and then received a BS degree in geology from UT in 1942. He served in the U.S. Airforce in India dur-

ing World War II. He later worked for Gulf Oil, Chevron, British American Oil Producing Company, Trunkline Gas Company, and Mosbacher Company during his career.

Leo's survivors include his wife, Lucretia, of Austin; his son, John, and two grandchildren.

Fred Earl Ingerson, Sr.

Dr. Earl Ingerson, Professor Emeritus in the Department of Geological Sciences at UT, died on June 11, 1993, at the age of 86.

Earl was born in Barstow, Texas in 1906 and graduated from Barstow High School. He graduated summa cum laude in chemistry in 1928 from Hardin Simmons University, and also obtained his Master's degree in geology there in 1931. In June, 1934 he received his PhD from Yale University. After two years of post-doctoral work in Austria, he joined the staff of Carnegie Institution Geophysical Laboratory in Washington D.C. In 1947 he became chief of the geochemical and petrology branch of the U. S. Geological Survey. From 1958 until his retirement in 1977 he was a professor of geology at The University of Texas at Austin. While at UT, he served as associate dean of the Graduate School from 1961 to 1964. During his career, Earl published nearly 200 articles on geology and geochemistry. He was the founder of two major societies

and their journals: the Geochemical Society and its publication, *Geochimica et Cosmochimica Acta*, and the International Association of Geochemistry and Cosmochemistry and its journal, *Organic Geochemistry*.

In 1955 Earl received the Day Medal from the Geological Society of America. The U. S. Department of the Interior awarded him a gold medal in 1959, along with a lifetime pass to all national parks.

In 1930, Earl married Martha Anna Duncan, who died in 1979. Earl then married Maurine Morse in 1983; Maurine died in 1991. Earl is survived by his son, Fred E. Ingerson, Jr. of Granbury, Texas, and two grandsons.

Leonard F McCollum

Leonard F. "Mc" McCollum, former chairman of Conoco, died in Houston on June 13, 1993 at the age of 91.

"Mc" was a long-time supporter of the University of Texas; he was named a Distinguished Alumnus of the University in 1965. He was a charter member of the Geology Foundation Advisory Council in 1956, and served served on the Advisory Council until 1969. He was named a Distinguished Graduate of the Department of Geological Sciences in 1985. "Mc" established a scholarship endowment in the Geology Foundation for the support of geology students

Jerald H. Bartley

Randy Garnett

Leo C. Gravis

Fred Earl Ingerson Sr.

Carl B. Irwin

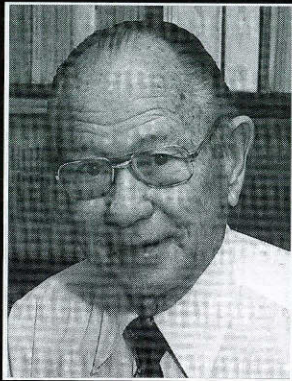
Leonard F. McCollum

Garland V. Reedy Jr.

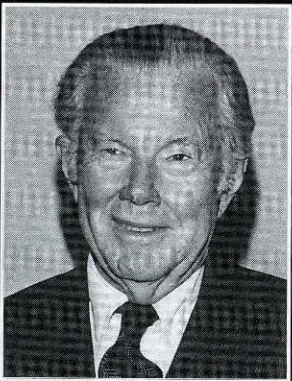
James H. Rucker

Calvin S. Smith

Robert B. Waggoner Jr.



Fred Earl Ingerson Sr.



Leonard F. McCollum

at UT. He was a member of the Chancellor's Council, and an honorary member of the UT Centennial Commission.

After receiving a BA degree in geology from UT in 1925, "Mc" was employed by Humble Oil and Refining Company (an affiliate of the Standard Oil Company of New Jersey), now Exxon. He was transferred to another Jersey subsidiary, Carter Oil Company in Tulsa, in 1934. He rose to the presidency of Carter, then moved again to the Standard of New Jersey headquarters in New York in 1943. In 1947, "Mc" left the Jersey companies to become the head of Continental Oil Company, which was headquartered in Ponca City, Oklahoma. He moved the headquarters to Houston and the East Coast, then expanded operations to cover most of the U.S. and more than 32 foreign countries. He became chairman of the board of Conoco in 1964 and retained that position until he retired in 1972.

An outstanding civic leader, "Mc" organized the Capitol National Bank in Houston and was chairman of the board for a number of years. He served on the trustee associations of several university, and had honorary doctor's degrees from Colorado School of Mines, Texas Tech, and Baylor College of Medicine. From 1969-82 "Mc" was chairman of the board at the Baylor College of Medicine in Houston, and played a major role in helping to build the enormous medical complex there.

His professional accolades were many. In 1962 and 1963

he was chairman of the American Petroleum Institute, from which he received the Gold Medal for Distinguished Achievement in 1972. He joined the American Association of Petroleum Geologists in 1927, and in 1985 received its Human Needs Award for his humanitarian efforts. Those efforts include serving as the first chairman of the People to People Health Foundation, which sent abroad the Hope Hospital ship to give free medical treatment and training. He also chaired Project Orbis, which provided a DC-8 which had been converted into a flying eye hospital to give free treatment in poorer countries.

"Mc" was preceded in death by his wife of 45 years, Margaret Wilson. He is survived by his second wife, the former Eleanor Searle Whitney, a son, a daughter, a stepson, and five grandchildren.

Garland V. Reedy Jr.

G. V. Reedy of Abilene passed away on July 17, 1993 in Austin, at the age of 58. He had moved to Abilene in 1985, after living in Houston for 25 years. At the time of his death he was president of The Reedy Company, a family-owned business in Abilene. He was a district director for the Texas Oil Marketers Association, a member of the first Baptist Church in Abilene, and served on the Development Council for the Hendrick Home for Children. He was a past board member of the Abilene Chamber of Commerce.

G.V. is survived by nu-

merous family members, including his wife, Birdie; son, Randall; and daughter, Karen Johnson; all of Abilene.

James Howard Rucker

James Howard Rucker of Georgetown, Texas, died on February 3, 1993 at the age of 73. He received a BBA degree from the University of Texas in 1941, and a B.A. degree in geology in 1948. He attended graduate school in 1954.

Mr. Rucker served in the U. S. Marine Corps during World War II. For a number of years he worked as a geophysicist in Texas, Louisiana and Canada. In 1958 began 25 years of employment for the State of Texas, for both the Texas Highway Department and the Department of Health.

Mr. Rucker is survived by his wife, Mildred, who lives in Georgetown; three sons, one daughter, and four grandchildren.

We have learned of the deaths of the following persons, but have no additional information:

Randy Garnett

(BA '74) died August 11, 1992

Carl B. Irwin (BS '39)

Calvin S. Smith

(BS '48) died June 1, 1993

Robert Browning Waggoner Jr.

(BS '56)

Notes from AIR MAIL



OUR

Alumni

Edwin A. Acker (BS '56) writes, "Bev and I are looking forward to our first trip to Germany this summer to visit Scott. We still enjoy living in rural America although it's nice to visit the city folks now and then." Edwin is self employed in Tilden, Texas.

Jim W. Adams (BS '51) reports from Midland, "On the way to AAPG National in April 1993, spent two enjoyable days with James Lee Wilson and Dell in New Braunfels and toured six complete floors of the Geology Building. Had not visited the Alumni Center before, it's very nice. Best wishes to students, faculty, and friends." Jim is a geological advisor with Exxon.

William H. (Bill) Adamson Jr. (BS '51) is employed as a geophysical consultant in Midland. "Just trying to stay alive. Is the oil business ever going to turn around? None of the politicians know what to do. Clinton is even more ignorant than Bush and Reagan were."

Elise Akin (BA '47) is owner of Photakin Inc. in Wichita Falls. "Have a new photolab and have branched out into computer imaging, an exciting time for the photo industry."

Charles W. Alcorn Jr. (BS '52) contributes, "Vaalco is an international exploration and production company, concentrating

primarily in Southeast Asia. We have one producing field offshore Philippines and are getting ready to develop two more in the same area. We have a large block in Belize and are looking at other opportunities around the world. I still reside in Victoria so stop by if you're in South Texas." Charles is chairman and CEO for Vaalco Energy, Inc.

Elaine M. Allan (BS '83) writes, "Now work in areas of environmental, health and safety law as an attorney for Phillips. Hazardous waste, solid waste, and underground storage tank work still provides lots of contact with geologists, hydrogeologists, and other scientists, which I appreciate." Elaine lives in Bartlesville.

Dave Alt (PhD '61) comments, "Still worrying about asteroid impacts, flood basalt provinces, and impact ejecta diamictites, in that order." Dave is a professor of geology at The University of Montana in Missoula.

Michael Amdurer (MA '78) writes, "Program manager for \$100 million hazardous waste contract to investigate contamination and start the cleanup of Rocky Mountain Arsenal, one of the largest and most complex Superfund sites in the U.S. I am an adjunct professor at the University

of Denver, teaching hazardous waste management. Two kids (8 and 5½), one wife, two cats, guinea pig, and hamster." Mike works for Ebasco Services Inc. in Lakewood.

Nancy Jenswold Anderson (BA '50) is president of Urban Environment Associates, Inc. in Dallas. "My consulting firm is very busy, especially on projects related to water quality. I'm ready to retire, but business is too good! Vacation, family, and business trips have taken me to Vermont, Pennsylvania, Oregon, and Colorado during the past nine months. This fall it will be London, Paris, and Vienna."

Payton V. Anderson (BS '45) comments, "Enjoy travel and golf with wife Evelyn (UT 1943-45). Have three daughters and six grandchildren. Still active in oil and gas exploration in many areas of USA." Payton is a partner in W. D. Anderson and Sons in Midland.

Raymond H. (Pat) Anderson (BS '56) writes, "I took early retirement from

Texaco-International Aviation Sales Department after 32 years of service. Joanne and I have been doing lots of traveling, England and West Coast U.S. The volcanics along the coast took me back to Dr. Fred Bullard's very interesting course in the early 50's." Pat lives in Richmond, Texas.

Tom Anderson (MA '67, PhD '69) comments, "Spent two months in Sonora, Mexico studying Jurassic faults and Cretaceous uplifts. Tanna is continuing to develop manuscripts. Sara Lee finished a master's degree in international studies at Boston University. Garrett is in China for the summer studying Chinese. I visited a seismological institute at Wuhan, China but we didn't overlap!" Tom is a professor of geology at University of Pittsburgh.

Russ Andress (BS '80) is a senior geophysicist for ORYX Energy Company in Dallas. "I'm having a great time finding new drilling locations on old producing fields in the Gulf of Mexico."

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David Angstadt (MA '83) writes, "I'm enjoying working in international exploration in our frontier department. Recently my team discovered the first oil in the Malaysian Penyu Basin. Next assignment is working in our sequence strat consulting group. We enjoy a couple of trips a year back to Sixth Street since returning to Texas in 1987." David is an advanced geophysicist for Texaco in Bellaire, Texas.

Edgar P. Armstrong (BS '51) reports from Houston, "Retired and loving it. Now am so busy that I don't understand how I ever had time to go to work."

James M. Armstrong (BS '78) is an assistant manager for FDIC in Houston. "I am maintaining a busy life in Houston, but I often travel back to good 'ole Austin, especially in the summer. A special hello to the class of '78!"

Larry M. Asbury (BS '59, MA '61) writes, "Just passed my 32nd year with Atlantic Richfield. We are in the middle of two big and exciting projects here in Indonesia. My wife, Jackie, and I would love to see UT friends if you are in this part of the world." Larry lives in Jakarta.

Edward R. Atwill IV (MA '59) contributes, "Helen and I are off on our third life. We sold Neskowin Marketplace in December 1992, and purchased the 70 acre Serendipity Ranch south of Tucson. Helen has two horses and some cats and dogs, and I have seven acres of wine grapes and 12 acres of pistachio trees. Got lots of room for friends to visit. Y'all come."

Arten J. Avakian (MA '89) writes, "Howdy folks. Still

enjoy living in Austin and working at the BEG. Recent changes include advancement to parenthood of our son, Arak, who arrived on Halloween, 1991. Don't get out as often to collect rocks, and other projects seem to be piling up, but in their place am enjoying 'new' things (like playing chase, etc.). Hope y'all are well." Arten is a research scientist associate at the Bureau of Economic Geology in Austin.

Olufemi O. (Femi) Babalola (MA '84) is an exploration geophysical consultant for Afram-Tech International in Houston. "I initiated a joint-ventured project evaluating some Nigerian basins for non-exclusive reports. The first reports have been completed. I also lead Afram-Tech's Integrated Geoscience Applications

in exploration and development."

Herbert A. Babione (BS '40) writes, "Nothing unusual, family count the same, three children, four grandchildren and two great grandchildren; all in good health and spread from Idaho to Virginia. Consider myself fortunate, having grown up in the state, attended the university and worked with and retired from the company." Herbert is retired from Exxon and currently lives in Tulsa.

Andy Bagot (BS '78) comments, "Traveling in and out of Russia working on my second project there and living in my second Russian 'oil town.' I got tired of fighting the engineers so for this project I became one. It's amazing how far a UT geology de-

gree can take someone." Andy is an optimization engineer in Sugar Land.

T. Dale Bagwell (BS '79) is a senior gas supply representative in Houston. "Natural gas marketing has been a good field for me since the oil field went down. But nothing has the excitement of exploring for hydrocarbons in foreign lands!"

Carol Swenumson Baker (BS '84) reports, "Between my job at Exxon and my son, Grant (3), I stay extremely busy. But I'm never too busy for friends. Give us a call!" Carol lives in Houston.

Ernest T. Baker, Jr. (BS '55) is a senior geologist for USGS in Austin. "Have 37 years with USGS, almost all in Texas. Feel like I know Texas geology pretty well from surface to deep sub-



Geology 310 class, 1948, in Marble Falls.
 From left to right, Jordan Stanford, _____, Dr. Gordon McNutt,
 Norman Stephen, Bill Wills, Gus Walla, and Bill Sharp.
 Photo submitted by Bill Sharp.

surface and offshore. Now ready for a second career in geology, hydrology, industrial minerals, and petroleum."

Jerry D. Baker (BS '51) comments, "Retired from full time salaried contract work to semi-full time unpaid yard and house work. If Mr. Clinton's taxes keep going up I will find a good street corner and a cardboard sign and 'work for food.'" Jerry lives in Richardson, Texas.

Tracy Baker (BS '86) writes, "I've been married a year now and I love it! Although my address is in Houston, I am spending most of my time in Memphis, Tennessee. This year we're implementing an RFI. The weather is as bad there as it is here. And the bugs are bigger!" Tracy is a project geologist for DuPont.

Linda R. Balcom (BS '87) is project manager for Dames and Moore in Denver. "Hi guys! 1993 has been a busy year. Mark and I will be married in September and will bicycle through Italy for our honeymoon. We bought a turn-of-the-century house and are busy with the restoration. Work at Dames and Moore is busier than ever and Denver is booming. Lots of skiing, hiking, camping, and bicycling here. Hope all is well with Texas."

John C. Barratt (MA '82) writes, "After thirteen years in Texas, it's time to return to the land of tall trees, rocky coast lines and rain!" John is a manager of fuel supply for KVA Resources in Washington.

Benjamin (Ben) Barrow (BS '51) is retired and living in Utopia, Texas. "Same story as past seven years, too many civic activities, too little time on ranch work and travels.

There are a number of retired geologists in the area; we joke about starting a local 'old geologists society.'"

Robert Bartels (BS '85) writes, "I am still working in the environmental field (nearly 7.5 years) dealing with project management and hydrogeological problems through remediation. I am working for a company called Environmental Strategies, Inc. in Austin. My wife and I have an 8½ month old boy named Hunter, born 9/11/92."

Joe Beard (BS '42) is an independent petroleum geologist in Wichita Falls.

Robert E. Beatty Jr. (BA '51, BS '54) writes, "Hello peer group!" Robert is a consultant in San Antonio.

Fred H. and Teresa Harkrader Becker (BS '83; BS '82) comment, "Work is going well for both of us: Fred is at Shell and Teresa is still with Amoco. Our girls are loads of fun. The two year old looks like Fred, if you can imagine! If anyone is ever down to New Orleans give us a call." Fred and Teresa live in Slidell, Louisiana.

Richard Beckman (BS '37) writes, "Attended 50th anniversary in 1987. Hope to attend 60th in 1997. Active interest geological discoveries." Richard is active in property development in Daytona, Florida.

Sidney S. Bell (BA '45) is self-employed as a silversmith in Ft. Plain, New York. "Winchester—Savage—making replacement patch box lids in brass with deer and bear heads on them for CVA and Thompson Center Muzzle loading companies. Diabetes is under control, cancer ditto, but getting a cataract in right eye. After heart, back,

and shoulder surgery, hearing loss, now the eyes. Not much left to go wrong. Do you think being 74 has anything to do with it?"

Walter E. Belt Jr. (BS '43) comments from Flatonia, Texas. "Working almost full time on family history and new hobby, Texas history prior to becoming a republic. Virginia and I have been married 49 years."

James B. and Kathryn G. Bennett (BS '61; BA '61) write from Houston, "Fortunately we are still continuing with an active exploration program on behalf of a client in the Jurassic and Cretaceous trends of North Louisiana and South Arkansas. Presently serving as chairman of the Houston chapter of SIPES. Son, Wiley, will return as a senior at the University this fall. Daughter, Kathryn and son-in-law Jeff, are enjoying their new home in Dallas and Kathryn is keeping me on the straight and narrow. We enjoy the *Newsletter* every year."

Mark J. Berlinger (BA '82) is an environmental manager for BPOil in Marcus Hook, Pennsylvania.

Alan Berry (BA '70, MA '74) is employed as a geologist with DeWalt Royalty, Inc. in Houston.

Allen Bertagne (MA '80) contributes, "Staying busy doing seismic interpretation projects for the industry. Currently working Algeria, Peru, Chile, Ecuador, and Indonesia. Also enjoying the opportunity to travel overseas. I've particularly enjoyed South America and even bumped into an ex-student in Rio. It seems that the UT network is quite extensive!" Allen is a chief geologist for CGG American Services in Houston.

Earl H. Bescher (BS '40) writes, "Still enjoy retirement, traveling, and doing whatever seems interesting. Miss the trips to Geology Department to interview prospective explorationists for Exxon. Last visit was in fall 1980 and a lot has changed since then." Earl lives in Kingwood, Texas.

Don G. Bilbrey (BS '53, MA '59) is retired from Gulf Oil in New Orleans. "Still playing a lot of golf but had to take a week off for angioplasty in December."

David S. Birska (PhD '77) writes, "We moved back from England last summer. New job is chief geologist for Chevron's International Upstream Company. It's good to be back in Walnut Creek, California."

Gale A. Bishop (PhD '71) is a professor of geology at Georgia Southern University in Statesboro. "New research/teaching initiative 'St. Catherines Sea Turtle Conservation Program' will put me on St. Catherines Island, Georgia from May—September to direct and teach an internship course with 21 participants to monitor sea turtle nesting and investigate nesting ecology."

Norman G. Bishop (BA '57) works as vice president for Proler Environmental Services, Inc. in Houston. "Still busy developing processes for pyrolysis/gasification of solid waste materials. Barbara and I look forward to retirement in about five more years. We plan to live in Ruidoso, New Mexico, when I retire."

William T. Biskamp (BS '54) comments, "Still helping Mona sell Dallas real estate. Entire clan still living in Dallas, including three

B

grandchildren (and our daughter expecting twins)."

Keith D. Bjork (BS '84) writes, "One more year of training and I'm out in the real world. Ten years of medical school and residency, almost done. Maybe I'll go back to geology." He is an orthopaedic surgeon in San Antonio.

T. K. Bjorklund (MA '62) contributes, "Returned to Houston in Amoco's worldwide exploration business group in June after six months with Amoco Pakistan in Islamabad."

Curt W. Black (BS '81, MA '89) is an environmental scientist/hydrogeologist for U.S. EPA in Washington. "Alive and well and out of private consulting for the first time in six years. Lots of scuba diving and backpacking and my hammered dulcimer playing has improved tremendously."

Barbara J. Smith Blaisdell (BS '78) writes, "At last, I am becoming immersed in the English way of life. I now concentrate on surviving this culture in style rather than merely surviving. My 'foreign' accent is no longer the topic of conversation!" Barbara is a homemaker in Woking, Surrey, England.

Harvey Blatt (MA '58) is a professor of geology at the University of Oklahoma in Norman. "My *Laboratory Exercises in Environmental Geology* will appear in August 1993. Moved into a new house in July, 1992."

Robert H. Blodgett (PhD '90) comments, "Work at the Texas Water Commission continues to be challenging. I manage eight people who examine the vulnerability of public drinking water to contamination by organic chemicals and asbestos. Still continuing my

work on paleosols, but at a slower pace." Bob lives in Austin.

Dan I. Blunk (BA '70) is a psychiatrist in private practice in El Paso.

Patricia Bobeck (MA '85) comments, "I am working for the Texas Water Commission as geologist in the industrial and hazardous waste division. I continue to translate geologic literature from French and Spanish to English." Patricia lives in Austin.

Ricky Boehme (BS '89) is a graduate student (master's) at LSU in Baton Rouge.

Clint Booth (MA '56) is president of Booth Energy Company in Dallas. "Business has been good and our house is very active with one daughter and her sons, ages eight and eleven, living with us."

Robert W. Booton (BS '53) is retired in Kerrville, Texas.

Silverio Bosch (BS '74, MA '75), a consulting exploration geologist in Corpus Christi writes, "Still prospecting for 'big, deep, gas' in South Texas. Actually drilling wells and selling deals. Could there really be a need for gas? Matthew (5), Eric (3) and Lisa (thirty something) keep life in a wonderful state of turmoil."

Southern W. Bower (BS '50) writes, "Ann and I are still enjoying retirement living in the country near Luling."

Don R. Boyd (BS '58) is president of Gulf Coast Exploration Company in Corpus Christi. "I am pleased to see gas prices rising. I hope it brings better times on geologists! The Geology Department is always enjoyable to visit and continues to do a great job."

Walter A. Boyd Jr. (BS '53) reports from Houston, "Retired from Columbia

Gas on 12/1/92 after 35 years. What a short trip!"

Bryan R. Bracken (MA '82) writes, "I'm supporting development and exploration projects worldwide. Fast pace and exciting; a great experience." He is a clastic sedimentologist/stratigrapher in San Ramon, California.

Robert F. Brandt (BS '57), "Still teaching at Houston Community College. I teach physical and historical geology, environmental science, and astronomy." He lives in Houston.

