

TxD
Z UA200.6 N477 44

NON-CIRCULATING

TEXAS STATE
DOCUMENTS COLLECTION

MAR 20 1995

The 1994

NEWSLETTER

THE UNIVERSITY OF TEXAS AT AUSTIN

DEPARTMENT OF GEOLOGICAL SCIENCES

U OF NT LIBRARIES 76203

The University of Texas at Austin
1994 Geological Sciences Newsletter
Volume 44

TABLE OF CONTENTS

Letter from the Chairman

Department News, p. 2-18

Tributes to Bullard and DeFord, p.3-6

Research Report, p. 19-41

Bureau of Economic Geology, p. 42

Institute for Geophysics, p. 43

Vertebrate Paleontology Lab, p. 44

Walter Geology Library, p. 45

Student Activities, p. 46-71

Degrees, p. 63-65

Geology Foundation News, p. 72-82

Memorials, p. 83-85

Alumni News, p. 86-119

Women in Graduate Program, p. 86-88

Clark R. Wilson, *Chairman*
Department of Geological Sciences

William L. Fisher, *Director*
Geology Foundation

Joyce E. Best, *Managing Editor*
Scott Schroeder, *Layout and Graphics*
Rosemary Brant-Barker, *Assistant*
Kimberly Kurtz, *Assistant*
Julie Thomas, *Assistant*

*This Newsletter was prepared by the staff of the
Geology Foundation and printed at Foundation expense.
No State-appropriated funds were used.*



Printed entirely on recycled paper.

Letter from the Chairman

HERE ARE A FEW HIGHLIGHTS of the 93-94 academic year. Two new faculty joined us in January 1994. Jay Famiglietti, came from Princeton (Civil Engineering) with a degree in surface hydrology to supplement our growing hydrogeology program. Jim Connelly joined us to lead the uranium-lead geochronology effort, and to contribute to the structural geology program. Both Jay and Jim have already spent time teaching in the summer field courses as part of their first year activities. See their research and activity reports for more details. In September, we were joined by Randy Marrett, who comes from AMOCO Research in Tulsa, with a PhD from Cornell. Randy brings a variety of talents to the Department, including a strong interest in Mexico, and considerable quantitative abilities, among them, knowledge of the application of fractals to problems in structural geology and reservoirs. This summer, we hired Dr. Kurt Bartelmehs, who recently completed a PhD in crystallography at Virginia Tech, to become our computer coordinator. This job is an entirely new position for the Department, and Kurt's direction will be important in leading us in the acquisition, management, and use of our computer resources in teaching and research.

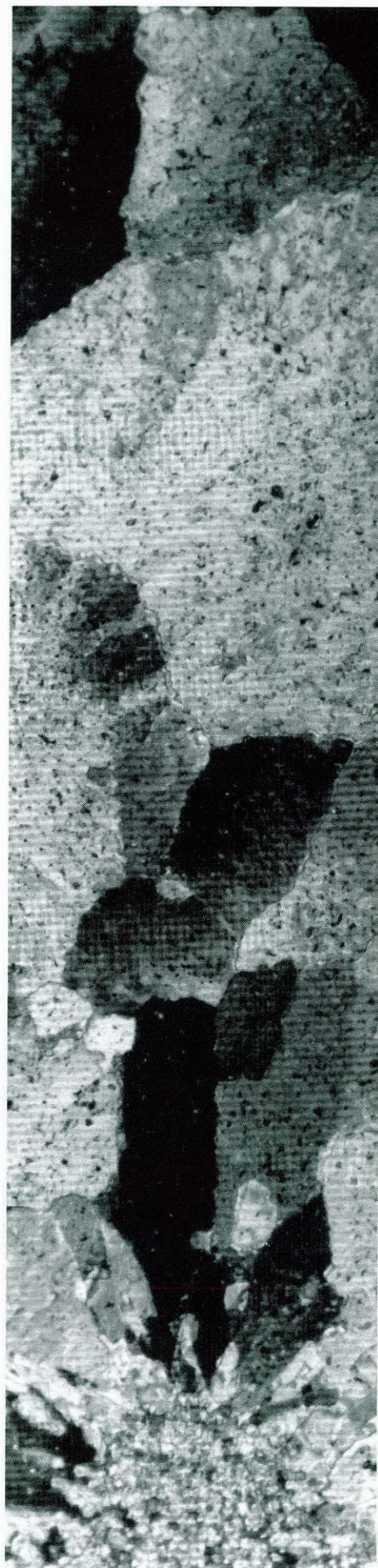
The next academic year is almost certain to be one of significant change at the University, following the appointment of the new Executive Vice President and Provost, Mark Yudof, as well as other changes in the administration of research and development activities. Important changes are also coming to the administration of the various geological sciences enterprises which are directly related to the Department. One is that Art Maxwell retired at the end of the summer, vacating the position of director of the Institute for Geophysics. A second

change is that Bill Fisher stepped down after almost a quarter of a century as director of the Bureau of Economic Geology, to begin service as a full time faculty member this fall. Noel Tyler has been named as the new BEG director, and assumed that role, along with the position of professor in the Department, effective September 1. A third change is that Bob Boyer has returned to the Department full time after 14 years as dean of the College of Natural Sciences. Mary Ann Rankin, professor of zoology, became the new dean on September 1.

The most direct administrative change for both the Department and me is that, at the end my four year term as chairman, I have elected to return to regular faculty life this fall. Bill Carlson took over the chairmanship on September 1. I am eager to concentrate on aspects of my faculty job that have been neglected during my service as chairman, especially efforts to make more effective use of computers in teaching. I have thoroughly enjoyed my time as chairman, and genuinely feel that I have received more in personal growth and development than I have contributed. I am grateful to have had the chance to learn about academic administration as chairman of the finest geological sciences program in the country, and to have had advice and example from a variety of individuals, especially from my predecessor Bill Fisher, and from Bob Boyer in his position as dean.

1994 marks the passing of two giants in the history of the Department, Ronald DeFord in May, and Fred Bullard at the end of July. As our lead article, we review the contributions that these two individuals made to the Department and the University over their many decades of service.

— Clark R. Wilson



DEPARTMENT OF GEOLOGICAL SCIENCES

FACULTY & STAFF LISTING

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
Robert E. Boyer, Peter T. Flawn Centennial Chair
Leonard F. Brown Jr., Professor Emeritus and Research Scientist, Bureau of Economic Geology
Richard T. Buffler, Professor and Senior Research Scientist, Institute for Geophysics
William D. Carlson, Professor and William Stamps Farish Chair in Geological Sciences, Chairman of the Department of Geological Sciences
Stephen E. Clabaugh, Fred M. Bullard Professor Emeritus
Mark P. Cloos, Professor
James N. Connelly, Assistant Professor
Ian W. D. Dalziel, Professor and Senior Research Scientist, Institute for Geophysics
Samuel P. Ellison Jr., Alexander Deussen Professor Emeritus

Jay Famiglietti, Assistant Professor
William L. Fisher, Leonidas T. Barrow Centennial Chair, Director of the Geology Foundation
Peter T. Flawn, President Emeritus and Leonidas T. Barrow Centennial Chair Emeritus
Robert L. Folk, Dave P. Carlton Centennial Professor Emeritus
William E. Galloway, Morgan J. Davis Centennial Professor in Petroleum Geology
Wulf A. Gose, Research Scientist
Brenda Kirkland George, Assistant Professor and William T. Stokes Centennial Teaching Fellow
Stephen P. Grand, Associate Professor and Shell Companies Foundation Centennial Teaching Fellow
Roberto Gutierrez, Lecturer
Mark A. Helper, Lecturer
Claude W. Horton Sr., Professor Emeritus
Todd Housh, Research Associate
Edward C. Jonas, Professor Emeritus
Gary Kocurek, Professor and Getty Oil Company Centennial Teaching Fellow
Michelle A. Kominz, Assistant Professor and Shell Companies Foundation Centennial Teaching Fellow
J. Richard Kyle, Professor and Getty Oil Company Centennial Teaching Fellow
Martin B. Lagoe, Associate Professor and Dave P. Carlton Centennial Teaching Fellow in Geology

Lynton S. Land, Professor and Edwin Allday Centennial Chair in Subsurface Geology
Wann Langston Jr., First Mr. and Mrs. Charles E. Yager Professor Emeritus
Leon E. Long, Second Mr. and Mrs. Charles E. Yager Professor of Geology
Fangqiong Lu, Research Associate
Ernest L. Lundelius Jr., John A. Wilson Professor in Vertebrate Paleontology, Getty Oil Company Centennial Teaching Fellow and Director of the Vertebrate Paleontology Laboratory
Randall Marrett, Assistant Professor
Arthur E. Maxwell, Professor Emeritus
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, Professor and J. Nalle Gregory Regents Teaching Fellow
Amos Salvador, Morgan J. Davis Centennial Professor Emeritus
John M. Sharp Jr., Gulf Oil Foundation Centennial Professor
Douglas Smith, Professor, Dave P. Carlton Centennial Teaching Fellow in Geology
James Sprinkle, First Mr. and Mrs. Charles E. Yager Professor
Paul L. Stoffa, Dave P. Carlton Centennial Professor in Geophysics and Senior Research Scientist, Institute for Geophysics

Noel Tyler, Professor and Director of the Bureau of Economic Geology
Willem C. J. van Rensburg, George H. Fancher Professor in Petroleum Engineering and Director, Graduate Program in Energy and Mineral Resources
Clark R. Wilson, Wallace E. Pratt Professor in Geophysics, Shell Companies Foundation Centennial Fellow in Geophysics
John A. Wilson, Professor Emeritus
Keith Young, J. Nalle Gregory Professor Emeritus

TECHNICAL STAFF

Kurt Bartelmehs, Computer Coordinator
Pablo Cortez, Electronic Technician
Jeff Horowitz, Draftsman
Katherine Manser, Research Scientist Associate
Scott Mitchell, Technical Staff II
Greg Thompson, Thin-section Technician
Dennis Trombatore, Librarian
Cassia Wolfson, Analytical Chemist

ADMINISTRATIVE STAFF

Joyce Best, Administrative Associate
Andrea Black, Accounting Clerk III
Betty Kurtz, Administrative Assistant
Ann Page, Administrative Assistant
Donna Precht, Student Development Specialist II
John Ready, Senior Procurement Officer
Scott Schroeder, Microcomputer Applications Specialist
Julie Thomas, Administrative Assistant
Bill Woods, Executive Assistant

(as of September 1994)

In Appreciation

Both DeFord and Bullard had long, productive, and rich lives, remained active until their last days, and were recognized and appreciated personally and professionally in their own lifetimes. It is clear, however, that their contributions to the Department are destined to continue.



Fred Bullard's enduring legacy is the strength of the undergraduate teaching program in the Department, especially in the instruction of non-majors. Bullard's zeal for teaching and his contribution to the education and inspiration of thousands of undergraduates over his decades of service have been noted many times. But it was Bullard's ability to inspire the faculty, as well, that has allowed the perpetuation of his zeal, his teaching spirit.



Ronald DeFord's legacy is the strength of the graduate program and particularly the promotion of effective oral and written communication skills as an integral part of graduate education. As noted many times, DeFord personally taught these skills as he conducted the Technical Sessions course over a period exceeding three decades, contributing to the professional development of hundreds of graduate students.



Ronald K. DeFord and Fred M. Bullard dine at the Texas Union Faculty Dining Room in Spring 1956.

FRED MASON BULLARD passed away suddenly and quietly at his home in Austin on Friday, July 29, 1994. Bullard was born July 20, 1901, on Kikapoo Indian lands, Indian Territory, now Oklahoma, where his father had homesteaded. He attended the University of Oklahoma, where he attained the B.S. and M.S. degrees in Geology and played the saxophone in the University Band. He received his Ph.D. degree from the University of Michigan. After a few years as Field Geologist for the Oklahoma Geological Survey, he was appointed to the faculty of the Department of Geology at the University of Texas in 1924. There he sustained a professional career in teaching and research for 70 years, and was actively at work in his office on the last day of his life. During his long career, Professor Bullard taught thousands of students, many of whom became pioneers in the petroleum industry. He was greatly admired and loved by his students, colleagues and friends, and kept in touch with many of them over the many decades of his professional life. The span of his career offered him the chance to teach the children and grandchildren of his early students, and during his travels he constantly met people who came up to him to say, "Dr. Bullard, I was a student in your class in 19__!"

Continued on page 4

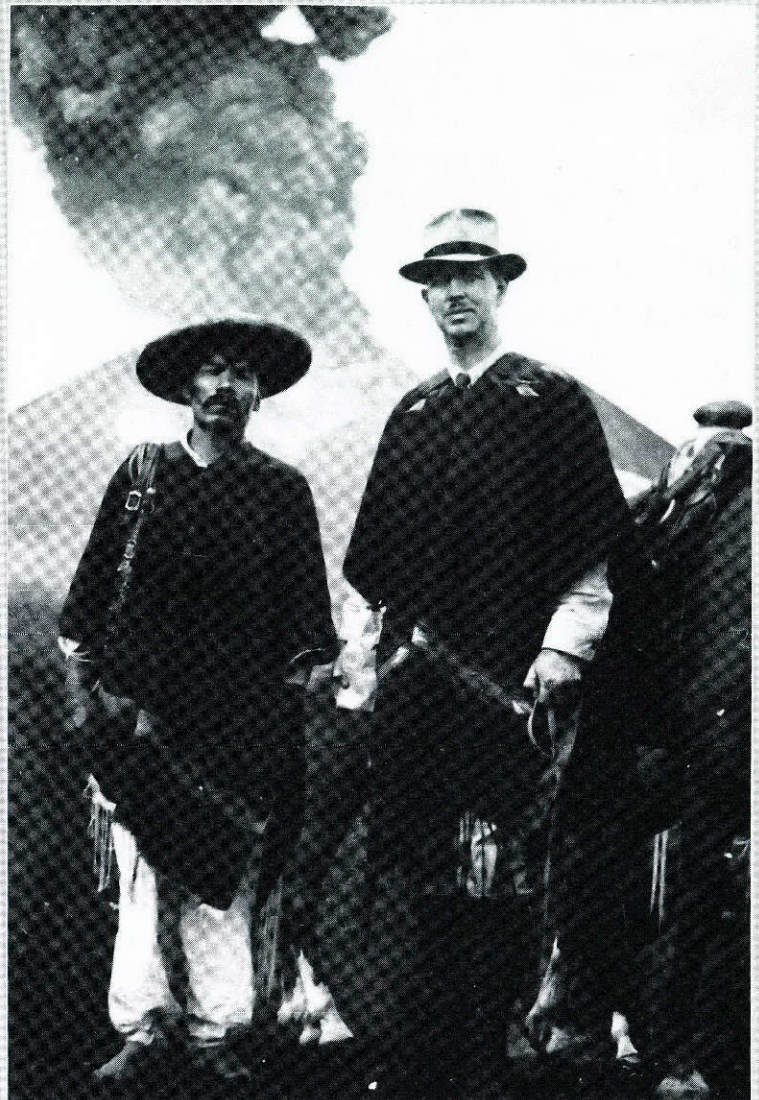
RONALD KINNISON DEFORD, age 92, Professor Emeritus of Geological Sciences, died May 7, 1994. Ronald joined the University as a Professor in 1948, and he was Graduate Advisor in the Department from 1949 to 1967. He supervised 19 Ph.D. dissertations and 126 masters theses. After nominal retirement in 1972 and appointment to Professor Emeritus, he continued as the faculty supervisor of Technical Sessions, a course required of all graduate students in Geological Sciences, until 1987. He then retired in fact at the age of 85, partly because of the afflictions of Parkinson's Disease. Ronald's influence on the Department and University was immense, as a teacher, a leader, and a colleague.

Ronald was born in San Diego, California, on January 22, 1902, the son of George Washington DeFord and Amelie Stenger DeFord. In 1921, DeFord earned an Engineer of Mines degree from Colorado School of Mines in Golden, Colorado, and in 1922 he received his Masters of Science degree in Geology from that school. His thesis topic was the Tertiary History of the Front Range. In 1924, Midwest Refining Company employed him and assigned him as resident geologist to a then fairly remote station at Roswell, New Mexico. Five years later he drove the stake that marked the location for

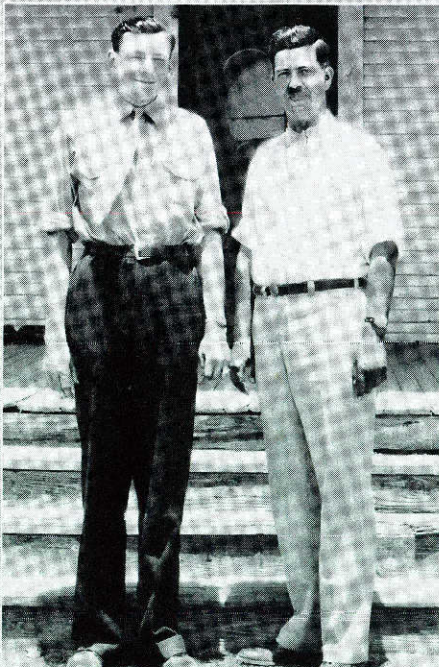
Continued on page 5

Bullard served as Chairman of the Geology Department from 1929 to 1937. This was the period in which the State of Texas implemented the building program for the central core of UT buildings surrounding the Main Building and which helped celebrate the 1936 Texas Centennial. Fred Bullard personally researched the architecture of geology buildings at prominent universities and then designed and helped draw the plans for the first Geology Building, and personally selected the furnishings, as well. He designed the fossil frieze that decorates the building's exterior, indelibly and forever signifying its dedication to geology.

Dr. Bullard served as a visiting professor at a number of schools through the years, including the University of Michigan, Columbia University, the National University of Mexico in Mexico City, Vassar College, and Northern Arizona University. He also served as Distinguished Lecturer for the American Association of Petroleum Geologists in 1945 and 1954, and in the Visiting Scientists Program of the American Geophysical Union in 1966 and 1968-69. Other foreign assignments included appointments as a Fulbright Research Scholar in Italy, 1952-53; Fulbright Lecturer in Peru, 1959; and Chief of Party of the University of



Fred Bullard with guide in front of Parícutin in Mexico.



Robert Cuyler with Fred Bullard in Brady, Texas, mid 1930's.

Texas contract group at the University of Baghdad, Iraq, for two and a half years, 1962-1964. This group was sent under a US Agency for International Development program to provide "technical assistance in improving education in the sciences and engineering" to the University of Baghdad. Nine professors and their families were in the group under his care, four in the sciences and five in engineering.

Fred Bullard had an early interest in volcanoes, and while on a US Geological Survey expedition to Alaska in 1929, he observed an active volcano for the first time. His interest was piqued, and the study of active volcanoes became a life-long profession. He served as an assistant at the Hawaiian Volcano Observatory in 1939, where he worked under the famous volcanologist, Dr. T. A. Jaggar. With this background, he was equipped to do the seminal geologic research on the

nascent active volcano Parícutin when it erupted out of a sleepy cornfield in Mexico in 1943. According to his own account, "When Parícutin was born, I was teaching a course on volcanoes at the National University of Mexico. I used it as a laboratory for my students, and for the next seven years I spent a part of each year at Parícutin studying the life history of this volcano. I studied the volcanoes of the Central American countries from 1945-1957. In 1959, I extended my work to South America. In the summer of 1960, I participated in the International Congress Field Trip to study the volcanoes of Iceland. In 1962 I was a member of the International Symposium on Volcanology in a study of the volcanoes of Japan.

During the summer of 1963 I studied the volcanoes of central Turkey and the Greek Islands. During the summer of 1964 I visited the volcanic areas of

Africa, the Canary Islands, Madeira and the Azores. During the summers of 1965 and 1967 I taught Volcanology in a National Science Foundation Institute for High School science teachers at Northern Arizona University. In the fall of 1965-66 I studied the volcanoes of the South Pacific region (Phillipines, New Guinea, New Britain, etc.) and attended the International Symposium on Volcanology in New Zealand. During the summer of 1968 I was on an International Geologic Congress Field Trip studying volcanics in the Carpathian Mountains of Slovakia. During the summers of 1969 and 1970 I studied the "Great Rift" at Craters of the Moon National Monument, Idaho." Bullard's research findings and accumulated knowledge became an original reference work on volcanoes entitled, *Volcanoes: in Theory, in History, in Eruption*, published by the UT Press; a revised and enlarged edition, including information on the eruption of Mt. St. Helens, was published under the title, *Volcanoes of the Earth*. these books were best sellers among the UT Press offerings.

In his early days at the University of Texas, Fred Bullard helped organize and participated in the activities of professional geologic organizations, including Sigma Gamma Epsilon and Sigma Xi. He helped organize the Institute for Latin American Studies during the Roosevelt "Good Neighbor Policy" days. He enjoyed life-long membership in the Kiwanis Clubs of Austin (being in "the Old Men's Group") and after retirement, the Retired Faculty Association. He was a Mason, a Fellow of the Geological Society of America, a member of the Mineralogical Society of America, the American Association of Petroleum Geologists, and Phi Beta Kappa.

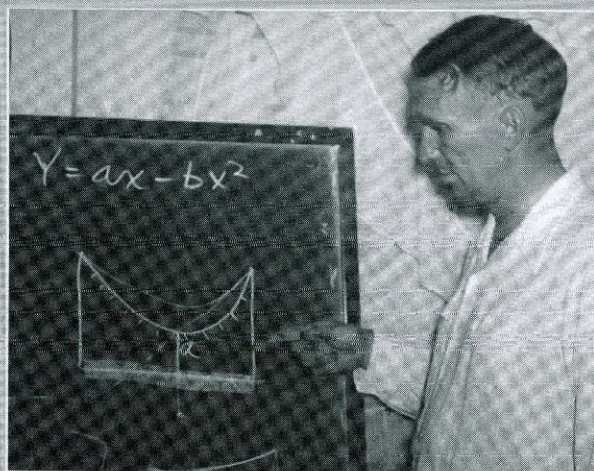
Fred Bullard's immediate family include his wife, Evelyn Hereford, of Austin; his daughter, Thais, of Austin and Taos; his daughter and son-in-law, Peggy and John Marshall of Westlake Village, California; his grandchildren, Cindy Livermore, Lynn Marshall, and Scott Marshall of San Diego; two great-granddaughters, children of Cindy and Jeff Livermore; and his step-children, Lynn Hereford, Carl Hereford, Jr., and David Hereford, of Austin.

— Compiled by Clark Wilson

DEFORD, Cont'd. from Page 2

the discovery well for Hobbs Field, one of the major oil fields of North America. In 1933, he moved to Midland, Texas with Argo Oil Corporation. He lived in Midland until 1948, when he accepted an appointment as Professor of Geology at the University of Texas at Austin.

The Professor, as he was known to all, was first and foremost a teacher. His first classroom assignment after graduation was as an instructor of chemistry at the Colorado School of Mines from 1923 to 1924. The breadth of his intellectual interests was documented by his 1923 application for a Rhodes Scholarship at Oxford in English Language and Literature. Though he did not receive the



Ronald K. DeFord teaches a course in higher mathematics to help Midland veterans qualify for college in the late 1940's.

scholarship, his next teaching assignment was as an instructor and then as Assistant Professor of English at the Colorado School of Mines from 1931 to 1933. When he became Graduate Advisor in our Department, he encouraged all students to acquire an adequate foundation not only in geology, but also in mathematics, physics, chemistry, English, and foreign language. His interests and skills in English usage were always evident when he edited student manuscripts. Among the memorable courses he taught were undergraduate classes in physical geology and graduate courses in Geology of Fluids and Advanced General Geology. Vigorous discussions with students were hallmarks of his teaching. In the 1960's, he occasionally taught a course for aspiring teachers in the School of Education. The final week was a debate of evolution vs the Bible; Professor DeFord brought his big red brassbound Bible to

class and made future teachers defend evolution as he defended the Bible. He used the same family Bible in a different sense at the start of the first day of class in physical geology. He looked out at the class solemnly, introduced himself, and read a few verses from Genesis. He then closed the book, turned to the class, and said, "I hope that by the end of this semester you will realize that all of that is not true."

One of his enduring contributions to teaching and to the Department was in his leadership of the graduate course called Technical Sessions, a one-credit-hour course meeting twice each week. In that course, each graduate student has been required to make at least one formal presentation of research results to an audience of students, faculty, and others. DeFord used the course to teach clear, effective speaking, and graduates of the Department have often attributed their successes in lecture presentations to the high standards he so ably imparted. Each student speaker was also required to prepare copies of an abstract for all in attendance, after that abstract had

been discussed with and edited and approved by DeFord. A volume of abstracts of talks for the last nine years of Ronald's leadership was compiled and presented to him in 1986 (a copy is kept by the Geology Library as a resource and a record of the science he influenced). All have warm memories of the style in which he presided over the course.

Many of his teaching contributions came during supervision of graduate students doing field work in west Texas, New Mexico, Arizona, and Chihuahua, Mexico. Almost all of the nearly 150 graduate students who received degrees under his supervision based at least part of their research upon careful field studies of an area in one of these regions. Stories of his abilities, enthusiasm, and insights under sometimes trying conditions are legion. Even in 1960, when Ronald was 58, his young students couldn't understand how this "old man" could walk their legs off all summer long. Little did they know that starting in the middle of the month of April, if one drove out along Mount Bonnell Road



Fred McDowell presents leather-bound volume of Tech Sessions abstracts to Prof. DeFord. (Marion DeFord in center).

west of Mt. Barker, one would see Ronald's jeep parked, and he would be running up and down the hills getting in shape so that he could out-do those young "kids" when they met him in Trans-Pecos Texas or northeastern Chihuahua. He also learned enough Spanish to be understood and to understand during the Chihuahua excursions. He organized field trips for students and faculty into northern Mexico in conjunction with Pemex geologists, and he taught participants both geology and other useful things, such as how to stop leaks in a car radiator in the midst of an empty desert. (He took an egg, separated the white from the yolk, dropped the yolk into a soup pot, dropped the white into the car's radiator while it was hot and running, and coagulation of the egg white stopped little leaks.) He was a stickler for promptness on field trips. Students re-

call long highway drives with no rest stops, to make certain to be at the appointed places at the appointed times.

The importance of his contributions to the educations and lives of these students has been shown in part by the enthusiastic response when the Ronald K. DeFord Field Scholarship Fund was established in the Geology Foundation in 1972. Before Ronald's death, the endowment had grown to a balance of over \$170,000 contributed by more than 180 donors (including many former Graduate students).

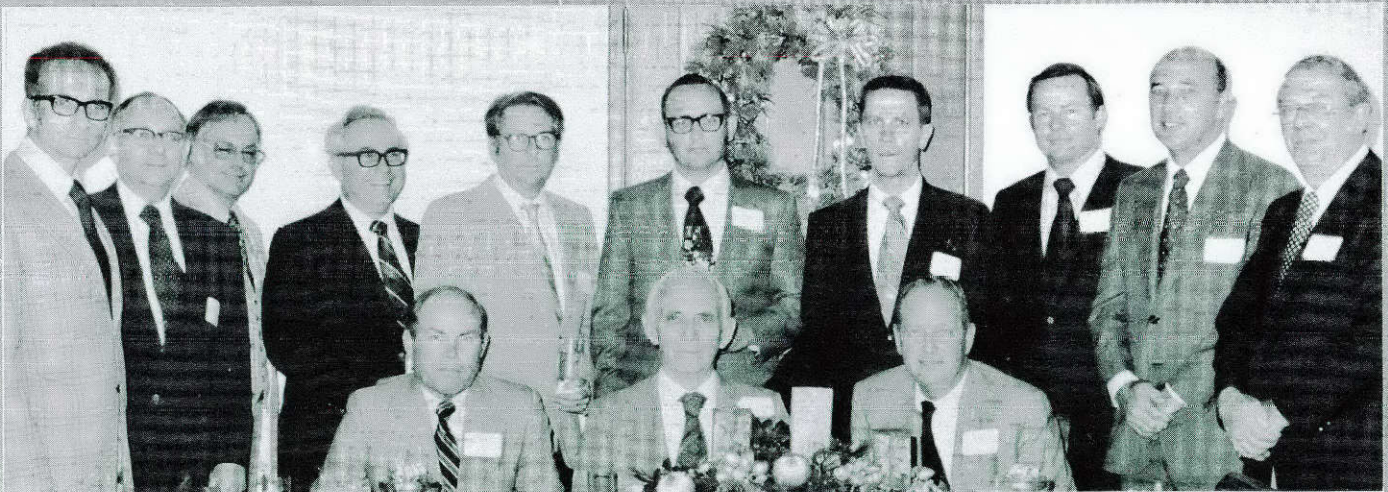
Ronald participated in more than a dozen scientific societies and received special recognition from many of them. His awards included the Individual Merit Award Medal from Colorado School of Mines in 1963, election to the Permian Basin Hall of Fame in Midland in 1975, and honorary life membership of the American Association of Petroleum Geologists. He was a former president and a life member of The West Texas Geological Society, and that society cosponsored a symposium in his honor in 1970. He was awarded the title of "Professor Extraordinario" by La Universidad Nacional Autonoma de Mexico in 1968. He was a founding member of the Chancellor's Council of The University of Texas and a member of the President's Councils at both The University of Texas and the Colorado

School of Mines. He was also a Life Member of the UT Ex-Student's Association and The Eyes of Texas Society.

DeFord was also a great patron of the Arts and a supporter of many civic organizations. He was a founding member of the Midland Community Theatre and was voted Life Member by the Board of Governors in 1970. He was elected to the Knights of the Symphony in Austin and was proclaimed King Brio VI in 1971. He was a founding member of the Austin Lyric Opera, and he was an avid supporter of Laguna Gloria Art Museum, several Chamber Music groups, The Festival-Institute at Round Top, and the local Gilbert & Sullivan Society. He also loved ballroom dancing, and although many geology faculty took years of ballroom dance classes to emulate him, none could match his style, particularly in the waltz.

DeFord is survived by his wife of 17 years, Marion Wier Rich DeFord, and his four step-children: Nell Hill Gillespie of Beverly Hills, California; John Hill DeFord of Tulsa, Oklahoma; Stephen Geoffrey Rich of Phoenix, Arizona; and Lisa Rich Beck of Austin. In addition, he is survived by his mother-in-law, Mabel Wier of Austin, and by his sister-in-law and brother-in-law, Marjorie and John Eason of Georgetown, Texas. He was preceded in death by his sister, Estella. His first wife, Amma (Mary Amma Spence), died in 1976; she accompanied Ronald for many summer field seasons.

— Prepared by Douglas Smith, William R. Muehlberger and Keith Young



Ronald DeFord surrounded by some of his former students at a luncheon in his honor at the Houston Club in December, 1975. Standing, left to right: Robert Zinn, Sidney Moran, George Harwell, Don Reaser, David Amsbury, George Walker, Arthur Cochrum, Morgan Davis Jr., Baxter Adams, Ed McGee; seated left to right: John E. Wilson, R. K. DeFord, J. C. Walter Jr.

AAPG Honors UT Affiliates

WILLIAM L. FISHER, Leonidas T. Barrow Chair in Mineral Resources, was the 1994 recipient of AAPG's highest award, the Sidney Powers Memorial Award. He received the medal at the annual meeting of the Association in Denver where Don R. Boyd, a Distinguished Graduate of the Department and past chairman of the Advisory Council of the Geology Foundation, was his biographer and citationist. Fisher was recognized for his early work in formulating concepts of depositional systems in basin analysis and later work in energy resource assessment and energy policy.

Fisher's recognition continues a long history of AAPG involvement by geologists associated with the University of Texas as graduates, faculty, staff, and Advisory Council members. Of 47 Powers medalists, nine have been associated with UT Austin. Also at Denver, Joe Cannon, a UT-ex, was elected to honorary membership, the 32nd UT associate so honored, and Susan Longacre, a UT grad and member of the Advisory Council, received a Distinguished Service Award, joining ten other UT people so recognized earlier. Jesus Maguregui, a recent UT graduate, received the Braunstein Award, joining two previous UT recipients. Gyorgy Marton, a PhD candidate in geophysics in the Department, received first place in the student poster presentations.

A total of 22 individuals associated with UT Austin have served as elected members of the AAPG Executive Committee, ten serving as President. Also many people from UT have served on AAPG committees and as Distinguished Lecturers, have contributed substantively to AAPG literature on petroleum geology, and have been recognized with numerous awards.

AAPG, as the world's largest geological society, and UT Austin, as one of the world's largest geology departments, obviously have long ties and concerns in common. The tradition continues.

Powers Medalists

J. Ben Carsey, Sr., 1985 (AC, G)
Morgan J. Davis, Sr., 1972 (AC, G)
Everette L. DeGolyer, ____ (AC)
Alexander Deussen, 1947, (G, F/S)
William L. Fisher, 1994 (F/S)
W. Dow Hamm, 1976 (AC)
G. Moses Knebel, 1974 (AC, G)
Edgar W. Owen, 1964 (AC, F/S)
Wallace E. Pratt, 1945 (AC)

Honorary Members

Leonidas T. Barrow (AC, G)
Richard R. Bloomer (AC, G)
Leslie Bowling (AC, G)
Don R. Boyd (AC, G)
Hal P. Bybee (F/S)
J. Ben Carsey, Sr. (AC, G)
Joe Cannon (G)
Morgan J. Davis, Sr. (AC, G)
Ronald K. DeFord (F/S)
Everette L. DeGolyer (AC)
Alexander Deussen (G, F/S)
E. T. Dumble (F/S)
Samuel P. Ellison, Jr. (AC, F/S)
William L. Fisher (F/S)
Peter T. Flawn (AC, F/S)
George R. Gibson (AC)
William E. Gipson (AC, G)
W. Dow Hamm (AC)
R. T. Hill (F/S)
James R. Jackson, Jr. (G)
G. Moses Knebel (AC, G)
Leonard F. McCollum (AC, G)
Harry A. Miller, Jr. (AC, G)
John D. Moody (AC)
William R. Muehlberger (F/S)
Edgar W. Owen (AC, F/S)
George B. Pichel (AC, G)
Wallace E. Pratt (AC)
John T. Rouse (AC)
Bill St. John (G)
E. H. Sellards (F/S)
Edd R. Turner (AC, G)
J. A. Udden (F/S)

Distinguished Service Award

Leslie Bowling (AC, G)
Don R. Boyd (AC, G)
A. T. Carleton (G)
Samuel P. Ellison, Jr. (AC, F/S)
William L. Fisher (F/S)
Robbie R. Gries (G)
James R. Jackson, Jr. (G)
Susan A. Longacre (AC, G)
Edward McFarland (G)
George Pichel (AC, G)
Bill St. John (G)

Human Needs Award

Wallace E. Pratt (AC)
Creighton A. Burk (F/S)
Leonard F. McCollum (AC, G)

Public Service Award

Daniel N. Miller, Jr. (G)
Charles J. Mankin (G)
Virgil E. Barnes (F/S)

Pratt Award

Richard T. Buffer (G, F/S)
Carr P. Dishroon, Jr. (G)
William E. Galloway (G, F/S)
David K. Hobday (F/S)
Kinji Magara (F/S)
Charles D. Winker (F/S)

Dott Award

Hugh R. Balkwill (G)
Robert L. Folk (F/S)
Edgar W. Owen (AC, F/S)
Arnold M. Woods (G)

Sproule Award

Marc B. Edwards (F/S)
Martin P. A. Jackson (F/S)
Steven J. Seni (G, F/S)
Robert D. Walters (G)
Paul Weimer (G)

Matson Award

Martin P. A. Jackson (F/S)
Ralph S. Kerr (G)
John D. Moody (AC)
William R. Muehlberger (F/S)

Braunstein Award

Jesus Maguregui (G)
Dale S. Sawyer (F/S)
John R. Suter (G)

Levorsen Award

Christopher Caran (G, F/S)
Arthur W. Cleaves (G)
Shirley P. Dutton (G, F/S)
Mark Eidelbach (G)
Thomas E. Ewing (F/S)
Robert J. Finley (F/S)
William E. Galloway (G, F/S)
Lisa K. Goetz (G)
Robbie R. Gries (G)
Karen Herrington (G, F/S)
Mark W. Longman (G)
Donald E. Owen (G, F/S)
Mark W. Presley (F/S)
Arnold M. Woods (G)
Hunter Yarborough, Jr. (G)

Executive Committee

Richard R. Bloomer, S (AC, G)
Don R. Boyd, S (AC, G)
A. T. Carleton, HD, PE, P (G)
J. Ben Carsey, Sr., VP, P (AC, G)
Morgan J. Davis, Sr., P (AC, G)
Everette L. DeGolyer, P (AC)
Alexander Deussen, VP, P (AC)
Samuel P. Ellison, Jr., VP (AC, F/S)
William L. Fisher, PE, P (F/S)
George R. Gibson, HD (AC)
Willard R. Green, HD (G)
William B. Heroy, Jr., T (AC)
James R. Jackson, Jr., S (G)
G. Moses Knebel, P (AC, G)
Susan Longacre, E (AC, G)
Harry A. Miller, Jr., HD (AC, G)
John D. Moody, S-T, P (AC)
Edgar W. Owen, S-T, P (AC, F/S)
George B. Pichel, T (AC, G)
Wallace E. Pratt, P (AC)
Kenneth O. Seewald, HD (G)
Edd R. Turner, PE, P (AC, G)

Executive Committee EMD

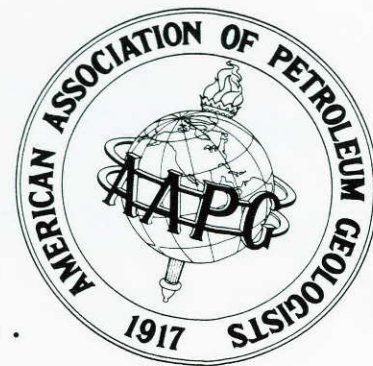
Charles G. Groat, VP, P (G, F/S)

Executive Committee, DPA

Royce P. Carr, S (G)
H. Grady Collier, Jr., VP (G)
George R. Gibson, P (AC)
Willard R. Green, PE, P (G)
W. Dow Hamm, P (AC)
Harry A. Miller, Jr., P (AC, G)
John T. Rouse, VP (AC)

LEGEND:

AC - Advisory Council;
G - UT Graduate; F/S - Faculty/Staff;
P - President; PE - President Elect;
VP - Vice President; S - Secretary;
S-T - Secretary/Treasurer





Jay Banner relaxes on the Fall '93 298T Field Trip.

ON A PERSONAL NOTE

JAY BANNER, Liz, and Ethan are happy to report the arrival of Carly Jade Banner on February 19. Other highlights of the past year include fieldwork on spectacularly exposed Devonian reefs in Western Australia. Jay met up with post-doc Bruce Ward and graduate student Milt Kwong in Derby, W.A., after seven consecutive flights, and proceeded to roll around the Canning Basin amongst boab trees, King Brown snakes, ancient and correlative marine calcite cements, ancient cave paintings, and the Southern Cross.

• • •

DAN BARKER taught the graduate igneous petrology course and the orientation for new teaching assistants in the fall. In the spring he shared with Bill Carlson the teaching duties in the undergraduate course in igneous and metamorphic rocks and the graduate course in analytical techniques. He attended the annual GSA meeting in Boston in October, and the Geological Association of Canada meeting in Waterloo, Ontario, in May, and went on field trips associated with both meetings. Among other manuscripts, he finished a visitor's guide to the volcanic rocks of Tuff Canyon, Big Bend National Park. Daughter Amy earned her master's degree from the Boston Conservatory. Dan's most important event of the year was his marriage to Rosemary Brant on March 26, in an outdoor ceremony that was attended by many friends from the department. In June, he and Ro visited the Scottish islands of Arran, Mull, and Skye, and the volcanic region of the Auvergne in south-central France.

• • •

PHIL BENNETT received tenure this year, effective September, and he received the Houston Oil and Minerals Corporation faculty excellence award. Phil taught a total of five courses over

the past year, including organic geochemistry, chemical hydrogeology, intro to hydrology, analytical methods in chemical hydrogeology, and field methods in hydrogeology. This summer Phil taught the summer field hydrology course (AKA hydro boot camp) with the help of our new hydrogeologist, Jay Famiglietti. Jay, and 18 graduate and undergraduate students, received a crash introduction to Texas hydrology, hydrogeology, and small biting insects. Phil's first PhD student, Franz Hiebert, finished his dissertation on microbial influences on mineral diagenesis, and graduated in May. Phil's wife Liz is continuing to work toward her doctorate in education, and successfully passed her comprehensive exams this spring. Now it's Phil's turn to take care of the house while Liz works on her dissertation.

• • •

DICK BUFFLER continues to enjoy his dual role at UT, which involves 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, Hungary, Venezuela, Colombia, Brazil, Trinidad, Oman and Indonesia. The highlight this year was developing a new graduate field course in advanced sequence stratigraphy that



James N. Connelly

was quite successful. His wife, Pat, continues to do a great job as Dean of the School of Public Health at UC Berkeley, and Dick enjoys the commuting and spending time working in California.

•••

JAMES N. CONNELLY arrived as a new faculty member in January from Newfoundland, Canada with his wife, Kathryn Manser. Acclimatizing quickly to the grueling Texas "winter," he and his wife took up residence in an apartment while having a house built in southwest Austin. The summer was a busy one. In addition to continuing work in the geochronology laboratory, he was involved in the senior field course, pursuing field work in southwestern Sweden and starting an international, field-based project in western Greenland.

•••

JAY FAMIgliETTI reports that the word that best describes the past year is *change*. Jay began the year at the National Center for Atmospheric Research (NCAR), in Boulder, Colorado, where he was completing his post-doctoral studies on the connection of global-scale climate models to the small-scale processes that control water transport at the surface of the Earth. Before packing up the family and heading southeast to Austin, Jay attended a workshop in December on scale issues in hydrology, held in Sydney, Australia, as well as the Ameri-

Continued on Page 10

Fisher Elected To National Academy

DR. WILLIAM L. FISHER, director of the Geology Foundation, former director of the Bureau of Economic Geology, and former chairman of the Department of Geological Sciences, has been elected to the National Academy of Engineering.

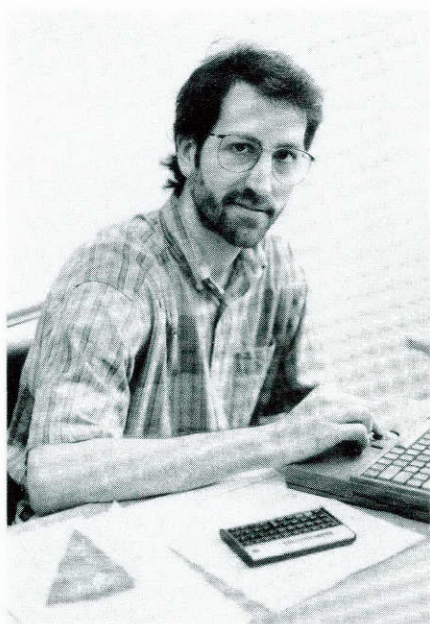
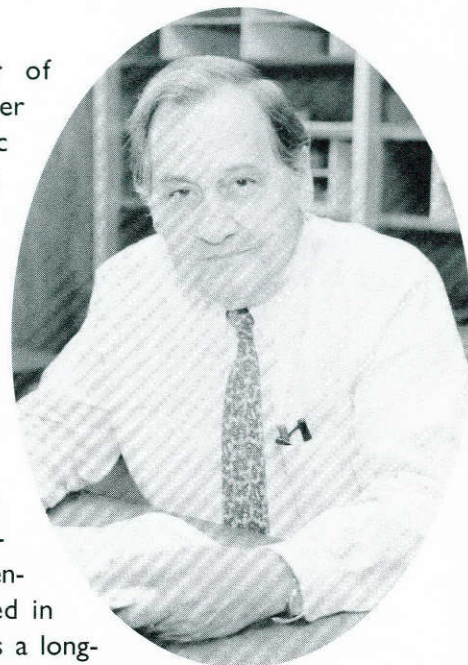
Fisher is one of 79 American engineers and eight foreign associates elected this year to the NAE, which is considered one of the most prestigious honors bestowed upon engineers. Fisher's election was "for integrating engineering and geological concepts to assess and manage energy resources," the NAE indicated in making the announcement. Fisher is a long-time adviser to state and federal officials, and testifies frequently to the U.S. Congress. He lectures extensively, and has published more than 200 articles, reports and books.

Currently, Fisher serves on the National Petroleum Council, the board of the Texas Low-Level Radioactive Waste Disposal Authority and the Advisory Council of the Gas Research Institute. He is a former member of the White House Science Council and the Secretary of Energy Advisory Board, and is past chairman of the Board on Earth Sciences and Resources of the National Academy of Sciences.

He is past president of the American Association of Petroleum Geologists, the Association of American State Geologists, the American Geological Institute, the American Institute of Professional Geologists, and the Austin Geological Society.

During the Ford administration he served as Assistant Secretary of Interior for Energy and Minerals, and as a member of the White House Energy Resources Council. He is a fellow and former councilor of the Geological Society of America and current president of the Gulf Coast Association of Geological Societies.

The National Academy of Engineering membership honors those who have "made important contributions to engineering theory and practice, including significant contributions to the literature of engineering theory and practice, and those who have demonstrated "unusual accomplishment in the pioneering of new and developing fields of technology." Fisher joins Thomas D. Barrow and Peter T. Flawn, honorary life members of the Geology Foundation Advisory Council, as elected members of the National Academy of Engineering.



Jay Famiglietti

NOTES, Cont'd. from Page 9

can Geophysical Union conference in San Francisco. In January, Jay, his wife Cathy, their two dogs and their cat, took up residence at the Sharps' house, while Jack and his family took sabbatical leave in Adelaide, Australia. Jay settled into his new responsibilities by co-teaching the introductory hydrology course during the spring semester. In March, Jay and Cathy began construction on a new house in southwest Austin. Although the Famigliettis are delighted with their new surroundings, the highlight of their year occurred in mid-March with the birth of their first child, Nicholas. Both Cathy and Nicholas are doing wonderfully. Summer activities included teaching the hydrology field-methods course, a five-week visit to NCAR to continue studies of the global hydrological cycle, and moving into the new house in late August.

• • •

BILL FISHER was elected to the National Academy of Engineering and became a member of the Commission on Geosciences, Environment and Resources of the Academy this year. Also, he had the good fortune to receive the Sidney Powers Medal from AAPG, their highest honor, at the annual meeting in June. Advisory Council Honorary Life Member Don Boyd, was his generous and gracious biographer.

During the year, Bill concluded his term as chairman of the Board on Earth Sciences and Resources of the National Research Council, as well as, a term as president of AIPG. He began a term as president of GCAGS.

Bill gave several invited lectures during the year including invited testimony to the U.S. House of Representatives Committee on Natural Resources and a week of lectures in China.

• • •

The biggest event of the year for **BILL GALLOWAY's** family was the trip to Adelaide, followed by their first-ever serious sight-seeing trip through the tourist traps of Australia. They flew to Alice Springs, drove to Ayer's Rock, migrated on to Cairns (pronounced "Cans") for tours of the rain forest and, of course, the Great Barrier Reef. Finally, a stop back through Sydney to revisit favorite sights and friends.

Personally most satisfying was Bill's receipt of the Educator of the Year award from the Gulf Coast As-



Aaron Land takes a sample of the Iridium-rich clay bed at the KIT boundary with parents, Lynton Land and Judy Lang, watching.

sociation of Geological Societies, which was presented at the October meeting in Shreveport.

His AAPG short course on facies in sequence stratigraphy continued to attract sufficient enrollment to make. He's also continued presentations in company schools. Like most practitioners, Bill finds sequence strat to be a thought-provoking, exciting, and frustrating adjunct to facies-oriented basin analysis. At home, he taught his usual courses: Clastic Depositional Systems, and Trend and Basin Analysis. Because Dick Bufferler took a semester off, Bill combined Sequence Stratigraphy into his usual basin analysis seminar, and tried his best to sound convinced of some of the models.

• • •

This year will mark **BRENDA GEORGE's** greatest contribution to date. Her daughter, Margaret Jean Williams George, was born on March 23, 1994. The nine months prior to her birth were the slowest of Brenda's life and the months since then have been the fastest and most challenging. Maggie is doing very well, and Mom and Dad are delighted.

In August, Brenda traveled to Jamaica with Lynton Land, his family, and a group of students. Everyone helped enlarge her algae collection—they even captured elusive dasyclads. In September, she had the good fortune to attend the Alpine Algae meeting, an international conference on fossil algae held in the village of Gosau, Austria. The field trips were, for Brenda, the most interesting that she

has ever participated in. Every stop brought opportunities to learn about new kinds of algae, and she enjoyed learning about the research on fossil algae going on around the world.

Brenda settled back down in Austin to help plan another overseas venture: the University of Cambridge and University of Texas field trip exchange. This spring break Dr. Tony Dickson led 15 of our students and two participants from industry on a field trip along the southern English coast. Being eight and one half months pregnant at departure time precluded Brenda's participation in this year's trip. Next spring, however, she will lead students from England to the Sacramento and Guadalupe Mountains in Texas and New Mexico. They hope that this will be the beginning of a long and mutually enjoyable tradition.

• • •

Teaching and travel were the mainstays of **MARK HELPER's** agenda this past year. He was again involved with Introductory Field Methods (with Earle McBride), Gems and Gem Minerals, and the summer field course. The Gems and Gem Minerals course was at capacity both fall and spring semesters and continues to attract an extremely wide cross-section of students from nearly all colleges on campus. Great weather and a somewhat smaller class made for three good weekends of mapping for the Field Methods course this spring. New field projects in Colorado, Wyoming, and Montana, and much more camping than in previous years, added new

challenges to an exciting summer field class, despite some rather wet and cold weather. Meetings took Mark to Washington and Boston in the fall, and in late November he was off to Antarctica for two of the most unique and memorable months he's ever experienced. The trip took them to Auckland, Christchurch, McMurdo Station, South Pole, an Argentine station on the Weddell Sea coast, and the Shackleton Range at the westernmost end of the Transantarctic Mountains. In all, they crossed Antarctica twice, both times in the cargo hold of a ski-equipped Navy LC130 aircraft. The first flight carried them and about five tons of food and field gear for two months of field work; the second brought them back with a return load of about three tons of rocks. Two months of camping and traveling on the ice have forever changed Mark's perspective on the occasional winter ski trip!

• • •

The summer of 1993, for **MICHELLE KOMINZ**, was largely devoted to teaching the introductory physical geology summer school course. Devotion to teaching duties during the fall was only broken for a short three-day trip to the annual Geological Society of America meeting in Boston. However, her schedule allowed her to give invited lectures on her research in cycles and in thermal blanketing of sediments at Northwestern University, Southern Methodist University, and the University of Michigan. Not to be outdone, the Chinese Petroleum University, East, in Shandong, invited her to lecture for a week on the subjects of cyclostratigraphy and quantitative basin analysis. China was a very different experience. Delivering two three-hour lectures a day, with translator, was at least as hard on the lecturer as on the students. The big surprise came when they decided to videotape her last lecture, and asked her to do it as she would deliver a lecture in the U.S. Her students will appreciate what a surprise this was for the Chinese, who are taught to sit quietly through lecture, never questioning or participating. Instead they found themselves participating, in a foreign language, on video-tape! The Chinese were great; the food was healthy, tasty and exotic. A hike up the Great Wall just before returning to the U.S. capped an amazing experience.

RICH KYLE reports a busy year of teaching and research in ore deposits geology. He taught a core course in Economic Geology for the Energy and Mineral Resources graduate program in Petroleum Engineering, combined with the undergraduate Mineral Resources course. Rich also taught Geology 335, a popular non-majors course on the geology and mineral resources of Texas, during the spring semester. He continues to serve as the undergraduate advisor and reports that the undergraduate population continues to show increased strength with over 160 geological sciences majors.

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 Ertsberg district in Irian Jaya, and regional studies of major siliciclastic-hosted zinc-lead deposits in Alaska and China. Rich continues to serve as the co-editor for *Ore Geology Reviews*, an international journal of ore deposits geology.

The summer was full, including teaching a two-day short course on sedimentary lead-zinc deposits for the Earth Resources Foundation at the University of Sydney, then some more lecturing to support traveling around the Outback to visit some of Australia's major lead-zinc deposits, namely Mt. Isa and McArthur River. He met with former student Paulo Vasconcelos now on the faculty of the University of Queensland in Brisbane, as well as former Exxon colleague, Michael Fellows, who works out of Townsville. Then on to Irian Jaya for some field work on the lower Tertiary stratigraphy, as well as the copper-gold orebodies of the Ertsberg district.

Last summer the Kyles began the adventure of building a new home; moving began phase two of the experience. Brock and Brett advance to the ninth and sixth grades, respectively, and are busy in many extra-curricular activities. In USA Karate Federation regional and national tournaments, Brett and Linda were gold medalists, respectively. Linda's golds

in her division earned her an All American Athlete award and title of National Karate Champion. Linda continues as an editor and writer, is a board member for Prevent Blindness, and has given 500 hours of service at Texas Recording for the Blind.

• • •

The event of the year for **MARTIN LAGOE** was the fall semester spent at Aarhus University in Denmark. He and his family arrived in Aarhus on a cold and rainy afternoon in mid-September and left an abnormally snowy Denmark in mid-December. In between, Martin was a visiting professor in the Geological Institute's program in micropaleontology. His host, Professor Karen Luise Knudsen, and her students made sure that his stay was both busy and rewarding. He taught two graduate courses, "Quantitative Methods in Biostratigraphy and Paleoenvironmental Analysis" and "Paleoceanography of the North Pacific Ocean." Field trips and weekend jaunts allowed the Lagoes to visit several areas of the Jutland Peninsula. They especially enjoyed seeing the beautiful rolling countryside and learning more about the areas of Viking and Medieval heritage. Longer trips included visits to Copenhagen and a trip to Norway (Oslo and Bergen). In particular the train trip from Oslo to Bergen was spectacular. On their way back to Texas, they traveled to Cologne, Germany; Brugge, Belgium; and Amsterdam, before finally returning just before Christmas.

On returning to reality, Martin has been busy with graduate student advising, serving as associate editor of the *Journal of Foraminiferal Research*, and activities associated with the North American Micropaleontology section of SEPM. He was also recently

Gary Kocurek among the gypsum dunes (White Sands, New Mexico).



lected to the board of directors of the Cushman Foundation for Foraminiferal Research. Summer plans are to attend the International Symposium on Foraminifera in Berkeley this July where Martin and his students will present several papers on our research and he will co-teach a short course on sequence biostratigraphy.

During the summer of 1993, Judy, Aaron, and **LYNTON LAND** and Brenda Kirkland George shepherded a group of students (including the odd undergraduate!) to the Discovery Bay Marine Laboratory on the north coast of Jamaica. The troops examined the Miocene and Plio-Pleistocene rocks, but spent most of their time in the water exploring the various reefs. Before arrival, we were told that the Laboratory Land Rover, which was needed for extensive excursions inland, was "frail." "Frail" turned out to mean "doesn't have a transmission," so some of our inland plans were curtailed. Aaron survived middle school and moves on to Westlake High School next year. He's taller than his mother, and almost as tall as his dad, and is the unchallenged Macintosh expert in the family (we're on our fifth Apple). If only he could pass Spanish! Judy is expanding her "Vanishing Species of Texas" museum exhibit, working on the "reef" in Biosphere II, and, together with students and colleagues, continues coral bleaching work in the Bahamas. The family plans to spend two weeks in Italy with Luigi during the summer of 1994. Stuarto, Carolyn, and Clayton will be sure to report next year!



LEON LONG taught a graduate course in isotope geology, and team-taught the big introductory course (Geo 303) with Steve Grand in the fall, and with Doug Smith in the spring. During intersession Leon taught the field course designed for students who are not geology majors. He gave a poster session at the national GSA meeting in Boston, and was co-author of four papers during a week of meetings of isotope geochemists from all over the world. Such meetings occur only once every four years, and this one, nicknamed ICOG-8, was in Berkeley. Summer a year ago, Leon and Mary had a series of wild adventures in Kenya, Tanzania, and Uganda, and during the past summer it was more of the same in South Africa, Botswana, Zimbabwe, and Namibia. It was Leon's sixth trip to Africa; he just keeps coming back again and again to that exciting place. The latest journey was partly for university business—going into the field with Doug Henderson and with another prof to look at geology and collect samples for Doug's thesis research.

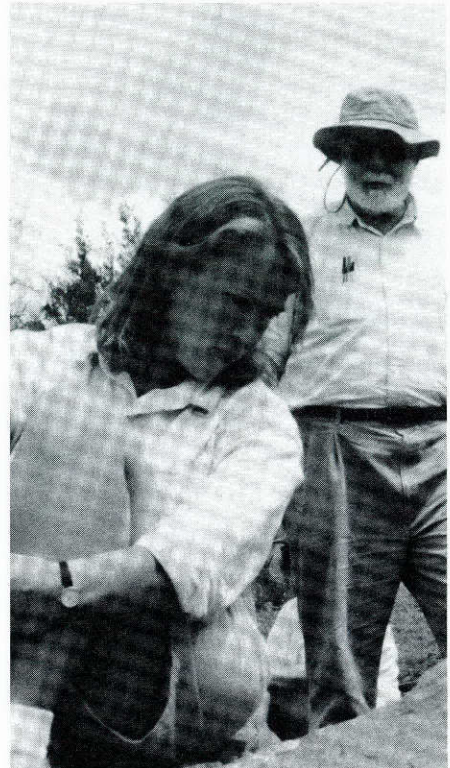
Leon was also the very pleased recipient of the Carolyn G. and G. Moses Knebel Distinguished Teaching Award from students and faculty in the Department in recognition of his efforts over the years in the introductory course.

In July **ERNIE LUNDELIUS** attended the 66th International Theriological Congress in Sydney, Australia, where he participated in a symposium on the response of mammalian communities to late Quaternary climatic change.

Ernie and Judy became grandparents with the arrival of Glenn Ernest Welch in Bryan, Texas on June 6, 1994.

Ernie taught Geology 504, Life Through Time, in the fall and Topics in Quaternary Geology and Geology 401, Physical Geology, in the spring.

ART MAXWELL retired from the Department and as director of the Institute for Geophysics on August 31, 1994. He will remain in Austin and will continue to be associated with the Department as a professor emeritus.



Dan Barker helps student on the fall 1993 GEO 298T field trip.

EARLE MCBRIDE became the graduate advisor in January and is now the "father" of 180 graduate students. He reports that it is a great opportunity to work with these remarkably talented and energetic people. Earle completed his second year on the council of the National Association of Geology Teachers and also completed putting together several slide sets that can be used as visual aids in introductory courses for the NAGT. Other activities include serving on the advisory council of the geology foundation of his undergraduate *alma mater*, Augustana College; serving on the editorial boards of *Sedimentary Geology* and *Journal of Egyptian Petroleum Geology*; and helping plan and organize the GCAGS meeting to be held in Austin in October.

Last summer Earle participated in the GSA-sponsored field trip to Iceland. The volcanic features were spectacular, of course, but the sands composed of basalt, rhyolite, and pumice were of special interest. One incident left a big impression on Earle. At the car parking lot at the base of a crater a car pulled in and stopped. Two Icelandic women and a boy about ten years old got out. The boy tied around his waist a ten-foot-long rope attached to a log that weighed about ten

Earle McBride on the fall 1993 GEO 298T field trip.

pounds. The three Icelanders walked off up the trail to the crater with the boy dragging the log behind him. I surmise that the weight of the log was to deter the kid from running too far ahead of his mother. The boy acted as if this was an everyday event.

This summer Earle is teaching two weeks of the summer field course with Jay Banner, Lynton Land, and Jim Sprinkle in parts of New Mexico, Colorado, and Utah. Then Earle attends the AAPG meeting in Denver, where he presents a poster of his work with Kitty Milliken, Duke Picard, and Italian co-workers on the patterns of calcite cement in sandstones from the northern Apennines, and is co-presenter of a poster on the diagenesis of the Ivishak with Nina Harun. Earle is also serving as the citationist for Duke Picard (Univ. of Utah), who was awarded Honorary Membership in the AAPG. After the meeting in Denver, Earle will examine cement patterns in sandstones in five western states, accompanied by Duke.

• • •

Since returning from her ODP adventure and last summer's field work in Italy, **KITTY MILLIKEN** has stayed mostly close to home. Except for two posters at GSA in Boston and a visit to lecture at Michigan Tech University (Houghton, Michigan, in mid-January!), she has tried to concentrate on data collection and writing. This spring she was pleased to be invited to speak at one of the Austin Geological Society's monthly luncheons. Austin public schools were out on the day of this meeting, so daughter Katy (now eight) came along. The biggest round of applause went to Katy when the chairman graciously introduced her as one of the day's guests. She was a little embarrassed perhaps, but she still loved it. Kitty thinks that she will be less inclined to want to come along the next time she goes to a meeting—Katy says Kitty's talk was boring and she didn't understand a word of it!

• • •

SHARON MOSHER reports another busy year of teaching, administration, graduate supervision and research. She enjoyed serving as a GSA Councilor and on the ETS Geology

Gary Kocurek stands within the Jurassic and Triassic units of a dissected monocline, southwest of Escalante, Utah.

GRE advisory board and finished up her term as IGCP U.S. National Committee Chairman. The most time consuming committee activity, however, was chairing the structure/tectonics search committee for another year. Fortunately, with the hiring of Jim Connelly, who started in January, and of Randy Marrett, who will start in the fall, next year will *not* be another killer year!

Sharon's graduate students continued to be very productive and intellectually stimulating. She was delighted when Mary Johns won a very well deserved Best Poster Award at the Annual GSA meeting in Boston this past fall for her poster on "Physical Models of Fold Interference: The Role of Rheology."

The highlight of the year, however, was teaching field camp in Montana again. "Mark and I really enjoyed having our girls, Sarah (10) and Lisa (7) with us at field camp this summer. They survived going out into the field everyday and camping for three weeks. By the end of field camp, they had even started learning to map!"

• • •

JACK SHARP and family had an exciting six-months in Adelaide, Australia. It was scientifically stimulating. The Aussies are ahead of us on recharge/discharge relationships in semi-arid and arid zones. Several "old" projects were wrapped up and some new ones begun. The whole family was involved in a bad car crash on Kangaroo Island, but are all recovering fully. Eldest daughter, Katie, is in her second year at the The College of Wooster (and both taking and TAing a second geology course!)

• • •

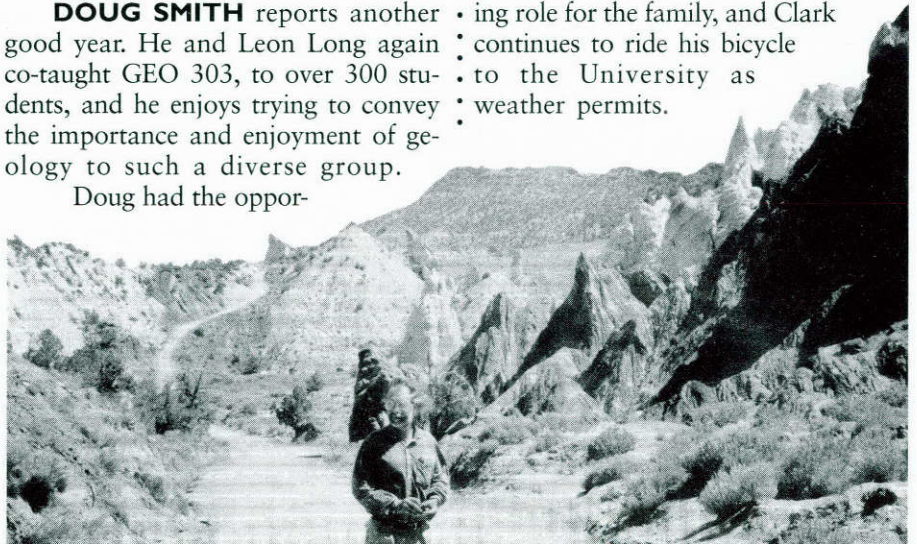
DOUG SMITH reports another good year. He and Leon Long again co-taught GEO 303, to over 300 students, and he enjoys trying to convey the importance and enjoyment of geology to such a diverse group.

Doug had the oppor-

tunity to explore spectacular geologic settings while attending meetings in Arizona, California, and Colorado. His research led to investigations of low-temperature metamorphic processes in the mantle, a challenging diversion.

• • •

In addition to serving as Chairman, **CLARK WILSON** taught the graduate data processing class in the Fall semester. Fall travel included a week-long earth observation satellite workshop in Newport Beach associated with National Research Council service, a brief trip to the GCAGS meeting in Shreveport, a week-long trip to Honolulu in November for a Joint Oceanographics Institutions workshop, and another to San Francisco in December for the American Geophysical Union meeting. Clark's wife, Ellin was fortunately able to come along on both the San Francisco and Honolulu trips. In the Spring, Clark taught the geodesy class, which included a Spring Break field trip to McDonald Observatory. The family came along, and greatly enjoyed the scenery in the Davis Mountains and the comfortable mountain-top life in House A, the Observatory Director's residence. In the Spring and summer, travel included two trips to Washington, D. C., and one to the Spring American Geophysical Union Meeting in Baltimore, and to the AAPG in Denver (followed by Estes Park with the family). At home, daughter Kirsten is ready to start the fourth grade, and daughter Sissel is preparing for first grade. Clark served as Indian Guide Tribe Chief this year, and went on several camping trips with the girls as part of that. Ellin continues her management consulting role for the family, and Clark continues to ride his bicycle to the University as weather permits.



1993-94 VISITING LECTURERS

- **Dr. J. Lawford Anderson**
University of
Southern California
- **Gary Axen**
CICESE, Ciencias de la Tierra,
Ensenada, Mexico
- **Mary J. Baedeker**
U.S. Geological Survey,
Reston, Virginia
- **Stan Ballard**
Canyon Resources,
Midland, Texas
- **Albert Bally**
Rice University
- **Nathan Bangs**
Institute for Geophysics
- **Mark Barton**
University of Arizona
- **Don Bebout
and Rick Major**
Bureau of Economic Geology
- **Don Blankenship**
Institute for Geophysics
- **Peter Blum**
Ocean Drilling Program,
College Station, Texas
- **Tom Brown**
City of Austin
- **Mark Burn**
Bureau of Economic Geology
- **Martin Buzas**
National Museum of
Natural History,
Smithsonian Institution
- **Jer-Ming Chiu**
Memphis State University
- **Peter Clift**
Ocean Drilling Program,
College Station, Texas
- **Sigrid Clift
and Scott Hamlin**
Bureau of Economic Geology
- **Mike Coffin**
Institute for Geophysics
- **Peter Copeland**
University of Houston
- **Reinold Cornelius**
• Cornell University
- **Todd Council**
• Radian Corporation
- **John E. Damuth**
• University of Texas at Arlington
- **Shirley Dutton**
• Bureau of Economic Geology
- **Jerome Dymant**
• McGill University
- **Robert Elsinger**
• Humble Geochemical Services,
• Houston, Texas
- **Rod Ewing**
• University of New Mexico
- **John Firth**
• Texas A&M
• Ocean Drilling Program
- **Steve Fisher**
• Bureau of Economic Geology
- **Mike Gardner**
• Bureau of Economic Geology
- **Jan Garmany**
• Institute for Geophysics
- **John Garver**
• Union College
- **John Goff**
• Institute for Geophysics
- **Robert Goldstein**
• University of Kansas
- **Scott Goode
and Missy Jackson**
• Bureau of Economic Geology
- **Gary Greene**
• U.S. Geological Survey,
• Menlo Park, California
- **Bob Hardage**
• Bureau of Economic Geology
- **James W. Head III**
• Brown University
- **Sue Hovorka**
• Bureau of Economic Geology
- **Peter Hudleston**
• University of Minnesota
- **James Ingle**
• Stanford University
- **Gilbert Kelling**
• University of Kelling,
• Staffordshire, England
- **Charles Kerans**
• Bureau of Economic Geology
- **Juergen Kienle**
• University of Alaska
- **Stephen F. Kirby**
• U.S. Geological Survey,
• Menlo Park, California
- **Paul Knox**
• Bureau of Economic Geology
- **Hans Ave Lallement**
• Rice University
- **Will Lamb**
• Texas A&M University
- **Thorne Lay**
• University of California
• at Santa Cruz
- **Stephen Lewis**
• BP Exploration
- **Juan M. Lorenzo**
• Louisiana State University
- **Robert Mace**
• Bureau of Economic Geology
- **Dan MacLemore**
• Roy F. Weston Consultants
- **Kathie Marsaglia**
• University of Texas at El Paso
- **Andrew Miegs**
• University of Southern California
- **Bill Mullican**
• Bureau of Economic Geology
- **Seay Nance**
• Bureau of Economic Geology
- **Dag Nummedal**
• Louisiana State University
- **Eric Oswald**
• Exxon Production and Research
- **Carolyn Peddy**
• Houston Area Research Center
- **J. M. Rensberger**
• University of Washington
- **Mark A. Richards**
• University of Washington
• at Seattle
- **Peter S. Rose**
• Rose & Woodruff Associates
- **Carol Ruthven**
• Bureau of Economic Geology
- **James Saunders**
• Auburn University
- **David Schimel**
• National Center
• for Atmospheric Research
- **Andrew Scott**
• Bureau of Economic Geology
- **Mrinal K. Sen**
• Institute for Geophysics
- **Robert Sheridan**
• Rutgers University
- **A. Richard Smith**
• Corrective Action Team,
• Texas Natural Resource
• Conservation Commission
- **Paul Stoffa
and Mrinal Sen**
• Institute for Geophysics
- **Ed Sudicky**
• University of Waterloo,
• Ontario, Canada
- **Doug Swift**
• Bureau of Economic Geology
- **Tina Tsui**
• University of Texas at Arlington
- **Roger Tyler**
• Bureau of Economic Geology
- **Alan Walker**
• Johns Hopkins University
- **Martha Oliver Withjack**
• Mobil Research and
• Development Corporation
- **Xiannan Xiang**
• Bureau of Economic Geology
- **Alex Zaporozec**
• University of Wisconsin
- **Mary Lou Zoback**
• U.S. Geological Survey,
• Menlo Park, California



Each year the Department invites several speakers who present lectures sponsored by endowed lectureships. The endowed lectureships provide an opportunity for more in-depth studies of the areas represented. Special thanks go to these individuals for their lectures during the 1993-94 academic year.

ENDOWED LECTURERS 1993-94

EDWIN ALLDAY CENTENNIAL LECTURESHIP IN GEOLOGICAL SCIENCES

WALTER ALVAREZ
University of California at Berkeley

“Catastrophic Extinction
by Asteroid Impact – the
Alvarez Impact Hypothesis”

GEORGE ROSSMAN
California Institute of Technology

“Technological modifications
of the Color of Gemstones”

...

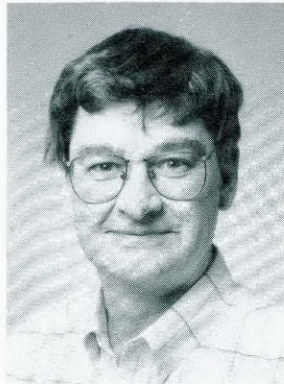
“Hydrous components
in Anhydrous Minerals”

...

“South American Crystal Quest”

DONALD SANGSTER
Geological Survey of Canada

“Recent Dating of
North American MVT Deposits”



George Rossman



Donald Sangster

DON R. AND PATRICIA KIDD BOYD CENTENNIAL LECTURESHIP IN PETROLEUM EXPLORATION

ROBERT WEIMER
University of Colorado

“Sequence stratigraphy—a historical
perspective of concepts, problems
and challenges in exploration”

...

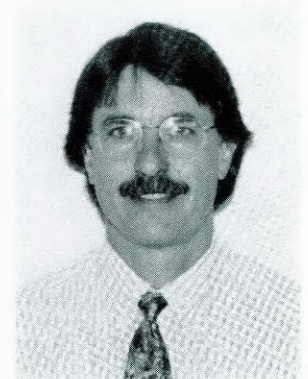
“Incised valley fills and associated
facies: sequence stratigraphic
markers in foreland and cratonic
basin exploration”

...

“Basin center—fractured source rock
plays within tectonically segmented
foreland (back-arc) basins: targets
for future exploration”

...

“Sequence stratigraphic concepts
applied to integrated oil and gas field
development with case histories”



Anthony Barnosky

CLARA JONES LANGSTON CENTENNIAL LECTURESHIP IN VERTEBRATE PALEONTOLOGY

ANTHONY BARNOSKY
University of California at Berkeley

“Effects of Miocene tectonism
on evolution of mammals in
northern Rocky Mountains”

...

“Testing effects of seasonality
on mammalian community
composition with a mid-Pleistocene
fossil sequence from the
Colorado Rockies”

...

“Recognizing mosaic evolution and
its implications in the fossil record”



*Don and Patricia Boyd pose with Robert Weimer,
this year's Don R. and Patricia Kidd Boyd
Centennial Lecturer in Petroleum Exploration.*

**FRED AND FRANCES OLIVER
CENTENNIAL LECTURESHIP
IN HYDROLOGY AND
WATER RESOURCES**

C. WILLIAM FETTER

University of Wisconsin, Oshkosh

“Case History of
groundwater contamination and
remediation, Seymour Hazardous
Waste Site, Indiana”

...

“Contaminant Hydrogeology”

**JUDD AND CYNTHIA OUALLINE
CENTENNIAL LECTURESHIP IN
GEOLOGICAL SCIENCES**

RICK ALLMENDINGER

Stanford University

“Fractal analysis of
fault populations”

...

“Determining ages
of deformation in fold
thrust belt.”

JOHN GROTZINGER

Massachusetts Institute of Technology

“Tectonic and climatic
controls on foreland basins
(1.9 Ga) flanking a small
Archean continent,
northwest Canada”

...

“Facies and evolution
of Precambrian
carbonate platforms”

...

“Architecture of stratigraphic
sequences prograding from
the cratonic side of the
1.9 Ga Kilohigok foreland basin,
Northwest Canada”

...

“Progress and problems
in stratigraphic
forward modeling”



EMERITI NOTES...

VIRGIL E. BARNES

A tree fell on the roof of our home during the May 29-30 midnight storm and, except for a couple of hospitalizations, things have been rocking along as usual. I am still revising sheets of the Texas Geologic Atlas. During the fiscal year the Palestine, Lubbock, and Big Spring atlas sheet revisions were published.

SAMUEL P. ELLISON, JR.

The *Geology of Texas* manuscript has been rejected by the University of Texas Press. Now other possibilities will be searched. The only publication for the year is “The Branson and Mehl Conodont Era” in the *Forschungsinstitut Senckenberg Courier* 168, in the *Willi Ziegler Festschrift*, 1994. Dottie and Sam visited Denver in late October 1993 to visit their son, daughter-in-law, and two grandchildren. The last day before scheduled to return to Austin, Sam slipped on a gravel path, fell, and broke his right leg. The leg was put back together at the Swedish Medical Center, Denver. This has healed and Sam is again ambulatory.

Dr. and Mrs. Willi Ziegler from Frankfurt, Germany, visited the Ellisons in Austin in October and stayed at one of the guest rooms at the Westminster Manor.

PETER T. FLAWN

During 1993-94, I continued my involvement with the Superconducting Super Collider as a member of a committee to advise the Governor on beneficial use of the assets at the site and as a member of the Texas National Research Laboratory Commission. Service on corporate boards and as a director of Southwest Research Institute still occupy much of my time.

BOB FOLK

Bob went to Italia again in 1993 (surprise), still following the overall theme of investigating the role of mineral formation as influenced by nannobacteria (0.1-micron dwarfed forms). His assistant was Emma (Troy) Rasbury; among other things, they worked on the Triassic dolomites at Portovenere and Cortina, marbles at Carrara, and hot springs at Viterbo. Folk also lectured at the University in Bari, down in the heel. Their chief new find, however, was at the island of Vulcano, off the northeast corner of Sicily. How did they happen to go there? Having worked with Leo Lynch on his PhD research on the Frio sandstone, they had found evidence of possible bacterial precipitation of clay minerals. Examples of other clays and bentonites revealed that this was not such a crazy idea. So, Vulcano was a great place to study the triple interface between volcanic ash, seawater, and sulfide-rich hydrothermal water, to see what role bacteria might play in the alteration of fresh volcanic sands. Vulcano is a wonderful island for scenery, active volcanic geology, bathing beaches and hot springs, sulfuric mud bathing which Emma loved, and, needless to say, outstanding food. Hydrothermal waters emerge at the beach so that in some places the beach is too hot to walk upon. One has natural fizzy-hot “jacuzzis,” warming caves with sulfur vapors, etc. The samples they collected showed amazing examples of nannobacteria coating and boring into volcanic glass and olivine, and eventually converting older volcanic sediments to masses of tiny nannobacterial balls. Inspired by this example, Bob later looked at weathering granites in Llano, New York, and North Carolina, and yes, nannobacteria seem to be the active agents converting feldspars to clays. Perhaps they are the key to weathering processes worldwide. Preliminary findings indicate that nannobacteria play an important role in such things as forming caliches, catalyzing the deterioration of concrete, rusting of iron, and greening of copper.

After the field season in Italy was over, Marge met Bob in Milano and they enjoyed Vicenza. Then they took the train for a week’s touring of Poland. They saw Krakow, Czestochowa,

Warsaw, and Wroclaw. Poland was interesting, but the food cannot compare with Italy and the coffee is wretched. They also spent several days in Prague, which is stunningly beautiful with all the buildings in good repair and freshly painted. Bob and Marge had been chased out by the Russian invasion in 1968 and have since felt very emotional about this breath-taking city. They returned to Italy to see Tarvisio in the Alps, and Venice.

During this past academic year, Bob lectured on bacterial dolomite at GSA (Boston), and Marge and he enjoyed touring that city. He also lectured on bacteria and minerals at a karst hydrology meeting in Colorado, an International Geomorphology Congress in Hamilton, Ontario, UT-Port Aransas and Duke-North Carolina. During the year also, Bob worked on the SEM with two visitors: Giordana Gelato from the University of Bari, Italy, on Cretaceous cherts; and Vicky Pedone, now a professor at California State University at Northridge, on Salt Lake (Utah) stromatolites. Of course, hordes of nannobacteria were found in both studies.

ARTHUR E. MAXWELL

This past year work was completed on measurements of the heat flow in the Gulf Mexico Abyssal Plain. Forty-eight measurements of heat flow through the ocean floor at ten separate locations, along with magnetic, gravity, and wide-angle seismic measurements, as well as the examination of sediment cores have provided data to allow accurate determination of the heat flow. Corrected values range from 41 to 44 milliwatts per square meter as compared with 47 to 50 mW/m² for other oceanic basins of comparable age. This lower heat flow suggests that the cooling in the Gulf of Mexico's Jurassic lithosphere is further advanced than other oceanic basins. The significance of this lower heat flow is being investigated. This research was supported by the National Science Foundation and funds from the Institute for Geophysics (UTIG). Drs. John Sclater, (former Department member) and Seiichi Nagihara (recent PhD recipient from the Department),

both now at the Scripps Institution of Oceanography (UCSD), and Yosio Nakamura and I of the Department and UTIG, along with Drs. J. D. Phillips, E. W. Behrens, L. A. Lawver, all of UTIG, participated in the program.

WILLIAM R. MUEHLBERGER

The best thing to happen was the appearance in print (finally!) of the south half of the Tectonic Map of North America, that has been dragging on for what seemed to be a lifetime. I then wrote a brief guide to reading the map which was published by AAPG, so that whoever buys a copy of the map will also get the guide. The north half is underway with the main incomplete segment being the bulk of the Canadian Shield. With any luck at all, I should have the drafting done by this December!

Retirement has its benefits, the main one being that you can travel without worrying about missing classes or asking a colleague to sit in for you. As a result, Sally and I went to GSA in Boston a week early to tour New England and its gorgeous fall colors. Similarly for AAPG-New Orleans and a meeting of the AAPG Foundation Associates on Mobile Bay, Alabama (both in the spring). We drove via different circuitous routes and saw much of Louisiana and Mississippi that we hadn't seen before. We also took a month to take a two-week cruise around Indonesia, to which we added five-day stays in Bali and Singapore.

I continue to brief Shuttle astronauts on targets to photograph on their flights and take the newly appointed astronauts on a four-day field

trip to northern New Mexico to teach them geology. I seem to be giving his "Shuttle views of the Earth" talk to all kinds of groups from scout troops to retirement homes, high school science classes to honors groups, and to Texas exes.

The Big Bend region still attracts me with field trips to visit students or to promote new students into field projects (with someone else as supervisor). The Solitario report has been through peer review and is presently being revised. It should be ready for the printer late this fall.

AMOS SALVADOR

The majority of my "retirement" time during the last year was devoted to the publication and promotion of the second edition of the *International Stratigraphic Guide*, and to an investigation of the potential demand and possible sources of supply of energy during the 21st century.

The second edition of the *Guide*, of which I am the editor, was co-published by the International Union of Geological Sciences (IUGS) and the Geological Society of America. It is an extensive revision of the first edition of the *Guide*, published in 1976, and represents the product of 16 years of work by the International Commission on Stratigraphic Classification (ISSC) of the IUGS International Commission on Stratigraphy. Even though the final manuscript was submitted to the IUGS in March of 1993, it took more than a year of negotiations with Wiley to get permission to reuse material from the first edition (of which it was the publisher) and to get through the editing, galley-proofing, etc. The second edition of the *Guide* became

Bob Folk and Troy Rasbury relax in a hot steam cave after swimming.



finally available for sale in June. Knowing that the success of the *Guide*—whether and how widely its recommendations are accepted—will depend to a great extent on the publicity it receives, I have been corresponding with geologists throughout the world to encourage the preparation and publication of reviews in widely read journals, and the inclusion of advertisements for the *Guide* in these journals.

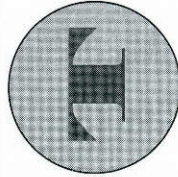
What available time I had left from working on the *International Stratigraphic Guide*, I devoted to an attempt to predict the potential demand and possible sources of supply of energy during the 21st century, a subject that has interested me for many years, and to which I had been able to devote very little time while I was teaching. I have approached the prediction of the demand by attempting to project into the 21st century the trends of population growth and consumption of energy per capita since 1950. The expected contributions by the possible sources of energy—oil, gas, coal, etc.—I am trying to predict based on the estimates of ultimate recoverable resources for each possible source. It is not an easy project but certainly an extremely interesting, and frightful one.

JACK WILSON

Jack Wilson continues to enjoy good health. He and Ruth are looking forward to a helicopter tour in the Canadian Rockies. In the meantime, Jack does the yard work at Lake Travis. On occasion, when he is tired of yard work, he goes to the VP Lab to see what is going on and to answer questions about this or that old bone.

KEITH YOUNG

I am still studying and describing the Upper Cretaceous ammonites of Alabama. The ammonites from Irian Jaya are still quite exciting. The only marine rocks known from Arizona, also producing ammonites, occur in the Chiricahua Mountains. Ann and I have spent most of our out-of-Austin time in Dallas or Harlingen visiting grandchildren. We did attend Ann's 50th reunion of her graduating class from high school in LaCrosse, Wisconsin, in September.



N

R

M

T

A

R

P

E

D

OUTREACH

Promoting the understanding of science and engineering, UT hosted its 34th annual Texas Energy Science Symposium for High Schools during the month of June. Bill Woods, our Executive Assistant, led six tours for over 100 high school students and teachers. Covered in the tour was our Display Room which houses collections of quality minerals and gems and our lapidary lab where students are taught how to facet gemstones. Woods spoke briefly on faceting gemstones, the process of making synthetic gems, and the gem and mineral industry. Participants in TESS are chosen by their schools on the basis of academic excellence and are sponsored by members of the Texas Atomic Energy Research Foundation: Central Power and Light Co., Houston Lighting and Power Co., TU Electric, and West Texas Utilities Co. This is the fifth year that Geological Sciences has been asked to participate during the informal tours of the UT-Austin campus. We were pleased to note that the tour of Geological Sciences was rated as one of the top two most interesting tours on campus.

— Bill Woods



Bill Woods conducts a tour of how gemstones are faceted (top) and the Department's gem & mineral display room for participants of Texas Energy Science Symposium.

PUBLICATIONS:

BOLDFACE :
highlights the U.T. affiliates

ASTERICK:
signifies a graduate student

BOOKS

Castagna, J. P., and **M. M. Backus**, editors, 1993, Offset-Dependent Reflectivity—Theory and Practice of AVO Analysis: *Investigations in Geophysics No. 8*, Society of Exploration Geophysicists.

Long, L. E., 1994, *Geology: an introductory textbook*: 6th edition, American Press, Boston, 535 p.

O'Dunn, S., Sill, W., and **Long, L. E.**, 1993, *Exploring Geology: Introductory laboratory activities*: Ginn Press, Needham Heights, 189 p.

ABSTRACTS

Austin, J. A. Jr., Davies, T. A., Fulthorpe, C. S., and **Lagoe, M. B.**, 1994, Late Quaternary periglacial marine sedimentation and multi-frequency approaches to sequence stratigraphy: New Jersey outer continental shelf: *Eos, Transactions American Geophysical Union*, v. 75, no. 16 supplement, p. 350-351.

Backus, M. M., 1993, Basic Considerations for Fluid Anomaly Seismic Signal Detection, and Mapping Reservoir Properties: *3rd International Congress of the Brazilian Geophysical Society, Expanded abstracts*, p. 1485-1491.

Banner, J. L., Edwards, R. L., Kimbell, T. N., and Humphrey, J.D., 1994, Timing of mixing zone cementation in a Late Pleistocene coral reef, Barbados, W.I.: *AAPG Annual Convention Abstracts*.

Banner, J. L., Edwards, R. L., Kimbell, T. N., and Humphrey, J.D., 1993, Geochemistry and geochronology of aragonite cementation in an ancient marine-meteorite mixing zone, Barbados, W.I. *Eos, Transactions American Geophysical Union*, v. 74, no. 43, 328.

Banner, J. L., **Musgrove, M.***, and Humphrey, J. D., 1993, Carbon and

Faculty Research

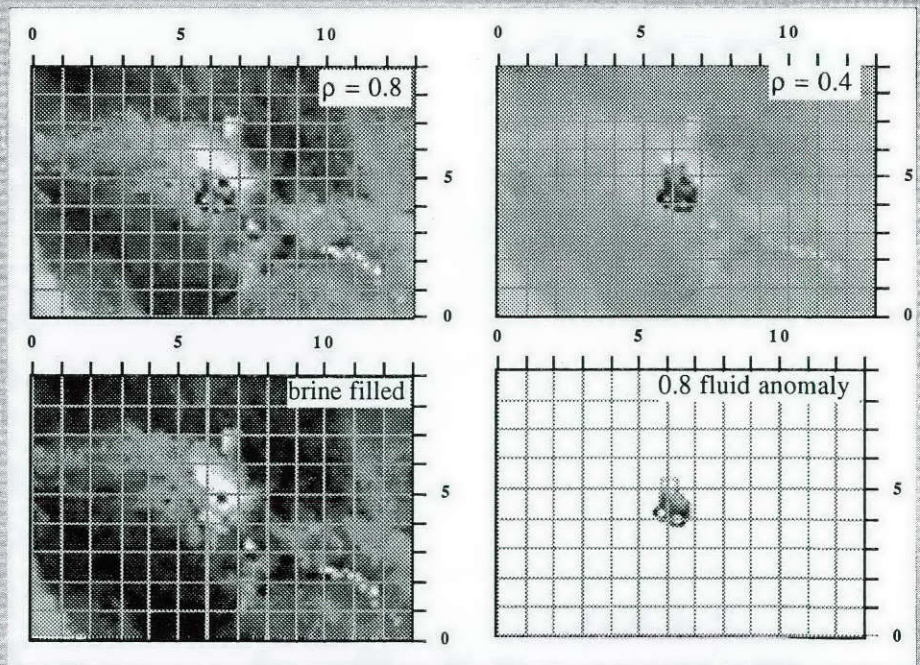
Milo M. Backus

Professor,

Shell Companies Foundation Distinguished Chair in Geophysics
PhD—1956, Massachusetts Institute of Technology

Exploration geophysics: geophysical data processing and interpretation

WE CONTINUE THE QUEST for a reasonable earth model to reproduce the observations, wherein the observations may consist of 3D marine seismic data plus wireline log data, and the earth model consists of a 3D model of stratal geometry and rock properties. Sophisticated visualization and analysis of 3D seismic data is now viable on low cost desktop computers, and we are exploring the effective utilization of this rather revolutionary development, including the use of movies and the microscope focusing knob analog. I have also been working with students studying data from on-shore fields in Texas at the Bureau of Economic Geology. The thrust of this research is the evaluation of the effectiveness of reservoir property predictions based on the combination of all available data, geological models, and geophysical inversion (i.e. geostatistics) techniques. We continue to address an improved characterization of the fluid anomaly signal detection problem, and issues in the use of amplitude versus offset. A synthetic example is shown:



A synthetic stratal slice example adapted from Zeng, et al (1993). The map shows a 10 by 13 km area covering the Powderhorn field. We show the seismic reflection amplitude at a selected stratal level. The brine filled image shows a high impedance (light) sandstone body embedded in shale. The top images were made with oil (left) and gas (right) structurally localized within the sandstone. In the lower right, we show the difference image between the oil filled reservoir and the brine-filled reservoir—the fluid anomaly signal.

FACULTY RESEARCH

Jay Banner

Assistant Professor,

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. A clean laboratory for isotope geochemistry is nearing completion in the Geology Building. This laboratory will enable the analysis of the concentration and isotopic composition of trace elements in small rock, mineral, and water samples in a low-contamination environment. My teaching interests include graduate courses in Biogenic and Evaporite Depositional Systems, Sedimentary Geochemistry, Isotope Hydrology and our undergraduate offerings of Sedimentary Rocks, Introduction to Physical and Chemical Hydrology, and Field Camp.

Recent research projects center on the development of quantitative models of fluid-rock interaction in a variety of systems, including 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 the study of: 1) the timing and nature of processes of carbonate deposition, diagenesis, and hydrology in the Pleistocene limestone aquifer of Barbados, W.I.; and 2) the record of marine diagenesis and secular variations in seawater in Devonian reef complexes of Western Australia.

Daniel S. Barker

Fred M. Bullard Professor in Geological Sciences,

Third Mr. and Mrs. Charles E. Yager Professor of Geology

PhD—1961, Princeton University

Igneous petrology; geochemistry; volcanology

MY RESEARCH DURING THE PAST YEAR has continued to focus on carbonatites (igneous rocks containing at least 50% carbonate minerals). For years, the prevailing view has been that the carbon in these rocks is juvenile, entering crustal and surficial processes for the first time. Now, however, there is increasing evidence that crustal carbon is recycled deep into the mantle by subduction, and I am assessing the probability that this recycled carbon nourishes carbonatite magmatism. One line of evidence concerns the ages of carbonatites; none has been found older than 2.7 billion years, and the numbers of carbonatite occurrences, plotted against age, increase toward the present at a more rapid rate than can be accounted for by burial and erosion. Carbonate-rich liquid differs from silicate liquid in having physical properties that promote early and efficient separation of carbonatite magma from the mantle. If all the carbon in carbonatites was juvenile, it should have been purged early in the Earth's history, and the rate of carbonatite emplacement in the crust should have decreased through time.

Alternatively, a small portion of the recycled carbon injected into asthenospheric mantle forms carbonate-rich liquid that migrates into litho-

strontium isotopic variations in Pleistocene carbonates and modern groundwaters of Barbados, West Indies: A temporal record of carbonate diagenetic fluids: *AAPG Annual Convention Abstracts*, p. 71.

Barker, D. S., 1994, Implications from non-juvenile carbon in carbonatites: *Geological Association of Canada/Mineralogical Association of Canada, Program with Abstracts*, v. 19, p. A7.

Benan, C. A. A., Deynoux, M., Kocurek, G., Havholm, K., Crabaugh, M*., and Pion, J. C., 1993, Sequential architecture of post glacial eolian deposits, Pleistocene-Holocene Akchar Erg, Mauritania, West Africa. *European Union of Geosciences VII (Strasbourg, France)*, p. 737.

Boettcher, S. S*., and Mosher, S., 1994, Late Cretaceous transition from contraction to extension in the northern Dome Rock Mountains, Arizona: *Geological Society of America Abstracts with Programs*, v. 26, n. 2 p. 39-40.

Bralower, T. J., Hutson, F*., Mann, P., Iturralde-Vincent, M., Renne, P., and Sliiter, W. V., 1993, Tectonics of oblique arc-continent collision in Western Cuba, I: Stratigraphic constraints: *Eos, Transactions American Geophysical Union*, v. 74, p. 546.

Buffler, R. T., 1993, Mid-Cretaceous deposition and erosion by deep-sea currents along the continental Rise, deep eastern Gulf of Mexico: *Geological Society of America Abstracts with Program*, v. 25, p. A-180.

Buffler, R. T., De Balko, D. A., and Dobson, L. M., 1993, Mesozoic Seismic Stratigraphy and Geologic History, Northeast Gulf of Mexico: *AAPG Annual Convention Abstracts*, p. 81.

Buffler, R. T., and Iturralde-Vinent, M. A., 1993, Latest Cretaceous Megaturbidites in Cuba and southeastern Gulf of Mexico—KT impact or megatectonic event: *Eos Transactions American Geophysical Union*, v. 74, p. 386.

Cander, H. S*., and Banner, J. L., 1994, The paradox of porosity and fluid-rock interaction in carbonate platforms: *AAPG Annual Convention Abstracts*.

Carlson, W. D., 1994, Rate of a metamorphic reaction and duration of a metamorphic event from compositional profiles in partially resorbed garnets. *Proceedings of the Meeting on Rates of Geological Processes of the Mineralogical Society of Great Britain, Glasgow, Scotland, January 1994*, p. 27.

Carlson, W. D., Schwarze, E. T., 1993, Petrologic and tectonic significance of geographic variations in garnet

- growth zoning in the Llano Uplift. *Geological Society of America Abstracts with Programs* 25:101-102
- Carter, K. E., Reese, J.*, and Helper, M. A., 1993, Precambrian extension in the Llano Uplift, Texas: *Geological Society of America Abstracts with Programs*, v. 25.
- Cheng, M., Shum, C., Tapley, B., and Wilson, C., 1994 Global Constraint on Modeling the Time-Varying Gravitational Field From Analysis of SLR to Geodetic Satellites, *Eos Transactions American Geophysical Union*, 75, 16, 114.
- Chernoff, C. B.*, Helper, M. A., and Mosher, S., 1993, Evidence for fourth generation structures in the Piedre Lumbré Region, western Picuris Mts., New Mexico: *Geological Society of America Abstracts with Programs*, v. 25, p. 86.
- Cloos, M., 1993, Lithospheric buoyancy and collisional orogenesis: subduction of continental margins, island arcs, and oceanic plateaus: *Geological Society of America Abstracts with Programs*, v. 25, no. 6, p. A70.
- Cloos, M., and Shreve, R. L., 1994, Subduction channel model for accretion, sediment subduction, and tectonic erosion at convergent plate margins: seamount asperities and thrust-type subduction zone seismicity: *Abstracts U.S. Geological Survey SUBCON Meeting*.
- Collins, M. B., Gose, W. A., and Shaw, S., 1993, Preliminary geomorphological findings at Dust and nearby caves, Alabama. Southeastern Archaeological Conference, Raleigh, NC.
- Council, T. C.*, and Bennett, P. C., 1993, Modern ikaite formation at Mono Lake, CA. *Geological Society of America Abstracts with Programs*, v. 25.
- Crabaugh, J. P.*, and McBride, E. F., 1993, Episodicity in Gulf of Mexico sedimentation, Rocky Mountain tectonism, and early Paleogene climate at the scale of several million years: *Geological Society of America Abstracts with Programs*, v. 25, p. A68.
- Crabaugh, M.*, and Kocurek, G., 1994, Wet eolian sequence stratigraphy and its relationship to relative sea level change: *AAPG Annual Convention Abstracts*, p. 128.
- Crowe, J.*, and Sharp, J. M. Jr., 1993, Detailed hydrogeologic mapping for delineation and protection of endangered species habitats: *Geological Society of America Abstracts*

spheric mantle. Here it commonly reacts with peridotite and crystallizes completely. The altered lithospheric mantle becomes enriched in elements carried upward and surrendered by the carbonate-rich liquid. Eventually, small volumes of the lithospheric mantle are overwhelmed by successive invasions until they can no longer react with carbonatite liquids, which can therefore travel farther upward through the mantle before stalling and crystallizing. Ultimately, a pulse of carbonate-rich liquid survives passage through the entire lithosphere, because its predecessors had prepared a path. Most of the available data that have been examined so far seem to fit the recycling hypothesis, with the conspicuous exception of $^{13}\text{C}/^{12}\text{C}$ isotopic ratios in carbonatites, which do not show values that should be imposed by previous residence in the crust or at the surface. Either the idea of carbon recycling is wrong, or we should re-examine what we think we know of carbon isotope fractionation. Resolving this conflict is clearly important in understanding the Earth's carbon cycle.

Philip C. Bennett

Assistant Professor,
John A. and Katherine G. Jackson Centennial Teaching Fellow
PhD—1989, Syracuse University
*Aqueous geochemistry; environmental geochemistry;
geochemical kinetics, hydrogeology*

MY PRIMARY RESEARCH AREAS FOCUS on the molecular chemistry of the silicate surface in water and the fate and transport of organic solutes in ground water, using field studies, spectroscopy, kinetic studies of silicate dissolution, and quantum computational geochemistry. I am especially interested in the mechanisms of organic acid enhanced dissolution of silicates, and in the mechanisms of sorption of organic solutes on silicate surfaces. I am also investigating the role of bacteria in low-temperature silicate diagenesis. With PhD student Franz Hiebert, I am using *in situ* methods to characterize the microenvironment that surrounds a bacterium or bacterial colony attached to a silicate surface. This research has been supported by NSF, ACS-PRF, and the USGS. My other research area involves field and laboratory investigations of the fate and mobility of organic contaminants. As part of the UT-BEG Pantex project we are investigating the mobility of high-explosive residues in aqueous systems, and examining fate models of vapor phase organic contaminants such as benzene in and around the high-plains playa environment. An integral part of this study will be a detailed analysis of carbon-budget and soil-water evolution in a saturated playa, considering the possibility that these playas represent focused recharge to the Ogallala aquifer.

Richard T. Buffler

Professor
PhD—1967, University of California, 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 reflection data. Principles of seismic (sequence) stratigraphy are applied to interpret the depositional and structural history of a region. My principle focus continues to be the geologic history of the Gulf of Mexico

FACULTY RESEARCH

basin. Three major Ph.D. projects have just been completed, including "Plio-Pleistocene Evolution of the Upper Continental Slope, Garden Banks and East Breaks Areas, Northwestern Gulf of Mexico" by J. Carl Fiduk, "Seismic Stratigraphy and Geologic History of the Post Mid-Cretaceous Rocks, Deep Gulf of Mexico Basin" by Jianhua Feng, and "Mesozoic Structural and Stratigraphic Evolution of the Southeastern Gulf of Mexico" by Gyorgy Marton. Leipin He is finishing up a Masters project on the Neogene sequence stratigraphy in the northeastern Gulf of Mexico as part of an NSF-sponsored project. New proposals have been submitted to study the structure of the Chicxulub KT impact crater off Yucatan and to study a KT? related megaturbidite unit in Cuba.

I am also supervising several field projects that are applying sequence stratigraphic principles to the study of outcrop sections, including 1) Leonardian carbonate margin in the Sierra Diablo, West Texas—Bill Fitchen, 2) Jurassic Great Valley turbidite sands in northern California—Kevin Lyons, and 3) Cretaceous Fall River Formation in the Black Hills—Widya Dharmasamadhi. Other students are working on projects in Trinidad, Colombia, and off southeastern Australia. Work off northwest Australia continues with a paper on the Argo Abyssal Plain and a proposal submitted to study the adjacent continental margin.

William Z. Carlson

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

THE PRINCIPAL FOCUS OF MY RESEARCH continues to be the development and use of high-resolution computed X-ray tomography (X-ray CT) as a tool for quantitative analysis of metamorphic textures in three dimensions. A corollary to this effort is the development of testable quantitative theories and computer models for the nucleation and growth of porphyroblasts in metamorphic rocks. With funding from the National Science Foundation and the Texas Advanced Research Program, three PhD students — Cambria Denison, Jim Rougvié, and Dave Hirsch — are using X-ray CT to produce understanding of various aspects of crystallization, and Carlotta Chernoff will soon complete a Masters thesis that sheds additional light on the problem by analyzing patterns of chemical zonation in garnet.

Exciting progress has been made on the NSF-funded project with Sharon Mosher on the Precambrian history of the Llano Uplift. Postdoc Bob Roback is beginning to unravel the complex intrusive and deformational history of the southeastern part of the uplift, with a combination of detailed mapping in the field and U-Pb dating of key units. Joel Davidow has begun work on a newly recognized occurrence of eclogite in the central Uplift that promises to integrate, for the first time, the petrologic aspects of early high-pressure metamorphism with some of the deformational history.

Finally, 1993 saw a pair of lively exchanges in the literature concerning the validity of physical models for the annealing of fission tracks in apatite. Undaunted by that experience, I persuaded the American Chemical Society's Petroleum Research Fund to support a two-year study with a part-time postdoctoral fellow, Ray Donelick, to attempt to characterize the compositional dependence of annealing rates of fission tracks in apatite. The initial results show startling differences in rates across a broad range of composition; the reason for these differences still eludes us.

with Programs v. 25, p. A209.

Dalla Salda, L., and Dalziel, I. W. D., 1993, Evolución paleogeográfica del occidente del Gondwana durante el Neoproterozoico-Paleozoico medio, Primer Simposio Internacional del Neoproterozoico-Cámbrico de la Cuenca del Plata: resúmenes extensos, Tomo 1, p. 6-12 (abstract 2), *DINAMIGE-Facultad de Agronomía, Montevideo*.

Dalziel, I. W. D., 1993, The Origin of the Southern Margin of North America: AAPG Annual Convention Abstracts.

Dalziel, I. W. D., 1993, Precambrian Scotland as a Laurentia-Gondwana Link and the Role of Cratonic Promontories: *Geological Society of America Abstracts with Programs*, v. 25, no. 6.

Dalziel, I. W. D., 1994, Impacts, extinctions, volcanism, glaciations, and tectonics: Matches and mismatches. New Developments Regarding the KT Event and Other Catastrophes in Earth History: *Lunar and Planetary Institute Technical Report*.

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 Huntect reflection surveys and cores: *23rd Arctic Workshop*, Ohio State University, p. 95.

Davis, L. L.*, and Smith, D., 1993, Potassic magmatism at Two Buttes as a window to a Proterozoic lithosphere keel. *Eos, Transactions American Geophysical Union*, v. 74, p. 634.

Davis, L. L.*, Smith, D., and McDowell, F.W., 1993, Potassic magmatism at Two Buttes as a window to a Proterozoic lithospheric keel: *Eos, Transactions American Geophysical Union*, v. 74, no. 43, p. 634.

Dickerson, P.W.*, 1993, Eocambrian rifted margin of SW North America—drift-phase miogeoclinal and eugeoclinal strata: *First Circum-Pacific and Circum-Atlantic Terrane Conference Proceedings* (Guanajuato, Mex.), p. 41.

Dickinson, W.W. and Milliken, K. L., 1993, Sandstone compaction by interrelated brittle deformation and pressure solution, Etjo Sandstone, Namibia: *Geological Society of America Abstracts with Programs*, v. 25, no. 6, p. 65.

DiVenere, V.J., Kent, D.V., and Dalziel, I. W. D., 1994, An Early Cretaceous paleopole for Marie Byrd

Land, West Antarctica: *Eos Transactions American Geophysical Union*, v. 75, no. 16.

Eustice, R. A.*, Land, L. S., and Mack, L. E., 1994, Geochemical and textural indications of open system behavior during evaporite diagenesis, Louann salt, south-western Alabama: *AAPG Annual Convention Abstracts*.

Eustice, R. A.*, and Land, L. S., 1993, A comparison of the diagenesis of Lower Ordovician cyclic carbonates from central and west Texas: *Geological Society of America Abstracts with Programs*, p. A-226.

Famiglietti, J. S., 1993, Large-scale application of TOPLATS with implications for regional-global interactions: *Eos, Transactions American Geophysical Union*, 1993 v. 74, no. 43 p.176.

Famiglietti, J. S., Giorgi, F., Hostetler, S. W., and Shields-Brodeur, C., 1993, Effects of spatial variability and scale on the U. S. hydrological cycle as simulated with a regional climate model: *Workshop on Scale Issues in Hydrological/Environmental modeling*, Robertson, NSW, Australia, p. 46.

Faria, E. L.*, and Stoffa, P. L., 1993, Traveltime computation in transverse isotropic media: *Society of Exploration Geophysicists Sixty-Third Annual International Meeting Expanded Abstracts*, p. 839-842.

Feng, J.*, and R. T. Buffler, 1993, Post Mid-Cretaceous Stratigraphy and Sediment Infill History, Deep Gulf of Mexico Basin (abs.): *AAPG Annual Convention Abstracts*, p. 100.

Ferreira, V. P., Sial, A. N., Long, L. E., and Pin, C., 1994, Sr, Nd, O and S isotopic signatures and the mantle source for ultrapotassic syenitic magmas in northeastern Brazil: *Abstracts of Eighth International Conference on Geochronology, Cosmochronology and Isotope Geology*, p. 99.

Fiduk, J. C.*, and Buffler, R. T., 1993, A loading/dissection model for the development of salt structures, offshore northern Gulf of Mexico: *AAPG Hedberg Research Conference on Salt Tectonics*, Bath, England.

Frank, A.* and Kocurek, G., 1994, Models for airflow velocity profiles in natural settings: accounting for atmospheric convection, and secondary flow over dunes (on both the windward and lee slopes). Response of Eolian Processes to Global Change Work-

Mark Cloos

Professor

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 of 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., we 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.

James N. Connelly

Assistant Professor

PhD—1991, Memorial University of Newfoundland
U-Pb geochronology, tectonics.

STARTING AT UT IN JANUARY, I spent much of this past term reorganizing the U-Pb geochronology laboratory, overseeing renovations to the crushing and mineral separation facilities and teaching a graduate course in "Applications of Radiogenic Isotopes." On the research front, I continue to be interested in constructing/constraining tectonic models for Precambrian orogens by integrating careful field mapping, geothermobarometry and U-Pb geochronology.

I am currently engaged in joint projects in the Proterozoic NE Grenville (W. Labrador) and SW Sveconorwegian (SW Sweden) provinces and the Torngat (N. Labrador) and Nagssugtoqidian (W. Greenland) orogens. The Grenville-Sveconorwegian projects documents the crustal growth and modification of the "southern" North Atlantic craton margin during the mid-Proterozoic. This deeply eroded orogen should provide insights into tectonic processes at mid- to deep- crustal levels. Archean gneisses (2.7->3.6? Ga) in the Torngat and Nagssugtoqidian orogens of the North Atlantic craton have been reworked in early-Proterozoic ductile shear zones. Utilizing mapping, geothermobarometry and U-Pb geochronology, we hope to document the architecture of these complex, older orogens and develop tectonic models for their development.

This work will facilitate geological correlations between Labrador and Greenland. In addition, we will integrate Sm-Nd and U-Pb data to examine the systematics of these isotopic systems during amphibiolite and granulite metamorphic conditions.

FACULTY RESEARCH

Jan W. D. Dalziel

Professor

PhD—1963, University of Edinburgh

Tectonics, earth history, tectonic processes

DEVELOPMENT OF THE HYPOTHESIS that the Pacific margins of North America and East Antarctica-Australia were juxtaposed prior to the opening of the Pacific Ocean basin, put forward in 1991 with Eldridge Moores of the University of California at Davis, has led to an entirely new scenario for the tectonic history of the Earth before the amalgamation of Pangea. New research projects are designed to test the ideas that the Precambrian geology of Texas, New Mexico, and Arizona can be traced into Antarctica, and that the Taconic Appalachians once continued into southern South America; possible implications with regard to global environmental changes are also being pursued. Work on processes of orogenesis and continental fragmentation around the southern rim of the Pacific Ocean continues. New seismic studies of the lithospheric "cradle" of the West Antarctic ice sheet are starting in 1994-95.

James S. "Jay" Famiglietti

Assistant Professor

PhD—1992, Princeton University

Hydrology, hydrometeorology, and hydroclimatology

MY MAIN RESEARCH INTERESTS INVOLVE understanding the role of the hydrological cycle in driving weather and climate. These are the relatively young fields known as *hydrometeorology* and *hydroclimatology*. Using a variety of tools including numerical simulation modeling, remote sensing of surface hydrological characteristics, and participation in large-scale field experiments, I address fundamental issues in these areas such as: how do the land surface and the atmosphere interact to affect long-term climate and the time-variability of weather and climate? How do the process controls on these interactions change with spatial and temporal scales? What role do heterogeneities in land surface characteristics play in controlling these processes?

Research in hydroclimatology continues in conjunction with scientists at the National Center for Atmospheric Research (NCAR) in Boulder. At the continental scale, we are studying the processes which control the spatial-temporal variability of the hydrological cycle over the conterminous United States. We have recently proposed a concept called *hydroclimatological similarity*, which is a classification scheme that explains the physical mechanisms responsible for regional differences in long-term water balance. At the global scale, I am working with a multi-disciplinary team of atmospheric scientists, oceanographers, biogeochemists, ecologists, and applied mathematicians on the development of NCAR's next-generation Climate System Model. The UT component of this research involves implementing a considerably more realistic representation of hydrological processes than in previous global climate models, and should therefore provide exciting new insights into the role of the hydrological cycle in driving climate and global change.

Research in hydrometeorology involves 4-dimensional data assimilation (4DDA) of remotely sensed soil moisture into hydrological models. This work is being conducted jointly with the University of Arizona, and involves augmenting sparse, remotely sensed, soil moisture data with physi-

shop (Zzyzx, CA), p. 37-38.

Frank, A.*, and **Kocurek, G.**, 1993, Near surface atmospheric convection and its effects on wind profiles and eolian sand transport: with an example at White Sands National Monument, New Mexico: *Geological Society of America Abstracts with Programs*, p. A-272.

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

Gahagan, L. M., **Coffin, M. F.**, **Dalziel, I. W. D.**, **Gangishetti, M. B.**, **Lawver, L. A.**, **Lee, T-Y***, and **Rosencrantz, E. J.**, 1993, Application of 3-D Graphics Software to Plate Tectonics Research and Resource Exploration: *AAPG Annual Convention Abstracts*.

Gao, G., and **Land, L. S.**, 1993, The implication of the oxygen isotopic composition of nodular chert from the lower Devonian carbonate sequences in Oklahoma and Texas: *Geological Society of America Abstracts with Programs*, p. A-89.

Gose, W. A., **Collins, M. B.**, **Takac, P.**, and **Guy, J.**, 1994, Paleomagnetic studies of prehistoric burned-rock features: *Eos, Transactions Am. Geophys. Union*, 75, p. 128.

Grimes, S. W.*, 1993, The Bloody Bluff fault zone in E. Massachusetts: remnants of intra-Avalonian mylonitization and the suspect affinity of the Wolfpen Lens: *Geological Society of America Abstracts with Programs*, v. 25, p. A421.

Haubold, H.*, 1993, Quantitative paleomagnetic, rock-magnetic, and geochemical interpretation of burial dolomitization associated with regional tectonism: *Geological Society of America Abstracts with Programs*, p. 398.

Hiebert, F. K.*, and **Bennett, P. C.**, 1993, Microbial diagenesis of silicates and calcite in an organic-rich ground water: *Geological Society of America Abstracts with Programs*, v. 25.

Hill, D. W.*, and **Sharp, J. M. Jr.**, 1993, A theoretical model of subsidence caused by petroleum production: Big Hill Field, Jefferson County, Texas: *Geological Society of America Abstracts with Programs* (South Central Section), v. 25, p. 14.

Hutson, F. E.*, **Walker, N. W.**, **Sutton, S. J.**, and **Land, L. S.**, 1993, 2.8-0.57 Ga Individual detrital zircons from Carboniferous

Rocks of the Ouachita orogen, Arkansas: a northern or southern source? *Geological Society of America Abstracts with Programs*, v. 25, no. 1, p. A15.

James, E. W., Henry, C. D., and **McDowell, F. W.**, 1994, Defining the southeastern limit of North American Middle Proterozoic basement in Texas and Chihuahua with lead isotopes: *Geological Society of America Abstracts with Programs*, v. 26, no. 6, p. 20.

Jervis, M.*, **Stoffa, P. L.**, and Sen, M. K., 1993, 2-D velocity estimation using a genetic algorithm: *Eos, Transactions American Geophysical Union*, p. 74, no. 16, p. 201.

Jervis, M.*, Sen, M. K., and **Stoffa, P. L.**, 1993, Optimization methods for 2D pre-stack migration velocity estimation: *Society of Exploration Geophysicists Sixty-Third Annual Meeting Expanded Abstracts*, p. 965-968.

Johns, M.K.*, and **Mosher, S.**, 1993, Physical models of fold interference: the role of rheology: *Geological Society of America Abstracts with Programs*, v. 25, p. 169.

Ketcham, D.*, and **Long, L. E.**, 1994, São Rafael batholith, Rio Grande do Norte, Brazil: an unregenerate pluton: *Abstracts of Eighth International Conference on Geochronology, Cosmochronology and Isotope Geology*, p. 169.

Kimbell, T. N., Humphrey, J. D., **Banner, J. L.**, and **Musgrove, M.***, 1993, Microdissolution control on distribution of Quaternary mixing zone dolomite, Barbados: *AAPG Annual Convention Abstracts*, p. 129.

Kocurek, G., Murphy, K., **Frank, A.**, and Lake, L., 1994, High-resolution wind velocity profiles in nature using hot-wire probes. Response of Eolian Processes to Global Change Workshop (Zzyzx, CA), p. 61.

Kominz, M., 1993, The effects of sediment on tectonic subsidence in passive margins: *Geological Society of America Abstracts with Program*, p. A-411.

Kominz, M., 1993, What can really be learned from the Gamma method? Theory and application to Albian pelagic Piobbico densitometer cycles: *AAPG Annual Convention Abstracts*, p. 131.

Kreitler, C. W., Jackson, T. J., **Dickerson, P. W.***, and Blount, J. G., 1994, Hydrogeology and hydrochemistry of the Falls City, Texas, UMTRA site: *American Institute of Hydrology Conference, Pro-*

cally based hydrological modeling. One result of this research will be the quantification of regional-scale spatial soil moisture patterns and their effect on climate and weather. This work also represents a first step towards a new breed of meteorological forecasting models which assimilate *both* meteorological *and* hydrological measurements to improve the reliability of numerical weather prediction.

William L. Fisher

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

MY RESEARCH OF THE PAST YEAR has focused on oil and gas resource evaluation with particular emphasis on the role of technology in expanding the resource base. I am currently organizing an international conference on global gas resources and the role of technology in gas development.

Students I am currently supervising or co-supervising are working on reservoir scale problems in the U.S., Venezuela, and Brazil.

William Galloway

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

I HAVE SPENT MUCH OF THE PAST YEAR writing, along with my co-author Dave Hobday, new chapters for a second edition of *Terrigenous Clastic Depositional Systems*. Accommodating the explosion of interest, publications, and new concepts and models in coastal, shelf, and slope systems, the evolution of practical applications of sedimentology from petroleum exploration to reservoir development and aquifer management and restoration, and the blossoming of sequence stratigraphy necessitates, in effect, a whole new book. Some things remain the same, however; my co-author still lives half a world away in Sydney, Australia.

Students continue projects in the North Sea and Gulf Coast Tertiary sections. Brian Reinsborough completed his thesis on the facies and stratigraphic architecture of the Andrew "fan," in reality a delta-fed basinal apron with a complex history of formation, using the seismic and well data set we have for the North Sea. NOPEC (Norwegian Exploration Consultants) again came through for us with a seismic data set over the apron that included latest lines.

I've also begun a collaboration with the National Centre for Petroleum Geology and Geophysics (NCPGG) at the University of Adelaide, Australia. Along with Tom McGilvery, who will be working on the sequence stratigraphy and depositional systems of the Barrow Group, I spent much of last summer in Adelaide. We are participating in a joint government-/industry-funded basin analysis of the Northwest Shelf sedimentary basins. I will return to Adelaide for a month this summer (or winter, depending on your hemispherical perspective). As an outgrowth of this collaboration, Wiltshire Geological Services, Ltd., donated to UT for our use a digital well-log data base for the Northwest Shelf and adjacent area that is valued at nearly \$300,000. This will be immensely useful for research and teaching.

FACULTY RESEARCH

Brenda Kirkland George

Assistant Professor, William T. Stokes Centennial Teaching Fellow

PhD—1992, Louisiana State University

Carbonate and evaporite sedimentology; fossil algae; carbonate petrology

THIS YEAR MUCH OF MY RESEARCH effort has focused on the origin of radiaxial calcite in the Capitan Formation. The crystals of this early cement have unusual extinction patterns and, at least in the Capitan, it occurs in a spectrum of morphologies. Capitan radiaxial calcite ranges from large blocky crystals with undulose extinction to fibrous rims composed of many small elongate crystals. One of my students, Michael Rahnis, has begun looking at the role of trace-element distribution in these crystals. He has also cleverly used staining and etching techniques to define zonation and growth habit.

I have also had the opportunity to learn more about the development of fabrics in the Capitan Reef. Working in conjunction with Dr. Rachel Wood and Dr. Tony Dickson of Cambridge University has given me the opportunity to learn more about calcareous sponges and their interrelationships with the other organisms in the reef. Delicate bryozoan fronds and microbial mats appear to be much more important to development of reef framework than we previously suspected. The more I learn about the Capitan Formation, the more I realize how phenomenal it really is.

The Paradox Basin has proven to be an interesting and exciting place for research. Two of my students, James White and Keith Tischler, did field work along the San Juan River in Utah. Some of the localities are accessible only by raft. This alone would make for exciting field work, but in addition to that the outcrops are outstanding and the rocks are interesting. The diagenetic history has proven to be more complex than we initially anticipated. These rocks present new opportunities for developing techniques for study of porosity distribution and prediction of porosity trends.

Along with Dr. Roberto Gutierrez, I am trying to develop a new type of entry level course designed to introduce outstanding students to the geological sciences. This course, inspired by the highly successful Emerging Scholars Program in the Department of Mathematics, is targeted at groups underrepresented in the sciences. Creating exercises to challenge these students is exciting and enjoyable. The most difficult challenge, however, proves to be identifying and recruiting the best students.

Steven P. Grand

Assistant Professor, Shell Companies Foundation

Centennial Teaching Fellow

PhD—1986, California Institute of Technology

Seismology and geophysics

DURING THE PAST YEAR I and my students have finished several projects related to the seismic structure of the Earth's interior. We have also begun several new studies, mostly related to processes at the core-mantle boundary. A long term project to map lateral variations in seismic velocity within the Earth's mantle beneath North and South America has recently been published. These variations in seismic wave speeds are presumably related to temperature variations within the mantle. Our results show large scale sheets (1000's km long) of cold rock descending from shallow depths to the core-mantle boundary beneath both North and South America. These descending sheets of rock can be related to subduction

ceedings , p. 37.

Kuehne, J.*, **Wilson, C.**, and **Hoar, T.***, Observation of Global-Scale Atmosphere and Ocean Dynamics using Polar Motion Data, 1994 Western Pacific Geophysics Meeting Abstracts, p. 69, Supplement to *EOS Transactions of the American Geophysical Union*, June 21, 1994.

Kugler, R. L., and **Milliken, K. L.**, 1993, Imaging of low-intensity cathodoluminescence in authigenic quartz, Norphlet sandstone, offshore Alabama: *Journal of the Alabama Academy of Science*, v. 64, no. 2, p. 117.

Kyle, J. R., 1993, Origin of Winnfield salt dome cap rock, North Louisiana Basin: *Geological Society of America Abstracts with Programs*, v. 24, p. A159-160.

Kyle, J. R., 1994, Zinc-lead-silver mineralization in sedimentary environments: *Lessons from the Gulf Coast Basin: Colorado School of Mines, A Perspective on Ore Deposits after 45 years of Research: A Tribute to Professor Richard W. Hutchinson, Program and Abstracts*, p. 12-13.

Lagoe, M. B. and **Zellers, S. D.***, 1994, Depositional and faunal response to Pliocene climate change in the eastern Gulf of Alaska: *EOS, Transactions American Geophysical Union*, v. 75, no. 16 supplement, p. 207.

Li, N.*, and **Kyle, J. R.**, 1993, Jinding Pb-Zn-Sr deposit, Yunnan Province, China: Mineralization in Tertiary ssandstones along the eastern margin of the Himalayan continental collision zone: *Geological Society of America Abstracts with Programs*, v. 24, p. A276.

Long, L. E., and **Lehman, T.**, 1993, Rb-Sr ages of detrital mica in sandstones of the Triassic Dockum Group, Texas Panhandle: *Geological Society of America Abstracts with Programs*, v. 25, no. 8, p. A-66.

Long, L. E., and **Lehman, T.**, 1994, Mid-Paleozoic age of provenance of Triassic (Dockum Group) sandstone, Texas Panhandle, USA: *Abstracts of Eighth International Conference on Geochronology, Cosmochronology and Isotope Geology*, p. 197.

Lynch, F. L.*, **Land, L. S.**, and **Gao, G.**, 1993, Recrystallization of diagenetic calcite in Frio Formation sandstones, Corpus Christi area, Texas: *Geological Society of America Abstracts with Programs*, p. A-335-A336.

- Mahler, B. J.***, **Bennett, P. C.**, Hillis, D. M., and Winkler, M., 1993, Polymer-labeled clays: a new approach to tracing ground water flow and sediment transport, *EOS Transactions American Geophysical Union*
- Marton, G.***, and **Buffler, R. T.**, 1993, Evolution of a Mesozoic Seaway, Southeastern Gulf of Mexico, *AAPG Annual Convention Abstracts* p. 146.
- Marton, G.***, **Buffler, R. T.**, and **Gahagan, L.**, 1993, New constraints on the opening of the Gulf of Mexico based on combined geophysical data: *EOS, Transactions American Geophysical Union*, v. 74, p. 586.
- McBride, E. F.**, 1993, Rock-water interaction and provenance determination: southern Appalachian basin rocks: *Reports on Research, Petroleum Research Fund, ACS*, p. 151.
- McBride, E. F.**, **Picard, M. D.** and **Folk, R. L.**, 1993, Oriented concretions, Ionian coast, Italy: evidence of groundwater flow direction: *Geological Society of America Abstracts with Programs*, v. 25, p. A-335.
- Mertig, H. J.***, and **Kyle, J. R.***, 1993, Geology and origin of the Dom copper skarn, Gunung Bijih (Ertsberg) District, Irian Jaya, Indonesia: *Geological Society of America Abstracts with Programs*, v. 24, p. A402-403.
- Milliken, K. L.** and **Land, L. S.**, 1993, Luminescent textures in quartz silt from Eocene and Oligocene shales, Texas Gulf Coast: *Geological Society of America Abstracts with Programs*, v. 25, p. 65.
- Molineux, A.***, 1993, Late Pennsylvanian Encrusters—Terminal Paleozoic Stromatoporoids or Calcareous Sponges?: *Annual Convention, Canadian Society of Petroleum Geologists with Global Sedimentary Geology Program*, p. 212.
- Moore, G. F.**, **Zhao, Z.**, **Shiple, T. H.**, **Bangs, N. L.**, **Stoffa, P. L.**, and **Moore, J. C.**, 1993, Structure of the northern Barbados Ridge accretionary prism from 3-D seismic reflection data: *Eos, Transactions American Geophysical Union*, v. 74, p. 224.
- Mora-Alvarez, G.*** and **McDowell, F. W.**, 1993, The geochemical evolution of Neogene volcanism in west-central Sonora: *Geological Society of America Abstracts with Programs*, v. 25, p. A-35.
- Muehlberger, W. R.**, 1992, Tectonic map of North America, Southeast and Southwest Sheets: *American*

processes which have occurred during the past 150 Ma or so and indicate that the plate tectonic cycle involves convection throughout the entire mantle.

In a related project, graduate student Xiao-Yang Ding and I have submitted a paper investigating the detailed seismic structure beneath deep earthquakes in the Kurile subduction zone. The goal of this study was to determine the fate of subducted slabs at depths where earthquakes no longer occur. We found a large fast seismic anomaly beneath the deepest earthquakes in the central and northern Kuriles but not beneath the southern Kuriles. This indicates great variability in the behavior of subducting slabs near 650 km depth (the depth where seismicity ends). Our interpretation of these results is that slabs encounter a resistance to flow near 650 km depth and tend to deform laterally, however, they eventually sink into the lower mantle when the volume of slab exceeds a critical value.

Another project nearing completion concerns the seismic structure beneath the Rocky Mountain front in Colorado. A seismic array was deployed two years ago in Colorado and graduate student Duk-Kee Lee has performed a tomographic inversion of seismic delay times recorded by the array. We are finding that the uplift of the Rockies is not due to thicker crust but rather is due to abnormally hot mantle beneath the core of the Rockies. The seismic signal is so strong we are led to conclude that there is significant partial melting of the mantle to depths near 150 km beneath the Rockies. We also found that the edge of the stable continental lithosphere is not located beneath the Rocky Mountain Front but rather occurs to the east beneath western Kansas.

Recently, I have become interested in seismic properties of the core-mantle boundary. I have been collaborating with Ed Garnero, from the University of California at Santa Cruz, analyzing several new seismic data sets related to the core-mantle boundary. There appears to be very large variations in seismic velocity near the boundary which may be chemical heterogeneities in the mantle related to the core or possibly the remnants of subducted lithosphere from the distant past. Most interesting is the apparent strong anisotropy of the mantle near the core. In the coming year I hope to continue work on this puzzling phenomenon with graduate student Eric Matzel.

Gary A. Kocurek

Professor, 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.

FACULTY RESEARCH

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,

Shell Companies Foundation Centennial Teaching Fellow

PhD—1986, Columbia University

Periodicity of cyclic sediment packages;

tectonic and stratigraphic history of sedimentary basins

MY TEACHING THIS PAST ACADEMIC YEAR was remarkable in that I did not develop any new courses, although I continue to try to update and improve old ones. I shared responsibilities for teaching of exploration geophysics for geophysics majors and first-year graduate students with Milo Backus. There was even sufficient interest to offer an updated version of my new graduate course in climate, climate modeling, and implications for high-frequency climate variations. In the spring semester I team-taught a graduate course in Quantitative Stratigraphy with Martin Lagoe. 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. I supervised independent research of a number of students, including the completion of a manuscript which arose from my Geodynamics of Basins course the previous spring.

My research in the study of high-order cyclic sediments continues. 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 northern Atlantic glacial debris/carbonate ODP core (609) indicates that the new method does enhance the orbital signals. A composite gray-scale record from an equatorial Pacific core (577) has been generated. I have also begin 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.

I have also completed a study designed to test the thermal blanketing effects of sediments in thermally subsiding margins. Sediments affect both the absolute magnitude and the curvature of tectonic subsidence. This can result in an apparent long-term sea-level change in the back-stripped data.

Association of Petroleum Geologists, scale 1:5,000,000.

Musgrove, M.*, and **Banner, J. L.**, 1994, Geochemical evidence for the origin, evolution, and flowpaths of saline groundwaters in a regional flow system: Midcontinent, USA: 1994 Chapman Conference: *Hydrogeologic Processes*.

Musgrove, M.*, and **Banner, J. L.**, 1993, Mixing and evolution of saline groundwaters in the midcontinent, USA: Implications for carbonate diagenesis: *AAPG 1993 Annual Convention Abstracts* p. 155.

Noble, P.*, **Hull, D.**, **Cloos, M.**, and **Carpenter, P.***, 1993, Regional significance of Jurassic-Cretaceous radiolaria, San Simeon region, California: *Geological Society of America Abstracts with Programs*, v. 25, p. A190.

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: *AAPG 1993 Annual Convention Abstracts*, p. 161.

Owen, P. R.*, 1993, A factor analytic approach to the functional assessment of the atlas-axis complex of Rancho La Brea carnivores *Smilodon fatalis* and *Canis dirus*: *Abstracts, Journal of Vertebrate Paleontology*, v. 13, p. 51A.

Porsani, M., Sen, M. K., **Stoffa, P. L.**, **Chunduru, R.***, and **Wood, W. T.***, 1993, Seismic waveform inversion by a hybrid linearized-genetic algorithm: *Eos, Transactions American Geophysical Union*, v. 74, p. 201.

Porsani, M. J., **Stoffa, P. L.**, Sen, M. K., Chunduru, R., and Wood, W. T., 1993, A combined genetic and linear inversion algorithm for seismic waveform inversion: *Society of Exploration Geophysicists Sixty-Third Annual Meeting Expanded Abstracts*, p. 692-695.

Porsani, M. J., **Stoffa, P. L.**, **Chunduru, R. K.***, and Sen, M. K., 1993, Evaluation of measures of error using a genetic algorithm: *3rd International Congress of the Brazilian Geophysical Society*.

Posey, H. H., **Kyle, J. R.**, and Agee, W. N., 1994, Relations between diapiric salt structures and metal concentrations, Gulf Coast sedimentary basin, southern North America, in Fontboté, L., and Boni, M., eds., *Sediment-hosted Zn-Pb Ores*: Springer-Verlag, Berlin, p.

139-164.

Reed, R. M.*, and **Helper, M. A.**, 1994, Evidence for solid-state deformation of 1.1 Ga "anorogenic" granites in the Llano Uplift, central Texas: *Geological Society of America Abstracts with Programs*, v. 26.

Reed, R. M.*, and **Williams, M. L.**, 1993, Formation mechanism of the Pelham dome, western Bronson Hill Anticlinorium, central Massachusetts: *Geological Society of America Abstracts with Programs*, v. 25, 6, A-475.

Riter, J. C.A.*, and **Smith, D.**, 1993, Analysis of Grand Canyon Cr-dioxiside spinel peridotite and pyroxenite xenoliths. *Eos, Transactions American Geophysical Union*, v. 74, p. 637.

Romanak, K. D.*, **Bennett, P. C.**, and **Hovorka, S. D.***, 1993, Spatial and temporal variations in CO₂, CH₄, and O₂ in the unsaturated zone of fresh water playas-implications for geochemical processes: *Geological Society of America Abstracts with Programs*, v. 25.

Rubin, J. R.*, and **Kyle, J. R.**, 1993, Precious-metal distribution, Gunung Bijih (Ertsberg) district, Indonesia: *Geological Society of America Abstracts with Programs*, v. 25, p. A275-A276.

Sen, M. K., **Akbar, F. A.***, and **Stoffa, P. L.**, 1993, Imaging of ocean subbottom structure using swath mapping data: feasibility studies: *Acoustical Society of America*, Ottawa, Canada.

Sen, M. K., and **Stoffa, P. L.**, 1993, Geophysical inversion using global optimization: *Society of Industrial and Applied Mathematics Conference on Mathematical and Computational Issues in the Geosciences*, Houston, Tex..

Sen, M. K., and **Stoffa, P. L.**, 1994, Bayesian inference, Gibbs sampler and uncertainty estimation in non-linear geophysical inversion: *Proceedings of the European Association of Exploration Geophysicists 56th Annual Meeting and Exposition*, Vienna, Austria.

Sen, M. K., **Stoffa, P. L.**, and **Austin, J. A. Jr.**, 1993, High-resolution shallow water 3-D survey and inversion for geophysical parameters, *Acoustical Society of America*, Ottawa, Canada.

Sen, M. K., **Stoffa, P. L.**, **Chunduru, R. K.***, and **Jervis, M.***, 1993, Geophysical applications of global optimization methods: *3rd International Congress of the Brazilian Geophysical Society*.

Richard Kyle

Professor, 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 DEVELOPED A DIVERSE PROGRAM in ore deposits geology in the Department of Geological Sciences since my arrival from the mineral exploration industry in 1978. This program combines many aspects of geology in the investigation of the origin of mineral resources in sedimentary, igneous, and metamorphic environments. The program is broad based geologically, geographically, and topically, and involves field projects in several states and foreign countries. 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. In addition to undergraduate and graduate courses in ore deposits geology, I also teach a core course in economic geology for the Energy and Mineral Resources graduate program in Petroleum Engineering, and a nonmajors course on the geology and mineral resources of Texas. I am an active member of several professional organizations and a Fellow in the Geological Society of America, the Geological Association of Canada, and the Society of Economic Geologists. I am the Co-Editor for *Ore Geology Reviews* and recently completed a stint as an Associate Editor for *Economic Geology*.

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 deformed Cenozoic carbonate rocks that form the central mountain range of the island of New Guinea. The area is a complex tectonic terrane that developed on the northern margin of the Australian tectonic plate. The carbonate sequence has been intruded by Pliocene diorite plutons with which major intrusion- and skarn-hosted copper-gold deposits are associated. The primary goal of the project is to investigate the tectonic setting and structural geology, igneous and metamorphic petrology, and ore genesis of the district.

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 world-class siliciclastic-hosted zinc-lead deposits in Alaska and China.

Martin B. Lago

Associate Professor, Dave P. Carlton Centennial Teaching Fellow
PhD—1982, Stanford University
Micropaleontology

PROGRESS OF SEVERAL RESEARCH PROJECTS during the past year included work in Alaska, the Gulf of Mexico, Texas coastal plain, New Jersey continental shelf, and Antarctica. My research focus continues to be using foraminiferal micropaleontology to address a variety of geologic, tectonic, paleoclimatic, and paleoenvironmental questions. I also maintain an active interest in the quantitative analysis of micropaleontological data for both

FACULTY RESEARCH

biostratigraphic and paleoenvironmental interpretations. Research projects with significant results to report include the following (with associated graduate-student co-workers): 1) The Neogene tectonic and depositional history of the Yakataga continental margin, Gulf of Alaska (Sally Zellers); 2) Modern benthic foraminiferal distributions in fjords of the Gulf of Alaska (Sally Zellers); 3) Holocene benthic foraminiferal assemblages and paleosalinity history of Baffin Bay, Texas (Laura Stewart); 4) Quaternary foraminiferal assemblages and sequence stratigraphy of the Texas continental shelf (Lynette Holdford); 5) Modern benthic foraminifera from the Larsen Shelf, Antarctica (Ben Sloan); and 6) Eocene foraminiferal biofacies and sequence stratigraphy from the Yegua Formation, Texas.

I also have several projects ongoing with scientists at the Institute for Geophysics, including the Baffin Bay work (E. William Behrens) and Antarctic study (Larry Lawver) mentioned above. In addition, a major project investigating the Quaternary history of the New Jersey shelf includes high-resolution seismic and analysis of cores for sedimentology and micropaleontology, done in collaboration with James Austin, Jr., and Thomas Davies. This study has recognized a very complex stratigraphic history associated with the last deglaciation. Also, paleobathymetric analysis has been applied to the uplift history of the Solomon Islands, in a study with Fred Taylor and Paul Mann. Finally, I am involved with Dick Buffler and Craig Fulthorpe in a sequence stratigraphic study of the northeastern Gulf of Mexico.

Lynton S. Land

Professor, Edwin Allday Centennial Chair in Subsurface Geology

PhD—1966, Lehigh University

Isotope geochemistry; diagenesis;

low-temperature aqueous geochemistry

RESearch CONTINUES ON GULF COAST DIAGENESIS, with emphasis on the behavior of the rocks that constitute most of the sedimentary fill of the basin, the shales or mudrocks. Leo Lynch completed his dissertation this year, and together with Larry Mack's help, we are trying to better constrain the isotopic and elemental changes which occur as "smectite" converts to "illite." Do the mudrocks provide the SiO₂ for quartz-cementation of sandstones? What is the source of the potassium for the illitization process? There is not enough potassium in the mud when it was deposited, so potassium must be imported into the mudrocks as diagenesis proceeds. Does K come from associated sandstones? From the underlying basement beneath the sedimentary basin?

Rachel Eustice, Larry Mack, and I studied the halite + sylvite bittern salts from a deep core in Alabama, and concluded that the assemblage is a diagenetic, not a primary one. Intense and long-lasting diagenesis is the reason primary K, Mg-SO₄, Cl phases such as carnallite and epsomite are not preserved, and also explains many aspects of saline formation chemistry such as high Rb and Br contents.

On the carbonate front, Dr. G. Gao is now a post-doctoral fellow at Princeton University. Further complicating the "dolomite problem" in Cambro-Ordovician strata from Oklahoma, we postulate that late dolomitization resulted from circulation of post-Ordovician seawater through previously developed karst. Two students, Rachel Eustice and Herbert Haubold, continue to focus on these rocks, on aspects of limestone diagenesis and paleomagnetism, respectively.

The new(est) mass spectrometer continues to permit new avenues of research. Oxygen isotopic analysis of milligram-sized samples of silicates by la-

Sharp, J. M. Jr., and Galloway, W. E., 1993, Sedimentological controls on fluvial aquifer heterogeneity: *Geological Society of America Abstracts with Programs* v. 25, p. A-109.

Sharp, J. M. Jr., Hibbs, B. J.*., and Larkin, R. G.*., 1993, Hydrogeological basis for groundwater modeling of fluvial aquifers associated with modern rivers: *Geological Society of America Abstracts with Programs*, v. 25, p. A-38.

Shibley, T. H., Moore, G. F., Bangs, N. L., **Stoffa, P. L.**, and Moore, J. C., 1993, Seismically inferred spatial pattern of fluid content of the northern Barbados Ridge decollement: implication for fluid migration and fault strength: *Eos, Transactions American Geophysical Union*, v. 74, no. 43, p. 579.