Anne L. Brigham (BS '83) is vice president for Brigham Oil and Gas, L.P. in Dallas.

Ben M. (Bud) Brigham (BS '83) is president and CEO for Brigham Oil & Gas, L.P. in Dallas.

David A. Bristol Jr. (MA '87) lives in Houston, where he works as a geophysicist for Schlumberger-GeoQuest.

David B. Brock (BS '65) is an independent petroleum geologist in Murchison, Texas.

M.H. (Buddy) Brock (BS '56) reports, "New granddaughter since the last publication which now makes a total of four. Still living in Edna, Texas, but spending more time now on the road between kids." Buddy is self-employed in Edna.

Ken Brook (BS '67) is president of Desert Ventures, Inc. in Reno. "The struggle to maintain a viable domestic mining industry continues despite Billary, the EPA and low metal prices. However, as a precaution DV has diversified into widgets and margarita mix, and the future looks bright."

Suzee Champeny Brooks (BA '88) is the mother of two in Austin.

Charles D. Brown (BS '84) is an acquisition coordinator

for Petro-Hunt Corp. in Dallas.

Larry Browning (MA '77) contributes, "Still doing the consulting thing, mostly environmental. We have a new client on Maui—tough duty, but someone has to do it. Son, Bo is five, and a source of real scientific curiosity. Living the good life in the Hill Country. Houston was just a bad dream." Larry lives in Dripping Springs, Texas.

James E. Bryant (BS '43, MA '48) is, "Doing a little geology in South Texas. Also, have a few cows, and calves on our ten acre ranch. Trying to get 1015 onions to grow as well as my neighbor's." He lives in Fredericksburg.

Leonard C. Bryant (BS '57) is an independent geologist in Helotes, Texas. "We spend about two months a year at our ranch in the Ozark Mountains of Arkansas where we raise Limousin Cattle. We also visit our three year old grandson in Austin quite a bit. My daughter, Dr. Beverly Bryant, has her medical practice in Austin now. She just couldn't get too far from UT."

Julius A. Buchanan (BS '41) writes, "I graduated from the school of geology 53 years ago and I have been retired 13 years. Still slightly busy doing family research and following the doctor's orders." Julius lives in Tyler, Texas.

Ray A. Burke (BS '47) is retired from UNOCAL and lives in Dana Point, California. "Back to exploration and drilling oil wells, but this time for my family corporation, Seamark Inv. Inc. We have had some success in good old West Texas. Still a good place to explore."

Claude M. Burnett (BS '51)

writes, "Moved to Round Rock from Big D in October, last year. Joined old field trip buddy, C. W. Hornbeck, who has lived here some 12 years and is semi-retired, as near as I can tell." Claude is retired.

William M. Burney (BS '48) reports from Tyler, Texas. "Married Jean Florence in 1948. Have three children and seven grandchildren. Lived in Tyler since 1954."

Robert W. Bybee (BA '41) is retired in Houston. "Highlight of 1992 was a trip to Russia and Kazakstan in September. Sponsored by People to People Citizen Ambassador Program, a petroleum technology delegation visited in Moscow, Western Siberia (Tyumen) and Atirva on Caspian Sea with government officials. Went to giant Tenguz oil field and facilities."

W. J. (Jack) Cage and Susan Kiefner Cage (BS '50; BA '50) write, "Lots of traveling this year, the Caribbean in the spring and Australia and New Zealand in the fall. We enjoy reading about other 'old timers' in the *Newsletter* and would welcome a chance to have a visit." Jack and Susan are both retired and live in Boerne, Texas.

Frank K. Cahoon (BS '57) is an independent oil operator in Midland. "Finishing my sixth year on the Texas Higher Education Coordinating Board. Paula and I recently returned from a trip to Nepal and India where we had a great time. We enjoy our grandchildren more every day."

Roger Q. Callaway (BS '77) comments, "Well, I couldn't stand dirty water after all. I am drilling holes by the side of the road in preparation for paving every wetland in North Carolina. Are exploration ge-

ologists covered by the endangered species act?" Roger is a highway engineering geologist in Matthews, North Carolina.

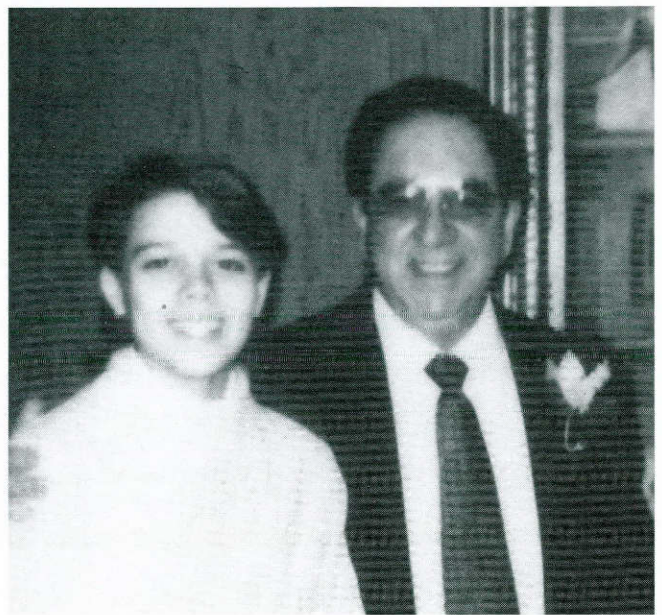
Dean L. Callender (BS '56, MA '58) is senior vice president of Dean Witter in Houston. "The rising gas prices may get geologists back to work if environmentalists don't shut everything down. Keep the faith—reason may yet reign!"

Donald H. Campbell (MA '62) is a senior principal petrographer for Construction Technology Lab in Skokie, Illinois. "Work continues apace in cement and concrete microscopy. Egyptian pyramid controversy as cast-in-place concrete has been nullified, but interest persists."

Donald M. Campbell (BA '54) comments, "We finally bought a home located in New Market, Maryland on Lake Linganore about seven miles east of Frederick, Maryland, and about 35 miles north of the District of Columbia. After five years of mud logging and doodle bugging, 18 years with the Geological Survey, seven years with the Interamerican Geodetic Survey working in Latin America, five years of retirement taking care of elderly relatives, Carol and I are now 'day caring' our only grandchild, Kimberly Nicole, born December 9, 1992. I'm still interested in part-time work (I miss traveling) and visitors to our area."

Richard A. Campbell (MA '59) writes, "Helping sons Kevin, Eric, and John run family oil business—Camex." Richard is a geologist in Lafayette.

Alvin Candela (BS '41) comments, "This August 1993



Alvin Candela (right) in a 1990 photo taken at his daughter Carolyn's wedding. Nathan Gilmore, a family friend, is at left.

will be 52 years since graduation. Other than controlled diabetes I am enjoying the best of health. The oil industry domestically still makes way for imports which affects our deficit. Exxon just announced that they are shutting down domestic exploration." Alvin is semi-retired in Galveston.

Harris Cander (PhD '91) received the Excellence of Oral Presentation Award for his paper *Late Stage Diagenesis in the Floridian Aquifer, Middle Eocene Avon Park Formation* at the 1992 SEPM-AAPG meeting in Calgary. Harris lives in Houston.

Steve Cardimona (PhD '92) is "happy to report that I have accepted a post-doctorate appointment as Air Force Geophysics Scholar at the Phillips Laboratory of Hanscom AFB near Boston. It is an appointment for one year, with possible extension to a second year. The opportunity for me is great, as I am able to work on research topics of my

choosing. The personnel here are nice, and the interaction with researchers at MIT is substantial, so this position is a good one as I begin my career."

A. T. (Toby) Carleton (BS '51, MA '52) is a geologist and rancher in Midland. "Family status the same: wife, three children, son-in-law, daughter-in-law, two grandchildren. Dividing time between geology and ranching. Spent much of last year on campaign trail as candidate for president elect of AAPG. I was elected to that post in May and assume duties July 1."

Marvin T. Carlsen (BS '51) reports from Midland, "Wife and I help supply many needs of her 93 year old mother, who still lives alone here. We will also keep our six year old granddaughter during school vacation this summer while her mother works. I still do some organic gardening, mainly to keep in shape. Best wishes to all at UT Geology Department."

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Steve Carlson (MA '84) writes, "I've been reassigned to Balikpapan, Indonesia on the island of Borneo. Wife and kids (ages 5 and 3) will follow in 1 1/2 years." Steve lives in Singapore and works for Unocal Indonesia.

Richard F. Carroll (BS '80) is a consultant for Union Petroleum Company in Houston. "My wife, Robin, and I are expecting our first child, a boy, in June of 1993. We are going to name him Ian Arthur Carroll and he will attend UT. I am consulting, screening deals, and trying to survive in a very tough oil and gas business. I'm still hoping to find an international position but would settle for a good position anywhere."

Robert (Bob) Carter (BS '48, MA '48), "Have become an avid reader since breaking my hip on the tennis court Friday, November 13!!! Keep up the good work with the *Newsletter*." Bob writes in from Austin.

Jack C. Cartwright (BS '51, MA '55) writes, "We continue operating our family business at a moderate pace. This is not the boom time. Our family continues to grow now that we have a married grandson." Jack is an independent in Midland.

Lee Case (BS '71) contributes, "Water Resources Division activities in Utah continue to grow. Projects range from determining the sources of saline water in the Navajo sandstone in the Aneth area to determining the cause(s) of salt loss in the Bonneville salt flats raceway. Living in Park City, Utah is fantastic! Skiing is great. Words a father of three boys

should always question? 'Follow us dad, this trail is easy!'"

David G. Casey, Jr. (BS '60) writes, "Working Bayou Choctow salt dome. Re-entered old well; now most need investment money, hard to handle alone. Last seven years have been the pits, things moving and getting better, look forward to a good year. Hope I can now start attending UT games. Life on Lake Pontchartrain with sailboat is great!" David is self employed in Mandeville, Louisiana.

Dwight E. Cassell (BS '54, MA '57) is a consulting geologist in Austin. "Settling in out west of Austin. Actively involved in shallow oil drilling with knowledgeable operator; not getting rich but it's great trying to outsmart mother nature. Linda continues to work part time as paralegal while tending a fine garden. Daughter Sally and spouse now living and working in Austin. Come see us!"

Chuck Caughey (BS '69, MA '73) writes, "I'm still exploring for oil and gas in Northeastern Sumatra. This last year was filled with field geology, seismic operations, and drilling. That plus trying to keep up with the kids in baseball and Boy Scouts keeps me busy enough. The family is looking forward to another summer in San Leon, Texas." Chuck is a senior staff geologist for Asamera in the Republic of Singapore.

Steven Chang (BS '87) is a geophysicist in the technical support group for Western Geophysical in Houston.

Thomas S. Chapin (BS '82) writes, "Kathy and I have two boys 10 and 7 years

old and adopted 18 year old. We are very active in youth soccer, windsurfing, and camping on the beach. Hope to move to Reno soon." Thomas is an exploration geologist in Yuma, Arizona.

E. Walter Chatham Jr. (BA '48, MA '50) is retired in Mineral Wells, Texas. "Time passes on and we are still here. Hope everyone is doing fine."

Steven E. and Pat Clabaugh (BS '40, MA '42; MA '62) comment, "We continue our quiet retirement life on the Pedernales arm of Lake Travis with plenty of activity at times when children, grandchildren and great-grandson, Steven come visiting. The Canadian grandchildren learned about trot-line fishing for catfish with such enthusiasm that they stayed a few extra weeks last summer."

Michael Clark (BA '89) writes, "Working on Master's thesis at Stephen F. Austin State University in geology. Developing applications in Geographic Information Systems and Remote Sensing to perform structural analysis for Llano uplift and the Solitario. Been designing and administrating GIS platforms at SFA for the past two years." Michael is from Tomball, Texas.

Merritt Clements (BA '83) is an attorney in San Antonio.

Russell E. Clemons (PhD '66) writes, "I've been retired one year and have enjoyed every day of having nothing to do. Frankie retired January 31, 1993 and she is also enjoying same. She is busy with Hospice and Hospital Foundation volunteer work. I am busy trying to learn golf, still involved with a few projects of reading rocks.

We are going to Alaska this May and to England in October. Other trips are pending." Russell lives in Las Cruces, New Mexico.

Joel Coffman (BS '83) is a project manager for GeoStrategies Inc. in Hayward, California. "I'm managing a group doing environmental assessment and remediation for GeoStrategies here in the Bay Area. Would enjoy hearing from fellow 1983 grads."

Kitty Coley (BS '79, MA '87) reports from Austin, "After going from Amoco Oil Company to Radian where I was a hydrogeologist, I've finally found a way to combine my environmental passion and science. I am the director of the Texas Water Commission's new municipal composting program. It feels great to believe in what I'm doing!"

H. Grady Collier Jr. (BS '49) is a consulting petroleum geologist in New Orleans. "New office across from superdome. I extend to all Texas Exes an invitation to drop in for a visit when in New Orleans."

Billy C. Collins Jr. (BS '76) contributes, "I'm still with Hanson Minerals and busier than ever. The oil patch is looking up with sky rocketing gas prices; hope they last. Corpus Christi is a wonderful place to live; my family and I enjoy all its recreational attributes."

James W. Collins (BS '56) is a geologist and oil operator in Corpus Christi.

James H. (Jim) Collum (BA '60) lives in Tyler, where he formed Alpha and Omega Environmental, Inc. in January, 1993.

Janet M. Combes (PhD '90) is a research scientist for Amoco Production Company in Tulsa, Oklahoma.



John and Alyson Headle Cooper

Tom Connally (MA '81) writes, "Five years in Arabia for Aramco. After four years they declare you brain dead. Enjoyed seeing many of you at Calgary last summer. I have the honor of doing lots of field work. This year we found the first dinosaur bones from Arabia. Where's Art Busbey when I need him?"

Carlton Cook (BS '78) is an independent petroleum geologist in Houston.

Henry C. Cook (BS '41) contributes, "Nancy and I have moved again. Boating became too much work, and a bore. Ft. Pierce was a good place for access to the Atlantic, but not much for just living. We are 20 miles east of Gainesville. Come to visit us." Henry lives in Melrose, Florida.

Alyson Headle Cooper (BS '86) comments, "The game plan changes. I had a change of location, change of careers, change of name, and change of marital status. While working on masters in oceanography at the Naval post graduate school, my best buddy of years past gave me a ring and I decided that two people at sea all the time was crazy. I resigned, mar-

ried Lt. John Cooper in August and am now Lt., USNR and paralegal student at Trident Technical College in Charleston, South Carolina. Other than that, not much has happened."

Casey and Susan Cornett (BS '86; BS '86) report from Houston, "Susan and I have a son born August 25, 1992 who has filled the three hours that we had to ourselves each week and we love it! The oil business is treating us very well considering where it was when we graduated. I hope all is well with our long lost friends who got out of school at the same time; we would love to hear from ya'll!" Casey is an exploration computer geologist for Ames International and Susan is a mom.

Frank Cornish (MA '75) writes, "Still at Suemaur as independent consultant exploring for our joint venture in Starr Co. Done the mid-life crisis thing. Oldest son, 14, with me. Youngest son, Darian (11), went with ex to Virgin Islands. Society's Jr. Rockhounds program is big success. I co-chair the program." Frank lives in

Corpus Christi.

Jeff Corrigan (MA '86, PhD '90) is a research geologist for Arco in Plano, Texas. "New son, Matthew Patrick born 10/9/92."

Augustus A. Cotera (BS '52, MA '55, PhD '62) writes, "Officially retired, but continuing on 49% appointment for University of Arizona 1993-94, then off to Spain." Gus is executive director for Nau-Yuma in Yuma.

Jerry Covington (BS '43) is president of COV Inc. in Midland. "Greetings to my classmates and friends."

Raymond W. Cozby III (BA '83) is employed as an attorney for Hardy and Atherton in Tyler, Texas. "My wife, Mary Ann (Plan II 1985), and I were blessed with twins, Raymond IV and Meredith, on 5-23-93. All are well. The twins almost have us on their schedule!"

Troy T. Crain (BS '84) works as a senior geologist for Broadbent and Associates, Inc. in Boulder City, Nevada.

Arthur (Art) S. Cramer Jr. (BS '57) writes, "Deena and I are grandparents again. Michael David Cramer was born April 29, 1993 to son David and daughter-in-law Lisa in Anchorage, Alaska. Weight 9 lbs. 3 ounces." Arthur is a consultant in New Orleans.

Roland P. Crawford (BA '63) is retired in San Antonio.

Weyman W. Crawford (BS '50), retired in Houston, continues on the Geology Foundation Advisory Council.

Thomas M. Culbertson (MA '47) reports, "A regional water plan has been developed for our Edwards Aquifer." Thomas is retired in San Antonio.

Steve Cumella (BS '77, MA '81) is a senior geoscientist in Grand Junction, Colorado.

Hugh W. Curfman (BS '48) writes, "Enjoy the news, keep up with other semi-active grads from 'those years.' Still looking for a place to 'place' some South Louisiana deals." Hugh is a semi-retired geologist in Lafayette.

Thomas B. Curlee (BS '50) comments, "Enjoy the Newsletter each year. Helen and I still in 'Okie-Land.' Not too bad. We still make trips to Hillsboro and Itasca often." Tom is a consultant petroleum geologist in Oklahoma City.

William W. Curtis (BA '82) is president of Empire Royalty in Oklahoma City.

Harris P. (Koop) Darcy (BS '51) contributes, "Everyone should see the new discoveries made by Dr. Carl Baugh at the Creation Evidences Museum in Glen Rose, Texas. Dr. Baugh is a very nice man. Don't delay as Dr. Baugh's departure is imminent." Harris is an independent in Houston.

Pam Tiezzi Darwin (MA '84) writes, "Since leaving UT I have been working as a geologist with Exxon. My husband and I lived in New Orleans for eight years and were recently transferred to Houston. In January I gave birth to our second child, a boy we named Tyler. We also have a three year old daughter named Kristin."

Franklin W. Daugherty (MA '59, PhD '62) writes, "My wife, Dorothy, and I stay busy even though we both retired from academia more than a decade ago, and I left the mining business shortly thereafter. I serve as chairman of the Brewster County Historical Commission, and as ad-

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visor to the Center for Big Bend Studies and the Big Bend Natural History Association. In addition, am continuing a long-term study on the water resources of the Sunny Glen area (northwest of Alpine), consult as the occasion arises in the realms of hydrogeology and mineral deposits, and gather material for a book on lost mines, buried treasure, prospectors, and promoters in the Big Bend area and adjacent Mexico. Will welcome any tales that anyone cares to share with me on these subjects." Frank lives in Alpine, Texas.

Howard E. Davenport (MA '92) contributes, "I finally completed my thesis, and have started work as an independent out of Abilene. I am still employed as an officer on merchant ships for four months out of the year. I do enjoy pointing out that a part of my year is devoted to avoiding Florida reefs and the re-

mainder is used to search for reefs along the Eastern shelf."

Mary Q. Davis (BS '48) is a vegetable grower in Tyler. "I'm still growing vegetables and also enjoying my six grandchildren (two in Tyler, three in Austin and one in Menlo Park, California)."

Rick R. Davis (BS '76) contributes, "I've been with Aramco for almost two years now working as a reservoir geologist. Enjoying the challenging work, the desert, and the travel." Rick works for Saudi Aramco in Dhahran, Saudi Arabia.

Ross Davis (BS '80) writes, "Wife Gail, daughter Allie (born September 6, 1991), and daughter Kate (born November 21, 1992)." Ross is a geologist in Houston.

Jairo Marcondes de Souza (MA '82) writes from Rio de Janeiro, "After my return to Brazil, I have been involved in the areas of quality control during the

acquisition of land seismic data (1982-86), and processing and interpretation of 3D marine seismic data in Campos Basin (1986-89), particularly in the region of the deep water giant Marlim and Albarcora fields. In 1989 I was designated as the coordinator of the Leplac Project within Petrobras. The 'Brazilian Continental Shelf Survey Plan (Leplac)' is a program of the Brazilian Government, whose prime objective is to establish the outer border of the 'Brazilian Legal Continental Shelf,' in accordance to article 76 of the United Nations Convention on the Law of the Sea (UNCLOS). Although the Leplac has a well-defined objective, the marine geophysical data collected will enable a better knowledge on the evolution of the Brazilian Continental Margin. I do not know if either the United States government or the universities and American private institutions are involved in a project similar to the Brazilian one, either concerned with the 'legal continental shelf' or with the 'economic exclusive zone.' If you have any news on this subject, please let me know."

Rudi de Zoeten (MA '88) writes, "Unocal restructuring has brought us back to Texas once more. Mary, Erich and I are surviving the environmental shock of Houston and expect an increased work load as the birth of our second baby approaches in December." Rudi is an exploration geologist in Sugar Land.

David A. DeBalko (MA '92) is a geophysicist for Arco Oil and Gas Company in Houston.

Leslie A. Dedede Jr. (BS '55) writes, "Retired from

Unocal Corp. on September 1, 1992 after 35 years in the oil patch as a geophysicist. Moved from Houston (thank goodness) to New Braunfels (my hometown). Keeping busy with my house, a place on the Guadalupe River, and a ranch in Gonzales County."

Carlos H. Deere (BS '50) is retired in Bellville, Texas.

Frederick E. Dekker (MA '66) reports, "Unocal has consolidated its worldwide exploration group in Sugar Land, 25 miles southwest of Houston. My position of manager of business development for worldwide exploration entails a lot of travel and meeting many interesting people from other countries, other companies, and other cultures. We're adapting to the Texas weather, especially tornadoes, violent storms and enervating summer heat/humidity." Fred lives in Katy.

Charles J. DeLancey (BS '40, MA '42) is retired from Exxon and lives in Houston. "Just traveling the world. About to take off on the silk road."

Bill DeMis and Mary Nelis (MA '83; MA '84) write from Houston that Bill has been with Marathon Oil Company for five years now, and worked the Smackover Formation in the Arkansas-Louisiana state line area for the last four. He finally made a discovery in the Smackover he can call his own. Last fall, he was transferred to International Exploration and now works in a world wide basin analysis group. His new job allows him to travel to foreign and forbidden lands. He has gone to China twice (foreign) and a symposium at Texas A&M (forbidden). Mary



Mr. and Mrs. Jerry Covington on a cruise on the Mississippi Queen several years ago.

is busy working part-time out of the home as a consulting petrologist; full-time taking care of John (3.5 years) and Eleanor (2 years). They both miss Austin, the Geology Department, and the good times they had there.

John L. Denson III (BA '49, MA '50) comments, "I especially appreciate hearing from graduate students assisted by the DeFord fund to which I have the privilege of making a small gift." John is a counselor and writer in Nashville.

George P. Derry Jr. (BS '49) writes, "I closed my office and moved to the house two years ago this coming October after 41 years of chasing oil and gas fields over south Texas. I am doing extremely well after my heart transplant on February 8, 1987 (six years) at the Texas Heart Institute, Houston. Greetings to all." George lives in Portland, Texas.

Mike Dildine (BA '72) works as a consultant for DuPont Gemini Alliance in Houston. "All is well in Houston. Greetings to 'Dillo' 660 class of 1972. When's the reunion in Marathon?"

Laura Martin Dobson (MA '90) is a senior geophysicist for Exxon Exploration Company in Houston.

John D. Doehring Jr. (BS '82) writes, "In the last year I have moved to Long Valley, New Jersey with Exxon in my current assignment as environmental engineering supervisor, Northeast United States. I really enjoy the challenge of this work, and the beauty of the countryside. Also pursuing an MBA at New York University. Busy! Miss UT and Austin alot."

George A. Donnelly Jr. (BS '40) says, "Still hunting oil and gas reserves." George

is president of The Eastland Oil Company in Midland and participates on the Geology Foundation Advisory Council.

Gene C. Doty (BS '54) comments from Las Vegas, "Wife, Mopsy, and I are well and, for the moment, so are son Jeff and his bride, and my daughter Paula and her family, which includes two prize-winning grandchildren." Gene is retired from the U.S. Geological Survey.

Michael L. Douglas (BS '80) is project geologist for Columbia Gas Development Corp. in Houston. "My fourteenth year in the oil and gas business and things are going well. Life in the urban jungle is great; after five years in Houston, I really enjoy it."

William W. Doyl (BS '48) moved to Williamsburg, Virginia, last summer. "Fully retired since return from Sultanate of Oman. Children, grandchildren and travel keep us fully occupied."

Robert E. Doyle (BS '55, MA '57) is president and owner of American Energy in Houston. "We are quite involved in development projects in Russia and Central Asia. Nearly all of our work deals with production operations, including the import of equipment. Perhaps later we will be involved with drilling following the resolution of their taxes."

James Doyle (BS '73, MA '76) is a geologist for BP/Statoil Alliance in Trondheim, Norway.

John G. Drake (BS '74) comments, "It is time for a GOB&G 20 year reunion. If anyone is interested let me know and we can get something organized." John is district geologist for Pogo Producing Com-

pany in Corpus Christi.

Thomas V. Dubois (BS '77) is vice president and exploration manager for New West Fuels in Corpus Christi. "Involved in forming new company, New West Fuels, L. C. with a utility partner. Oil and gas business seems to be picking up; hope it continues! Wife, Debbie is teaching 2nd grade. Kids, Scott (12) and Laura (10) busy with school, etc. Hook Em!"

Ralph C. Duchin (MA '55) writes, "Sally and I became legal Arizona residents early this year. Still make multiple trips to Houston to stay involved in the oil business." Ralph is an independent geologist in Tucson.

William E. (Bill) Dunaway (MA '62) is manager of geology for SCANA Petroleum Resources in Houston.

John A. Dunbar (PhD '88) is a senior research geophysicist for Shell Development Company in Houston. "First child, Tamura Ellen Dunbar, born 1/28/93, 8lbs. 5oz., 20" long.

David E. Dunn (PhD '64) reports, "Seeing so many of you at the Muehlberger Roast was a real treat, and the success of the fund drive for the Muehlberger field scholarship is very gratifying. Last November I was elected treasurer of GSA, so I have my hands full of external commitments. Hope to see everyone in Boston." David is dean of natural sciences and mathematics at UT Dallas.

William R. Dupre (BS '68, MA '70) writes, "Big news this year is a trip with the family to Yellowstone and Glacier National Park. Not too many more years until the days of family vacations will be over!" Bill is an associate professor at

the University of Houston.

Bobby G. DuPree (BS '54) is retired in Palestine, Texas. "Retirement is great. Lerla and I were blessed to be able to witness the birth of grandchild number 11 this year!"

Marie Durbin (BS '87) writes from Dallas to say, "Yes, amazingly enough some companies are still exploring! I have broadened my horizons this year, and developed into the world of time/velocity; having moved from our domestic geology department to worldwide geophysical group. (Still partial to depth though!) Have also gone from the DOS world to UNIX, using some neat toys (Sun Sparc, Zycor). Went to Murfreesboro, Arkansas in May to dig for diamonds. Didn't find any, but had a good time playing outside. Hi to my geology buddies: Linda B., Terry R., Tony Y., and Vicki N." Marie is employed as an associate geophysicist for Hunt Oil.

Steve Dworkin (PhD '90) comments, "I have been very busy teaching at Baylor but still have time for research. I will soon be reporting important advances I have made in understanding the parameters that control boundary layer thickness in turbulent fluid flow." Steve lives in Waco.

Connie Mayes Dyer (BA '58) is a wife, mother, grandmother, and community volunteer in Houston. "Presently wearing all hats listed above. Youngest son is 14 in September, second granddaughter arrived in April. I'm very busy and unsalaried, I might add, but wouldn't have it any other way. Byron and I weren't able to attend any meet-

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ings this year and surely did miss seeing old friends."

Fred A. Ealand (BA '45, BS '48) contributes, "Full time grandpa to nine grandchildren (ages 2-16). Life has been very good to my wife and me during seven years in retirement." Fred lives in Houston.

John H. Edgerton (BS '78) lives in Houston and is an exploration geophysicist for AEC Exploration Co.

Leo Ehrhard (BS '86) is an associate geophysicist for Phillips Australian Oil Company in West Australia. "All is well in Perth, with Jane busy, Taylor is one year and Elliott ready to enter the terrible twos! Phillips is busy and active here, waiting for the big one. A great posting to be sure!"

Mark Eidelbach (BS '51) is owner of Mark IV Energy in San Antonio.

Gus K. Eifler Jr. (BA '29, MA '30) is retired and living in Austin. "After 20 years in the Bank One Tower I have given up my office."

Ralph I. Ellsworth (MA '49) contributes, "Still enjoying living at Lakeway. Get to the campus occasionally and watch UT athletics. On the fringes of the oil and gas industry, travel to Midland, Houston and Corpus Christi primarily—always check on contemporaries."

Rojelio P. Espinosa (BS '85) is a seismologist for Western Geophysical in Houston.

Lawrence E. Ethridge Jr. (BS '47) writes, "Semi-retired but keep office hours. Some of my classmates are still around, see them frequently. Drilling every now and then with a group. 'Dickey' and I just celebrated our 52nd anniversary. Hook-em horns." Lawrence lives in Corpus

Christi.

Rizer Everett (BA '37, BS '37) contributes, "In June of 1992 we drove to Albuquerque, where we picked up our 19 year-old granddaughter, Kate, for our trip to California. The purpose of the trip was to be present at several important family events: the graduation ceremony of our granddaughter, Lael, who received her BA degree in anthropology from UC Davis; the graduation ceremony of her mother, Connie, who obtained her PhD degree in psychology in San Francisco; the wedding ceremony of our grandson, Chris, to Debbie Jenkins in Concord; and visits with 19 members of our extended family. We then drove south to the Hearst Castle at San Simeon and then drove to the San Diego area to visit a cousin of Hildegard whom she had not seen in more than 55 years. On the way back to Texas we spent several days in Tucson, to visit friends and points of interest. We drove more than 5,300 miles on the trip, and we saw lots of wonderful sights and had a great time being with our granddaughter on that long journey. In early October we drove to Tulsa, to attend the biyearly Stanvac reunion. Later in October we flew to Fort Myers, Florida to attend the celebration of the 50th wedding anniversary of a couple who were our neighbors when we lived in Palembang, Sumatra in the 50s and 60s. We are enjoying our busy life here in Austin, but we find it hard to believe that we have lived here 27 years since our move from Indonesia."

Norman Ewbank (BS '43) is retired in Midland.

George H. Falk (BS '57) writes, "About the same. Still involved in a horizontal well now and then." George is an independent in Seguin, Texas.

Thomas E. Fanning (BS '56) says, "The new job, my first in international, is fascinating. Once I master the skill of sleeping en route, rather than in overseas meetings, everything should fall into place." Tom is vice president of international exploration of Marathon Oil Company in Houston, and still finds time to serve on the Geology Foundation Advisory Council.

Christine Farrens-Ando (MA '82) is project supervisor for Exxon Exploration Company in Houston. "Have worked most of the Far East (from Houston...sigh), Alaska, and now the Gulf of Mexico for Exxon these past 11 years. Married 1987, Lillian Claire born 1987, divorced 1992. Currently into tennis and Tae Kwon Do."

Drake Fason (BS '89) writes, "After working for a year in hydrology for Jones and Neuse in Austin, I decided to change careers and applied to medical school. I am currently in my third year (out of four) at the UT Health Science Center at San Antonio. Last summer, Kristin Kidd and I were married. We are living in San Antonio but can't wait to get back to Austin."

Irma Jo Morgan Feibelman (BS '59) contributes, "I retired in January after 25 years in the aerospace industry at Johnson Space Center. My husband, Jim, is also retired. We will move to Canyon Lake this year, when we can get a house built up there." Irma lives in Seabrook, Texas.

William K. Fennell (BA '89) is a supervisor for U.S. Postal Service in Austin.

Walter M. Fitzgerald Jr. (BS '53) comments, "Still procrastinating. Playing golf at Lufkin Country Club with Geritol Nooners. Shooting trap and skeet at Pines Gun Club. A real laid back retiree. TGIF, thank goodness I am free."

Ted Flanigan (MA '80) writes, "I've left the proud ranks of independents and taken paying work with Quest Petroleum, one of the biggest oil companies in Reno. Sadly, my wife of six years exercised her bail-out option via divorce. I'm now living the single life at Ophir Mill Ranch, south of Reno. Y'all come visit!"

Graham E. Fogg (PhD '86) comments, "After four years in the Golden State (seems like two years), things are going better than I could have anticipated. Have taken great pleasure in watching our graduate (MS & PhD) program in hydrologic sciences grow and flourish at UC Davis. We also now have a BS program in hydrologic science." Graham lives in Davis, California.

Cynthia Fong (BS '88) writes, "I recently quit my job of 3 1/2 years as a hydrogeologist and am now enjoying life (translates into travelling, reading, bummin' around, and planning a wedding). And I'm having a great time. I'm getting married on June 27 to Adam Greenblatt and we hope to move to Hawaii someday soon from sunny California. Any good hints for finding a fun geo-job out there?" Cynthia lives in San Jose.

Thomas Foster (BS '84) contributes, "I was transferred to Anchorage, Alaska from Lafayette in December of

1992. I am very happily married and have two children. I presently work for Baker Hughes INTEQ, formerly Eastman Teleco, formerly Teleco Oilfield Services as a senior mud engineer. Also, I am still trying to get some prospects drilled in South Texas. I look forward to hearing from those geology Longhorns."

Hewitt B. Fox (BA '47, BS '48, MA '48) comments, "We recently took a cruise on the *Crystal Harmony* from Ft. Lauderdale to Acapulco which included stops at several Caribbean Islands and Costa Rica but the main event was transiting the Panama Canal. Be sure to see it before it changes hands. I recently leased about 2200 acres in Southeast Nevada on a look-alike to a nearby field that has produced 16 millions barrels since 1983; over nine million out of the discovery well that flowed 4300 bbls/day for eight years. Give me a call if you'd like more details at (512) 857-0717." Hewitt is president and owner of Hewitt B. Fox Inc. in Cor-

pus Christi.

W. D. Frazell (MA '35) is, "Still having fun looking for oil or gas in South Louisiana. More fun than Las Vegas." W. D. is president of W. W. F. Oil Corporation in Lafayette.

Tom Freeman (PhD '62) says that in May 1993 he taught a five day course in carbonate petrology for thirteen doctoral students at the University of Granada (Spain). This was a repeat of a course that he offered while on sabbatical leave there two years ago. They are in their new home, "Los Balcones," atop Perche Creek bluffs west of the University of Missouri, where Tom continues as professor of geology.

Kevin Frenzel (BS '87) is operating manager for Hall Southwest Corporation in Midland.

Annabelle Bannahan Friddle (BA '45, MA '50) lives in Aztec, New Mexico.

Tatiana Frierson (BS '85) comments, "Working as a management consultant for Perot Systems and loving every bit of it! Did a little volunteer work for the 1992 Perot for Presi-

dent campaign last year. Greetings to all the summer 1985 Geodogs." Tatiana lives in Houston.

Jack Q. Frizzell (BS '50), president of Enrich Oil Corporation in Abilene, says "We're doing our part to maintain the rig count in West Central Texas and East Texas Salt Basin. Still drilling about 25 wells per year and finding enough oil and gas to keep our hopes up, for (1) \$20 oil and \$3 gas and (2) a return to reason in government. They need us!"

Donald W. Frye (BS '55) is self employed in Houston. "I have been self-employed for the last five years. Looking for oil and gas in the Texas Gulf Coast."

Jeff and Carla Matherne Fuller (BS '86; BS '86, MA '90) write, "We are happily employed here in Austin. We bought our first house last year. Drop by anytime in the next 50 years, after all the work we've put into it, we plan to be in it at least that long!" Jeff is a geologist at the Texas Railroad Commission, and Carla is a hydrogeologist at IT Corporation.

Warren P. Fuller (BS '40, MA '48) is retired in San Jose, California.

Daniel S. Gafford (BS '61) is employed by the Department of Defense Commissary Agency in Fort Lee, Virginia.

Rimas J. Gaizutis (BS '91) writes, "Finished my MS in geology at Texas Tech in December 1992. Currently working at Unocal International Exploration in search of prospects in Kazakhstan. Hello to all the crew of 'Big Blue' and 'The Colonel' from field camp 1990." Rimas lives in Houston.

J. Neal Garland (BS '59) is

president of Garland Minerals Corporation and executive vice president of Goldston Oil Corporation in Longview, Texas.

Douglas Garrett (BS '51) retired from Exxon after 35 years. "Now doing only what I want to when I want to. That's called the good life. My granddaughter is planning to continue the UT tradition." Doug lives in Houston.

Thurman Geddie (BS '45) writes, "Drilling Vicksburg gas wells in Hidalgo County and horizontal in the Chalk." Thurman is a geologist for L. B. Industries Oil and Gas Division in Austin.

Clement George (BA '47) is "doing fine in semi-retirement. March a trip to Brittany (France). In May, off to China with flying Longhorns." Clem lives in Midland.

James M. Geron (BS '60) writes, "I have been in the securities business for the past 31 years. Currently I co-manage the retail brokerage division for Rauscher. We have 270 brokers in five states. I have always used my geology studies as a way to better understand energy-related investment and the resources of our economy." James lives in Dallas.

Fred M. Gibson (BA '51) is semi-retired and still doing statistical reports at IRS in Austin.

Louis de A. Gimbrede (MA '51) writes, "Still alive and hoping some friends from UT or other places would come see me!" Louis is retired in Lafayette.

Jerry R. Gips (BS '70) is president of Tourmaline Exploration Company in Houston. "One small successful well in Wharton County. Two more prospects to be



Geology 660, 1989, in New Mexico.
Standing, left to right: Drake Fason, Erik Harris, Tom Ritchie, and Patrick Reiss. Kneeling, left to right, Greg Warren and Doug Bowling.
 Photo submitted by Erik Harris.

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tested this year.”

Paul Giraudin Jr. (BS '48) writes from Corpus Christi, “Nothing of note, just glad to be here.”

Jennifer L. Glasford (MA '88) reports, “California has been interesting, but I am very happy to be moving back to Texas where many of my friends from UT live. Current UT coworkers include Rudi deZoeten (proud father of a new baby boy, Erich), Fred Dekker and Paul Sagasta (recently transferred to Thailand).” Jennifer is a geologist for Unocal International in Houston.

W. Leonard Goode (BS '53) says, “All is well in West Texas. Working a little and enjoying life and good health.” He is a consulting geologist in Midland.

Pat Goodson (BA '84) is owner and manager of Geoprojects International Inc. in Austin.

James E. (Jim) Gordon (MA '51), an independent in Corpus Christi, says: “Have four sons, five grandsons, and two granddaughters. Not a geologist among them.”

Mark B. Gordon (PhD '93) writes, “I went to Cuba in August and September of 1992 to do fieldwork with Paul Mann (UTIG) and several Cuban geologists. After I returned, I found out that my NSF grant for Central America was funded. As a result, I spent January to April of 1993 doing fieldwork in Honduras and Guatemala. The toughest part of the year will be spending summer in Houston.” Mark is a postdoctoral research associate at Rice University in Houston.

Scott B. Gorham and Susan Elder Gorham (MA '81; MA '81) comment, “Scott is a geophysicist with Em-

pire Exploration. We left Houston in 1991 for western New York and miss our friends but little else. Susy and the kids have adjusted well to battling the occasional blizzard and enjoy the proximity to family and Canada. We're waiting for Jim Anderson to open the Geneva office.” Scott and Susan live in Orchard Park, New York.

Peggy Stanley Gormley (BA '46) writes, “Recently took a vacation from work for geologist George Rice to visit Corpus where my UT Law School graduate son and his wife live with their brand new twin sons.” Peggy lives in Dallas.

Linda Grace (BS '81) is employed by Pennzoil and lives in Houston.

Drane F. Grant (BS '43) writes, “Fiftieth anniversary class 1943-1993. Wonder where the other four or five are.” Drane works as an independent in La Pryor, Texas.

Willard R. Green (MA '55) comments, “Am active in prospect generation and consulting. Remain active in AAPG as president-elect of the division of professional affairs.” Will is an independent/consultant in Midland.

Robbie Gries (MA '70) writes, “Denver, 1994! June 12-15 is the AAPG annual convention. Mary Beth Cooper is working on an alumni cocktail party like the good ole boom days! As general chairman I'm excited to bring the meeting back to Denver, after 14 years. Plan to bring the whole family. On a personal level, Willard Pease, Jr. in Grand Junction (Willard Pease Oil and Gas) and I have joined forces and made our first acquisition (a Denver company with 700 BOE/D produc-

tion). As director and vice president of exploration, I'll continue with acquisitions and exploration.”

Ariel D. Griffin (BS '57) is a retired geophysicist in Spring, Texas.

Steve Griffin (BS '83) is a laboratory manager for Omni Environmental, Inc. in Austin. “Starting up a new asbestos analysis laboratory with two other guys. It has been an experience! Wife Linda is fine and daughter Jennifer is three and growing like a weed. Give me a call sometime.”

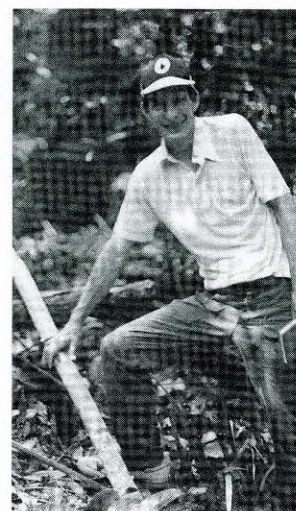
Furman A. Grimm (BS '47) contributes, “After many good years with Exxon as a geophysicist and ranching near Meridian, Texas, I have fully retired and live in Clifton, Texas. The wife and I devote most of our leisure time to travel and golf. I stay in touch with industry activity through my younger son, Mike, a UT graduate who is vice president of land and exploration with Placid Oil in Dallas.”

Robert O. Gross (BS '63, MA '65) lives in Dallas where he is a partner in Creole Exploration Company.

Kathryn L. Gryta (MA '91) reports from Buda, Texas, “Daughter Suzanne, born November 1991, son Michael born October 1992.” Kathryn is a homemaker.

Aura Yadira Guevara (BA '91) works in the marine section of the Houston center for processing seismic section for Digicon. “So far it's been an excellent job. A learning experience from all points of view. I recently got married (3 months) to a UT grad from engineering.”

Christopher Haas (BA '88) is attending medical school at UT Southwestern at Dallas, after serving with a



Chuck Caughey at site of Beta-1 discovery in northern Sumatra.

medical relief team in South America.

Albert Haertlein (BS '78) is a geologist for Freedom Resources Company in Houston. “I have two sons, Bryant (12) and Michael (9). Michael is finishing his scholarship to the Glassell art school, while Bryant received a scholarship to the Earl Campbell football camp. The variety keeps us busy. My wife, Patty (UT DB '77), is thinking about returning to school.”

Curry W. Hall (BS '54) writes from Houston, “Have been consulting since Wintershall closed down last summer. Plan to retire in January unless something too good to turn down comes along (highly unlikely). Have lots of projects planned for next year.”

Henry R. Hamman (BS '60, MA '63) is president of Hamman Oil and Refining Company in Houston. “Still looking for good oil and gas prospects in Texas and Louisiana.”