Simmons, J. L. Jr.*., and Backus, M. M., 1993, A Matched Filter Approach to Impedance Estimation: *Expanded Abstracts, Sixty-third Annual Meeting, Society of Exploration Geophysicist*, p. 642-645.

Simmons, J. L. Jr.*., and Backus, M. M., 1993, Amplitude-Versus-Offset Modeling and the Locally Converted Shear Wave: *Expanded Abstracts, Sixty-third Annual Meeting, Society of Exploration Geophysicist*, p. 738-741.

Smith, D., 1993, Ultramafic reaction zones in Colorado Plateau xenoliths: recorders of sub-Moho hydration: *Eos, Transactions American Geophysical Union*, v. 74, p. 637.

Smith, D., and **Riter, J. C. A.*.**, 1994, Mantle xenoliths and the Colorado Plateau: *Geological Society of America Abstracts with Programs*, v. 26, p. 63-64.

Smith, M. J.*. and **Sharp, J. M. Jr.**, 1993, Significance of free convection in saline fluid migration, Frio Formation, South Texas: *Geological Society of America Abstracts with Programs*, v. 25, p. A-244.

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.

Stoffa, P. L., Sen, M. K., **Varela, C.*.**, and **Chunduru, R. K.*.**, 1994, Geophysical applications of global optimization methods: *Proceedings of the European Association of Exploration Geophysicists 56th Annual Meeting and Exposition, Vienna, Austria.*

Sturchio, N. C., **Banner, J. L.**, **Musgrove, M.*.**, Stueber, A. M.,

- Pushkar, P., and Binz, C. M., 1993, Ra isotopes-Ba-salinity relations: Mid-continent groundwaters: *Eos Transactions American Geophysical Union*, v. 74, no 43, p. 299.
- Sutton, S. J., Land, L. S., Hutson, F.***, and **Awwiller, D. N.***, 1994, Mineralogical and geochemical evidence of Ouachita provenance: *Geological Society of America Abstracts with Programs*, v. 26, no. 4, p. A65.
- Tajima, F., **Stoffa, P. L.**, and **Zhou, R.***, 1994, Broad-band body waveform source inversion incorporating genetic algorithms to constrain near-source structure: International Association of Seismology and Physics of the Earth meeting abstracts.
- Takac, P. R., **Gose, W. A.**, Goldberg, P., and Collins, M. B., 1994, Magnetic susceptibility and microstratigraphic studies in archeological contexts. *EOS, Transactions American Geophysical Union*, 75, p.133.
- Taylor, F. W., Mann, P., **Lagoe, M. B., Quarles, A.***, Gray, S. C., Edwards, R. L., Recy, J., and Cabioch, G., 1993, Mechanisms for rapids reversals of vertical motion in the New Hebrides and Solomon Arcs related to colliding features: *Eos, Transactions American Geophysical Union*, v. 74, no. 26, p. 545.
- Ward, W. B., Kwong, M. H.***, and **Banner, J. L.**, 1994, Marine calcite cement stratigraphy of Neptunian fractures, Devonian Reef Complexes, Canning Basin, Western Australia: *Amer. Assoc. Petroleum Geologists 1994 Annual Convention Program*.
- Ward, W. B.**, Cox, O. A., **Kwong, M. H.***, Meyers, W. J., and **Banner, J. L.**, 1993, Upper Devonian seawater samples incased in calcite cements: Single-phase fluid-inclusion salinities and cement compositions, Devonian Reef Complexes, Canning Basin, Western Australia: *AAPG 1993 Annual Convention Program*, p. 197.
- Yang, W.***, and **Kominz, M. A.**, 1993, Preliminary results on depositional cyclicity of late Pennsylvanian and Early Permian Cisco Group, eastern shelf, North-Central Texas: *Geological Society of America Abstracts with Programs*, v. 25, p. A-474.
- 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

ser heating is now routine, and students are beginning to process their own samples. Laser ablation of carbonates is in the research stage now that the hardware has been constructed and tested. And finally, Rachel has been analyzing carbon and nitrogen isotopic compositions of reef organisms from Jamaica, Enewetak, and Biosphere II.

Leon E. Long

Second Mr. and Mrs. Charles E. Yager Professor of Geology
PhD—1959, Columbia University
Geochronology; isotope geology; clay diagenesis; petrogenesis of igneous rocks

MOST OF MY RESEARCH IS TO USE ISOTOPIC age methods (chiefly Rb-Sr) for geochronology and as a geochemical tracer of rock origins. Dating of igneous rocks is commonly quite straightforward, but such is not the case for sedimentary clay minerals which typically are complex mixtures of diagenetic particles, and clastic particles of different ages. First the detrital and diagenetic constituents must be separated from one another, and then the sample must be treated to get rid of loosely-bound Rb and Sr in clay interlayers. Once these preliminary procedures are accomplished, we often may obtain geologically meaningful data. My students, associates, and I have explored some of these problems, with considerable success in dating clay diagenesis in a deep burial environment, in evaporitic facies, and in paleosol, and in identifying the source of sediment via Rb-Sr dating of detrital muscovite.

I am also involved with research on the ages and origins of granitic rocks, particularly to use Rb-Sr and Sm-Nd data to probe the characteristics of magma sources. For example, students and I have worked with Brazilian colleagues to establish that Pan-African granitoid magmas in Northeast Brazil (~0.6 Ga) come from sources, anomalously enriched in incompatible trace elements, that may have Archean crust-formation ages. We are currently applying these same methods to examine a granite batholith in the Republic of South Africa.

Ernest L. Lundelius, Jr.

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

CONTINUES TO WORK ON THE QUATERNARY faunas of North America and Australia. He is involved in the study of several assemblages of mammals from terrace deposits of the Brazos River in north Texas. Another study involves the analysis of a collection of mammal bones from an archaeological site in Israel. This study is being done in collaboration with Dr. Harold Liebowitz of the Department of Oriental and African Languages.

The compilation phase of the collaborative project with Dr. Russell Graham of the Illinois State Museum on the data base of the mammalian faunas of the last 40,000 years of North America has been completed. The use of the data base for the investigation of several paleoecological problems is underway. A volume of distribution maps of a number of species of mammals is expected to be out by the end of the summer 1994.

FACULTY RESEARCH

Earle F. McBride

Professor, 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 AGAIN this year 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, and grad student Stefan Boettcher. Our total of 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). Our work is complete and the reports are in review or in press.

I continue also to have collaborative projects with my good friend, Duke Picard, from the University of Utah. Duke and I are also studying the downstream change in sand mineralogy in several rivers that drain the Dolomite Mountains in northern Italy, and the origin of honeycomb weathering in sandstones along the Tuscan coast. The latter locality was discovered by Luigi Folk and me ten years ago. A new project involves the Ordovician quartzites of the miogeocline in the western Cordillera. I hope these rocks can provide some information on the quartz cement story: who, what, when, where, and why.

Sharon Mosher

Wilton E. Scott Centennial Professor

PhD—1978, University of Illinois at Urbana

Structural petrology; deformation mechanisms; complexly deformed terranes

FOR SEVERAL YEARS I, along with Bill Carlson, Mark Helper, Bob Roback and a number of graduate students (now Joe Reese, Rob Reed, Joel Davidow, and Chris Whitefield), have been investigating the deformational, metamorphic, and geochronologic history of the Proterozoic Llano Uplift of central Texas. The uplift records a complex history of Grenville, and perhaps pre-Grenville, orogenesis that has not been overprinted by later orogenic events, and thus is an ideal place to study mid-Proterozoic orogenic processes. The rocks represent the deep-seated core of a collisional orogen, complete with ultramafic rocks marking a probable original suture. The units have been multiply deformed, transposed, and metamorphosed twice during a Grenville-age orogeny and intruded by post-tectonic(?) granites. Current work centers on 1) determining the structural, depositional, and absolute age relationships between lithologic units to constrain the tectonic setting and to delineate the colliding blocks and location of major structural boundaries, 2) constraining the timing of deformation and metamorphism, and 3) determining the emplacement mechanisms of the post-tectonic plutons and relationship of intrusion to deformation.

I have initiated a research program in the Maria fold and thrust belt of west central Arizona, with the help of several graduate students (now Stefan Boettcher, Tor Steinke). This study expands and builds on our previous work in the northern Apennines of Italy. We are again studying the relationship

areas, north-central Texas: *AAPG Annual Convention Abstracts* p. 204.

Zeng, Hongliu*, **Backus, M. M.**, **Barrow***, **K. T.**, and **Tyler, N.**, 1993, Facies-Guided 3-D Seismic Modeling: Part 1, Model Construction: *Society of Exploration Geophysicists Sixty-third Annual Meeting Expanded Abstracts*, p. 938-941.

Zeng, Hongliu*, **Backus, M. M.**, **Barrow***, **K. T.**, and **Tyler, N.**, 1993, Facies-Guided 3-D Seismic Modeling: Part 2, Model Interpretation: *Society of Exploration Geophysicists Sixty-third Annual Meeting Expanded Abstracts*, p. 1253-1256.

Zhao, L.-S., **Sen, M. K.**, and **Stoffa, P. L.**, 1994, Statistical study of norms of waveform fit for source estimation from regional seismograms: *Seismological Society of America*.

Zhao, Z., **Moore, G. F.**, **Shipley, T. H.**, **Bangs, N. L.**, **Stoffa, P. L.**, **Teagan, P. L.**, and **Sen, V.**, **Moore, J. C.**, and **Zwart, G.**, 1993, Hydrogeology of the northern Barbados Ridge accretionary prism: constraints from 3-D seismic reflection data: *Eos, Transactions American Geophysical Union*, v. 74, p. 241.

Zhou, R.*, **Tajima, F.**, and **Stoffa, P. L.**, 1993, A feasibility study of genetic algorithms to constrain near-source velocity structure: *Eos, Transactions American Geophysical Union*, v. 74, p. 394.

ARTICLES

Aguirre-Díaz, G. J.*, and **McDowell, F. W.**, 1993, Nature and timing of faulting and synextensional magmatism in the southern Basin and Range, central-eastern Durango, Mexico: *Geological Society of America Bulletin*, v. 105, p. 1435-1444.

Baedecker M. J., **Cozzarelli, I.**, **Bennett, P. C.** and **Siegel D.I.**, 1993, The fate of crude oil in a sand and gravel aquifer III. *Geochemical processes. Applied Geochemistry*, 8, 569-586.

Barker, D. S., 1993, Diagnostic magmatic features in carbonatites: implications for the origins of dolomite- and ankerite-rich carbonatites: *South African Journal of Geology*, v. 96, p. 131-138.

Bennett, P. C. and **Council, T.***, 1993, The geochemistry of ikaite formation at Mono Lake, California: Im-

plications for the origin of tufa mounds. *Geology*, 21, p. 971-974.

Bennett P. C., Siegel D. I., Baedeker M. J., Cozzarelli, I. and Hult M., 1993, The fate of crude oil in a sand and gravel aquifer I. Inorganic geochemistry. *Applied Geochemistry*, v. 8, 529-549.

Bennett P. C. and Casey, W. H., 1993, Organic acids and the dissolution of silicates, in *The role of organic acids in geological processes*. (Pittman, E.D. and Lewan, M. eds.) Springer-Verlag.

Bond, G. C., Devlin, W. J., **Kominz, M. A.**, Beavan, J., and McManus, J., 1993, Evidence of astronomical forcing of the Earth's climate in Cretaceous and Cambrian times: *Tectonophysics*, v. 222, p. 295-315.

Buffler, R. T., 1994, Geological history of the eastern Argo Abyssal Plain based on ODP drilling and seismic data: *AGSO Journal of Australian Geology and Geophysics*, v. 15, no. 1, p. 157-164.

Buffler, R. T., and Thomas, W., 1994, Crustal structure and evolution of the southeastern margin of North America and the Gulf of Mexico basin, in Speed, R.C. (ed.), Phanerozoic Evolution of North American Continent-Ocean Transitions: *Boulder, Colorado, Geological Society of America, The Geology of North America*, v. CTV-1.

Cambois, G.*, and **Stoffa, P. L.**, 1993, Surface-consistent phase decomposition in the log/Fourier domain: *Geophysics*, v. 58, p. 1099-1111.

Carlson, W. D., **Reese, J.R.***, 1994, Nearly pure iron staurolite in the Llano Uplift and its petrologic significance: *American Mineralogist*, v. 79, 154-160.

Cibin, U., Cavazza, W., Fontana, D., **Milliken, K. L.**, and **McBride, E. F.**, 1993, Comparison of composition and texture of calcite-cemented concretions and host sandstones, northern Apennines, Italy: *Journal of Sedimentary Petrology*, v. 63, p. 945-954.

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.

Dalla Salda, L.A., and **Dalziel, I. W. D.**, 1993, Evolución paleogeográfica del occidente del Gondwana durante el Neoproterozoico-Paleozoico Medio, Primer Simposio

between construction and collapse of an orogen and the effect of fluids on deformation and recrystallization mechanisms during ductile shearing. Thus far, we have worked in the Granite Wash and northern Dome Rock Mountains where the Mesozoic structures are well exposed and have not been extensively dismembered by Tertiary extension. Thus, we can see the geometric relationships between the contractional and extensional structures. Another fascinating problem under investigation is understanding the difference in mechanical response by the same stratigraphy to Mesozoic shortening in the two areas. In the northern Dome Rock Mountains, the shortening has apparently been accommodated by polyphase nappe-scale folding of the entire sequence, whereas in the Granite Wash Mountains, the units form imbricate stacks of discrete ductile shear zones bounded by brittle thrusts.

In addition to these ongoing projects, I also supervise students who work closely with Martin Jackson and Bruno Vendeville at the Geodynamics laboratory of the Bureau of Economic Geology and with Mike Coffin and Ian Dalziel at the Institute for Geophysics. Hongxing Ge is studying the evolution of the salt-related structures in the Paradox Basin of Utah. Mary Johns is investigating the sequential and synchronous formation of superposed folds. Danielle Carpenter is beginning a study on the tectonic history of the metamorphic basement of the Sierra del Carmen, Coahuila, Mexico. Christina Massell is involved in an investigation of the Macquarie Ridge Complex, Southwest Pacific.

Timothy Rowe

Associate Professor, J. Nalle Gregory Regents Teaching Fellow
PhD—1989, University of California at Berkeley
Vertebrate paleontology and systematics; computer imaging

IT WAS MY GREAT PLEASURE to join professor emeritus Jack Wilson and his wife Ruth for a grand tour of the Sierra Vieja and an introduction to relatively unexplored Late Cretaceous sediments in West Texas. Our Department has a long history of geological research in this region which, together with Jack's classic work on the Tertiary faunas and geochronology of the region, provides an outstanding context in which to begin work on the Late Cretaceous faunas. The problems in the region are intellectually challenging and the Sierra Vieja is one of the most beautiful parts of Texas I have visited. I look forward to a long future in the region. I also began field work in the Early Permian Arroyo Formation in Baylor County, after having spent a number of years studying the fossils that others have collected from the region. With the help of graduates and undergraduates, in a short time we found dozens of small jaws and other bones, and the promise of some major advances in our knowledge of Permian microvertebrates.

Back in the lab, I have been working on an analysis of the X-ray CT imagery that has been generated over the last two years in our exploration of new industrial scanners. These new data afford an outstanding means of visualizing complex 3-D anatomy of tiny vertebrate skulls. This has helped to solve some long standing problems surrounding the evolution of the mammalian brain and middle ear, offering some rather surprising conclusions. I am now looking at brain evolution in carnivorous dinosaurs to evaluate the relationship between modern birds and extinct dinosaurs, and to understand the history of the avian brain.

Computers continue to dominate my life on campus. Together with Bill Carlson and Austinite William Bottorff, we published our first compact disc, entitled *Thrinaxodon: Digital Atlas of the Skull*, which includes a

FACULTY RESEARCH

complete research library of X-ray CT images as well as digital versions of previous publications on this extinct relative of modern mammals. This disc was also a first for the University of Texas Press. Although the topic might seem especially erudite, we were very happy to have successfully prototyped a pathway for electronically publishing large volumes of scientific research.

A second research CD-ROM is due to be published soon, and we expect the importance of electronic publishing both on CD-ROM and over the "information highway" to grow enormously in importance over the next decade. We are nearing completion of a third disc, this one aimed at undergraduates taking my course on The Age of Dinosaurs. The "Dinosaur Disc" as it has become known, is a sort of electronic text book and tutorial for freshmen that introduces them to dinosaurs while also introducing computers, CD-ROM and the Internet.

John M. (Jack) Sharp

Chevron Centennial Professor

PhD—1974, University of Illinois

Hydrogeology; alluvial aquifers; regional flow systems; energy transport; basin analysis; fractured rock systems

JACK SHARP'S LAST YEAR saw the conclusion to his three years on the GSA Council and he stepped down as chairman of the board of registration for the American Institute of Hydrology because of his research leave in Australia. Jack did accept the post of advisor to the council of the International Association of Hydrogeologists, join the editorial board of the *Journal of Applied Hydrogeology*, and may accept the editorship of the *Journal of Hydrology*. The research on fractures, fracture skins, and Gulf of Mexico Basin were fruitful. Also, very interesting has been the cooperative study with the USGS and UT Civil Engineering on springflow augmentation for San Marcos and Comal Springs. Politics has a way of trying to dictate hydrogeological factors. We feel, however, that augmentation may be scientifically, environmentally, and technically feasible. Economic, social, and political feasibility may be another question.

Doug Smith

Albert W. and Alice M. Weeks Centennial Professor in Geology,

Dave P. Carlton Centennial Teaching Fellow in Geology

PhD—1969, California Institute of Technology

Igneous and metamorphic petrology; geochemistry; mantle processes

MY RESEARCH INTERESTS HAVE BEEN focused on processes within the Earth at high pressures. I investigate why magmas are formed, how fluids interact with the mantle, and how crustal tectonics are dictated by mantle events. Some clues 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 eruptions. Most of the rocks studied in the past year have been from the southwestern U.S., where provinces with contrasting tectonic histories provide a superb natural laboratory. Mantle fragments from the Colorado Plateau have been analyzed by electron probe and mass spectroscopy to determine their histories. One goal is to understand the uplift but relative stability of the Colorado Plateau province.

Internacional del Neoproterozoico-Cambrio de la Cuenca del Plata, Tomo I.

Dalziel, I. W. D., Dalla Salda, L. H., and Gahagan, L. M., 1994, Paleozoic Laurentia-Gondwana Interaction and the Origin of the Appalachian-Andean Mountain System, *Geological Society of America Bulletin*, v. 106, 243-252.

Dalziel, I. W. D., 1993, Tectonic tracers and the origin of the proto-Andean margin: XII Congreso Geológico Argentino y II Congreso de Exploración de Hidrocarburos, v. Tomo III, p. 367-374.

Dalziel, I. W. D., 1994, "Geology and Paleontology of the Ellsworth Mountains, West Antarctica" by G.F. Webbers, C. Craddock and J.F. Spletstoeser, eds., *Geological Society of America Memoir 170*, Boulder, Geological Society of America. *Economic Geology*, v. 7, p. 1917 (review).

Denny, W.M., Austin, J.A., and **Buffler, R. T.**, 1994, Seismic stratigraphy and geologic history of Mid-Cretaceous through Cenozoic rocks, southern Straits of Florida: *AAPG Bulletin*, v. 78, p. 461-487.

Deynoux, M., **Kocurek, G.**, Benan, C. A. A., **Crabaugh, M.***, Havholm, K. and Pion, J. C., 1993, Stratigraphie sequentielle en milieu desertique: exemple de l'erg Akchar en Mauritanie occidentale (Afrique de l'Ouest). *Comptes Rendus de l'Academie des Sciences, Paris 317*, Ser. II, p. 1199-1205.

Ellison, S. P. Jr., 1994, The Branson and Mehl conodont era: *Forschungsinstitut Senckenberg Courier 168*, Willi Ziegler Festschrift I, p. 25-30.

Famiglietti, J. S., Braswell, B. H., and Giorgi, F., 1994, Implications for continental-scale hydroclimatological similarity from regional climate model simulations: *World Climate Research Programme, GEWEX News*, v. 4, no. 2, May, p. 1.

Faria, E. L.*, and **Stoffa, P. L.**, 1994, Finite difference modeling in transversely isotropic media: *Geophysics*, v. 59, no. 2, p. 282-289.

Faria, E. L.*, and **Stoffa, P. L.**, 1994, Traveltime computation in transversely isotropic media: *Geophysics*, v. 59, no. 2, p. 272-281.

Feng, J.*, **Buffler, R. T.**, and **Kominz, M.A.**, 1994, Laramide orogenic influence on Late Mesozoic-Cenozoic subsidence history, western deep Gulf of Mexico basin: *Geology*, v. 22, p. 359-362.

Ferris, M. A.*, Kerans, C., and **Sharp, J. M.Jr.**, 1993, Outcrop permeabilities within four facies of a single depositional parasequence, Upper San Andres Formation (Guadalupian /Leonardian), Lawyer Canyon, Guadalupe Mountains, Otero County, New Mexico: In Carlsbad Region, New Mexico and Texas (eds., Love, D.W., Hawley, J. W., Kues, B. S., Adams, J. W., Austin, G. S., and Barker, J. M.): *New Mexico Geological Society Forty-Fourth Annual Field Conference*, p. 205-210.

Fiduk, J. C.*, and Behrens, E. W., 1993, A comparison of recent versus Plio-Pleistocene sediment accumulation rates of the Texas-Louisiana Slope, NW Gulf of Mexico: *14th Annual Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists Foundation Research Conference Proceedings*, Dec. 5-8, p. 41-56.

Fu, L.*, **Milliken, K. L.**, and **Sharp, J. M.**, 1994, Porosity and permeability variations in fractured and liesegang-banded Breathitt Sandstones (Middle Pennsylvanian), eastern Kentucky: Diagenetic controls and implications for modeling dual-porosity systems: *Journal of Hydrology*, v. 154, p. 351-381.

Galloway, W. E., 1993, "Facies models; response to sea level change": *Journal of Sedimentary Petrology*, v. 63, p. 570.

Galloway, W. E., 1993, "Shelf sand and sandstone bodies: geometry, facies and sequence stratigraphy", *Journal of Sedimentary Petrology*, v. 63, p. 770-771.

Gordon, M., and **Young, K.**, 1993, Bathonian and Valanginian fossils from Honduras: *Geobios*, Memoir Series no. 15, p. 175-179.

Gose, W. A., Collins, K. S., and Collins, M. B.: Paleomagnetic studies of burned limestone clasts in historical architectural settings: the Moore-Hancock Farmstead, Austin, Texas. *J. Field Archaeology*, 21, 125-129, 1993.

Guensburg, T.E., and **Sprinkle, J.**, 1992, Rise of echinoderms in the Paleozoic Evolutionary Fauna: significance of paleoenvironmental controls. *Geology*, v. 20, p. 407-410 (and cover photo).

Hanor, J. S., **Land, L. S.**, and Macpherson, G. A., 1993, Carboxylic acid anions in formation waters, San Joaquin Basin and Louisiana Gulf Coast, U.S.A.— implications for clastic diagenesis: dis-

One student, Linda Davis, finished her doctorate this year, with a study of potassic magmas generated at the eastern edge of Cenozoic magmatism caused by subduction below the southwest. Another, Alex Riter, is comparing the mantle below the Grand Canyon with that below the Basin and Range. A third, Lars Borg, is studying products produced by recent subduction below northern California.

James Sprinkle

First Mr. and Mrs. Charles E. Yager Professor of Geology
PhD—1971, Harvard University

Invertebrate paleontology; Paleozoic echinoderms; evolutionary history

I DID FOUR WEEKS OF FIELD WORK in June and early July 1993, in the central and northern U.S. Rockies searching for Late Cambrian echinoderms with Tom Guensburg, Rock Valley College, UT PhD student Colin Sumrall, and two undergraduate assistants on a one-year NSF research grant. We had only fair success, with few discoveries of complete specimens and terribly wet weather while we were in northern Wyoming and Montana. A paper on these new echinoderms and their implications is now in preparation. I also worked with Tom Guensburg for a week in August, finishing a manuscript on Early Ordovician edrioasteroids that is now in press with the Field Museum, setting up a poster session on the same topic for the October 1993 GSA meeting in Boston, working on a manuscript on Early Ordovician rhombiferans, and planning other work together. The rest of the school year was spent finishing up and submitting a manuscript on the general aspects of our Early Ordovician echinoderm work, cleaning and preparing Late Cambrian echinoderms for description in another paper, plus teaching two weeks of GEO 660 and three courses (one freshman, one writing component for geology majors, and one graduate) during the fall and spring.

Paul L. Stoffa

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

Marine seismology

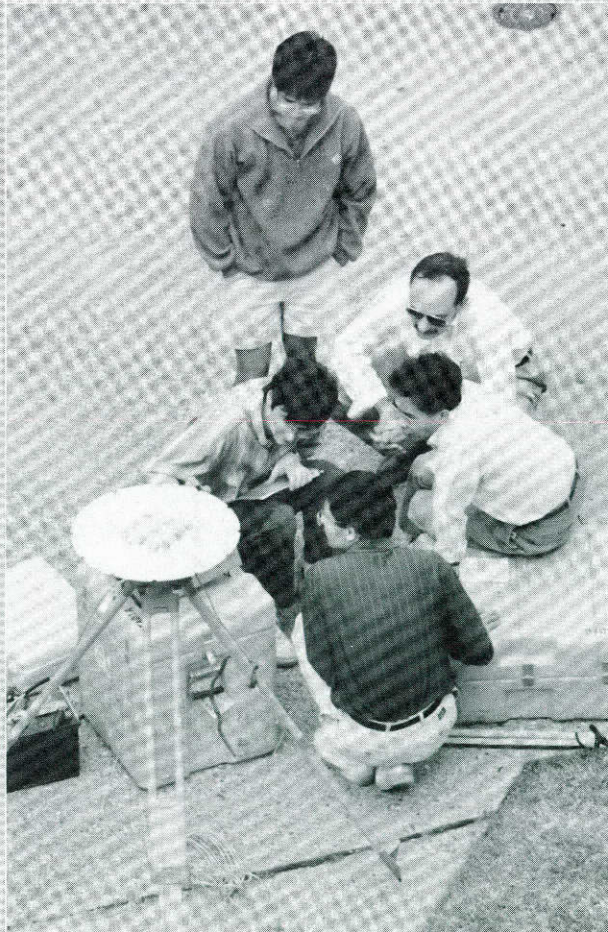
ANSWERS TO MANY COMPLEX GEOLOGICAL problems often can be obtained from seismic measurements. Understanding tectonic processes at both active and passive rifted continental margins requires knowledge of their deep geological structure. My overall research has been focused on developing new seismic data acquisition and processing methods that can be used to address these and other specific geologic problems; for example, mapping the transition from continental to oceanic crust requires the ability to probe beneath large accumulations of sediment to depths often in excess of 15 to 20 km. 2-D and 3-D seismic acquisition combined with pre- and post-stack migration methods of the original or plane-wave decomposed data have been developed that accounts for vertical and lateral velocity variations. Both surface and ocean-bottom seismic data can be used for these migration algorithms to form images of the subsurface. To define the subsurface velocity structure, nonlinear optimization procedures such as genetic algorithms and very fast simulated annealing have been developed based on the "misfit" of migrated subsurface images and reflection tomography. These optimization procedures and the seismic migration algorithms can be implemented on parallel computer architectures, making them within reach of solving practical problems.

FACULTY RESEARCH

Clark R. Wilson,

Wallace E. Pratt Professor of Geophysics, Shell Foundation
 Centennial Teaching Fellow
 PhD—1975, Scripps Institution of Oceanography, University of
 California at San Diego
Research in geophysics and geodesy

OVER THE PAST YEAR MY STUDENTS and I have been working on various problems in geophysics with support from NASA 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 and Department of Aerospace Engineering. Under the NASA Global Geophysics Program, radar altimetry measurements from the Geosat mission were used to examine the oceanic response to forcing by barometric pressure. In his Master's thesis, my student Tim Hoar found that, in contrast to earlier published work, most of the oceans seem to respond in a simple static way, especially in the southern hemisphere. The difficulties with earlier studies appear to be in the treatment of orbit error. Under the NASA Dynamics of the Solid Earth program, with post-doctoral associate Roberto Gutierrez and graduate student Derek Reiber, we continued our job of maintaining a permanent Global Positioning System receiver at McDonald Observatory. As part of this work, we continued measurements between this receiver and various locations in West Texas and New Mexico. We have found that over the past three years, the precision of the GPS method has improved almost by a factor of ten, so that we can get 1-2 millimeter precision on baselines of hundreds of kilometers in length. Furthermore, our measurements over the past three years show suggestions of tectonic motion, which, if confirmed, should lead to further projects in the area. My involvement with the NASA Earth Observing System (EOS) project continues to focus on mass and angular momentum budgets for the atmosphere, oceans, and solid earth. This summer, I am working on the prospects of using hydrologic models to quantify global budgets for water and sediment mass redistribution.



Clark Wilson oversees GPS training during the Spring '94 graduate Geodesy class.

cussion: *Applied Geochemistry*, v. 8, p. 305-307.

Havholm, K. G., Blakey, R. C., Capps, M., Jones, L. S., King, D. D., and Kocurek, G., 1993, Aeolian genetic stratigraphy: an example from the Middle Jurassic Page Sandstone, Colorado Plateau, in: *Aeolian Sediments* (ed. by K. Pye and N. Lancaster). *Special Publication International Association of Sedimentologists*, v. 16, p. 87-107.

Henry, C. D., Muehlberger, W. R., Erdlac, R. J. Jr., Price, J. G., and Dickerson, P. W.*, 1994, Discussion of "Geology of the Solitario, Trans-Pecos Texas"—GSA Special Paper 250: *Geological Society of America Bulletin*, v. 106, p. 560-565.

Jervis, M.*, Stoffa, P. L., and Sen, M. K., 1993, 2-D migration velocity estimation using a genetic algorithm: *Geophysical Research Letters*, v. 20, no. 14, p. 1495-1498.

Jones, H. D., Kesler, S. E., Furman, F. C., Sassen, R., Anderson, W. H., and Kyle, J. R., 1994, Role of crude oil in the genesis of Mississippi Valley-type deposits: Evidence from the Cincinnati Arch: *Geology*, v. 22, p. 609-612.

Kirkland, B. L., Longacre, S. A., and Stoudt, E. L., 1993, Reef, in *Bebout and Kerans*, C. eds., *Guide to the Permian Reef Geology Trail, McKittrick Canyon, Guadalupe Mountains National Park, West Texas: Bureau of Economic Geology Guidebook 26*, p.23-31.

Kocurek, G., and Havholm, K.*, 1993, Eolian sequence stratigraphy—a conceptual framework, in: *Siliciclastic Sequence Stratigraphy* (ed. by P. Weimer & H. Posamentier): *AAPG Memoir*, v. 58, p. 393-409.

Kocurek, G., and Crabaugh, M.*, 1993, Significance of thin sets of eolian cross-strata—discussion: *Journal of Sedimentary Petrology*, v. 63, p. 1165-1169.

Kohn, M. J., Spear, F. S., and Dalziel, I. W. D., 1993, Metamorphic P-T Paths from the Cordillera Darwin, a Core Complex in Tierra del Fuego, Chile, *Journal of Petrology*, 34, p. 519-542.

Kuehne, J.*, Johnson, S.*, and Wilson, C., 1993, Atmospheric Excitation of non-seasonal Polar Motion. *Journal of Geophysical Research*, 98, B11, 19973-19978.

Lagoe, M. B., Eyles, C. H., Eyles, N. and Hale, C., 1993, Timing of Late Cenozoic tidewater glaciation in the Far North Pacific Ocean: *Geo-*

Research Scientists

logical Society of America Bulletin, v. 105, p. 1542-1560.

Lin, D.-S., Wood, E. F., **Famiglietti, J. S.**, and Mancini, M., 1994, Impact of microwave derived estimates for soil moisture fields, *Proceedings of the 6th International Symposium on Physical Measurements and Signatures in Remote Sensing*, Val d'Isere, France, p. 67-74.

Liu, X.*, and **Galloway, W. E.**, 1993, Sediment accumulation rate: problems and new approach: *Program with Papers, 14th Annual Research Conference, Gulf Coast Section Society of Economic Paleontologists and Mineralogists Foundation*, p. 101-107.

Loubere, P., Gary, A. and **Lagoe, M. B.**, 1993, Sea-bed biogeochemistry and benthic foraminiferal bathymetric zonation on the slope of the northwest Gulf of Mexico: *Palaos*, v. 8, p. 439-449.

Lundegard, P. D.*, and **Land, L. S.**, 1993, Carboxylic acid anions in formation waters, San Joaquin Basin and Louisiana Gulf Coast, U.S.A.—implications for clastic diagenesis: discussion: *Applied Geochemistry*, v. 8, p. 297-300.

McDowell, F. W., and Mauger, R. L., 1994, K-Ar and U-Pb zircon chronology of Late Cretaceous and Tertiary magmatism in central Chihuahua State, Mexico: *Geological Society of America Bulletin*, v.106, p. 118-132.

McKenna, T. E.*, **Sharp, J. M. Jr.**, and **Lynch, F.L.***, 1994, Thermal conductivity and radiogenic heat production of sedimentary rocks from the Gulf of Mexico Basin (South Texas), *AAPG Bulletin*.

Mertig, H. J.*, **Rubin, J. N.***, and **Kyle, J. R.**, 1994, Skarn Cu-Au orebodies of the Gunung Bijih (Ertsberg) district, Irian Jaya, Indonesia: *Journal of Geochemical Exploration*, v. 50, p. 179-202.

Milliken, K. L., 1994, Scanning cathodoluminescence studies of siliciclastic rocks: EM Applications Note, Oxford Instruments, Oxford, England, 4 pp.

Misi, A., and **Kyle, J. R.**, 1994, Upper Proterozoic carbonate stratigraphy, diagenesis, and stromatolitic phosphorite formation, Irecê Basin, Bahia, Brazil: *Journal of Sedimentary Research: Section A: Sedimentary Petrology and Processes*, v. A64, p. 299-310.

Moldovanyi, E. P., Walter, L. M., and **Land, L. S.**, 1993, Strontium, boron, oxygen, and hydrogen isotope geochemistry of brines from basal

Wulf Gose

Research Scientist and Senior Lecturer
PhD—1970, Southern Methodist University
Paleomagnetism

IN COOPERATION WITH archeologists from the Texas Archeological Research Laboratory, I performed paleomagnetic analyses on samples from burned rock features from several archeological sites. Multicomponent magnetizations and estimates of the maximum heating temperatures yield information on the function of the different features. Intra- and inter-site patterns in concert with archeological evidence are used to differentiate feature types, identify specialized extractive sites, and track changes in these patterns over time. At several sites, we observed a very large increase in the magnetic susceptibility in stratigraphic intervals associated with human occupation. This suggests the possibility of using the susceptibility as a technique for evaluating the extent and possible cause of anthropogenic modifications of natural sediments and soils. Together with John Kappelman, UT Anthropology, I collected samples for a magnetostratigraphic study of Eocene strata in China in an attempt to date fossil sites which have yielded—among others—the oldest known primates. Paleontologists from the Carnegie Museum of Natural History in Pittsburgh had organized this “rescue mission” because construction of a water dam will permanently flood this area. The most exciting data produced in the paleomagnetic lab clearly are the results from the ~1 Ga old rocks from Coats Land, Antarctica. As advocated by Ian Dalziel, these rocks may possibly be the counterpart of the Grenville front of North America. Rotation of East Antarctica to juxtaposition with the Pacific margin of cratonic North America indeed places the paleomagnetic pole position from Coats Land squarely on the Keeweenawan-Grenville apparent polar wander path for North America giving dramatic support to the SWEAT hypothesis.

Roberto Gutiérrez

Lecturer and Research Scientist Associate,
PhD—1990, University of Texas at Austin
Satellite geodesy

THE PAST YEAR has been busy with teaching the course Geology for Engineers, analyzing data from several ongoing projects involving the Global Positioning System (GPS), and starting a new GPS project. I've continued to work with Drs. Robert Morton and James Gibeaut at the Bureau of Economic Geology (BEG) on the problem of monitoring beach erosion along the Texas Gulf coast. Two kilometers of beach on Galveston Island were surveyed in 1991 and again in 1993 using a vehicle mounted GPS system and our analysis shows that we can measure beach topography with centimeter-scale precision. Between 1991 and 1993 we are able to document subtle changes in beach morphology and estimate corresponding changes in beach sand volume. In addition, in 1994 the BEG was awarded a two-year grant under the Texas Advanced Technology Program to develop a small boat-mounted survey system for making high-precision bathymetric measurements in shallow water. The system we are developing uses a state of the art digital fathometer to measure water depth, a set of accelerometers to monitor the boat attitude, and a GPS satellite receiver to provide information on the boat's position. Our goal is to integrate both on and off-shore GPS surveys into a detailed picture of coastal change and sediment transport.

RESEARCH SCIENTISTS

Since 1990 we have been using GPS to measure a number of baselines across southern New Mexico and west Texas to detect crustal deformation. The full GPS constellation of 24 satellites became operational in late 1993 and this is reflected in the increasing precision of our measurements. In 1990 our baseline precision was about ± 3 cm per 1000 km while in 1993 our precision increased to nearly ± 3 mm per 1000 km. Hopefully, with this level of operational precision we will soon have firm estimates for the rates of extension in the southern Rio Grande rift in New Mexico and the Basin and Range of Trans-Pecos Texas. Our permanent GPS satellite receiver at McDonald Observatory has been now operating a year and it's providing data to the international geodetic community and supporting field operations in west Texas.

Mark Helper

Lecturer

PhD—1985, University of Texas at Austin

Field Geology, Structural Geology and Tectonics

MY RESEARCH THIS YEAR has focused on field relations in the Precambrian of the Llano Uplift in Texas and the Shackleton Range in Antarctica. Graduate student Rob Reed and I mapped and examined evidence for post-emplacement deformation in one of the Town Mountain Granite plutons of the southeastern Llano Uplift last fall. This work, combined with Rob's dissertation studies of other plutons, should provide important constraints on the youngest phases of ductile deformation in the Uplift. I have also been working closely with Robert Roback, who is doing a post-doctoral study of the geochronology of many of the older metamorphic units in the southeastern Uplift.

The highlight of my research effort this year was two months of field work in the Precambrian and lower Paleozoic rocks of the Shackleton Range in Antarctica. This work is being conducted with colleagues Ian Dalziel, Wulf Gose, and Nick Walker and graduate students Fred Hutson and Steve Grimes. We are examining possible geologic ties to the Middle Proterozoic of Arizona and New Mexico suggested by Ian's Late Proterozoic plate reconstructions. We hope to spend a month next year doing similar work in the Heimefrontfjella of Dronning Maud Land, a mountain range containing a 1.0 to 1.3 Ga metamorphic and plutonic sequence that bears remarkable similarities to the Precambrian of the Llano Uplift! By any and all measures, our field season this year was an outstanding success. Samples collected for paleomagnetic, petrologic, and isotopic studies will provide a firm basis for drawing comparisons with the Precambrian geology of the Southwest and lead to an improved understanding of the Middle and Late Proterozoic of Antarctica.

Todd Housh

Research Scientist Associate I

PhD—1989, Washington University

Isotope geochemistry

ASIDE FROM MAINTAINING the Department's MAT 261 thermal ionization mass spectrometer, my research this year has primarily been a continuation of my interests in understanding the formation and development of the continental lithosphere. Perhaps one of the most intriguing aspects to me in understanding the nature of the continental lithosphere is the manner and time-scales in which it is modified. One important means of lithospheric modification is magmatism associated with various tectonic events. In

strata of the Gulf Coast sedimentary basin, USA: *Geochimica et Cosmochimica Acta*, v. 57, p. 2083-2099.

Mosher, S. O., and Kirkland, B. L., 1993, Identification and diagenesis of a phylloid alga: *Archeolithophyllum* from the Pennsylvanian Providence Limestone, Western Kentucky: *Journal of Sedimentary Petrography*, v. 63, p. 1032-1041.

Mosher, S., 1993, Western extensions of Grenville age rocks; Texas: in Reed, J. C. Jr., Bickford, M. E., Houston, R. S., Link, P. K., Rankin, D. W., Sims, P. K., and Van Schmus, W. R., eds., *Precambrian: Conterminous U.S. : Boulder, Colorado, Geological Society of America, The Geology of North America*, v. C-2, p. 365-378.

Mosher, S., Murray, D. P., Hermes, O. D., Gromet, P., 1993, Alleghanian and Avalonian tectonism in southeastern New England: in Cheney, J.T., and Hepburn, J.C., eds., *Field Trip Guidebook for the Northeastern United States: 1993 Boston Geological Society of America*, v. 2, p. BB1-BB30.

Muehlberger, W. R., 1993, Tectonic map of North America, Southwest and Southeast Sheets, a user's guide: *American Association of Petroleum Geologists*, 6 pp.

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.

Oetting, G.C.*, Banner, J. L., and Sharp, J. M. Jr., 1994, Regional geochemical and isotopic variations in badwaters of the Edwards aquifer: In, *Edwards aquifer: The Barton and San Marcos Springs area - A field trip guide book*, American Institute of Hydrology 1994 Annual Conference, Austin, TX.

Oetting, G.C.*, Banner, J. L., and Sharp, J. M. Jr., 1994, Geochemical and isotopic variations in saline groundwaters of the Edwards aquifer: Implications for structural and depositional controls on basin fluid movement on the northwestern margin of the Gulf of Mexico sedimentary basin: *Soc. Sedimentary Geology Research Conference: Basin-wide diagenetic patterns: Integrated petrologic, geochemical, and hydrologic considerations*.

Picard, M. D., and McBride, E. F., 1993, Beach sands of Elba Island, Tuscany, Italy: roundness study and evidence of provenance: in Johnsson,

M. J., and A. Basu, eds, Processes controlling the composition of clastic sediments: Boulder, Col., Geological Society of America Special Paper 284, p. 235-245.

Pitman, A. J., Henderson-Sellers, A., Abramopoulos, F., Avissar, R., Bonan, G., Boone, A., Dickinson, R. E., Elk, M., Entekhabi, D., Famiglietti, J., Frecht, M., Garrat, J. R., Hahmann, A., Koster, R., Kowalczyk, E., Laval, K., Lean, J., Lee, T. J., Lettenmaier, D., Liang, X., Mahfouf, J.-F., Mahrt, L., Milly, P. C. D., Mitchell, K., deNoblet, N., Noilhan, J., Pan, H., Pielke, R., Robock, A., Rosenzweig, C., Schlosser, C. A., Scott, R., Suarez, M., Thompson, S., Versegny, D., Wetzel, P., Wood, E., Xue, Y., Yang, Z.-L., and Zhang, L., 1993, Project for intercomparison of land-surface parameterization schemes (PILPS), Results from Off-line Control Simulations (Phase 1a), World Climate Research Programme, International GEWEX Project Office Publication Series No. 7, 47 p.

Rast, N., Skehan, J. W., and Grimes, S. W.*, 1993, Highlights of Proterozoic Geology of Boston, in: Cheney, J. T., and Hepburn, J. C., eds., Field Trip Guidebook for the Northeastern United States: 1993 Boston Geological Society of America, v. 2, Contributions 67, Dept. of Geology and Geography, Univ. of Massachusetts, Amherst, Chapter 5, p. S1-15.

Rowe, T., Carlson, W. D., Bottorff, W., 1993 *Thrinaxodon: Digital Atlas of the Skull*. [CD-ROM] University of Texas Press, 263 megabytes.

Rubin, J. N.*, Henry, C. D., and Price, J. G., 1993, Mobility of zirconium and other "immobile" elements during hydrothermal alteration: *Chemical Geology*, v. 110, p. 29-47.

Sen, M. K., Bhattacharya, B. B., and Stoffa, P. L., 1993, Nonlinear inversion of resistivity data: *Geophysics*, v. 58, p. 496-507.

Sharp, J. M. Jr., 1993, Fractured aquifers/reservoirs: Approaches, problems, and opportunities: in *Hydrogeology of Hard Rocks: Memoirs of the 24th Congress, International Association of Hydrogeologists* (Eds. Banks, D., and Banks, S.), Oslo, Norway, v. 24, part 1, p. 23-38.

Sharp, J. M. Jr., Fu, L.*, Cortez, P., and Wheeler, E., 1994, An electronic minipermeameter for

pursuing this particular line of research, I have been involved in studies of both some of the oldest rocks on Earth and some of the youngest. This past year I have been involved in both new and continued research on magmatic rocks ranging from 50 years old to 40 Ma from Siberia, several locations within Mexico, and Irian Jaya. These rocks are located in a variety of tectonic settings, from arcs to rift zones and compressional orogenic belts. The principal research tools I have applied to these problems include a combination of radiogenic isotope (Pb, Sr, and Nd), petrologic, and geochemical studies.

This last year also saw my continued collaboration with Sam Bowring (MIT) on attempting to understand the nature of the Earth's early crust through studies of the Earth's oldest rocks, the ca. 4.0 Ga Acasta gneisses. Perhaps some of the most important results of this work have been the recognition that even older crustal materials were involved in the formation of these rocks, and that the Hadean Earth was characterized by high rates of recycling of continental crust back into the mantle.

Fangqiong Lu

Research Associate

PhD—1991, University of Chicago

Igneous petrology, micro-scale geochemistry

MY RESEARCH INTERESTS LIE mainly in deciphering igneous processes by detailed micro-scale chemical analyses of igneous products. I am especially interested in determining mineral/melt partition coefficients of various minerals using melt inclusions and their host crystals. Melt inclusions are small volumes (a few to a few hundred micrometers in diameter) of amorphous silicate included in phenocrysts of volcanic rocks; they are samples of the melt from which the host crystals grew, and thus represent the melt in equilibrium with the crystal. Micro-scale analyses (electron microprobe and ion microprobe analyses) of melt inclusions and the adjacent areas of their host crystals should give partition coefficients that are closer to real values because they exclude various interferences and uncertainties. Right now, I am working on partition coefficients for sanidine/melt and plagioclase/melt in silicic volcanic systems with samples of different compositions from various locations.

I am also involved in a project determining F concentrations in apatite with William Carlson. We started investigating the problem of different F volatility with different crystal orientations relative to the electron beam and the mechanism behind it.

Fred W. McDowell

Research Scientist and Senior Lecturer

PhD—1966, Columbia University

Geochronology and isotope geochemistry of continental arc magmatism

FOR MY RESEARCH ACTIVITIES I continue to look toward the south and the west. Our long-term study of Cretaceous and Tertiary magmatic activity in western Mexico continues to advance. With the publication of a major paper on the history of magmatism since 100 Ma in central Chihuahua, my attention has now turned fully to the area of south-central Sonora. There, it is possible to examine a variety of geologic features, including the Late Cretaceous and Early Tertiary plutonic and volcanic rocks of a major Circum-Pacific batholith complex, the westward continuation of the vast Tertiary Sierra Madre Occidental volcanic field, volcanism associated with

RESEARCH SCIENTISTS

Basin and Range extension, and the development of Neogene volcanic fields adjacent to the Gulf of California. In this work, I continue to enjoy effective collaboration with geologists from Sonora. Through their own research programs, they are documenting crucial field relationships that guide my sampling for geochronology and geochemistry. In addition, they have been providing logistical aid and good field companionship during our short but frequent sampling trips. When the Sonoran part of this project has been completed, we will have a profile of the history of Cretaceous and younger magmatic activity across an east-west strip stretching from Chihuahua City to the coast of Sonora.

I am particularly excited about new plans to initiate a study of the radiogenic isotopes of lead, strontium, and neodymium in igneous rocks across the entire strip. This project will be conducted together with Todd Housh and Eric James. In addition to learning much about the geochemical evolution of the magmatism and its source regions, we will look for the isotopic imprint of hidden crustal features through which the magmas have traversed. Among the features of interest are the westward trace of the Ouachita tectonic front, the eastward continuation of the controversial Mojave-Sonora megashear, and the interface between continental and oceanic crust in northwestern Mexico.

In other research, I am continuing to determine K-Ar ages as part of the Department's project in Irian Jaya. Dating of plutons in the Ertsberg district is virtually complete. More recent efforts have been aimed at dating plutonic and metamorphic rocks collected during reconnaissance of the Late Tertiary arc complex in the highlands of Irian Jaya.

Kitty L. Milliken

Research Associate

PhD—1985, University of Texas at Austin

Petrography and geochemistry of siliciclastic rocks

MY RESEARCH CONTINUES to be focused on deciphering the geochemical history of shales and sandstones through the use of integrated petrographic and geochemical methods. The scanned cathodoluminescence system that was on loan to the Department last year is now a permanent component in the repertoire of imaging methods available here. This particular technique is opening new possibilities for examining interrelated deformation and authigenesis in both sandstones and various "hard" rocks. The scanned-CL allows students in structural petrology, igneous petrology, and sedimentary petrology to examine small-scale deformation features and rock-alteration effects that are "cryptic" in other modes of imaging. There are several significant new findings that have come from scanned-CL: the importance of brittle deformation in development of apparent pressure-solution fabrics; the widespread occurrence of healed intragranular fractures in sandstones; and vivid confirmation of the crack-seal mechanism in the formation of some quartz veins (much "vein" quartz turns out to be fractured and extended detrital grains—a messy complication for isotopic chemists!)

I continue to apply scanned-CL and other petrographic/geochemical methods to several projects. Work on Gulf Coast mudrocks continues with Lynton Land and his students and post-docs, my current focus being on the origin of quartz in mudrocks. Siliciclastic diagenesis in thrust-faulted settings is the topic of interest in my projects in the southern Appalachians and, with Earle McBride, in the Apennines. On-going work in connection with ODP Leg 149 includes study of the silt fraction in Cenozoic deep-sea turbidites. Another aspect of my cruise-related work is the study of low-temperature clay-mineral precipitation and calcitization in serpentinized peridotite breccias (another case of interrelated brittle deformation and authigenesis).

use in the field and laboratory: *Ground water*, v. 32, p. 41-46.

Sharp, J. M. Jr., Mayer, J. R.*, and **McCutcheon, E.**, 1993, Hydrogeologic trends in the Dell City area, Hudspeth County, Texas: in *Carlsbad Region, New Mexico and Texas* (eds., Love, D. W., Hawley, J. W., Kues, B. S., Adams, J. W., Austin, G. S., and Barker, J. M.), *New Mexico Geological Society Forty-Fourth Annual Field Conference*, p. 327-330.

Sharp, J. M. Jr., Smyth-Boulton, R. C.*, and **Fuller, C. M.**, 1993, Permeability-porosity variations and fracture patterns in tuffs: in *Hydrogeology of Hard Rocks, Memoires of the 24th Congress International Association of Hydrogeologists* (eds., Banks, D., and Banks, S.), Oslo, Norway, p. 103-114.

Sial, A. N., Ferreira, V. P., and Long, L. E., 1994, Oxygen and strontium isotopes in contrasting meta-luminous granitic suites from two Precambrian foldbelts in NE Brazil: *Abstracts of Eighth International Conference on Geochronology, Cosmochronology and Isotope Geology*, p. 291.

Slatt, R. M., Phillips, S., Boak, J. M., and Lagoe, M. B., 1993, Scales of geological heterogeneity of a deep water and 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., Arculus, R. J., Manchester, J. M., and Tyner, G. N., 1994, Garnet-pyroxene-amphibole xenoliths from Chino Valley, Arizona, and implications for continental lithosphere below the Moho: *Journal of Geophysical Research*, v. 99, p. 683-696.

Sprinkle, J., 1992, Radiation of Echinodermata in: *Lipps, J. H., and Signor, P.W.* (eds.), *Origins and Early Evolution of the Metazoa*, p. eds, publisher Plenum Press, New York, 570 p.

Sprinkle, J. and **Wahlman, G. P.**, 1994, New echinoderms from the Early Ordovician of west Texas: *Journal of Paleontology*, v. 68, p. 324-338.

Swezey, C. S.*, 1993, El Menzaha: Lost village in the Grand Erg Oriental, Algerian Sahara: *The Ancient World*, v. 24, p. 57-58.

Turnbull, W. D., Lundelius, E. L. Jr., and Tedford, R. H. 1993. Fossil vertebrate locality at Smeaton,

Victoria: Mem. Ass. Australas. Palaeontologists, v. 15, p. 429-440.

Wilson, C., 1993, Contributions of Water Mass Redistribution to Polar Motion Excitation, in American Geophysical Union Geophysical Monograph Series, v. 24, *Contributions of Space Geodesy to Geodynamics: Earth Dynamics*, Smith and Turcotte editors, pp 77-82.

Wood, E. F., Lin, D.-S., Mancini, M., Thongs, D., Troch, P.A., Jackson, T. J., Famiglietti, J. S., and Engman, E. T., 1993, Intercomparisons between passive and active microwave remote sensing and hydrological modeling for soil moisture: *Advanced Space Research*, v. 13, p. 167-176.

Wood, W. T.*, **Stoffa, P. L.**, and Shipley, T. H., 1994, Quantitative detection of methane hydrate through high-resolution seismic velocity analysis: *Journal of Geophysical Research*, v. 99, no. B5.

Xue, L.*, and **Galloway, W. E.**, 1993, Genetic sequence stratigraphic framework, depositional style, and hydrocarbon occurrence of the Upper Cretaceous QYN Formations in the Songliao lacustrine basin, northeastern China: *AAPG Bulletin*, v. 77, p. 1792-1808.

Xue, L.*, and **Galloway, W. E.**, 1993, Sequence stratigraphic and depositional framework of the Paleocene Lower Wilcox strata, northwest Gulf of Mexico Basin: *Gulf Coast Association of Geological Societies Transactions*, v. 43, p. 453-464.

Ye, Q.*, Matthews, R. K., **Galloway, W. E.**, Frohlich, C., and **Gan, S.*** 1993, High-frequency glacioeustatic cyclicity in the early Miocene and its influence on coastal and shelf depositional systems, NW Gulf of Mexico basin: *Program with Papers, 14th Annual Research Conference, Gulf Coast Section Society of Economic Paleontologists and Mineralogists Foundation*, p. 287-298.

Young, K., 1993, and Olóriz, F., 1993, Ammonites from the Smackover Limestone, Cotton Valley Field, Webster Parish, Louisiana, U.S.A.: *Geobios, Memoir Series no. 15*, p. 401-409.

Young, K., 1993, Middle Albian ammonites from El Madero, west-central Chihuahua: *Texas Journal of Science*, v. 45, no. 2, p. 165-176, 3 figs.

Robert C. Roback

Postdoctoral Fellow

PhD—1993, University of Texas at Austin

Geochronology, Structural Geology and Tectonics

AFTER SUCCESSFULLY DEFENDING my dissertation in May of last year, I was employed as lecturer for the Summer Field Geology class in Montana. The pace was incredibly hectic but, as usual, the experience was 100% rewarding. In July I began work as an NSF postdoctoral fellow working on the Grenville rocks of the Llano Uplift with Sharon Mosher and Bill Carlson. The work has focused on defining various lithotectonic packages within the Uplift and dating previously documented structural and metamorphic events. As a result of recent field work, we now regard mafic and tonalitic rocks associated with the Coal Creek serpentinite in the southeast part of the Uplift as the Coal Creek Domain. Forthcoming geochronologic, geochemical, and isotopic studies are aimed at determining the nature and evolution of this domain. Comparison of these data to similar data on rocks to the north of the Coal Creek Domain will help us to better understand the Precambrian geologic evolution of the Llano Uplift.

As part of my postdoctoral work, I traveled to Memorial University, St. Johns, Newfoundland, during the frigid month of December. While there, I was fortunate to work in the geochronology lab with Drs. Greg Dunning and James Connelly (now an assistant professor in our Department).



Dr. Oscar Gutierrez lectures on a GEO 312K field trip to a detention-filtration pond at Barton Creek Square Mall in Austin.



Bureau of Economic Geology

THE OPERATING BUDGET OF THE BUREAU OF ECONOMIC GEOLOGY during 1993-1994 totaled \$13.6 million from line-item State appropriations and from 68 outside contracts and grants. Of these 68 funding sources, 25 were from interagency contracts with State and local governments and 12 were with the petroleum industry and private institutional foundations. The rest were with various agencies of the Federal government.

In 1993-1994, the Bureau conducted 54 research projects. Most of these involved oil and gas investigations. The goal of the Bureau's continuing study of San Andres and Grayburg carbonate reservoirs is to develop new methods for understanding and predicting petrophysical rock properties in the subsurface that will help identify the distribution of unrecovered oil remaining in the reservoirs. Long-term study of San Andres/Grayburg outcrops along the Algerita Escarpment and other areas of the Guadalupe Mountains has recently been expanded to include the nearby Brokeoff Mountains. The research program has also expanded to include study of the South Cowden San Andres/Grayburg field in Ector County, Texas. Continuing field and laboratory studies of two well-exposed fluvial-deltaic formations of the western United States, the Upper Cretaceous Ferron Sandstone and Lower Cretaceous Fall River Formation, are designed to aid in improved oil and natural gas recovery from complex fluvial-deltaic reservoirs, specifically reservoirs of the Texas Gulf Coast, which account for 64 percent of total production from Gulf Coast reservoirs. By contrasting geologic attributes of the two formations, a spectrum of data can be developed to predict facies architecture and permeability distribution of fluvial-deltaic deposits.

Several multi-year projects characterize the Bureau's research efforts in natural gas. An ongoing Bureau program funded by the Gas Research Institute (GRI) has three major

components: (1) regional and reservoir-scale geologic study of the Paleocene Wilcox Lobo gas trend of Webb and Zapata Counties, South Texas, (2) investigation of factors controlling gas production in the Upper Pennsylvanian Canyon Sandstone, Val Verde Basin, Texas, and (3) study of diagenetic controls on fracture occurrence and attributes in the Upper Cretaceous Frontier Formation of Wyoming, the Lower Cretaceous Travis Peak Formation of East Texas, and the Pennsylvanian Canyon Sandstone. For the past several years, the Secondary Natural Gas Recovery (SGR) project has been studying the impact of stratigraphic and diagenetic variation in fluvial-deltaic gas reservoirs in the Gulf Coast Basin and developing the necessary geologic and engineering knowledge to efficiently produce gas from these reservoirs. This phase of the SGR project, funded by GRI and DOE, was successfully completed in 1993-1994. A new SGR project is focusing on Pennsylvanian sandstone reservoirs in the Midcontinent region. The current research objective is the Atoka interval of the Boonesville field in the Fort Worth Basin, North-Central Texas. During 1993-1994, Bureau researchers completed study of the geologic and hydrologic controls on the production of coalbed methane in the Upper Cretaceous Williams Fork Formation and the Paleocene Fort Union Formation in the Sand Wash Basin of the Greater Green River Basin, Colorado and Wyoming. Research has now expanded to other parts of the Greater Green River Basin.

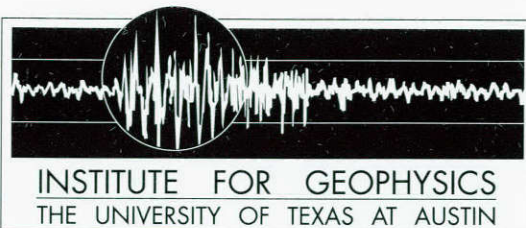
The Bureau's Applied Geodynamics Laboratory (AGL) conducts mathematical and physical scale modeling to generate new concepts, test hypotheses, and duplicate specific geologic structures relevant to the location, origin, mechanics, and evolution of structural traps for oil and natural gas. Experimental research during 1993-1994 focused on a wide range of gravity-driven tectonics involving

diapirism, extension, contraction, and combinations of these structural styles. Field study of Upheaval Dome, Utah, continued in 1993-1994. Exposures of the structure suggest that it may represent the pinched-off stem of a salt dome, a feature that is common in the productive fairways of the subsurface Gulf of Mexico.

In addition to energy-resource investigations, environmental and hydrogeologic investigations compose a major portion of Bureau research. The Bureau continued a multi-year characterization of the overall geologic suitability of the proposed site for the Texas low-level radioactive waste repository in the Eagle Flat region of Hudspeth County, Texas. In a new project, Bureau researchers are compiling an environmental atlas of the Rio Grande/Rio Bravo Border Area, a 100-km-wide strip straddling the United States/Mexico international border. Bureau researchers continued a 5-year hydrologic and geologic assessment of movement of ground-water contaminants in and around the Pantex Plant, the nation's site for assembly, maintenance, and disassembly of nuclear weapons.

Coastal studies conducted by the Bureau in 1993-1994 addressed the complex problems surrounding natural and man-induced changes in sand-dominated Texas Gulf Coast shorelines and in the State's ecologically invaluable coastal wetlands. In a new project, Bureau coastal geologists are attempting to determine rates of sedimentation of the Trinity River that are necessary to maintain existing coastal wetland habitats in a setting experiencing a net rise in relative sea level. In a 5-year study of coastal erosion and wetland loss from Sabine Pass to Sargent Beach, the Bureau is developing the information and expertise needed to assure that future economic development of the coastal region is compatible with the dynamics of the coastal system.

— Tucker F. Hentz



Institute for Geophysics

THE INSTITUTE FOR GEOPHYSICS (UTIG), FOUNDED IN 1972, CONDUCTS geophysical investigations of the history, structure, and dynamics of the earth's crust, especially the ocean basins and margins, and of earthquake phenomena. UTIG has evolved into one of the leading academic research groups in geology and geophysics. The Institute is an Organized Research Unit established to serve the basic and applied geophysical research needs of The University of Texas at Austin. The Institute staff includes over 25 PhD-level research scientists, a number of whom hold joint positions with the Department of Geological Sciences as faculty members or research scientists.

August 31, 1993 marks the end of an era, as Dr. Art Maxwell retires as Director of UTIG, after more than 12 years of service. Paul Stoffa will assume the position of Acting Director until a permanent selection is made. Another noteworthy summer 1994 news item is that UTIG has been selected to become the headquarters of the National Science Foundation aerogeophysical facility under the direction of Dr. Don Blankenship. Blankenship's main interest is in aerogeophysical studies over the ice sheets of Antarctica, and he routinely spends 8 to 12 weeks in the Southern Hemisphere each year. UTIG also was able to take possession of new shop facilities at the J.J. Pickle Research Campus (formerly the Balcones Research Center), to house equipment that formerly resided in Galveston, and to relieve space problems at the Atrium Office Building on North MoPac, where the bulk of the Institute's research activities take place.

UTIG serves as an important educational resource for students in the Department of Geological Sciences (mostly graduate students, but a few undergraduates, as well) by providing technical support staff to help with data processing, drafting, design and engineering, and to maintain equip-

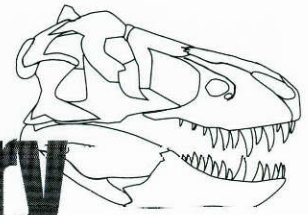
ment which includes multichannel seismic systems, an array of active or passive ocean bottom seismometers, magnetometers, gravimeters and geothermal probes. Disciplinary areas of research interests include seismic reflection and refraction, earthquake seismology, geothermal studies, gravity, geomagnetism, aerogeophysics, laser altimetry, geodesy, and theoretical geophysics. Geographic areas of research are worldwide. The following is a list of research studies that were underway during the 1993-94 academic year. All of these topics form a major or minor part of one or more graduate student theses or dissertations, and this list illustrates the richness of UTIG as an educational resource for Geological Sciences students.

- Plane wave Kirchhoff migration in the 2-D and 3-D media using UTIG Costa Rica 3D data set.
- Investigation of neural networks and optimization methods for processing and inversion of seismic data.
- Hybrid optimization in geophysical inversion.
- Slab related velocity anomalies in the upper and lower mantle.
- Plane-wave migration of seismic data and velocity analysis.
- Background velocity estimation in laterally varying media.
- Prestack migration and inversion.
- Structure and stratigraphy of a starved late Cretaceous passive margin, SE Australia.
- Identification of the Miocene-Pliocene rocks of Trinidad.
- Geophysical investigation of the South Shetland Arc/Bransfield Strait, Antarctica.
- Tectonic history of the metamorphic rocks of the Sierra del Carmen, Coahuila, Mexico.
- Sequence stratigraphy of Early Permian carbonate platform margins, Delaware Basin, Texas

- Late Cenozoic sequence stratigraphy of a portion of the northeast Gulf of Mexico.
- Tectonics of the Shackleton Range, Antarctica.
- Utilization of refraction, MCS, satellite altimetry and sea-born gravity data to study the structure of the southern Kerguelen Plateau, southern Indian Ocean.
- Rocky Mountain Front shallow mantle structure using imaging methods.
- Mesozoic structural and stratigraphic evolution of the southeastern Gulf of Mexico as well as the early evolution of the entire Gulf basin.
- Cenozoic plate reconstruction of the Macquarie Ridge Complex in the South Pacific.
- Neotectonics in the Solomon Islands.
- Stratigraphy and depositional history of the Miocene sedimentary section in the eastern Venezuela Basin.
- Improved model of the thermal structure of oceanic lithosphere near a fast spreading ridge.
- Integrated geophysical and micropaleontological study of the Eocene North Sea basin.
- Detailed sequence stratigraphy and modeling of Miocene rocks in the northwest Gulf of Mexico.
- Seismic stratigraphy, depositional history and paleo-environmental analysis of the Yakataga continental shelf, northern Gulf of Alaska.
- Source rupture processes of major earthquakes and regional tectonics in southwestern China.

— Patricia E. Ganey-Curry

Vertebrate Paleontology & Radiocarbon Laboratory



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 it much easier to use.

Wann Langston is continuing his research on fossil crocodylians and pterosaurs. He is currently working on some mid-Miocene crocodylians from Colombia. One particularly good skull demonstrates the presence of true gavials in the Western Hemisphere in the Cenozoic. These crocodylians are currently known only from India.

Tim Rowe continues his studies on the vertebrate fauna from the late Cretaceous Aguja formation of the Big Bend area. The locality preserves nearly 40 different taxa, including new species of mammals, lizards, and a tiny fragment of one of the oldest known snakes. The locality is important in showing that even in the late Cretaceous Trans-Pecos Texas had a highly distinctive fauna. Tim's digital atlas of the skull of the fossil *Thrinaxodon*, has been released on CD-ROM by the University Press in 1993. This spring semester, Ernie taught a course on topics in quaternary geology at the Lab utilizing the collections there.

The preparation of the plesiosaur skeleton collected from Shoal Creek three years ago is complete and the specimen has gone on exhibit in the Texas Memorial Museum. The skull of an ichthyosaur, another Cretaceous marine reptile found in the Austin area, is being prepared. In October a partial skeleton of a mammoth was collected by students and staff east of Salado in Milam County.

Several graduate students conduct research in connection with the Vertebrate Paleontology Lab.

- Chris Brochu is continuing his work on the phylogeny of crocodylians. A trip to Britain allowed him to examine material in the British Museum.
- Andy Czebeniak's work on microtine rodents is continuing. These are small rodents that underwent explosive evolution in the last 5 to 6 million years and thus are potentially useful for biostratigraphic and evolutionary studies.
- John Merck is deeply involved in the phylogeny of archosauromorph reptiles.
- Kyoko Kishi is still working on her master's project, which is a close look at the role of digital imagery and GIS (Geographic Information System) in the management of vertebrate collections.
- David Froehlich has found that the earliest horses and their allies pose some interesting and tough problems in working out their relationships.
- Pamela Owen is continuing her work on the evolution of the post cranial skeleton of cats in the late Cenozoic of North America.
- John Chaille has amassed thousands of measurements of skulls and teeth of mammals, both fossil and modern, in his investigations of the relationship between morphometric skull characters and various climatic and environmental factors in several mammals.

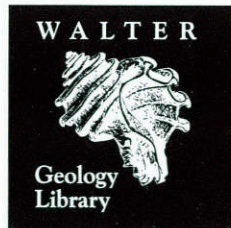
— Ernest Lundelius Jr.

THE RADIOCARBON LABORATORY HAS BEEN ENGAGED IN A SERIES of intercalibrations with 80 laboratories around the world. The samples consist of wood, peat, turbidites, carbonates etc. of known age. The samples were assembled, prepared and distributed by the Department of Statistics of the University of Glasgow, Scotland and the results will be made available at the 15th International Radiocarbon Conference held in Scotland August 15-19, 1994.

A cooperative project between the Radiocarbon Laboratory and the Geography Department of the University of Kansas is a study of a 36,000 year chrono-bio-and magnetostratigraphic record from loess of south central Nebraska. Two papers are being completed for publication in the *GSA Bulletin*.

Another project just completed is the dating of Holocene alluvial sequences of Metapontum, Basilicata and Croton, Calabria, Italy. This was part of a dissertation in the Department of Geography.

— Ernest Lundelius Jr.



Walter Geology Library

ONCE AGAIN, MANY THANKS GO TO THE DONORS TO THE WALTER CHALLENGE FUND DRIVE, which was successfully completed with more than \$310,000 in donations. The enhancements to the Walter Fund, and the newly created Barrow Periodical Fund, will be of great assistance to the library in dealing with the ongoing high cost of new information.