John W. Hampton Jr. (BS '53), owns John W. Hampton and Sons in Wichita Falls. “Brought in five fantastic wildcats in the last

- six years—all grandsons!”
- J. V. Hardwick** (BS '40) is retired in Midland, Texas.
- Jennifer Thompson Hare** (BS '86) is a PhD student at UT Dallas.
- Robert W. Hare** (BS '79) lives in Fort Worth where he is employed as a geologist for the Adkisson Estate.
- Louis H. Haring Jr.** (BS '38) is president of Haring Energy Company in San Antonio. “Still maintain an office and take a working interest in an occasional oil and gas prospect. Traveling a lot both domestically and foreign.”
- John L. Harmon** (BS '52) is a drilling supervisor for Texland Petroleum, Inc. in Lubbock.
- Erik J. Harris** (BS '89) writes, “Engaged to Monica Istvan (BS '90). Enjoy working for the City of Austin.” He is an environmental quality specialist.
- Margaret Hart** (BS '83, MA '92) comments, “Working hard at the Texas Water Commission; enjoying not being in school, traveling whenever I can. On the down side, I was diagnosed with non-Hodgkins lymphoma in May and am undergoing chemotherapy this summer. I'm very optimistic about the future.” Margaret lives in Austin.
- Richard E. Hart** (BS '74) is a geologist with Royal Oil and Gas Corporation in Corpus Christi. “Still prospecting in Southeast Texas and Southwest Louisiana and still hoping for that next big oil and gas discovery. It was nice to run into numerous UT Exes at the AAPG Convention in New Orleans. What a fun week that was: AAPG convention and Jazz Festival! My wife, Jeanne, and son (Derek) are doing fine and are enjoying the South Texas lifestyle.”
- Peggy Harwood** (BA '66, MA '73) comments, “Just finished two months as a district ranger at the Los Padres National Forest near Santa Barbara, California, fantastic experience. Incredible geology in those coastal ranges, including the oldest, still working oil field in California, the Sespe Oil field. That part of the field inside forest boundaries is in the mountains! Weird. In some places there are still natural tar seeps. The district's 300,000 acres also included the London Refuge, two new wilderness areas, rare plants, endangered species of foods, and thousands of campers and hikers (who aren't endangered). Best wishes to all former fellow students and teachers. I can't believe it's been 20 years!”
- Glenn D. Hatcher** (BS '73) writes, “Mary and I have made it another year! The boys are growing more rapidly than I care to admit. It seems so long ago that I was at the UT Geology Department running errands, delivering mail and all the other fun things (like studying). Hope everyone has another good year.” Glenn is a geologist with British-Borneo Exploration in Spring, Texas.
- Laurence H. Hawes** (BS '51) writes, “Enjoying retirement. Doing some property evaluation for purchase. Made an inspiring trip to the bottom of the Grand Canyon via pack mule. Plan to tour a number of Civil War battle fields this summer and fall. Getting a closer look at the geology and history of our great country. Best regards to all publishing the *Newsletter*.” Laurence lives in Midland.
- Hugh Hay-Roe** (MA '52, PhD '58) contributes, “Consulting still takes me to places such as Santa Cruz, Bolivia, Quebec City and Riyadh, with no opportunity to settle into a nice comfortable rut. I'm always looking for funny bloopers in geowriting to put in ‘The Geological Column’ in *Geotimes*. If you have any, please mail them to me.” Hugh lives in Kingwood, Texas.
- Edward F. Haye** (BS '51) is president of Benchmark Exploration in Houston.
- Kristopher K. Hefton** (BS '78) writes, “I am in my fourth year living in the province of Irian Jaya, Indonesia, and exploring the fascinating Ertsberg District.” Kristopher is a senior geologist with Freeport Indonesia.
- Grant Heiken** (MA '66) is on the research staff at Los Alamos National Laboratory in New Mexico. “I'm turning more to research and mitigation of volcanic hazards, with less time spent on geothermal research. Books are doing well; *Volcanology and Geothermal Research* (Wohletz and Heiken; University of California Press) came out last year; we are also pleased that *Lunar Sourcebook* received best geoscience reference book award at the Cincinnati GSA meeting last year.”
- James H. Helland** (BS '43) is president of Inland Ocean, Inc. in San Antonio. “I'll still be around trying to find oil and gas provided President Clinton, the DOE, the EPA and the rest of the New Socialists don't put me out of business.”
- William B. Hemphins** (BS '58, MA '62) writes, “Two years into retirement. I love it. Just returned from six weeks in mainland China.
- Fascinating, fantastic, weird—but I wouldn't want to live there. Doing minor consulting in Philippines and looking for more. I do like the South Pacific. Just received two more patents on my stuck drill pipe prediction technique.” Bill lives in San Francisco.
- Cornelia Henderson** (BS '81) comments, “I thoroughly enjoyed the GDS/660 reunion in Austin in October 1992. Although Mike Moore and Mike Miller only rounded up seven of us, we all had a grand time, and yes, there will be another one. I married Ed Gates (potter and artist) July 3, 1993.” Cornelia is an attorney for Allison and Huerta in Corpus Christi.
- John D. Henderson** (BS '37) is retired in Dallas.
- Steven Henderson** (BS '90) writes, “Just finished (last December) MS on San Andres Formation and am starting PhD on Crosscut Sand, Runnels County, Texas.” Steven is a graduate student in geosciences at Texas Tech in Lubbock.
- Larry R. Hensarling** (BS '56), president of Dove Resources in Lafayette, is “still looking for oil and gas anywhere I can find it!”
- Reid Hensarling** (MA '81) comments, “After graduating from UT, I worked for nine years as a geologist with Tee Oil, Inc. in Lafayette. In the summer of 1989, I went to seminary in Pennsylvania. I felt called to serve in full-time ordained ministry in the Episcopal Church. My ordination was December 5, 1992. I still love reading the alumni *Newsletter* annually and am proud to be a graduate of UT Austin.” Reid is an assistant at St. Matthias Episcopal Church

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in Shreveport, Louisiana.

Charles W. Henslee (BS '51) writes, "Am enjoying retirement, playing golf, traveling, and eight grandchildren." Charles lives in Houston.

Harold T. Henslee (BS '50), self-employed in Amarillo, is "just sitting back relaxing and wondering how and why we outlived our profession in petroleum geology. Better days ahead."

Jon Herwig (MA '82) comments, "I have recently been transferred by Ogden to our Honolulu office where I am acting as technical director for the Geology/Hydrogeology group and am working on the Pearl Harbor Superfund site. Hello to all and come out and we'll tear up the North Shore." Jon is technical director for Ogden Environment and Energy Services Company.

Christoph Heubeck (MA '88) writes, "I am busy finishing my PhD at Stanford. The future is, as yet, uncertain."

Charlie Hewitt (BS '88, MA '90) contributes, "This year brought the unsettling experience of a corporate takeover. Don't know what the future holds with the uncertainty of the coal market and the environmental activism of current administration. Looking for opportunity to move to familiar surroundings." He is an environmental specialist at SMC Mining in Lovely, Kentucky.

Suzanne Mechler Hewitt (BS '89) is a geologist for Bocook Engineering in Paintsville, Kentucky. "I am busy permitting the coal fields of Eastern Kentucky and trying to keep up with our little holler. Sure do miss Texas."

Charles H. Hightower Jr. (BS

'56) is president of Hightower Oil Corporation in Lafayette.

Janice Lorraine Hill (BS '79) writes, "John was transferred to Amoco's international exploration group so we loaded up the truck and moved to Houston in August. We 'quickly' settled into a great neighborhood in Copperfield with 18 young kids on a cul de sac next to the elementary school. Caitlin (6) amazingly transformed into a 1st grader and Russell (4) finally made it out of diapers. Hallelujah! I've been a seamstress and laborer."

Linda Alide Hinnov (MA '85) is a geology PhD student at Johns Hopkins University.

Paul B. Hinyard (BA '28) writes, "At 90 years of age and 26 years in retirement about all I can do is read about what is going on in the oil business." Paul lives in Tyler, Texas.

Dave Hixon (MA '59) is employed as a software engineer for UniSys in Friendswood, Texas.

F. A. (Fred) Hoeninghaus (BS '49) writes, "Eight years of retirement have gone by and now nine grandchildren have appeared on the scene to keep Millie and me pretty well occupied. Thanks for the excellent *Newsletter* each year." Fred is retired from Exxon and lives in Houston.

David S. (Scotty) Holland (BS '57) comments, "Now in my third year of retirement. Enjoying it more every day. Busy with various boards and investments. Jacque and I travel quite a bit now, but enjoy the ole fireside more and more." Scotty is retired from Pennzoil and lives in Houston.

William C. (Bill) Holland (BS '81) comments, "Hello all you Longhorns, especially

you guys in the Bat-Mobile. Hey, Wild Bill of San Antonio. My family is fine: Elise is eight and Jessica is two. Consulting work is going fine, although times are tuff." Bill writes from Missouri City, Texas.

H. W. (Bill) Hollingshead Jr. (BS '57) writes, "Retired from Pennzoil in Houston, July, 1992. Now part-time in Midland and part-time in Pagosa Springs, Colorado, fishing!"

Charles Lee Roy Holt (BS '49, MA '50) is a sculptor and geological consultant. "Moved to second home and studio in cool Wisconsin. Holt's Sculpture, including geologic relief mosaics, now in galleries in San Antonio, Corpus Christi, Rockport, Dallas, and Madison." Lee's Texas home is in Port Aransas.

James W. Hood (BS '48) writes, "Still enjoying retirement immensely, keeping fit by rebuilding our old house. Making good progress in our family history projects." James lives in Salt Lake City, Utah.

Ben P. Hooper (BS '80) is manager of geology for Josey Oil Company in Houston.

Edward Hooper (BS '82) is a senior geologist at Hadson Energy in West Perth, Western Australia. "This has been a busy year with a wedding and a change of company."

Brian Hoover (BS '84) is director of sales/marketing for Colwick Travel in Dallas.

Richard A. Hoover (PhD '68) is a geologist/coordinator for Exxon in Houston.

Eleanor M. Hoover (BS '56) is a geologist for Exxon Exploration Company in Conroe, Texas. "Enjoy working for the new technology department. Global exploration is challeng-

ing and interesting."

Carlton W. Hornbeck (BS '53) writes, "Preparing for the next boom. I feel it is imminent!" Carlton is an independent geologist in Round Rock, Texas.

Scott Hoskins (BA '87) writes, "I was recently promoted to develop the Latin American markets for Messina Incorporated. Messina is an international drilling fluids company servicing national oil companies around the world." Scott is director of Latin American Operations in Dallas.

G. B. (Bill) Howard IV (BS '82) is a managing director for Flare Resources Inc. in Houston.

John W. Howard (BS '86) is manager of natural gas supply for Transco Energy Company in Houston. "Hollywood Van reunion: September 18, 1993 (Syracuse game)."

William P. C. Hudson (BS '75) is president of Plenus Corporation in Austin. "Finally back in Texas—working on housing sector. Canada and Poland were fun, but Texas is where our hearts are. First grandchild, Kara Lynn, was born on Thanksgiving Day."

Raul Huerta (MA '80) is an exploration supervisor in Houston. "Enjoying work in the offshore Gulf of Mexico. I still get to visit those tea-sippers at Exxon, but miss those that are harder to reach."

Jack T. Hughes (BA '41, MA '42), professor emeritus of anthropology at West Texas A&M University in Canyon, is "trying to live a little bit in all of the worlds of the past—historical, archeological, paleontological, and geological."

Ed Hughston (MA '50) is self employed. "Living still in Taos, New Mexico (last

15 years). Spending progressively more time in Mexico."

Richard C. Hulbert Jr. (MA '79) is an assistant professor at the Department of Geology at Georgia Southern University in Statesboro.

Steven D. Hulke (MA '78) is a senior exploration geologist for Hunt Oil Company in Dallas.

Emmett A. Humble (BA '49, MA '51) writes from Houston, "Continue part time consulting, mostly in the Far East. Lorine and I enjoy traveling and spending time with our grandchildren, some of whom we now have to look up to!"

Elvin M. Hurlbut Jr. (BS '43) comments, "Virginia and I and three cats are fine. Finally got house and yard in shape. World's boom or bust is still an unanswered question. Listed in 12th, 20th, and 21st editions of *Who's Who in the South*

and *Southwest* and 9th and 10th editions of *Who's Who in the World*." Elvin lives in Tyler, where he is a semi-retired editor and writer.

Daniel C. Huston (MA '87) writes, "I married the most beautiful lady geophysicist in Texas last October. Holly and I are expecting a baby in the fall and we both are drilling wells this summer." Daniel is a geophysicist for Unocal in Sugarland, Texas.

David E. Hutchison (BS '79) comments, "My wife and I reside in Phoenix where there are more golf courses than outcrops to look at." David is a chiropractor in Scottsdale, Arizona.

Robert M. Hutchinson (PhD '53) writes, "Continue to teach my specialty every fall semester, i.e., optical mineralogy-crystallography. Summers I teach half of summer field camp with an emphasis on under-

ground and open pit geological mine mapping. Continue to advise and supervise graduate theses. Continuing to offer a course for industry in underground and open pit geological mine mapping. Am planning a similar offering for the summer of 1994. My wife, Bette and I now have three of our five daughters married and one of our three boys married; four grandchildren, all daughters so far." Bob is a professor emeritus at the Colorado School of Mines.

Susan Ide (MA '86) writes, "Got married to a musician two years ago, currently expecting a baby in September. I'd like to hear from any friends who might read this!" Susan is manager of water quality services for Woodward-Clyde Consultants in Santa Barbara, California.

Jim Immitt (MA '81) is a financial analyst for Ad-

vanced Micro Devices in Austin. "Pam and I are enjoying living in Austin again. Adrian had his first birthday and he loves to swim in all the spring-fed pools in the area. These are exciting times in the semiconductor business and AMD is enjoying its best years ever. I sure miss the earth sciences and would love to get involved, maybe with a club. Anyone know of any?"

Joe L. Jackson (BS '56) is retired in Alamogordo, New Mexico. "Don't know how we got things done while still working. Do some consulting as engineering geologist, otherwise yard work and honeyedew jobs."

Leslie Hay Jackson (BS '89) lives in Nashville.

Russell W. Jackson (BS '76) writes, "Still trying to create a boom in East Texas. Love living in Tyler, we just need a little more oil business."

Eric H. Jager (MA '41) lives in Wichita, Kansas where he is retired and doing limited consulting.

Otis L. James, Jr. (MA '52) is self employed in Gainesville, Texas.

Beth Janssen (BS '84) writes from Houston, "I'm working as a pilot for a charter service operating out of Hobby Airport. I'm glad Todd (MA '87) has a real job! I also own an aerobatic plane which I fly at competitions and air shows around the country."

Jim Janssen (BS '79) reports from Houston, "No longer with Oryx Energy in Dallas. We've been look at coming to Houston for a while and it's as good as we had hoped." Jim is a geologist with Walter Oil and Gas in Houston.

Kenneth L. Jarratt (BS



Sigma Gamma Epsilon Honorary Geology Fraternity, spring, 1937. Front row, left to right: S. W. Horne, Jerald Bartley, Dan White, Pete Smith, Frank Gardner, Irby Cobb, Lloyd Rymann, Rizer Everett. Second row: Aubrey Rabensburg, Wayne Holcomb, Gideon Mayfield, Bob Sheldon, Fred Goerner, Lester Marshall, James Burke. Third row: Dr. Fred M. Bullard, Gerald Stafford, Bob Redfield, Walton Launey, Doug Hanson, Bill Bramlette, E. A. Dodson, Bethea Martin. Top row: Dr. F. W. Simonds, Dr. F. L. Whitney, Dr. Hal P. Bybee, Gordon R. McNutt, Dr. Robert H. Cuyler, Surce J. Taylor, Clyde Ikins. Photo provided by Rizer Everett. Members not shown: J. M. Frost, Roscoe Wilber, Dan Johnston.



'57) is "enjoying semi-retirement, selling real estate and enjoying our grandkids; they now number four. Still hoping the Horns make a comeback in 1993." Ken lives in Edna, Texas.

Charles T. Jenkins (BS '48) is an independent geologist and operator of Jenkins Energy Company in Duncan, Oklahoma. "Still searching for oil in south Oklahoma and help has arrived; youngest daughter, Daphne, graduated from OU school of geology last year and has joined me in my office. Suddenly, looking for oil is a lot of fun again. Now to get lucky! Enjoyed the AAPG meeting in Sydney, Australia last summer; toured the Outback and the Great Barrier Reef with side tours to New Zealand and Fiji. Looking forward to my

annual trips to Austin this fall. I never tire of walking past the old geology building as well as the new. I thoroughly enjoy the *Newsletter*—keep up the fine work!"

Charles N. Jennings (BS '52) comments, "Have been in Rio Grande Valley for 20 years. Have been selling real estate and some geological consulting on a part time basis." Charles lives in Brownsville.

Eric Jerome (BS '86) lives in Austin.

Leslie (Les) A. Jeske (BS '84) writes, "Will complete MS in December of 1993. Still hoping to break through as an exploration geologist. Just welcomed the arrival of our second child, Walker Scott (4/1/93). Enjoying East Texas as much as we can." Les is a teaching assistant at Stephen F. Austin State University in

Nacogdoches.

Charles B. John (BS '51) is "still living in Tulsa with Norma, wife for 47 years. Am a doctoral candidate (geology) at UT El Paso, working on a structural dissertation: the Blue Mountain transverse structure, Latimer County, Oklahoma. Expect PhD in 1994. Thanks for the annual *Newsletter*."

Charles G. Johnson (BS '83), an independent geologist in Jackson, Mississippi, is "working the Frio and celebrating the birth of our third child and second son, Ethan, in February, 1993."

John E. Johnston III (MA '77) writes from Baton Rouge, "Rick McCulloh and I are still at the Louisiana Geological Survey, and I'm still the deputy state geologist. My writing career has taken off. Earlier this year I was made an active member of the Science Fiction Writers of America. Look for my name in short story anthologies (still no rejections)."

Charles E. Jones (BS '51) is retired in Houston, "playing golf."

Christopher R. Jones (BS '81) comments, "Petroleum geologist with Texas Oil and Gas Corp. in Jackson, Mississippi 1982-1986. Joined A. H. Robins Pharmaceutical Company in 1986 as sales representative. Promoted to district manager 1991 in Denver. Married to Tina, with three daughters Kristen, Cassie, and Kaitlin." Christopher lives in Parker, Colorado.

Harold E. Jones (BS '41) writes, "It is tougher than ever to sell oil and gas deals these days. Outlook not too bright for independents. Jerry Bartley (BS '41) died in April because of kidney failure at the age of 79. I will miss him. A fine

friend and good geologist." Harold lives and works in Midland.

Jonny Jones (MA '88) is president of Jones Energy Ltd. in Austin. "I moved my oil and gas exploration business to Austin in March of 1993. Our primary area of activity is shallow gas exploration in the Texas Panhandle."

Luther G. Jones (BS '59) is retired from Federal Civil Service in San Antonio, and reports that retirement is great.

Mary Lafe Martin Jones (BA '48) lives in Dallas, where she volunteers skinning and stuffing birds for ornithologist Dr. Warren Pulich of UT Dallas. She still collects fossils. "Can't wait to visit our geology library."

Jon T. Jorgenson (BA '49) writes, "Frances and I are still retired since 1985 from Veezay Geoservice but keep my interests up with some photogeologic consulting. Grandkids keep coming with two in North Carolina, one in Houston and one underway in Calgary. Come see us." Jon lives in Denver.

James D. Kallina (BS '53) is president and owner of JDK Incorporated in Stafford, Texas. "Still brokering seismic data and investments. Playing lots of golf. Have taken up salt water fishing."

Steven G. Katz (PhD '75) writes, "Connie and I continue to enjoy living in Granville, Ohio. I'm really challenged by my position with a small local technology development firm in the fiberglass reinforced composites business. Regards to the gang at UT." Steve is vice president of operations for Isorca, Inc.

Peter C. Keller (MA '74, PhD '77) is executive director



John E. Johnston III and his Great Pyrenees, Mindy Bear.

of Bowers Museum in Santa Ana, California. "Just opened a new museum in Orange County. It appears to be a success although it has few, if any, gems and minerals. Stop in and say hello."

Christopher G. Kendall (postdoc '66-'68) continues as a professor of geology at the University of South Carolina in Columbia. "Spent 1992 on sabbatical in Italy in Ferrara and Calabria, developing sedimentary models to test with a computer simulation. This year have almost completed first phase of a 2D sedimentary simulation to recover basin geometry. Off this summer to Australia for more of the same."

Elizabeth Merritt Kenley (BA '39) comments, "One grandchild graduates from UT in June, another enters in September—Beth Bridges and Sarah Goerner. Parents and grandparents are all Texas Exes." Elizabeth lives in Houston.

Edward R. Kennedy Jr. (BS '48, MA '49) writes, "Continue to work as a consulting geologist in Midland, primarily the Delaware Basin."

Bob Kent (BS '72) contributes, "Moved to California in 1990. Most of my work is still environmental, some groundwater resource studies. Work area mostly southern U.S. and South America." Bob is vice president of Geomatrix Consultants in Santa Ana Heights, California.

Allan R. Keown (BS '58) is a forensic document examiner in El Paso, Texas. "Many moons have passed since I graduated and most of my classmates have retired and some have even gone to that great fault in

the sky. I, however, find that I must continue working to stay off food stamps. My hat is off to those of you who completed a most rewarding career. Thank you, TU, for a jump start in life."

George L. Keppta (BS '52) comments, "My wife and I traveled to Europe, Great Lakes and the Rockies last year. This year we plan to visit Nova Scotia and Alaska." George is retired in Houston.

Don M. Kerr Jr. (BS '60) is president of Kerr Construction Services in Houston.

Walter Kessinger (MA '91) contributes, "I have been employed since October, 1990, in the Geotechnology Research Institute at Houston Advanced Research Center. During that time, I have performed commercial seismic processing and have worked on the 3D Project, a seismic data processing R&D program funded by industry sponsors."

Carla Ketner (BS '86) is a geologist for JAPEX (U.S.) Corp. in Houston.

Howard W. Kiatta (BS '58) writes from Houston, "Working on several exploration projects on the Texas Gulf Coast. I'm excited about the opportunities for independents, but realistic about the lack of available risk capital. Doing fine otherwise. Ada works for me two days a week. We have seven grandchildren, six of whom reside in Houston."

Robert J. Killian (BS '77) comments, "Added new son to family, Robert Maverick, born November 1, 1992." Robert is a geologist for The Gulf Tide Oil Company in Houston.

William C. King (BS '50) writes, "Spent 15 years in

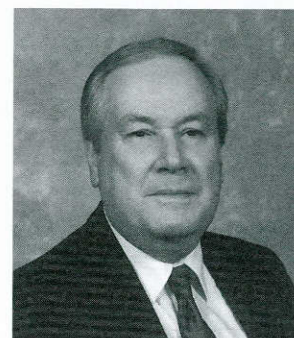
Houston area in oil and related endeavors, then 21 years in Alaska as a state geologist and later with the city of Anchorage. Now we are retired and happy in Kerrville."

David L. Kirchner (BS '73) lives in Phoenix, Arizona with his wife Kathy (also a geologist) and two sons (Kory and Kody). David is president of Basin and Range Hydrogeologists, Inc., a privately-held consulting firm which provides services in natural resources and environmental sciences. He also formed Camelback Cartoon Company, Inc., and is developing an entire line of cartoon characters, including Dusty Dawg and the Slip Slang Cowboys. "Hello to all my past and existing friends, and those that eventually will be. Give us a call when you are in Arizona!"

Tom Kirkpatrick (BS '84) is a computer support geologist for Exxon in Houston. "Nearing completion of Master's thesis and looking forward to spending more time with my wife, Stacy, and 1 1/2 year old son, Evan."

Don L. Kirksey (BS '60) contributes, "I often reflect on my most enjoyable career in exploration geology of 30 years. I feel blessed because of this experience and also because of the new career I have in waste management that's proving to be very satisfying. I'm a recycling consultant developing recycling programs for businesses. Recently married to my wife B.J., another wonderful happening in my life." Don lives in Oklahoma City.

Walter L. Knighten (BA '51) writes, "Life in Tyler is very pleasant. We have our own branch of UT which



Walter Knighten

makes it a little like Austin. I am mainly a history buff these days doing a newsletter for the Sons of Confederate Veterans and digging in the archives for the SAR and Smith County Historical Association. St. Francis Episcopal Church keeps me busy with vestry duty. Christine and I have never forgotten Austin and those we knew at UT." Walter is retired from Gulf Oil Corporation.

William F. Knode (BS '57) is a consultant in Abilene.

Radim A. Kolarsky (MA '92) writes, "Having a grand time with 3D computer-assisted seismic and well-log interpretations, sequence stratigraphy, 3D visualization, etc." Radim is a geophysicist for Texaco USA in New Orleans.

Erwin K. Krause (BS '49, MA '54) writes, "Attended 1992 GOP convention in Houston and welcomed granddaughter number five. Enjoying retirement in Houston, visiting Austin, and going to opera in Houston, Dallas, Austin, and elsewhere."

J. Scott Kuykendall (BA '75) is a staff geologist for ENSR Consulting and Engineering in Houston. "Still pursuing a career in the environmental consulting business in Houston, although I may be headed for the Hill Country soon."

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- Ted B. LaCaff Jr.** (BS '50) writes, "Now officially living in Santa Fe and studying the rock bottoms of the numerous trout streams in the area. I may not know the rocks, but I sure know the trout (how to catch them)."
- George A. Laguros** (MA '87) comments, "We're enjoying our second year in Aberdeen, Scotland, where I'm doing development geophysics for Marathon. By the time you read this, our second child will have been born."
- Michael E. Lamar** (MA '90) is a medical student at Texas A&M University in College Station.
- James L. Lamb Jr.** (BS '56) is an oil and gas producer in Austin.
- Leon M. Lampert** (BA '51, MA '53) writes, "Dalport Oil Company, with which I have been associated for over 30 years, is being dissolved in 1993. I am joining the ranks of my friends who are also independents. Will continue to generate drilling prospects in South Texas and occasionally in Southeastern New Mexico. Having bought Dalport's interests in South Texas, I am now an 'oil producer,' whatever that means." Leon lives in Corpus Christi.
- Robert K. Lattimore** (BS '56, MA '62) comments, "Hanging in for as long as I can. With retirement of Larry Littlefield last fall the only other Texas-Ex in Chevron Overseas is chief geologist Dave Birsa." Robert is an operations geologist for Chevron Overseas in San Ramon, California.
- Thomas B. and Rosa L. Layman** (MA '87; BS '85) are geologists for Exxon Company USA in Midland. "Rosie and I are alive and well in West Texas. Our son, Bruce (3), keeps us young."
- H. Louis Lee** (BS '54, MA '58) is a consulting geologist in Austin. "Still doing my part to keep this old oil business going."
- David Lemke** (BS '82) is a senior geophysicist in Houston. "I'm managing all of Amerada Hess' Landmark and GeoQuest interpretation workstations. It's a far cry from geology, but it's work."
- Ray Leonard** (MA '76) comments, "I am currently exploration manager and vice president of Amoco Eurasia Petroleum Company, Amoco's subsidiary for exploration and production in the former Soviet Union. We have an active program in five areas and I spend much of my time travelling to Russia and Azerbaijan. Advice to UT geology and geophysics students: study the geology of Russian basins and learn to speak Russian!"
- G. Warren Leve** (MA '52) writes, "My firm merged with EMCON and my present job is senior consultant. Just returned from Europe and Middle East where we are looking for joint ventures for environmental remediation work." He lives in Ponte Vedra Beach, Florida.
- Max Levin** (BS '47, MA '71) is a consulting geologist in Midland.
- Russell Lewis** (BA '72) is an industrial program director for the Texas Water Commission in Corpus Christi.
- Dean Leyerly** (BS '50) writes, "Since John Turner UT (BS '50) is semi-retired he gets to practice his golf more. He is a real good geologist. Margy and I are working at being retired but things keep getting in the way of our travel plans. We want to travel to Las Vegas two or three times a year." Dean lives in Midland.
- Charles V. Liebscher** (BS '46) writes from San Diego, "Due to old age (78), the faults in my body have been active. During the past year, I've had a major quake (triple heart by pass) and aftershock (prostate surgery). My life has been satisfactory. I worked in Europe and Africa for 35 years. For the past 12 years I have been retired in San Diego. I believe that I've lived in the peak standard of the human race. My disappointment is the erosion of moral and ethical standards during the past 25-35 years. Drug use and abuse is common. Corruption is widespread and found at every level of government, occasionally even in churches, etc. I have learned that the good Lord has erected a sign at the Pearly Gate which states, 'Former politicians take the first elevator down.'"
- Walter S. Light Jr.** (BS '77) is owner and president of Thunder Exploration, Inc. in Houston. "Working Olmos, San Miguel, Austin Chalk, Buda, Edwards, Glen Rose, Sligo of RRCD I, Wilcox, Frio, Bee and Goliad Counties."
- Tim Lignoul** (BS '82) writes, "I am working as an environmental attorney for the City of Houston. I am involved with enforcement of environmental laws and opposition of state permits."
- John F. Ligon** (BS '81) owns Sandalwood Oil and Gas, Inc. in Houston.
- Russell M. Lilly** (BS '53) is semi-retired in Oklahoma City.
- Tung-Hung Thomas Lin** (MA '84) is an exploration geophysicist for Marathon Oil in Houston.
- A. L. Linehan** (BS '51) is self employed and semi-retired in Hilltop Lakes, Texas. "Geophysical and geological and property evaluation bombed out. When consulting got so near nothing, I got into real estate and investments. After two or three years it got shaky as jello; now I'm only working with some real estate of my own."
- Alsie Linscomb** (BS '51) comments, "Living in San Antonio and enjoying four grandchildren. Go fishing a lot, but don't do much catching. Work with Norman Norris on consulting jobs occasionally. See Jack Trantham (BA '51) when I visit my youngest son and family in Tyler. Enjoy the *Newsletter*. You are doing an excellent job."
- Eugene Lipstate** (BS '49) writes, "I retired last year after 30 years with Northwest Oil Company. My wife doesn't like my retired status, so requested that I become a consultant. Working with AAPG as a member of the House of Delegates and on the Advisory Board for the Division of Professional Affairs." Gene lives in Lafayette.
- Nancy Green Lister** (BA '55) contributes, "All of us are fine. Ray is busy at work, hunting and fishing. I go along on the latter two for fun. Our sons are involved in jobs and school. We love to go to Colorado to hike, relax and enjoy the beauty. Best wishes to all." Nancy is a housewife in Houston.
- Larry D. Littlefield** (BS '57) writes, "Retired in July 1992 after 34 years with Gulf/Chevron. Now waiting for the perfect consulting job to show up. I may

THROUGH THE YEARS many Venezuelans have attended The University of Texas at Austin. The strong orientation of the Venezuelans to oil and natural gas means many of these students pursued degrees in geology and related fields. On March 14, 1993, a large number of Venezuelan ex-students met to establish and inaugurate AVEUT. Officers elected for the Association were geology ex-students Hildebrando Martell (MA '70) as president, Freddy Chiquito (MA '70) as vice-president, and Daisy Mejia (MA '77) as treasurer. Martell's remarks at the meeting in Caracas are printed here.

"One of the characters described in the novel *Doña Barbara*, written by Romulo Gallegos in 1929, is Mr. Danger. Gallegos described Mr. Danger as an unscrupulous American adventurer who arrived in the Venezuelan Llanos looking for easy ways to make money and acting outside the law.

In 1948, while Romulo Gallegos was the president of Venezuela, U.S. president Harry Truman invited him to inaugurate a statue of the liberator of Venezuela located in Bolivar, Missouri. During that visit Gallegos met with Dr. Lowell Dunham, a professor at the University of Oklahoma, who was coincidentally writing his doctoral thesis on Gallegos and his novels. Later that year President Gallegos was thrown down from government. He went into exile and settled in Mexico. Gallegos and Dunham started to write letters to each other and developed an extraordinary friendship. Their relationship was such that Gallegos' son, Alexis, went to live in the Dunhams' home and they considered him like a true son.

Gallegos' reaction to the Dunhams' acceptance of his son and the deep fondness he felt toward the American couple was such that he wrote to Dr.



AVEUT Inaugural, Caracas, March 13, 1993, (left to right): Daisy Mejia, Bill Fisher, Rose Maria Fargas, Freddy Chiquito, Rodulfo Prieto, Hildebrando Martell, Julian Castro.

Dunham: 'Dear friend, you may rest assured that there will not be any other Mr. Danger in my novels, since I will not pay any attention to those like him that still may exist; rather, I will placidly look to those like Lowell Dunham, who honor the excellence of the human condition.'

I have referred to Gallegos and Dunham because they are a good example of what friendship and culture can do for the relationship among countries and their people. This is the same motivation that joins us today. For all of us, the time we spent at the University of Texas was an important stage in our lives; it had a positive influence in our professional and personal growth. We had the opportunity to attend a first-class university with fine professors and excellent facilities, and we also got acquainted with the nice people of Austin.

I am sure none of us has forgotten the frequent spectacle of the illuminated Tower when there was any relevant victory in sports. I was at the Department of Geology from 1968 to 1970 and, for me, it is impossible to forget the big illuminated number one when our Longhorn football team won the National Championship in 1969. I remember all my professors: DeFord, Boyer, Ellison, Scott, Fisher, Pirson and many others, and I

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particularly remember the kindness of Miss Margaret Kidd of the International Office. I cannot forget the family picnics at Zilker Park nor the baseball games at Lake Austin. It certainly was a friendly environment where the academic requirements were in appropriate equilibrium with sport and amusement. Since I came back from Austin in 1970, I have kept a very beneficial contact with the University of Texas, especially with Dr. William Fisher, who has been a consultant for our petroleum industry and who we are privileged to have with us today.

We have also kept a gratifying relationship through Intevop and Lagoven with other qualified professors from the University of Texas, among them Larry Lake, Gary Pope, and Paul Mann, who is also with us today. Through my own experience, I can say that their teach-

ings and recommendations have been of great importance for our industry and our professionals.

Many of you have been very active in connection with the University of Texas, and due to your efforts this association is becoming a reality today. For this we would like to thank Mr. Freddy Chiquito, Dr. Rodulfo Prieto and Mrs. Daisy Mejia. This group of graduates includes lawyers, dentists, journalists, administrators, engineers, petroleum engineers, and geologists, and is a good indication of the acceptance and enthusiasm created by the idea of having our Venezuelan association of UT graduates. The objective of this association is to make a stronger link among us and our University of Texas by means of cultural, professional and social activities. I am sure that with our common effort this objective will be reached."

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have to wait a while.” Larry lives in San Ramon, California.

James L. Lockley (BS '78) is “doing that exploration thing in South Louisiana.” James is a senior geophysicist for Enserch Exploration in Dallas.

Allen C. Locklin (BS '54) is president of Locklin Oil Company in Tyler. “1992 was a very bad year for the domestic explorationist and 1993 is likely to be no better. All the action is overseas. I'd go too if I were younger. Fortunately life in general is very good. Nancy (Summers) and I have nearly 39 years of happy marriage. Both children, Chris (37), and Lee Ann (34) are doing fine. We have five grandchildren. Give my best to all at the department.”

John L. Loftis Jr. (BS '40) is an independent geologist in Houston.

Manuel J. Lombas (BS '79) is a geologist for M&E/Pieco Inc. in Hialeah, Florida.

Laddie Long (BS '52) writes, “Faye and I still enjoy traveling but keeping home base in Midland. Biggest effort goes in keeping up with only grandson—must keep up appearances in spite of the strains.” Laddie is retired from the UT Lands office.

Mark W. Longman (PhD '76) continues to live in the Denver area and work on carbonate reservoirs around the world. He looks forward to seeing lots of UT grads at the 1994 AAPG convention in Denver.”

E. William Longmire (BS '50) writes, “Playing lots of golf. After a couple of false starts, finally got to Scotland last year and played St. Andrews, Turnberry, Troon, Carnoustie. Quite an experience.” Bill lives in Carrollton, Texas.

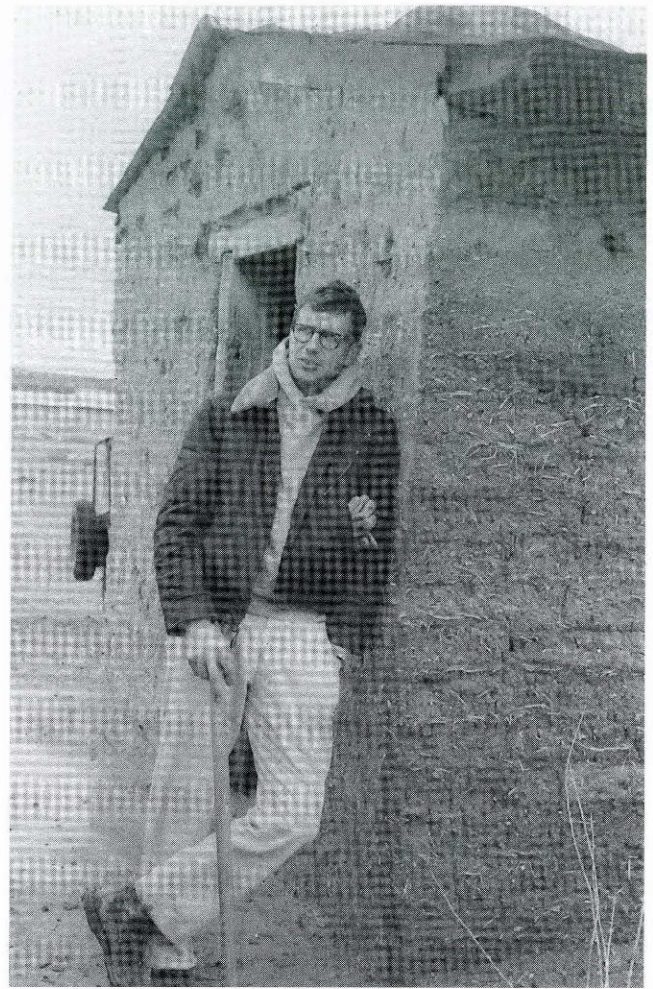
Don A. Lundy (BS '70) comments, “Between my job, family, and bluegrass band, life has never been busier. Made time, however, to write a letter of gratitude to some of my old mentors at UT, Dr. Bullard, Bell, and Turk.” Don is a senior hydrogeologist/associate principal for RETEC in Ft. Collins, Colorado.

Pamela Luttrell (BA '73, MA '76) is a geological manager for Mobil in Germany. “After a brief assignment in Norway, I'm back in our German office. It's an interesting time to be living in Europe with all the political and social changes happening. From what I hear from my stateside friends, it's not so encouraging for U.S. oil and gas. We're fine; Erin is nine, attending German third grade and fluent in her new language. Let me hear from you!” Pam lives in Celle.

Mary Ellen (Alyx) Lyons (BS '82) writes, “Lots of changes over the years for me. After I left Exxon in 1984, I became involved with the natural foods industry. Since 1984, I have worked in retail health food stores doing everything from grocery buying to publishing a monthly newsletter. Recently I've studied acupressure therapy in a desire to diversify my talents. I am also a percussionist with two bands.” Alyx lives in Burlington, Vermont.

Millard H. Major (MA '42) comments, “I've been following the lead of the big companies by downsizing my operations. I've downsized my office till some would call it a large walk-in closet.” Millard lives in Corpus Christi.

Bruno Maldonado (BS '82) contributes, “Well, I'm still surviving this downturn in



Dick McGehee (BS '55, PhD '63) at the dugout, 96 Camp, Rim Rock country, West Texas, in early January, 1962. Photo by Steve Clabaugh.

the oil industry. I am currently marketing seismic data processing services for Tensor Geophysical from Brazil to Mexico and the U.S. My boys are growing up; Bruno is 11 years old and Armando is six.”

Frank L. Manville (BS '55) is a draftsman for Cameron County Court House in Brownsville, Texas. “I am still working for the Cameron County Engineer's Office. With 22 years of service I can retire any time, but as of now, I have made no definite plans for retirement. Nothing important has happened to me in the past year so I have no more to report.”

David Martens (BS '84) com-

ments, “My wife, Autumn, and I had our second child, Pearce David, in June. I finally finished my MS degree from the University of Houston and have begun my ninth year with UNOCAL in Houston. I like the industry in general, have switched emphasis from domestic to international since being transferred to our North Caspian Basin group.”

Jeffrey G. Martin (BS '84) is president of Petro Quest Corporation in New Orleans. “Generating prospects in South Louisiana and hopeful that the natural gas bubble has finally burst!”

Mark W. Martin (BS '84)

writes, "In 1992 I received my PhD from University of Kansas, completed a post-doc at UNLV, and moved to Houston to see what the oil patch is all about. It's nice to be back in my home state after an eight year leave. Hope all my cohorts are doing well wherever they may be."

Owen Martin (BA '90) is a safety officer, legal officer, and first lieutenant for *USS Crommelin* in Aiea, Hawaii.

Lamar B. Maxwell (BS '60) is in investments in Devers, Texas.

Paul R. Mayo (BS '50) comments, "I continue to prospect on the Eastern shelf and enjoy the grandchildren. Would welcome contact with classmates." Paul lives in Abilene.

John McAnulty (BS '78) writes, "Still hanging on in the oil and gas business." John is a senior geologist for Kriti Exploration, Inc. in Houston.

Robert L. McBroom (BA '51) writes, "We always have a hot deal for anyone who cares enough to hunt for oil. Greetings to all!" Robert is a consultant in Wichita Falls.

William E. McBroom (BS '40) is "still mobile and enjoying life, in spite of Federal government oppression." William is retired in Vernon, Texas.

C. Carew McFall (BS '50, MA '52) is a consulting geologist in Los Altos Hills, California. "Jean's daughter has given us two grandsons. Gold exploration continues."

Edward McFarlan Jr. (MA '48) comments, "My continuing regional studies of offshore exploration plays in the U.S. Gulf Basin reveal many encouraging opportunities supported by many presentations, in-

cluding my own, at the 1993 AAPG Annual Meeting in New Orleans." Edward is a consulting geologist in Houston.

Edward F. McGee (BS '50, MA '52) comments, "Love living in Wimberley close to Austin. Having lots of fun with two small grandsons, four big dogs, 25 chickens, 27 1/2 acres and a big garden. Enjoyed great success with big time oil business in Gulf of Mexico. Too bad for the youngsters that the business has changed so greatly."

John A. McGinley (BS '48) is retired in Oklahoma City. "Forty-seven years ago I met Gloria Jean Trant at a Duke Ellington dance in old Gregory Gym. We were married while students at UT. April 14th of this year Gloria died of lung cancer. Gloria was a wonderful wife, and mother of our three children. We will all miss her."

Bill J. McGrew (BS '54, MA '55) is retired in Mena, Arkansas.

Jim McLaren (MA '84) is a senior staff scientist for Woodward-Clyde Consultants in Pasadena, California. "Woodward-Clyde is monitoring earthquake activity around the site of Southern California's largest water reservoir, under construction near the city of Hemet. By the time you read this the network will be installed and I will be overseeing day-to-day operations. This will be a big project and a lot of fun."

Mike McLeod (BS '86) is an associate geologist in Sacramento, California. "Have spent time this year in third world countries such as Guatemala (before the coup) and Oregon. Life is peachy out here but there are too many Aggies. I'm in the phone book so give

a shout if up this way."

Jude McMurry (MA '82) writes from Winnipeg, "I'm still employed by AECL Research, where I'm a geochemist in the Canadian nuclear fuel waste management program. Daughter Dante is now four years old and knows her major dinosaurs quite well, thank you. Shame on all my UT friends who read the *Newsletter* every year but who are too lazy to send in a few bits about themselves (that goes for you, too, Ralph!)."

Milo E. McMurtray (BS '57) comments, "Working along Texas Eastern's pipelines in Pennsylvania and New Jersey. Am in San Diego every other month for a long weekend with granddaughter Mila. Was in St. Thomas, V.I., in February checking out beach structures. Still helping to promote theatre in Caledonia, Pennsylvania, and tourism in the Cumberland Valley. Will be in Europe in October checking out my father's route with the 36th infantry division during WWII." Milo lives in Fayetteville, Pennsylvania.

Jerry McNeish (MA '87) is a geosciences manager for Intera in Dallas.

Jerald E. McQueen (BS '61, MA '63) is vice president of Medallion Oil Company in Houston.

Lee I. Meador (BS '57) is retired in Anacortes, Washington.

Joe N. Meadows (BA '62) comments, "Son Mark is sophomore at UT and daughter Meredith and family are in Nacogdoches." Joe is an attorney in Waco.

Robert D. Mebane (BS '36) writes from San Antonio, "I will be 80 next year and I have forgotten what little

geology I learned, but haven't forgotten the good times I had at UT and on summer geology camps in Brady and New Braunfels, Texas."

William J. Meek (BS '55) is president of W. J. Meek Insurance Agency in Arlington. "Dorothy (wife) and I have added two new grandsons to our 'fold.' Joshua Lee Averitt (Temple, Texas) born March 8, 1993 and Austin Mark Meek (Ft. Worth) born August 16, 1992. We now have six grandsons, no girls yet. Dorothy and I will be going back to Grand Cayman, BWI in late June for our second island vacation—so beautiful! More next year."

Peter Megaw (BA '76, MA '79) is president of Imdex Inc. in Tucson. "Mexico is booming as an exploration play. Gold, silver, copper, and zinc are driving things and the airports are full of U.S. geologists headed south, including several Longhorns. Expect our first child in October so I'll miss you all at GSA. Call if in Tucson."

Bob Merrill (PhD '74) is department chair and professor of geology at California State University. "Authored instructor's manual for *Exploring Earth and Life through Time* (historical geology text). Oldest son, Cyrus, in grad school at Brown University. Younger son quarterback for Fresno High. Hope to see friends at GSA in Boston."

Charles M. Merrill (BS '56) writes, "Enjoying new retirement home in far southwest Austin. But the grass grows too fast out here. Need to get all five grandkids to trample on it more, I guess."

Anne Smith Miller (BA '83) is a geologist for the Texas Water Commission in Austin. "Just passed the four year mark with the state and just celebrated four years of marital bliss. We're considering taking the plunge into the world of rugrats, but I'm waiting for Paula Sessions to go first! This past year I had the fortune of visiting Judy Gaylord Dain and her wonderful family in Fairfax, Virginia. How are the beagles and the beau, Barb?!"