This past year has been extremely busy and productive for the Walter Library. In April, the second Foundation-sponsored book sale of surplus materials raised more than \$2500 for the Whitney Fund (now valued at over \$22,000—almost doubled since 1985), proceeds from which support the purchase of paleontology materials.

For the past year, Dennis Trombatore and Jim McCulloch have been engaged in a large project to change the call numbers of thousands of volumes of journals from Dewey Decimal to Library of Congress numbers, and send the oldest of these journals and other volumes to the new warehouse facility at the Pickle Research Campus (formerly Balcones Research Center). All remaining Dewey materials now fit in the “back room” area, and there will be no more growth in that section.

More than 20,000 volumes (20%) of the Walter Library holdings are now in the warehouse facility, where they are kept in a low-light, climate and temperature controlled dense-storage facility. Materials can be retrieved in about two working days, and all materials are listed in UTCAT and noted as being in the warehouse. Another reminder to those planning to visit the library for historical research that many seldom-used materials are no longer on the open shelves, and advance notice or more time may be required for you to accomplish your work.

For the first time in a decade, by October there will be no shifting project ongoing at the Walter Library.

The growth patterns of the collection and the space crunch have meant that over the past ten years the entire collection has been moved more than 12 times, for more than 1.5 million volumes shifted to provide shelving space where it was needed. The end of this task is welcomed by everyone!

Conservative fund management, a stronger dollar, market effects, and presidential funding from Dr. Berdahl have made it possible for the General Libraries to escape a reduction in subscriptions this past year. Unfortunately, another 10% increase in journal costs is anticipated next year, so the Walter Library stands ready to cancel journals as part of the annual fund management process. The electronic information revolution has not yet brought about solutions to this problem, but that universe of information is expanding rapidly and more useful products and services are coming on stream.

The General Libraries CD-ROM workstations now offer almost a dozen science related databases, including Dissertation Abstracts, Engineering Index, Physics Abstracts, Med-Line, Science Citation Index, and others. This is a big help for students, as it allows them to research a wide variety of disciplines from their seats in the Walter Library before they have to walk from unit to unit to gather the materials they need. In other equipment news, the General Libraries has provided the Walter Library with a new Power Mac. This is a significant upgrade of staff resources, and will greatly improve the unit's efficiency. 1993-94 has provided even more gift materials for the collection than usual, starting with the personal library of Dr. Morad Malek-Aslani of Houston, and including many gifts from faculty, students, alumni, and local agencies downsizing their collections.

Mrs. Malek-Aslani was gracious enough to donate, in addition to the book and journal materials, a very nice binocular petrographic microscope and Dr. Malek-Aslani's collection of

thin-sections, which have been added to the Department's facilities. The Walter Library also received a large number of boxes of book materials from the estate of Dr. Earl Ingerson, and another shipment of Russian language publications from Anatoly Kaplan of Houston, as well as a number of boxes from the collection of Dr. Bill St. John.

The large amount of gift materials has created a backlog in the Walter Library, and to help process the materials staff from other General Libraries units have been working in the Walter Library on a staff sharing project to process gifts. It's slow going, but quite a bit of excellent material is being added to our collection.

The Tobin Map collection continues to grow, and the number and completeness of records on the on-line catalog is growing as well. Now that the internet has opened UTCAT to the wider world, having our map records on-line will permit researchers to check our holdings from any internet connected machine. Almost half the map collection is now in UTCAT with at least brief records, and full cataloging of large national map sets and series from Texas, other U.S. states, Mexico, and the Middle East constitute our current project. This work is being done with available staff, and progress is slow but steady. Thanks to Carol Russell for her efforts on the cataloging project, and congratulations for her 30 year service award this year!

In other staff news, Alice Dewberry received her 10 year service award this year, and Dennis Trombatore participated with a number of other science librarians at the University in preparing a volume called *Library Without Walls: Plug In and Go* for the Special Libraries Association. This volume outlines the challenges and opportunities of the electronic information environment for small and medium sized special libraries.

— Dennis Trombatore

T
N
E
D
U
T
A
C
T
I
V
I
T
I
E
S

THE GRADUATE STUDENT

G S E C O F F I C E R S

FALL 1993

Jason Lundquist
Chairman

Carlotta Chernoff
Vice-chairman

Karen Jarocki
Treasurer

Ian Jones
Secretary

Members at Large
Sara Burns
Danelle Carpenter
Dave Hirsh

SPRING 1994

Jason Lundquist
Chairman

Carlotta Chernoff
Vice-chairman

Sara Burns
Treasurer

Ian Jones
Secretary

Members at Large
Danelle Carpenter
Laura Cutright-Zahn
Matt Uliana



EXECUTIVE COMMITTEE REPORT

THIS YEAR,

the Graduate Student Executive Committee (GSEC) has remained an active focal point for the concerns, complaints, suggestions, and opinions of many of the graduate students in the department. In this role GSEC was often able to communicate the needs of students to the staff and administration of the Department and in so doing solve many of the small problems which might otherwise have slipped through the cracks. In other cases relatively slight expenditures by GSEC were able to rectify several difficulties. Several equipment requests were made known to and relayed by way of GSEC. An example would be the request to repair the aging Thermafax machine, used to produce overhead transparencies. GSEC recommended that the Thermafax not be repaired, but rather elected to provide photocopier- and lasercopier-safe transparencies to graduate students at a nominal cost (\$0.10).

In other areas, GSEC was able to have the ailing graduate student microwave-oven repaired (temporarily). However, it now appears that the old microwave is beyond repair, and we are planing to replace it. Chronic problems with the overloading of the lounge's old and non-self defrosting refrigerator were solved by the addition of a "new" refrigerator, acquired at a very reasonable price. In the process

we hopefully helped "get it off someone's hands." GSEC was able to help coordinate the transfer of a Department Pentax camera body and screw-mount bellows unit slide copier attachment, with macro lens, into the custody of the graduate student photocopier, as well as the repair of another student camera. This, and the purchase of an inexpensive mounting adapter by GSEC, remedied a longstanding difficulty for graduate students in the creation of slide reproductions. GSEC continued to organize these kinds of activities by securing the participation of many hard working czars who agree to oversee many important functions of the department, such as the aforementioned graduate student camera and darkroom equipment.

Other activities which we have pursued this past year include: obtaining a wireless microphone and receiver for the use of speakers during Technical Sessions; obtaining a new toaster oven for the graduate student lounge (an important contribution to the ever popular bagel day each Friday); helping to fund (along with the department) first aid and CPR training for graduate students; and implementing a program to defray costs of thesis/dissertation preparation and binding for graduate students.

GSEC provided input from graduate students on more substantive issues as well. GSEC was able to help spearhead a proposal to change some of the operating procedures behind Technical Session, particularly those directly relevant to graduate students. The opinions of the graduate students relative to the qualities the new Chairman of the Department should possess, and the major future challenges which they

should be able to address, were assembled and conveyed by GSEC to Dean Boyer.

Of continuing concern to GSEC has been the funding of graduate students. Not only have tuition and fees continued to rise, producing expense related problems for many graduate students, but also funding seems to be growing tight, jeopardizing the funding of longer tenured students. This at a stage when their investigations depend on continued support to produce the highest quality research. GSEC has offered the opinions of the graduate students to the faculty as they consider policies to address some of these concerns.

This year as in previous years GSEC was responsible for the visiting prospective graduate student program. This past semester saw various changes in the program. This involved the hosting of most students during one of two host periods. Each period included many scheduled events which allowed the prospective students to tour the Department, meet with faculty members, see the campus and Austin, and to ask questions of the resident graduate students. Each period also included a student/faculty mixer in the Eastwood park, a group diner, and an evening party with many graduate students. We have been gratified by the positive response of the visitors, and feel this more structured approach has been a more efficient and effective manner of hosting these prospective students.

As in years past GSEC was again responsible for planning and often sponsoring a number of social events for the graduate students and the department as a whole. These events included the Halloween party, the Thanksgiving/Christmas potluck, various new students get-togethers, and even this past years department picnic. In cooperation with the undergraduates, a number of the traditional Friday afternoon "beer-busts" at Eastwood Park were also supported.

I · F · . . Y · O · U

HOST THEM

THEY WILL COME

by Carlotta Chernoff and Karen Jarocki



Jason Lundquist, GSEC president, gets ready to chow down on some barbeque.



Prospective students enjoy dinner hosted by graduate students.

AS HAS BEEN DONE for the past two years, the Graduate Student Executive Committee (GSEC) organized a comprehensive hosting program for prospective graduate students offered admission for the fall semester. Student host coordinators, Carlotta Chernoff and Karen Jarocki sent letters to prospective students inviting them to visit Austin and the Geological Sciences Department to gain a better idea of what we do. Twenty-one students accepted the offer to visit in late March and early April.

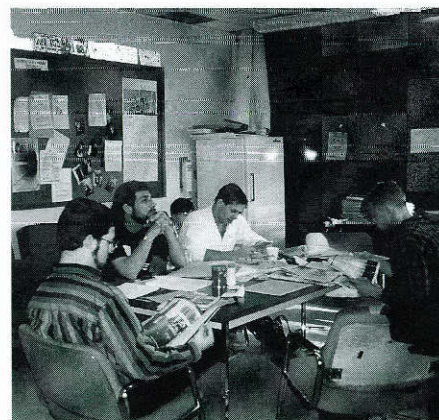
Most students arrived on Thursday afternoon, greeted at the airport by enthusiastic graduate students. Students who arrived early in the afternoon were sent on a campus tour to learn more about the university and then were treated to cookies and coffee before a technical sessions lecture. Those who were in town by dinnertime were escorted to one of Austin's most famous dining establishments (Chuy's). Although a few prospective students had friends to stay with, most were hosted by graduate students from the department. Prospective students met their hosts at dinner, beginning a weekend of fun.

Friday morning, Karen and Carlotta met with the visiting students to brief them on the day's events. The morning was occupied with a two hour tour of the department, which included lab tours provided by faculty and graduate students, and a meeting with Graduate Advisor Earle McBride and Department Chairman Clark Wilson. During the afternoon, students had

individual appointments with faculty in their area of interest as well as opportunities to visit faculty and facilities in other departments.

The real festivities kicked off at 5:00 p.m. with a faculty, staff and student mixer in Eastwoods Park. After the mixer, students were taken to a nearby student's house for a catered barbecue dinner and party with graduate students. Most students left Saturday morning, although a few stayed on with their hosts showing them the sights in Austin.

Carlotta and Karen felt the host weekends were a great success for all involved, and comments back from visiting students confirmed this. Comments heard and overhead include that the "program is unique compared to other universities," students "learned alot while having fun," "my host was fabulous, she had great music, beer and nachos," and "all my appointments with faculty went well."



Students relax in the graduate student lounge.

Scientists and crew sail the oceans of the world in a continuous series of cruises aboard the JOIDES Resolution to retrieve rock and sediment samples from below the seafloor. ODP addresses specific interactions through time between the biosphere, atmosphere, ocean, crust and mantle, and examines tectonic evolution of passive and active margins, origin and evolution of oceanic crust, origin and evolution of marine sedimentary sequences and paleoceanography. The Ocean Drilling Program (ODP) is funded by the U.S. National Science Foundation, Canada/Australia Consortium, European Science Foundation Consortium, Germany, France, Japan, Russia (Inactive) and the United Kingdom. The Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), an international group of scientists, oversees scientific planning for the program and is committed to the advancement of marine geology and oceanography through scientific ocean drilling.

— ODP and Linda Lee

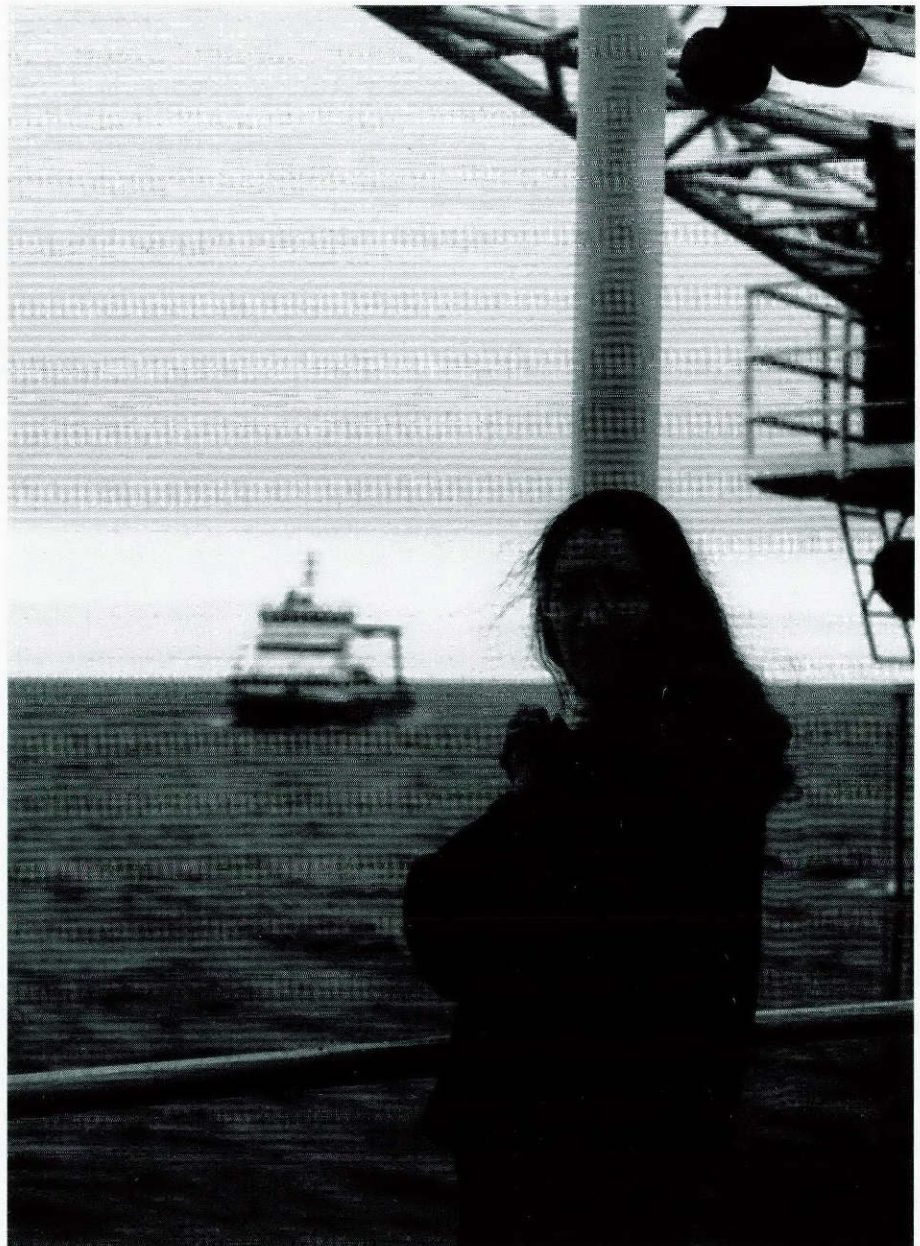
OCEAN DRILLING PROGRAM

by Linda Davis

I WAS INVITED to apply as Shipboard Petrologist for an ODP research cruise to the Nordic Seas and the Arctic Ocean. I applied because of the opportunity to begin a new research project on ocean basalts, while waiting to defend my dissertation in the fall. After weeks of preparation, I left for a two-month cruise to the Arctic Ocean in late July.

The group of scientists, technicians, drillers, galley and ship's crew arrived in St. John's, Newfoundland about July 25th. I investigated many sights, including Signal Hill where Marconi received the first transatlantic wireless telegraph.

We set sail July 29th, travelling from St. John's Harbour, around the tip of Greenland, through the Denmark Straits to the Iceland Plateau where we drilled our first hole, Site 907A. Scientifically, Site 907A was the most interesting hole for me, because we drilled through sediment into basalts. The





Passengers are transferred from icebreaker *Fennica* to ODP research vessel.

sediment cores from this hole were the first of many similar, and with time, deadly boring, olive gray, greenish gray and grayish green silty clays and clayey mucky oozing sucking sediment.

All of us took turns sampling the cores. Sampling had to be done carefully with a record of each sample entered into a computer. When the core is first brought on deck, the paleontologists grab a core-catcher sample and process the material furiously. Meanwhile the core warms to a certain temperature, then is passed through a series of high-resolution physical properties measurements. Then the cores are split: one half archived and one half sampled. Remanent magnetization measurements are taken from the archive half before the core description teams begin. The physical properties team and the paleomagnetists get first crack at the half-core set aside for sampling. After samples have been taken, an announcement is made that core is "ready for sampling."

The sampling table was generally the most entertaining spot in the science labs. The core came through very fast. Paleontologists would come and put markers where they wanted specific samples taken. This was in addition to the "regular" sampling that was laid out in a cookbook manner for us by the shipboard curator. Each person requesting samples was assigned a sampling code and color. Colored flags

cores at desired intervals. The cores with so many colorful flags made a spectacular sight. The sampling table with me and my friend Dr. Donna Hull, became the focus of a segment of a German Public Television documentary filmed during our voyage. Donna and I got a reputation as the "mud doctors" and the German film crew, who were quite taken with the multitude of flags in the core, filmed Donna and me sampling the mud. We did have fun while standing on our feet for hours at a time, digging in the mud, calling out sample intervals, with extremely loud music playing over the stereo system. We laughed a lot and moved cores through quickly. I took two to three sampling shifts a day to help the organic chemist, the staff scientist, or the physical properties specialists.

We had an emergency evacuation of one of the crew and had to abandon our first site, 907. Two Air Force helicopters and a fueling plane from Keflavik, Iceland, met the ship and airlifted the patient to Iceland. This was a big event at sea, and the second of the many "photo opportunities" we were to have. (Sailing north around the beautiful basalt cliffs of Iceland was the first. I thought that this might be the only basalt I would see on my voyage.)

After the evacuation, the ship steamed north to meet the ice-breaker *Fennica* that was to rescue us in case of a collision with ice while we drilled

Plateau. During transit times, work from the hole just drilled is completed. All duties related to "basement" were mine and because the "basement" came up just before we set sail, I had little time to finish. They allowed me to work on the basalts until well after the drilling began at the next site. We went through a tremendous storm just hours after we evacuated the ill crewman and I became very ill.

I don't remember this period of time very well as I was ill and was using ear patches doped with scopolamine, which if used in too large a dose will produce the symptoms of seasickness that you are using the patch for. I know we were in 30' seas with "green water over the bow." Women who had been out to sea convinced me that the scopolamine patch was making me ill in addition to the very large waves. I cut the dosage back to a quarter-patch, which worked. During this time I had the most work to do and I had to be able to think. It was difficult feeling ill, describing meters of black basalt, deciding on thin sections, and using my hand lens with the ship rolling about furiously. The ship would pitch and roll such that I was propelled from hand hold to hand hold, providing much entertainment to the salty old crew, particularly in the galley where all I could even think about eating was soup. I would get up from my table, ricochet off tables across the room to get to the stairwell up and out of the galley to go outside and gasp for air. A crewman would accompany me for fear of losing me over the side.

Early in the storm, my nausea was started by the smell of an electrical fire, or so we thought. Some of us were very alarmed. Of course a fire on a ship calls for evacuation. I got so concerned after watching the crew frantically search for the source that I went and put my boots on instead of my sneakers. I was staring out a porthole after donning my boots, trying to maintain my stomach and my fear, when I saw a flare thrown into the water. Our satellite communications were down during the storm. I had three or four nanoseconds worth of sheer panic with the thought that that was it, we were evacuating the ship

cue just like the drills. That was a bad moment, but the guy who had thrown the flare overboard came intold me that there was no fire, but that a wave had banged the flare earlier, setting it off, and the smoke from the flare had been sucked into the ship's air-intake system. He had thrown it overboard.

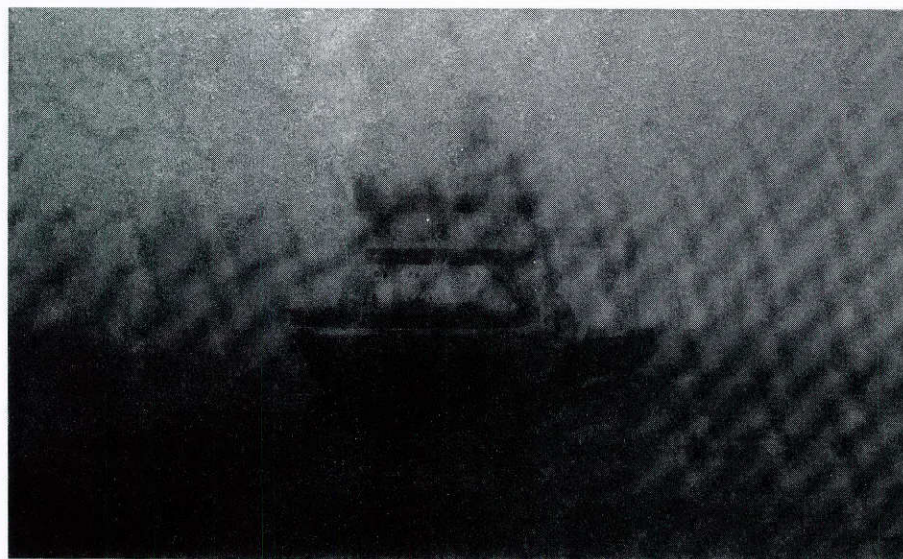
One of the finest things about participating in one of these cruises is the collaboration between the groups of specialists from differing geologic disciplines. We had "Science Meetings" about every 36 hours. Each group presented results from the hole just drilled and the co-chiefs would summarize, then prepare us for the next Site.

Drilling at the next Site, 908, on the Hovgaard Ridge in the southern Fram Strait, took a week. We conducted a brief seismic survey and logged the hole. The cores contained many "dropstones" that I then began to look at in a very detailed manner with Dr. Birger Larsen, geologist and renaissance man extraordinaire. We combined efforts to find possible source areas to determine the paleocurrents that brought the sediment-laden ice.

We met the icebreaker *Fennica*, at Site 909. It was a spectacular site up near the Arctic Circle in a ship with another ship appearing like a ghost out of the dense fog not fifty feet away. People were transferred from ship to ship on a contraption that resembled a cage on an inner tube hanging by a

bungee cord. The *Fennica* would scout out sites, carrying scientists from the Scott Polar Research Institute who made ice observations and ground-truthed the available satellite imagery. The German television crew also joined us at this time. We would get to the safe drill site only to be chased off by ice, time and again. There were some exciting moments due to the ice, which did not show up on radar, as it was only several meters thick. Fog was common. We discovered we had travelled within a cul-de-sac of ice once when we were steaming at top speed, 11.5 knots. The Captain turned the ship on a dime and people were thrown off their bunks!

We docked in Reykyavik, Iceland, in late September. We had a stretch of very good weather and some of us toured about the country. We went to see the place where the American and European plates are rifting apart (basalt heaven), taking in the many breathtaking waterfalls, shield volcanoes, and big glaciers. I stayed in the very nice hotel, The Saga, for a couple of nights where ODP made reservations for us, and then went to stay in one of the small but fabulous guesthouses within the town. The down comforters were thick and much appreciated on my last day when Iceland's true nature showed through. It was very cold, windy, rainy and icy all the way to Keflavik, where the airport is.



USGS/AAPG UPDATE:

by Amanda Casebier

USGS AND AAPG MEMBERS were involved in a variety of new activities during the school year. Some of these activities generated recognition for the students outside of the UT campus.

Pete Rose, professional geologist, spoke to the students about geologist certification and the role undergraduates can play during the next school year to change present restrictions dictated by state legislation.

In April, geology undergraduates enjoyed a visit to the studio of KBVO Fox 42 television station, appearing on a show called Kids Corner. They presented some basic facts about rocks, then explained the importance of learning about the geosciences.

An accompanying article in this *Newsletter* describes a visit to a Texaco horizontal well in the Austin Chalk. Funds for the trip were provided by the Geology Foundation.

Fundraising projects included the annual T-shirt sale and guidebook sale. For the first time, these sales were held on the UT West Mall, which generated additional income. Proceeds of these sales allowed us to purchase a printer for the use of undergraduates.

Other activities included ongoing Waller Creek beautification projects, camping field trips to Inks Lake and Pedernales Falls State Park, Celis brewery tours, frequent student/faculty mixers, and intramural sports activities.

OFFICERS:

1993-94 USGS

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

1993-94 AAPG

Jim Gharib
President
James Farmer
Vice-President
Amy Gray
Secretary

TEXACO HOSTS WELL SITE VISIT

by James Farmer

Last year Mark Gallagher of Texaco E & P sponsored a tour of a horizontal drilling rig targeting the Austin Chalk, at a site just southeast of our nemesis in College Station. This year AAPG/USGS was given the privilege of following Texaco along this prolific and fickle trend as exploration efforts moved to the Newton County area, which rests along the Texas-Louisiana border. Next year's group will probably have to charter a plane in order to keep up with Texaco's development of this play into Louisiana.

A small group of undergraduate and graduate students left Austin on Friday, the 23rd of April, to make the five-plus hour drive to our campsite at Martin Dies, Jr., State Park, which is just outside of Jasper. Upon entering the park, a sign warns visitors of the presence of roaming alligators. Fortunately no one was attacked by an alligator, but there was a bit of excitement when something rustled the bushes behind our campsite. Accompanying our entourage were world renowned hunters and part-time geologists, Jim Gharib and Fred Du Puy, who fearlessly leaped into action to drive away the mysterious intruder. They think it was an armadillo, but our group knew it had to have been the fabled Cajun swamp man. Anyway the alligators left us alone, but the mosquitoes just about carried our group off into Lake Livingston.

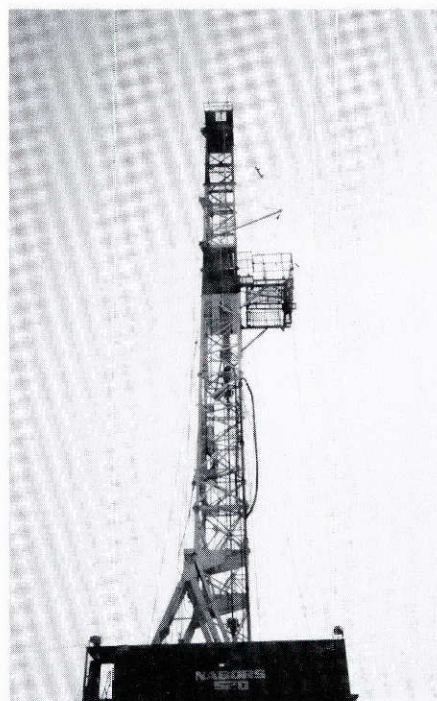
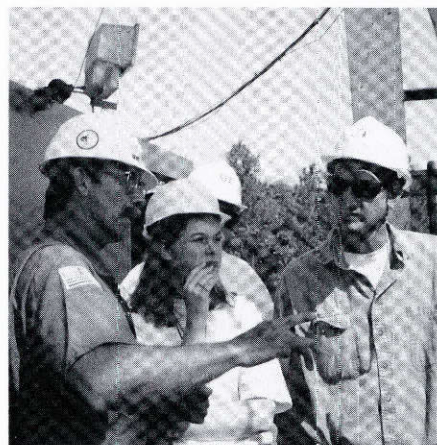
On Saturday, the 24th of April, we met our Texaco tour guides at the Brookeland Field Office, just north of Jasper. The day began with Texaco geoscientists Alvin Schuchert and Jim Strahan discussing the depositional setting of the Austin Chalk, expanding on exploration techniques utilized in this area, and typical production histories for this play.

We then departed for the Temple-Inland hunting lease to tour the Nabors No. 520, drilling the AMI Unit No. 3, Well No. 1-H. The well is planned to be a dual horizontal completion in the Chalk. While touring the rig, the directional driller was correcting for the drift of the horizontal leg beyond the +/-20 ft marker horizon. Daniel Lantz, Texaco drilling engineer, showed us around the rig site and explained the workings of the on-site machinery. He also mentioned an alternate use on NutPlug (ground walnut shells) as a flavor additive for barbecuing, instead of its intended application as a mud agent. We then moved on to speak with the mudlogger and gain a little insight into this fine "art." The on-site directional driller explained the mechanics, enormous cost, and importance of the MWD tools in ensuring accurate horizontal drilling.

After climbing all over the rig and thoroughly interrogating the rig personnel, we returned to the Brookeland Field Office for a huge BBQ lunch. Mark Gallagher, Texaco geoscientist, joined our group just in time for BBQ and the distribution of baseball caps emblazoned with the Texaco logo. The BBQ was great, although the brisket had sort of a walnut flavor (NutPlug?).

To conclude the tour of the Brookeland Field, we headed out for the Fee Unit 4, Well No. 1-H to take a look at what happens after a well is brought on line. Clarence McAllister, Texaco production engineer, discussed the on-site processing equipment, the gathering network of the field, and the expected production of this reservoir.

This trip provided a rare opportunity to view the core operations of an industry which has done so much for the University and promoted the geological sciences. Although attendance was a bit less than planned, the comfortable size allowed easy interaction with our guides. The tour was very enlightening, and at the same time fattening for those of us who indulged in too much BBQ. Thanks again to Texaco, Mark Gallagher, Ron Munn, and our guides for putting this great trip together. The contributions of Donna Precht, Betty Kurtz, Joyce Best, and the Geology Foundation are also immensely appreciated. Keep on drilling!



(top) Daniel Lantz, Texaco drilling engineer, explains the workings of the rig floor equipment.

(middle) UT geologists and Texaco representatives pose before the Christmas tree of the Fee Unit 4, No. 1-H, Newton County, Texas.

(bottom) Profile of the Nabors No. 520, drilling the Texaco AMI Unit 3, Well No. 1-H in Newton County, Texas.

Research Assistants Teaching Assistants

Bureau of Economic Geology

Allen, Stephen
Barrow, Kenneth T.
Barton, Mark D.
Boghici, Erika
Boghici, Radu
Choh, Suk-Joo
Crabaugh, Mary C.
Czebieniak, Andrew
Dickerson, Patricia W.
Edgerton, David G.
Fang, Qing
Fiduk, J. Carl
Fitchen, William M.
Ge, Hongxing
Jones, Ian C.
Kattah, Senira
Kempter, Kirt A.
Liu, Xijin
Marton, Gyorgy
McMurry, Ronald
Pendleton, Virginia
Sapp, Amy K.
Simmons, James L.
VanBroekhoven, Norman
Xue, Liangqing

Institute for Geophysics

Barker, Daniel
Carpenter, Danielle
Chunduru, Raghu K.
Feng, Jianhua
He, Leipin
Hutson, Frederick E.
Marshall, Annette
Massell, Christina
Nyffenegger, Paul A.
Rowell, Philip
Sen, Vikramaditya
Sloan, Benjamin
Ye, Quicheng
Zhou, Ran

Department of Geological Sciences

Beam, Eric C.
Borg, Lars E.
Choi, Wan-Joo
Crabaugh, Jeff P.
Davidow, Joel S.
Davis, Linda L.
Denison, Cambria
Ding, Xiao-Yang
Eustice, Rachel A.
Frank, Andrew J.
Gonzalez, Daniel M.
Hansen, David S.
Hicks, David W.
Hoar, Timothy J.
Hoffman, Cory L.
Hua, Ksiao-Peng
Ketcham, Richard A.
Kishi, Kyoko
Kreisel, Ilan
Kuehne, John W.
Lebron, Maria C.
Lee, Duk Kee
Lynch, F. Leo
Mahler, Barbara J.
McKenna, Thomas E.
McMahon, Timothy P.
Merck, John W.
Minehardt, Todd
Nyffenegger, Paul A.
Oetting, Gregg C.
Quarles, Andrew I.
Rahnis, Michael A.
Reiber, Derek N.
Reese, Joseph P.
Riter, Alex C.
Romanak, Katherine D.
Rougvie, James R.
Sapiie, Benjamin
Smith, Merrie J.
Smyth Boulton, Rebecca
Sumrall, Colin D.
Swezey, Christopher S.
Uliana, Matthew
Warren, Paul Q.
Weiland, Richard J.
Yang, Wan
Zellers, Sarah D.

Department of Geological Sciences

Adrian, Joel M.
Akbar, Faruq
Anderson, James R.
Balinsky, Robin L.
Boettcher, Stefan
Broquet, Charl
Burns, Sara L.
Caran, S. Chris
Chen, Jeffrey
Cheng, Yan
Chunduru, Raghu K.
Clague, Alistair S.
Colbert, Matthew
Cutright, Laura C.
Davidow, Joel S.
Fang, Qing
Frank, Andrew J.
Gan, Stoney
Gandhok, Gini
Gell, Charles E.
Gerdes, Frederick P.
Gonzalez, Daniel M.
Grimes, Stephen W.
Hall, Brook E.
Hansen, David S.
Harren, Michael R.
Harun, Nina T.
Henderson, Douglas
Hicks, David W.
Johns, Mary K.
Ketcham, Denise Harrington
Ketcham, Richard A.
Kishi, Kyoko
Knox, Susan D.
Konnecke, Lis K.
Krause, Steven J.
Kreisel, Ilan
Kwong, Milton H.
Li, Ning
Liu, Xiaoyu (Greg)
Lundquist, Jason
Lyons, Kevin T.
Mahler, Barbara
Marshall, Annette
Massell, Christina
Matzel, Eric
Mayer, James R.

Minehardt, Todd
Molineux, Margaret A.
Nicot, Jean-Philippe
Nyffenegger, Paul A.
Owen, Pamela R.
Potter, Lee
Price, Sarah A.
Friday, Elizabeth J.
Rahnis, Michael A.
Reed, Robert M.
Reiber, Derek N.
Roska, Julie A.
Rougvie, James R.
Sapp, Amy K.
Schlottmann, R. Brian
Sen, Vikramaditya
Smith, Jennifer S.
Steinke, Theodore R.

Assistant Instructors

Department of Geological Sciences

Christopher Brochu
John Merck

Cambridge Austin

International Field Exchange

By Ann Molineux and Mike Rahnis

PARTICIPANTS:

Joel Adrian Chris Brochu, Van Broekhoven, Tony Dickson, Rachel Eustice, Nina Harun, Cory Hoffman, Ron Johns, Sue Love (Mobil), Ann Molineux, Simon Conway Morris, Mike Rahnis, Laura Stewart, Colin Sumrall, Keith Tischler, Ricardo Torres Vargas, Jeff Warner (Chevron), Jamie White, Nick White, Paul Wilson, Rachel Wood, and Wan Yang,

MARCH 10TH MARKED the beginning of an auspicious occasion — the first C.A.I.F.E. A group of graduate students comprising carbonate petrologists, sedimentologists, paleontologists (vertebrate, invertebrate and micro), sandstone petrographers, geochemists, and hydrologists joined a renowned group from Cambridge University for a fascinating week in Dorset studying the Mesozoic of the Wessex Basin.

Leading the field was Tony Dickson, an eminent carbonate petrographer, aided by Simon Conway-Morris, a noted invertebrate paleontologist. Rachel Wood, another paleontologist and influential sponge specialist, Nick White, more geo-

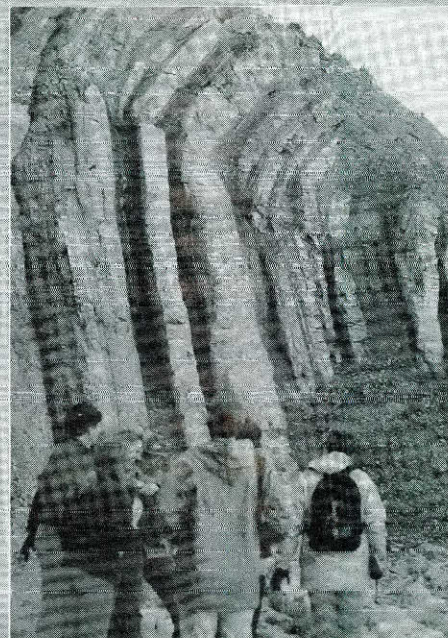
physically oriented, and Paul Wilson, a geochemist, all provided us with highly articulate, intelligent and humorous leadership. In addition we were fortunate to have two interesting representatives of Mobil Oil and Chevron.

We stayed in (or rather monopolized) a small hotel fronting the Weymouth esplanade. The entrance hall became home to 20+ pairs of hiking boots, and the lounge transformed into a lecture-theater-cum-petrology lab. The dining room served typically English food...

The section covered Upper Jurassic to Lower Cretaceous. Days were spent

in the field and evenings looking at thin sections of the pertinent rocks. Discussion included the opening of the Atlantic, cyclic deposition and various diagenetic problems. Priorities in the field were, of course, geological, but the outings were embellished with the occasional historical diversion, including a visit to Stonehenge and to an unsurpassed selection of country pubs for much-needed refreshment.

The notoriously unpredictable English weather was fantastic during our



stay; admittedly it was cool and windy but with plenty of sun.

We missed the company and expertise of the progenitor of this wonderful experience, Brenda Kirkland-George. She was unable to join us, but we understand that she had more important obligations

(the birth of her daughter).

We wish to thank the Geology Foundation, Chevron and Mobil Oil for financial support and our field leaders from the University of Cambridge for their time and material assistance.

PHOTOS:

- (top left) Hotel Elektra.
- (bottom left) Overlooking Lulworth Cove, Dorset, part of Purbeck Monocline.
- (top right) Trip leader Rachel Wood stands above an ammonite at Kimmeridge Bay.
- (bottom right) Durdle Door on south coast of England.
- (Background photo) Overlooking St. Catherine's Monastery, and Chesil Beach near Weymouth.

Amoco Foundation, Inc.
Sneha Dholakia, Fall 1993

**Bloomer Fund
for Motivated Students**
John Breeding, Fall 1993-94
Colby Drechsel, Fall 1993
Tony Faucett, 1993-94
Jay Harbin, Spr./Sum. 1994
Robert Hembrook, Fall 1993
Daniel McConnell, Spring 1994
Chris McShane, Fall 1993
Christie Weismantel, Spring 1994

**John F. Bookout Jr.
and Carolyn Bookout Scholarship**
Jolyn Piercy, 1993-94

**W. Kenley Clark Memorial
Endowed Presidential Scholarship**
Jennifer Califf, 1993-94

**R. H. Cuyler
Endowed Presidential Scholarship**
Jennifer Beall, 1993-94
Jennifer Wilson, 1993-94

**Guy E. Green
Endowed Presidential Scholarship**
Paul Murray, 1993-94

**Karl F. Hagemeyer Jr.
Endowed Presidential Scholarship**
Frank Wagner 1993-94

Marathon Oil Company Scholarship
Lance Christian, Fall 1993
Patrick Hempton, Fall 1993
Kevin Pasternak, Fall 1993

Frank W. Michaux Scholarship
Adrienne Beede, Fall 1993
Christopher McShane, Spring 1994

**John H. & Lujza P. McCammon
Scholarship**
James Farmer, Spring 1994
Ed Hughes, Fall 1993
Christopher McShane, Spring 1994

**Mr. & Mrs. L. F. McCollum
Scholarship**
Martin Herrmann, Spring 1994
Christie Rogers, Fall 1993

**Carroll C. Miller
Endowed Presidential Scholarship**
Yemia Turnage, 1993-94

**William R. Muehlberger
Field Geology Scholarship**
Stephen Leslie, Summer 1994

UNDERGRADUATE SCHOLARSHIPS

○ **Oryx Energy Company
Scholarship**

- Lance Christian, Spring 1994
- Adhamh Findlay, Spring 1994
- Stephen Leslie, Spring 1994
- Kevin Pasternak, Spring 199
- Brad Wolaver, Spring 1994

○ **Pennzoil Company Scholarship**

- Eric Matzner, Fall 1993
- Clayton Thorp, Spring 1994

○ **Petrography Award**

- Chris Brown, 1993-94
- Sarah Penniston-Dorland, 1993-94

○ **Phillips Petroleum Company
Scholarship**

- James Farmer, 1993-94
- Emiliano Garcia, 1993-94
- Christine Martinez, 1993-94
- Robert Trevino, Spring 19
- Arthur Valdez, 1993-94

○ **Louis & Elizabeth Scherk
Geology Scholarship**

- Jennifer Beall, Summer 1994
- Michael Brown, Fall 1993
- Colby Drechsel, Spring 1994
- James Farmer, Spring 1994
- Jim Gharib, Spring 1994
- Patrick Hempton, Spring 1994
- Ed Hughes, Summer 1994
- Tom Letsinger, Summer 1994
- Court Little, Fall 199
- Cynthia Mauk, Fall 1993
- Christie Morgan, Fall 1993
- Julie Roberts, 1993-94
- Clayton Thorp, Fall 1993

○ **F. W. Simonds
Endowed Presidential Scholarship**

- Alison Teagan, 1993-94

○ **Texaco Scholarship Fund**

- Jim Gharib, Spring 1994
- Julie Roberts, Spring 1994

○ **Udden Memorial Scholarship**

- Egan Jones, Spring 1994
- Bradley Reid, Fall 1993

○ **Union Pacific
Resources Company**

- Adamh Findlay, Fall 1993
- Egan Jones, 1993-94
- Robert Trevino, Fall 1993
- Brad Wolaver, Fall 1993

○ **Mr. & Mrs. Albert W. Weeks
Scholarship**

- Emilio Carmona, Summer 1994
- Amanda Casebier, Summer 1994
- Tony Faucett, Spring 1994
- Amy Gray, Summer 1994
- Gregory Grubbs, Spring 1994
- Jason Ham, Spring 1994
- Patrick Hempton, Summer 1994
- Jonathan Holt, Summer 1994
- Egan Jones, Summer 1994
- Jerry Kerzee, Summer 1994
- Austin Lerner, Summer 1994
- Cliff Li, Summer 1994
- Clint Pohler, Spring 1994
- Bradley Reid, Spring 1994
- Christie Rogers, Spring 1994
- Scott Sheddan, Summer 1994
- Robert Trevino, Summer 1994
- Yemia Turnage, Summer 1994
- Jennifer Wilson, Summer 1994

○ **F. L. Whitney
Endowed Presidential Scholarship**

- Sharon Bruyere, 1993-94
- Amy Gray, 1993-94

○ **Charles E. Yager
Undergraduate Field Scholarship**

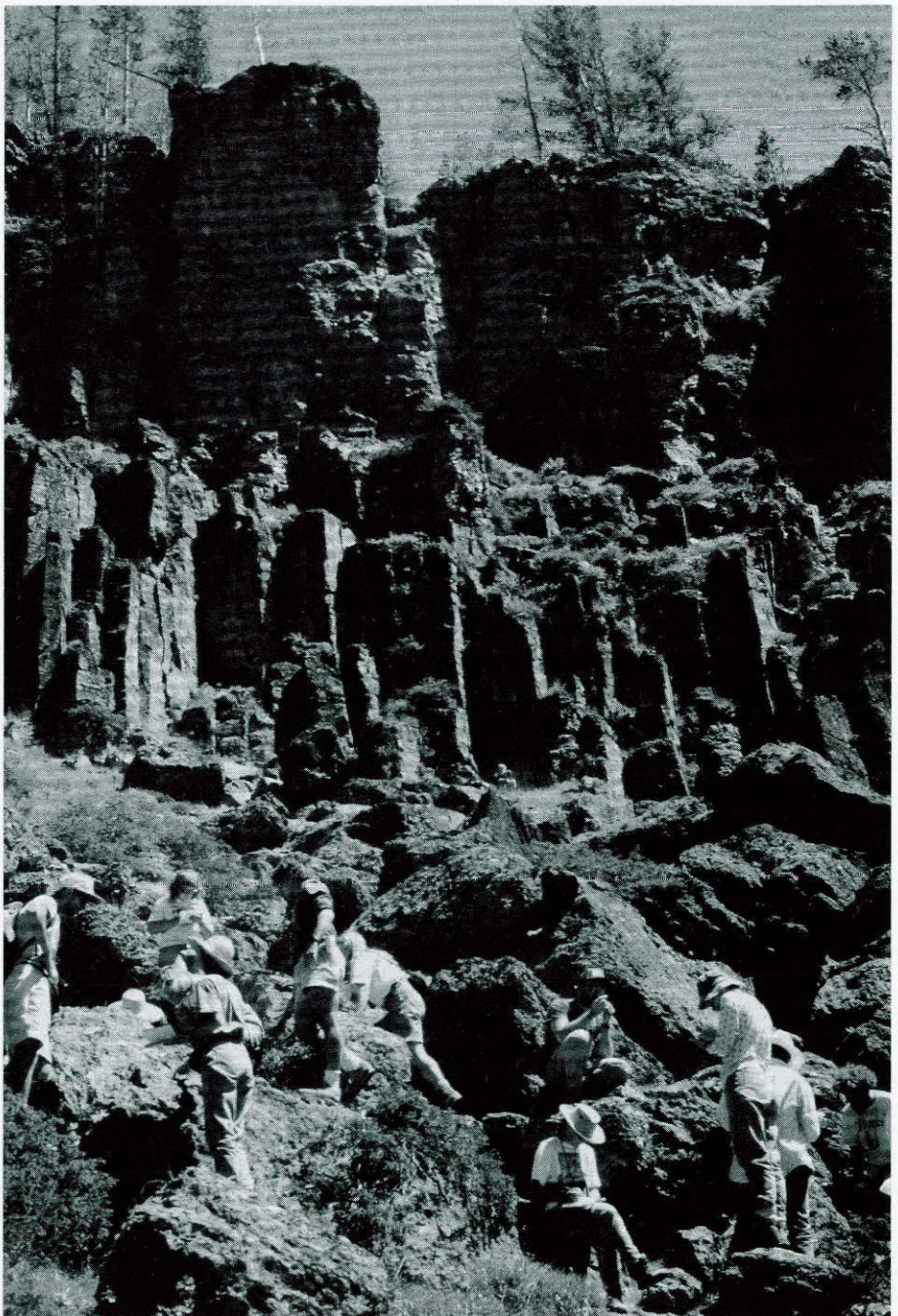
- Kristen Barber, Summer 1994
- Douglas Dawson, Summer 1994
- John Gamble, Summer 1994
- Chris McShane, Summer 1994
- Kevin Pasternak, Summer

GEO 660

by Sharon Mosher

THIS YEAR WE ONCE AGAIN tried southwestern Montana as the location for most of field camp (Geo 660) and were rewarded with beautiful weather along with the great geology. Projects primarily involved mapping fold and thrust belt structures in the Paleozoic rocks of the Big Belt Mountains near Helena and the Elkhorn Mountains near Three Forks with Helper, Mosher, and Bob Roback, a postdoctoral scientist. The group also spent three days in Yellowstone and Teton National Parks looking at the effects of the Quaternary to Recent volcanism, tectonism and hydrothermal activity. The last project was in the Pioneer Mountains near Heckla looking at the relations between deformation, metamorphism, plutonism, and gold mineralization. Jim Connelly joined the group for the last ten days. Although the weather was much nicer than the previous year, a few severe storms, high winds, and snow made the four weeks of camping more exciting. In Yellowstone, students were greeted in the mornings with buffalo and moose wandering through their campsites.

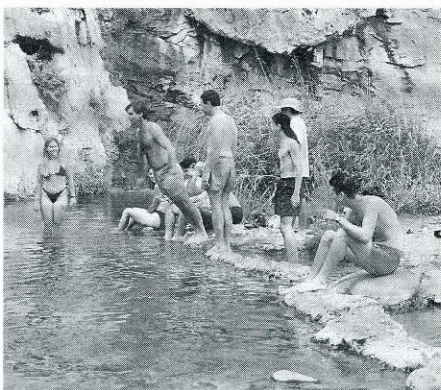
The first two weeks concentrated on carbonate and clastic sedimentology with Banner, Land, McBride, and Sprinkle. The students studied the Permian reefs in the Guadalupe Mountains, carbonates and bioherms in the Sacramento Mountains of New Mexico, and clastic sedimentation in



Top: Group photo of 1994 Geo 660 students.
Bottom: Geo 660 students at scenic outcrop.

the San Juan Basin near Durango, Colorado. This year the group also went to Utah looking at Uinta Basin and Lake Bonneville sediments. Field trips included visits to Carlsbad Caverns, White Sands National Monument, and Arches National Park.

The group of 33 students was larger than recent years, but a group of excellent TA's (Stefan Boettcher, Mary Johns, Colin Sumerall, Steve Krause, Robin Balinsky, and Matt Colbert) made the large numbers manageable. All in all, it was a great field camp this year.

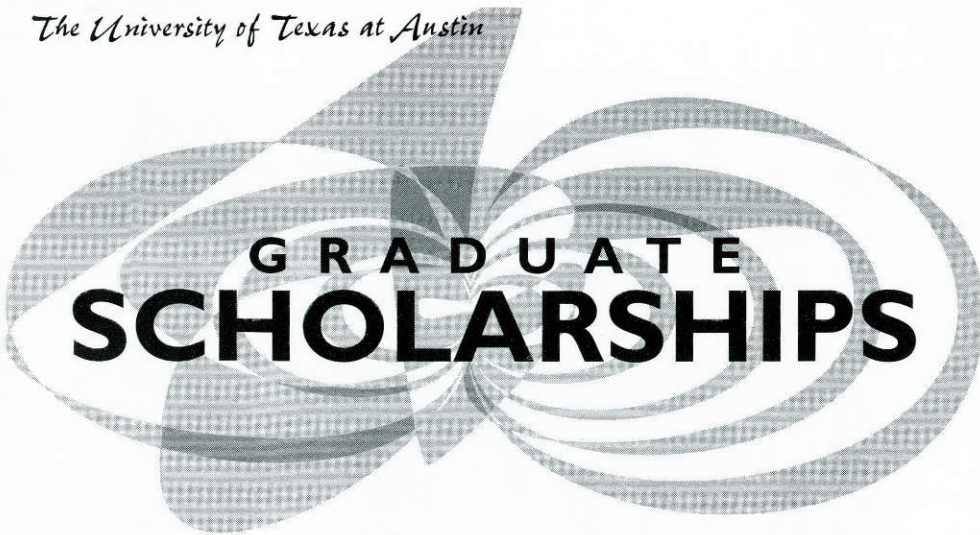


GEO 660 PHOTOS:

Top: Artesian well north of Durango.

Center: Playing at Sitting Bull Falls.

Bottom: Students measure cross-bed orientations.



Amoco Foundation, Inc.

Catherine Schuur, 1993-94
Laura Stewart, 1993-94

ARCO Scholarships

Doug Bowling, Summer 1994
Sara Burns, Summer 1994
Joel Davidow, Summer 1994
Herbert Haubold, Summer 1994
Doug Henderson, Summer 1994
David Hirsch, Summer 1994
Jim Rougvie, Summer 1994
Geoffrey Upitis, Summer 1994
James V. White, Summer 1994
Chris Whitefield, Summer 1994

**Laura Thomson Barrow
Graduate Fellowship**

Barbara Mahler, 1993-94

**Wayne F. Bowman
Endowed Presidential Scholarship**

Colin Sumrall, 1993-94

BP Exploration Scholarships

Joseph Fiduk, Fall 1993
James Mayer, Spring 1994
Pamela Owen, Spring 1994

**Jesse L. Brundrett Memorial
Endowed Presidential Scholarship**

Catherine Schuur, 1993-94

Hal P. Bybee Memorial Fund

Bill Fitchen, Summer 1994
Nina Harun, Summer 1994
Mary K. Johns, Summer 1994

**Carlton Centennial
Professorship in Geology Grant**

Lynette Holford, Spring 1994
Laura Stewart, Spring 1994
Keith Tischler, 1993-94
James White, Spring 1994
Sally Zellers, Spring 1994

Chevron Fellowship

James Anderson, Summer 1994
Ilan Kreisel, Summer 1994
James Mayer, Summer 1994
Tom McGilvery, Spring 1994
Ann Molineux, Spring 1994
Jean Philippe Nicot, Summer 1994
Robert M. Reed, Summer 1994

**Morgan J. Davis Centennial
Professorship Grant**

Xijin Liu, Fall 1993

**Ronald K. DeFord
Field Scholarship Fund**

Dan Barker, Spring 1994
Stefan Boettcher, 1993-94
Chris Brochu, 1993-94
Danielle Carpenter, Spring 1994
Laura Cutright, Spring 1994
Charles Gell, Spring 1994
James R. Mayer, 1993-94
John W. Merck, 1993-94
Chris Swezey, 1993-94
Keith Tischler, 1993-94
Wan Yang, Spring 1994

**Michael Bruce Duchin
Centennial Memorial
Endowed Presidential Scholarship**

Laura Stewart, 1993-94

**William Stamps Farish
Chair in Geology Grant**

David Hirsch, Spring 1994
James Rougvie, Spring 1994

**J. Nalle Gregory Chair
in Sedimentary Geology Grant**

Charles Gell, Spring 1994

Hogg-Cullinan Scholarship

Lars Borg, 1993-94

Hogg-Sharp Scholarship

Lars Borg, 1993-94

Ingerson Graduate Research Assistance in Geochemistry

Ian Jones, Spring 1994
Amy Sapp, Spring 1994

Howard R. Lowe Fund in Vertebrate Paleontology

Chris Brochu, Summer 1994
Brook Hall, Summer 1994

Mackin Scholarship

Mary Crabaugh, Fall 1993

Marathon Oil Company Scholarship

Jenhuua Feng, Spring 1994
Lee Potter, Spring 1994
Philip Rowell, Fall 1993
Liangqiang Xue, Spring 1994

George W. Marshall Memorial Endowed Presidential Scholarship

Lars Borg, 1993-94

Oryx Scholarship

Stefan Boettcher, Fall 1994
Sara Burns, Spring 1994
Pamela Owens, Spring 1994
Jennifer S. Smith, Spring 1994
Keith Tischler, Fall 1994
Sarah Wilson, Spring 1994

Pennzoil & Pogo/Gipson Scholarship

Douglas Bowling, 1993-94

Petrography Award

Tim McMahon 1993-94

O. S. Petty Geophysical Fund

James Simmons, Fall 1993
Hongliu Zeng, Fall 1993

Phillips Petroleum Fellowship

Hongxing Ge, 1993-94

Shell Oil Company Fund

Chris Swezey, Spring 1994

Shell Oil Foundation Centennial Teaching Fellowship in Geophysics Grant

Cory Hoffman, Summer 1994
Duk Kee Lee, Fall 1993
Wang Yang, 1993-94

Shell Oil Foundation Distinguished Chair in Geophysics Grant

Hongliu Zeng, Fall 1993
James Simmons, Fall 1993

○ **William T. Stokes Centennial**

○ **Teaching Fellowship Grant**
○ Christiane Reinhold, Spring 1994

○ **John and Elizabeth Teagle Scholarship Fund**

○ Stefan S. Boettcher, 1993-94
○ Cory L. Hoffman, 1993-94
○ James V. White, 1993-94
○ Hong Liu Zeng, 1993-94

○ **Outstanding Teaching Assistant Awards**

○ James Mayer, 1993-94
○ Pamela Owen, 1993-94

○ **Technical Sessions Best Speaker Awards**

○ Jeff Chen, Fall 1993
○ Widya Dharmasamadhi, Spring 1994
○ Richard Ketcham, Spring 1994
○ John Kuehne, Fall, 1993

○ **Texaco Scholarship Fund**

○ Eric Beam, 1993-94
○ Keith Tischler, Spring 1994
○ Sarah Wilson, Spring 1994

○ **Various Donors**

○ **Scholarships**
○ Joanna Crowe, Fall 1993
○ Cambria Denison, Fall 1993
○ Rachel Eustice, Fall 1993
○ Li Ning, Fall 1993
○ Carl Fiduk, Fall 1993
○ Andrew Frank, Fall 1993
○ Hongxing Ge, Fall 1993
○ Stephen Grimes, Fall 1993
○ Herbert Haubold, Fall 1993
○ Mary K. Johns, Fall 1993
○ Barbara Mahler, Fall 1993
○ Timothy McMahon, Fall 1993
○ Virginia Pendleton, Fall 1993
○ Robert Reed, Fall 1993
○ Joseph Reese, Fall 1993
○ Alex Riter, Fall 1993
○ James Rougyie, Fall 1993
○ Jeff Rubin, Fall 1993
○ Merrie Smith, Fall 1993
○ Benjamin Sloan, Fall 1993
○ Liangqing Xue, Fall 1993
○ Ran Zhou, Fall 1993

○ **Albert W. and Alice M. Weeks Fund in Geology**

○ Herbert Haubold, 1993-94

○ **Arno P.(Dutch) Wendler Professional Development Fund Grant**

○ Stefan Boettcher, Spring 1994
○ Linda Davis, 1993-94

○ Karl Fiduk, 1993-94
○ Hongxing Ge, Spring, 1994
○ Denise H. Ketcham, Spring 1994
○ Xijin Liu, 1993-94
○ Gyorgy Marton, 1993-94
○ Ben Sloan, Spring 1994
○ Laura Stewart, Spring 1994
○ Sally Zellers, 1993-94
○ Ran Zhou, Spring 1994

○ **Second Charles E. Yager Professorship Grant**

○ Doug Henderson, Spring 1994

○ **Third Charles E. Yager Professorship Grant**

○ Kirt Kempster, Spring 1994
○ Lee Potter, Spring, 1994

OUTSIDE SUPPORT

The following graduate students received support in the form of scholarships, grants, etc. during the past school year:

CARLOTTA CHERNOFF

received a Graduate Fellowship from the National Science Foundation.

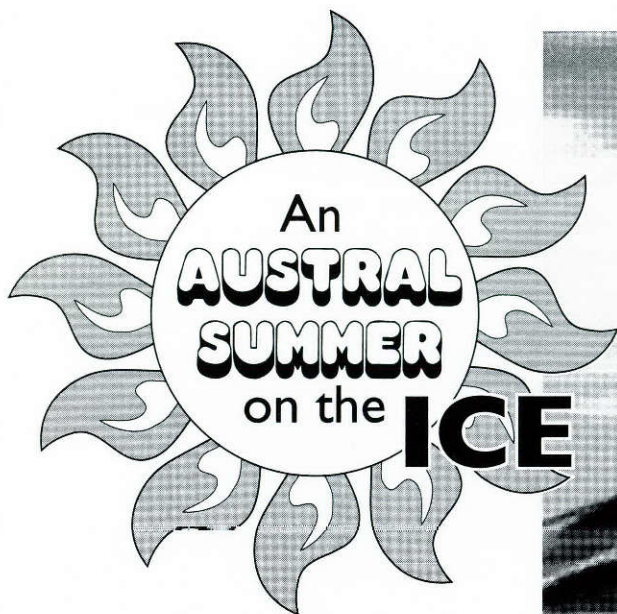
JOEL DAVIDOW was awarded a Research Grant from the Geological Society of America.

DAVE HIRSCH received a Graduate Fellowship from the National Science Foundation.

ANN MOLINEUX received Summer 1993 support from Sigma Xi and the Geological Society of America.

JAMES R. ROUGVIE was awarded the Ogden Tweto Memorial Research Grant from the Colorado Scientific Society.

LAURA STEWART received a grant from the Gulf Coast Association of Geological Societies.



ON NOVEMBER 19, 1993,

Dr. Ian Dalziel, Dr. Mark Helper, and two graduate students, Steve Grimes and Fred Hutson left Austin to go to Antarctica on a National Science Foundation sponsored project. The objective of the project was to study rocks exposed in the Shackleton Range and the Coats Land Nunataks (see map). Dr. Dalziel along with a colleague, Dr. Eldridge Moores, had proposed that this part of Antarctica was joined to southwestern United States about one billion years ago. We returned to Austin in late January, two months later, having collected 3000 pounds of rocks and over 300 rock cores for paleomagnetic analyses. The following are excerpts from the journal kept by Fred Hutson, with notes by Steve Grimes.

THURSDAY, NOVEMBER 25

FRED: After spending a few days in New Zealand, we are in the air on our way to Antarctica. We are crammed into the dark and noisy hull of a Navy C-130 wheeled cargo plane with over 20 people, cargo, and a bag lunch. It would take us ten hours to reach McMurdo Station. We were allowed to visit the flight deck for a spectacular view. Over 800 miles away from the continent I could see wispy trails of sea ice and mammoth icebergs floating northward. We then passed over the ice-covered peaks of northern Victoria Land and landed as if on the moon on the sea ice runway near McMurdo Station.

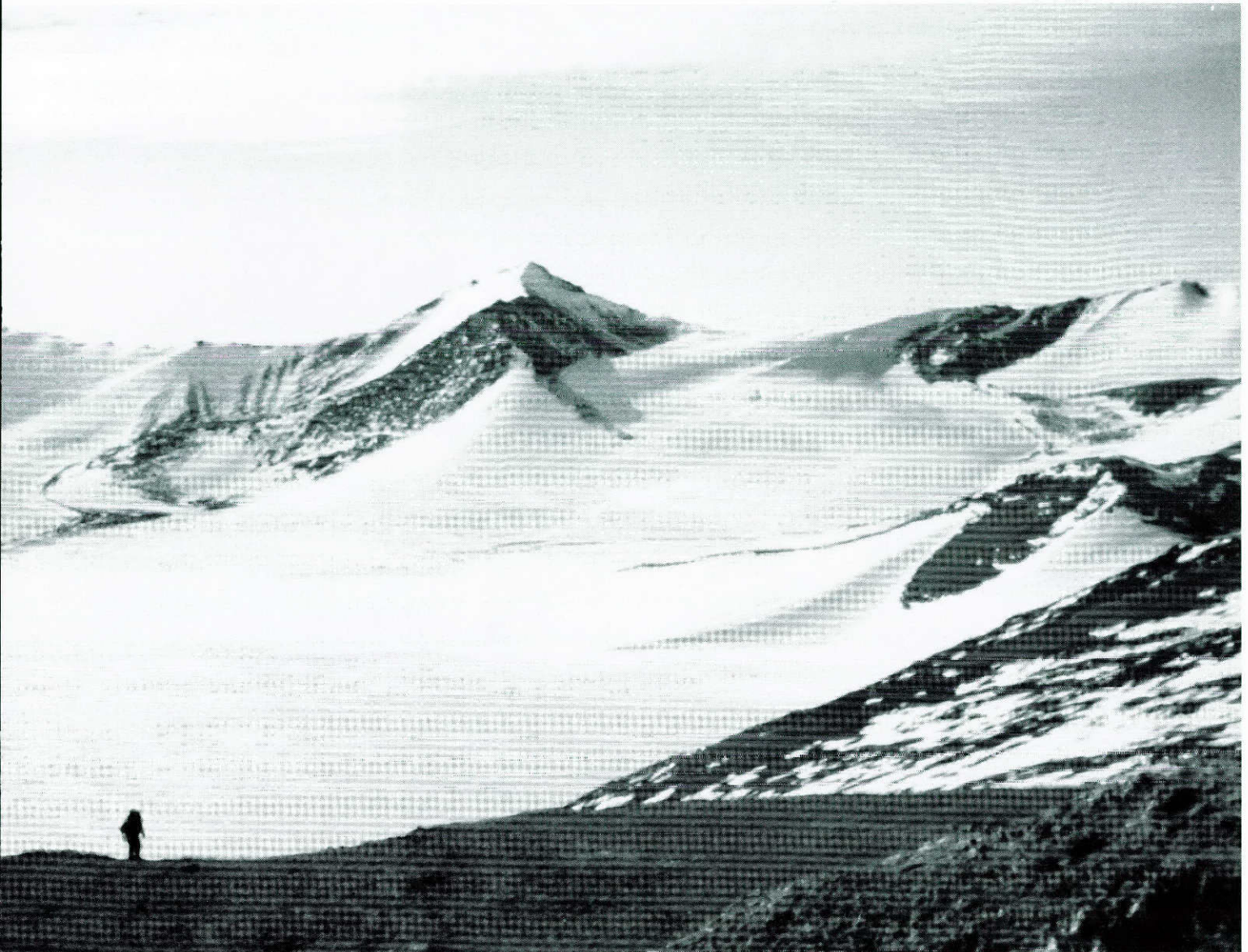
STEVE: MacMurdo Station, the main support base for the U.S. Antarctic Program, is kind of like a boom town on the edge of Antarctica. It has a population of

about 1200 during the tourist season, when it fills up with Navy and Air National Guard personnel, civilian support staff, and the researchers, or "beakers" as we're known down there. Field parties pretty much just sit around town and wait to get flown out. Flying everyone hither and yon is a pretty complicated business, so it takes a while. While waiting, we trained, readied our supplies, and hung around the local taverns (there are two!); celebrating Thanksgiving in the meantime. Finally, we get flown out on two ski-equipped LC-130's.

THURSDAY, DECEMBER 2

FRED: It is almost midnight with the sun shining brightly; we are again in flight to our field area in the Shackleton Range, which is eight hours away and on the

opposite side of the continent. I have never done so much flying in all of my life. I will celebrate my birthday twice today because we will cross the international date line and it will be December 2 in our field area. The past week in McMurdo is now a blur. We had met the other two members of our field party, Andy Harris and John Roberts, both of whom are New Zealand alpine guides and who will serve as our field safety experts for the season. We finished packing supplies for the field and went on a day-long shakedown cruise to get acquainted with snowmobiling, sledding, and operating the radio. Then Mark, Steve and I participated in a two day survival school, where we learned glacier travel techniques and crevasse rescue methods. I have never done so many new and foreign things in a week's time.



THURSDAY, DECEMBER 9

FRED: Another week and another adventure. After setting up our base camp and getting in a day of geology early last week, we were joined by a Twin Otter with a crew of three, all from Canada. Ian, Mark, John Roberts, and I flew to Belgrano II, an Argentine base that happens to be located on one of the Coats Land Nunataks that we wanted to sample. Steve and Andy Harris continued work in the Shackleton Range. We arrived back to the Shackleton base camp last night after a cultural and geological adventure at the Belgrano Base, where our hosts treated us extremely well. For the next week the Twin Otter will shuttle all of us to various locations in the Shackleton Range, a 40,000 km² area.

STEVE: For the first few days after everyone got back from Belgrano, we did

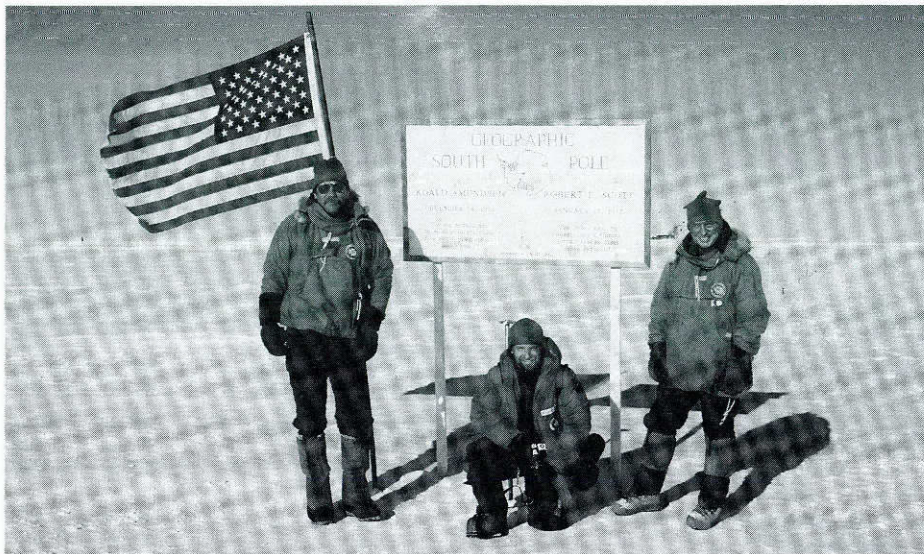
Twin-Otter-style reconnaissance geology over the entire range. This is weirdly like the kind of drive-and-hike geology we've all done for years on field trips, except we're "driving" by plane around this range that's poking up from under an ice cap. Once the plane left, we worked in the Read Mountains, along the southern edge of the range, until Christmas. The Read Mountains consist of early Proterozoic (1.6-1.7 Ga) basement beneath a low-grade late Proterozoic/early Cambrian metasedimentary section. Between December 2 and Christmas we had only one day off (and one bath). The whole time Andy and I were forced to listen to Belgrano stories from the others.

SATURDAY, DECEMBER 25

FRED: The Twin Otter left on December 13 and since then we have been do-

ing Skidoo geology, which we will continue to do throughout the remainder of the trip. For ten days we set up a mini base camp near Mt. Wegener about 50 km from our main camp and on the other days we have done day trips. The weather has been outstanding with mostly clear skies, very little wind, and temperatures in the teens. Today we stuffed ourselves with cornish game hens with all the fixings and finished it off with Christmas pudding while listening to the BBC. In the next couple of days we will set off on a 600 km skidoo and sled traverse, that will take us away from our main camp for two weeks and allow us to explore the northern and western parts of the Shackleton Range.

STEVE: Christmas was a needed and fun break. We had a jolly little feast and toasted each other while listening to horrible BBC Christmas programs. Ian read



Dylan Thomas' "A Christmas in Wales"—it went over perfectly in his Scottish accent—and we all got homesick. Well, O.K., I did. Then we were stuck for a couple of days because of cloudy weather. (You can't travel virgin glacial terrain in bad light because you can't see the surface features—like crevasses.)

WEDNESDAY, JANUARY 12

FRED: As you can tell, I have lost track of what day it is. We go by Greenwich Mean Time in the field but McMurdo, with whom we check in by radio on a daily basis, is a day ahead of us. It gets very confusing. We got back yesterday from our two week traverse. We are taking today off and will do day trips from here till the end of the season.

STEVE: The Great Skidoo Traverse, around the northern and western parts

of the range, was quite an odyssey. The rocks there are mostly medium-to-high-grade basement and supracrustal rocks that were deformed and metamorphosed together in the (early-Paleozoic) Ross Orogeny. Fred and Ian spent a lot of time working on the Blaiklock Glacier Group, an undeformed, Paleozoic sedimentary section, as well. We travelled in trains consisting each of a lead snowmobile, an unmanned Nansen sled, another Skidoo, and a manned sled. Riding the sleds was probably the most fun slot in the train—they're basically just dogsleds. Our mountaineers, Andy and J.R., taught us how to set up and drive in the trains, along with most of the other skills we needed down there. Really, without them we would have been pretty lost.

During the traverse, we had our one spell of bad weather (two days) during the whole field season. All the Antarctic veterans, Ian, Andy, and J.R., said that we

were ridiculously lucky. I'm glad, because sitting in a tent all day during a blizzard gets old real fast.

TUESDAY, JANUARY 18

FRED: We are standing next to overloaded cargo pallets as we await the arrival of the LC-130 for pickup. It has been an amazing experience, from the pristine and silent beauty of an Antarctic summer day to the dim darkness of blowing snow and tent-beating wind.

SATURDAY, JANUARY 22

FRED: I am now enroute to New Zealand. The last few days have been spent returning gear and packing up rocks, which will go back by ship. I am anxious to get home but there will always be part of me that cherishes the beauty and serenity of Antarctica.

UNDERGRADUATE DEGREES:

BACHELOR OF ARTS

AUGUST 1993

Edward S. Angle
Paul A. Froehlich
Tammy K. Pierce
Jeffery L. Richardson

DECEMBER 1993

Allison L. Gore
Autumn L. Laughrun
Courtland P. Little
Michelle R. Widener

MAY 1994

Cynthia R. Mauk
Christie C. Morgan
Jennifer L. Walker

BACHELOR OF SCIENCE

AUGUST 1993

Jennifer L. Bishop***
Jason M. Bontrager
Carolyn E. Cooper
Peter M. Rung
Thomas A. Warren

DECEMBER 1993

Chock J. Bailey
Hector A. Becemberg
Michael A. Brown
Sneha K. Dholakia**
Matthew C. Landon
Eric C. Matzner
James C. Sagebiel*

MAY 1994

Lance N. Christian
Colby C. Drechsel
Jennifer L. Ericsson
James C. Farmer
E. Garcia De Lillar
Jim J. Gharib
Linwood D. Shelton
Marshall D. Taylor
Clayton R. Thorp

*with honors

**with high honors

***with highest honors

GRADUATE

AUGUST, 1993

thru MAY, 1994

DEGREES

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

MASTER OF ARTS, AUGUST 1993 (3)

Moore, James H.
B.S., Geological Sciences, 1981,
The University of Texas at Austin
*Travel Time Tomography in the
Mantle Beneath the Indian - South
Asian Collision Zone.*
Supervisor: Stephen Grand
and Fumiko Tajima
Committee: Clark R. Wilson

Reinsborough, Brian C.
B.S., Geology, 1983,
Mount Allison University
*Sequence Stratigraphy and Depo-
sitional Systems of the Paleocene
Andrew Formation, Central
North Sea: The Evolution of a
Shelf-to-Basin System.*
Supervisor: William E. Galloway
Committee: Richard T. Buffler,
William L. Fisher

Single, Robert S.
B.S., Geology, 1987,
Colorado State University
*Relationship between Seismic Re-
flector Amplitude and Porosity,
Upper Mississippian St. Louis For-
mation, Gray County, Kansas.*
Supervisor: Milo M. Backus
Committee: Richard T. Buffler,
Raymond A. Levey

DOCTOR OF PHILOSOPHY, AUGUST, 1993 (8)

Aguirre-Diaz, Gerardo
B.S., Geology, 1983,
University Nacional de Mexico
M.A., Geological Sciences, 1988,
The University of Texas at Austin
*The Amealco Caldera, Queretaro,
Mexico: Geology, Geochronology,
Geochemistry, and Comparison
with other Silicic Centers of the
Mexican Volcanic Belt.*
Supervisor: Daniel S. Barker
Committee: Douglas Smith, Fred W.
McDowell, Steven A. Nelson,
Christopher Henry

Cunningham, William D.
A.B., Earth Sciences, 1982,
Dartmouth College
M.S., Geosciences, 1986,
University of Arizona
*Geological Investigations at the
Southern Tip of the Americas: The
Development of the Patagonian
Orocline and Uplift of the Cordil-
lera Darwin Metamorphic Com-
plex, Southernmost Chile.*
Supervisor: Ian W.D. Dalziel
Committee: Nicholas W. Walker,
Sharon Mosher, James A. Austin,
William P. Mann

Faria, Eduardo Lopes de
B.S., Geology, 1978,
Universidade Federal de Minas Gerais
M.S., Geophysics, 1986,
Universidade Federal da Bahia
*Modeling, Migration, and Focus-
ing Analysis in Transversely Iso-
tropic Media.*
Supervisor: Paul L. Stoffa
Committee: Milo M. Backus,
Clark R. Wilson, Mrinal K. Sen,
Jacob Fokhema

Hibbs, Barry J.

B.S., Geology, 1985,
Arizona State University
M.S., Geology, 1989,
University of Nebraska-Lincoln
*Numerical Modeling and Hydro-
logic Analysis of Floodplain
Hydrogeology, Bank Storage In-
teractions, and Underflow in the
Colorado River Alluvial Aquifer.*
Supervisor: John M. Sharp, Jr.
Committee: Philip C. Bennett, Clark
R. Wilson, Alan R. Dutton,
Darryll T. Pederson

Jervis, Michael

B.S., Geology, 1980,
University of Western Australia
M.S., Geophysics, 1987,
Curtin Institute of Technology
*Optimization Methods for
2-D Pre-Stack Migration
Velocity Estimation.*
Supervisor: Paul L. Stoffa
Committee: Milo M. Backus,
Clark R. Wilson, Mrinal K. Sen,
Milton J. Porsani

Johns, Ronald A.

B.S., Geology, 1984,
Purdue University
M.A., Geological Sciences, 1987,
The University of Texas at Austin
*Paleoecology and Depositional
Environments of Ordovician
Sponge Communities in Central
and Eastern Nevada.*
Supervisor: James T. Sprinkle
Committee: Martin B. Lagoe,
Timothy B. Rowe,
Stephen Ruppell, J. Keith Rigby

Klepeis, Keith A.

B.A., Geology, 1987,
Colgate University
*Structural Studies of Deformation
Along convergent and Transform
Plate Boundaries in the Western
Scotia Arc.*
Supervisor: Ian W.D. Dalziel,
Sharon Mosher
Committee: Nicholas W. Walker,
Wulf A. Gose, Lawrence A.
Lawver, Terry Wilson

Oh, Jinyong

B.S., Geology, 1979,
Yonsei University
M.S., Geophysics, 1981,
Yonsei University
*Basement Structures Associated
with Mesozoic Continental
Breakup Along the Southeastern
United States Continental
Margin from Multichannel
Seismic Profiles.*
Supervisor: Paul L. Stoffa
Committee: Clark R. Wilson, Yosio
Nakamura, James A. Austin, Jr.,
Joseph D. Phillips,
Millard F. Coffin

**MASTER OF ARTS,
DECEMBER 1993 (5)**

Hill, David W.

B.S., Geology, 1976,
Texas A&M University
*Land Subsidence in the Big Hill
and Fannett Fields in Jefferson
County, Texas: An Analytical
Model.*
Supervisor: John M. Sharp, Jr.
Committee Members: Jeffrey Paine
William E. Galloway

Hoar, Timothy J.

B.S., Physics/Geophysics/Geology,
1983, SUNY-Fredonia
*Altimetric Observations of Oce-
anic Response to Atmospheric
Forcing*
Supervisor: Clark Wilson
Committee Members: Stephen Grand,
Paul Stoffa

Klimchuk, Glenn A.

B.A., Geology, 1988,
Brown University
*Provenance of Sandstones and
Conglomerates from the Pliocene
Era Formation, Aure Fold-and-
Thrust Belt, Papua New Guinea.*
Supervisor: Mark P. Cloos
Committee Members: William R.
Muehlberger, Earle F. McBride

Kugler, Khib A.

B.S., Geological Sciences, 1988,
The University of Texas at Austin
*The Seismic Structure and Stratig-
raphy of the Aure Fold and Thrust
Belt, Papua New Guinea.*
Supervisor: Mark P. Cloos,
Richard T. Buffler
Committee Members: Peter Hill

Rougvie, James R.

B.S., Geology, 1990,
University of Iowa
*The Effect of Metamorphic Flu-
ids on Rb-Sr Systematics, Llano
Uplift, Central Texas.*
Supervisor: William D. Carlson
Committee Members: Leon E. Long,
Mark Helper

**DOCTOR OF PHILOSOPHY,
DECEMBER 1993 (2)**

Davis, Linda L.

B.A., Geology, 1981,
University of Colorado
M.S., Geology, 1986,
University of Georgia
*Potassic Mafic Rocks at Two
Buttes, Colorado.*
Supervisor: Douglas Smith
Committee Members: Daniel S.
Barker, Fred W. McDowell,
Allen V. Heyl, Steven C. Bergman

Rowell, Philip

B.A., Geophysics, 1974,
Queensland University
*The Structural and Stratigraphic
Evolution of the Celtic Sea Basins,
Offshore Ireland.*
Supervisor: Richard T. Buffler,
Michelle A. Kominz
Committee: James A. Austin, Jr.,
Millard F. Coffin, Ian W.D. Dalziel

**MASTER OF ARTS,
MAY 1994 (2)**

Hua, Hsiao-Peng

B.S., Geology, 1986,
National Cheng-Kung University
*Vapor-Phase Sorption Equilibria
of Organic Contaminants*
Supervisor: Philip C. Bennett
Committee: John M. Sharp, Jr.,
Leon E. Long

Ralston, Matthew D.

B.S., Geophysics, 1988,
University of California-Santa Barbara
*Analysis of the COCORP San
Marcos Arch Deep Seismic Sur-
vey: Line Texas 6*
Supervisor: Paul L. Stoffa
Committee: Richard T. Buffler,
William R. Muehlberger

**DOCTOR OF PHILOSOPHY,
MAY 1994 (7)**

Barton, Mark D.

B.A., Geology, 1981,
University of Colorado
M.S., Geology, 1991,
Colorado State University

*Outcrop Characterization of
Architecture and Permeability
Structure in Fluvial-Deltaic
Sandstones, Cretaceous Ferron
Sandstone, Utah.*

Supervisor: William L. Fisher,
Noel Tyler

Committee: William E. Galloway,
John M. Sharp, Jr., David Goggin,
Mark Miller

Fiduk, J. Carl

B.S., Geology, 1979,
University of Florida
M.S., Geology, 1982,
University of Florida

*Plio-Pleistocene Evolution of the
Uppr Continental Slope, Garden
Banks and East Breaks Areas,
Northwestern Gulf of Mexico.*

Supervisor: Richard T. Buffler,
E. William Behrens

Committee: William E. Galloway,
Leonard F. Brown, Jr.,
William R. Bryant

Hiebert, Franz K.

A.B., Geology, 1981,
Harvard University
M.A., Geological Sciences, 1988,
The University of Texas at Austin

*Microbial Diagenesis in Terrestrial
Aquifer Conditions: Laboratory
and Field Studies.*

Supervisor: Philip C. Bennett,
Robert L. Folk

Committee: Earle F. McBride, Dennis
T. Brown, Henry S. Chafetz

Lynch, F. Leo

B.S., Geology, 1981,
Tufts University
M.S., Geology, 1985,
Dartmouth College

*The Effects of Depositional Envi-
ronment and Formation Water
Chemistry on Diagenesis of Sand-
stones and Shales, Frio Formation
(Oligocene), Aransas, Nueces, and
San Patricio Counties, Texas.*

Supervisor: Lynton S. Land
Committee: Earle F. McBride,
Robert L. Folk, Shirley P. Dutton,
David R. Pevear

Simmons, James L.

B.S., Geological Sciences, 1983,
The University of Texas at Austin
M.A., Geological Sciences, 1987,
The University of Texas at Austin

Practical Seismic Inversion

Supervisor: Milo M. Backus
Committee: Clark R. Wilson,
Paul L. Stoffa, Stephen P. Grand,
Jan D. Garmany

Xue, Liangqing

B.S., Geology, 1982,
Northwest University/China
M.S., Geology, 1985,
China University of Geosciences

*Genetic Stratigraphic Sequences
and Depositional Systems of the
Lower and Middle Wilcox Strata,
Texas Gulf Coast Basin.*

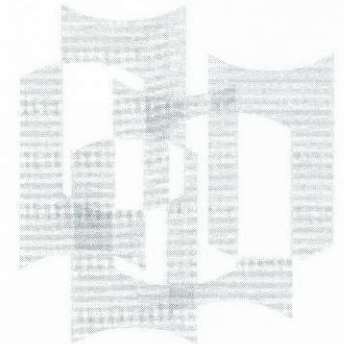
Supervisor: William E. Galloway
Committee: Richard T. Buffler,
William, L. Fisher, Martin B.
Lagoe, Robert A. Morton,
Hsu Huaida

Zeng, Hongliu

B.S., Geology, 1982, Petroleum
University of China at Dongying
M.S., Geology, 1985, Petroleum
University of China at Beijing

*Facies-Guided 3-Dimensional
Seismic Modeling and Reservoir
Characterization.*

Supervisor: Milo M. Backus,
Noel Tyler
Committee: William E. Galloway,
Paul L. Stoffa, Steven L. Morriss



PHOTOS:

Top: Matt Colbert studying specimens.

Bottom: Students in Last Chance Canyon,
near Ferron, Utah, on field trip associated
with new field class, *Advanced Sequence
Stratigraphy*. Trip leaders were Mike Gardner
(lower right) from the Bureau of Economic
Geology, and Richard Buffler (lower left).





TUNISIA

By Chris Swezey

Chris Swezey's dissertation concerns Quaternary basin dynamics on the northern margin of the Sahara Desert in southern Tunisia. During the course of this work, he spent a year as a Fulbright Scholar in Strasbourg, France, conducting remote sensing studies. This was followed by field work in southern Tunisia in the spring of 1993 and 1994.

"I understand that you are here in southern Tunisia to study the dunes. I adore the dunes. I want to know all about them." I looked up from my dinner of lamb and olives with harissa sauce to see a man with long sideburns and a black leather jacket staring down at me. He sat down abruptly opposite me, and then added, "My name is Serg. Mohamed across the street told me about you. I've searched all over town for you. Let's have tea at the cafe at the end of the street after you finish your dinner, then we can talk about the dunes."

Serg was a Frenchman who had been living in the town of Tozeur, in southern Tunisia, for the past three years. Before that, he had lived in "various other places in North Africa." He was not interested in the dunes, however. He wanted to talk about cars and other vehicles that one drives in the dunes. This was fine with me. I had brought a 1972 Landrover, plagued with an infinite variety of mechanical malfunctions, across the Mediterranean Sea on the ferry from France to Tun-

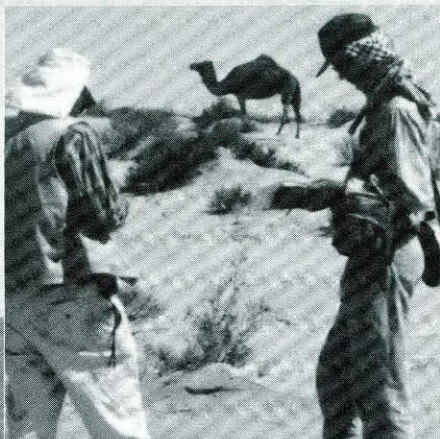
sia. Thus I had ample material to hold up my part of the "motorized vehicle problems in the Sahara" discussion.

Serg was probably the last person in town to find out about me. Word had spread quickly among the Tunisians that I was an American in Tozeur doing something with the dunes and rocks of the region. Mohamed, who had told Serg about me, sat in a chair across the street from the restaurant every evening, and made it his business to find out who was passing through town. After talking with me, Mohamed assembled a group of local school teachers and insisted that I explain to them what I was doing with the dunes.

Mohamed later told me that everything I wanted to know about dunes could be found in the Koran. In his opinion, my research in the field was the more difficult route for acquiring knowledge, and that all of my work would only confirm what was written in the Koran. I did not follow Mohamed's recommendations for research, however, for I suspected that they would receive the approval of my dissertation committee. Therefore, for three months in the Sprint of 1994, I endured sandstorms, illnesses, extremes of temperature, vehicle failures, and constant harassment from men in tan polyester uniforms with large guns.

During much of my time in Tunisia I stayed at Tozeur, an oasis town on the northern edge of the Sahara Desert. The town lies about 50 kilometers south of the Atlas Mountains, and owes its existence to a natural water source. The water is used to irrigate numerous date palms that surround the town. Dates are very important. They say that the best dated in Tunisia come from Tozeur. Frequent topics of conversation include nuances of date quality, the nutritious values of dates, and how the Prophet himself likes dates. "Where do you get your dates in America?" they ask.

Immediately south of Tozeur lies the Chott Djerid, a vast inland sabkha beyond which stretches the Grand Erg Oriental ("Great Eastern Sand Sea"). North of Tozeur lies the Chott Rharsa, a smaller inland sabkha, but one that has the distinction of lying several



Photos, clockwise from top:
Chris Swezey in sandstorm in southern Tunisia;
Vehicle stuck in the Chott Rharsa, southern Tunisia;
Southern view of the Sahara Desert, from Tunisia's Atlas Mountains;
Basil Tikoff and Chris Swezey in southern Tunisia (with camel).

Background photo: The Grand Erg Oriental, southern Tunisia.

meters below sea level. The landscape is dominated by gypsum. Gypsum nodules and crusts are found in the chotts (sabkhas). Giant blades of gypsum stick out of the chott surface. Meter thick crusts of gypsum cap remnant buttes and yardangs. Gypsum "desert roses" are sold in the market next to dates and carpets. Even the sand dunes on the margins of the chotts are composed of gypsum.

When Gary Kocurek and I first went to Tunisia, accompanied by some French geologists from Strasbourg, we had expected to find active linear dunes composed of quartz sand based upon our satellite images of the region ("Topographic maps do not exist, or are difficult to obtain," as one Tunisian official explained). Upon our arrival, we found linear yardangs composed of gypsum sand and covered with some vegetation. We did find sev-

eral generations of eolian deposits, and eolian sands interfingering with sabkha and fluvial deposits (which will be discussed later in my dissertation), but the overwhelming abundance of gypsum certainly was a surprize.

Tunisia is about the same size as the state of Georgia. Over this distance the landscape changes from an agricultural Mediterranean climate (Geology: Thrust Sheets of the Atlas Mountains) to a hyperarid desert (Geology: Saharan Craton). Northern Tunisia is "modernized" with electricity, plumbing, sewage facilities, cars and cable television. This is not true of southern Tunisia. In the north, French is the dominant language, while in the south the dominant language is Arabic. Despite all of these contrasts, the country appears to be relatively stable economically and politically (The President of Tunisia was re-elected while I was in

the country, although I noticed that he had no opponents...).

Most people that one meets are quite friendly, although somewhat suspicious of foreigners trying to work in Tunisia. The government is even more suspicious than the general populace, to the point of being paranoid. This government paranoia, combined with the usual cultural difficulties encountered in a foreign country, make it a very arduous and stressful task for an American to work in Tunisia. A French geologist once explained to me that, in Tunisia, one must work with a Tunisian at all times, or one runs the risk of encountering "ennuis" (bureaucratic difficulties). Nevertheless, Tunisia is a very beautiful country, with many interesting geological problems to solve. It is worth the risk of encountering a few "ennuis."



STUDENT SPEAKERS

Eric Beam, PhD candidate

"The Effect of Variable Material Parameters and Sedimentation on Simple Basin Subsidence Models"

Stefan Boettcher, PhD candidate

"Thermal Histories of Piggy-Back and Foreland Basins in the Northern Apennines, Italy, Derived from Apatite Fission Track Thermo-Chronology"

Jeffrey Chen, MA aspirant

"Emerged Corals and Reef Terraces: Measurement and Dating of Late Quaternary Uplift, Tanna Island, Vanuatu"

Jeff Crabaugh, PhD candidate

"Detrital Mineralogy and Diagenesis of Wilcox Group Siliciclastic Rocks, Northwestern Gulf of Mexico Basin Margin: Petrology in an Integrated Stratigraphic Context"

Joanna Crowe, MA aspirant

"A Detailed Hydrogeologic Mapping of the Comal and San Marcos Rivers to Aid in Endangered Species Habitat Definition"

Bruce Darling, PhD candidate

"Isotope Hydrology of Southern Hudspeth County"

Linda Davis, PhD candidate

"A Scenic Overview of the Ocean Drilling Program's Leg 151 Artic-Atlantic Gateways Research Cruise, From St. John's, Newfoundland to Reykjavik, Iceland"

Cambria Denison, PhD candidate

"Three-Dimensional Quantitative Textural Analysis of Porphyroblasts in Metamorphic Rocks Using Computerized X-Ray Tomography"

Widya Dharmasamadhi,

MA aspirant
"Facies Analysis and High-Resolution Sequence Stratigraphy of the Lower Cretaceous Fall River Formation, Red Canyon, South Dakota, and Buck Draw Field, NE Wyoming"

Rachel Eustice, PhD candidate

"¹⁵N Compositions of Various Reef Critters, Discovery Bay, Jamaica"

Bill Fitchen, PhD aspirant

"Glen Rose Cyclostratigraphy, East Texas Basin"

Andrew Frank, PhD candidate

"The Link Between Airflow and Eolian Sand Transport: Our Current Understanding and its Limitations"

David Froelich, PhD candidate

"North American Early Eocene Equids: Taxonomy and Phylogeny of Hyracotherium"

Hongxing Ge, PhD candidate

"Kinematics and Dynamics of Salt Tectonics in the Paradox Basin, Utah and Colorado: An Integrated Investigation"

Hongxing Ge, PhD candidate

"Physical Models of Overburden Deformation above Withdrawing Salt: Implications for Salt-Dissolution Structures"

David Hansen, MA aspirant

"Geochemical Evolution and Hydrogeology of the Crater Hot Springs Geothermal System"

David Hansen, MA aspirant

"Thermal Hydrology of the Sevier Desert, Western Utah"

Nina Harun, PhD candidate

"Diagenesis and Provenance of the Lower Triassic Ivishak Sandstone, North Slope of Alaska: Implications for Porosity Development in Chert Arenites"

Franz Hiebert, PhD candidate

"Microbial Effects in Shallow Groundwater: Pure and Applied Science"

Cory Hoffman, PhD aspirant

"Glen Rose Cyclostratigraphy, East Texas Basin"

Fred Hutson, PhD candidate

"Sedimentation and Tectonics: A Trip Through Time and Space"

Mary Johns, MA aspirant

"Physical Models of Oblique Inversion"

Ian Jones, PhD aspirant

"Ion Transport Within the Floridan Aquifer, West-Central Florida"

Denise Harrington Ketcham,

MA aspirant
"Rb-Sr and Sm-Nd Study of the Sao Rafael Batholith, Rio Grande de Norte, NE Brazil"

Richard Ketcham, PhD candidate

"How Hot is the Crust?: Some Cold Facts from the Basin and Range"



Richard Ketcham, PhD candidate
 “The Effect of Variable Material Parameters and Sedimentation on Simple Basin Subsidence Models”

John Kuehne, PhD candidate
 “Atmospheric Excitation of Polar Motion”

Milton Kwong, MA aspirant
 “Marine-Burial Diagenetic Processes in Upper Devonian Reef Complexes, Canning Basin, Western Australia”

Kevin Lyons, PhD candidate
 “Relating Depositional Facies to Stratal Geometries in Outcrop: Great Valley Turbidite Complex, Sacramento Valley, California”

György Marton, PhD candidate
 “Mesozoic Structural and Stratigraphic Evolution of the Southeastern Gulf of Mexico”

Gregg Oetting, MA aspirant
 “Evolution of Ground Waters in the Edwards Aquifer”

Virginia M. Pendleton, MA aspirant
 “Reservoir Characterization from 3-D Seismic Data in the Seeligson Field, South Texas”

Andrew Quarles, PhD Candidate
 “Evolution of the Irian Jaya Central Range, Indonesia”

Mike Rahnis, MA aspirant
 “Workshop-Staining Carbonates”

Matt Ralston, MA aspirant
 “Analysis of the COCORP San Marcos Arch Deep Seismic Survey: Line Texas 6”

Rob Reed, PhD candidate
 “Deformation of Town Mountain-Type Granite, Llano Uplift, Texas”

Jeff Rubin, PhD candidate
 “Formation of the Gunung Bijih Timur-Complex Cu-Au Skarn, Irian Jaya, Indonesia”

Jeff Rubin, PhD candidate
 “Precious Metal Distribution in the Gunung Bijih (Ertsberg) District, Irian Jaya, Indonesia”

Ben Sloan, PhD candidate
 “Eocene Sequence Stratigraphy, North Sea Basin”

Rebecca Smyth-Boulton, MA aspirant
 “Geological Controls on Porosity and Permeability of the Santana Ash-Flow Tuff, Trans-Pecos Texas”

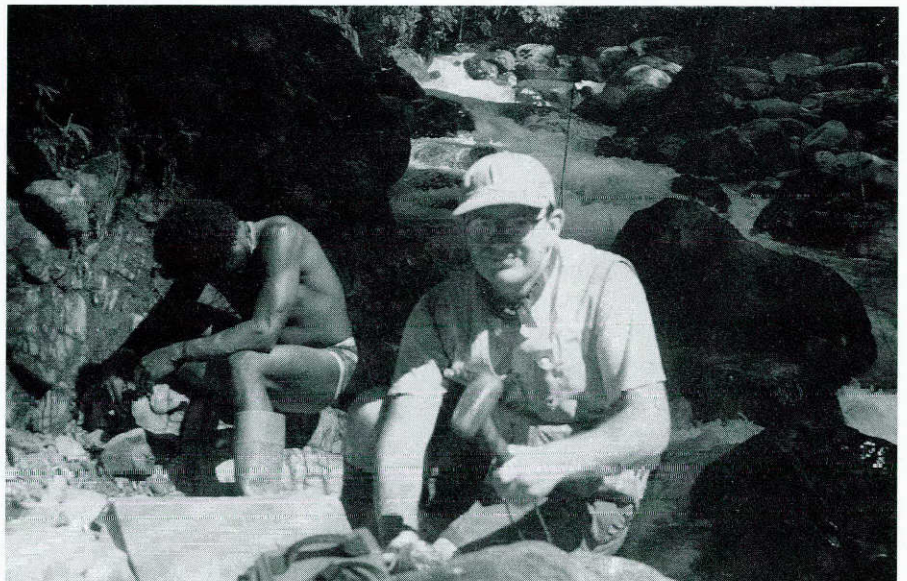
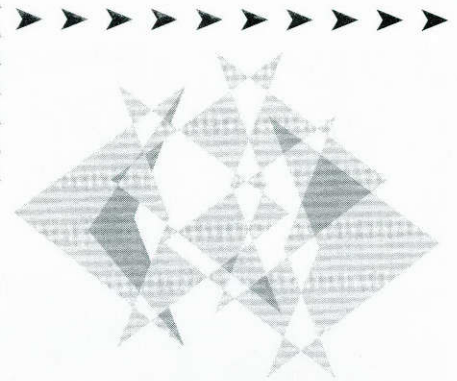
Rebecca Smyth-Boulton, MA aspirant
 “Hydrogeologic Properties of the Santana Ash-Flow Tuff, Trans-Pecos, Texas”

Keith Tischler, MA aspirant
 “The Geochemistry of Paradox Basin Shales on and off the San Juan River, Southeastern Utah”

James V. White, MA aspirant
 “Diagenesis of Pennsylvanian Paradox Formation Carbonates, Southeast Utah”

Wan Yang, PhD candidate
 “Success and Failure in Gamma-Tuning a Devonian Cyclic Carbonate Record”

Sally Zellers, PhD candidate
 “Ups, Downs, Ins & Outs: Late Cenozoic Seismic Stratigraphy and Paleoenvironments of the Yakataga Continental Shelf, Northeastern Gulf of Alaska”

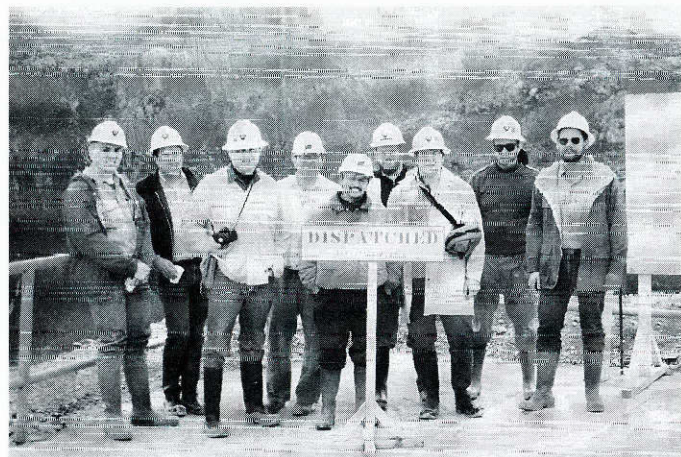


Rich Weiland with Indonesian nationals.

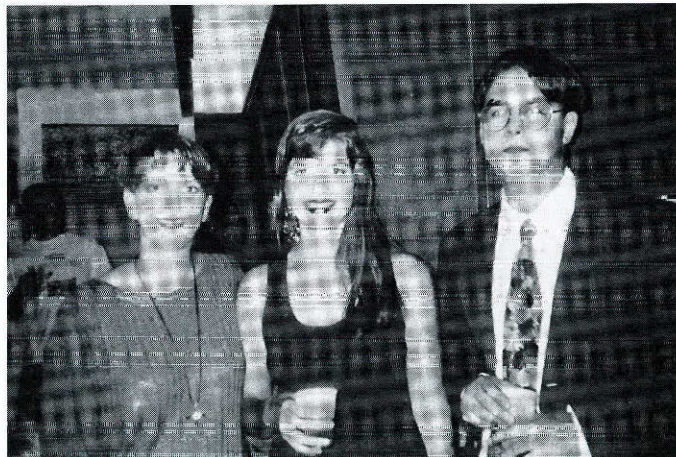
JUST A FEW MORE PHOTOS...



3.



1.



4.



2.



5.

PHOTOS:

- 1. Paul Warren
- 2. Huge selenite, Castille Formation
- 3. Wan Yang in north central Texas, Fall, 1993
- 4.-6. Graduate students at GSEC-sponsored dinner
- 7. Students preparing to leave for GEO 660
- 8. Jamie White and Rachel Eustice on Upper Portland Limestone at Portland Island, England
- 9. "Snuff boxes" from inferior oolite (Middle Jurassic) at Burton Bradstock, England



6.



7.



8.

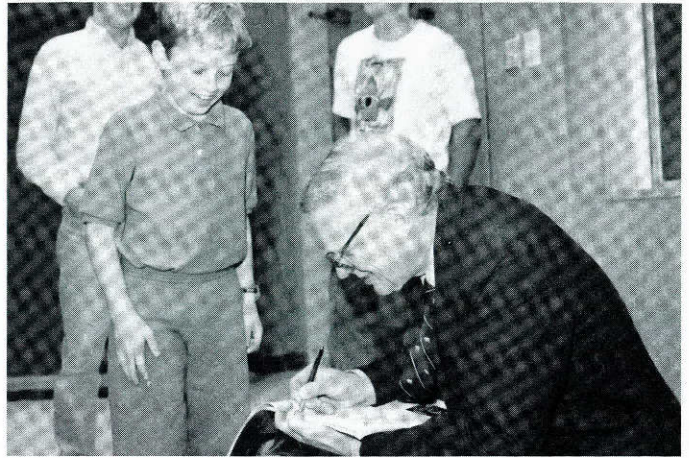
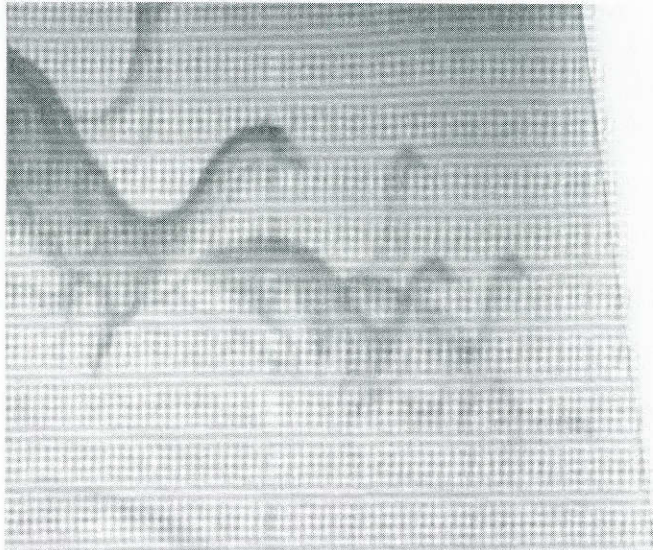


9.

Placement Activities

The Geological Sciences Placement Office was staffed during the end of 1993 and 1994 by Julie Thomas, who joined the Department in November 1993. A total of 89 students signed up to interview. Nineteen were candidates for the BS or BA degrees, 32 for the MA, and 38 for the PhD degree. Representatives from Arco, Digicon, Exxon, Marathon, Meridian, Mobil, Radian, Shell, Tenneco, Texaco, Union Pacific, Unocal, and Roy F. Weston visited the Department during the Fall. Spring visitors included Meridian Oil and Roy F. Weston. The number of permanent job offers was small, but there were a fair number of summer jobs offered, to both undergraduate and graduate students. According to a 1993 survey published in the June 1994 issue of the *AAPG Explorer*, salaries for petroleum geologists in 1993 grew about 4.5 percent while companies remained uncertain about their hiring plans. Overall, salaries rose 4.4 percent, slightly ahead of the inflation rate. Salary ranges according to years of experience are as follows:

Experience	Salary Range
0-2 years	\$37,200-52,000
3-5 years	\$44,000-64,200
6-9 years	\$48,000-95,000
10-14 years	\$51,500-130,000
15-19 years	\$58,000-133,000
20+ years	\$64,000-185,000



The *Running* of the Dinosaurs...

LAST OCTOBER marked the 40th anniversary of the establishment of the Geology Foundation at The University of Texas at Austin. Official recognition of that anniversary took place in conjunction with the fall meeting of the Geology Foundation Advisory Council—the seventy-fifth meeting of that group. Council members and their spouses were invited by Chancellor and Mrs. William Cunningham to an elegant dinner at the Chancellor's home, the Bauer House, on Thursday evening, October 28.

A celebration involving the University and alumni in the Austin area took place in the Geology Building lecture hall on Friday afternoon, October 29, with a fascinating lecture by Dr. Walter Alvarez of Stanford University. Sponsored by the Edwin Allday Lectureship in Geological Sciences, Dr. Alvarez is world-renowned in the

area of stratigraphic and structural geology, plate tectonics, and mass extinctions. Dr. Alvarez' talk focused on mass extinctions, with emphasis on mass extinction of dinosaurs, an ever-popular topic. In spite of a sudden downpour of rain a few minutes before the lecture, GEO 100 was packed with eager listeners. They were rewarded with a thought-provoking talk, with a few minutes for Dr. Alvarez to answer questions from the audience after he concluded his remarks.

Before introducing Dr. Alvarez, Mr. Phillip Wyche, current chairman of the Geology Foundation Advisory Council, summarized the impact that the Geology Foundation has had on the Department of Geological Sciences. He recognized all current and former members of the Council who attended the reception and lecture.





3



4



5



6

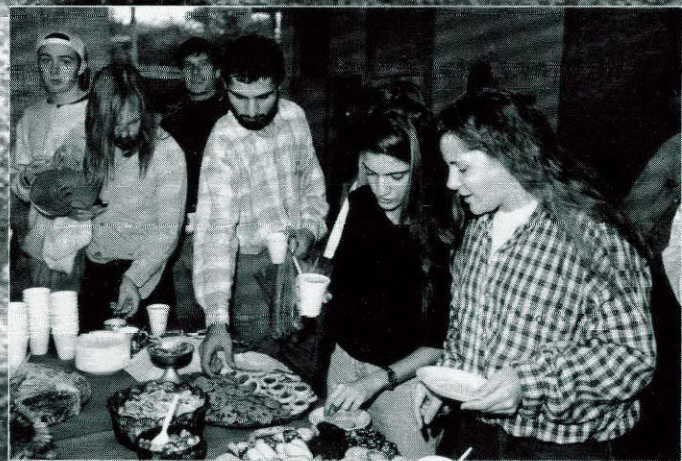
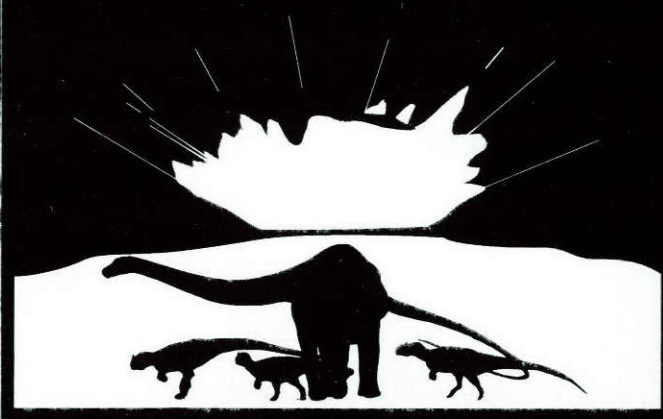
Sponsored by the Edwin Allday Lectureship
in celebration of the 40th Anniversary of the UT Geology Foundation

Geology Foundation
40th
Anniversary
1953 - 1993

WALTER ALVAREZ

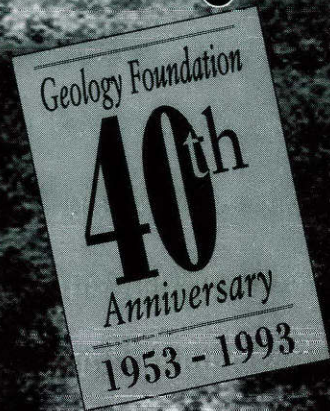
**MASS EXTINCTION OF
DINOSAURS BY ASTEROID:
IN SEARCH OF THE SMOKING GUN**

Friday, October 29, 1993, 2:30 p.m.
Geology Building, Room 100

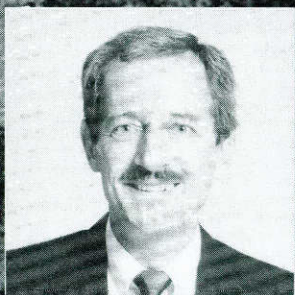
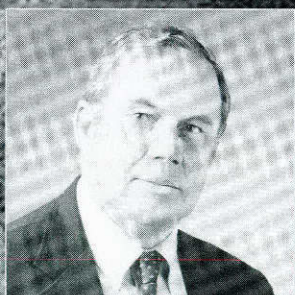
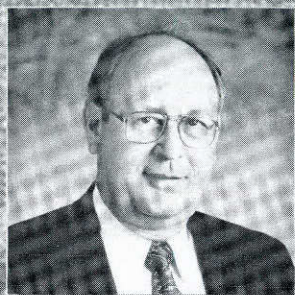
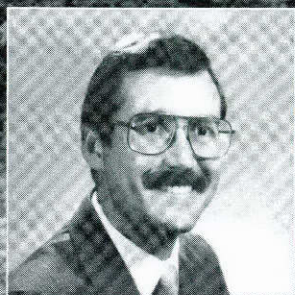


7

1. Dr. Walter Alvarez lectures.
2. A fan gets an autograph.
3. Bill Gipson and Harry Miller.
4. Council member Susan Longacre talks with grad student Joe Reese.
5. Linette and George Harwell, Patricia Boyd.
6. Walter Alvarez, Bill Fisher and John Maxwell. Maxwell was Alvarez' faculty supervisor at Princeton.
7. Visitors enjoy refreshments at the 40th anniversary celebration.



ADVISORY *Council* NEWS



Pictured from top to bottom:
Keith Brownlee,
Thomas Grimshaw,
Pamela Luttrell,
Russell Slayback
and Richard Standaert

FIVE INDIVIDUALS have been approved by the Board of Regents for membership on the Geology Foundation Advisory Council for three-year terms beginning in September, 1994. We welcome Keith R. Brownlee, Thomas W. Grimshaw, Pamela E. Luttrell, Russell G. Slayback, and Richard R. Standaert.

KEITH BROWNLEE is vice president and regional exploration manager, Africa, Latin America and Canada, for ARCO International Oil and Gas Company in Plano. His career with ARCO began in 1975 after his graduation with a BS in geophysical engineering from Colorado School of Mines. He continued through the years in various positions in ARCO Oil and Gas Company, Delta Drilling Company, and ARCO corporate office in Los Angeles before taking his present position in November, 1991. Keith and his wife, Diane, have a son, Bryce, and daughter, Jennifer.

THOMAS W. GRIMSHAW has been project director of the VISION System Development Project for International Technology Corporation in Austin since February, 1991. He previously served as general manager of Austin operations for IT Corporation, beginning his employment with that company in 1987. From 1976 until 1987 Tom was employed in several capacities by Radian Corporation, also in Austin. Tom received a BS in geological engineering from South Dakota School of Mines and Technology in 1967. He entered UT Austin graduate school and received an MA in geology in 1970, and a PhD in geology in 1976.

PAMELA E LUTTRELL became chief geologist in Mobil's Exploration and Producing Division headquarters in Fairfax, Virginia, in 1993. She joined Mobil in October, 1976, after completing her BA in 1973 and her MA in 1976, both from UT. She began working as a geologist with Mobil Exploration Services, Inc. in Dallas, then progressed through a variety of geologist positions associated with international operations and in 1981, transferred to Germany as a senior geologist. In 1983

Pamela returned to Dallas, where she advanced through a series of assignments in the exploration and producing division, including staff geologist, senior staff geologist, and exploration supervisor. Her main area of responsibility included the Far East and China. Beginning in 1989, Pamela was assigned to Mobil Exploration in Stavanger, Norway as an exploration supervisor. In 1991 she was appointed manager of geology in Germany, remaining in that position until 1993.

RUSSELL G. SLAYBACK received a BS degree in geology from Rensselaer Polytechnic Institute in 1959. He began working for Leggett, Brashears & Graham in 1960 as a ground-water geologist. In 1969 he became a senior hydrogeologist with that firm, advancing to partner in 1975. In 1976 he became vice president and director, then in 1984 became president and director of the firm.

RICHARD R. STANDAERT has served in the position of general manager offshore USA since June, 1993 at Oryx Energy Company corporate headquarters in Dallas. He previously served as managing director and president of Oryx U. K. Energy Company from 1992 to 1993. He joined Sun Exploration and Production Company, the predecessor of Oryx, in 1981 as a geology manager in Denver. He was named manager of the Rocky Mountain West District in 1984, and moved to Dallas in 1986 as manager of the Southwest District. In 1988, Standaert became director of exploration technology and occupied that position until he moved to London in 1990 as exploration manager for Oryx U.K. Richard received a bachelor's degree in geology from the State University of New York as Oswego and completed graduate work in geology from the State University of New York at Binghamton. Richard and his wife, Lorrie, live in Plano and have one son.

These five new Council members will increase the Council's breadth in representation from major companies and will also add more representation from the area of geohydrology.

CHAIRMAN

Mr. Phillip E. Wyche
126 Firebird
Austin, TX 78734

VICE-CHAIRMAN

Mr. William T. Stokes, Consultant
7703 Southwestern Boulevard
Dallas, TX 75225

MEMBERS:

Mr. Charles W. Alcorn Jr., President
Alcorn Companies
P. O. Box 2879
Victoria, TX 77902

Mr. Eugene L. Ames Jr., President
Venus Oil Company
2100 NBC Bldg.
San Antonio, TX 78205

Dr. Richard R. Bloomer
55 Tamarisk Circle
Abilene, TX 79606-5049

Mr. Keith R. Brownlee, Vice-President
ARCO International Oil and Gas
Company, 2330 West Plano Parkway
Plano, TX 75075

Mr. Thomas M. Burke, Consultant
8519 Manhattan Drive
Houston, TX 77096

Mr. Richard M. Coffelt
Exploration Manager
North America Explor. and Prod.
1500 POB
Bartlesville, OK 74004

Mr. Weyman W. Crawford
10026 Sugar Hill
Houston, TX 77042

Mr. L. Decker Dawson, President
Dawson Geophysical Company
208 S. Marienfeld
Midland, TX 79701

Dr. Rodger E. Denison
15141 Kingstree Drive
Dallas, TX 75248

Mr. George A. Donnelly Jr., President
The Eastland Oil Co.
P. O. Box 3488, Midland, TX 79702

Mr. Thomas E. Fanning, Vice President
Int'l. Exploration, Marathon Oil Company
P. O. Box 3128, Houston, TX 77253

Mr. James H. Frasher, Consultant
14751 Quail Grove
Houston, TX 77079

Dr. Thomas W. Grimshaw,
Project Director
VISION System Development Project
International Technology Corporation
1250 Capital of Texas Highway South
Austin, TX 78746

Mr. W. Douglas Hall
Hall Southwest,
505 East Huntland Drive,
Suite 550
Austin, TX 78752

Mr. George M. Harwell
Norcen Explorer, Inc.
200 Westlake Park Blvd.,
Suite 800
Houston, TX 77079

Mr. Larry R. Hensarling
202 Primera Drive
San Antonio, TX 78712

Mr. David S. "Scotty" Holland
3 River Way, Suite 1300
Houston, TX 77056

Mr. Charles J. Hooper
2111 Pine Valley
Houston, TX 77019

Mr. John A. Jackson
10325 Gaywood Road
Dallas, TX 75229

Mr. J. Donald Langston
78-6880 Kuhinanui Street
Kailua Kona, HI 96740

Dr. Susan A. Longacre
Texaco E&P Technology Division
P.O. Box 770070
Houston, TX 77215-0070

Dr. Pamela Luttrell,
Chief Geologist
Mobil Exploration and Producing
3225 Gallows Road
Fairfax, VA 22037

Mr. Vance M. Lynch
P. O. Box 330
Liberty Hill, TX 78642-0330

Mr. David F. Martineau
Exploration Manager
Pitts Oil Company
4600 Greenville Avenue
Dallas, TX 75206-5038

Mr. Harry A. Miller Jr.
600 First National Bank Building
303 West Wall, Suite 600
Midland, TX 79701

Mr. Michael B. Morris
3108 Reba Drive
Houston, TX 77019

Mr. James C. Patterson
12331 Broken Arrow
Houston, TX 77024

Mr. W. F. Reynolds
J. C. & W. F. Reynolds Oil Producers
700 MBank Building
Wichita Falls, TX 76301

Mr. George W. Schneider Jr.
P. O. Box 9399
Metairie, LA 70055

Mr. Don B. Sheffield
3741 Chevy Chase
Houston, TX 77019

Mr. Russell G. Slayback
Leggette, Brashears & Graham, Inc.
72 Danbury Road
Wilton, CT 06897

Mr. Richard R. Standaert
General Manager,
Offshore USA
Oryx Energy Company
P. O. Box 2880
Dallas, TX 75221-2880

Mr. David B. Story
Exxon Company U.S.A.
P. O. Box 2180 (RM 2917)
Houston, TX 77252-2180

Mr. Eddie A. Williamson
Amoco Canada Petroleum Co.
P.O. Box 200, Station M
Calgary, Alberta, T2P 2H8
CANADA

HONORARY LIFE MEMBERS:
Dr. Thomas D. Barrow, Consultant
4605 Post Oak Place, Suite 207
Houston, TX 77027

Mr. Don R. Boyd
1720 The Six Hundred Building
Corpus Christi, TX 78473

Dr. Samuel P. Ellison Jr.
4100 Jackson Ave., #303
Austin, TX 78731

Dr. Peter T. Flawn
3718 Bridle Path
Austin, TX 78703

Mr. William E. Gipson,
Gas Fund Inc.
808 Travis, Suite 1512
Houston, TX 77002

Mr. John L. Loftis Jr.
11919 Broken Bough
Houston, TX 77024

Mr. Judd H. Oualline, Consultant
217 Mayerling
Houston, TX 77024

Mr. Edd R. Turner
900 W. Main Street
Kerrville, TX 78028

Mr. Joseph C. Walter Jr.
Walter International, Inc.
1021 Main St., Suite 2110
Houston, TX 77002-6502

Advisory Council Listing

GEOLOGY FOUNDATION

Gifts

Gifts to the Geology Foundation for 1993-94

Individuals

C. W. Alcorn Jr.
 Ubertino Aliaga
 Adrienne Allie
 Eugene L. Ames Jr.
 Nancy J. Anderson
 R. H. Anderson Jr.
 Thomas H. Anderson
 Jean Andrews
 Arten Avakian
 Walter B. Ayers Jr.
 Herbert Babione
 Jonas Bailey
 Carole S. Baker
 Mr. & Mrs.
 Virgil E. Barnes
 Mrs. L. T. Barrow
 Thomas D. Barrow
 Gerald S. Barton
 Mrs. E. Jarrett Beanland
 Mr. & Mrs.
 Fred H. Becker
 Richard C. Beckman
 Richard E. Bennett
 Alan W. Berryhill
 Mr. & Mrs. Mike Best
 A. M. Biedenham Jr.
 Terry V. Bills Jr.
 Edward C. Bingler
 David S. Birska
 Jennifer Bishop
 Ricky Boehme
 Ellaoise P. Bleasdale
 Richard R. Bloomer
 Mrs. Neill Boldrick Sr.
 John F. Bookout III
 Douglas L. Bostwick
 Susie Blackburn Boyce
 Mr. & Mrs.
 Don R. Boyd
 Alfred Breuer M.D.
 Herbert L. Brewer
 Thomas E. Bridge
 David A. Bristol Jr.
 F. G. & Joan Brown
 Wallace E. Brunson

Leonard C. Bryant
 J. Fred Buenz
 Peter R. Buenz
 Ray A. Burke
 Thomas M. Burke
 Dorothy D. Burlage
 John P. Butler
 R. A. Butterworth
 Mr. & Mrs.
 Robert W. Bybee
 Mrs. Hal H. Bybee
 Mr. & Mrs. W. J. Cage
 Frank K. Cahoon
 Rodney J. Camp
 Donald H. Campbell
 J. D. Carballo
 A. T. Carleton
 William D. Carlson
 Paul S. Carpenter
 Karen Carter
 Mr. & Mrs.
 Robert D. Carter
 John Casey
 Josephine Casey
 Mr. & Mrs.
 Dwight Cassell
 Martha Cather
 Charles A. Caughey
 Edward C. Cazier III
 H. D. Cernosek
 Robert Chapin
 Walter Chatham Jr.
 Gregory Choban
 Mr. & Mrs. Stephen E.
 Clabaugh
 Robert T. Clarke
 Arthur W. Cleaves
 W. R. Cleaves M.D.
 Mark Cloos
 D. B. Clutterbuck
 Mrs. Stanton P. Coffey
 George B. Coffin
 Julie & Tom Cogswell
 Harvey F. Cohen
 Katharine L. Coley
 H. Grady Collier
 Jerry H. Collins
 The Coleman Family
 Jack L. Conger
 Sean T. Conlon

Ruth C. Corder
 Mr. & Mrs.
 T. W. Cothren
 Dexter H. Craig
 Steve Cumella
 Russell W. Cumley
 Molly Daugherty
 Dan Davis
 Mr. & Mrs. Bond Davis
 Mr. & Mrs.
 J. M. Dawson
 Mr. & Mrs.
 Ronald K. DeFord
 Richard DeGregorio
 Charles J. DeLancey
 John Lane Denson, III
 Mr. & Mrs. G. J. DePaul
 George A. Donnelly Jr.
 J. Chrys Dougherty
 William E. Dougherty
 James D. Doyle
 Ranaye Dreier
 James H. Driskill
 Mr. & Mrs.
 Ralph C. Duchin
 John A. Dunbar
 A. Baker Duncan
 Edward A. Duncan
 William R. Dupre
 Connie Mayes Dyer
 Richard H. Eckhardt Jr.
 G. K. Eifler Jr.
 Ruben Ellert
 Ruth P. Elliott
 Mr. & Mrs. S. Ellison Jr.
 Lawrence E. Ethridge Jr.
 A. Gordon
 & Natalie Everett
 Rizer Everett
 Robert H. Fakundiny
 Thomas E. Fanning
 Royce Faulkner
 J. D. Finley
 Mr. & Mrs.
 William L. Fisher
 Ted Flanigan
 Peter T. Flawn
 Mr. & Mrs. R. L. Folk
 Lee M. Folkes
 Wilbur A. Foster
 Hewitt B. Fox
 James H. Frasher
 W. D. Frazell

Annabelle B. Friddle
 Mark David Froneberger
 Karen Gallaher
 Mr. & Mrs.
 Henry Gayle
 Brenda Kirkland-George
 Clem E. George
 Steve J. Germitat
 Fred M. Gibson
 Edwin Gilbert
 William E. Gipson
 James E. Gordon
 Allison Gore
 Mark Graebner
 Richard E. Grant
 Volker C. Grasso
 C. DeVearle Gray
 Robert W. Grayson
 Mr. & Mrs.
 Joe B. Green
 Redge Greenberg
 Robert E. Greenwood
 Robbie Gries
 Phillip G. Grothus
 Roy H. Guess
 Walter T. Haenggi
 Albert Haertlein
 Donald E. Hahn
 Bryan M. Hale
 W. W. Hammond Jr.
 Paul A. Hardwick
 Mr. & Mrs.
 Schreiner Harrison
 Richard E. Hart
 G. M. Harwell Jr.
 Peggy Harwood
 Keith Haun
 William R. Haynes
 Cornelia Henderson
 Jon Herber
 Patricia M. Hester
 Janice L. Hill
 Stephen W. Hodgkins
 Dennis &
 Barbara Hoerster
 Mr. & Mrs.
 Bill D. Holland
 Melody Holm
 & Stan Cadwell
 James W. Hood
 Eleanor M. Hoover
 Richard A. Hoover
 Mrs. J. A. Hord
 Richard T. Houser
 Douglas J. Howard
 William P. C. Hudson
 J. R. Jackson, Jr.

Jim Bob Jackson
 Russell W. Jackson
 James Janssen
 Marshall E. Jennings
 Bridget Jensen
 Charles B. John
 Charles G. Johnson
 L. Chris Johnson
 Mrs. Dan M. Johnson
 Mrs. Max E. Johnson
 Robert T. Kent
 Howard W. Kiatta
 Karl Kinsel
 David L. Kirchner
 Dorothy D. Kunz
 Mr. & Mrs.
 Edward J. Kurtz
 Linda and Richard Kyle
 George A. Laguros
 Mr. & Mrs. W. Laing
 Lance Lambert
 Mr. & Mrs.
 Lynton S. Land
 James Donald Langston
 Randy Larkin
 Kristina LaRue
 Bernard and Cece Laves
 Olive H. Law
 Jeffrey L. Lawton
 Robert L. Layden
 Mr. & Mrs.
 Tom Layman
 Neta W. Lee
 David H. Lehman
 Robert C. Lentz
 Max Levin
 Paul S. Lewis
 Sandra J. Lindquist
 Sidney A. Lindsay
 Eugene Lipstate
 Larry D. Littlefield
 Allen C. Locklin
 Leon E. Long
 Susan A. Longacre
 Mark W. Longman
 E. W. Longmire
 Stephen E. Lovell
 Paul Lundegard
 Mr. & Mrs.
 E. L. Lundelius Jr.
 Rolf Lundelius
 Don A. Lundy
 Vance M. Lynch
 Michael O. Maler
 Barbara A. Marin
 Sabin W. Marshall
 David F. Martineau

**Business, society
and estate contributors:**

Leslie Mashburn
John C. Maxwell
LeRoy McCravey
Fred McDowell
Edward McFarlan Jr.
Richard McGehee
William R. McKinley
Garey McMains
A. D. McRae
C. Wade Meade
John A. Means
Mr. & Mrs. C. E. Mear
Peter Megaw
Charles M. Merrill
Harry A. Miller Jr.
Laura Lee Moffett
W. Lee Moore
Ann Moorehead
Duane E. Moredock
Diana &
Jeff Morehouse
Hank Morgan
Michael B. Morris
Roy P. Muehlberger
William R. Muehlberger
Maureen
Mullarkey-Imus
Mrs. Houston Munson
Grover E. Murray
Jesse Nash
Kenneth E. Neavel
John Newberry
Paula Noble
David C. Noe
Isaac W. Norman
Bob R. O'Brien
Jeffrey D. Ottmann
Margaret Palm
Joseph Parker
Tim Parks
Jack L. Penick
Benjamin J. Petrussek
Elliott Pew
Cynthia A. Philipson
William A. Poe
Joseph L. Pritchett
Mr. & Mrs.
William Randolph
Thomas D. Reed
Will Reid
Bernard W. Reiss
Patrick S. Reiss
B. Coleman Renick Jr.
W. F. Reynolds
Jess P. Roach
Alf Roark
James W. Rogers

L. T. (Tom) Rogers
Peter R. Rose
R. S. Rosenberger M.D.
Lucy O. Ross
Don Rylander
James M. Rutledge
Paul Sagasta
Richard H. Sams
Jack S. Sanders
James W. Sansom Jr.
Elsie C. Schiemenz
Francis X. Schloeder III
John T. Schulenberg
Clyde R. Seewald
Robert T. Sellars Jr.
Thomas H. Shelby Jr.
Charles Sicking
Kathleen F. Simpson
Robert S. Singer
Harry H. Sisson
Bruce Dixie Smith
D. Craig Smith
David L. Smith
Kenneth R. Smith
Kelley Smoot
Mr. & Mrs.
Corgin Snow
Linda Soar
Howard J. Speer
Frederick Spiegelberg
Fred Spindle
James & G. K. Sprinkle
Patricia O. Spurr
Bill E. St. John
Mrs. J. Frank Stampf
Ann M. Stanley
Michael S. Stinson
Michael W. Strickler
Dorothy Carsey Sumner
Leonard J. Svajda
Bruce Swartz
James B. Tartt
Peter R. Tauvers
Robert T. Terriere
C. B. Thames Jr.
Billy D. Thomas
Robert P. Thomas III
Judge & Mrs.
Mace B. Thurman Jr.
Bert C. Timm
Richard S. Toomey III
Michelle Town
John Trammell
Everette J. Travis
Jim Tsai
John D. Tuohy
Clyde W. Turner

Neil Turner
Mr. & Mrs.
Glenn Vargas
David W. Vernon
Harry A. Vest
R. B. Vickers
Bryan Wagner
David E. Wahl Jr.
Mark C. Walker
Virgil A. Walston Jr.
J. C. Walter Jr.
Bernie Ward
Ralph H. Warner
David A. Wark
W. Pirtle Watts
Charles Weiner
Bonnie R. Weise
Mr. & Mrs.
Robert Wells
Jane Brite D. White
Leslie P. White
Steve L. White
Ben T. Whitefield
Shirley W. Whiteside
W. B. Wilkerson Jr.
Dan C. Williams
Duncan Wilson
Homer C. Wilson
John A. Wilson
Melissa C. Winans
Irwin T. Winter
Donald F. Wood
John W. Wood
Robert L. Wood Jr.
Carl R. Woodring
Charles Woodruff Jr.
Arnold M. Woods
Mary C. Woods
Jim & Flora Wooley
Kevin L. Wooster
Charles F. Word
Phillip E. Wyche
J. R. Wynne
Charles E. Yager III
Harvey E. Yates
Kevin L. Zonana

**Non-monetary
gifts**

Jon D. Champeny
Mrs. M. Malek-Aslani
Wiltshire Geological
Services

A. E. Hiller & Sons Inc.
Amoco Foundation Inc.
Anderson Advertising
Associated Republicans of Texas
Austin Geological Society
BETR Resources Inc.
BP Exploration Inc.
Chevron U.S.A. Inc.
Diamond Central Nurses Personnel
Duke, Branch, Box & Huber
Estate of Edwin Allday
Excalibur Geophysical Consultants, Ltd.
Exxon Company U.S.A.
Faculty Wives Social Club
Findling, Milam and Pyle
GLG Energy LP.
Grant Geophysical Inc.
Gresham, Davis, Gregory & Worthy
Hamman Oil & Refining Company
Information Finders
Jones Company Ltd.
Katie Petroleum Foundation
Kerns Oil & Gas Inc.
KMPG Peat Marwick
Matthews & Branscomb
NationsBank
Osborne, Lowe, Helman & Smith
Paragon Engineering Services Inc.
Perugia Trust
Pioneer Flour Mills
Richard F. Garcia
Construction Co., Inc.
Robert S. Kier Consulting
Signal Software
Society of Exploration Geophysicists
Texaco Foundation
TSPE Auxiliary
Union Commission Company, Inc.
USX Foundation Inc.
Xavier Exploration

**donors of books and materials
to the Walter Geology Library:**

Dan Barker	Leon Long
Pat Bobeck	Mrs. M. Malek-Aslani
Yvonne T. Burk	John Maxwell
Suk Choh	E. F. McBride
Andy Czebeniak	Todd Minehardt
Pat Dickerson	Kitty Milliken
R. L. Folk	Bill Muehlberger
Earl Ingerson Estate	Helmer Ode'
Missy and Tim Jackson	Mrs. L. M. Rose
Mike Jankowski	Amos Salvador
Anatoly Kaplan	Bill St. John
Rich Kyle	Tim Thompson
Sally Lewis	Nick Walker

ENDOWMENTS

Benefit from

MATCHING PROGRAM

DURING THE PERIOD from September 1, 1991 through August 31, 1993, the UT System Board of Regents sponsored a matching program for gifts to scholarship and library endowments. For each \$1 in gifts, the Regents contributed \$.50. Thanks to support from many generous benefactors of the Department of Geological Sciences, matching funds totaling \$625,266.64 were received for seven new endowments and five existing endowments during those two years. The breakdown for individual endowments is shown:

Barrow Periodical Fund: Established in 1993 by Dr. and Mrs. Thomas D. Barrow and Mrs. L. T. Barrow for the benefit of the Walter Geology Library, the Barrow Endowment received \$25,000 in matching funds. The matching funds were allocated by the Regents from the Hilda Norman Barnard Estate bequest to the University of Texas.

Bloomer Fund for Motivated Students: Gifts to this existing fund by the Bloomer family and matching gifts from IBM generated a Regents match of \$14,997.50.

Jesse L. Brundrett Memorial Endowed Presidential Scholarship: A gift to this existing fund by Mrs. Brundrett and a matching contribution from Exxon was matched by the Regents in the amount of \$6,125.

F. Earl Ingerson Graduate Research Assistance Fund in Geochemistry: Dr. Ingerson's estate provided a gift to this existing fund which was matched with \$12,682.

John A. and Katherine G. Jackson Fellowship in Geohydrology: This new graduate fellowship established by the Jacksons received \$37,500 in matching contributions.

George W. Marshall Jr. Memorial Endowed Presidential Scholarship: Established in 1992 by Mr. Marshall's family, this fund received \$12,511.64 from the Regents matching funds.

William R. Muehlberger Field Geology Scholarship Fund: Former students and family of Dr. Muehlberger established this fund in honor of his retirement in 1992. The Regents allocated \$21,892.50 for this new scholarship.

Pennzoil and Pogo Producing Companies/William E. Gipson Scholarship: This graduate scholarship was set up by Mr. Gipson in 1985. Gifts and company matches during 1991-93 were matched in the amount of \$11,350.50.

John and Elizabeth M. Teagle Scholarship in Petroleum Geology: A new scholarship resulting from a bequest from the estate of Mr. and Mrs. Teagle in 1991, matching funds in the amount of \$218,951.50 have been received.

Glenn and Martha Vargas Endowed Presidential Scholarship: The Vargases established this graduate scholarship in 1993, with matching gifts allocated in the amount of \$12,500.

J. C. & Elizabeth Walter Geology Library Fund: A gift to this existing fund by Mr. and Mrs. Walter in 1992 was matched by the Regents in the amount of \$50,000. A subsequent challenge for additional gifts resulted in an allocation from the Hilda Norman Barnard Estate of \$25,000.

Albert W. and Alice M. Weeks Fund in Geology: This endowment was established in 1992 by a bequest from the Weeks' estate. The amount of \$176,756 was received in Regents matching funds.