Daniel N. Miller Jr. (PhD '55) was the 1993 recipient of the Ben H. Parker Memorial Medal from the American Institute of Professional Geologists. The presentation of the medal will be made in October during the 30th annual meeting in Springfield, Massachusetts. Dan is retired. He and his wife now have their home in Chapel Hill, North Carolina.

Harry A. Miller Jr. (BS '41) contributes, "In fine health, and still working in the oil patch with a new discovery (of sorts) in Winkler County. Having fun!" Harry is an independent geologist in Midland."

Michael R. Miller (BS '80) writes, "Since last report I have been married (twice) and have three beautiful children." Michael is a geologist in Austin.

R. Dick Miller (BS '51) is retired and living near Georgetown, Texas. "Still living in the country northwest of Georgetown. Pat and I enjoy retirement, also doing some bird watching and traveling."

Wayne D. Miller (MA '57) writes, "Not much change in past year. Got a few wells drilled and producing and hope to get about three wells drilled this year.

After 12 years in the same office building I finally moved my office to my current location in Midland last fall (September 1992). Family is fine. Looking forward to reading this year's *Newsletter*." Wayne is an independent consulting geologist.

Richard A. Mills (BS '50) is "working offshore Gulf of Mexico on sulphur project. Bought a house in Acapulco, Mexico and studying geology of state of Guerrero." Richard is a consultant in Houston.

Erminie Hunter Minard (BA '50) writes, "1992 recipient of the University Inter-scholastic League Denius UIL Sponsor Excellence Award. Award brings an original oblesk and \$1,000.00 check. Still living on Surfside Beach and loving it." Erminie is a math teacher at Alvin High School in Alvin, Texas.

James R. Moffett (BS '61) is chairman and CEO for Freeport-McMoRan Inc. in New Orleans. "Freeport-McMoRan continues to enjoy the research and studies that are being conducted in Irian Jaya, Indonesia—one of the most unexplored mineral provinces left in the world. Glad that UT students are getting the opportunity to build first geologic research data base. Hope many great theses and geological reports will reach many geological groups around the world."

Robert J. Moffett (BS '41) is an independent in Shreveport, Louisiana.

Evelyn Wilie Moody (BA '38, MA '40) writes, "On July 4, 1992 daughter, Melissa, had a tragic near-fatal accident at my ranch west of Waco. She was run over by a Suburban which destroyed her beautiful face,

broke her ribs, punctured her lung but she miraculously survived. Since then she has had multiple reconstructive facial surgeries at Houston Methodist Hospital, the last one being 20 hours long. It's been a frightening ordeal and there is still much to be done. The surgeon is unusually talented, skillful, creative and compassionate. We are truly blessed; however, it's been difficult for each of us. Son John is still lawyering at Exxon in Houston though he had a short but exciting start in Alaska. Daughter Jennifer, the archaeologist, is in the middle of her fifth year as MacArthur Fellow spending half year working in Crete, Greece and the other half in her new home near Waco teaching at Baylor University (see Pi Beta Phi *Arrow* Spring 1993, and Texas *Alcalde* July 1993). The six grandchildren are all teenagers—five handsome boys and one beautiful gal. Most excel with vigor and I am mighty proud. The Main Building, downtown Houston, where I had my office for 17 years, closed at the end of 1991, so my office is at home. Not much business but a little. In 1991 took daughter Melissa to Hawaii to study the volcano, this year planning to take granddaughter Jenny to Greece to explore and work with daughter Jennifer. Please call, write, or come see me."

Charles G. Moon (BS '40, MA '42, PhD '50) comments, "I retired from Exxon 21 years ago and still live in Houston."

Julie Schiebl Moore (BA '81) writes, "The journey of life has led me to San Diego, where I am learning the environmental business.

Lots of dirty dirt to dig and chase, coupled with the excitement of parking lot geology! It's a cultural enlightenment after living in Corpus Christi for 11 years." Julie is a project geologist for Millcon Environmental.

Michael Moore (BS '80) is exploration manager for Esenjay Petroleum in Corpus Christi. "I am marketing drilling deals in Texas and Mississippi. We are playing deep Vicksburg/Wilcox in South Texas and Smackover/Haynesville in the Mississippi Salt Basin. I continue to participate in various sports and I plan to cycle from Prague to Budapest this summer. Looking forward to our second annual Geology Department Scum reunion in Ciudad Acuña."

Terry L. Moore (BS '80) writes, "I have been reassigned to explore Gulf Coast gumbo and growth faults; wife Beverly is throwing herself a birthday party on Galveston Island; daughter, Jessica, graduates in August from SWTSU in hospital administration; daughter, Sarah, played fast pitch softball at Clements High School, and son Cyrus took a gold medal in the softball throw and a bronze medal in the 50 meter dash at area 22's Special Olympics." Terry lives in Sugar Land, Texas.

Francis W. Morgan (BA '39) reports from El Dorado, Kansas, "The state of the oil industry has almost retired me. I still put an occasional prospect together for drilling."

Julian (Hank) Morgan (BA '49) writes, "Have been in Arizona since September, 1992. Had a rainy winter but spring was beautiful. Enjoy the *Newsletter* and appreciate the effort to send

it out. Thanks." Hank lives in Prescott.

Marian Morris (BS '81) is a student at the University of Trondheim. "With the 'finest geology library in the Southwest' it should be possible to locate Trondheim a bit more accurately. Trondheim is a town in the kingdom of Norway, and not part of the city of Copenhagen! Trondheim is also a wonderful city to live and study in and I'm having fun here with my husband, Nils, Texas dog Melissa, and little baby boy Eivind."

Michael B. Morris (BS '47) is retired in Houston, and continues his participation on the UT Geology Foundation Advisory Council.

Sherill Motsch (MA '51) comments, "Still enjoying coastal living and fishing for speckled trout and red fish." Sherill is retired in Rockport, Texas.

Charles Motz (BS '60) is retired from federal service and is currently working for Budget Rent-A-Car in New Braunfels.

Charles P. (Chick) Mueller (BS '60) is a consulting petroleum geologist in San Antonio. "Nothing much has changed. I am still screening prospects for a group of investors. We are looking for low to medium risk deals, with some high side potential."

Harry W. Mueller III (PhD '75) writes, "I'm still doing carbonate geology, mostly in the Middle East. Jackie is still raising Dobermans and Whippets. James is a teen-ager and Kristen will be three before long." Harry works for Exxon Production Research in Houston.

Jerry Namy (PhD '69) is vice president of Exploration for Texland Petroleum in Fort Worth. "Looking for-



Photo from the October, 1992 reunion of the 1980 GEO 660 Taos/Durango group, left to right: Dan Keeler, Chip Fly, D'Nese Young Fly, Mike Moore, Cornelia Henderson, Mike Miller, and Patrick Talamas. Photo submitted by Cornelia Henderson.

ward to a busy year. Texland will drill 30 wells in the second half of 1993, including eight new exploration prospects, all in the Permian Basin. Susan and I were blessed with a beautiful granddaughter in 1992, our first grandchild."

Ken Nemeth (MA '76) comments, "Am still conducting 'the trail between two cities' as family stays in Houston while I work in Dallas. Active year in drilling has been marred by geological successes without good cash flow. Keep finding UT contemporaries still employed. Nice to know good people are still appreciated." Ken is a geologist for Browning Oil.

Paul E. Neumann (BS '87) is a well logging engineer for Halliburton Logging Services in Houston. "Working in Villahermosa, Mexico."

David C. Noe (MA '84) writes, "Things are hopping here! My duties at the Colorado Geological Survey include site geological reviews for subdivisions, oversight of our heaving ground hazards project, and coordination of educational activities. This fall,

Denise starts law school at CU-Boulder and I will embark on a PhD program in geological engineering at Colorado School of Mines." David lives in Boulder, Colorado where he is a geologist for Colorado Geological Survey.

Isaac W. Norman (BS '48) is retired in Taylor, Texas.

George E. Nowotny Jr. (BS '55) writes, "Still using my geological training in commercial real estate and banking, both of which have survived strong quakes in recent years." George is director of commercial leasing and sales for Case and Associates in Tulsa.

J. Mark Null (BS '87) comments, "Working toward a dual masters degree in oceanography and meteorology, at the Naval Post Graduate School in Monterey, California."

Bob R. O'Brien (BS '52, MA '56) writes, "Still writing a book on national parks which means (sigh) another summer in Yellowstone, Grand Tetons, Canyonlands and my second trip through the Grand Canyon on a raft, after a 30 year hiatus!" He is professor of geography at San

Diego State University.

A. M. (Red) Olander (BS '48) comments, "Between my cattle business, our grandchildren, and doing volunteer work in a regional office of the Presbyterian church, I am as busy as ever. Pleased to see our son-in-law, Dave Story, become a member of the Geology Foundation." Red lives in Houston.

John C. Osmond (BA '47) is, "Very busy and looking forward to seeing many Texas friends at AAPG Convention in Denver, June '94." John is a consulting geologist in Denver.

Clair R. Ossian (PhD '74) is president of The Ossian Group in Houston. "The second year of retirement has brought success for my consulting company, teaching positions, foreign professional travel, publications and new career direction that have allowed me to again follow an old interest in Egyptology! No time for rocking chairs. My wife Eleanor's career is growing and children are a success! Geology was a good choice after all!"

Robert (Bob)

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Ottmann (BS '51) comments, "Thankful for the dynamics of the oil business during my career, but retirement isn't bad either. Enjoyed serving on the Advisory Council of the Geology Foundation. Here's wishing you continued success." Bob lives in Houston.

Philip M. Oviatt (BA '78) is employed by Executone Information Systems, Inc. in Marietta, Georgia.

Robert M. (Bob) Owens (BS '51) is a consulting geologist in Houston.

Forrest (Woody) Pace Jr. (BS '85) is a geophysicist for Marathon Oil Company in Houston. "Pretty much the same as last year. Having a great time exploring the frontier basins of Argentina and Bolivia."

Jack M. Park (BS '50) is a consultant in Dallas.

Don F. Parker (BS '70, MA '72, PhD '76) writes, "Daughter, Cimarron Ann, born in July 1992. Doing research in Oregon Cascades, San Juans of Colorado and, of course,

West Texas." Don is a professor of geology at Baylor University in Waco.

Tim Parks (BS '88) is a geologist for Kelley Oil Corporation in Houston.

Matthew J. Parsley (MA '88) is a geologist for Marathon Oil Company in Midland. "Lynne and I are enjoying West Texas with our two boys, Nick (4) and Sam (1)."

Lisa Hawkins Paton (BS '85) writes, "We're expecting our second daughter in June and I'm excited about staying home with our children for a few years. Hello to all my geology friends. Where are Karla and Elizabeth?" Lisa teaches kindergarten in San Antonio.

Joseph E. Patterson Jr. (MA '83) comments, "After spending my first 6 1/2 years out of UT in Denver, the last three years in California seem somewhat lacking. While geographically and geologically interesting, politically, fiscally and economically it can best be summed up in one word—oppressive. It's easy to see

why so many companies are fleeing this state. In the minds of many Californians, the oil industry is only one step up from child molesters. California is an interesting place to visit, but don't even think about moving here. Trust me on this." Joseph is a staff production geologist for Mobil Oil Corporation in Bakersfield, California.

J. F. Patterson (BS '52) is a consultant in Bellaire, Texas.

Jacob L. Patton (BA '32, MA '32) comments, "Believe it or not I am still consultant to the Saner Estate in Dallas after all these years. Right now I am trying to get over the shingles and it has been a painful process." Jake continues to live in Tyler.

Bill R. Payne (BA '39, MA '40) writes, "Going on my 17th year of retirement from Exxon. Still haven't found time to do things I still want to do. Health is slowing me down now, so I don't believe I will do everything in my plans." Bill lives in Houston.

Steven Payton (BS '79) is president of Ausland Production Company in Midland. "We will be drilling a couple of new prospects in West Texas this year, and continue to drill developmental wells in Andrews County. The ostrich ranching business is continuing to grow with many new ranches being established in the Midland area."

Jack L. Penick (BS '42) comments, "Semi-retired and now have plenty of time for travel, golf, tennis, etc. Pleased to hear that 'a major gas company' plans to drill some development wells on leases under which I own overrides. Rising product prices will do it every time." Jack is presi-

dent of Reserves Research Inc. in Houston.

Benjamin J. Petrussek (BA '42) writes, "Continuing retirement in Metairie, Louisiana, still in good health. Enjoyed 50th wedding anniversary Caribbean Cruise last February."

Elliott Pew (MA '82) is a senior geophysicist for American Exploration in Houston.

George B. Pichel (BS '51) writes, "After three years of sailing Pacific and one month in Brasil we are back home waiting for clients." George lives in Dana Point, California.

James N. Piper (BA '88) is a research scientist associate for Applied Research Labs at UT. "Another busy year. I participated in three research cruises, two in the Gulf of Mexico and one near Bermuda. All involved collecting underwater acoustic and marine geological data. Next, off to the Arctic Ocean to do research at an ice camp."

Gene Pisasale (MA '80) writes, "Made a big change in late 1986, to the securities business. Originally lived in Denver, but have enjoyed my new line of work and wonderful weather in San Diego for the last five years. Plan to specialize as a chartered financial analyst (CFA) in the energy/alternative fuels field. Currently managing client portfolios at Paine Webber."

Gerald S. Pitts (BS '54) is president of Pitts Energy in Midland. "Oil business continues at Pitts Energy Company at a brisk pace. We would like to have a few more high quality prospects to drill in 1993 and 1994. Pitts Energy has put together 5,000 acres on a shallow wildcat that is going to be exciting to drill."



Photograph submitted by Evelyn Wilie Moody (left) on a field trip near Austin in 1939 or 1940. "This was the botany course offered for geologists where we learned to identify outcrops by the plants that grow on them. The professor (in hat) was a geologist turned botanist."

Mike Plamondon (MA '75) works as a technical sales representative for Geographix in Denver.

William A. Poe (BS '48) comments, "After six years of retirement I'm still finding life good. Playing a lot of golf and watching the grandchildren grow up. One in grad school, one going into grad school, one a sophomore at UT, and one entering high school. Our health is generally good for which we are thankful. Hope you keep up this practice of keeping up with us old guys." Bill lives in Houston.

Nick Pollard (BS '84) is an exploration geologist for Lake Ronel Oil Company in Tyler. "Clay turned three in March. Took him to his first UT football game last fall. He is a bonafide Longhorn now. Hope to run into fellow Horns out selling deals this year."

Charles E. Porter (BS '49, MA '51) comments, "The past 'retired' year has been hectic. Pursuing karst topography and a new granddaughter in Central Florida. Trying to convince the paleontologists via U.S. mail that there are dinosaur tracks in Triassic Dochum sandstones in West Texas, vote two to one 'agin' at moment, but I've always loved the role of the devils' advocate. Have been writing and taping a series of five minute talks on geology, ranging from the 'big bang' through salt domes for playing on a West Texas radio station. Have had to hit the books to bring myself up to date. Even found Dr. Bullard's book on volcanoes in our local library. Plate tectonics and paleomagnetism, absolutely fascinating. How geology has changed in the past 50 years! I'd sure like to ex-

change this 70 year old carcass for a 25er and be a geologist again. Do you realize what a clear look we have of the world and the universe? We're the luckiest people in the world. And to all those Cushing Quadrangle Commandos, my very best regards." Charles lives in Jackson, Mississippi.

Robert B. (Bob) Porter (MA '51) is a geologist for RBP Land Company in Midland. "Rob (son) keeps me involved in his active business, though I loaf a lot. If in Midland give us a visit. We love to talk old times, oil patch, deals, or Longhorn football not necessarily in any order. Polly and I spend most of summers in Ruidoso, New Mexico. Turk (grandson) signed with Houston Oilers. If all goes will, we may see you in the dome."

John W. Preston (BS '70) writes from Houston, "Finally gave up and closed downtown office. Since then have a shallow Miocene discovery in Wharton and my Atascosa production doing well. Also trimming trees and painting houses to support my geologic addiction."

John L. Proctor (BA '50) comments, "Last August, we went on an inside passage cruise to Glacier Bay. The tour guide used terms like glacial milk, glacial moraines and calving. It was much like being in Dr. Stafford's class." John is retired in Richardson, Texas.

A. Leo Pugh Jr. (BS '52) reports from Houston, "The energy business still very slow. Will retire about the middle of next year."

Jim Quinlan (PhD '78) comments, "I chose to become a self-employed consultant in 1990. Since then I have

worked on karst-related problems in many places between Guam and Yugoslavia. The AEG and Engineering Geology Section of GSA have jointly named me their Richard H. Jahns Distinguished Lecturer for 1994. I will visit various universities and speak on *Principles of Groundwater Monitoring in Carbonate Rocks*." Jim lives in Nashville.

Diana Slagle Rader (BS '84) writes, "I'm still enjoying life in Austin. I got married a year ago and now have two stepsons. I can't believe it's been ten years since field camp. We need to have a reunion." Diana is a principal geologist for Law Engineering.

James A. Ragsdale (BA '60) is an exploration staff manager for Agip Petroleum in Houston. "Introduced my family to Trans-Pecos Texas over this past Easter. The kids both liked it, and Ian (age 11) really liked the rock shop at the Woodward Ranch."

Rick Railsback (BA '74) works as an independent in the South Texas oil patch and lives in Corpus Christi.

Clyde M. Rascoe (BS '49) is president of Merit Oil Company in San Angelo. "Still hanging in there in spite of environmentalists and taxes."

M. Allen Reagan (BA '50) is retired in Houston. "Sue Ann and I just returned from three weeks in French Burgundy and Dordogne. The people in these parts of France are so congenial, they even like Texans."

Carla Everett Reed (BA '89) comments, "My second child, Bradford, was born 10/23/92 weighing in at 8.5 pounds." Carla lives in Mandeville, Louisiana.

William M. Reid (MA '68, PhD '72) writes, "Jennifer

Reid is a freshman at Texas A&M. Wally Reid, a graduate of Texas A&M, has his first real job. I enjoy working Central Texas with Al Miller and Foster Hagaen, two landmen from UT." Will lives in Austin.

Charles B. Renaud (BS '49, MA '50) comments, "Just attended 50th high school reunion, Ft. Worth Arlington Heights. Still enjoying the easy pace of living in Midland." Charles is semi-retired.

Kirk W. Rexrode (BS '84) is CEO of Green Link International in San Diego. "We rocked and rolled from that 7.5 quake in June '92. The surface ruptures near Landers, California were fantastic. I'm patiently awaiting the 'big one' and I won't leave San Diego until it rips, not even for a couple of days."

W. F. Reynolds (MA '53) is an independent oil producer for J. C. and W. F. Reynolds in Wichita Falls.

Cheryl Richard (BS '89) comments, "This is my third year with Western Geophysical, and all I'd like to say is: Congratulations to Leslie Hay (BS '89) on her marriage, and where the heck is Greg Warren?" Cheryl lives in Houston.

James V. (Jim) Richards (BS '56) is a consulting geologist with Genesis Producing in Houston. "Traveled a lot this year. Sailed the Greek Islands in a sailboat in September and spent Christmas in Bangkok and Hong Kong. Waiting on several large offshore prospects to be drilled and pushing lots of close in deals onshore."

Gary Richter (BS '79) lives in Houston.

Wade C. Ridley (BS '53, MA '55) writes, "Seem to be

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getting older very quickly but wiser very slowly. Still looking for the remaining hydrocarbons in East Texas." Wade is president of Ridley Oil Corporation in Tyler.

Jess P. Roach (BS '41) contributes, "A year passes so fast at my age. What did I do? I really don't know but it was enjoyable. Friends, when in Austin, call me up—I'm usually here."

Clem H. Roberts (BS '49) writes, "Several prospects ready, but no investors. After many discoveries and major extensions, I don't really care. Miss the business though. Wife Ann and I enjoy mostly our home, some travel, and grandchildren." Clem lives in Midland where he is an independent geologist.

Rock Robertson (BS '54, MA '56) writes, "Some how I have survived all the bad times. My daughter, Amy, is our office manager and son, Gregg, helps with the geology. First Rock well service continues to stay busy. For nine years I have been fighting the battle of Parkinsons. Come and see Toni and me anytime." Rock is an independent geologist in Corpus Christi.

Edwin C. Robinson (BS '50) is retired from Unocal and is living in Carlsbad, California. "Enjoying the good life with a wonderful wife, six great children, and eight terrific grandchildren!"

Harlan H. Roepke (PhD '70) is a professor of geology at Ball State University in Muncie, Indiana. "Family is fine; Judy is a dean at BSU, daughter Jan is an intern in pathology in Muncie, son Doug is a pediatrics intern in Indianapolis, both too busy for spouses and kids. The geology program at Ball

State is growing again and evolving, with more emphasis on hydrogeology and geophysics. Regards to the geo folks at UT."

Lowell T. Rogers (BS '56, MA '60) comments, "Retired from teaching in the summer of 1992. Time spent reading, studying interesting topics, and managing rental property in Austin."

Lucy Owings Ross (BS '50) is president of Deltex Royalty Co. Inc. and LMA Royalties, Ltd. in Colorado Springs.

Robert B. Ross (BS '50) notes, "Retired from oil business. Helping wife run her antiques and collectibles business in New Ulm, Texas."

Rollins M. Roth (BS '58) is a production supervisor in Brackenridge, Texas.

Carolyn Rutland (MA '79) reports from Kalamazoo, "I spent the first three months of 1993 in Cordoba, Argentina. My husband, Chris Schmidt, is spending six months of his sabbatical there studying the Sierras Grande. Our stay there was a marvelous experience. Now our boys and I are home and I'm busy single-parenting, again, looking for a new job, coping with numerous domestic disasters, and fixing the yard. Those of you who know me well will laugh at the part about the yard."

Floyd Sabins (BS '52) is president of Remote Sensing Enterprises, Inc. in Fullerton, California. "Retired in November of 1992 from Chevron after 38 years service. Received Chevron Chairman's Award for contributions to Chevron's performance. Will now devote full-time to RSE, Inc. which I funded in 1982. We use remote sensing and digital image pro-

cessing in world-wide oil and mineral exploration."

Richard Saenz (BS '79) is president of Castle Rock Petroleum, Inc. in Tulsa, Oklahoma.

Paul F. Sagasta (MA '84) writes, "I've again escaped Houston by transferring to Thailand as my division moved to Sugarland. Southeast Asia is a very exciting place. See you all in a few years maybe." Paul works for Unocal Thailand in Los Angeles.

Philip K. Sampler (BS '51) owns Sampler Oil and Gas, Inc. in Richardson, Texas. "Luci and I are still riding our Harley. Last summer we toured Colorado, Utah, Arizona, and New Mexico. This summer we are planning on Northern Colorado, Wyoming, and Montana. Sorry I have been delinquent on past reports to the *Newsletter*. 'Old timer's disease' I guess. Nothing new in the oil business, just bad times. We're just trying to keep our head above water. Hard to do!"

D. F. (Sandy) Sandifer (BS '35, MA '35) writes, "I still maintain an office, but do very little geological work. Most of my time is spent researching my needs in the 'investment world.' That means trying to hold on to some of our life savings." Sandy lives in San Antonio, Texas.

Elsie C. Schiemenz (BA '43) comments, "Attended 50th anniversary of graduation and particularly enjoyed hearing Dr. Fred Bullard reminiscing about his early years at UT. As for myself, I am still enjoying traveling." Elsie is retired in Mobil Alabama.

Francis Schloeder III (BS '78) contributes, "Drilling wells and finding oil was never more fun. Thanks UT for all the tools that helped me

get here." Frank lives in Tulsa.

Jack R. Schmid (BS '51) is, "Still concentrating on international consulting, mostly Southeast Asia and the republics of the former Soviet Union." Jack works for Schmid and Associates in Dallas.

George W. Schneider Jr. (BS '57) writes, "Skidded the rig to New Orleans (May 1993). Will miss the Hill Country. Time to turn the page, however, on this time line. Will remain involved with UT, particularly the Geology Foundation."

Thomas Schneider (BS '50, MA '51) comments, "Involved in operations as Topat Oil Corporation and staying busy by buying production and drilling in Kansas, Texas, and New Mexico." Tom lives in Midland.

Paul E. Schnurr (MA '55) reports from Concord, California, "Watering flowers, watching the grass grow and betting on snail rides. Can hardly stand the excitement."

Milton Scholl (BS '47, MA '48) writes, "Enjoying seven grandchildren and retirement. We are preparing for a trip to scenic southern Utah in June and early in fall to New Hampshire." Milton lives in Chula Vista, California.

Frederick E. Schultz (BS '47) lives in Ojai, California where he is retired.

Rubin A. Schultz Jr. (BS '61) is assistant district maintenance manager for the Texas Department of Transportation in Corpus Christi. "News is almost a re-run of last year. Still with TX DOT, plenty of work. Family doing great, enjoying the grandsons. Also getting ready for a return trip to Maui, Hawaii again this May."

John T. Schulz Jr. (BS '57) comments, "I've spent 36 years as an oil and gas explorationist. Five grown children, three graduates of UT, and two of A&M. Will always appreciate the quality geology education I received at UT." John is an independent geologist in Corpus Christi.

Christy M. Schweikhardt (BS '83) writes from Houston, "Will be leaving American International Energy Corporation in September 1993 to begin my legal career. I take the Texas Bar Exam in July 1993 and will graduate from South Texas College of Law in May 1993, magna cum laude."

John E. Seale Jr. (BS '41) comments, "Nothing new. Enjoying loafing, occasionally a little consulting." John lives in Houston.

George Sealy (MA '52) is managing partner of Sealy Land Company in Houston. "Am active on the board of the Sealy and Smith Foundation in Galveston, looking after its oil, gas and ranching activities. Incidentally, that foundation is the largest single donor to any of the UT System's universities. It's fun to work for such a worthy cause."

Louie Sebring Jr. (BS '41, MA '47) writes, "Two dry holes last year very poor for morale. One new grandson. Total five grandchildren, three boys, two girls." Louie is an independent geologist in Corpus Christi.

Kenneth O. Seewald (att. '61-64) is owner of Seewald Energy Company in San Antonio. "Mary and I really enjoyed seeing many of you and meeting new Texas Exes at the AAPG regional meeting we attended as chairman of the House of Delegates. I had

an unexpected and unwanted convalescence due to corrective heart surgery. I am almost back to full speed and we look forward to seeing many of you at the AAPG annual meeting in Denver."

Robert T. Sellars Jr. (BS '57) is a consultant in Denver. "Consulting for a client in Denver. Active in the Gulf Coast and Rocky Mountains."

John S. Shambaugh (BS '49, MA '51) comments, "All is well with the passing of another year in Corpus Christi. My best wishes to all."

William W. Sharp (BS '50, MA '51) is a geologist/investor in Dallas. "Good to hear from some of Tejas Club fellows, a nice reunion in Tower Club in Dallas. Plan European trip fall of this year. Fortunate to be included in *Who's Who in Science and Engineering* second edition. Continue improvements on ranch and farm north of Dallas. Yes, the best times are now."

Stephen L. Shaw (BS '71, MA '74) writes, "I've just completed an interesting year as president of West Texas Geological Society. Nancy continues to teach in the ADN Nursing Program at Midland College. Katie started her career at UT-Austin last fall and is now a geology major! Will is a starter on the Midland Lee Rebel football team." Stephen is a regional geoscientist for Meridian Oil in Midland.

Stephen Shelburne (BS '85) writes, "The girls are doing great. Kimberly is planning to travel to Europe this year for opera house auditions." Steve is a branch claims supervisor in El Paso, Texas.

Cader Shelby (BS '58, MA



Bill Sharp (second from right) and co-workers at Creole Petroleum Corporation mapping a major anticline on the northwest flank of the Venezuela Andes in September 1955.

'62) comments, "My friends will be overjoyed to know that I have emerged from the wallpaper of life after monumentally successful heart surgery with three by-passes and new aortal valve that once belonged to a prince among pigs. All of this just in time for me to resume dazzling my students in environmental geology at Austin Community College. I also continue to teach the clarinet and saxophone and play for dances." Cader lives in Austin.

Jerry and Gay Shelby (BA '57; BS '57) are retired in Amarillo.

W. T. Sherman (BS '51) is in marketing and prospect sales for Quintana Petroleum Services in Houston. "Working on engineering and environmental; also showing prospects, domestic and international."

George H. Sherrill (BS '50) writes, "Some work and a lot of play watching my five grandchildren run and play. Shirley completing her masters degree at Angelo State University." George lives in San Angelo.

Robert Sherrill (BS '80) is a senior project manager and senior geologist in Dripping Springs, Texas. "Greetings from the Texas Hill Country. Life has defi-

nately shifted into a higher gear. One day Charlie and Michael (7 and 4) are born and the next day you're involved with school, little league, etc. Still at Jones and Neuse and enjoying life as a hydrogeologist (or is it geohydrologist)."

Mark Shield (BS '88) is employed as a computer geoscientist for Landmark Inc. in Austin.

Charles J. Sicking (PhD '80) is a research geophysicist for ARCO in Plano, Texas.

E. R. Sims Jr. (BS '38) reports, "My wife and I retired in Austin."

Samuel J. Sims (MA '57) writes, "Continuing doing consulting work in Southeastern Pennsylvania mainly in the stone industry." Sam lives in Bethlehem, Pennsylvania.

Coyle E. Singletary (BS '48) is retired in Midland.

Harry H. Sisson (BS '40) writes, "Here in the office Nancy and I are still active for a few hours each day. We are active in Grace Presbyterian Church, near our home. Our trips are shorter but we still hit the road driving to Austin, Ft. Worth, the Hill Country and Palacios, Texas. Life is still good for both of us with family growing." Harry lives in Houston where he

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is retired.

Matt Sjöberg (BS '86) is an attorney for McGinnis, Lochridge and Kilgore in Austin. "I specialize in oil and gas litigation and administrative representation before the Texas Railroad Commission Oil and Gas Division."

David K. Skidmore (BS '76) is president of Skidmore Exploration, Inc. in Nocona, Texas.

Marriott Wieckhoff Smart (BS '57) is a research librarian/consultant in Littleton, Colorado. "I have had my research business for a year. It is different than working for a corporation. The flexibility is wonderful but it takes a lot more hours to make a living. So far it has been fun, interesting and I can think of no good reason to work for a corporation again."

Tommy T. Smiley (BS '51) reports to us from San Antonio, "Just relaxing and watching grandkids grow."

A. Richard Smith (BS '64) writes, "Ann and I are both happily working at the same location for the Texas Water Commission (together at least until the next reorganization) in Austin. I am trying to educate engineers about the complexities of stratigraphic processes and hydrogeology."

Bruce D. Smith (BS '58) is a partner with Fulbright and Jaworski. "I am still practicing admiralty law in Houston. Life continues to be challenging and rewarding. Marja and I are going on a cruise to the Eastern Mediterranean in late June to indulge our interest in ancient history and archaeology."

Charles Smith (BS '78) is a hydrogeologist for OHM Remediation Services Corporation in Austin.

Daniel L. Smith (BS '58) writes, "I currently have an exploration program with Texas Meridian Resources Corporation to acquire 3D seismic data in ten areas in South Louisiana. I hope to be in the drilling phase by late 1993 or early 1994." Dan lives in Houston.

Harry L. Smith (BS '51, MA '56) comments, "Am now watching the floundering 'oil business' from the sidelines." He is retired in Boerne, Texas.

J. T. Smith (BS '50, MA '56) has been retired from Sun Oil Company for five years. "Still enjoy it and especially living in Fredericksburg in the Texas Hill Country."

Traci Trauba Smith (BS '85) is employed by Birdsong Real Estate in Lake Jackson, Texas. "Married B. Douglas Smith, Jr. in October 1992."

Greg Smithhart (BA '91) writes, "Since graduating from UT, I have been working on a marine seismic crew for Western Geophysical. We work 12 hours a day/seven days a week and stay out at sea for up to two months at a time. It's a rough schedule, but we are given two to four weeks off for break and also travel to foreign countries like Venezuela and Trinidad! Life could be worse." Greg lives in Mansfield, Texas.

Edmund D. Sneed (MA '55) comments, "Retired June 1992 after 37 years with Marathon Oil Company in Abilene, Wichita Falls, Midland, and Houston. Will stay in Houston."

Linda K. Soar (MA '84) is a geophysicist for Green Mountain Geophysics, Inc. in Boulder, Colorado.

Fred D. Spindle (BS '49) writes, "Paleontology be-

comes much more interesting when one is turning into a fossil. I wonder if the dinosaurs became extinct because of some prehistoric politicians. It seems possible if the present is the key to the past and present day politicians are making our extinction probable. Betty and I are well, overweight and underemployed, not really one of the idle rich, just one of the idle." Fred lives in Sugar Land, Texas.

Anna M. Stanley (BA '44) is vice president of Miles Production Company in Dallas. "Am still continuing the never-ending search for the elusive hydrocarbons. Every day is a new challenge to beat the little monsters of the computer world, plotting little egg shaped circles on the screen from getting any attention. Oil is found in the minds of men (women)!"

Sara Avant-Stanley (BS '79) is employed as a consulting geologist in New Orleans.

Theodore E. Stanzel (BS '56)

is general manager for Victor Stanzel Company in Schulenburg, Texas. "Manufacturing flying model airplanes and toys in Schulenburg, Texas. The good years that were are greatly appreciated and the opportunities to be involved in new ventures give a unique sense of satisfaction. You have an invitation to visit the toy factory."

Walter W. Stein (BA '52, MA '52) works as an independent producer in Dallas. "Still prospecting on the Muenster Arch of North Texas."

Burgess Stengl (BS '85) is a geologist for the Texas Water Commission in Austin. "The merger of the Texas Water Commission and the Texas Air Control Board has now created the Texas Natural Resources Conservation Commission (TNRCC). I continue to work in the ground water section and find myself testifying at more hearings every year. Angela and I are still doing great here in



1988 GEO 660 group at Rattlesnake Gulch, North Central New Mexico.
 Left to right: **Matt Schoenwald, Leah Kelley, John Howard, Tim Parks, Gary Foster.**
 Photo submitted by **Tim Parks.**

- Austin and our girls continue to grow. It's amazing how fast time passes. If you are in Austin, please look us up!"
- Sheree L. Steward** (BA '84) writes, "Still working on hazardous waste sites, and I still enjoy working for the state. Skied a lot this past winter; lots of camping and hiking to do this summer, as well as learning to wind surf. I fill my spare time with gardening, and teaching hydro and environmental science classes. Lee, where are you?" Sheree is a senior hydrogeologist for Oregon Department of Environmental Quality in Portland.
- Preston A. Stofer** (BA '57) owns Stofer Real Estate in Port O'Connor, Texas. "Still selling beautiful water front lots in Port O'Connor.
- William T. Stokes** (BS '50) comments from Dallas, "This has been an interesting year. We have been attempting to reenter oil industry starting STEX Energy Company, Inc. by investing in oil and gas prospects. Fifi and I have enjoyed golfing. Our son, Bill, is in gas marketing, and son Brad is an environmental geologist."
- Ted Stout** (BS '85) writes, "Still working at an 'urban' national park site, but the geology here is quite interesting. My wife and I went on a trip around the world last fall and visited my father in Bangkok. We are pregnant and expecting our first child in November." Ted is a park ranger in Santa Monica Mountains National Recreation Area in California.
- Tom W. Stovall** (BS '57) comments, "I have retired. My wife is selling real estate in the mid-valley. One daughter lives in Dallas (also a UT ex) has two children. The other, a Texas A&M ex, on a wildlife refuge in Alaska." Tom lives in Weslaco, Texas.
- Mike Stowbridge** (BS '82) writes from Abilene, "The good news is: I'm still working as a wellsite geologist in West Texas. The bad news is: I'm still working as a well site geologist in West Texas."
- Michael W. Strickler** (BS '78) is a senior vice president for Hardy Oil and Gas USA Inc. in Houston.
- Edgar J. Stulken** (BS '34) is retired in Dallas.
- Martin Stupel** (BS '88) is a geophysicist for Western Geophysical in Houston.
- Paul D. Suddath** (BS '76) works as an independent geologist in Abilene.
- Jerome F. Svajda** (BS '40) is a dentist in College Station, Texas. "Still operating my own drilling rigs. Have son taking my place in 1994."
- Bruce Swartz** (BS '82) writes, "I live in a full house, my wife and I have two boys, one girl, a dog, and a cat. Besides my family I remain busy originating a few prospects, and try to remain in compliance with the EPA and OSHA. And I sure miss Austin." Bruce lives in San Angelo.
- Michael Sweet** (PhD '89) is a sedimentologist for BP Exploration in Scotland. "Two big new items for this year, the birth of my son Philip and a transfer from Houston to Aberdeen, Scotland. It looks like I'll spend the next three years working on Eolian rocks in the North Sea."
- Patrick Talamas** (BS '81) is a staff geologist for Maxus Energy in Dallas. "During fall, 1992, I attended the first GDS reunion at Lake Travis. Good times were had by all who attended."
- Robert R. Tarver** (BS '87) is employed as a geologist for the Mississippi Mineral Resources Institute in University, Mississippi.
- Peter R. Tauvers** (PhD '88) writes, "Recently transferred to Shell Offshore in New Orleans. No ice hockey, but plenty of other distractions. Miss my UT friends in Texas already."
- Eugene M. Taylor** (BS '58) is a medical doctor in private practice in Denton. "Still practicing medicine and spend time continuing to build a world class collection of turquoise. I've now a major collection from 30 years since I decided to work medicine and hobby geology."
- George W. Taylor** (BA '49) writes, "Have been blessed with good health. Still flying several WWII war birds, including co-pilot on North American B-25. flew to Doolittle Raiders 50th reunion of Tokyo Raid in Columbia, South Carolina. We were the only B-25 to make the trip. Great fun! Have re-built air craft engines including a Allison V-12-1710 for a P-39 Bell Aircobra this past year." George is retired from Exxon and lives in Georgetown, Texas.
- Dick Teel** (BS '39) comments, "Still working for Petroleum Information in Houston as a consultant. My oldest son, Dick Jr., had a great safari to Tanzania, Africa last year. I collected the largest cape buffalo I have ever taken. My son got a large blackmaned lion. Beautiful country on the Masai Steppes, part of the Serengeti Savannah."
- C. B. (Tim) Thames Jr.** (BS '54, MA '57) writes, "Enjoying my semi-retirement and fighting alligators trying to keep stripper wells on line. Thanks to idiotic politicians." Tim lives in Hearne, Texas.
- B. D. Thomas** (BS '49), retired in Austin, writes, "Our son has a new job in Richardson. Daughter awarded tenure at University of Georgia. Wife retired but busier than ever."
- Ray S. Thompson** (BS '83) is a senior gas marketing representative for Meridian Oil in Houston.
- T. J. Thompson** (BS '57) writes, "Enjoy reading the *Newsletter*. Seven grandchildren keep us busy and our minds off the new national leaders and their advisors." T. J. is owner of Toro Exploration Company in Dallas.
- Jerry T. Thornhill** (BS '60) comments, "Conducting research on mechanical integrity of injection wells; providing technical assistance for ground-water investigations; and teaching ground-water course." Jerry is a hydrogeologist for Robert S. Kerr Environmental Research Lab in Ada, Oklahoma.
- Bert C. Timm** (MA '41) writes, "As the spring semester ended the question most asked us was 'where are the fledgling geologists of the 90's going to fly in the strained economy you saw in the 30's? Frankly I have no answer." Bert is an adjunct professor for Collin County Community College in Plano, Texas.
- Elsworth (El) Tonn** (BS '55) is president and CEO of KAMEL Corporation in Houston.
- Deborah Travis-Neuberger** (MA '88) contributes, "After working for Amoco for three years I quit to go back to school. I will complete law school in May, 1994 and plan on practicing oil and gas and/or patent and/or environmental litigation." Deborah

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lives in Houston.

L. R. Travis (BA '48) writes, "Still looking for that elusive oil or gas prospect after 45 years of searching. I am consulting for Coastline Exploration in Houston. In addition to working the South Texas Wilcox Trend, Coastline will be drilling a wildcat in Russia. Enjoy the *Newsletter*."

Robert F. Travis (BS '57) is retired in Corpus Christi. "Retirement is great."

Raymond R. Trollinger Jr. (BA '60) is owner of Raymond R. Trollinger Investments in Dallas.

Arthur J. Tschoepe (BS '51) writes, "Hope to find a big one in 1993. Family now numbers 28, ten granddaughters and four grandsons; we are very fortunate. Keep the *Newsletter* coming." Arthur is an independent geologist and oil operator in Corpus Christi.

James J. (Jeff) Tucker (BS '48) lives in Jackson, Mississippi where he is retired.

Felix M. Tunnell (BS '51, MA '52) resides in Littleton, Colorado, and writes, "Retired and enjoying it very much."

John D. Tuohy (BS '39) comments, "Well it has now been ten years since I retired for the third and last time (the first two in '67 and '78 didn't take). We are still enjoying life in the Hill Country. Manage to get the children and grandchildren together once a year. Son comes in from China (where he works for Amoco) and daughter from Colorado. And of course we spend time in Ireland at least once a year—as the songs say, 'It's a little bit of heaven.' Greatly enjoy the *Newsletter*."

Edd R. Turner (BA '43) writes, "Having great time

in retirement. Greetings to all." Edd lives in Kerrville.

Neil Turner (PhD '70) is employed as a staff geologist in Houston. "Completed my work in offshore China last year and began study of carbonate reservoirs world wide starting with the Mediterranean."

John T. Twining (BS '48, MA '54) writes, "Just trying to keep busy. Jeanne has her book club, women's club and bridge club. I recently completed successfully the master gardener's class and am now a certified master gardener with the Harris County Agriculture Extension Service-Volunteer work." John lives in Houston.

Robert C. Tysor (BA '52) is a geologist for Armour Resource Holdings, Ltd. in Houston.

Scott Underwood (BS '85) writes from Austin, "Moved out to the lake with my wife Theresa, my sons Max and Paul. We are very happy. Going on seven years with Hall Southwest."

Don Urbanec (BS '60, MA '62) is president of Mina Energy, Inc. in San Antonio. "Within the last year one daughter graduated from college, became gainfully employed and was married. The other daughter is about to emerge from graduate school and is looking for employment, etc. Meanwhile, Mina Energy continues to purchase producing properties. Not glamorous, but keeps me in the oil business until the next boom."

Robert D. Valerius (BS '59) contributes, "Have qualified myself as mediator in alternative dispute resolution. I believe my 26 years business experience should be helpful in resolving industry disputes." Bob lives

in Corpus Christi.

Michael A. Valko (BS '83) is a marketing manager for Howell Hydrocarbons and Chemicals in Channelview, Texas.

Bruce R. Van Allen (MA '78) lives in Lakewood, Colorado.

James B. and Amy Wharton Vanderhill (PhD '86; BS '83) are both senior production geologists with Mobil E&P US in Midland. "We feel fortunate to be continuing our geoscience careers with Mobil in Midland. Jim has producing responsibilities in the Aneth field, Utah, and Amy has similar responsibilities in the Pegasus Ellenburger Field, Texas. Our two daughters, Ceili (4), and Shannon (2) are excited about the new baby who should arrive early September. We hope to maintain our domestic producing positions until an opportunity is available overseas, if ever. Friends, if you are ever in Midland, visit us!"

David W. Vernon (BS '79) is an assistant district attorney in Parker County, Texas. "1992 was a busy year! I finished law school in May, passed the July bar exam, was sworn in, and my wife (Dee Ann) and I were blessed with the birth of Molly Ann on 11/24/92. In February of 1993 I was fortunate enough to land a job with the D.A.'s office in Parker County. However, the drive from Dallas each day keeps me looking for something closer, preferably back in the oil industry."

Charles Vertrees Jr. (BS '51) writes, "Still retired. Still living in Dallas. Still trying to improve my golf game. Happily, both daughters live in Dallas. Things are going so well it's begin-

ning to worry me."