GEOLOGY FOUNDATION

Endowed ACCOUNTS

Values as of May 31, 1994

	BOOK / MARKET			BOOK / MARKET	
Edwin Allday Centennial Chair in Subsurface Geology <i>Income supplements salary and supports research of recipient</i>	\$637,796	\$869,972	Hal H. Bybee Memorial Fund <i>Student field support, or support of students researching geologic issues related to public policy</i>	\$69,520	\$78,814
Edwin Allday Lectureship in Geological Sciences <i>To provide for guest lecturers in geological sciences</i>	\$114,172	\$138,042	Hal P. Bybee Memorial Fund <i>Faculty use-research, travel, study, etc.</i>	\$512,062	\$728,514
Alternative Energy Research and Development Fund <i>For study of energy sources other than petroleum</i>	\$420,691	\$433,550	L. W. Callender Memorial Fund <i>Department use, unrestricted</i>	\$53,783	\$82,960
E. M. Barron Trust <i>For support of the Barron Mineral Collection</i>	\$108,309	\$153,498	Dave P. Carlton Centennial Professorship in Geology <i>Income supplements salary and supports research of recipient</i>	\$517,085	\$807,956
Leonidas T. Barrow Centennial Chair in Mineral Resources <i>Development of program of excellence in mineral resources; income supplements salary and supports research of recipient</i>	\$1,002,165	\$1,432,670	Dave P. Carlton Centennial Professorship in Geophysics <i>Income supplements salary and supports research of recipient</i>	\$496,157	\$735,598
Laura Thomson Barrow Graduate Fellowship <i>To support graduate students specializing in natural resources; special consideration for female students and students concentrating in field-oriented studies</i>	\$219,943	\$254,520	Dorothy Ogden Carsey Memorial Scholarship Fund <i>Geology scholarships, any level; special consideration to micropaleontology students.</i>	\$86,791	\$130,444
Barrow Periodical Fund <i>For purchase of periodicals for the Walter Library</i>	\$87,041	\$85,977	J. Ben Carsey Sr. Special Maintenance Fund <i>To maintain teaching and research equipment</i>	\$88,796	\$108,205
Bloomer Fund for Motivated Students <i>Financial aid for students not qualified for scholarships</i>	\$135,102	\$130,784	S. E. Clabaugh Fund in Hard-Rock Geology <i>To support research in hard-rock geology</i>	\$28,707	\$42,780
Leslie Bowling Professorship <i>To attract persons from industry and government for short-term appointments on the faculty</i>	\$120,036	\$158,555	W. Kenley Clark Memorial Endowed Presidential Scholarship <i>Geology scholarship, any level</i>	\$45,468	\$64,731
Wayne F. Bowman Endowed Presidential Scholarship <i>Unrestricted geology scholarships</i>	\$101,990	\$153,560	Robert H. Cuyler Endowed Presidential Scholarship <i>Undergraduate (upper-division) and graduate scholarships</i>	\$53,090	\$81,015
Don R. and Patricia Kidd Boyd Lectureship in Petroleum Exploration <i>To provide for guest lecturers in petroleum exploration</i>	\$45,465	\$62,585			
Brahman Energy Scholarship <i>Senior field course scholarship</i>	\$17,097	\$26,532			
Jesse L. Brundrett Memorial Endowed Presidential Scholarship <i>Graduate student scholarship</i>	\$39,127	\$50,674			
Fred M. Bullard Professorship <i>Excellence in teaching, income supplements salary and supports research of recipient</i>	\$87,366	\$117,667			
Thomas and Ray Burke Student Job Program <i>Jobs for students in geologic work related to faculty research</i>	\$25,279	\$26,575			



	BOOK / MARKET			BOOK / MARKET	
Morgan J. Davis Centennial Professorship in Petroleum Geology <i>Income supplements salary and supports research of recipient</i>	\$720,134	\$1,026,371	Gulf Oil Foundation Centennial Professorship in Geology <i>Income supplements salary and supports research of recipient</i>	\$248,653	\$342,017
Ronald K. DeFord Field Scholarship Fund <i>Field studies for graduate students</i>	\$180,372	\$255,306	Karl F. Hagemeyer Jr. Memorial Endowed Presidential Scholarship <i>General geology scholarship, any level, with preference to students from Brazoria or Kerr counties</i>	\$41,027	\$47,343
Alexander Deussen Professorship Energy Resources <i>Development of program of excellence in energy resources; income supplements salary and supports research of recipient</i>	\$170,341	\$220,573	George S. Heyer Memorial Fund <i>Any purpose of the Foundation</i>	\$90,937	\$147,425
Michael Bruce Duchin Centennial Memorial Endowed Presidential Scholarship <i>Scholarship for Master's candidate with preference toward general geology</i>	\$39,300	\$54,407	Hogg-Cullinan <i>Scholarship in petroleum or field geology in honor of Joseph S. Cullinan</i>	\$40,712	\$64,043
Elf Aquitaine Petroleum Faculty Fellowship in Geological Science <i>Income supplements salary and supports research of junior faculty member</i>	\$146,132	\$182,670	Hogg-Sharp <i>Scholarship in petroleum or field geology in honor of Walter Benona Sharp</i>	\$40,712	\$64,043
John E. "Brick" Elliott Centennial Professorship in Geological Sciences <i>Income supplements salary and supports research of recipient</i>	\$298,044	\$455,986	Houston Oil & Minerals Corporation Faculty Excellence Awards <i>In recognition of outstanding service and special contributions to the teaching and research programs</i>	\$48,018	\$73,292
Samuel P. Ellison Jr. Endowment Fund <i>For Department Newsletter and support of faculty-alumni functions</i>	\$68,821	\$106,496	F. Earl Ingerson Graduate Research Assistance Fund in Geochemistry <i>Research assistance to graduate students in geochemistry</i>	\$52,732	\$56,683
Energy and Mineral Resources Fund <i>Support of programs and students in energy and mineral resources</i>	\$27,433	\$42,882	John A. and Katherine G. Jackson Centennial Teaching Fellowship in Geological Sciences <i>Income supplements salary and research of junior faculty member</i>	\$124,353	\$171,216
William Stamps Farish Chair in Geology <i>Income supplements salary and support research of recipient</i>	\$380,630	\$571,315	John A. and Katherine G. Jackson Fellowship in Geohydrology <i>Graduate scholarships in geohydrology</i>	\$114,473	\$114,500
Peter T. Flawn Centennial Chair in Geology <i>Income supplements salary and supports research of recipient</i>	\$706,727	\$977,345	Carolyn G. and G. Moses Knebel Teaching Award <i>For teaching excellence in geological sciences</i>	\$81,596	\$123,530
Geology Foundation Advisory Council Centennial Teaching Fellowship in Geological Sciences <i>Income supplements salary and supports research of junior faculty member</i>	\$79,351	\$104,694	Clara Jones Langston Centennial Lectureship in Vertebrate Paleontology <i>To provide for guest lecturers in vertebrate paleontology</i>	\$21,556	\$30,600
Getty Oil Company Centennial Chair in Geological Sciences <i>Income supplements salary and supports research of recipient</i>	\$870,051	\$1,244,144			
Miss Effie Graves Memorial Fund <i>Department needs (faculty support, student aid, special equipment, etc.)</i>	\$25,449	\$43,432			
Guy E. Green Endowed Presidential Scholarship <i>Geology scholarships, any level</i>	\$30,344	\$45,787			
J. Nalle Gregory Chair in Sedimentary Geology <i>Development of program of excellence in sedimentary geology; income supplements salary and supports research of recipient</i>	\$672,643	\$845,375			
J. Nalle Gregory Regents Professorship in Geological Sciences <i>Income supplements salary and supports research of recipient</i>	\$297,020	\$333,262			

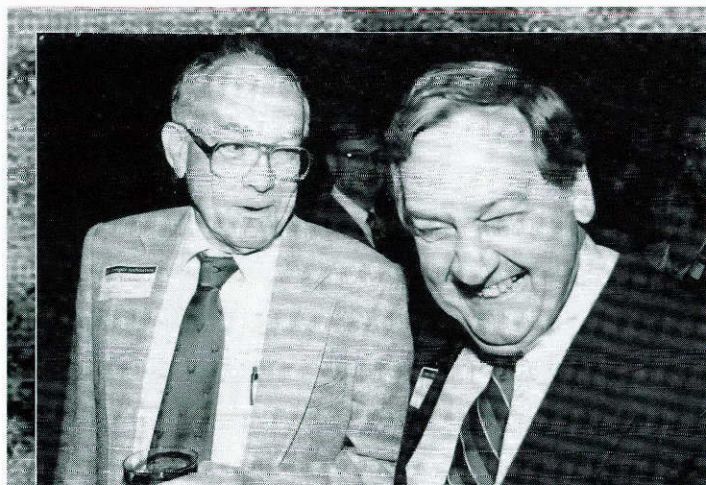


	BOOK / MARKET	
J. Donald Langston Special Operations Fund <i>Purchase teaching and research equipment</i>	\$160,611	\$204,839
Wann and Marietta Langston Research Fund in Vertebrate Paleontology <i>Faculty research in vertebrate paleontology</i>	\$109,636	\$153,717
Jack K. Larsen-Mesa Petroleum Company Fund in Sedimentary Geology <i>Support of student field work in vertebrate paleontology</i>	\$143,339	\$206,932
Howard R. Lowe Vertebrate Paleontology Endowment <i>Support of student field work in vertebrate paleontology</i>	\$29,732	\$45,171
Hoover Mackin Memorial Scholarship Fund <i>Graduate geology scholarship</i>	\$22,352	\$33,557
George W. Marshall Jr. Memorial Endowed Presidential Scholarship <i>Graduate scholarships in general geology</i>	\$37,295	\$37,694
John H. and Lujza P. McCammon Endowed Scholarship <i>Upper-division undergraduate scholarships</i>	\$11,318	\$17,676
Mr. and Mrs. L. F. McCollum Endowed Scholarship <i>Geology scholarships, any level</i>	\$19,297	\$30,711
Frank W. Michaux Scholarship Fund <i>Geology scholarship, any level</i>	\$11,086	\$16,481
Carroll C. Miller Endowed Presidential Scholarship <i>Geology scholarship to students pursuing careers in energy industries; preference to students from South Texas</i>	\$31,725	\$47,546
William R. Muehlberger Field Geology Scholarship <i>To support field studies at graduate or undergraduate levels</i>	\$58,606	\$57,610

	BOOK / MARKET	
Wes Ogden Memorial Scholarship in Geophysics <i>Geophysics scholarships to students pursuing careers in energy industries; preference to students from South Texas</i>	\$11,759	\$13,300
Fred L. and Frances J. Oliver Lectureship in Texas Hydrology and Water Resources <i>To provide for guest lecturers in water resources</i>	\$63,541	\$78,470
Judd H. Oualline Endowment Fund <i>For special needs of the Department</i>	\$19,989	\$26,886
Judd H. and Cynthia S. Oualline Centennial Lectureship in Geological Sciences <i>To provide for guest lecturers in geological sciences</i>	\$45,029	\$62,009
Judd H. and Cynthia S. Oualline Centennial Lectureship in Petroleum Geology <i>To provide for guest lecturers in petroleum geology</i>	\$53,477	\$62,431
Ed Owen-George Coates Fund <i>Publication of geological research by faculty and graduate students</i>	\$110,027	\$162,229
Bill R. Payne Centennial Teaching Fellowship in Geological Sciences <i>Income supplements salary and research of junior faculty member</i>	\$74,710	\$106,152
Joyce Bowman Payne Centennial Teaching Fellowship in Geological Sciences <i>Income supplements salary and research of junior faculty member</i>	\$77,615	\$101,668
Pennzoil and Pogo Producing Companies-William E. Gipson Scholarship <i>Scholarships for UT graduates seeking Masters degrees at UT</i>	\$150,720	\$180,822
O. Scott Petty Geophysical Fund <i>Development of program of excellence in geophysics</i>	\$191,842	\$262,830
Wallace E. Pratt Professorship in Geophysics <i>Development of program of excellence in geophysics; income supplements salary and research of recipient</i>	\$193,002	\$265,744
Louis and Elizabeth Scherck Geology Scholarship <i>Undergraduate (upper-division) and graduate scholarship</i>	\$106,143	\$127,883
Wilton E. Scott Centennial Professorship <i>Income supplements salary and supports research of recipient</i>	\$257,451	\$383,490
The Shell Companies Foundation Centennial Chair in Geophysics <i>Income supplements salary and supports research of recipient</i>	\$1,095,563	\$1,385,766
The Shell Companies Foundation Distinguished Chair in Geophysics <i>Income supplement salary and supports research of recipient</i>	\$901,380	\$1,205,831
Frederick W. Simonds Endowed Presidential Scholarship <i>Scholarships to undergraduate (upper division) and graduate students</i>	\$27,939	\$45,915



	BOOK / MARKET			BOOK / MARKET	
William T. Stokes Centennial Teaching Fellowship in Geological Sciences <i>Income supplements salary and research of junior faculty member</i>	\$132,836	\$190,324	Various Donors (General) <i>Unrestricted funds for any purpose of the Foundation</i>	\$31,970	\$62,071
Structural Geology and Tectonics Fund <i>For support of faculty and student research in structure and tectonics</i>	\$111,570	\$127,182	Joseph C. Walter Jr. and Elizabeth C. Walter Geology Library Fund <i>Acquisition of books, maps and other library materials</i>	\$418,407	\$462,602
H. Tod Sutherland Memorial Scholarship Fund <i>For summer research support for graduate students</i>	\$36,027	\$45,165	Albert W. and Alice M. Weeks Centennial Professorship in Geological Sciences <i>Income supplements salary and supports research of recipient</i>	\$147,417	\$209,313
Estate of Elizabeth M. Teagle <i>For scholarships to students with interest in petroleum geology</i>	\$674,038	\$758,727	Albert W. and Alice M. Weeks Fund in Geological Sciences <i>Scholarships in geological sciences at any level</i>	\$550,647	\$575,324
David S. Thayer Memorial Scholarship Fund <i>Senior field course scholarship</i>	\$28,202	\$42,653	E. A. Wendlandt Fund <i>Purchase of books and journals in German or English translations</i>	\$7,808	\$11,552
Tobin International Geological Map Collection <i>For purchase of maps and photos, storage and viewing facilities for these items</i>	\$76,426	\$123,396	Arno P. (Dutch) Wendler Professional Development Fund <i>Support of graduate student presentations at professional meetings</i>	\$107,504	\$154,834
Udden Memorial Scholarship Fund <i>Geology scholarships at any level</i>	\$11,457	\$15,914	Francis L. Whitney Endowed Presidential Scholarship <i>Geology scholarship, and level, paleontology and stratigraphy preferred</i>	\$44,104	\$67,072
Glenn and Martha Vargas Endowed Presidential Scholarship <i>Graduate level scholarship in geological sciences</i>	\$37,500	\$37,448	Francis L. Whitney Memorial Book Fund <i>Purchase of paleontological books for library</i>	\$22,586	\$32,562
Glenn and Martha Vargas Gemological Scholarship <i>Scholarships for students interested in gemology or mineralogy</i>	\$16,041	\$19,992	John A. Wilson Professorship in Vertebrate Paleontology <i>Development of program of excellence in vertebrate paleontology; income supplements salary and supports research of recipient</i>	\$131,531	\$187,933
Vargas Endowment for Gems and Gem Mineral Instruction <i>For course-related materials and instruction on gems and gem minerals</i>	\$66,437	\$74,124	Charles E. Yager Undergraduate Field Scholarship Fund <i>Support for students taking GEO 660</i>	\$49,455	\$74,631
			Mr. and Mrs. Charles E. Yager Professorship <i>Three professorships in any discipline for faculty who participate in field instruction</i>	\$436,552	\$677,463



Memorials

LENORA WHITMORE BLACKBURN

Lenora Whitmire Blackburn of Mobile, Alabama, died Tuesday, April 13, 1993, after an extended illness. She was 88 years old. She was born in Midland, where her parents were pioneer settlers. In 1927, she received her BA degree in geology. In 1930 she married Willis Clifford Blackburn, who received his BS in geology from UT in 1926. Mrs. Blackburn worked as a newspaper reporter and a public school teacher before her marriage. Willis Blackburn died in 1967.

Mrs. Blackburn was active in the Methodist Church, which she joined in 1913. She had belonged to the Daughters of the American Revolution since 1938, and was also a long time member of the American Association of University Women, and a charter member of both the Mobile Symphony Guild and the Mobile Art Patron's League. She enjoyed collecting art, gardening, and traveling.

Mrs. Blackburn is survived by a daughter, Susie Blackburn Boyce, of Warren New Jersey, and two grandchildren, Willis Boyce and Nell Boyce, as well as two brothers.



CHARLES CLINTON BOOTH

Charles Clinton Booth died in Dallas on March 20, 1994. He graduated from St. Marks School of Texas, received his BS from Washington and Lee University and his MS in geology from UT in 1956. For many years Charles enjoyed the ranching way of life as president of Flat Top Ranch in Walnut Springs, Texas. In the mid-'70's he moved back to Dallas and became a consulting geologist, doing

business as Booth Energy Company. He was active in Phi Gamma Delta, Dallas Petroleum Club, Energy Club, and Dallas Country Club. Charles served as a director of TSCRA, and was a past committee chairman of the USAHA. He was later appointed to the Secretary of Agriculture's Advisory Committee on foreign and domestic animal health.

Charles is survived by his wife, Guyanne, three children, and three grandchildren.



JOHN ALLEN BURLESON

John Allen Burleson died September 27, 1993, in Midland. John attended Texas College of Mines then went on to receive his BS at UT in 1949. He worked for Humble Oil Company in New Mexico, then moved to Midland continuing his work with Humble. He was active in Roswell, New Mexico's Geological Society and was a member of AAPG. John is survived by his wife.



MICHAEL E. DOUGLAS

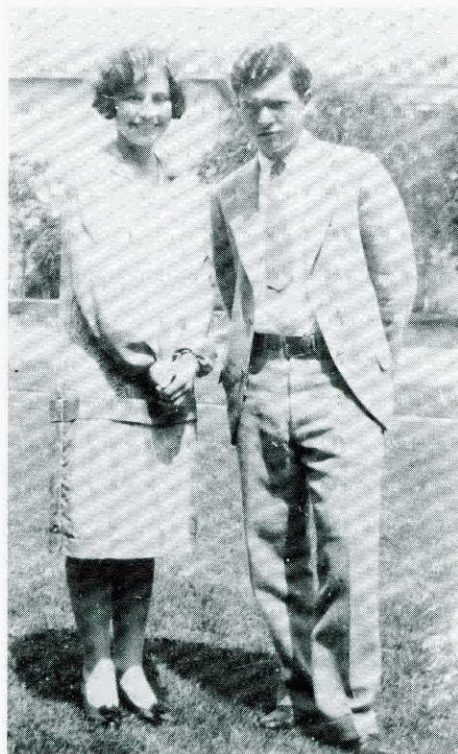
Michael E. Douglas died May 30, 1994, in San Antonio. Michael graduated from UT with a BS in 1958. He then began working as an independent geologist in San Antonio. Michael was a member of AAPG.



SHIRLEY J. DREISS

Shirley J. Dreiss died in an auto accident on December 14, 1993, at the age of 44. A native of San Antonio, Shirley graduated with honors in geology from

UT, earning a BS in 1971. She received her MA from the University of Missouri and went on to complete a PhD at Stanford University. Shirley was a hydrogeology professor and also chaired the board of studies in earth sciences at the University of California at Santa Cruz. In 1991 she received one of the top honors in the field of geology: the Birdsall Distinguished Lectureship for the Hydrogeology Division of the Geological Society of America. She also served on a National Academy of Sciences Committee and was a leading hydrologist in the International Ocean Drilling Program. Shirley is survived by



Lenora Whitmire and Willis Blackburn at UT in 1925 or 1926.

her husband, David Freyberg, her parents, grandmother, and two brothers and sisters-in-law.

⊗ ⊗ ⊗

MARY FRANCES GADDIS

Mary Frances Gaddis died at her home in Austin on June 9, 1994 after a long illness. She was the secretary to the graduate advisor in the Department of Geological Sciences at UT from 1963 until her retirement in 1979. Alumni will remember their association with Mrs. Gaddis when needing assistance with graduate matters. Mary is survived by her husband, Dwight, two sons and daughters-in-law, one daughter and son-in-law, and several grandchildren.

⊗ ⊗ ⊗

LOUIS DE AGRAMONTE GIMBREDE

Louis de Agramonte Gimbrede died October 8, 1993. Louis received his BA from Cornell University 1939. From 1939 to 1947 he was employed as a micropaleontologist at Shell Oil Company in Houston. Louis graduated with an MA from UT in 1951. He taught for many years at the University of Southwest Louisiana, retiring in 1978. He enjoyed his summer home at Thousand Islands in New York as well as visits from his Texas friends. Louis was a member of many organizations including AAPG, SEPM, and GSA.

⊗ ⊗ ⊗

TRAVIS O. HARKNESS

Travis O. Harkness died on February 25, 1993. He attended the University of Texas from 1934 until 1936. He worked in oil exploration for a number of years in Dallas. He retired from exploration in the early '70's and began cattle ranching near Kaufman, Texas. During his ranching years he patented a round hay bale mover and a tractor hydraulic grubbing tool for removing mesquite roots. He continued to live near Kaufman until the time of his death.

⊗ ⊗ ⊗

M. H. "PETE" JANSZEN

M. H. "Pete" Janszen died October 30, 1993, at the age of 82. Pete graduated

from UT with a BA in 1948 and received his MA from The University in 1953. He taught geology at SMU for two years, then worked for Conoco beginning in 1951, retiring from that company in 1967 in Corpus Christi. He later worked for the Texas Rehabilitation Commission in Corpus Christi and the General Land Office in Austin until retirement in 1978. In the '80's he sold real estate in Orange Grove, Texas, where he had spent his childhood years, and recently lived in San Marcos. He is survived by his wife of 43 years, Vivian, son and daughter-in-law, Jack and Donna Janszen of Round Rock, and his brother, Dr. Herbert H. Janszen of Alpine.

⊗ ⊗ ⊗

LEO WILFORD KONZ

Leo Wilford Konz died in Austin on July 2, 1994, at the age of 84. In 1931 Leo received a BA in geology, and in 1932 an MA in geology, both from the University of Texas. For many years he was a geophysicist for Sun Oil Company in Beaumont. He retired in 1971 and returned to Austin. Leo was a past member of the Austin Geological Society, the Austin Coin Club, the Austin Stamp Club, and was a devoted Longhorn fan, having attended all home football games and Texas Relays for the last 20 years. He is survived by his wife, Estelle; a son, Leo Edwin Konz; and two daughters, Carolyn Panak and Margaret Snooks.

⊗ ⊗ ⊗

ROBERT G. LOVICK

Robert G. Lovick of News Orleans died on October 15, 1993, of leukemia. Bob received his BS degree from UT in 1951, then enjoyed a long career as a consulting petroleum geologist in New Orleans. He was a member of the New Orleans Geological Society and the American Association of Petroleum Geologists.

⊗ ⊗ ⊗

JAMES L. "JERRY" MINAHAN JR.

James L. "Jerry" Minahan, Jr. died Saturday, June 4, 1994 in Corpus Christi. After serving as an Air Force

staff sergeant in the Korean Conflict, he entered UT and received his BS in geology in 1955. He worked for Sinclair Oil Company in Midland, then founded Minahan Oil Company in Corpus Christi.

Jerry is survived by his wife of 43 years, Barbara; a son, James L. III, and his wife, Carolin; daughter, Paula; daughter Kathleen (BS '82) and her husband, Matthew Franey (BS '81); son, Mark and his wife Brenda; daughter, Mary Ann and her husband Clinton Simmons, and seven grandchildren.

⊗ ⊗ ⊗

WILLIAM RINEHART MILLER

William Rinehart Miller died August 6, 1993. He received his BA from UT in 1946. William spent most of his life in Corpus Christi as an exploration geologist and oil operator. In his later years, he divided his time between looking for oil and golfing. He was involved in the Society of Professional Earth Scientists in Corpus Christi.

⊗ ⊗ ⊗

WILLIAM WILLARD MOORE JR.

William Willard Moore Jr., a former member of the Geology Foundation Advisory Council, died November 6, 1993. Bill received his BS from UT in 1937. He joined Texaco after graduation, embarking on a career that spanned many years and numerous assignments, including domestic and foreign travel. He served on the Advisory Council from 1965 through 1971.

⊗ ⊗ ⊗

OLIVE SCOTT PETTY

Olive Scott Petty, the last surviving founding member of the Geology Foundation Advisory Council, died on March 2, 1994 at the age of 98. He was born in Olive, Texas, a town named for his maternal uncle, Col. S. C. Olive. His early years were spent at Magruder's School for Boys in San Antonio. In 1917, he graduated from UT with a degree in civil engineering. After serving in France in World War I, he returned to UT to teach and study advanced physics until 1923. Along with his brothers, Dabney E. Petty and

Van A. Petty, and aided by his wife, Edwina, he founded Petty Geophysical Engineering Company in 1925. One of the first seismic service companies in the oil industry, Petty Geophysical later merged into Geosource Inc., which subsequently became part of Halliburton Geophysical Services Inc. of Houston. Mr. Petty's career as a geophysicist and inventor produced an amazing number of patents in geophysical instruments and equipment. One such invention was an electrostatic seismograph detector that was developed in 1925. The detector was later made smaller for NASA; one of these devices eventually operated on the Moon and another on Mars.

In addition to his many contributions to the geophysical industry, Mr. Petty saw the need to promote higher education as well. In 1955, he served on the first Advisory Council for the Geology Foundation, faithfully serving and attending semi-annual meetings until the late '60's. In 1969, the Geology Foundation honored him with the designation of Honorary Life Member. Although Mr. Petty often pointed out that he was an alumnus of the civil engineering department rather than geology, he will always be an icon in the history of the geology department for his tireless efforts in promoting broadening the department's emphasis, specifically in offering courses in geophysics and related earth sciences. In 1972 he was a recipient of a Distinguished Engineering Graduate Award from UT Austin. He was a founding member of the Chancellor's Council for The University of Texas System, as well as a member of the UT Austin President's Associates, Littlefield Society, UT San Antonio Advisory Council for Texas Culture, and the UT Health Sciences Advisory Council in San Antonio. Mr. Petty was also honored in 1972 as a founding member and honorary life member of the Society of Exploration Geophysicists. He belonged to numerous other professional, scientific, social, cultural and charitable organizations.

Mr. Petty is survived by his wife of 72 years, Edwina; one son, Scott Petty, Jr. and his wife, Eleanor; and several grandchildren and great grandchildren.

JAMES M. RASBERRY

James M. Rasberry of Austin died on August 4, 1994. He was born on November 14, 1928 in Marshall, Texas. James received a BS in geology from UT in 1953. He was employed by the minerals division of Dow Chemical for many years. While working near Big Bend National Park, he befriended faculty and students of the UT geology field camps that were headquartered each summer at the Leary Ranch nearby. He returned to Austin in 1983, after retiring from Dow. James was a member of the American Association of Petroleum Geologists, AIPG, Geological Society of America and the Houston Geological Society. He is survived by his wife, Mary.

☺ ☺ ☺

THOMAS HALL SHELBY

Thomas Hall Shelby, Jr. died October 31, 1993, at the age of 83. Tom graduated from UT Austin with a BS in 1933 and an MA in 1934. He was a member of the President's Associates, Littlefield Society, and Chancellor's Council. Tom had a 40-year career with Exxon, then became a petroleum consultant in Tyler. When he retired he created several scholarships at Tyler Junior College, was a member of many organizations, including Tyler Petroleum Club, and was active in community organizations. Tom is survived by a son and two daughters.

☺ ☺ ☺

PRESTON A. STOFER

Preston A. Stofer died December 17, 1993. Preston graduated with a BA from UT in 1957. He had many career interests, including independent geologist, oilfield supply business, cattleman, real estate developer, and aquaculture investor. He was a member of AAPG, GSA and Corpus Christi Geological Society. He is survived by his wife, Dee, of Port O'Connor.

☺ ☺ ☺

WILLIAM R. WADDELL

William R. Waddell died April 25, 1994, at the age of 81. William gradu-

ated from UT in 1938 with a BS in geology. He worked as a regional geophysicist for Sun Oil Company in Beaumont and later became an independent geologist in Houston. He was a member of AAPG and Society of Exploration Geophysicists. William is survived by his wife, Ruth B. Waddell.

☺ ☺ ☺

D. J. "JACK" WALZEL

D. J. "Jack" Walzel died November 24, 1993. Jack graduated in 1959 with a BS in geology from the University of Texas. At the time of his death he lived in Houston.

☺ ☺ ☺

MARY CHAMPION WHEELER

Mary Elizabeth Champion Wheeler died December 11, 1993. Mary graduated in 1951 with a BS in geology from UT. She worked for several years for the Bureau of Economic Geology as a technician and assistant curator, leaving that position in 1965. She is survived by her son, Thomas Wheeler.

☺ ☺ ☺

BENJAMIN WITTE

Benjamin Witte, a resident of Austin for more than 60 years, died on June 27, 1994 of cancer. He received a BA degree in geology from UT in 1943. He served in the U. S. Navy in World War II. He owned and operated a television and electronic business in Austin. He was also a rancher in Austin County and controlled a 150-year-old family farm.

Ben is survived by his wife of 50 years, Betty Jo, five sons and daughters-in-law, and 14 grandchildren.

☺ ☺ ☺

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

MARTIN LAVELL HARVILL

(BS '60, MA '61)

ARLO C. HATFIELD

(BA '32) died June 16, 1994.

Participation

of Women

in the Graduate Program

of the Department

by Kitty Milliken

THE YEAR 1993 MARKED the centennial of the granting of the first PhD in geology to a woman in the United States. Florence Bascom received her degree from Johns Hopkins in 1893, and taught at Ohio State before founding the Bryn Mawr Geology Department. This century of women in graduate studies in geology coincides almost exactly with the Department's graduate program. I have compiled the following history of the program, and the participation of women in it, after consultation with Earle McBride,

the current graduate advisor, and with the help of graduate coordinator Ann Page and her assistant, Julie Thomas, who supplied me with data covering the period 1897 to 1993.

To get a general numerical history of our graduate program, histograms in *Figure 1 and 2* show all graduate degrees awarded by the Department, 1900-1993, totaling 1156 MA degrees and 296 PhDs. The first MA degree was awarded in 1897;

the first Ph.D in 1931. The Department has awarded graduate degrees every year since 1927; PhD's have been awarded continuously since 1957. The MA histogram is clearly marked by events of 20th century history, including the Great Depression, a decline during World War II, and growth after the War. The PhD program did not experience similar growth until the early 1960's, and it probably also reflects historical events such as the International Geophysical Year of 1955-57, the launch of Sputnik in 1957, and the fluctuating fortunes of the oil industry.

To get an idea of the participation of women, the bars in *Figure 1* show MA degrees awarded to women. In the first two decades of the Department's history only three MAs were given. Interestingly, two of those were to women: Harriet Virginia Whitten (1900) and Hedwig Thusnelda Kniker (1917). A third woman affiliated with the Department in this period, Alva C. Ellisor, earned a Masters degree through the Education Department, a common practice for female science students at the time. Ellisor later pursued a successful career in micropaleontology. If she were recorded among our early graduates then it would make a total of three out of the first four MA's going to women! An interesting aspect of *Figure 1* is the prominent bimodal distribution of women's participation in the MA program through time. In some years between 1928 and 1941, 20 percent or more of MA degrees went to women. The Depression seems to have affected women more than men, as women disappear almost en-



First female participants in the geology field course, 1934.
Left to right: Katherine Archer Tyson, Mildred Louise Winans Miller, Marie Gramann.

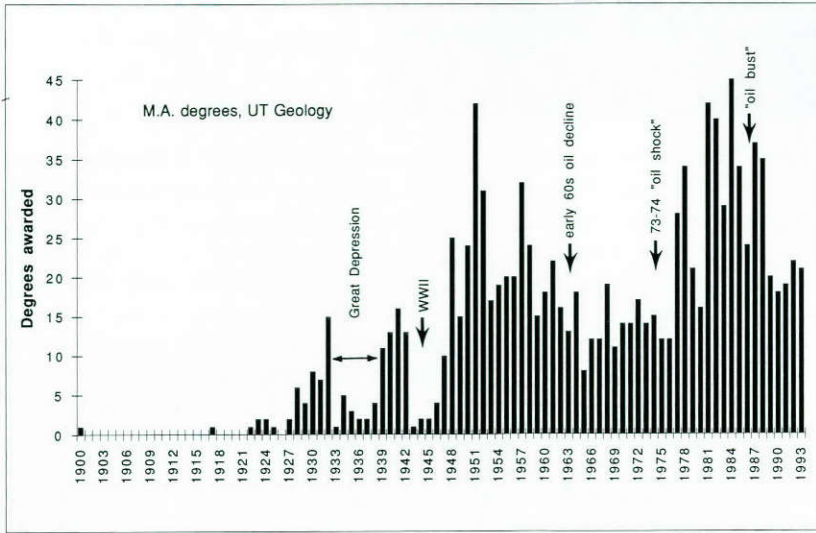


Figure 1



Jackie Covo on Geology field course in the summer of 1943.

tirely from the program in 1933-1937. By the late 1930s, though, women were back to their pre-Depression numbers, averaging 15 percent of MA degrees in 1938-1942. During the peak of the War years and the immediate post-War period, women disappeared from the Department, as did most men. While men returned to the Department in even greater numbers beginning around 1947, women did not. Participation by women did not reach the pre-War level again until the mid-1970's, when over a two-year period, women increased their share of MA degrees from less than 10 percent to about 30 percent, a level which is maintained to the present time.



Summer 1943 - Jean Ott (on top of vehicle), and (from left) Mary Holland, Georgette Covo and Dr. Whitney take a break from field work.

Through the end of 1993, 23 PhDs have been awarded to women. Figure 2 shows that only three of these were before 1970. Three decades separate the first PhD to Marion Isabelle Whitney, in 1937, from the doctorates of Lael M. Ely Bradshaw (1966) and Susan A. Longacre (1968). Beginning in the mid-1980s women's share of PhDs rose to about 15 percent, continuing through 1993. Since 1974, PhDs constitute around 12 percent of graduate degrees awarded to women and around 28 percent of graduate degrees awarded to men. In the period 1985 to 1993 PhDs rose to 20 percent for women versus 34 percent for men.

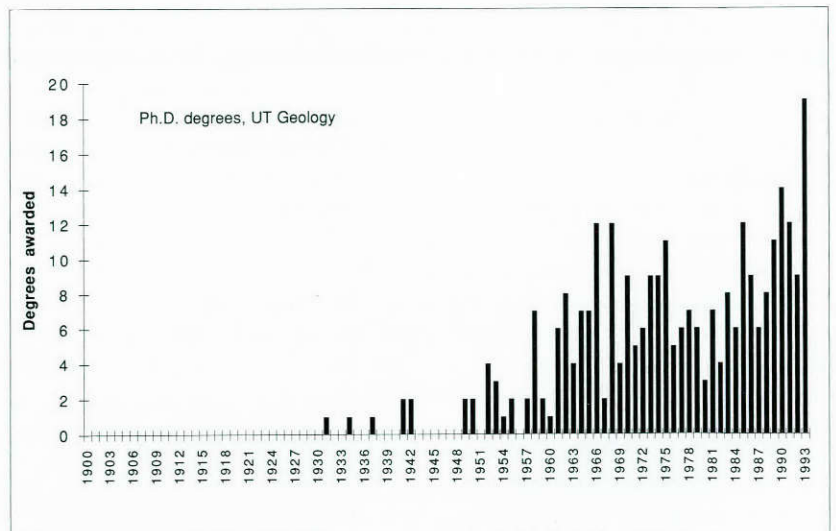


Figure 2

Continued on Page 88

Marion Whitney Replies...

Kitty Milliken's article about the history of women in the graduate program in the Department prompted us to ask Dr. Marion Whitney (PhD '37) for some recollections. Dr. Whitney, the daughter of Dr. Francis L. Whitney (a faculty member for 44 years), was the first woman in the Department to receive her PhD from UT. She was kind enough to send a fascinating letter, comments from which are excerpted here.

"Hedwig Knicker was a student who worked for the Bureau of Economic Geology and did much of her paleontological work with my father. I remember that she had a desk in my father's large lab in the northwest corner of the third floor of the Old Main Building. Alva Ellisor also worked there. At the Bureau, Knicker was doing a study of microfossils for Dr. Udden. My father had been including some micro fossils in his teaching, but after seeing the work she was doing he realized the value of these fossils as markers to formations and especially he recognized their value to the blossoming petroleum industry because the micro fossils would not get broken up by the old chug-type drilling bits as would the macro fossils. He began to add as much study of micro fossils to his paleontology course as he could. There were two or three old microscopes in the Department. Knicker and Ellisor had to make do with these. They found jobs in the oil companies and started a revolution of sorts. Both of

them soon left their production departments to younger women and went on to establish research departments in micropaleontology in their companies.

One year the historical geologist, Charles Schuchert, came to Texas, visiting the Houston oil companies before coming to the University of Texas. When he got to my father's lab, he excitedly told my father about seeing these women working with micro fossils. My father asked him if he knew where they were trained. He said 'No.' My father then said, 'Right here in this lab.'

In the 1920's a number of men and women had gone to the oil companies to work in paleontology labs. I never got to do so, though that had been my ambition. I loved micropaleontology and could scarcely pull myself away from the microscope. I graduated in 1930 during the depression. I did not take a course in micropaleontology until after getting my BA degree. My master's thesis was in macro paleontology, however. This was in 1931. By this time the oil companies were not hiring, so I did a graduate project in micropaleontology in 1931-32. By that time the oil companies were laying people off, merging with other companies, or folding. I had to go back the third graduate year to get a teaching certificate.

I taught science in the elementary grades from 1933 to 1936—a new class every 40 minutes. Discipline was a vast struggle because the schools furnished nothing for the children to work with

and only occasionally a demonstration kit. I became very exhausted with teaching and holding at the same time. Hence, one morning in 1936 I awakened with the determination to get a PhD degree and then to teach in college. (My dissertation) turned out to be the longest of any of the 135 PhD candidates (at UT) for that year, 1937. I was 26 years old, and that summer I got a job teaching in a college.

I do not really know much about the women in micropaleontology after they went to work, except that Knicker and Ellisor came back now and then and were enthusiastic about their work. The reasons women went into micropaleontology were the sheer fascination of micropaleontology, the atmosphere of my father's lab, and the promise of a good job with an oil company. My father was a greatly revered teacher and he was very proud of the women micropaleontologists he trained.

My whole life experience up through college led me to graduate work in paleontology, but the depression forced me into teaching, and I stayed with that for 47 years.

I do not know exactly why women did not appear in the graduate program after the war. It was a time of turmoil and uncertainty. I don't believe the oil companies were hiring many micropaleontologists during that time. Other methods of analysis such as electric logging were coming to the fore."



Cont'd. from Page 87

A REQUEST...

As one who has spent most of the past 19 years associated with the Department, first as a graduate student and then as a postdoctoral researcher, I have been interested in understanding the forces that shaped the history of women in the Department. I would appreciate hearing from alumni, especially the women who participated in the 1928-1942 period. Some questions: Were most of the women in the pre-1942 period micropaleontologists? What influences led them to graduate

study? How did their careers evolve? What did they do during the war? Why didn't women reappear in the graduate program after the war? Other general questions: What factors affected confidence in plans to pursue graduate study? What were the practical considerations? What aspects of various career choices figured significantly?

Send your response to:
Kitty Milliken
c/o U. T. Dept. of Geol. Sci.
Austin, Texas 78712

Requests for anonymity will be respected.



Dr. Whitney, Jackie & Georgette Covo, Nolan Hirsch, Mary Holland and Jean Ott in the field (1943).

NOTES FROM THE ALUMNI

Edwin V. Acker Jr. (BS '56) writes, "I had a bout with cancer last summer, but I got a clean bill of health seven months after surgery, radiation and a little chemo, so things are looking good. Bev and I are still enjoying ranch life and going fishing. Our three children are happily married and our five grandchildren are a joy to us." Edwin is an independent geologist and rancher in Tilden, Texas.

G. Baxter Adams Jr. (BS '51, MA '53) contributes, "I'm retired to a pretty Texas Hill Country ranch, working harder than ever growing apples and propagating maple trees. It's a great pleasure to be able to track all those guys I went to school with in the *Newsletter* although they are getting old now." Baxter lives in Medina.

James W. Adams (BA '48) comments, "Five grandchildren keep retirement years busy." James is retired from Exxon and lives in Conroe.

Jim W. Adams (BS '51) is a geological advisor for Exxon USA in Midland. "Finished a three year term in AAPG House of Delegates. Have 43 years with Exxon and still working. Enjoy fieldtrips of NMGS, SEPM and WTGS. With five children and five grandchildren nearby, our days are busy. Enjoyed two days with Jim and Dell Wilson, plus tour of Geology Building on the way to New Orleans."

William H. Adamson Jr. (BS '51) writes, "This is the worst slump ever in the petroleum exploration business. Will it ever end? Complaining about politics and politicians seems to do no good because neither the Democrats nor the Republicans will do anything to help us. Does anybody out there hear our plight?" Bill is a consultant in Midland.

Charles W. Alcorn Jr. (BS '52) writes,

"Still exploring for oil and gas overseas as well as the U.S. Have been in Victoria since 1961 and would welcome any one passing through to have a cup of coffee." Chuck is chairman and CEO of Alcorn Production Company in Victoria.

Adrienne D. Allie (MA '81) contributes, "In 1986 I married another geologist, Clarke Bean, who works for Chevron. We have two girls, Laurel (5) and Leslie (3), who keep us very busy. I've been in New Orleans for 13 years and it's been a trip. The food's great but the crime is terrible." Adrienne is a geologist for Shell Offshore, Inc.

David Alt (PhD '61) is a professor of geology at the University of Montana in Missoula. "I continue to worry about asteroid impacts, flood basalts, and impact ejecta deposits, not necessarily in that order."

Nancy Jenswold Anderson (BA '50) is president/CEO of Urban Environment Associates, Inc. in Dallas. "My consulting firm had its best year ever in 1993. We continue to work on environmental impact studies for interesting projects. Last year also spent one month in England and Wales. Never tire of the historical sites there and the beauty of the countryside."

Paul Anderson (att. '39-'42, '46-'47) comments, "Staying home most of the time as my wife, Peggy, has MS and is in bed all the time. Son, Ken, in South Dakota and doing fine with his three girls. Daughter, Karen, in Wimberly, Texas has two sons doing fine." Paul is an independent geologist and oil operator in Midland.

Payton V. Anderson (BS '45) is a partner with W. D. Anderson and Sons in Midland. "Still active with brother Paul in oil and gas exploration. Same wife Evelyn, three daughters and six

grandchildren. Spend time traveling, lots of golf."

R. H. (Pat) Anderson (BS '55) contributes, "Joanne and I continue to travel after my retirement from Texaco in January 1993. Oldest daughter living near London, England and we plan to visit again this year. It's hard to realize that 40 years have gone by since UT graduation." Pat lives in Richmond, Texas.

Tom Anderson (MA '67, PhD '69) writes, "Highlights include: two field trips to Sonora, Mexico during which Cretaceous megaliths and Jurassic mylanites were studied. A very informative trip to China to visit a seismological institute and lastly an exciting visit to the Mojave Desert of California on the trail of the mythical Mojave-Sonora megashear, it's factual! Sara finished a MS and is off to find a job." Tom is a professor of geology and chairman of the department at University of Pittsburgh.

Edgar P. Armstrong (BS '51) contributes, "Retired and enjoying it. I heartily recommend the process." Edgar lives in Houston.

Larry M. Asbury (BS '59, MA '61) writes, "Jackie and I continue to enjoy working and living in Indonesia. There is nothing wrong with business here that a \$5/barrel increase in oil prices wouldn't help!" Larry is executive vice president of operations for Arco in Jakarta.

Edward R. (Bob) Artwill IV (MA '59) contributes, "Ranch life agrees with us. Helen rides her horses and shops in Tucson while I work in the pistachio trees and wine grapes. We're planting 20 acres of permanent pasture and may run some cattle on it next year. Also converting our Santa Fe style house into a California Mission style house. Top this one ya'll! Seems all three of our daughters will be married in last half of 1994." Ed lives in Tubac, Arizona.

Gene M. Austin (BS '51) is an independent petroleum geologist in Houston. "I welcome visiting with any old student friends that might be passing through Houston."

Joseph B. Avant (BS '51) is semi-retired in Dallas.

Sara Avant-Stanley (BS '78) is a consulting geologist in New Orleans.

Carol Evans Avery (MA '86) writes, "By the time you read this we will have just had our second child, Lord willing! I plan to return to work at Chevron after a five month leave of absence. My husband's private investi-

gation firm continues to do well here. Between committee work with the New Orleans Geological Society, my three year old son and my husband's bass boat, we stay busy!" Carol is a petroleum geologist in New Orleans.

Walter Ayers (PhD '84) is a manager of geology for Taurus Exploration, Inc. in Birmingham, Alabama. "Involved in coalbed methane exploration and consulting."

B

Herbert A. Babione (BS '40) writes, "All of family including children, grandchildren and great-grandchildren are fine. Enjoy receiving the *Newsletter* and reading about classmates and friends." Herbert is retired from Exxon and lives in Tulsa.

T. Dale Bagwell (BS '79) works in gas marketing for Panhandle Eastern Corporation in Spring, Texas.

Carol Swenumson Baker (BS '84) notes, "We have moved to the FM 1960 area in northwest Houston. Our son, Grant, is four." Carol is a geophysic-

cist for Exxon.

Jerry D. Baker (BS '51) reports from Richardson, Texas, "So far retirement is great; I don't know why I didn't try it 20 years ago. I did retire from geology in 1961, but that was an economic necessity, no jobs, no work, and no money. Thanks to the *Newsletter* staff for a great job!"

Donna Balin (BS '78) writes, "I received my PhD from Cambridge University in England last October, but sadly lost my father three weeks later. So it's been a year of ups and downs. I'm enjoying my job as a geology faculty member at the University of Texas at San Antonio. I also exchanged festivals with Janie Bell Hurley this year. I visited her for Mardi Gras in February and she came to San Antonio for Fiesta in April. Best wishes to everyone!"

William W. Ballard (PhD '61) is president of Ballard & Associates, Inc. in Billings, Montana.

Ben Barrow (BS '51) writes, "I am spending more time working for Bander County Republican Party. Now county chairman and spend less

time cutting brush, replacing fences." Ben lives in Utopia, Texas.

Thomas D. Barrow (MA '48) comments, "Having a ball with a geophysical service company, GXT, which introduced a new software modeling system, GXII, last year, and 3D AIMS 3.0, and 3DVSP more recently. Also have exploration projects going in the Yegua in South Texas and Pennsylvanian-Permian reef plays in West Texas." Tom is chairman of GXTechnology in Houston.

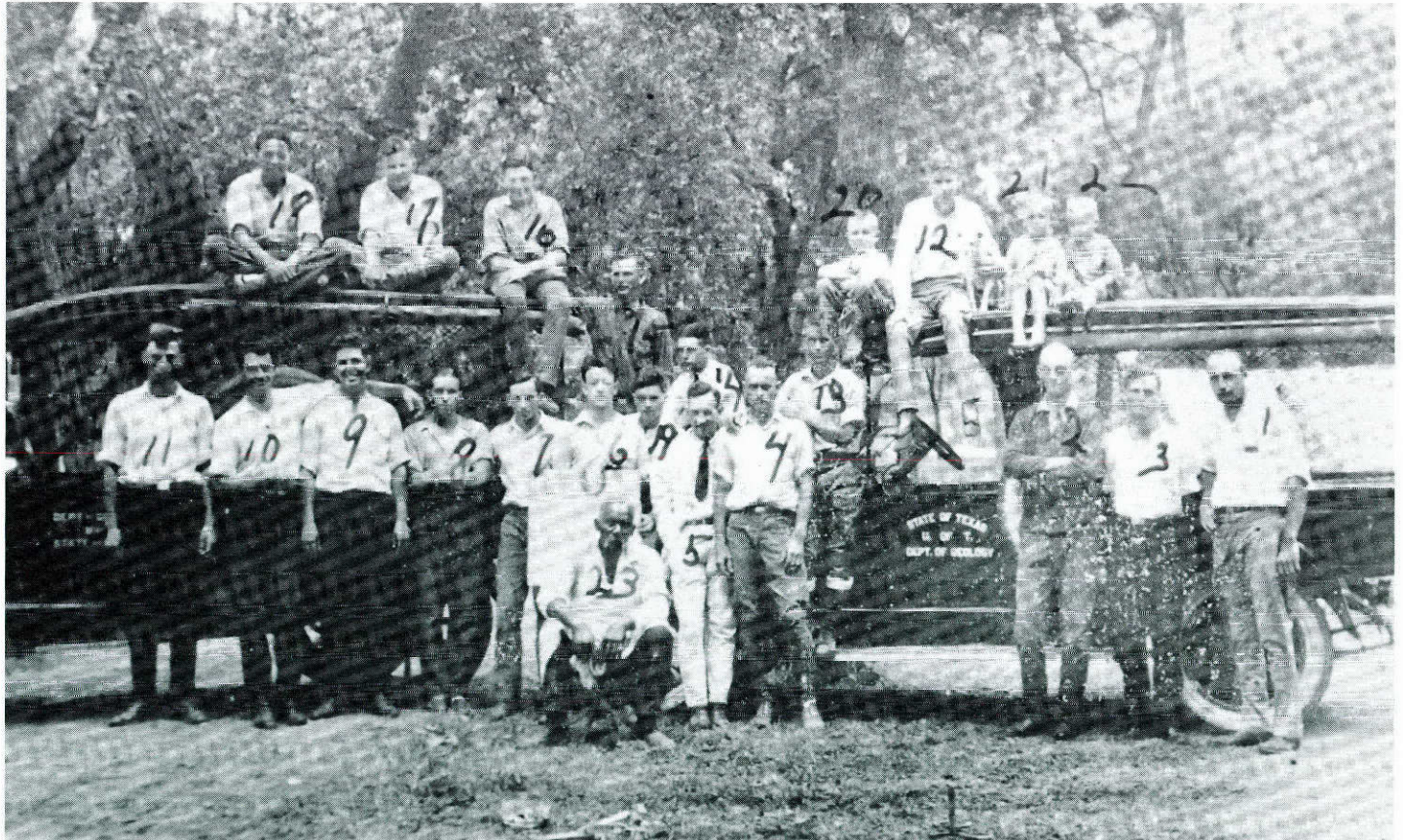
Thomas A. Bay Jr. (BS '49, MA '54) is a consultant in Houston.

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

R. E. Beatty (BA '51, BS '53) lives in San Antonio.

Bryan D. Beck Jr. (BS '39) is retired in Beaumont. "Enjoy yearly *Newsletter*. Have not reached senility, but nostalgia has set in. Enjoy Lamar University baseball games with wife Catherine, wed 53 years. Lamar Stadium is named Vincent-Beck for Al Vincent and yours truly. The stadium is beautiful and well lighted.."

Fred H. and Teresa Harkrader Becker



Field trip during 1926-27: (pictured numerically) 1. Hal P. Bybee, 2. Printz, 3. E. A. Murchison, Jr., 4. W. A. Maley, 5. Lovejoy, 6. Shields, 7. Harrold, 8. Edward D. Pressler, 9. Fred M. Bullard, 10. Selwyn O. Burford, 11. Drue Christner, 12. Wheelis, 13. Easley, 14. Vickery, 15. Still, 16. Robert H. Cuyler, 17. Moore, 18. Ernest M. Funkhouser, 19. Willis C. Blackburn, 20, 21, 22. Bybee children, 23. Cook.
Photo contributed by Susie Blackburn Boyce.

(BS '83) write, "Fred and I and the girls are doing fine. Lauren will be five years old in July; Lindsay will be four in December. Fred is still working lease sales in the Gulf of Mexico for Shell; I am still working field development in the Gulf for Amoco. Call if you're in New Orleans."

Sid Bell (BA '45) comments, "Putting together a company making gun replacement parts for black powder rifles (patch box lids with deer and bear heads out of brass). Then on to cast steel floor plates for Mauser and Springfield, engraved with deer heads. A long process, whipping the shrink factor of cast metals, so the pieces shrink to exact size. Am teaching silver carving and engraving of guns at the Trinidad College gun school. Sponsored by N.R.A., wife will attend engraving courses there. Hope to visit daughter in Austin early June and drop in to the department." Sid lives in Fort Plain, New York.

James B. and Kathryn G. Bennett (BS '61; BA '61) write from Houston, "Continuing with an active exploration program in North Louisiana and South Arkansas for clients and may be getting close to having a 3-D survey conducted over one of our areas. Presently serving as a national director of SIPES. Kathryn is vice-chairman of spouse activities for the AAPG convention to be held in Houston, March 1995. Son, Wiley is a senior at the University and will finish with a bachelors degree in December. Daughter, Kathryn is expecting child number two in Dallas. We always enjoy the *Newsletter*."

Don G. Bilbrey (BS '53, MA '57) contributes, "Open heart, double bypass surgery plus a hernia repair and prostate turp in the last year have slowed me down a little, but not much. I still play golf four times a week and carry a three handicap." Don is retired in New Orleans.

Sevin Bilir (MA '92) writes, "After a year of travel in the Pacific and USA and work in Antarctica, I have settled down in the Bay Area, California and am working as a staff geologist in the waste management department of Woodward-Clyde Consultants."

Terry V. Bills Jr. (BS '55, MA '57) is president of Sevarg Company, Inc. in Lafayette. "Our oil and gas activity this past year has been satisfactory and successful, but restricted entirely to recompletions of existing wells and the reentry of old wells. Product prices remain below that needed to

justify new drilling. I remain optimistic about the future, especially natural gas in southwest Louisiana."

Cecilia Binig (BS '80, MA '87) is a geophysicist for Landmark Graphics in Houston.

David S. Birsa (PhD '77) contributes, "Currently chief geologist for Chevron Overseas, based in San Ramon, California. It's good to be in the international oil business. There still are opportunities out there, and for the most part, governments and people want you there, as opposed to the U.S."

William T. Biskamp (BS '54) is retired in Dallas, "Working with Mona in real estate. Daughter had twins recently, so now keeping up with five grandchildren! Not much time for anything else."

Peter Bittenbender (MA '91) is a geologist for U.S. Bureau of Mines in Juneau, Alaska.

Keith Bjork (BS '84) writes, "Finished residency June 1994. Off to Amarillo for private practice finally. It's been a long haul since the days at UT as a geology student. Greetings to all my fellow Swiss travelers. Call me!" Keith is an orthopaedic surgeon in San Antonio.

Thomas K. Bjorklund (MA '62) is a senior geological associate for Amoco Production Company in Houston. "Recently moved to the job of geoscience computing coordinator in the information technology department of Amoco's worldwide exploration business group. 1994 will be a period of rapid change for Amoco as it probably will be for other large oil companies."

Fredrik S. Blackmar (BS '55) writes, "Still in Corpus, still in the golf business, and fishing as much as possible. Busy with local junior golfers and their aspirations for college/pro competition. One of 'my kids' now on the PGA tour and on the Nike tour and always a few in collegiate scholarship programs." Fredrik is owner of C-A Enterprises in Corpus Christi.

Harvey Blatt (MA '58) reports, "I will be retired from the University of Oklahoma on either June 1, 1994 or January 1, 1995 and Midge and I plan to move to Jerusalem, Israel. We can be reached at the Geology Department of Hebrew University. *Laboratory Exercises in Environmental Geology* appeared in August, 1993 and I have started work on an elementary text for environmental geology. Did you know that OSHA

has designated quartz sand as a carcinogen? All products that contain more than 0.1% quartz must be labeled as hazardous. What about my career? Whom can I sue?" Harvey lives in Norman.

Robert H. Blodgett (PhD '90) writes, "Although I still miss teaching, work with the Texas public drinking water program continues to be rewarding. I now manage a staff of nine geologists, geographers and biologists. We use GIS and GPS systems to assess the vulnerability of public water supplies to contamination." Robert works for TNRCC, water utilities division in Austin.

Jeffrey A. Blohm (BS '76) is a lieutenant colonel in the US Air Force in San Antonio.

Patricia Bobeck (MA '85) works for the Texas Natural Resource Conservation Commission in Austin. "I am a geologist with industrial and hazardous waste enforcement section. I've been elected program chairman of the science and technology division of the American Translators Association for the 1994 national convention to be held in Austin in October. I continue to translate French, Spanish and Chinese to English in my spare time."

Ricky Boehme (BS '89) is a graduate student in geology and geophysics at LSU in Baton Rouge.

Silverio Bosch (BS '74, MA '75) comments, "Still generating Wilcox drilling deals in South Texas. Drilling six back to back development wells on Cuba Libre field discovery by Esenjay (a first for me). Lisa and I riding herd on Matthew (6) and Eric (4). Matthew already collecting rocks from rock gardens and empty lots. Please God, not another geologist in the family." Silverio is an independent petroleum geologist in Corpus Christi.

Don R. Boyd (BS '58) is president of Gulf Coast Exploration Company in Corpus Christi. "Grateful for good health and good friends. Wish our business could improve! Looking forward to being in Austin for the GCAGS meeting in October."

Walter A. Boyd Jr. (BS '53) writes, "Sure prefer world travel of the 90's as a retiree over same as an Air Corps pilot during WWII." Walter is a retired chief geologist for Columbia Gas in Houston.

Walter V. Boyle (BS '54, MA '55) reports from Houston, "Consulting geology in West Texas and New Mexico. Also doing computer investing in stocks and mutual funds."



Martha Cast Cather

Robert A. Brackett (BA '92, BS '90) is a graduate student at Washington University in St. Louis, Missouri.

Charles M. Brasier (BS '83) writes, "I've been in medical sales now for six years, so I've helped form Luxin Tenebris International, Inc. a corporation designed to provide medical, dental, and surgical equipment to Third World countries. My two boys, Nicholas and Austin, are now six and four. I have little touch with geology due to my move into business, but I hope everyone is making it and having a good time doing it. Overdue hellos to Bill Ervin and Mike Stowbridge." Charles works for ABC Home Health Services, Inc. in Spring.

Tom and Betty Breedlove (BS '54) are both retired in LaGrange.

Jeanne Brennan (BS '83) is a senior information technology specialist for Marathon Oil in Houston. "Working on UNIX systems."

Herbert L. Brewer (BS '47) contributes, "Retired at end of 1991. Now helping my son's company, Madison Oil Company, explore for oil in France. Current plans are to drill three or four exploration wells this year in the Paris Basin." Herb lives in Dallas.

James G. Brewton (BS '83, MA '92) writes, "I've been performing AVO analysis in Malta, Egypt and China. I've also been doing pre-stack depth migrations for structural imaging and pressure prediction in China, Oman, and Norway. Tell everyone to concentrate on high tech issues and learn a foreign language." James is a senior grade petroleum geophysicist for Amoco in Houston.

Joe Brewton (BS '67, MA '70) works for Subsurface Consultants and Associates, Inc. in Lafayette. "I can't believe I'm teaching people how to interpret structural geology with subsurface well and seismic data."

Susan A. Bridges (att. '81-82) is chairman of the board of Security Finance in Spartanburg, South Carolina.

Ben M. Brigham, III (BS '83) is president of Brigham Oil and Gas, L.P. in Dallas.

Thomas W. Broadhead (MA '75) was appointed director of the UT (Tennessee, that is) Honors Program in February 1994. His research has shifted a little away from crinoids into flume studies of skeletal sand transport and growth patterns of tabulate corals. Tom lives in Knoxville, Tennessee.

Buddy Brock (BS '56) comments, "Always good to read about acquaintances of past years. I'm trying to play more golf but find it difficult with four kids, five grandkids and one more on the way." Buddy lives in Edna, Texas.

David B. Brock (BS '65) is a consulting petroleum geologist in Gonzales.

Susanne Champeny Brooks (BA '88) is the mother of two in Austin.

Charlotte Bryant (BS '89) is a graduate student in the PhD program, wetland biogeochemistry, in St. Paul, Minnesota.

Leonard C. Bryant (BS '57) writes, "Purchased a ranch in Arkansas in the Ozark Mountains. Raising Limousin cattle. We spend about one month out of the year up there." He lives in Helotes, Texas.

James E. (Woody) Bryant (BS '48, MA '48) is an independent geologist in Fredericksburg. "Am now semi-retired. Can become active fast, though, if another good geological idea is developed. Family is in good shape and still growing."

Julius A. Buchanan (BS '41) writes, "53 years since I received my degree from University of Texas and I am amazed at the doors that it has opened for me since that time. We have been through the golden years of our times and profession. Virginia and I still do church work and volunteer in the local historical society." Julius lives in Tyler.

Lee Buehrer (BS '57) contributes, "Working for Wascana, a Canadian company based in Regina, Saskatchewan, but based in Europe for our operations in Algeria. We are now in the drilling phase in our large block near Hassi Messaoud." Lee is

manager of Algerian operations and lives in Paris, France.

Claude M. Burnett (BS '51) comments, "No business except the honey-do variety. Round Rock is definitely a better place to be retired than Big D."

T. J. (Jeff) Burnett Jr. (BS '48) is semi-retired in Houston. "My wife, Cathe, and I continue to enjoy our eight grandchildren, one of whom is an honors senior at Texas A&M and will soon work in Germany."

William M. Burnett (BS '50) contributes, "Moved my office from Winnsboro to Tyler when I remarried in 1990. Finally joined the grandparent ranks in December 1993 when son Jeff and his wife Patti had John Covington in Dallas. Grandpa holding up well."

Robert W. Bybee (BA '41) writes, "Elizabeth and I enjoy good health, family, friends, golf, fishing, hunting, and our summers in Saratoga, Wyoming. We now are proud great-grandparents to two fine young boys, Scott Verplank Jr. (2) and his cousin Austin Verplank (1 1/2)." Bob is a petroleum consultant in Houston.

G

Clint Cagle (MA '86) is a geophysicist for Brigham Oil and Gas in Dallas.

Frank K. Cahoon (BS '57) reports from Midland, "Have now finished my six years on the Texas Higher Education Coordinating Board. I am enjoying getting back into the exploration business. Our three grandchildren continue to be wonderful." Frank is an oil operator in Midland.

Donald H. Campbell (MA '62) writes, "Microscopical aspects of cement and concrete never cease to amaze me. In addition, it's a fine way to study rocks." Donald is senior principal petrographer for Construction Technology Labs in Skokie, Illinois.

Donald M. Campbell (BA '54) contributes, "Now fully retired and enjoying our one and only grandchild, Kimberly Nicole, who will be two in December 1994. Too cold in Maryland and hope to move to Myrtle Beach, South Carolina in the near future. In the meantime any exes this way give me a call." He is currently located in New Market, Maryland.

Jacqueline (Jackie) Covo Campbell (BA '44) writes, "I've just returned from the 50th reunion of the class of 1944. I wish all of you classmates could see all the exciting experiments and equipment in the Department of Geo-

logical Sciences. Dr. Bullard came to see his former students." Jackie is a homemaker in San Antonio.

Alvin Candela (BS '41) is semi-retired in Galveston. "The recent earthquakes in Los Angeles area are a warning that offshore drilling in the Pacific could result in major oil spills, making the oil spill in Alaska just a drop. We are prepared in the Gulf Coast for tanker oil spill. What happens if casing splits?"

A. T. (Toby) Carleton (BS '51, MA '52) writes, "I am looking forward to a busy year as president of AAPG. I hope to see many classmates at the AAPG annual meeting in Houston in March 1995 and at sectional meetings, including the one in Austin in October of this year." Toby is a geologist and rancher in Midland.

Darryl E. Carlson (BS '64) works for Pilko & Associates, Inc. as a managing associate in Houston.

Steven M. Carlson (MA '84) is a senior geophysicist for Unocal Indonesia-Balikpapan in Los Angeles. "Third child, Russell Lee (a boy, finally), was born April 27. I'm working offshore East Kalimantan, Indonesia, and loving it. Wife Jenny is finishing internship in Des Moines, and will join me in Indonesia in September after obtaining PhD in clinical psychology."

Paul Carpenter (BS '86, MA '90) writes, "After eight years in Austin with a geology degree, I had to move to California to finally find a job as a geologist. When we moved here last summer, we got an exceptional deal on a moving van because hordes of people from Silicon Valley were moving to Austin to find high-tech jobs! Hello to all the survivors of the GEO 660 class of 1986. Is the ten year reunion at Tomasita's in Santa Fe still on?" Paul is a geologist for Applied Engineering and Geology in Lincoln, California.

Richard F. Carroll (BS '80) is a geologist for Trans Texas Gas Corporation in Houston. "My wife and I had our first child, Ian Arthur, in May of 1993 and things have been getting better ever since. We are now pregnant with our second. I am now working for Trans Texas where I was hired in July to start up a new ventures group to expand the company out of its present production base. I am buying deals and will be taking the company international very soon."

Bob Carter (BS '48, MA '48) comments, "Enjoying life at Lakeway and the family summer visits." Bob is retired

in Austin.

Gary D. Carter (BS '76) comments, "Drilling one or two wells a year in North Central Texas. So far no dry holes, but some better than others. Mississippian reefs have been lucky for us. Where are the rest of the last GEO 660 class to go to the Leary's?" Gary is president of Black Star Oil Company in Plano, Texas.

John C. Carter (BA '89) was married on June 4, 1994 to Ana Francisca Garcia, of Londrino, Brazil. They met in Fort Worth where both attended a ranch management school at TCU. John works for Cemex Corporation in Austin.

Karen Carter (MA '85, PhD '90) writes, "Working on Quaternary fault kinematics in the North Rio Grande Rift as a post-doc at Los Alamos National Laboratory."

Jack C. Cartwright (BS '51, MA '55) contributes, "We continue to operate the family business in Midland. The family grew this past year and now includes 11 grandchildren and one great granddaughter. Barbara and I have been blessed in many ways."

David G. Casey Jr. (BS '60) is president of T Company, Inc. in Mandeville, Louisiana. "Still working salt domes in Louisiana and hunting money. Just added a granddaughter and really enjoying her. Raye and I last about a week and then give her back (one of the blessings of being a grandparent). Sailing Lake Pontchartrain when we have time. Drop by for coffee."

Steve and Martha Cast Cather (MA '80, PhD '86; BS '81, MA '86) write, "Steve and I still work for New

Mexico Tech. I was recently promoted to research geologist, and am learning a lot more about computer software than geology. Steve will soon begin work on a trail guide to the geology of the Gila Wilderness Area. Lucky guy, my field area is near Carlsbad! We still live in our one-room adobe house; can't seem to find the time or energy to add on. We are now collecting horses. We're up to six and one more is due in June. Steve really does use them for fieldwork, and we live in ideal country for

riding. If any of our old UT friends are ever near Socorro, be sure and look us up."

Chuck Caughey (BS '69, MA '73) comments, "I'm continuing work as a geologist for Asamera in Jakarta, Indonesia. A deep drilling program recently finished with some gas discoveries, and we are evaluating development options. The family is enjoying travel. We took a short vacation in Singapore and Bangkok, and the boys have class trips this year to Lake Toba (Sumatra) and Bali."

Ed Cazier (MA '84) writes, "Things in Colombia have quieted down considerably since the demise of Pablo Escobar. Even last Sunday's elections were quiet. After working on Cusiana development for two years, I'm now leading an exploration group in acreage north of Cusiana. I'm trying to remember all the structural geology Sharon Mosher ever taught me!" Ed works for BP Exploration.

Henry Chafetz (PhD '70) is a professor of geosciences at the University of Houston. "Still at the same shop, still working carbonates with an emphasis on travertines the last ten years or so. They've been fun and provided the opportunities to see new places, Italy, Yugoslavia, Morocco (presently working there). Janet and Josh doing fine, she is taking over as chair of the sociology department again and he is part way through high school."

Joe A. Champion (BS '39) lives in Brownsville, Texas.

Robert Chapin (MA '81) comments, "Just appointed an associate (officer) of Geraghty and Miller, Inc. Nicolas



Steve Cather

just turned two, and I'm willing to trade frequent flier miles for more time with him." He lives in Austin.

Thomas Chapin (MA '82) is project geologist for Santa Fe Pacific Gold in Reno, Nevada. "We are building new house underneath Mount Rose ski area. We love Reno, the skiing and windsurfing."

Walter Chatham Jr. (BA '48, MA '50) writes, "Not much news from here this time." Walter is retired in Mineral Wells, Texas.

C. A. Chimene (BS '50) is president of The Laahnz Corporation in Houston. "Headed for Normandy for the 50th anniversary of D-Day. Also written a couple of books and looking for publishers."

Wilbur R. Cleaves (BA '60) contributes, "David finished UT Plan II this spring. Kim enters Plan II in the fall. Tad, our youngest, is deep into computers and cars. Peggy is finishing her 35th romance novel with Harlequin books. We're all going camping in Big Bend next month." Wilbur is a family practice physician in Corpus Christi.

Russell E. Clemons (PhD '66) writes, "Frankie and I had a great trip to Alaska last summer; a very restful trip to southern England in the fall; and then for variety, we took a 16-day tour of the Amazon this spring. The latter tour was a real learning adventure! In between travels I play golf and still trying to finish some geology projects (as time permits)." Russell is a professor emeritus in Las Cruces, New Mexico.

Michael J. Clifford (BS '63) is a geologist for Hyquest Energy in Corpus Christi. "All goes reasonably well. Adjusting to being a grandparent. In April '94 I thoroughly enjoyed a skydiving expedition to the USSR including jumps into a Russian air show in Moscow; a Siberian Esquimo village and a jump from a Russian jet over the North Pole. Guaranteed to take one's mind off the oil business."

Kelton Cloud (BS '73) writes, "Opened an office last November in Granbury. Currently have a couple of South Louisiana projects and a couple of Permian Basin projects. We should be very busy this year." Kelton is a partner with Harbor Operating Co. in Granbury, Texas.

D. B. Clutterbuck (MA '58) is president of AFG Energy Inc. in Houston.

Joel Coffman (BS '83) is a project manager for Geo Strategies, Inc. in Dublin, California. "Five years in the

Bay Area environmental business has left me homesick for the hill country and Texas. Doing well but may think about returning to the Lone Star State in the next year or two."

Kitty Coley (BS '79, MA '87) contributes, "I am still managing the state's composting program and am in the midst of rule writing. Yuck! However, I got married last year and am very happy." Kitty lives in Austin and works for the Texas Natural Resource Conservation Commission.

Thomas M. Colley (BA '51) is retired and living in the Hill Country in Hunt, Texas.

H. Grady Collier Jr. (BS '49) writes, "Still office across the street from the Superdome. Would appreciate your dropping in when next in New Orleans. We'll try to catch up on news of our associates and friends." Grady is a consulting geologist.

Jerry H. Collins (BS '53, BS '54) contributes, "1954-1994: 40 years in petroleum exploration was quite gratifying. My wife, Jerrie H. Collins (UT '52) and I have four children: John R. (UT high honors in architecture); Carol (UT at 'Norman' highest honors in accounting); Jerry E. Collins (UT honors in mechanical engineering); Laura Anne (UT honors in business administration). We are two proud 'T' sippers." Jerry lives in Houston.

L. H. Collins (BA '58) is retired in Junction, Texas. "Recently buried father-in-law, Paul D. Crawford. He was a surface magnetometer pioneer, discovered Old Glory, Katz and other fields. I have surface maps and reports for 20 West Texas counties for sale or donation."

Mary Beth Cooper (BA '66, MA '69) contributes, "Business is doing well (we market GMA geophysical modeling software). Happiest news is birth of twin granddaughters in late January (six weeks early). I don't feel old enough to be a grandmother but I am! The girls are identical and beautiful!" Mary Beth is part owner of Excalibur Geophysical Consultants in Denver.



Taliaferro Cooper (BS '49) is a consulting geologist in San Antonio. "Enjoyed a two week trip to Morocco with the UT department of continuing education. Interesting geology."

Reinold R. Cornelius (MA '84) and Tracy are back in Austin. They have a son, Derek, born in April.

Casey and Susan Cornett (BS '86; BS '86) report from Houston, "Susan and I are both enjoying our jobs; I thing she has the tougher one: wrangling our two year old, Marshall. I've taken up home brewing and finally started working out. Susan enjoys Bible study, aerobics, and cooking wild recipes. Hope all the pals are enjoying life and eating out often!" Casey is a computer geologist for Energy Development Corp. and Susan is a homemaker.

Frank Cornish (MA '75) writes, "Third year with Suemaur Exploration, Inc. (a joint venture) poking around in the Vicksburg in the Valley." Frank is a contract geologist in Corpus Christi.

Augustus S. Cotera (BS '52, MA '56, PhD '62) writes, "After 27 years at Northern Arizona University, I begin my new life of writing (historical fiction) on July 1, 1994! Will spend half the year in Yuma, Arizona—winter paradise of the U.S."

Jerry Covington (BS '43) is president of COV, Inc. and Dela Minerals, Inc. in Midland.

Arthur S. Cramer Jr. (BS '57) writes, "Deena and I plan a trip to Scotland this summer to see our son and his family who are with Conoco. I'm fishing once a week and playing a lot of golf." Arthur lives in New Orleans where he is a consulting explorationist.

Fredrick E. Crawford (BS '83) is a senior surveyor for the Lower Colorado River Authority in Austin. "LCRA is implementing a geographical information system. I will be utilizing GPS for data collection. Best wishes to all my geo buddies."

John C. Crowell (BS '39) contributes, "It is great to be a geologist and, now that I am emeritus, to be on a continuous sabbatical leave! Last November and December I lectured on transform tectonics and sedimentation, and on the record of pre-Cenozoic ice ages at 14 universities in Europe, under the auspices of the International Association of Sedimentologists, and am off again soon for a similar tour to New Zealand, Australia, and South Africa." John lives in Montecito, California.

Steve Cumella (BS '77, MA '81) is a project manager for Rust Environment and Infrastructure in Grand Junction, Colorado.

Phyllis Cunningham (BA '89) writes, "Presently heading up the environ-

mental division for Russell-Veteto Engineering, Inc. Recently obtained professional registration to conduct environmental studies in California."

Phyllis lives in Alice, Texas.

John M. Curchin (MA '85) is an instructor for the community college in Aurora, Colorado. "Currently still playing 'Howard' to Keith Pollman's (MA '84) 'Bob.' Also leading a group of CCA students to Moab, Utah for a week of camping and mountain biking; sure beats the oil business!"

Hugh W. Curfman (BS '48) reports from Lafayette, where he is retired. "Still waiting for prices to come back so an independent can make a selling trip worthwhile."

D

Mike Darr (BS '81) left UT and worked with Placid Oil Company in San Antonio and New Orleans, then for the UTIG in Galveston and Austin. "Retrained in hydrology at Northern Arizona University and worked with the state of Arizona's DWR and DEQ. Currently in private consulting firm and I do flow and transport modeling, short courses, and environmental work in Mexico." Mike is a senior hydrogeologist for Geosciences Consultants, Ltd. in Albuquerque.

Hercules da Silva (PhD '93) is a geologist with Petrobras in Brazil. "I'm involved with rift basin analysis in northeast Brazil. I am also dealing with some teaching (rift basin, seismic/sequence stratigraphy). Also been involved with exploration work in both rift and marine marginal basins. My family and I are doing fine in Salvador, Brazil. Many nice beaches, with palm trees, nice weather, etc. See you!"

Joe Davis (PhD '81) writes, "Consulting in Dallas for three years, primarily doing exploration training on contract to various companies and seismic interpretation on workstations."

Linda Davis (PhD '93) contributes, "I am working with the Earth Sciences and Resources Institute, University of South Carolina, Columbia, SC 29208, but I am transferring to ESRI-Utah with the University of Utah, Salt Lake City, Utah. The same goes for Denise Apperson, but she's established, in fact won an award for outstanding performance in her first year or so here. I am definitely a junior chipmunk... so far."



Hercules T. F. da Silva (PhD '93) in spring, 1990 while on a field trip to the Guadalupe Mountains in West Texas.

William H. Davis (BS '41) is retired in San Antonio.

Charles J. De Lancey (BS '40, MA '42) contributes, "This past May we took the train from Beijing and Xian following the Silk Road to Urumqi. Then on to Tibet. The Chinese went west centuries before the Americans did, and what a wonderful job they did in conquering the desert." Charles is retired from Exxon and lives in Houston.

Ruurdjan DeZoeten (MA '88) writes, "This has been an exciting year. Our second son, Karl, was born in December and then we packed up the family and moved to Bangkok, Thailand where I'm working with Paul Sagasta in developing gas reserves in the Gulf of Thailand for Unocal."

Donald F. Dean (BS '83) is a geophysicist for ARCO Exploration and Production Technology in Plano, Texas. "I can't believe that it has been over ten years since I graduated from UT. Life has never been better. I am still employed, have a lovely wife and three healthy active children. There is a good group of UT folks here at ARCO that make work enjoyable."

Leslie A. Dedeke Jr. (BS '55) writes, "I'm enjoying the good life of retirement in New Braunfels. My Guadalupe River place keeps me busy."

Frederik E. Dekker (MA '66) reports from Katy, Texas, "Keep busy negotiating deals in the Asia Pacific area, mostly for exploration projects. Traveling a lot, especially across the wide Pacific. We miss California, but with

a new power boat, we take advantage of water sports in the Houston - **David Dernick** (BS '80) writes, "Still four wheeling! Presently very busy with two in baseball and one in ballet. Interior designing wife spends what little money is left. Have house in country with three dogs, four cats, one bird, and two turtles. Still trying to figure out difference between clauconite and chlorite." David is executive vice president of Dernick Resources, Inc. in Houston.

Sneha K. Dholakia (BS '83) is an intern geologist for BP Exploration in Houston. "Will be attending Stanford University for a Master's geology in the fall 1994. Research will be focused on fractures and fracture patterns."

Patricia W. Dickerson (BA '70) comments, "It's been a year of exceptional professional satisfaction, one that has more than confirmed the decision to assume the role of departmental antediluvian throwback and pursue the PhD. Following a presentation at an IGCP conference in Guanajuato in November, I was invited to be an organizing member of a task force on interactions of Laurentia and Gondwana prior to assembly of pangea. Organizational meeting will be in Nuevo Scotia in September; learning Scottish dancing in preparation for the ceilidh! Another unanticipated product of the Guanajuato meeting was appointment as compiler of Chihuahua/Coahuila portions of the map of active faults of North America (inter-

national Lithosphere project). That work should commence about the time I'm finishing the quest of the GEO-grail in December. Dissertation work has started to congeal, including some intriguing results of mechanical modelling of the structures. Present plan is to waltz down the aisle in the funny flat black hat and gown in December—you're invited. Call, write or send electrons at patd@maestro.geo.utexas.edu." Pat lives in Austin.

William F. Dingus (MA '87) is president of Dingus Investments, Inc. in Midland. "I resigned from Exxon in October of 1993. Mary Anne and I started our own oil and gas investment company in January and we keep busy screening prospects and buying working interest in the ones we like."

Laura Martin Dobson (MA '90) writes, "Husband Andy and I had our first child. Born January 27, 1994; Kelley Nicole Dobson, 7 lbs. 12 oz., 19 1/2 inches." Laura is a senior geophysicist for Exxon in Houston.

H. L. Dodd (BS '56) is "still enjoying retirement in Spring, north of Houston."

Gary and Jennifer Kraft Donnan (MA '84; MA '84) comment, "Gary and I now have two children, William (3 1/2) and Emily (7 months). We recently had a get together of UT grad students partly because so many of us live so close together now. Vicki Pursell, Jay Vogt, Tom Braschayko, Rene (Curtis) McCartney, Merle McCartney, Todd Mitchell, Mary Willis and Bill DeMis. Pam (Tiezzi) Darwin and Joe Greenburg could not make it. Sorry to those we missed! Next time will get all our undergrad friends together! Gary blew his knee out (badly) playing ice hockey last fall. As they carried him off the ice he was crying 'mama' and, behold, saw Peter Tauvers. Peter, who was in from New Orleans to play hockey, took Gary to the hospital, which was really nice since I was 8 1/2 months pregnant and it was 2 a.m." Gary works with ERM-Southwest Inc. and Jennifer just retired with second baby. They live in Houston.

Gene C. Doty (BS '54) writes, "Family well, grandchildren growing like weeds, and Mopsy retired April 1, 1994. Look out world, we are here!" Gene lives in Las Vegas.

Jack Drodody (PhD '78) reports from Houston, "Testing reservoir rocks for Baker-Hughes. Pam and I enjoyed visiting the Department last fall."

Ralph C. Duchin (MA '55) is an independent geologist in Tucson. "Still making 'commutes' to Houston approx once a month to engage in the oil business."

William E. (Bill) Dunaway (MA '62) writes, "Still in the acquisitions and exploitation business. This year will be involved in joint venture exploration projects for the first time." Bill is manager of geology for Scana Petroleum Resources in Kingwood.

Ed Duncan (BS '79, MA '87) comments, "Anne and I are having a great time in Norway. We have four children and two dogs, all multinational origins covered by this crew (U.S., Scotland, England, and Norway). If ever in Stavanger, give me a call." Ed is a geologist for BP Exploration.

William R. (Bill) Dupre (BS '68, MA '70) writes, "With few earthquakes in Central California to keep me busy, I'm working more with teachers and earth science education issues. Elaine and I are also bracing for kids in college! Meanwhile, we're building a cabin in the Hill Country to get away from Houston whenever possible." Bill is an associate professor at the University of Houston.

William Kent Duran (BS '83) is a hydrogeologist for Engineering-Science Inc. in Houston.

Dale L. Dutton (BS '59) is the national director, developmental disability division for Commission on Accreditation of Rehabilitation in Santa Monica, California. "Another step in assisting people with disabilities live more normal lives. Haven't moved to Tucson (yet!) but it's not a bad place to look at retirement, nice geology."

Steve Dworkin (PhD '91) writes, "As some of you may have noticed, I have been publishing profusely. My most recent studies have focused on solving some long-standing controversies regarding the phylogenetic complexities of an obscure lineage of crepicephalid trilobites." Steve is an assistant professor of geology at Baylor University in Waco.

Connie Mayes Dyer (BA '58) is a wife, mom, grandmother, and community volunteer in Houston. "All is well. We stay busy with family who are all in Houston. Youngest son, John, begins high school this fall. Byron is still finding oil and gas as president of Norcen Explorer, Inc., and as for me, serving on Houston's Methodist Hospital Board has presented some interesting challenges in the face of major changes now taking place."



Edwin Gilbert (BS '52) of Houston poses with Judge Anne Packer of Dallas at the 1993 100-year gala reunion for football at UT. Ed was inducted into the Longhorn Hall of Honor in 1985.

E

Fred A. Ealand (BA '45, BS '48) contributes, "Happy to report complete recovery from prostate surgery two years ago. All you guys, 55 and over, have a MD exam every year! Life is full, revolving around grandchildren." Fred is retired in Houston.

Roy E. (Ernie) Easley (BS '80) is vice president for Tana Oil and Gas Corporation in Corpus Christi.

John Edgerton (BS '78) is a consultant in Houston.

Mark Eidelbach (BS '51) is owner of Mark IV Energy in San Antonio.

Gus K. Eifler Jr. (BA '29, MA '30) comments, "Maintaining my office at my residence." Gus is retired in Austin.

Charles R. and Lynda Coons Ehlers (BS '78; BS '80) write, "Charlie is still working at Placid Oil Company interpreting West Texas 3-D surveys. Lynda is busy at home with our two boys. Jonathan (6 1/2) and Travis (3 1/2) are already interested in rocks and fossils." Charles and Lynda live in Richardson, Texas.

Ruben Ellert (BS '50) comments, "Retirement is not all that bad. I still do some consulting work (geophysicist) once in a while." Ruben lives in Corpus Christi.

Ralph I. Ellsworth (MA '49) reports from Austin, "Enjoying UT and Austin. Dabble with West Texas geology. Mainly just hanging in there." Ralph

is retired.

Joe Elo Jr. (BS '56) is an independent in Fort Worth. "Will be a grandfather; Glynnis, my daughter is pregnant. She is an environmental geologist (UM Amherst graduate). Son, Max, is unmarried and is an Arizona State graduate (advertising degree)."

Franklyn R. Engler (BS '58) is president of Engler Exploration, Inc. in Pittsburgh. "Doing fine! Tough winter here but gas sales were good."

Ross Ensley (BS '76) contributes, "I have been working in Norway now for over four years, and have loved every minute. Kathy and I have four boys, including one born in Norway. Right now, we are looking forward to summertime so we can get out and enjoy the hiking in nearby mountains." Ross is a senior exploration geophysicist for Esso Norge.

James L. (Jim) Eppler (BA '43) writes, "Still retired, playing golf and trying to grow old gracefully. Hello to all old UT friends." Jim lives in Dallas.

Rojelio P. Espinosa (BS '85) reports from San Antonio, "Currently employed by Tesoro Exploration and Production Company. Spent the last two years in South America working for Western Geophysical."

Lawrence E. Ethridge Jr. (BS '47) comments, "I still go to my office for three to four hours a day. Drilling with group but only field wells until the situation improves, when and if. See lots of UT graduates at meetings and at coffee. Hook Em!" Lawrence lives in Corpus Christi.

Rizer Everett (BA '37, BS '37) notes, "In early 1993 we enjoyed visits with long-time friends in Fort Worth, Mineral Wells, and Strawn, Texas. In November we flew to Washington, D.C. for a visit with our son and his family in Maryland, where we became acquainted with our first great-grandchild, five-month-old Georgi Marie. We had a delightful Thanksgiving day with our family in Silver Spring, Maryland. It was there that we met Katherine, the fiancée of our grandson, Mark. Both of them are geologists completing work on their masters degrees at Pennsylvania State University. After Thanksgiving, all of us went to Bala Cynwyd (a suburb of Philadelphia) to attend a reception and dinner given by Katherine's parents. The occasion was for Katherine's family and Mark's family to meet. It was a delightful and successful occasion in a large Dutch Colonial house, built about 1905.

The next day we drove to State College where Mark took us on a tour of the building where he does his work on the rocks he collected during summer, 1992, from his field area on Afognak Island, Alaska. Mark also gave us a tour of the town of Bellefonte, where there are many fine Victorian homes built before the turn of the century. Most of them are well maintained, and they certainly show interesting architectural designs. A spring in the town flows 11.5 million gallons of water per day and supplies Bellefonte's water needs. The water comes from rocks of lower Paleozoic age, but the geologists of the area are unable to determine how water gets into those rocks.

At Christmas time our daughter and her family were with us in Austin. In March we took a delightful eleven-day cruise from Acapulco to Port Everglades, Florida with a daylight passage through the Panama Canal. We made stops in Costa Rica, Jamaica, and Key West, and the sunshine during most of the trip enhanced the quality of photographs taken by all passengers." Rizer continues to live in Austin.

Norman Ewbank (BS '43) writes, "As Anthony Euwer said: As a beauty I'm not a great star. Others are handsomer by far but my face, I don't mind it because I'm behind it. It's the folks in the front I jar." Norman is retired in Midland.

F

Robert H. Fakundiny (MA '47, PhD '70) is state geologist and chief of New York State Geological Survey in Albany. "Each year seems to be the same as the last: trip to Europe in spring during budget crisis at work; no time in the summer to do field work; garden is full of weeds in the fall; tractor broken in the winter so I can't plow the snow. Sad that Ronald K. DeFord has left us. None of us was the same after meeting him."

George H. Falk (BS '57) writes, "Everything is about the same here on the lake. Waiting for the next boom." George lives in Seguin.

Thomas E. Fanning (BS '56) is vice president of international production for Marathon Oil in Houston. "Moved from E to P last winter; same questions, different answers."

Dorman N. Farmer (BS '50) writes, "We are still hanging on. Expect things to

pick up later this year." Dorman is a geologist/owner of Fargo Exploration in Abilene.

Richard B. Farrand (MA '84) is project manager for Roy F. Weston Inc. in Denver. "At work I promote geological interpretation to support remediation of contaminated sites. At home, our year was highlighted by a vacation to West Africa to visit a friend in the Peace Corps. While there a military coup attempt made for a complete West Africa experience."

Irma M. Feibelman (BS '59) is "enjoying retirement life in the beautiful Texas Hill Country." Irma lives in Canyon Lake, Texas.

Murray Felsher (PhD '71) contributes, "Consulting business and the three newsletters are thriving. Satellite remote sensing of the earth is no longer the esoteric subject it once was. Putnam/Berkley is publishing my book, *Working Alone*, which should hit the shelves in September of this year. It was fun writing, and I hope will be fun reading." Murray is president of Associated Technical Consultants in Germantown, Maryland.

William (Bill) J. Fennessy (BS '48) reports from Conroe, Texas, "I cram in as much golf as I can during the week and try to keep informed the best I can about the most startling developments in the oil patch."

Walter M. Fitzgerald Jr. (BS '53) writes, "Had a colon connection in February 94. Doing fine playing some golf at Lufkin country club, shooting skeet at Pines Gun Club, fishing occasionally. Rooting for the Horns as always. Proud of Ben Crenshaw's win. Have a chronic case of procrastination." Walter is retired in Lufkin.

Jack C. Fitzpatrick (BS '48, MA '56) comments, "Claire and I have a son and three daughters, also four grandsons and four granddaughters. Hope to see another well spud in the next few months. Generally, the business is slow for me." Jack is a consulting geologist in Jeanerette, Louisiana.

Ted Flanigan (MA '80) works for Quest Petroleum in Reno, Nevada. "Hello to all from Reno!"

Jose A. (Tony) Flores Jr. (BS '90) married Elizabeth Ramirez on May 14, 1994. They honeymooned in Cancun, Mexico and are residing in Houston. Tony is a project geologist

NOTES
FROM THE ALUMNI

in Stafford, Texas.

Sterling and D'nese Young Fly (BS '80, MA '85; BS '80) work for Yates Petroleum Corporation as geologists. "In transition: Texas roots are pulling us home. Will relocate to Uvalde. Intend to do some ranching, will try to do consulting in South Texas and southeast New Mexico."

Cynthia Lee Fong (BS '88) is self employed/bummin' it in Redwood City, California. "Hanging out and planning new business ideas, future schooling. Basically, having a fun time with life!"

Thomas F. Foster (BS '84) writes, "Sherry and I moved to Anchorage, Alaska. It is beautiful here. I am currently running measurement while drilling (MWD) triple combo services on the North Slope and in Cook Inlet. The oil business is treating us OK these days. If you are in the area look us up." Tom is a logging supervisor.

Hewitt B. Fox (BA '47, BS '48, MA '48) is an independent in Corpus Christi. "We spent several days in Las Vegas in April. There was still snow in our prospect area in the mountains near Ely. The Excalibur, Luxor and MGM Grand located in the latest extension of the strip near the airport are quite different from the older casinos and huge. The MGM Grand alone has over 5000 hotel rooms!"

Tom Freeman (PhD '62) received a William T. Kemper fellowship for excellence in teaching geology at The University of Missouri—Columbia. The award, which carries a stipend of \$10,000, recognizes teachers at MU for their activities over the past five years. Tom was nominated by fellow faculty members and UT alumnus James H. Stitt.

Brad Fricks (BS '82) is vice president and regional leasing director for Equity Office Properties in Houston. "Daughter, Amy Kathryn, born November 17, 1993."

Annabelle Bannahan Friddle (BA '45, MA '50) lives in Aztec, New Mexico.

Tatiana Frierson (BS '85) writes, "Hey 660 GeoDogs. I've been out of the oil business some time now and working for Perot Systems as a management consultant. Loving it, traveling quite a bit, in fact weekly!! Would love to catch up; ring me sometime." Tatiana lives in Houston.

Jack Q. Frizzell (BS '50) reports from Abilene, "Nobody told me it would be like this! Taxes are climbing and oil prices are dropping—what's a little ole oil geologist to do? Oh well,

obstacles present opportunities—the majors are overseas and the competition for good deals is less than ever before—it's time to get busy finding that \$20 oil for 1995!" Jack is president of Enrich Oil Corporation.

James Fulcher (BS '80) writes, "1993 was a very good year for our group. Gas prices were good, we acquired \$130 million worth of Mobil properties in the Gulf, we hired a geologist, two geophysicists and a geotech, and we've committed to a number of 3-D seismic surveys. Betsy and I have been busy chasing our two daughters (2 and 4) around and helping our families out in Dallas." James works for Sonat Exploration in Houston.

Nancy Null Funderburk (BS '79) is an environmental geologist for Enviro-Search of America, Inc. in Houston.

James B. Furrh Jr. (BS '48, BS '50) writes, "Had active year in Mississippi and Alabama. Recently made a good oil discovery in Wayne County, Mississippi. The price of oil must go up!" James is an independent oil and gas producer in Jackson, Mississippi.

G

Steven H. Gabay (MA '85) comments, "With Mobil centralizing exploration in Dallas, Dawn and I have built our dream home in Flower Mound." He is a senior staff geophysicist for Mobil.

Jay L. Gallia (BA '73) is a senior staff attorney in Houston.

Gerardo H. Garcia (BS '82) is a project hydrogeologist in Austin.

J. Neal Garland (BS '59) is executive vice president for Goldston Oil in Longview.

Abato J. Garza (BS '78) writes, "I transferred to Northern Germany (Celle) in January 1994. It was dark and rainy days then, but presently it is bright and sunny. Looking forward to new adventures and new geology. Still keeping busy with Jared (4) and Kate (5). The kids are learning the language faster than Cindy and I. Well, if you are in the neighborhood call or stop by. We will have a good German beer ready for you." Abato is a senior staff geologist for Mobil.

Thurman Geddie (BS '45) is a geologist for L.B. Industries in Austin. "Business as usual, wishing for better oil prices."

John Genuise (MA '91) writes, "Cindy and I enjoy Big D. I am a project manager with a medium-sized regional environmental firm. Completed my MS in hazardous and waste material

management at SMU. Miss UT and enjoy giving Aggie engineers a hard time. Keg, Kevin L., Leo, Nina, Rachel, et al, please visit soon." John lives in Plano.

Steve Germiat (MA '88) is a hydrogeologist for Hart Crowser Inc. in Seattle, Washington. "Became a dad in July 1993."

James M. Geron (BS '60) writes from Dallas, "Thirty two years in the investment banking industry finds me managing 150 retail sales brokers in the Rauscher Pierce system. We are noted for our energy research which keeps some ties to my days in the geology department at UT. Married with two kids and two grandchildren."

Tracy Baker Gibson (BS '86) contributes, "I'm still living and working in Houston! Boy do I miss Austin during the summer. Working for DuPont is as exciting as ever and my sites have expanded to include some in California. In fact, I had the distinct pleasure of experiencing the earthquake in LA in January. That's an experience I hope I only have to go through once. If any of my old classmates are in Houston, give me a call."

Edwin F. Gilbert (BS '52) is an independent in Houston, currently involved on a limited basis with Phylko Energy Corporation.

Gretchen M. Gillis (MA '89) is a senior geologist for Maxus Energy Corp. in Dallas. "It's been a busy year. I married Scott Fricke (a physicist!) on May 21. After the honeymoon I dodged another round of bullets at Maxus. In the last two months I've moved from offshore exploration to development to onshore Louisiana exploration! I was elected secretary of the Dallas Geological Society. Saw Ben Sloan at the wedding, hope to see more friends this summer!"

John P. Giltner (MA '87) reports from Kingwood, Texas, "Maggie and I doubled our family size on October 8, 1993 when Allyson Halah (5 lbs, 6 oz) and Emily Ann (4 lbs, 15 oz) were born. The girls join their sisters Meagan (5) and Molly (3). We don't have time to think about how we are doing, but we are surviving. I continue to work for Exxon's Exploration Company. Currently, I'm working on an exploration block offshore Angola, West Africa. Before that, I worked for two years on several South America projects in Trinidad, Argentina, Brazil, Ecuador, and Bolivia."

Jennifer L. Glasford (MA '89) is a geologist for Unocal Worldwide Explo-

ration in Sugar Land, Texas. "It was fun to see many UT alumni at the AAPG convention. I'll move to Lafayette late this year or early next year to work Gulf Coast sediments for the first time ever. I'll miss international exploration, but look forward to drilling wells for a change."

Georgette Covo Goble (BA '44) writes, "At the UT class of 1944 50th reunion in April, geology graduates had a wonderful tour of the Department of Geological Sciences. In addition, Dr. Bullard surprised us with a visit. Thank you, Dr. Wilson and others, for an educational and interesting experience." Georgette is a homemaker and community volunteer in Waco.

Charles Goebel (BS '80) comments, "Hanging in there with Arco International in Plano. Traveling a lot to the Mid-East and (mostly) enjoying it. Our second grader has been telling me all about continental drift lately, that's fun. Howdy to the classes of '79 and '80."

Lisa K. (Rusty) Goetz (MA '77) writes, "Survived another round of reorganization and transfers. We moved back to Houston in September after three years in Oklahoma City. My new job gives me plenty of opportunity to travel as our group evaluates upstream and downstream geologic opportunities worldwide. We are on the west side of Houston and would love to see any of you 'old' classmates if you find yourself in the area." Lisa works for Conoco, Inc.

Sipriano Gonzales (BS '86) reports from Plano, "I am working in the telecommunications field as a software engineer. Even though this has nothing to do with geology, I still like to collect rocks and fossils!" He works for Bell Northern Research.

W. Leonard Goode (BS '53) is a consulting geologist in Midland.

Phil P. Goodson (BS '84) serves as manager of an environmental drilling services company in Austin.

James E. (Jim) Gordon (BS '51) com-

ments, "Pat and I attended a summer academy field course in geology at the University of Durham in England last year. Enjoyed, but sore muscles." James is a consultant in Corpus Christi.

Mark Gordon (PhD '90) contributes, "During the summer of 1993 I went to Russia for vacation and to visit friends that I met in Paris in 1990-91. I continue as a postdoc at Rice University. Spent three months in Honduras doing fieldwork."

Allison Gore (BA '93) is doing a hydrology internship in the environmental affairs department of the El Paso Natural Gas Company.

E. R. (Win) Goter (MA '73) writes, "I have enjoyed relative professional stability compared to much of the industry and continue to enjoy my work. My family is doing well, also. The only additions here are two puppies born recently. I soon will depart for a three week geology course in Europe, which will be a real highlight." Win is a geology coordinator for Shell in Houston.

Richard E. Grant (PhD '58) notes, "I made yet another trip to West Texas in October 1993, to show Permian section to two visiting Chinese. Plan to attend Permian Symposium in South China in August: fourth trip to China. Published two monographs on brachiopods in past year: Jurassic Rhynchonellids, Permian of South China, plus *Journal Paleontology Memoir* on Permian of Khios (Greece)." Dick is a senior geologist at the U.S. National Museum in Washington, D.C.

Ronald L. Graner (BS '58) contributes, "Retired in April after almost 36 years in Federal service. Looking forward to a short rest before consulting or seeking employment." Ron lives in Brentwood, Tennessee.

C. DeVearle Gray (BS '57) writes, "Still exploring for major gas in Gulf Coast area, mainly offshore. Immensely enjoy departmental *Newsletter* to keep up on news and keep track of friends." He is senior vice president of exploration for CXY Energy Inc. in Dallas.

Robert W. Grayson (BS '48) reports from Austin, "Hope to see many classmates and friends at the GCAGS Austin meeting in early October."

Will Green (MA '55), independent consultant in Midland, writes, "Will be president of AAPG's division of professional affairs (certifies petroleum geologists) for the year begin-



GEO 660 at Mesa Verde, 1985. Left to right: John Soderman, Sandy Pospisel, Lisa Nelson, Ray Hu, Kelly Bobbitt, Jeff Beckman, Carla Ketner, Lisa Hawkins, Ted Stout, Curtis O'Dell, Lisa Krynine, Sean Boerner. Photo provided by Lisa Hawkins Paton.



Dr. H. B. Stenzl at Booker's Cafe
in Cushing, Texas, summer, 1949.
Photo submitted by Charles E. Porter.

may have not ultimately suffered a national disaster... unless a spiritual awakening helped to overcome the moral collapse." Roy is a consulting geologist and expert witness in Casper, Wyoming.

H

Henry R. Hamman (BS '60, MA '62) is president of Hamman Oil and Refining Company in Houston. "Looking for deals on Gulf Coast and West Texas."

Paul A. Hardwick (BS '83) writes, "Living in Houston and consulting in West Texas and the Gulf Coast. Expecting

first child in the fall." Paul is a consulting geologist.

Wiley B. Harle (BS '50) reports from Houston, "When I talk to my retired geologist friends it sure is sad to see all the knowledge and experience going to waste, but retirement is fun."

J. L. Harmon (BS '52) is a drilling and work-over supervisor for Texland Petroleum, Inc. in Lubbock.

James R. Harrison (BS '52) comments, "Enjoying life to the utmost. Live off the 10th hole at Columbia Lakes Resort and Country Club and spend a lot of time just putting around the house. Come visit if you're in the neighborhood!" James lives in West Columbia, Texas.

Margaret Hart (BS '83, MA '92) is a nonpoint source program manager for Texas Natural Resource Conservation Commission in Austin. "Doing a lot better than last year! My cancer has been in remission since last October, and I am riding my bicycle again. Hydrogeology is treating me well. I'm still working for the state, and actually enjoy being a public servant."

Richard E. Hart (BS '74) is a geologist with Royal Exploration Company, Inc. in Corpus Christi. "I hope to run into numerous UT Exes at the AAPG Convention in Denver. What a great place to have a convention! I have been extremely busy over the last year prospecting and marketing several Yegua prospects in Southeast Texas, and South Louisiana. The market is

still tough out there unless you have a prospect with 3-D seismic on it. We enlarged our family with the birth of our new son, Corey. My wife, Jeanne, and our oldest son, Derek, are doing great and are enjoying the Corpus Christi lifestyle."

Eric Hass (BS '78) writes, "When presented with the option to move to Dallas with Mobil or stay in the Rockies without Mobil, I chose the Rockies. I recently completed a MA in environmental policy and management from the University of Denver and now manage energy efficiency, pollution prevention research projects funded by US DOE. It ain't geology but it ain't bad." Eric lives in Lakewood, Colorado.

Alana Haveman (BS '89) contributes, "I've been in New Orleans for almost two years, since I finished my masters at Texas A&M. Enjoying my work at Texaco; getting married to Larry Avery in July, 1994."

Karen Havholm (MA '86, PhD '91) is an assistant professor at the University of Wisconsin in Eau Claire. "Survived the winter, and am enjoying my involvement in science education. Small-town life suits us. Merilie is enjoying second grade and making lots of friends. Glenn is holding down the home front and taking some courses."

Hugh Hay-Roe (MA '52, PhD '58) writes, "Still consulting on overseas energy projects and training technical and business writers. Witnessed the great pilgrimage in Mecca last year on TV from a hotel room in Riyadh. Still doing a bimonthly column for *Geotimes*, and started a column for the Society for Technical Communication newsletter." Hugh is a consulting geologist for Global Energy Operations in Kingwood.

Edward F. Haye (BS '51) is president of Benchmark Exploration in Houston. "Two grandsons, Jakey (2 1/2 years) and Eric (9 months)."

James F. Hayes (BS '49, MA '51) writes, "Lib and I enjoy living on the shores of Lake Travis and the proximity to Austin. We have spent some time visiting children and 13 grandchildren in Arizona, North Carolina, and Cairo, Egypt. I am still involved in exploration in South Louisiana." James lives in Leander.

Keith I. Haun (BS '74) works for Duncan Energy in Houston.

Mike Hazlip (BA '83) is a district landman for Devon Energy Corporation in Oklahoma City.

James H. Helland (BS '43) writes, "Try-

ning July 1, 1994. Hope to see former classmates at the section meetings or convention in Houston (March, '95)."

Robbie Gries (MA '70) is director and vice president of Pease Oil and Gas Company in Denver. "AAPG convention responsibilities behind me! First year operating within the confines of a public company behind me! First large merger behind me! Maybe 1995 will be more relaxing! Lynn graduates from CU this year!"

Ariel D. Griffin (BS '57) is a retired geophysicist in Spring, Texas.

Steve Griffin (BS '83) writes, "It's been an extremely eventful year. First year business at Omni Environmental has been much better than I could have hoped for. Daughter, Jennifer, is eagerly looking forward to her 4th birthday in September and wife Linda presented me with another daughter, April Laurel, in March." Steve is a laboratory manager in Austin.

Leslie Provence Grohe (BA '74) is a sales analyst for USAA in San Antonio. "Andrew and I had a daughter, Katherine Elise Provence Grohe, 3/11/94. Motherhood is great."

Roy H. Guess (BA '39, MA '40) writes, "I am deeply concerned about the moral decay and the absence of any sense of right or wrong in our students and in our government. Can we not profit from the mistakes of past generations? The apathy is appalling! General MacArthur said, 'History fails to record a single precedent in which nations subject to moral de-

ing to find oil and gas with average success. Future for independent is not looking better if oil prices do not increase." He lives in San Antonio.

John D. Henderson (BS '37) is retired in Dallas.

Steven Henderson (BS '90) reports from Lubbock, "Finishing my PhD in geology, suffering from flat earth syndrome, and looking forward to getting out of Lubbock! Tony Flores, where are you?"

Reid Hensarling (MA '81) writes, "I have moved from Texas to take another church position in South Carolina. I don't think there is much oil to be found in South Carolina. Things are going well. Kudos to a great geological magazine that you publish every year. It's the best!" Reid is the rector of St. Paul's Episcopal Church in Bennettsville, South Carolina.

Charles W. Henslee (BS '51) comments, "Continue to enjoy golf, travel and eight grandkids. I seem to be busier in retirement than when I worked." Charles lives in Houston.

Harold T. Henslee (BS '50) writes, "Just playing golf and waiting for things to improve in the petroleum industry and enjoying the Longhorns." Harold is an independent geologist in Amarillo.

Jon Herwig (MA '82) is technical director for Ogden Environmental and Energy Services in Honolulu. "Still having fun on Oahu, working on superfund sites in Hawaii and base closures on Hawaii and Guam. Lots of diving, kayaking, and surfing. Come on out."

Christoph Heubeck (MA '88) contributes, "After finishing my PhD at Stanford, I had to make up my mind whether to stay in the U.S. for even longer or to return to Germany. I chose the former and am now employed with Amoco in Houston."

Charles and Suzanne Mechler Hewitt (BS '88, MA '90; BS '89) write, "After a brief but memorable exile in Kentucky, we have returned to the Lone Star State. Charlie is working for Texas Utilities and Suzanne is preparing for her defense at the 'other university.' Since we have been back in Texas, we are really enjoying the big city life in Dallas. The vast openness and beautiful sunset (you don't see much in a holler) and most of all, being closer to family and friends."

Linda Alide Hinnov (MA '85) is an instructor and visiting scholar at The Johns Hopkins University in Baltimore, Maryland. "I received my PhD

in April, 1994 at The Johns Hopkins University, Department Earth and Planetary Science. My dissertation: Astronomical forcing, ancient climates and the sedimentary record: the Mesozoic of the Southern Alps."

Nolan Hirsch (BS '44) is president of MVC Inc. in Midland. "Fighting the odds in the oil business. Why? Guess I lost my smarts. Still enjoy the quest."

Lyllian B. Hix (BA '46) writes, "I retired from the Houston Community College in 1992, although I still teach one course a semester as an adjunct instructor in psychology for the college. My husband (William Edgar Hix Jr.) will retire from controller at a local wholesaler in June. My son (William Edgar Hix III) who lives with us, also works for the college in the financial aid office. I always enjoy reading the news about those guys who are left. I have MA and PhD in psychology from the University of Houston, as well as BA from UT in 1946."

Tim Hoar (MA '93) is a research scientist assistant II for the National Center for Atmospheric Research in Boulder, Colorado. "Working hard (nothing new), playing hard (you can do that?)."

F. A. (Fred) Hoeninghaus Jr. (BS '49) reports from Houston, "The years after retirement are adding up. The *Newsletter* is looked forward to and is always appreciated. Thank you."

Melody R. Holm (BS '75) writes, "My job as forest service liaison in residence with the USGS branch of petroleum geology is quite demanding and challenging, but I truly enjoy the variety of opportunities it presents. In addition to doing oil and gas work, I'm using a lot of my UT training in botany to help geology receive due recognition in ecosystem-based land management. Husband, Stan, is doing a great job remodeling our house, and seven year old twins, Adam and Brett, are doing well in school while becoming serious baseball players. We enjoy Colorado, but miss Wyoming!" Melody lives in Lakewood.

James W. Hood (BS '48) reports from Salt Lake

City, Utah, "Little change. Still travel two months a year."

Ben Hooper (BS '80) is manager of geology in Houston.

Ed Hooper (BS '82) is now married (to Liz Bar) and is enjoying his job as geologist for Hadson (Apache Corp.) in Perth, Western Australia, which involves loads of curly geological questions. He wonders if there are any other UT graduates in Perth at the moment.

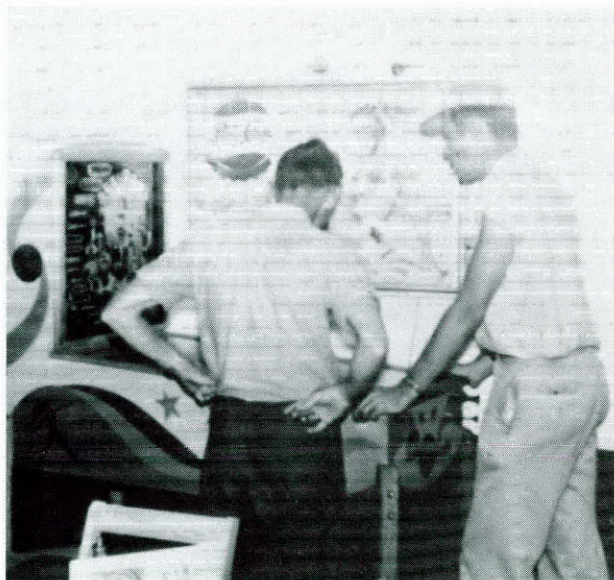
Brian Hoover (BS '84) is director of sales and marketing for Colwick Travel in Dallas.

Eleanor M. Hoover (BS '56) writes, "Have retired from Exxon after 36 years in exploration. Now plan to do some consulting in Houston as well as continue in the local volunteer fire department where I've been a volunteer firefighter for the past 18 years." Eleanor lives in Conroe.

G. B. (Bill) Howard IV (BS '82) is managing director for Flare Resources Inc. in Houston.

Nancy K. Howard (BA '90) writes, "I am currently in my second semester at Sul Ross in Alpine, working on a Master's degree in geology. I am teaching two introductory geology labs and love it. Very nice students. I thing Alpine is beautiful. My thesis area will be Santana, near Lajitas on the Rio Grande. I miss Austin and UT very much!"

William P. C. Hudson (BS '75) is managing director for Domus Group LTD in Rancho Viejo, Texas. "Tonia and I are happy in the Rio Grande Val-



Leroy Gatlin and Jim Hayes exploring the mysteries of the "tilt mechanism" at Booker's Cafe, Cushing, Texas, summer, 1949.

ley. We plan to build our casa and live here happily ever after. Master planned real estate development is keeping me busy."

Jack T. Hughes (BA '41, MA '42) comments, "Ups and downs in '93 at 73. Became professor emeritus of anthropology at UT A&M University, lost my 95-year-old mother to stroke, endured heart and prostate procedures, and traded my widower status for a fine new wife. All OK so far in '94." Jack lives in Canyon.

Ed Hughston (MA '50) is self employed in Taos, New Mexico, where he has lived for the past 16 years.

Emmett A. Humble (BA '49, MA '51) writes, "Not much change. Working mostly in the Far East and CIS. Spending more time in community service organizations, activities. But mostly watching grandchildren spring up." He lives in Houston.

Gary Hummel (MA '82) is a geologist for Amoco Production Company in Houston. "Exploring offshore Gulf of Mexico for Amoco. My free time is spent with my son Max (born November, 1992) and golf."

Elvin M. Hurlbut Jr. (BS '43) writes, "Virginia and I and our three cats are fine. Have been reading history, and it is interesting to learn what historians do with past events; e.g., Columbia University historians consider World War I and II one war, called The Great World War. At least one historian considers the Battle of Okinawa, in which fellow geologist Nolan Hirsch and I took part, the greatest battle in history. It all depends on the perspective." Elvin lives in Tyler.

Daniel C. Huston (MA '87) is a geophysicist for Unocal Corp. in Houston. "Our baby girl, Lana Marie Huston, was born healthy and happy on September 6, 1993 (Labor Day). We are due to visit Alaska for two weeks of vacation in June."

Susan Ide (MA '86) writes, "Had a baby boy in October, 1993 (Dylan) and I'm home on maternity leave for ten months. Loving every minute, too!" Susan is a senior project scientist for Woodward-Clyde Consultants in Santa Barbara, California.

Jim Immitt (MA '81) is a financial analyst for Advanced Micro Devices in Austin. "Pam, Adrian and I enjoy living in Austin. We just celebrated Adrian's second birthday. We would

like to say 'hi' to everyone."



Jim Bob Jackson (MA '69) contributes, "I have diversified into environmental work doing phase I environmental audits in the Houston area. I am also still looking for oil and gas." Jim is president of Trace Oil and Gas Company in Houston.

Joe L. Jackson (BS '56) writes, "Still retired in Alamogordo in the land of sagebrush, rabbits, and rattlesnakes. Yard work and some consulting keeps me busy."

J. R. Jackson (MA '40) comments, "Fully retired after almost 40 years with Exxon and ten more as consultant for Petroleum Information. Now devoted to golf, travel, grandkids, etc. Just returned from three weeks in China on a wonderful trip." He continues to live in Houston.

Lance Jackson (BS '79) reports from Kingwood, "Working South Texas Frio Vicksburg in Exxon's outpost group. On the family side, we are expecting fifth child in June."

NOTES FROM THE ALUMNI

Leslie Hay Jackson (BS '89) writes, "All news is good news! Alicia Simpkins, where are you?" Leslie lives in Brentwood, Tennessee.

Russell W. Jackson (BS '76) is a geologist for Tyler Oil and Gas, Inc. in Tyler. "Still working the East Texas Basin and trying to convince people to send their drilling money this way. Went to Prospect Expo in Houston and saw alot of UT Exes still very active."

Kenneth L. Jarratt (BS '57) contributes, "Enjoying real estate. Grandkids are growing; so is Edna, Texas and Jackson County. Great place to live. Very sad at the demise of the Southwest Conference. I think we will come to regret this move. Too bad money has to rule college sports!" Kenneth is the owner of Jarratt Realty in Edna.

Borden Jenkins (BS '77) writes, "I was in Alaska for three weeks on the Aleutian Peninsula, salmon fishing late last summer. The sights and geology were as good as the fishing. South Texas gas prospects are still in demand, if you've got a good one and are willing to give it away." Borden

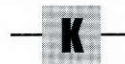
is a petroleum geologist in Corpus Christi.

Charles B. John (BS '51) comments, "Norma and I are enjoying life in Tulsa. I am about 75% into my research for the dissertation, the Blue Mountain Transverse structure, Latimer County, Oklahoma. Hope to complete late 1994 or early 1995 and receive the PhD from UT El Paso. Thanks for the *Newsletter*."

Ann C. Johnson (BA '86) is a claims replacement service manager and graduate gemologist for USAA, gem lab, in San Antonio.

Kenneth R. Johnson (BS '50) is retired in Austin.

L. G. Jones (BS '59) writes, "Enjoying the *Newsletter*." He is retired in San Antonio.



James D. Kallina (BS '53) is president of JDK Incorporated located in Stafford, Texas. "JDK continues as a seismic data services company. JDK recently added a seismic data processing and interpretation division. State of the art data processing hardware and software will be utilized."

Edward A. Karper (BS '41) writes, "Same location last 45 years. Trying to turn it over to three sons, one Texas Tech geo, one UT landman, and one Southwest Texas computer type. Need to hurry, about to run out of time." Edward is the owner of The Karper Company in Graham, Texas.

Edwin N. Kasper Jr. (BS '51) reports from Houston, "Enjoying good health and looking forward with excitement to attending UT's Up-date 1994 in mid-June at the Ex-Students Center. Ask me about my early March '94 trip into Germany. Carole and I are kept very busy by our four grandchildren. Flying for National Championship in Model Aviation will be held July 1994 in Lubbock and I will be one of the administrators. Best wishes to all!"

Steven G. Katz (PhD '75) is vice president of Isorca, Inc. in Granville, Ohio. "Connie and I continue to enjoy living in Granville. I'm challenged by my position with a small technology development firm in fiberglass reinforced composites business. Regards to the gang at UT."

Milo Kearney (BS '62) writes, "Both of my kids received their BAs from UT Austin this past year, not in geology, but had enjoyed taking some geol-



Francis Zimmer, John Soderman, and Harold T. Read compare results after a project in Durango, Colorado, during GEO 660, 1985.

Photo submitted by Lisa Hawkins Paton.

ogy electives." Milo is a professor of history at The University of Texas at Brownsville.

Peter C. Keller (MA '74, PhD '77) is executive director for Bowers Museum in Santa Ana, California. "Museum business is going well. Just returned from Timbuctu (Mali) where we often thought of Folk's sandstone lectures."

Kevin M. Kelly (BS '82) works at The University of Hawaii in Honolulu as a remotely operated vehicle manager. E-mail him at kelly@soest.hawaii.edu.

Christopher G. Kendall (postdoc. 66-68) continues as professor of geology and marine science at the University of South Carolina in Columbia. "In April '94 I led a field trip on carbonates and evaporites of UAE. Prior to trip I met Charlie Kerrans and Jerry Lucia in Bahrain at GEO94 conference sponsored by AAPG. Continue to develop new and exotic ways to computer model sedimentary systems and their relationship to sea level."

Andrew W. Kendrick (BA '86) comments, "Married Patty McGough on November 13, 1993. Completing MS in Geology at University of Pittsburgh."

Edward R. Kennedy Jr. (BS '48, MA '49) is enjoying semi-retirement as a con-

sulting geologist in Midland.

Robert F. (Bob) Kent (BS '52) is retired in Bullard, Texas.

George L. Keprta (BS '52) writes, "After living in Houston for 35 years we moved to East Bernard, Texas and are enjoying peace and quiet and clean air of the country. Still traveling over the world. Last year we visited New Brunswick and Nova Scotia. This year we plan to visit Europe."

Don Kerr (BS '60) is president of Kerr Construction Services in Houston.

Marcus M. Key Jr. (BS '83) contributes, "Since receiving my PhD from Yale in 1988 in paleontology, I received tenure at Dickinson College and my wife (UT '83) and I are expecting our third child." Marcus is associate professor of geology at Dickinson in Carlisle, Pennsylvania.

Howard W. Kiatta (BS '58) writes, "I continue to

originate and put together exploratory prospects in the upper Texas Gulf Coast and trying to figure out how an independent can use the latest technologies." Howard is an independent geologist in Houston.

Jerry S. Kier (att: '68-72) is a senior project coordinator for Core Laboratories in Carrollton, Texas. "I recently joined Core Labs after spending two years in Tulsa with K & A Energy Consultants. I'm working on sedimentology and petrography projects from domestic and international areas."

Robert J. Killian (BS '77) is a geologist/partner with The Gulf Tide Oil Company in Houston.

David L. Kirchner (BS '73) writes, "I am enjoying life in Arizona with my geologist wife, Kathy, and our two sons, Kory (3) and Kody (1). Our company, Basin and Range Hydrogeologists, Inc., is successful and thriving. The environmental regulations are driving our consulting business, and it is doubtful that the regulations will go away any time soon. To all my long lost friends: please come by for a visit before the next advancement of glacial ice!" David lives in Phoenix.

Thomas M. Kirkpatrick (BS '84) is project computer geologist for Exxon in Houston. "Successfully defended my MS thesis in geology at University of Houston just in time to begin preparing for our second child due in June. Wife Stacy and son Evan are looking forward to having daddy around the house more now that this monstrous project is completed."

Edwin K. Krause (BS '49, MA '54) contributes, "Took four granddaughters (9-14) on their first cruise. Started a Mayan Cruise 1-1-94 (same day the Mayas started their revolution, had Mayan pilots in Guatemala—haven't lost my timing!) Honduras was country number 103 for me. Booked cruise number 20 for August 1994." Edwin is retired in Houston.

Edward J. Krish (BS '71) writes, "Things are fine in Okie-land. Judy and I have been here in Oklahoma City for three years now. I'm still employed as a minerals geologist (20 years with Kerr McGee) exploring for heavy mineral sands in the U.S. and Australia. By the time you read this I will have returned from a one month stint in Australia and New Zealand. Last year I went to Russia twice; the Russian I took in school finally came in handy. Son Robert, now 24, is a chemical engineer for 3M in Missouri." Edward is a senior minerals geologist for Kerr McGee Corp.

Julie Kupecz (PhD '89) is a research geologist for Arco in Plano, Texas. "Matthew is now two, and Lauren is four! Jeff finally returned after nine months in Saudi Arabia—are we ever happy to see him!"

J. Scott Kuykendall (BA '75) contributes, "I'm happy to say I'm now living and working in the Hill Country. After seventeen years in Houston, the change of scenery is appreciated. Still pursuing an environmental career." Scott is a project geologist for PSI, Inc. in San Antonio.

— L —

Ted B. LaCaff Jr. (BS '50) writes, "Skiing all winter, fly fishing all summer, tennis in spring and fall. Lots of R&R in between. Ain't the oil business great or what?" Ted lives in Santa Fe, New Mexico.

Laurel J. Lacher (BS '87) is a doctoral student at the University of Arizona in Tucson. "Currently pursuing doctorate in hydrology. My study area is the only perennial river in Tucson,

the sewage-effluent dominated reach of the Santa Cruz. Worked at Sandia National Lab last summer and expect to be in Albuquerque for short periods this year."

Mike Lamar (MA '90) is a second year medical student in Temple, Texas.

James L. Lamb Jr. (BS '56) reports from Austin, where he is an oil and gas producer.

Leon M. Lampert (BS '51, MA '53) writes, "Became an independent in June, 1993, and am working on drilling prospects in South Texas and Southeastern New Mexico. Our daughter, Gail, has two daughters in Dallas; Wayne is in Oakland, California; and Ellen will be married in Denver in June, 1994." Leon lives in Corpus Christi.

Kristina Witt LaRue (BS '83) comments, "I'm still working for the TNRCC enforcing against hazardous waste violators." Kristina lives in Austin.

Barry W. Lassiter (BS '86) is a technology manager for ChemRex, Inc. in Shakopee, Minnesota. "Hello to Brad Aker, Dave Backus, Rick Neeley, Brad Wilkinson, Tom Davidson, Nancy and Leah and all others. Remember Sipapu Lodge!"

Robert K. Lattimore (BS '56, MA '62) is an operations geophysicist for Chevron Overseas Petroleum in San Ramon, California.

Thomas B. and Rosa L. Layman (MA '87; BS '85) live in Midland. Tom is a geologist for Exxon and says, "Rosie, Bruce and I are doing well. We are expecting our second child in September."

Bill J. Layton (BS '81) writes, "Generating, screening and selling oil and gas prospects for Burk Royalty Company. Wife, Vicki and three children Joe, Jessica, and Jordan are all doing well. Unfortunately, oldest son Joe (14) is already taller than me. Special hello to Boomer Holland, Brose, All Phantom Riders, Sipapu Youth Gang, Mr. Lancaster, Mr. Compton and Mr. Lanfere, of Geo 660, 1980." Bill lives in San Antonio.

H. Louis Lee (BS '54, MA '58) reports from Austin, "Having a great time working with Pete Rose, et. al. on the GCAGS convention here in Austin in October as exhibits chairman. Lots of work, lots of fun, lots of good people to work with."

Joseph W. Lee (BS '49) says, "No changes other than retirement." Joseph lives in Richardson, Texas.

Lee Leininger (MA '82) comments, "I'll do anything to remain in natural re-



Fall, 1943, field trip in GEO 40. Front row, from left: Ann Stanley, Barbara Hurley, Peggy Clark, Mary Holland, Jean Ott. Back row, from left: Anderson, Mr. Dirks, Adnan Chetin, Jackie Covo, Nolan Hirsch, Mrs. Applin, Lewis Banks. Photo submitted by Jackie Covo Campbell.

sources, even become a lawyer. I enjoy working for the Department of Justice, environment and natural resources division, as a trial attorney. Theresa is adjusting to life in Washington, D.C. and our new son, Ted, is babbling like a politician. My best to Vickey, Jon, Rick, Gene and Chris."

G. Warren Leve (MA '52) writes, "Sold my environmental firm to national company and am now concentrating on big game fishing and golf. Will be doing one last project overseas just to keep a little active in my field (hydrogeology)." He lives in Ponte Vedra Beach, Florida.

David M. Levin (BA '78) is owner of DML Exploration, Inc. in San Antonio. "Our two children keep us more busy than the oil business does, these days. Call us when you are in San Antonio."

Charles V. Liebscher (BS '46) writes, "My scheduled 1940 graduation was delayed due to illness (pneumonia) in 1940 and being drafted into the U.S. Army in 1941 at \$21.00 per month, minus \$8.00 for insurance and laundry. I made the military my career in 1943 to 1946. I served from Africa

to Germany. I hold a military service connected disability due to shrapnel wound in my right hand. I am almost 80 years." Charles lives in San Diego.

Walter S. Light Jr. (BS '77) is president and exploration geologist for Thunder Exploration, Inc. in Houston. "Working on several exciting projects—mega regional seismic line through Rio Grande Embayment tying South Texas and Mexico Cretaceous and Jurassic Trends and wells. Multi-prospects program for major reserves in Cretaceous and Jurassic RRCD 1. Projects in Wilcox and Frio RRCD 2. Several 3-D programs."

Tim Lignoul (BS '82) contributes, "I am continuing to work in environmental law for the city of Houston. My geology background gives me a unique understanding of how dynamic and interrelated our environment is." Tim is an assistant city attorney in Houston.

Russell Lilly (BS '53) is semi retired in Oklahoma City.

Tung-Hung Thomas Lin (M A '84) is a geophysicist for Marathon Oil Company in Houston.

Sandy Lindquist (MA '76) is a geologi-

cal associate for Amoco Production Company in Denver. She is "alive and flourishing, having thus far survived eight years of work-force reductions, reorganizations, down-sizing/rightsizing and corporate initiative programs. Am hoping to coerce Luigi Folk to write the story of my life as recorded in the concentric rings of my spectacular gallstone." Sandy donated the aforementioned gallstone to Folk for scientific study.

Alsie Linscomb (BS '51) writes, "Retired in 1988, now part-time consultant. Work occasionally with Norman E. Norris, class of 1950. Have three grown children and six grandchildren that keep me pretty busy. Would like more fishing time." Alsie lives in San Antonio.

Eugene Lipstate (BS '49) reports from Lafayette, "Retired two years ago, but keep an office just in case I may wish to do some work. So far I haven't had that desire. We will probably stay in Lafayette since our two children and four grandchildren all live here. It is fun watching the grandchildren grow and develop."

Nancy Green Lister (BA '55) writes, "All is well. All are fine. All are busy. Our last of three sons is a 1994 college graduate. Hooray! Best wishes to all." Nancy is a housewife in Houston.

E. R. Lochte Jr. (BS '56) is an independent petroleum geologist in San Antonio. "Spending considerable time at our hill country ranch tending our Herefords. Am somewhat encouraged about the higher gas prices in the industry. Still involved in several wells each year."

Allen C. Locklin (BS '54) writes, "June will be 40 years since UT and August 40 years for Nancy and me. Chris and Lisa Locklin gave us Alyson and Ross. Lee Ann and Scott Shaver gave us Lindsey, Claire and Macy. Nancy and I have Mollie, our Bassett and very often five grandchildren. We love it. World and oil biz gets sorrier and I should retire but don't feel that I can. I don't feel old but some old guy is shaving in my mirror. Enjoy the *Newsletter*. Keep up the good work." Allen is an independent petroleum geologist in Tyler.

John L. Loftis Jr. (BS '40) is retired in Houston.

E. William Longmire (BS '50) comments, "Not much to report when retired except your golf game. Have shot my age three times but unsure whether my game is better or just getting older. The best thing is it's still fun." Bill

lives in Carrollton.

Stephen E. Lovell (BS '82) is a senior geologist and office manager for Radian Corp. in Bellevue, Washington. "Enjoying the 'good life' in the Pacific Northwest. It is truly a geologist's paradise."

Paul D. Lundegard (PhD '85) writes, "With Unocal spending more on remediation than exploration, I have transferred from exploration research to environmental technology. The new challenges and opportunities have been rewarding. It is a lot like reservoir geology, at a very small scale." Paul lives in Fullerton, California.

Vance Lynch (BA '57) reports from Liberty Hill, Texas, "We are building a new home on a ten acre tract near Liberty Hill. I am going on safari to Africa in May and June 1994. Never a dull moment." Vance is retired from Unocal.

James Lyons (BS '71, MA '75) is a consultant in El Paso. "I expanded my consulting to South America this past year, and hope soon to get to fulfill the life long ambition to teach short courses for the mining industry."



Don Mahaffey (BS '59) writes from Durango, Colorado, "Life is good. Put together two very large Federal oil and gas units around wildcat prospects and turned to other larger operators in 1993. First in Wind River Basin in Wyoming, second in East Basin and Range Province, Nevada. Currently working up another in Paradox Basin, Colorado. Largest I have ever seen in Mother Nature's treasure trove. Self, wife, children all well. Best wishes to all of you." Don is an independent geologist.

Matthew Mahoney (BS '83) is a hydrogeologist in Austin who works for Southwestern Laboratories.

Bruno Maldonado (BS '82) reports from Cypress, Texas, "I'm at Diamond Geophysical and 'focusing' on sub-salt imaging. I spent the last two and a half years marketing geophysical services in Latin America. I hope to see some of you at the SEG convention in Los Angeles." Bruno is director of technical marketing for Diamond Geophysical.

Vaughn C. Maley (BA '26) is retired in Midland. "Retired in '64 after 38 years in the service of Humble, Standard, New Jersey, Exxon and now live in Midland. Started my geologic

work by mapping the aerial geology of Presidio, Brewster and adjacent counties in 1927-30, and still like to visit the Big Bend area."

Steven D. Mann (MA '82) says, "I'm still working at the Geological Survey of Alabama in Tuscaloosa, but two years ago I was moved away from research relating to oil and gas to the hydrogeology division. It seems grant money is easier to come by in this environmental field. Jennie and our four children are doing fine. Jennifer is at home taking care of the little rascals, but she may return to work soon. Jessica is twelve and making all A's and B's, and Elena is making all A's. Heather is six and going into 1st grade and Trevor is four and in pre-school. We moved to a larger house a year ago to accommodate our rapidly growing sprouts, but we still have trouble finding enough room for everything."

Bill Mantinband (BA '59) writes, "I'm in my 33rd year at Defense Mapping Agency in St. Louis. If you like what you're doing, why leave? We have three married sons living in Israel—just had our 12th grandchild (all in Israel). We also have a married son and daughter here in St. Louis. Edith is busy with volunteering. You never grow old if you keep busy." Bill is a cartographer.

Frank L. Manville (BS '55) lives in Brownsville, Texas. He writes, "I retired at the end of 1993 with 22 years of service with Cameron County engineers office. This past year I have been taking life easy and have no plans for future employment."

Barbara Marin (MA '93) is a geologist/petrologist for TerraTek, Inc. in Salt Lake City.

Sabin W. Marshall (BS '52) is retired in Houston. "Last son graduated in May with Masters from North Texas University. Mary and I plan a trip to New England this summer."

David Martens (BS '84) reports from Bangkok, "Transferred to Bangkok, Thailand with my wife, Autumn, and two children after nine years in Houston. Involved in developing natural gas reserves in the Gulf of Thailand." David works for Unocal Thailand.

Jeffrey Glenn Martin (BS '84) is president of PetroQuest Corporation in New Orleans. "Exploring for gas and oil in South Louisiana."

Paul R. Mayo (BS '50) is "very thankful for the health of myself and my loved ones. However, the current oil price



Evelyn Moody (BA '38, MA '40), consulting geologist in Houston, with her son, John, at Santa Fe Ski Basin in March, 1994. On the last day of the trip, Evelyn broke her leg on the slopes, but is now recovered.

makes me feel a little sick. But, faith and a few new faces in elected offices will surely effect a cure." Jeffrey is an independent geologist in Abilene.

Robert L. McBroom (BA '51) is a professor at Midwestern State University in Wichita Falls. "Teaching English, studying Spanish, living in Mexico this summer, wondering what I would do with some oil should I find it!"

William E. (Bill) McBroom (BS '40) is retired and living in Vernon, Texas. "Still enjoying traveling and seeing the geology of the world."

John C. McBryde (MA '79) contributes, "This independent venture continues to be a learning experience and a challenge. It's also fun. This past year I've worked on deals in Florida, Kentucky, all over Texas and Oklahoma, and one in Australia. Opportunities exceed working capital. We still like living here in Oklahoma City, but miss Austin and the Hill Country. Call or write." John is president of Mid-Continent Minerals, Inc.

A. Nelson McCarter Jr. (BS '84) is vice president of McCarter Energy and lives in Houston.

Thomas B. McCarthy (BS '79) is a technical coordinator for Gulf Coast business unit for Union Pacific Resources in Fort Worth.

Robert B. McCarthy (BS '50) is retired and living in Austin.

O. G. McClain (att. 1928-1930) writes, "I was born in Wilson County, Texas in 1911, a fifth generation Texan, a son of the Republic of Texas and proud of it. After 50 years in the oil patch, I retired in 1980. All of my work was done on land along the Texas Gulf Coast. This included drilling, production, scouting, geology and operating. After 1946 I was a consultant/independent in Corpus Christi. These were glorious years with opportunities and challenges in super abundance. At age 83 now, I rest content." He lives in Houston.

Matt Louis McCullough (MA '90) is a geologist for Marathon Oil Company in Anchorage, Alaska.

Katie Joe McDonough (BS '80) reports from Golden, Colorado,

"Worked for Exxon in Denver 1981-1986, used early retirement package to travel Europe, India, Nepal through 1987. MS in geology from Colorado School of Mines in 1989. Spent one year in France consulting in sequence stratigraphy for Elf Aquitaine. Will complete PhD this year, 'Sequence stratigraphy (seismic scale) and facies architecture of Vecors Plateau, SE France.' Married 1989, kids Stephen (2 1/2), 'unnamed' due June 26."

C. Carew McFall (BS '50, MA '52) is a consulting geologist/mineral exploration independent in Los Altos Hills, California. "Am grateful for my wife, her daughter, our son-in-law, two wonderful grandsons and our life in this wonderful country."

Edward McFarlan Jr. (MA '48), geological consultant in Houston, reports: "Useful geologic studies at UT, Rice, and LSU and significant advances in 3-D seismic surveys and computer technologies make consulting geology a real challenge offshore Louisiana and Texas. As 1995 SEPM technical program chairman for our '95

AAPG meeting in Houston, my co-chairs and I are 'rounding up' the best presentations for all to see and hear."

John A. McGinley (BS '48) writes, "This last year has been tough since losing Gloria in April of '93. However, with the help of three children and five grandchildren, I am gradually making the adjustment." John is retired and living in Oklahoma City.

Bill J. McGrew (BS '54, MA '55) is "still surviving" as a consultant in Mena, Arkansas.

Wayne Eugene McIntosh (BS '56) writes, "Hazel and I still home-basing in Rockwall when we are not traveling, doing consulting work and visiting grandkids from coast to coast. We now have a 5th wheel trailer so we don't wear out our welcome when we visit friends and relatives. Would enjoy visiting friends, if invited; have a long extension cord—all we need is a plug-in. Enjoy the *Newsletter* though it's getting harder each year to find old classmates." Wayne is a consulting engineering geologist.

W. N. (Mac) McKinney Jr. (BS '60, MA '63) is a senior staff geologist for Sonat Exploration. "I've been in OK City for three and a half years now. Still drilling wells in the deep Anadarko Basin of the Texas Panhandle. I hope to see some of the old gang at the AAPG Convention in Denver this year."

Mike McLeod (BS '86) is an associate geologist in Sacramento, California. "I'm in the Davis phonebook, not Sacramento. I'm pleased that two more Longhorns have moved out this way. We need some more so y'all come out and bring some barbeque."

Jerald E. McQueen (BS '61, MA '63) is vice president of Medallion Oil Company in Houston and lives in Kingwood.

A.D. McRae (BS '42) is retired and lives in Horseshoe Bay. "Healthy and enjoying life in the Texas Hill Country."

Joe N. Meadows (BA '62) is an attorney in Waco. "Son Mark is a sophomore at UT and loves every minute."

John A. Means (MA '47) writes, "Would like to hear from the 1946 summer field trip people: Thurman Clements, Chuck Forney, E.B. Knott, etc. for a reunion at Al Candela's bar in Galveston, with Dr. Gus Eifler giving the first toast." John is retired and living in Richardson, Texas.

Charles E. Mear (BA '51, MA '53) writes, "Retired February 1993 from Cross Timbers Oil Co. as senior vice president of geology. Am now re-

search fellow at Texas Archeological Research Lab, University of Texas, providing support to the archaeologists. Published two articles during 1993-1994 on petroleum geology of Hunton Reservoirs in Major County, Oklahoma." Charles lives in Austin.

Robert D. Mebane (BS '36) is retired and says, "I am eighty years young this year, but have about outlived my oil reserves." He lives in San Antonio.

James Medford (BS '85) is a software engineer for Northrup Corporation in Lakewood, California. "Obtained Masters of Science in computer sciences, June 1993, from California State University, Fullerton."

William J. Meek (BS '55) writes, "The insurance business is still exciting and full of change. My son, Byron, runs the property and casualty side while I concentrate on retirement and estate planning. I recently attained professional designation of LUTCF with NASO licensing next. Spent last June in Grand Cayman B.W.I.—a paradise for fishing, scuba and just plain relaxing. More next year." Bill is president of W. J. Meek Insurance Agency, Inc. and lives in Hurst, Texas.

Peter Megaw (BA '76, MA '79) is president of IMDEX, Inc. and lives in Tucson, Arizona. "Mexico exploration continues to expand—we're even doing jobs in the jungles of Chiapas under the noses of the Zapatistas. Allison and I had a baby girl this year, my first, Lauren Ann who joined the gem and mineral society at the tender age of three days! Drop a line if you're coming through Tucson!"

Charles M. Merrill (BS '56) is retired and living in Austin. "Enjoying retirement immensely, especially with the grandkids. Still enjoy 'talking shop' with brother-in-law, Hank Ford (BS '56) who's still operating as an independent in New Braunfels. Hang in there, fella!"

Mario L. Messina (BS '59, MA '62) writes, "Wife, Jenni, has expanded her second restaurant, Messina's Restaurant and Culinary Center. Her other restaurant, Jennivine, is eighteen years old and was voted most romantic in Dallas." Mario is CEO and president of Messina Inc. in Dallas.

Anne Smith Miller (BA '83) works for the Texas Natural Resource Conservation Commission in Austin and reports, "Although we were waiting on Paula Wright Sessions to go first, we finally took the plunge and are expecting a pebble puppy in July '94."

Daniel N. Miller Jr. (Ph.D. '55) says,

"Recipient of AIPG 1994 Martin Van Couvering Memorial Award for service to the Institute. Continue to lecture at university and college geology departments on career options in geology and exploration—the key to America's energy and mineral policies." Daniel is retired in Chapel Hill, North Carolina but is still active in professional affairs.

Mike Miller (BS '80) is a consultant for Tran-Seneca company in Austin. "Enjoying new job and new lifestyle—that of a millionaire playboy. Hard to juggle this with my responsibilities as father of twelve children. Ciao to all G.D.S."

R. Dick Miller (BS '51) is retired and living in Georgetown, Texas. "Country life is still great northwest of Georgetown. We also enjoy our birding group, traveling and golf."

Wayne Miller (MA '57) writes, "Everyone in the family is fine and have two of my children and our grandson (will be a junior in high school) still living in Midland. The last year turned out a little better for me in the oil business. Even got a couple of wells drilled and completed. Presently completing another well we just drilled last month. As long as the business is still enjoyable, I plan to stay active in it." Wayne is an independent consulting geologist.

J. Todd Mitchell (MA '87) is living in Houston and is president of Dolomite Resources, Inc. "Dolomite Resources has been busy doing natural gas exploration on the Texas Gulf Coast and North Texas. We were also founding partners in starting a company that writes commercial software for seismic analysis (in keeping with the 'dolomite' theme, the company is called The Discovery Bay Company). Having fun with the new technology. Married a pilot. Life's good."

NOTES FROM THE ALUMNI

James R. (Jim Bob) Moffett (BS '61) is chairman and CEO of Freeport-McMoRan Inc. in New Orleans. "UT and Freeport-McMoRan continue to unravel the geology of Irian Jaya, Indonesia. We're proud of work the professors and grad students are doing."

Victoria King Montgomery (BS '89) writes, "Worked for Radian in Austin my first year out of school and

have been with the Texas Natural Resource Conservation Commission (Texas Water Commission) ever since. Member of Austin Geological Society and helping with the preparation for Gulf Coast Association of Geological Societies Convention to be held in the fall of '94."

Charles Gardley Moon (BS '40, MA '42, PhD '50) is retired from Exxon. "Still living in Houston; having been here for 28 years and being a packrat, I've collected lots of junk. Should have a super garage sale, but can't bring myself to part with the stuff—might find a use for it."

Francis W. Morgan (BA '39) is currently living in El Dorado, Kansas.

Michael Everett Moore (BS '80) is exploration manager for Esenjay Petroleum Corporation in Corpus Christi. "Married with two kids. I'm happy to say that our entire geologic staff are UT exes. I am ready for the 2nd SCUM reunion in Ciudad Acuna."