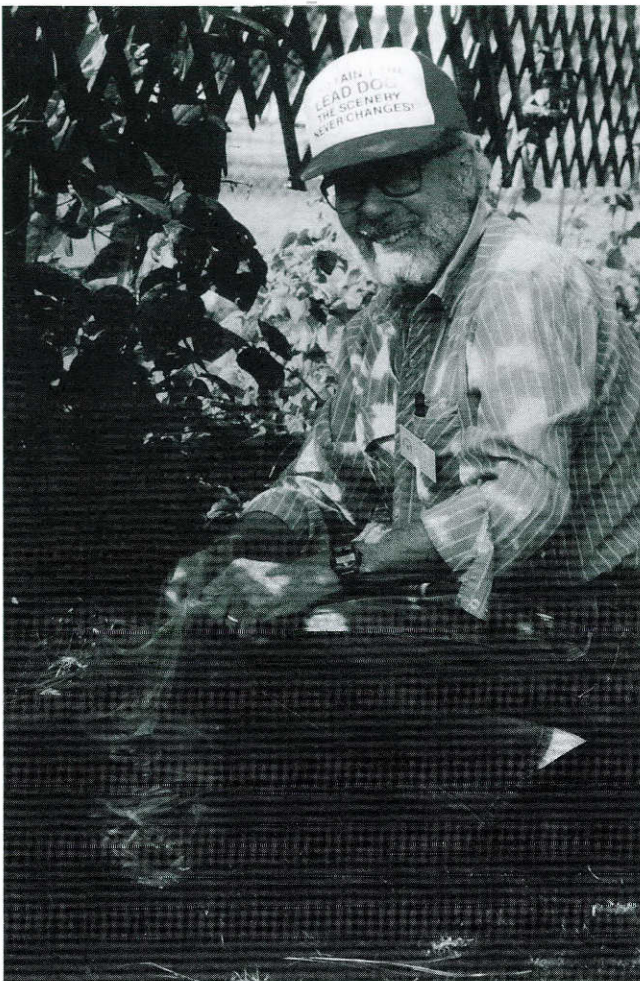
R. B. (Bob) Vickers (BS '47) writes, "We are living a normal retired life: an office downtown, coffee groups, lunch groups, trips to non-exotic places like Natchez, Mississippi; Niagara Falls; Hershey, and Philadelphia, Pennsylvania and Washington, D. C. One grandson at UT majoring in geology." Bob lives in Abilene.

Kenneth D. Vogel (MA '85) is a senior hydrogeologist for Leggette, Brashears and Graham, Inc. in St. Paul, Minnesota. "We've moved-out of the oil patch and into environmental consulting! I'm active in AAPG's new division of environmental geosciences. Take two aspirin and call Leggette, Brashears and Graham, Inc. in the morning to cure your environmental headaches! Laura and I are thrilled to be back in the beautiful midwest."

William Vrana (BA '39) writes, "Remembering the 'good old days' and wondering what the days will be like in the future. Enjoying my hobbies and fairly good health. I try to make all of the local geological society luncheons where one can always witness how the younger minds are progressing." Bill lives in Corpus Christi.

Martin J. Wachel Jr. (BS '56) comments, "Still continuing to market load sensing systems for large compactors. Enjoy reading the *Newsletter* and keeping up with classmates and professors." Martin lives in Bakersfield, California and is owner of Weigh Waste.

William R. (Bill) Waddell (BS '38) is an independent geologist in Houston. "At 80 it's time to sit back and smell the roses. Will



**John Twining picking green beans, fall 1992.
Photo taken by Bill Adams,
Harris County horticulturist.**

drill one gas well this year. Six grandchildren, rose gardening, walking and fishing take balance of my time."

Andrew H. Wadman (BS '84) writes, "Family: wife, Georgia P. Wadman, UT '84, Andrew T. Wadman, born 10/90, James H. Wadman, born 9/92." Andrew is a manager for Houston Processing Center of Digicon in Houston.

A. H. Wadsworth Jr. (BS '41, MA '41) comments, "Still working and enjoying every minute of it. Cannot understand the concept of retirement. Very active in politics trying to get Washington to understand it's

better to produce our own energy than to buy it retail from foreigners." He is an independent geologist and producer in Houston.

T. J. (Tommy) Waggoner III (BA '56) is president of Waggoner Exploration, Inc. in Dallas. "Primarily active in drilling development gas wells in the Anadarko Basin. We pray for natural gas prices to improve. Marilyn and I both remember the wonderful days in Austin as students and we hope to return to the Austin area to reside in the near future."

Hershel Walker (BS '50) writes, "I still enjoy working two or three days a

week but am really enjoying golfing, fishing and vacationing more than ever. The *Newsletter* is great, keep up the good work." Hershel is semi-retired in Corpus Christi.

Joe D. Walker Jr. (BS '51, MA '54) comments, "Still have a wife and three grown and married children. Still see and talk with several UT geology alumni. Thanks for the *Newsletter*. Hello to all of us from the 'old days.'" Joe is retired from Aminoil USA in Houston.

David A. Wallace (BS '86) writes, "Started with Pennzoil in December 1992. I am conducting environmental, safety and health audits of Pennzoil facilities. Still adapting to the lovely heat and humidity of Houston. However, I do get to travel so I've seen a lot of the U.S. the last six months, from Florida to California. If any of my old classmates are in Houston, as I'm sure they are, give me a call.

Fred B. Wallis (BS '41) is retired in Austin.

Anne Walton (MA '86) is a research specialist in aquatic studies for the Texas Parks and Wildlife Department. "Still organizing the informal paleo-biology seminar in Austin, and trying to generate interest in state agencies and the public mind in the scientific value and protection of fossils."

Bernie Ward (BA '55) writes, "Still pursue geology 'in these uncertain times.' I get to Corpus Christi occasionally; and former Humble employees will remember the charming Olga Doan, with whom I had a wonderful visit. She has a wealth of information about the old gang." Bernie lives in Tyler.

Bill and Kathy Ward (BS '55, MA '57; BA '57) comment, "Kathy is very busy teaching science in the high school for bright kids and, at the same time, working on a PhD in science education at UNO. Bill continues to go to Mallorca every summer to work on upper miocene carbonates. Son, Bruce, is at UT on a research project with Jay Banner." Bill and Kathy live in New Orleans.

Dan L. Ward (BA '49, MA '50) is retired in Grand Junction, Colorado.

Ralph H. Warner (MA '61) writes from Kingwood, Texas. "Wish best to all acquaintances. Job situation still tough!" Ralph is self employed.

Bill D. Watson (BS '58) is retired in Sugar Land, Texas.

John A. Watson (BS '56) writes, "Through an affiliate corporation, Creation Evidences Museum now has a 49 year lease of Mt. Ararat with the Turkish government to expose Noah's Ark for the world to see. As documented conclusively by CBS airing of 'The Incredible Discovery of Noah's Ark' the Ark's main segment is at 16,000 feet on the mountain and in the perennial ice. Geology, to be legitimate science, must deal with the 'Noah's Ark problem'; may I ask when?" John is a hydrologist for the Texas Water Commission in Austin.

Joseph D. Watzlavick (BS '41) is a consultant in Houston. "It's good to still be here. Best regards to all my old friends."

Nelson E. Webernick (MA '52) is an independent petroleum geologist in Midland, Texas.

Charles Weiner (BA '48) writes, "We

W

moved from the old Texas Crude Building downtown to the new Texas Crude Building at 2803 Buffalo Speedway. We had our best year of discoveries since 1975! Replaced all the old production we had sold. I guess we are contrarians.” Charles lives and works in Houston.

Bonnie Weise (BS '74, MA '79) is chief geologist for Venus Oil Company in San Antonio.

Joe Wheeler (MA '55) comments, “Retired in 1990 after 12 years with Exxon, 18 years with Arco and 5 years with Bechtel Energy Partners. Four grown children doing well. My wife

Karlene and I travel, garden and are avid bird watchers. We are in good health, enjoying retirement but miss the excitement of the oil business.” Joe lives in The Woodlands.

David J. White (BS '41) writes, “Have been retired from the ole Texas Department of Water Resources nine years in May, 1993. Our only grandson was married in July, 1992. Maybe we will be presented with a great grandchild someday. Enjoy attending AGS meetings, and also the Central Texas Mining Section of AIME.” David lives in Austin.

Hugh G. White III (BA '54, BS '52) contributes from

Midland, “Watching the Clinton Administration flogging a dead horse (the oil business). The health industry and the defense structure seem to be next. The Chinese curse, ‘may you live in interesting times’ is being overworked! It’s great to see Jim (James Lee) Wilson in West Texas a couple of times a year.”

Leslie P. White (BS '56) is a consultant in Tyler, Texas. “Consulting business continues to be a delightful experience.”

Robert R. White (BA '64) writes, “I recently completed a term as president of the Historical Society of New Mexico, and just received a PhD in American Studies at the University of New Mexico.” Robert is a writer and historian in Albuquerque.

Steve White (BS '78) is a consulting geologist in Tyler.

F. L. Whitney (BS '43) is retired in Kerrville. “Greetings to all.”

James C. Whitten (BS '56) comments, “I’m still exploring West Texas and New Mexico with new ideas in old areas and old ideas in new areas. I think we are all going to have a better year in 1993.” James is an independent geologist in Midland.

Fred Wiegand Jr. (BS '69) writes, “Have been working on the project to install microwave heaters in the oil wells my father drilled for Pemex in Mexican Golden Lane. Also trying to sell mines in Mexico. Charlotte and the Wiegand brothers, Byran and Douglas doing fine.” Fred lives in Lockhart, Texas.

Michael A. Wiley (BS '57, MA '63, PhD '70) comments, “Still consulting on computer applications for geoscience, mostly mapping. Also selling CPS/PC

mapping software from Radian Corporation of Austin. Will go back to southwest Utah in August to look at real rocks. Enjoyed seeing all the old faces at the Muehlberger retirement bash!” Mike lives in Carrollton, Texas.

Brad Wilkinson (BS '86) is a hydrogeologist for the Texas Water Commission in Austin.

A. B. (Bo) Williams (BS '53) is retired in Sequim, Washington.

Eddie A. Williamson (BS '69) writes, “Moved last year from Houston to Chicago, where I am now general manager for Amoco’s Total Quality Management process. A long way from Texas; local papers don’t even carry UT baseball scores. Travel to Austin occasionally to catch up on what’s happening. *Great Newsletter!*”

James C. Willrodt (BS '77) is employed as a senior operations supervisor for Exxon Company International in Houston. “I’m still working in the South China Sea offshore Malaysia, drilling for oil and gas there. Southeast Asia is quite active. Erika is now 2 1/2 years and Karen is now a full time mom. Best wishes to everyone.”

Clayton Wilson (BS '83, MA '85) writes, “We’re still in New Orleans, and I’m still employed with Exxon. Lance and Forrest are both playing little league baseball this summer. Emily (3) loves to go fishing with daddy in his new bass boat. Lorri works hard at home and is teaching VBS.”

Homer C. Wilson (BS '42) says, “Nancy (Willis, UT '42) and I continue to enjoy retirement. In March we joined other flying Longhorns for the Civil War site cruise of the



Professors Bill Sill and Leon Long on GEO 660 in 1988 at Mesa Verde Indian Ruins, Southern Colorado.

Mississippi via the *Delta Queen*. Hope to visit the Grand Canyon in September, to see real geology." Homer lives in Dallas.

James L. Wilson (BA '42, MA '44) writes, "Living in New Braunfels, a retired consultant. Busy in Mexico and with Masera Corp. on southern USA and international projects."

William F. Wilson (BS '60, MA '62) resides in Spring, Texas and writes, "Working as a consulting environmental and petroleum geologist; finished a book on N.O.R.M. which will be published by PennWell this fall ('93); teaching environmental science as it relates to geology on a part-time basis. Four grandchildren placed with Douglas and Clay, who are both UT geology graduates."

Irwin T. Winter (BS '53) writes, "Retirement is much too busy a lifestyle. Oh, for the good old days of working for a living! Are fellow geology grads Hornbeck, Booton, Holosek, Knox brothers, *et al* still with us? Let's hear from you all." Irwin lives in Fort Worth.

Kurt Wiseman (BS '76) is self employed in Houston. "Prospecting for gas onshore Texas is certainly more fun with gas prices above \$2 mcf. Bring me

your deals."

Amy R. Wood (BS '85) is a rate analyst for the City of Austin Water and Waste Water.

Thomas J. Worbington (BS '51) writes, "On May 5th I celebrated my tenth year of retirement. Those 32 years of searching for oil over most of the USA and Venezuela were exciting and wonderful but so is retirement. The wife and I travel a lot and this year we take our grandchildren to Disney World! Thanks for the *Newsletter*, I look forward to it every year."

Charles F. Word (BS '37) contributes, "Nothing new or different. We plan on going to Washington D.C. in July to visit our youngest daughter and then if I am physically able, plan on going to Alaska fishing for the sixth time. Outside of knee replacement am doing okay." Charles lives in Conroe, Texas.

David L. Work (BS '84) is a exploration geologist for Anadarko in Houston. "Currently working Middle Texas Yegua. Due to increase in natural gas prices, Anadarko is optimistic and busy."

John G. Worrall (MA '86) writes, "Started Pecos Petroleum Company in 1993 to explore for oil in South East New Mexico and

West Texas. The future looks good as long as the proposed energy tax does not kill the domestic industry. My brother Dan (PhD 1979) has the right idea; he is beginning a two to three year assignment for Shell in the Hague."

Charles J. Worrel (BS '47) is owner and consultant of Worrel Exploration, Inc. in San Antonio. "It's good to say hello to all my classmates. Working South Texas geology and participation in a few drilling prospects. Al Nelson where are you? You have been too quiet. My best to all."

Michael Wright (BS '85) writes, "Picking apples in Santa Rosa, California. Working for COGNIS, an environmental technology development company recently spun-off from the German owned, Henkel, KGaA's research and development group. Finished MS at University of San Francisco. Chasing barrier bars in West Texas, with 24 channel seismic surveys in spare time." He lives in Rohnert Park, California.

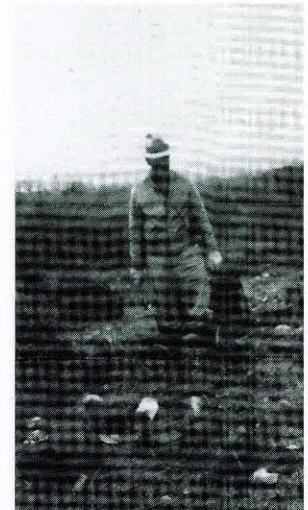
Phil Wyche (BS '51) is retired from Gulf Oil Corporation and lives in Austin. "Everything about the same, except age. Still serving on Geology Foundation Advisory Council."

Bob Wynne (BS '57) is "Still

hanging on!" He is an independent petroleum geologist in Fort Worth.

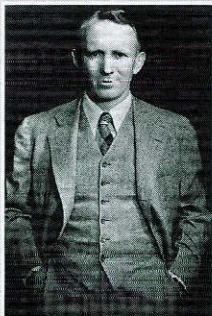
John C. Yeager (MA '60) writes, "Fishing is good and the prospecting is improving!" John is an independent geologist in Lafayette.

William C. Young III (BS '61) reports from Hemphill, Texas, where he is retired. "All doing well."



Dr. Fred Bullard, on a field trip with Economic Geology 338 class in 1938, examines "tin" deposits at the Llano city dump. (Actually, the class had visited a nearby pegmatite outcrop as well.) Photo submitted by A. H. Wadsworth Jr.

A Chance to share your recollections...



Former students and colleagues of Professor Ronald K. DeFord have an opportunity to tell professional or personal anecdotes or recollections for possible inclusion in a biography of Professor DeFord. Please send your stories to Ms. Betty W. Cox, Hudman Editing Service, 2305 Wilke Drive, Austin, TX 78704.

Dr. Fred Bullard's daughter is also interested in collecting anecdotes and stories about Dr. Bullard for possible publication. Please send information to: Ms. Thais Bullard, 206 West 33rd Street, Austin, TX 78705.



CREDITS

Photo captions, front cover:

- 1) Upper left: An early morning mist envelopes the quiet woods on Shikoku, Japan. Photo by Paula Noble.
- 2) Upper right: Puncak Jaya, Irian Jaya, highest point in Asia, 4,884 meters. Photo by Tim McMahon.
- 3) Lower left: Phonolite intrusion, Middle Black Hill, northeast of Big Bend, Texas. Photo by Lee Potter.
- 4) Lower right: Eolian Islands, off Sicily, taken from Vulcano, Stromboli in background. Photo by Bob Folk.

Photo captions, back cover:

- 1) Upper right: Aerial photograph of Ertsberg, Irian Jaya, open pit, 1989. Photo by Tim McMahon.
- 2) Upper left and lower half of page: Images from CD "Thrinaxodon: Digital Atlas of the Skull" produced by Timothy Rowe, William Carlson, and William Bottorff.

Photo caption, inside front cover:

Desiccation cracks, southern Tunisia, May, 1993.
Photo by Chris Swezey.

Photo caption, inside back cover:

Outcrop from Big Bend, Texas. Photo by Lee Potter.

Acknowledgments:

Special thanks to all the faculty and students who assisted in preparing this issue by providing photographs, articles, and advice. Thanks also to Dennis Trombatore for his assistance, and Tim Rowe for his dinosaur skeleton images.

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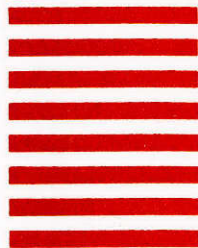
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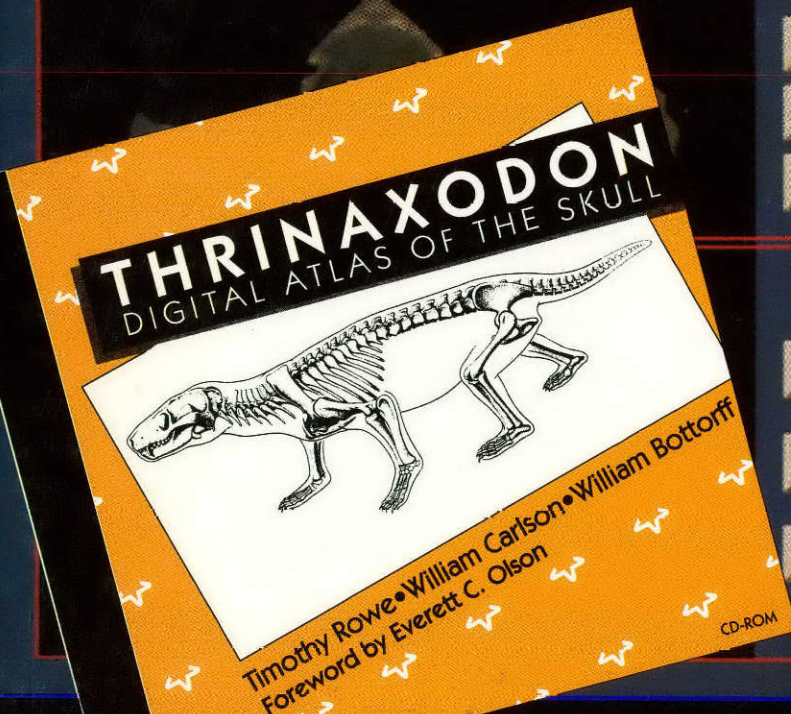
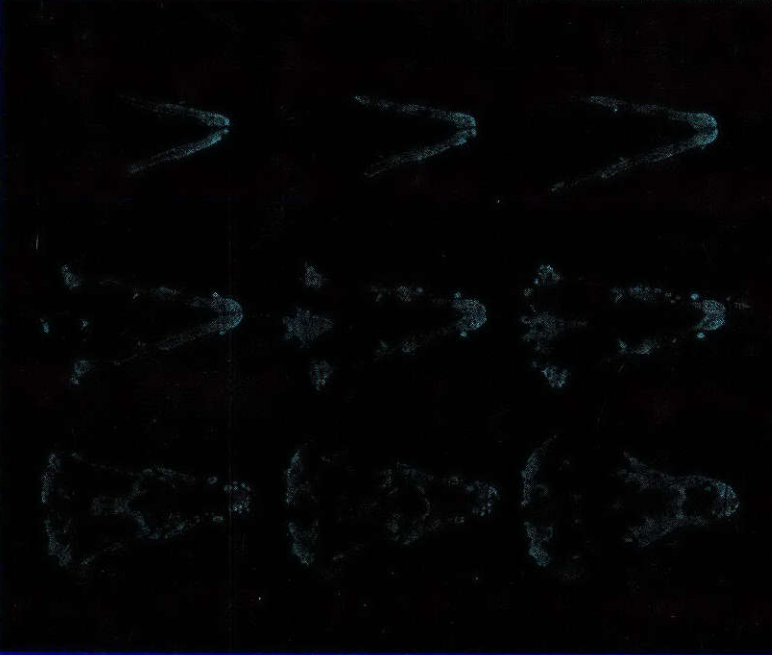
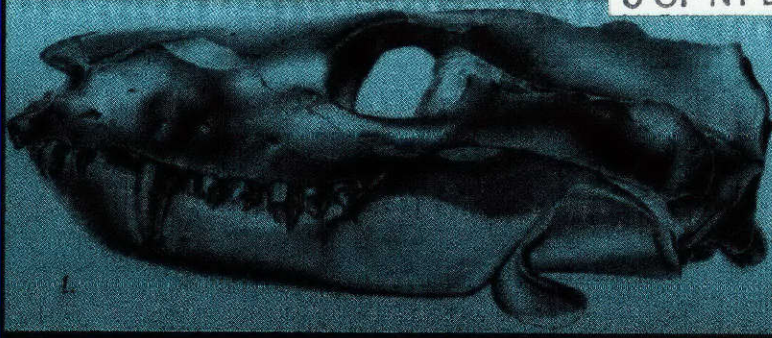
Some Reflections...

The production staff has enjoyed preparing this anniversary issue of the *Newsletter*, and it's been fun sorting through memorabilia from the early years of the Department and the Geology Foundation.

A motivating force for us in preparing the *Newsletter* each year is the knowledge that so many of you truly appreciate and look forward to receiving each issue. As we think about next year's issue, we face some concerns. Contributions for the *Newsletter* defray only about 20% of the total cost. Although Geology Foundation staff prepare camera-ready copy, the printer is selected by competitive bidding, and graduate students assist us with mailing, our costs are substantially more than contributions. Unrestricted gifts from alumni and companies must make up the difference. These same gifts, however, are also needed to pay salaries for Geology Foundation staff (who are supported entirely by gifts), and to pay the operational expenses of the Geology Foundation.

During 1992-93 our unrestricted gifts declined substantially. Economic conditions played a major role in this decline. In addition, many alumni who ordinarily support the Unrestricted Fund assisted us by giving to the Walter Geology Library and Muehlberger Field Geology funds so that those gifts could qualify for Regents matching funds. We truly appreciate the great success of those two funds. We simply ask those of you who enjoy the *Newsletter* and perhaps have not contributed recently to consider contributing so we can keep the *Newsletter* and the Geology Foundation operating for another forty years.

An envelope is enclosed to provide an opportunity to support the fund(s) of your choice. We are always grateful for gifts to any of the areas shown. We need your help to continue the excellence in geological education that has become a tradition at The University of Texas at Austin.



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- whole skull
- braincase
- snout

CORONAL FLICS

- whole skull
- braincase
- snout

TRANSVERSE FLICS

- whole skull
- braincase
- snout

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- go to AAPLAYHI
- Executable Program to Interactively View Animations
- about AAPLAYHI

- Section Menu
- Map
- quit