Terry L. Moore (BS '80) is a geophysical specialist for Phillips Petroleum in Houston. "Wife, Beverly (BA sociology '79) and I are increasing our involvement in Fort Bend ARC, Oyster Creek Industries and Area 22 Special Olympics. Daughter Jessica graduated from SWTSU with BA in hospital administration in August, 1993, and married Jason Judkins on March 5, 1994 and went to Cancun. (I have never been there.) Son Cyrus is adjusting to middle school and did well in the Area 22 Special Olympics track and field."

Henry M. Morris (BS '40) retired in 1980 and is living in Amarillo.

Michael B. Morris (BS '47) retired from the petroleum industry and is an investor in Houston.

Susan Morris (BS '70) is senior geological technician for Exxon Exploration Corporation in Houston.

Kevin Hemmant Morrison (BS '84) is manager of geology for Morrison-Knudsen Deutschland in Theissen, Germany. He resides in San Antonio.

Charles Motz (BS '60) lives in New Braunfels. "Retired in 1989, spend time at part-time work and traveling."

Harry W. Mueller, III (PhD '75) is senior reservoir geologist (special studies) for ADCO in United Arab Emirates. "I've been transferred to the Abu Dhabi Company for Onshore Oil Operations (ADCO) of which Exxon owns a small part. Since Jackie, James and Kristen and all the dogs will remain in the States (I'll go home for several weeks two or three

times a year), the address remains in Conroe. It's interesting being a bigger fish in a smaller pond for awhile, the carbonate geology is interesting, and the oil volumes are huge."

James G. Muncey (BS '81) writes, "Working hard at Prime trying to buy production. Drilled three South Texas Rodena wells in '93 in my 'spare time'. Learned a lot about rudistid reefs and seismic. Susan and I were blessed with a second daughter, Alexandra Ann, in March of '93. Hope all our friends are well!" James is a senior geologist/acquisition analyst for Prime Energy Corporation in Stamford, Connecticut.

Robert C. Murray (MA '85) contributes, "Donna and I have settled in Olympia, Washington where I am a senior geologist with SAIC working on environmental site investigations in Washington and Alaska. Just got back from a shallow seismic refraction survey on Kodiak Island and returning this month to drill and map sites at the Coast Guard base there. Plan to attend the GSA meeting in Seattle this fall and will be looking for familiar faces."

Steve Musick (BS '76) is a geologist for Texas Natural Resource Conservation Commission in Austin.

N

Seiichi Nagihara (PhD '92) is a post-graduate research geophysicist at Scripps Institution of Oceanography in La Jolla, California. "I have spent the last two years as a postdoc at Scripps. Starting January 1995, I will be teaching at University of Houston as visiting assistant professor. I am excited about the new job and moving back to Texas, but not about the hot and humid summer in Houston."

G. Allan Nelson (BS '47) lives in Englewood, Colorado and works as a consultant. "Charlie Worrell, when will we have the fourth reunion of the famous class of 1947? (It has been four years since the last one.)"

Ken Nemeth (MA '76) is a geologist for Browning Oil Company in Dallas and writes, "With a new president and an increase in technology use, drilling has picked up. First 3-D project was successful. I serve as employment committee chairman, DGS. Need resués, I've got some. I survived last summer's crushed thumb, so I took on knee surgery

in May; no more tennis exploits to recount."

Daniel J. Neuberger (MA '87) is an exploration geologist for Suemaur Exploration in Corpus Christi.

Paul Neumann (BS '87) writes, "Logging my life away in Ciudad Del Carmen, Mexico. Cancun is a hop, skip and a jump away. Y'all come down now." Paul is senior field engineer for Halliburton Energy Services and resides in La Canada, California.

Richard A. Nicholas (BS '68) contributes, "I continue as dean of students and chief of student affairs office for the University and enjoy each day. Daughter Laura is about to enter her senior year in high school." Richard is at the University of Evansville in Evansville, Indiana.

Paula Noble (PhD '93) is assistant professor at CSU Sacramento. "Paul and I bought a house three weeks ago *above* the flood plain and are putting in the sweat equity, sanding floors, etc. Hopefully, our home improvements will make it look better, not worse. Paul works for an environmental firm in the Sierra foothills and will do a site assessment of SugarBowl Ski Resort this summer. I'm keeping busy with my classes."

David Noe (MA '84) is a geologist for the Colorado Geological Survey in Denver and lives in Boulder. "Still working at the Colorado Geological Survey full-time and working on a PhD during my 'spare time.' Denise is finishing her first year of law school. We can't remember the last time we were bored! I'm looking forward to the AAPG convention in Denver and renewing decade-old friendships."

Isaac W. Norman (BS '48) is retired and living in Taylor, Texas.

Susan Stone Norman (BS '76) is a geological consultant in Duncanville. "Jon and I are busy with Jenna (9) and Lara (4), PTA, tennis for me and golf for Jon. Will we ever get higher oil prices?"

Wyatt (Wallstreet) Norman (BA '47) writes, "Enjoying life in the city by the sea. Have 18 things I have to do every afternoon. Golf that is. Not very good at it, but enjoying playing with a group of eight retired oil industry friends." Wyatt is retired in Corpus Christi.

J. Mark Null (BS '87) is a lieutenant in the U.S. Navy in Monterey, California. "Graduate student at the Naval Postgraduate School majoring in dynamic oceanography and meteorology. Will graduate in March '95."

O

Bob R. O'Brien (BS '52, MA '56) is professor of geography at San Diego State University. "Lazy summer—a little hiking in Colorado, a little climbing in Utah and Wyoming and I hope, a lot of writing."

John F. O'Donohoe (BS '50) is president and CEO of Coastline Exploration Inc. in Houston.

A. M. (Red) Olander (BS '48) is retired from Exxon and living in Austin. "After living in Houston for 27 years, Rose and I moved to Austin in late 1993. It's good to be back but needless to say, Austin has changed considerably since we left in 1948. This puts us much closer to our farm and lake place so we're looking forward to enjoying Austin again."

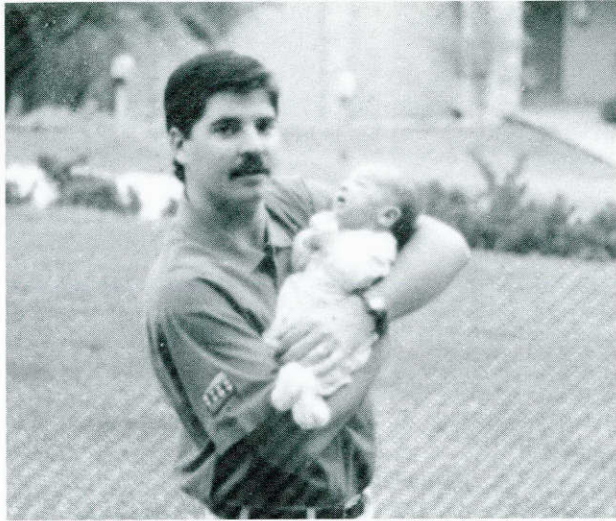
Bill Olsen (BS '78) comments, "The only thing my geology degree did was open the door to my Master's (MS, University of Houston) in environmental management. That has developed into a subspecialty in my naval career. I am involved in acquisition and contract management and have done extensive work in solving hazardous material problems for the Navy." Bill is a commander, U.S. Navy, in Surface Warfare, Naval Sea Systems Command, Washington, D.C. He lives in Springfield, Virginia.

John C. Osmond (BS '47) lives in Englewood, Colorado and is a consulting geologist in Denver. "AAPG annual convention in Denver should bring lots of classmates to town. The gas resources of the Rockies have re-emerged for activity and keeping me busy. Plus being president of host society for the convention, Rocky Mountain Association of Geologists. Good luck and good health to all."

Jeffrey D. Ottmann (BS '77) is an exploration geologist for Exxon Yemen Inc. in Houston. "Frequent trips to Europe and Middle East keep life interesting. Having a great time drilling wells and finding oil!"

Donald Eugene Owen (MA '51) writes, "Enjoying retirement, a new house, concentrating on geology, and three lovely granddaughters." Donald is retired as of December, 1993 and is professor emeritus of geology at Indiana State University at Terre Haute.

Kenneth I. Owens (BS '54) is retired and living in Austin. "We got a good education under Professors Ellison, Young, Wilson, Folk et al. I enjoy 'putting something back in to prime



Randy and Nicolas Remington in March, 1994.

the pump' by tutoring at the junior college level. It's like being a grandfather, I guess!"

Robert (Bob) M. Owens (BS '51) writes, "Still working on oil and gas prospects in South Texas and upper Gulf Coast." Bob is an independent geologist in Houston and lives in Cypress.

P

David Palmer (MA '81) is self employed in Tempe, Arizona.

Lisa Hawkins Paton (BS '85) writes, "Conoco just transferred us to McAllen. I'm staying home with our two daughters and loving it. McAllen is nice and the weather is fantastic."

A. B. Patterson (MA '41) is retired in Dallas.

J. F. Patterson Jr. (BS '52) is a consultant in Bellaire, Texas.

Joseph E. Patterson (MA '83) writes, "Still employed in earthquake country working heavy oil in the San Joaquin Valley. Fires, floods, riots and earthquakes keep life interesting." Joe is a staff production geologist for Mobil Oil Corporation in Bakersfield, California.

Jacob L. Patton (BA '32, MA '32) contributes, "I still work for the Saner Estate in Dallas." Jake lives in Tyler.

Bill R. Payne (BA '40, MA '41) comments, "There were three important things that happened to me in the last year. One was good, a second was both bad and good, and a third was all bad. First, I was able to go to Annapolis to witness my number one grandson's graduation and commission as ensign in the U.S. Navy. The second was having successful surgery

on my lower spine to fix some discs that were causing much pain. The third was a broken hip the surgeon can not repair because the bones in the area will not accept the usual hip replacement." Bill lives in Houston.

Jack L. Penick (BS '42) is president of Reserves Research Inc. in Houston. "Semi-retired. Traveling, playing golf and tennis. Smelling the roses."

George Petering (MA '74) owns Office Products Services in Anchorage.

Kim P. Peterson (BS '75) writes, "Appointed to the position of assistant district director, district 10, oil and gas division, Railroad Commission of Texas." Kim lives in Pampa, Texas.

Benjamin J. Petrussek (BA '42) comments, "Enjoying tenth year of retirement in Metairie, Louisiana. Celebrated 50th wedding Anniversary in April, 1993. Good health prevailing thus far. Staying preoccupied with photography hobby."

Robert W. Pettigrew (BS '52, MA '54) is enjoying retirement in Corpus Christi, and has taken up painting.

Deb Pfeiffer (MA '88) writes, "We are the proud parents of twins, Katherine Marie and Kristin Alexandra, born 4/26/94. The babies, mom, dad, and Lauren (2 1/2) are all fine." Deb is a senior geological engineer for Shell Offshore, Inc. in New Orleans.

Eduardo Pflucker (MA '45) contributes, "I used to work and represent Getty Oil Company in South America." Eduardo is retired in Lima, Peru.

George B. Pichel (BS '51) is "enjoying earthquake country. Oil geologists could help USGS—we have better data." He lives in Dana Point, California.

William R. (Bob) Pickens (BS '57, MA '59) writes, "In 1992, Mary Anne and I retired to a part of her family's original Texas land grant seven miles north of Columbus. We have thoroughly enjoyed the freedom of time and space available to us for pursuit of long suppressed outdoor interests; native plants, herb/vegetable garden, cattle, reclamation, county service geology. We invite old friends to stop by if their journeys pass this way."

James N. Piper (BA '88) is a research scientist for Applied Research Laboratories in Austin. "Well, back in school at the university. I'm hoping

to become the first individual to receive a masters degree in marine geology in the University Marine Science Department. Wish me luck!"

Gene T. Pisasale (MA '80) writes, "I am on my way to becoming a chartered financial analyst (CFA) and will likely join a large, independent money management firm as an analyst or portfolio manager within the next year. Wall Street is exciting and I may eventually specialize as an energy analyst." Gene works for Paine Webber in San Diego, California.

Gerald S. (Jerry) Pitts (BS '54) is president of Pitts Energy Company in Midland. "West Texas intermediate crude posted price was \$14.25/BBB yesterday. If only we had \$20.00/BBB again! Enjoy the Newsletter."

Mike Plamondon (MA '75) is director of training and services for GeoGraphix in Englewood, Colorado.

Nick Pollard (BS '84) writes, "Switched jobs in November to Sonat Exploration Company. Moved into Austin Chalk group drilling horizontal wells in Brookeland Field area. Need some partners in Louisiana, Texas Exes preferred!" Nick lives in Tyler.

Robert B. (Bob) Porter (MA '51) contributes, "Hangin' in there, in Midland, that is. Doing a little geology and a lot of reading and loafing. Turk is a full-time landman with RBP Land Company and Rob is busy running the whole business. Polly and I still summer in Ruidoso, fall in Austin, and visit kids and grandkids at every chance, from Oklahoma to San Antonio. (Mark is now outdoor sports editor for *San Antonio Express* and Roger is vice president of Alexander Energy, Inc. in Oklahoma City.) Nichole is junior straight A student at UT Austin and RA at Kinsolving. Hook 'em. Enjoying *Newsletter* and hearing about old classmates." Bob is a geologist for RBP Land Company in Midland.

**NOTES
FROM THE ALUMNI**

J. T. Portwood (BS '83) is vice president of Alpha Environmental Midcontinent, Inc. in Oklahoma City. "Married to Carol, for six years, two children: Colton (4) and Tyler (2). Expecting our third child winter 1994."

J. Dan Powell (PhD '61) stays busy with gas fields and precious metals in vari-

ous parts of the world, and with teaching trout biology and stream ecology, and guiding fly fishermen. "Still can't get Dorothy to quit working at bank in Aspen. When you pass this way, call, we're in the book." He is a consultant in Aspen, Colorado.

Joseph L. Pritchett (BA '46) is an independent geologist in Lafayette. "Still looking for prospects."

John L. Proctor (BA '50) writes, "In September 1993, I again toured the Alps. While there, friends insisted I attend the Oktoberfest. Without question, the Oktoberfest is a unique event. I participated in one rite: drink a liter of Munich beer and eat half a roasted chicken." John is retired in Richardson, Texas.

Victoria J. Pursell (MA '85) reports, "I have been working for Exxon since 1984, in New Orleans until July, 1992, and in Houston since then. I married David Katz in 1989 and we had our first child, Stephen Jeffrey, in February 1993. I'm enjoying working and being a mom, and seeing my old UT pals in Houston."

R

Diana Slagle Rader (BS '84) writes, "I've managed to stay in Austin all this time and still love it! I've married and have two stepsons. All is well." Diana is a principal geologist for Law Engineering in Austin.

Jack Ragsdale (BS '51) is self employed in San Antonio.

Walter K. Rainbolt Jr. (BA '57) reports from Lafayette, where he is president of Dynamic Exploration Inc.

Nathan Rakestraw (BS '80) is employed by CNG Producing Company in Bridgeport, West Virginia.

Clyde M. Rascoe (BS '49) writes, "Still hanging in there." Clyde is president of Merit Oil Company in San Angelo.

W. A. Ratcliff (BS '50) reports from Onalaska, Texas, "Still living in the piney woods of East Texas, trying to survive the fire ants, chinch bugs, moles and mosquitoes (are killer bees next?). Best regards to old friends."

Donald F. Reaser (PhD '74) is associate professor of geology at UT-Arlington. "Looking forward to retirement in a few years. Bette and I are busy planning a short trip to Hawaii this summer to take in the scenery and pay our respects to the volcanoes." Don lives in Waxahachie.

Scott C. Reeve (BS '70) is a senior staff geologist for Shell Oil in Houston.

"After 18 years working the domestic U.S. for Shell I've changed scenery and am looking at Indonesia."

Kevin Reid (BS '92) writes, "I am working on a project to determine erosion and runoff rules in a piñon-juniper woodlands. I will incorporate this research as part of my master's thesis." Kevin is a graduate research assistant at the Los Alamos National Laboratory in New Mexico.

William M. Reid (MA '65, PhD '72) says, "My son, Wallace Pratt Reid, has moved to Houston and is enjoying selling lots with Danny Signorelli, a classmate of his at Texas A&M. Jennifer Reid is a sophomore at Texas A&M majoring in journalism." Will is an exploration geologist in Austin.

Patrick S. Reiss (BS '89) writes, "I have been a restoration manager in Houston for Total Minerals Corporation for the past two years. Another French company has taken over and I have decided to leave the company and continue my MBA courses at Case Western Reserve University in Cleveland, Ohio. I will finish there after one year. I'll let you know what happens after that!"

Randy and Lisa Sparlin Remington (BA '92; BA '92) write, "Our new baby, Nicolas Warren, arrived on March 6, 1994. He weighed 8 lbs., 13oz., and was 21 1/2 inches long." Lisa is a research associate at the Bureau of Economic Geology and Randy is an engineering specialist at the Texas Natural Resource Conservation Commission in Austin.

Kirk Rexrode (BS '84) lives in San Diego, California.

James V. (Jim) Richards (BS '56) writes, "Working on the next big oil find this year (I hope). Celebrating my 60th birthday and retirement from the navy as a commander by having a party on the *U.S.S. Intrepid* (my old ship) in New York this summer. Will be rafting down the Grand Canyon with the Houston Geological Society in August." He is a consultant with Genesis Producing Company in Houston.

James W. Richards (BS '58) is self employed in St. Helena, California.

"We will make our first commercial wine this fall—Menlot. If we can't sell it we'll drink it—better than oil! I'm still trying to find a little oil though; I love the game too much to stop."

Gary D. Richter (BS '79) lives in Houston.

Wade C. Ridley (BS '53, MA '55) is president of Ridley Oil Corporation in Tyler. "Fortunately, I have business interests outside the oil business. It looks like it's over for independents."

Frank W. Rife Jr. (BS '50) writes, "Enjoying watching my two grandchildren grow up. Some oil and gas work in South Central Texas." Frank is retired in Irving, Texas.

John S. Rives (MA '74) contributes, "I left the oilpatch and high school mathematics behind in Lafayette and fled to Atlanta to work in the coal ash disposal and recycling business. I am working on mine reclamation in Pennsylvania; the rocks are fantastic, but the permits are endless!" John is an environmental engineer for KBK Enterprises.

Clem H. Roberts (BS '49) is semi-retired in Midland. "Because of wild (low side) fluctuations in oil and gas prices my work is mostly in the yard. I have access to an excellent geological library. If you need anything in West Texas or Southeast New Mexico, give me a call. A visit from old or new friends would be welcome."

Susan V. Roberts (BS '85) writes, "Returned to Austin four years ago to work in environmental consulting/hydrogeology. Never enough field ge-



From left, standing: Doug Bowling, Leslie Hay Jackson, Rimas Gaizutis at wedding of Cheryl Richards Skillman (seated). Photo submitted by Cheryl Skillman.

ology in environmental work!" Susan is a senior hydrogeologist for Engineering-Science Inc. in Austin.

Edwin C. Robinson (BS '50) is retired from Unocal and lives in Carlsbad, California. "Married to Edith for past 16 years. Have five girls and one boy (ages 25-40) plus eight grandchildren. Where did all the years go since graduation?"

Lowell T. Rogers (MA '60) reports from Austin, "Retired and enjoying every minute as I traveled from Alaska to South America."

Michael Rosen (PhD '89) writes, "I left Perth, Western Australia in October 1992. After a ten month stay at the Limnological Research Center at the University of Minnesota, I finally landed a permanent position in Taupo at the Institute of Geology and Nuclear Science in the groundwater program. I am enjoying New Zealand and my job immensely."

Lucy Owings Ross (BS '50) is president of Deltex Royalty Company, Inc. in Colorado Springs.

Robert B. Ross (BS '50) markets antiques and collectibles in New Ulm, Texas.

Rollins M. Roth (BS '58) is a production superintendent in Brackenridge, Texas.

John S. Runge (BS '50) writes, "I love doing geology." John is president of L. R. Company in Casper, Wyoming.

Jimmie N. Russell (BS '52, MA '54) contributes, "This past fall, I opted for 'the very small incentive' (terminology in article in the *Austin American Statesman* newspaper) for early retirement from the Texas Natural Resource Conservation Commission (formerly Texas Water Commission." Jimmie continues to live in Austin.

Carolyn Rutland (MA '85) is a senior project manager for Superior Environmental Corp. in Kalamazoo, Michigan. "Just after I wrote last year, I was overwhelmed with domestic disaster—leaky roof, broken water main in the basement, serious car problems, pneumonia. Later in the summer I sprained my ankle spectacularly. In September, I started a new job, which I like very much, and things finally started going well again. Maybe this year I'll get the yard fixed up."

S

Floyd Sabins (BS '52) reports from Fullerton, California, "In 1993 (after my

retirement) I received a chairman's award from the CEO of Chevron for my contributions to the exploration program. My company has been actively employing remote sensing for mineral exploration outside the U.S. More significantly, I landed and released a 23" rainbow in Alaska; a 75 pound tarpon in Costa Rica." Floyd is president of Remote Sensing Enterprises, Inc.

NOTES FROM THE ALUMNI

Philip K. Sampler (BS '51) is president of Sampler Oil & Gas, Inc. and resides in Richardson, Texas. "The oil business in Texas has gone to hell with no sign of recovery! So, next month (June) I leave for Kazakhstan to start operations for a Midland-based company, American Fluids International. I will be operations coordinator for their entire project. This will encompass seismic exploration, drilling, producing, and environmental cleanup. Later, we will even be constructing at least one refinery. The reason this is so exciting is this is a country where reserves are computed in billions of BBLs. Will let you know how things work out!"

Jack S. Sanders (BS '57) says, "Enjoying another beautiful Texas spring, and wish a joyous life to all." Jack resides in Dallas and is a geologist for the U.S. Department of Energy/EIA.

Ken Sands (BS '78) is a petroleum geologist in Tyler. "I consider myself lucky; I'm still able to make a living doing what I like most, petroleum geology."

Elsie C. Schiemenz (BA '43) is retired in Mobile, Alabama, and says, "Travel is one of my main interests. Next big trip is to Malauri and Madagascar."

Frank Schloeder (BS '78) reports from Tulsa, "Drilling up, reserves up, consulting up, getting into 3D with fabulous success. Saw Al Scott in Tulsa in May. Planning to attend AAPG alumni get together in Denver in June." Frank is president of Xavier Exploration.

Jack R. Schmid (BS '51) is presently living in Dallas and is managing director at Schmid & Associates.

George W. Schneider Jr. (BS '57) writes, "Enjoying semi-retirement in Metairie, Louisiana. Our spring Foundation meeting was a huge suc-

cess in conjunction with Dr. Boyer's dinner!"

Louis I. Schneider Jr. (BS '61) lives in Houston. He says, "Now working for Edison Chouest Offshore as vice president of geophysical operations. Recently completed chairman of International Association of Geophysical Contractors (IAGC)."

Tom Schneider (BS '50, MA '51) reports from Midland, "Finally had a grandson. Still plugging along and trying to slow down some on operations and prospect more." Tom is an independent geologist in Midland.

Paul E. Schnurr (MA '55) reports from Concord, California. "Doing some property evaluation; otherwise retired, traveling and enjoying time with family. Have grandchildren."

John T. (Ted) Schulenberg (MA '58) is a technical advisor for Korea Petroleum Development Corporation in Ho Chi Minh City, Vietnam. "I came to Vietnam last year as a follow-on to some work I had done here with the Koreans several years ago. I'm sure that some of you have also lived here at one time or another; although perhaps under less favorable circumstances than I enjoy. Until the arrival of Mobil last month, I was, I believe, the only Texan in the local oil patch. Unfortunately, despite an increase in the export population, that patch appears to be shrinking. Janet does not live here, but makes welcome visits whenever possible. Our three kids are all still in or associated with school. That's nothing new. At least one has been in college for each of the past 22 years. I'm not sure whether they're always learning or they never learn. Drop in for a visit sometime. The year-round climate is like summer in Houston so you'll feel right at home."

Frederick E. Schultz (BS '47) contributes from Ojai, California, "Working on an HO gage RR layout and have taken up golf. My wife, Lois, has formed a production company and is writing and recording children's songs and stories."

Rubin A. Schultz Jr. (BS '61) "Time flies! This August I will complete 30 years with the Texas Department of Transportation. Family is well and growing. Nancy and I are enjoying the grandchildren. We are also planning our tenth trip to Maui, Hawaii this summer." Ruben is assistant district maintenance manager for the Texas Department of Transportation in Corpus Christi.

John T. Schulz Jr. (BS '57) lives in Port-

land, Texas and is an independent consulting geologist in Corpus Christi. "Another year of sharpening survival skills, i.e. generating prospects that will sell in a limited market. A challenge, quite unlike any in the past."

Eugene P. Scott (BS '56) is a consulting petroleum geologist in Corpus Christi. He continues to be involved in a ten-year disagreement with Exxon Corporation regarding royalties for the Exxon-Lichtenberger mineral fee 797.9 acre section, Seven Sisters East Field, Duval County, Texas.

John E. Seale Jr. (BS '41) is retired and says he is taking it easy and doing a little consulting. He lives in Houston.

Kenneth O. Seewald (att: '61) writes, "Mary and I enjoyed seeing many friends at the national AAPG in Denver. We look forward to a great reunion in Austin at the GCAGS this fall. We're still trying to turn Seewald Energy into another Exxon but right now would settle for one year of profitability." Kenneth is owner of Seewald Energy in San Antonio.

Charles R. Sewell (MA '55) is owner of Sewell Mineral Exploration and resides in Tucson. "Still following Marco Polo along the "Old Silk

Route (principally Kazakhstan and nearby CIS countries) It seems that if we want to explore for raw materials our government has been forcing trained people and exploration funds to do their thing ex-U.S.A. Sad! But those with a lack of foresight prevail today!"

John S. Shambaugh (BS '49, MA '51) writes, "We are enjoying our fourth year back in Corpus Christi. All is well. Best wishes to friends from UT." John is retired.

Stephen L. Shaw (BS '71, MA '74) says, "I enjoyed seeing old faculty friends and making new ones while recruiting at UT last year. Nancy is chairman of health sciences division at Midland College, and we have two kids in college. Katie is a junior at UT majoring in geology and Will is a freshman at Texas A&M majoring in animal science." Steve is a regional geologist with Meridian Oil in Midland.

F. Carlton Sheffield (BS '63) is an exploration consultant for Newfield Exploration Company and lives in The Woodlands. "Consolidated Newfield's offices in Houston in 1991. The start-up period had its ups and downs but the company is coming together well now. Newfield's pres-

ence as a significant exploration and production company in the Gulf of Mexico is well on its way."

Jerry and Gay Shelby (BS '57; BA '57) are retired in Amarillo. "We're enjoying life. Hope you are, too!"

Steve Shelburne (BS '85) is "having fun in El Paso del Norte. Kim is traveling to Italy this year to sing. When not working I am racing mountain bikes and playing racquetball. This summer I have a trip planned in Wyoming to climb Gannett Peak. If anyone else has scaled this Alpine peak, I would surely like to hear from them." Steve lives in El Paso and is a branch claims supervisor.

William K. Sheldon (BA '48, MA '49) is retired in San Antonio. "Sara and I are both doing volunteer work as trail guides at Cibolo Nature Trails in Boerne and loving it (most of it). Working with kids 6-12 years can be a strain on my antiquity."

William T. (Bill) Sherman (BS '51) is "still involved in showing prospects and representing some companies. Looking forward to World Oilman's Tennis Tournament in Houston—18th year, 350 attending." Bill is a consultant in Houston.

George H. Sherrill (BS '50) is an independent geologist in San Angelo, Texas. "How do you stop? Still enjoying working, traveling. Three kids and five grandchildren. My best to all the guys and gals along the way."

Kimberly Owens Shield (BS '82) lives in Georgetown and works as a rancher and mom. "Married Alan Shield (BS 1960). Drilled a lot of wells in Texas and Oklahoma. Got frustrated with the oil business and sold all our wells and went into the ostrich and emu business. Became a mom in 1993. Best job of all!"

Mark Shield (BS '88) works for Landmark Graphics, Inc. as CAEX support and testing geoscientist. He says, "Responsible for testing and quality control of Landmark's mapping products including ZMapplus 2.1 running under Open Works." Mark lives in Austin.

Charles J. Sicking (PhD '80) lives in Plano, Texas and is a research geophysicist for ARCO.

Samuel J. Sims (MA '57) writes, "I'm still keeping amazingly busy doing consulting work, mainly for the commercial and chemical stone industry in Southeastern Pennsylvania." He is a consulting geologist in Bethlehem.

David W. Sipperly (MA '67) is living in Greenfield Center, New York and is



Perry Shaw and Earl Sebring at Rattlesnake Gulch while on GEO 660 in June, 1976. Photo submitted by Russell W. Jackson.

a partner at Sipperly & Cabot. "Sipperly & Cabot is active in the oil and gas exploration business. The Adirondack Gas Consortium represents institutional consumers of natural gas located in New York and New England. Business is stable."

Cheryl Richards Skillman (BS '89) writes, "Got married in April 1994 to Bill Skillman—a geo-guy from Boston, then honeymooned in Ireland looking for Irish rocks. Still work for Western Geophysical in Houston. Geo 660 1989 classmates Doug Bowling, pregnant Leslie Hay Jackson and Rimas Gaizutis made it to the wedding."

William P. Slater (BA '50) is "still generating prospects (for sale) in West Texas and Southeast New Mexico." William is an independent geologist in Canyon Lake, Texas.

Marriott Wieckhoff Smart (BS '57) is a consultant research librarian and lives in Littleton, Colorado. "My research business is almost three years old and surviving. One doesn't get wealthy in a very small business but it is hard to beat the perks: flexibility, control, and satisfaction."

Tommy T. Smiley (BS '51) is "enjoying retirement and looking forward to the Horns in the Big Whatever!" Tommy is retired in San Antonio.

A. Richard Smith (BS '64) is a senior hydrogeologist for EMCON Baker-Shiflett in Fort Worth. "Ann and I moved to Fort Worth, ostensibly for a better job in environmental consulting, but really to get closer to retiring west of there: ten acres and a horse!"

Bruce Dixie Smith (BS '58) writes, "I am still practicing admiralty and maritime law in Houston. Maria and I travel as much as possible." Bruce is a partner with Fulbright & Jaworski in Houston.

Daniel L. Smith (BS '58) is an independent consultant in Houston. "I continue to do 3D seismic programs and drill wells onshore, South Louisiana. My three year term as a national board member of the Society of Professional Earth Scientists (SIPES) is over and was very enjoyable. I am still very active in the Houston Geological Society and GCAGS."

Glenn C. Smith (BS '53) writes, "After many years in Edmond, Oklahoma, Betsy and I have returned to Texas. We are busily restoring an old house in my hometown of Electra which naturally has proven to be more costly and time consuming than projected. I am continuing my artist ca-



Denver Exes Host UT Alumni at AAPG



ON JUNE 13, 1994, a group of Denver-area UT exes treated alumni at AAPG to a fine alumni party at the Marriott Hotel.

Approximately 120 people attended the party, organized by Mary Beth Cooper (MA '69) from Denver. Mary Beth enlisted the support of several additional UT exes, who provided funds for the delicious appetizers served at the gathering.

Special thanks for their contributions go to:

Mary Beth Cooper
(Excalibur Geophysical Consultants)
Robbie Gries
Melody Holm and Stan Cadwell
Robert and Linda Lentz
Don Lundy
Lon and Ann McCarley
(BETR Resources Ltd.)
David and Denise Noe
Thomas and Nancy M. Reed
Lucy O. Ross
Marriott Smart
Linda K. Soar





From left, Mr. Li Jian, Mr. Huang Sen-Ming, and Kelley Smoot on location in Hunan Province, People's Republic of China.

Kelley Smoot (BS '82) writes, "It's been an exciting two years since I left Texas to establish Straits Energy Consultants in Singapore. The new career challenges have been rewarding, starting with Mandarin lessons and continuing on to be the geologist on the first on-shore well to be drilled in mainland China by a foreign operator. I've also had fun being the program chairman for the Southeast Asia Petroleum Exploration Society and hosting Bill and Sally Muehlberger. Bill generously donated his time while here on a retirement cruise to give a talk about transform faults. It was one of our most popular talks; the members loved Bill's NASA space shots!

The year ahead promises to be a time of both intellectual and career growth, much of which I owe to the firm foundation I received at UT. If any UT-exes are in town, please look me up. I'm the only Smoot in the Singapore phone book!"

Edmund D. Sneed (MA '55) is retired from Marathon Oil in Houston.

Howard Speer (BS '56) reports from Dallas, "All the kids are out of college. I am looking forward to retiring in a few years." He is first vice president of Dean Witter Reynolds.

Stephen W. Speer (MA '83) is an independent in Roswell, New Mexico. He writes, "Three + years as an independent and still going! God has blessed my work this past year and my family also. Utilizing 3D seismic to delineate Devonian bumps in Southeast New Mexico and Theresa is homeschooling our three kids (quite successfully I might add!). Life is good and bountiful when the priorities are straight! Hello to the Dirty Dozen!"

Fred Spindle (BS '44) says he is retired or "benched" and living in Sugar Land, Texas. "I'm still fighting to keep my chest measurement larger than that of my waist. Betty still engages in near hand-to-hand combat over bridge tables. I read the *O&G Journal* every week to keep my bile level high about the government energy policies and watch old cowboy movies with the sound off to get glimpses of the geology in the back-

ground. Tremendous intellectual effort being expended here?"

Anna Marie Stanley (BA '44) writes, "Believe it or not, I am still continuing the never-ending search for the elusive hydrocarbons. The computers can't compete with the geological brain. They are good for storing data however. Oil is found in the minds of men—and women!" Anna Marie is vice president of Miles Production Company in Dallas.

Walter Stein (BS '52, MA '52) is an independent oil producer in Dallas and reports, "Still actively searching for oil on the Muenster Arch."

Burgess Stengl (BS '85) is a geologist for Texas Natural Resource Conservation Commission in Austin. "I'm still with TNRCC, going on five years now. I transferred from the groundwater section into municipal solid waste permits. Instead of sewage treatment plants, I now deal with landfills. I'm still debating which is better! Things are great here in Austin. Our oldest daughter (Shara) starts high school, and Susan starts second grade. I'm looking forward to seeing some UT grads at the October GCAGS convention in Austin."

Sheree L. Stewart (BA '84) is a senior hydrogeologist with Oregon Department of Environmental Quality and lives in Portland. She says, "Still loving the Pacific Northwest and 'associated outdoor play-land.' Great ski season this past year has led directly into a great golf season—as often as I can. Work is going very well as there are never-ending supplies of hazardous waste sites to be challenged on. Norm Read (BA '84) joined our clean-up group this year!"

Mike Stinson (BS '83) "I have started a farm in East Texas. We are attempting to breed a low-fat, low-cholesterol pig by using genetic engineering. We are breeding chickens with hogs. Success has eluded us because every time one of the things hatches, some local hunter goes and shoots it down and has it mounted on his wall." Mike lives in Kingwood.

William T. Stokes (BS '50) continues to live in Dallas. "This past year, Fifi and I made a number of trips to Austin for UT activities. Our son, Brad, works as a geologist for Jones and Neuse in Austin. Our other son, Bill, is with Bridge Oil in Dallas. We are still active with the Geology Foundation and thinking of becoming more active in the oil business. It was really great to see UT classmates Jack

reer and managing Electra Exploration Corporation."

Harry L. Smith (BS '51, MA '56) is self employed on Deer Crest Ranch in Boerne, Texas. "Will play golf with anyone, anywhere, any time."

J. T. Smith (BS '50, MA '55) contributes, "It has been 48 years since I got out of the Marine Corps and enrolled in The University of Texas as a geology major. As I look back over my life as an undergraduate and graduate student, petroleum geologist, and exploration manager, I recall many fond memories through the euphoria of boom times and the challenge of bust times. It was a fulfilling and rewarding life...every day of it. I hope the geology students now at UT realize the same fulfillment that I have had." He is retired from Sun Company and lives in Fredericksburg.

Paul K. Smith (BS '84) lives in Austin and is an exercise physiologist with St. David's Health and Fitness Center. "Working with Phase I and Phase II cardiac rehabilitation patients."

Greg Smithhart (BA '91) comments, "It's been nearly a year since I left Western Geophysical. I am a graduate student at Southwest Texas State University concentrating in physical geography and GIS. I hope to work in Austin while I attend school in San Marcos. I hope all is well with the friends I knew at UT."

Frederick C. Smyth (BS '47) is retired and living in Dallas.

Frizzell and Ben Donegan at an AAPG Southwest section meeting in Ruidosa. Bob Boyer was there also."

Winston L. (Skip) Stokes (BS '57) is an independent landman in The Woodlands, Texas. "Will retire in 1994 after a good life in the petroleum industry. Kathryn and I plan to travel and visit some 'old' friends. We are expecting our number two grandchild this year."

Robert E. Stowers II (BA '86) writes from Spring, Texas, "Everybody doing great. Kids growing like weeds. T-ball, soccer, skating, etc. Keeps Lisa and me busy to say the least. Larry, keep in touch." Robert is a project manager—environmental in Houston.

Michael W. Strickler (BS '78) is senior vice president of exploration at Hardy Oil & Gas U.S.A. Inc. in Houston.

Judy Jacobson Stringer (BS '78) is a homemaker/home school teacher and says hi to Sara, Jeff and David. Judy lives in Oklahoma City.

Carroll E. Stroman (BS '58), a social worker for Stroman Associates in Sweetwater, Texas, writes, "Continued involvement as a private provider of residential and vocational services to adults with developmental disabilities—will complete the development of a horticultural therapy program this year."

Paul D. Suddath (BS '76) is an independent geologist living in Abilene.

George B. Sutherland (BS '84) is a sales engineer for Schlumberger-Anadrill and is living in Slidell, Louisiana.

Leonard Svajda (BS '40) says he "did poorly drilling for gas and oil—haven't done any better drilling on teeth. Tried to borrow some green from Ben Petrusek, W. E. Belt, and brother Jerome Svajda—all from our hometown of Wallis, Texas. You'd swear I'm HIV positive the way they have been avoiding me. Does any other Texas town of 890 people have four UT geologists?" Len is a retired dentist living in Corpus Christi.

NOTES FROM THE ALUMNI

Tom Swartz (BS '86) is department manager for Law Environmental and living in Houston. He says, "My family and I will be embarking on a new adventure this May when we transfer to Law's overseas company, Gibb

Environmental, in Reading, England. I will work primarily on soil and groundwater remediation projects in Central and Eastern Europe."

Tom and Cindy Swinbank (BS '71; BS '71) live in Georgetown, Texas where Tom is a consulting geologist. Cindy is a physics/physical sciences teacher at Georgetown High School. "Our oldest son, Chris, is finishing at Sul Ross with a BS in geology. Number two son, Sam, just finished his freshman year at UT in mechanical engineering."



Lindsay L. Tade (BS '72) writes, "Lilian and I are enjoying living in Tyler with our three children, Lilly (12), Lorene (10) and Ryan (7). Generating prospects in Southeast Texas." Lindsay is a senior geologist with Lake Ronel Oil Company.

Mehmet C. Tanis (MA '93) is a science research associate at the Institute for Geophysics in Austin.

Jim Tartt (BS '48) comments, "Enjoying retirement and very thankful for that blessing. Thanks for the *Newsletter*." Jim lives in Houston.

Peter R. Tauvers (PhD '88) says, "Will be in Latvia for the third time in two years this summer to see family and my significant other, Gunta. Still doing the urban thing living in the warehouse district, walking to work, close to the Quarter. I sure miss Austin, and just visited Chuck Stone there." Peter is an exploration geologist for Shell Offshore Inc. in New Orleans.

J. L. Taylor Jr. (BS '59) is an international business consultant in Houston. "Enjoy international business and travel along with grandchildren."

John Tenison (MA '89) writes, "After three somewhat uncertain years with an environmental consulting company here in San Antonio, I am now happily employed in Diamond Shamrock's new retail environmental services department. Doing the same kind of work, but enjoying it a lot more. It sure is interesting how everything has turned out for this former micropaleontologist!"

C. B. (Tim) Thames Jr. (BS '54, MA '57) reports from Hearne, Texas, "Things are quiet here. Personal life well-settled. Would like to spend some time in the Llano area if I could find some of the old fault-finders road logs and field trip guidebooks. Help appreciated."

Billy D. Thomas (BS '49) is retired in Austin. "Recently visited the Air Force Museum in Dayton, Ohio. A fantastic experience for an old pilot."

George L. Thomas (MA '60) lives in Weatherford, Texas.

G. Mac Thompson (BS '60) is a petroleum geologist in Houston. "Live in Austin, work in Houston. Not a bad combination."

T. J. Thompson (BS '57) reports from Rockwall, Texas where he is the owner of Toro Exploration Company. "Best regards to all. Keep up the good work!"

Jerry T. Thornhill (BS '60) is a hydrogeologist for the USEPA in Ada, Oklahoma.

Tom Tinney (BS '81) writes, "Continue to live in Midland, working for OXY USA Inc. I have worked for the company 14 years now and feel fortunate to have survived this many layoffs! I am married to a wonderful woman named Liz and have two boys, Jordan (4) and Travis (2)."

William E. Tipton (BS '49, MA '51) writes, "Julie and I have lived the past 14 years overlooking the fantastic San Juan Mountains—truly heaven on earth! Hard rock geology up here is great fun. I spend most of my time at the easel and Julie sells what I paint!" Bill is retired in Ridge Way, Colorado.

Elsworth (El) Tonn (BS '55) is president and CEO of Kamel Corporation in Houston.

Michelle Town (BS '92) reports from Austin where she is a geologist for Engineering-Science Inc.

Deborah S. Travis (MA '88) writes, "I decided to leave the oil and gas field and make a career change. I will start work in June, 1994 as a trial attorney in Corpus Christi and I'm looking forward to it!"

Lloyd R. Travis Jr. (BA '48) is an exploration consultant in Houston. "Keep up the good work. I always read the *Newsletter* from cover to cover. I am still prospecting for that elusive barrel of oil; am now doing it by using hi-tech methods."

Robert F. Travis (BS '57) comments, "I moved from Corpus Christi to Port Aransas to get closer to my fishing and sailing." Bob is retired.

Galen E. Treadgold (MA '85) contributes, "In March we moved to our new assignment with ARCO British Ltd south of London. I'll be working on 3-D datasets in and around the Central Graben while my wife and daughter explore the countryside."

Raymond R. Trollinger Jr. (BS '60) is self employed in Dallas.

Arthur J. Tschoepe (BS '51) writes, "Still active in South Texas (43 years). Enjoying my fine family and 15 grandchildren." Arthur is an independent geologist and independent oil operator in Corpus Christi.

John D. Tuohy (BS '39) contributes, "Still retired in the Hill Country and enjoying an annual trip to Ireland—wonderful people. Last year we extended the trip to include some time in northern Italy, where Evelyn's Italian came in handy. It's nice country—but no Ireland. Looking forward to the annual family get-together in June when daughter Cathy and family arrive from Arizona and son Tom and family from China." John is retired and lives in Canyon Lake, Texas.

Edd R. Turner (BA '43) is retired in Kerrville, Texas. "Enjoying fairly active retired status in West Texas and Hill Country. Finished AAPG history to fairly good reviews."

Neil Turner (PhD '70) writes, "Just completed a study of the carbonate reservoirs of the Mediterranean area and will move east from there in my overall long-term project of studying carbonate reservoirs of the world." Neil is a senior staff geologist for Amoco in Houston.

John T. Twining (BS '48, MA '54) writes from Houston, "Jeanne and I are just rocking along, enjoying our old age. I still do volunteer work in the experimental gardens with the Harris County Agriculture Extension Service. Enjoy taking various youth groups on garden tours."

LeeRoy Tydlaska (BA '49, MA '51) reports from Metairie, Louisiana, "Retirement is great except for wife and children who miss that semi-monthly paycheck. And who is that guy who sleeps till 6:00 every morning?"

Grace Nell Tyner (MA '79, PhD '84) writes, "After teaching at Florida Institute of Technology for six years (1983-89), I entered the consulting industry with the groundwater consulting firm of Geraghty and Miller, Inc. (1989-1993). For the past year I have been with the firm of Burlington Environmental Inc. in Houston. Dennis and I are glad to be back to the land of country western dancing, Tex-Mex food, and the Longhorns."

Robert C. Tysor (BA '52) is a geologist for Armour Resources Holdings, Ltd. in Houston.

— U —

Martin S. and Julie Broyles Ullrich (BS '75) write, "Still alive! If anyone is still in business and coming through Houston give Julie and me a call!"

Suzanne Danner Ulrich (MA '84) contributes, "I am a development geologist for Vaster Resources, Inc.; a subsidiary of Atlantic Richfield Corp. Currently working offshore properties in the Gulf of Mexico. I live in Houston with my husband, Mark Ulrich, a geologist with Mobil Oil Corp.; and my eight year old son."

Scott Underwood (BS '85) is a hydrogeologist with Hall Southwest in Austin. "In my second month of mid-life crisis but can't afford a red sports car. Please send the extra \$8,000 to my home address."

Don Urbanec (BS '60, MA '63) is president of Mina Energy, Inc. in Boerne, Texas. "I'm still living in Boerne and commute into San Antonio to help run Mina Energy which is basically an operating company. Plus, I continue to dabble in Texas and New Mexico oil and gas exploration as an independent geologist putting together drilling prospects."

Charles B. Upton (BS '57) comments, "Still teaching science, also still interested in getting into being gainfully employed as an environmental scientist." Charles is an instructor at Hallmark Institute of Technology in Stockdale, Texas.

— V —

Bruce R. Van Allen (MA '78) lives in Lakewood, Colorado.

Robert D. Valerius (BS '59) writes, "I'm now a qualified and practicing mediator to oil and gas companies facing litigation. Call me to explain how you can settle your own disputes efficiently." Bob lives in Corpus Christi.

James and Amy Vanderhill (PhD '86; BS '83) are both senior production ge-



Bill Stokes in 1949 while employed as a geologist for King Ranch.

ologists for Mobil in Midland. "We are very busy in our current positions with Mobil. Jim is responsible for the Ratherford unit, Four Corners, and Amy is preparing a reservoir description of the Pegasus Ellenburger Field, Permian Basin. The rest of our time is spent with our three daughters, Ceili (5), Shannon (3) and Meagan (1). We are being reintroduced to coloring, writing, numbers and letters, and don't forget Candyland! We love to have visitors; please call if you come to Midland."

David W. Vernon (BS '79) is an assistant district attorney for Parker County, Texas. "Still traveling from Dallas to Weatherford every day for work. Ashley will soon be nine and entering the fourth grade. Molly will be two in November."

Joseph W. Versfelt (MA '84) writes, "For those who have not seen my previous updates, I submit the following: after graduating, I received my MS geology from Duke University in 1988 after field research in the East African rift lakes (Project PROBE). I joined Texaco in 1988 in Coral Gables, Florida. I worked on projects throughout West and

North Africa and field checked a seismic crew in the Amazon jungle of Brazil. I served a year of pleasant duty in our Lisbon, Portugal office to work on our exploration and producing acreage in Angola's Lower Congo Basin. I am happily married to a lovely, beautiful Portuguese lady. I am working on projects in Southeast Asia and the southern C.I.S. at Texaco's F.E.D. international exploration arm in Houston where several UT grads work (Angstadt, MA '83; Tsai, PhD '81)."

Harry A. Vest (MA '59) comments, "Last son, John, graduated from UT in December 1993. We go to the home football games, usually have a beer at the Alumni Center prior to the game. I have never bumped into anyone that I know. Get out and circulate, you guys!" Harry is retired from Dupont/Conoco in Houston.

R. B. (Bob) Vickers (BS '47) writes, "There is not a lot to say about a retired geologist in Abilene. We have occasional enjoyable trips and I am carefully and prayerfully observing my geology major grandson, soon to be in his fourth year at UT." Bob is retired in Abilene.

William Vrana (BA '39) is self employed in Corpus Christi. "Still enjoy living in the sparkling city by the sea. Will celebrate my 80th birthday this month. Having spent almost 50 years within the oil and gas industry, most of these years were exciting and fruitful. The drastic changes which the industry has undergone and is undergoing will present tremendous challenges to future participants. It will be interesting to see how it turns out."

— W —

Martin James Wachel Jr. (BS '56) is self-employed in Overton, Texas. He writes, "Have moved from California to Texas. Still involved in trash weight sensors, moving my office with me back to Texas. Enjoy the *Newsletter* tremendously."

William R. (Bill) Waddell (BS '38) reports from Houston, "Finding more time to smell the roses. Still drilling about one gas well a year." Bill is an independent geologist.

A. H. (Al) Wadsworth Jr. (BS '41, MA '41) is "still generating oil deals and doing a little consulting, which is more of a hobby now than a profession. Active in geo-politics, not do-

ing much good but if we geologists don't tell them, who will?" Al is an independent geologist in Houston.

T. J. (Tommy) Waggoner III (BA '56) is president of Waggoner Exploration in Dallas. He says, "Marilyn and I have moved to Spicewood, Texas, 30 miles west of Austin. Still spend limited time in the Dallas office but am committed to smelling the roses."

David E. Wahl Jr. (MA '73) writes, "Political and environmental policies have pretty much shut down mineral exploration in Arizona. I'm doing some work in Mexico, but it doesn't hold a candle to UT thesis adventures down south. Pay is about the same though." David is a consulting geologist and lives in Scottsdale, Arizona.

Hershel Walker (BS '50) writes from Corpus Christi, "Really enjoy semi-retirement, playing lots of golf, fishing, and enjoying good health."

Joe D. Walker Jr. (BS '51, MA '54) is retired in Houston but does frequent map updates of South Texas Wilcox and Upper Cretaceous. "Things are stable with plenty of time for outdoor activities as long as physically able. I still praise the *Newsletter* for keeping up with so many. I welcome hearing from those I knew from the past. Still try to keep up maps of the Texas Wilcox trend because it is so interesting a sequence."

Mark C. Walker (BA '82) is an attorney/shareholder for Mounce & Galatzan in El Paso.

David A. Wallace (BS '86) writes, "Still conducting compliance reviews for Pennzoil. Have seen quite a bit of U.S. in last year. Will be traveling internationally with several trips to Canada this year. Unfortunately I don't get the opportunity to practice geology anymore except on annual vacations to Utah. Missing Austin!" David lives in Houston.

Fred B. Wallis (BS '41) reports, "Just returned from a January supervisory trip near Shoshani, Wyoming. Temperature minus 20 degrees, wind velocity 35 mph. Thank goodness for Austin weather." Fred is a consulting geophysicist in Austin.

NOTES FROM THE ALUMNI

Preston and Dawn McKalips Walters (BS '73) write, "Preston has spent the past year working on a multi-disciplinary team in the High Island Area,

offshore Texas. Dawn has completed her first semester of clinicals in nursing at U.S.L., a big change from geology. The family enjoys Lafayette and with Alissa going to ninth and Joshua to second grade we stay as busy as ever." They live in Lafayette, Louisiana.

David H. Walz (MA '74) is an associate professor of geology at Reynolds Community college in Richmond, Virginia. "Toddy and I will celebrate our 25th wedding anniversary in late May 1994. She continues to teach in the local public school system (kindergarten this year.) Jonathan will graduate Phi Beta Kappa and with highest honors from UNC Chapel Hill in May 1994. Kristopher (born in Austin) is a junior at The University of Utah majoring in sociology and minoring in hiking the Wasatch Front. I am in my 19th year of teaching geology at the college and at Virginia Commonwealth University."

Bernie Ward (BA '55) is an independent in Tyler.

Bill and Kathy Ward (BS '55, MA '57; BA '57) continue to live in New Orleans. "Kathy is working on a PhD in education while continuing to teach science at the high school for bright students in New Orleans. Bill will make a quick trip to Mallorca in early May to help lead a field trip, then go to China for three weeks to evaluate geology programs at some 'petroleum universities.' Our son Bruce, is post-doc in geology at UT."

Dan L. Ward (BA '49) is enjoying retirement in Grand Junction, Colorado.

David A. Wark (MA '83, PhD '89) writes from Troy, New York, "I'm pleased to report that volcanic rocks (employably incorrect these days) continue to keep me busy (off to Sumatra soon!), as does my venture into experimental petrology. I'm even more pleased to report my marriage (finally!) to former Austinite Christine—a vegetarian, cat-loving, environmental engineer who just survived her second winter in upstate New York in addition to a belated honeymoon to view active volcanism on the big island of Hawaii." Dave is a research assistant professor in earth and environmental science at Rensselaer Polytechnic Institute.

Ralph H. Warner (MA '61) is a self-employed geologist in Kingwood.

L. Coy Warren (BS '48) is retired in Abilene. "Daughter, Connie, husband, and grandson live in Fort

Worth. One stepson, Austin King, is a doctor in Abilene. Another stepson, Greg King, also in Abilene. Both married with small children. Greg followed in my footsteps and became a geologist and is doing fine—even with oil prices low.”

Leslie Leland Warren (BS '85) reports from Katy, “After two years of working part-time so I could stay home with Kyle, I’m back at a 40 hour week—but they only have me four days a week! Scott and I are busy remodeling our new house in Katy but found time to spend a long weekend in New Orleans for Mardi Gras. Hope all the '85 Geodogs are doing well!” Leslie works for Schlumberger/GeoQuest Systems in Houston.

Bill D. Watson (BS '58) is retired and living in Sugar Land, Texas. “Playing golf, enjoying six grandchildren.”

John A. Watson (BS '56) is a hydrologist for the Texas Natural Resource Conservation Commission in Austin. He writes, “Creation Evidences Museum of Glen Rose, Texas has doubled in size. A popular exhibit is the spherical pleochroic radiohalos (discolored rings in cross-section) of primordial polonium 218 and polonium 214 in the biotite mica of granite, formed by radioactive decay of polonium (not as a daughter element of uranium decay). This is remarkable when you consider that polonium 218 and polonium 214 have half lives of three minutes and 164 microseconds respectively. Instantaneous creation of solid granite is required for the discoloration of the granite to have occurred by radiation damage with the formation of halos. A slow cooling of molten rock (required by uniformitarian theory) could not have captured/preserved the halos of these radio-isotopes of fleeting existence through the theoretical millions of years cooling of a magma to solid granite. Documentation: ‘Creation’s Tiny Mystery’, by Dr. Robert V. Gentry, Secular geologists are intellectually derelict if Dr. Gentry’s outstanding discovery is not brought to the center of scientific discussion.”

John E. Watson (BA '72) John writes, “1994 marks 20 years in Colorado. Time flies when you live in the mountains. The mining business seems to be struggling recently in the U.S. Maybe all those field trips to Mexico might be useful after all. The whole industry seems to be headed south. Are there any of the old carry-alls left?” John is the C.E.O. of Horizon

Resources Corporation and lives in Evergreen, Colorado.

Joseph D. Watzlavick (BS '41) lives in Bellaire, Texas. He writes, “Have prospects—send money.”

Robert S. Weatherall (BS '51) reports from Houston, “After graduation in 1951 I spent three years in the U.S. Army, about one-half of that time learning to speak Russian. Jobs in geology were hard to find in 1954 when I was discharged so I returned to Texas and got an LLB. I thereafter practiced law in Houston, but I always tried to maintain my contacts with the geologists I knew at Texas. I have many fond memories of the UT geology department in the late '40's and I am proud to hold my BS in geology.” Robert is a retired partner for Andrews & Kurth.

William C. Weaver (BA '32) writes, “Still trying to find some oil even with the price so low. I am probably the only living geologist that saw the discovery well of the Luling Field come in in 1922. Vern Woolsey was credited with the discovery, based on surface geology.” William is a petroleum geologist in Corpus Christi.

Gerald E. Weber (MA '68) operates a hydrogeology and engineering geology consulting business. “This is my 12th year teaching the U.C. Santa Cruz field geology classes. Drinking good beer, drinking good wines, doing a lot of whitewater rafting and also some work.” He is president of Weber, Hayes, and Associates in Santa Cruz.

Nelson Webernick (MA '52) is an independent petroleum geologist in Midland.

Richard J. Weiland (MA '93) is a PhD student in geology at UT.

Charles Weiner (BA '48) says “The company bought its own little building in Greenway Plaza between Alabama and Westheimer at 2803 Buffalo Speedway. Active worldwide. Pleased with results.” Charles works for Texas Crude in Houston.

Bonnie Weise (BS '74, MA '79) is chief geologist for Venus Oil Company in San Antonio.

G. E. Welder (BS '49) writes from Kingsland, “Recently moved back to Texas after 33 years in Wyoming and New Mexico.” He is retired from the U.S. Geological Survey.

Roger A. Wenzel (MA '75) says, “Married Jane Lee Grantham in December, 1987. Twin daughters, Carol and Elise, born May 1, 1990. Jane is a ballet teacher with a fine arts degree

from OU. I have two sons from my previous marriage, Karl (18) and Keith (15), both are students at Putnam City North in Oklahoma City. I have had my own oil & gas consulting firm in Oklahoma City since 1988.”

John B. Wesselman (BS '53) is a retired U.S. Geological Survey hydrologist in Montgomery, Texas. He says, “Pauline and I live fourteen miles from town in the Sam Houston National Forest. Our eight children are scattered from Algeria to the state of Washington. We are looking forward to our eighth grandchild and welcome correspondence and visitors.”

David J. White (BS '41) says “I have been retired from ye ole Texas Department of Water Resources for ten years, am enjoying reading about the universe, medical technology, geological and mining journals. Attend meetings of the Austin Geological Society and the Central Texas Mining Association of the AIME.” He is retired in Austin.

Hugh G. White, III (BA '54, BS '52), a semi-retired geologist in Midland, writes: “Oil business still bad. Now dabbling in accounting and education—I’d like to encourage all Teasippers to be more indulgent of Aggies. After all, theirs is the most expensive education in the world—they pay for it the rest of their lives!”

Jane Brite White (BA '46) is a cattle rancher and lives on Brite Ranch in Presidio, Texas.

Rex H. White Jr. (BS '56, MA '60) is a partner with Hutcheson and Grundy, LLP in Austin. He writes, “Boys are both out of college now and employed. Brenda and I stay busy with church, work and occasional trips. I am still very active in oil and gas area. Yes, there are still some independents left. I love the oil and gas business, it’s been good to me. Come see me.”

Steven L. White (BS '78) is a consultant and prospect generator in Tyler.

Ben T. Whitefield (BS '60) writes from Corpus Christi, “Have just moved back to Texas after an eight year absence.” He is a consultant.

Charles D. Whiteman Jr. (BS '58) is retired from the U.S.G.S. and lives in Denham Springs, Louisiana.

F. L. Whitney (BS '43) writes, “Has anyone noticed the hills are higher than they were a few years back? Perhaps it is due to a new, and as yet unreported, tectonic uplift along the Gulf Coast. Better check that out!” He is retired and living in Kerrville, Texas.

Marion I. Whitney (BA '30, MA '31, PhD '37) is retired in Shepherd, Michi-



Janie Bell Hurley, BS '78 (left) and Donna Balin, BS '78, whooping it up at Mardi Gras '94 in New Orleans.

gan. "I'm still working on the aerodynamic and velocity aspects of wind erosion and writing manuscripts."

James C. Whitten (BS '56) is an independent geologist in Midland. He writes, "Enjoy the *Newsletter*, keep it coming!"

Michael A. Wiley (BS '57, MA '63, PhD '70) is a consultant in Carrollton, Texas. "Providing data management and computer mapping services and software, mostly to the small company-independent sector. That sector seems to be ever dwindling, so I work harder for less for fewer. It's fun, believe it or not! Writing a few papers and generally goofing off."

A.B. (Bo) Williams (BS '53) Bo is retired in Sequim, Washington.

James R. Williams (BS '50) "Not much has changed. I have five grandchildren now. Still do some consulting for Cholla Petroleum in Dallas, still attend national AAPG conventions, mostly to see old friends. Do my share of golfing, fishing and hunting." He lives in Bullard, Texas.

Eddie A. Williamson (BS '69) is vice president of the northwest business unit for Amoco Canada Petroleum Company. He writes, "Recently relocated again, this time to Calgary where the skiing is great, the dinosaur fossils close-by, but Tex-Mex impossible to find. Now involved in Canadian heavy oil and thrust belt gas development."

Clayton H. Wilson (BS '83, MA '85) is an exploration geologist for Exxon in Houston. "We have returned to the Houston area after three years in New Orleans. I have rejoined the volunteer fire department. Church, baseball, basketball, Cub Scouts, and ballet fill up the kids' schedules after

school. For the first time in two decades, we live in the same town with my dad, brother, and sister. We are elated to be back in Texas!"

Douglas H. Wilson (BS '80) notes, "Change is constant. We moved back to Houston in January. Rachel will be three this year and she is enjoying learning how to sail the *Windward*. I am working in the frontier exploration group of Vastar Resources, Inc. (formerly ARCO Oil & Gas Co.). This is the most exciting, challenging, and rewarding assignment I have ever been given."

Homer Wilson (BS '42) is retired in Dallas. He says, "Another successful trip with the Flying Longhorns last January through the Panama Canal. In March, we took a five day visit to West Point to see our grandson, Cadet Keith Wilson. Plan to visit the Grand Canyon in September."

William F. Wilson (BS '60, MA '62) is president and consulting environmental geologist for Strata Environmental Services, Inc. in Spring, Texas. He writes, "Finished a textbook on the subject of N.O.R.M. and Pennwell published it in January, 1994. Living within 1/2 mile of my sons, Douglas and Clay, and their families. We were all UT geology majors. Working seven days a week as a consulting environmental geologist. Still owe a great deal to R. L. Folk."

Irwin T. Winter (BS '53) is retired in Fort Worth. He says, "UT baseball fans will be pleased to know the Longhorns have more All Star players coming to assure their winning tradition. My three grandsons are examples."

Kurt Wiseman (BS '76) says, "Betty, Heather, Lisa and I are looking forward to living at our ranch in Junction. I enjoyed seeing all the 1976 Texas Exes at the prospect fair in Houston. Hope to see you all next year." Kurt lives in Houston and is an independent oil and gas producer.

Ed Wolcott (BS '46) is president of EDCO Petroleum in Dallas. He writes, "Still finding a little Goen Reef oil in Runnels County. Dallas Texas Exes getting scarce. Of course they are older. My grandkids are getting taller than I am and I have one son with mostly gray hair."

Daniel H. Wood (BA '72) is a geophysicist for Amerada-Hess in Houston.

Robert L. Wood Jr. (BA '56) is president of Occidental Crude in Houston.

Warren T. Wood (MA '89, PhD '93) lives in Slidell, Louisiana and is a geophysicist for Stennis Space Center,

Mississippi. He writes, "I am trying to publish, lest I perish from the staff of the Naval Research Laboratory where I'm continuing to research extracting sediment properties from seismic data. My wife, Caroline, and sons, Benjamin and Ryan, hope to visit Austin soon. We miss it!"

Arnold Woods (MA '81) "The AAPG development geology reference manual is out and selling well (they're looking at a second printing already). Have another dinosaur talk in preparation. Conoco is leaving Casper, but I'm not, so I'm starting with an international consulting group." Arnold lives in Casper, Wyoming.

Gene Woodyard (MA '56) is retired in Bertram. "We have built a new home and are back in Texas in the Hill Country. We were pleased to be able to visit at a Littlefield Society meeting last winter."

Thomas J. Worthington (BS '51) is retired in Jacksonville, Texas. "I am still enjoying life after eleven years of retirement. The wife and I have visited 46 states—we only have four more to visit then we will start over again. Every year I say 'thanks for the *Newsletter*' and every year it gets better. Thanks again."

Charles F. Word (BS '57) comments, "I enjoy the annual *Newsletter* except when I hear about my old classmates who have gone on." Charles is retired in Conroe.

Paul Wyche (BS '51) is retired from Gulf Oil Corporation and lives in Austin. He continues as chairman of the Geology Foundation Advisory Council.

Bob Wynne (BS '57) writes from Fort Worth, "Would like to be more involved in oil and gas exploration but things pretty slow. Thanks for remembering me each year in the *Newsletter*."

— Y —

John C. Yeager (MA '60) is "still generating prospects and likes the challenge." John is an independent geologist in Lafayette.

Susan W. Young (MA '85) contributes, "Transferred from Oklahoma City to Midland in June, 1992 with Conoco. We now have two children: Caroline will be four in July, Conrad just turned two. They like rocks! Randy has opened a small restaurant and is enjoying the challenge of running a small business."

We Need Your Help...

THE FACULTY AND STUDENTS APPRECIATE your interest in the Department and Geology Foundation. We are pleased with the enthusiastic response to our request for information to be included in the Alumni News section.

We are anxious to keep your current address on our mailing list and solicit your cooperation in advising us if you move. Also, if you know of other alumni who do not receive our letters, please send their names and addresses so they can be added to our files.

We need your financial assistance in many areas—scholarships for worthy students, teaching and research equipment, cost of publishing the Newsletter, and Unrestricted support for the operation of the Geology Foundation, and library needs.

Contributions to the Geology Foundation may be made in the form of cash, stocks and bonds, life insurance and gift annuities, and tangible property such as real estate. Many major corporations will provide matching funds at a rate of 100% or greater for those contributions made by employees and their spouses. A list of these corporations and their matching policies is available from the Geology Foundation office. The Foundation staff can assist in the arrangement of the match.

Photos

FRONT COVER:

Cathodoluminescence photomicrograph of pore-filling cements in the Capitan Formation, Guadalupe Mountains. The dull red prismatic crystals are radiaxial calcite. The large, brightly luminescent, zoned crystals are late-stage calcite spar. Photomicrograph taken by Brenda Kirkland-George.

BACK COVER:

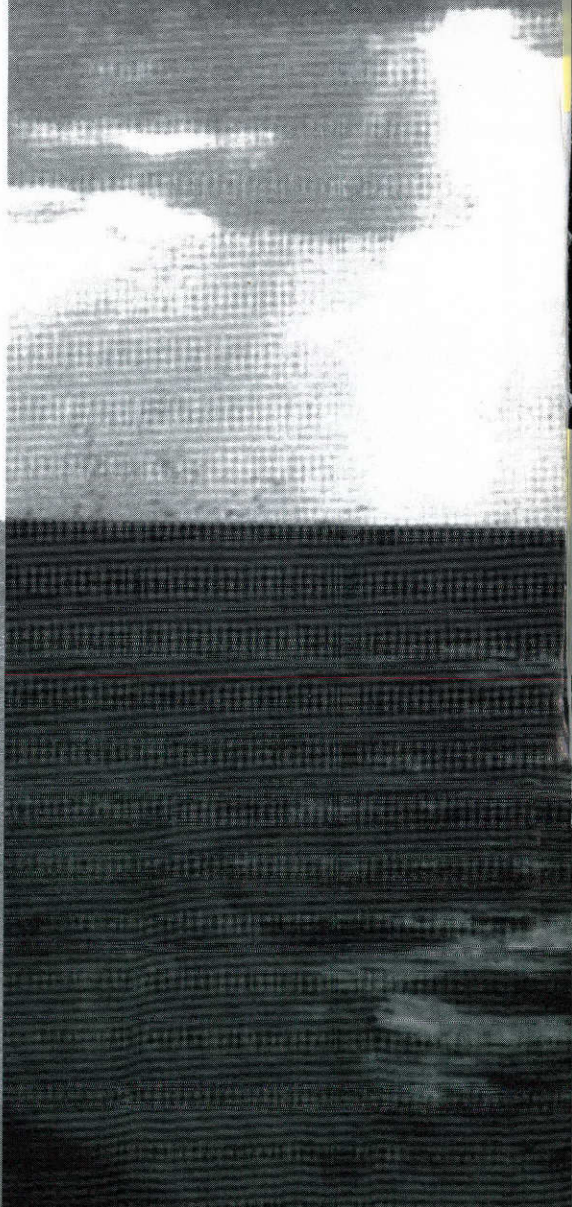
(left) A beautiful sunset photographed by Linda Davis on her ODP cruise (see article on page 49).

(top right) Participants in the NSF-sponsored Antarctica project described in article on page 60. Photo by Steve Grimes.

(bottom right) Working into the night at White Sands National Monument, NM. Members of the Department's eolian group dig trenches within interdune areas to investigate dune bedform migration processes, and fundamental mechanisms of accumulation within wet eolian systems. Seen here: Andy Frank (on backhoe), Mary Crabaugh and Karen Havholm (now at the University of Washington) in trench with Dr. Kocurek (in turban) with Chris Swezey (standing on right). Photo taken in Fall, 1993.

Acknowledgments:

THANKS TO ALL the faculty, staff, and students who assisted in preparing this issue by providing photographs, articles, and advice. Also special thanks to Paula Bickham, Pablo Cortez, Jeff Horowitz, Brenda Kirkland-George, Betty Kurtz, Tim Rowe, and Dennis Trombatore for their assistance.





For More Information...

Write us at:

Geology Foundation,
The University of Texas at Austin,
Austin, TX 78712,

or Call:

Voice (512) 471-6048
Fax (512) 471-9425,

or Send an e-mail message to:

utgeofdn@ccwf.cc.utexas.edu.

