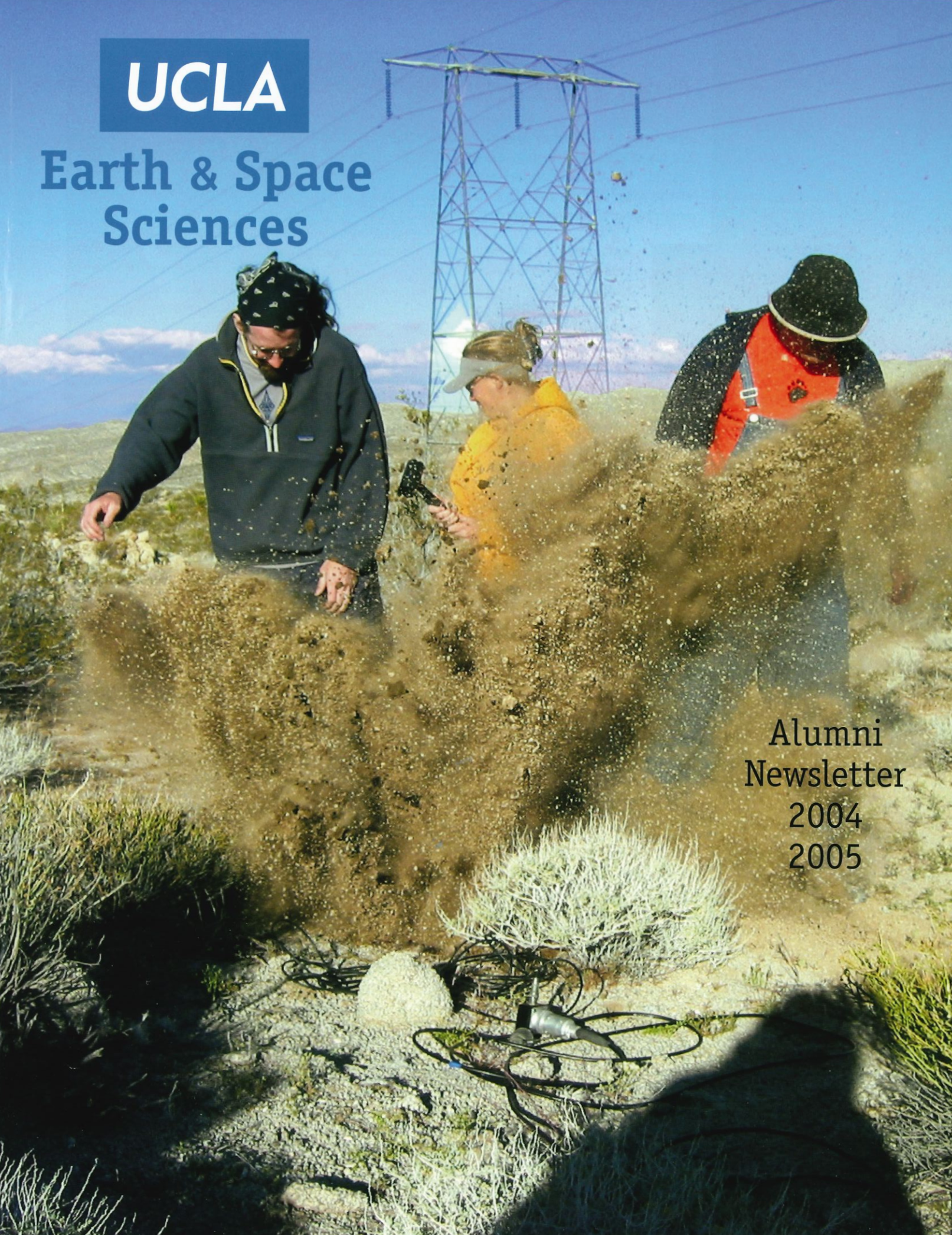


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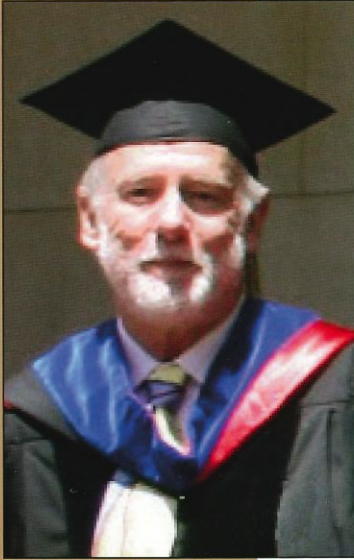
**Earth & Space
Sciences**



Alumni
Newsletter
2004
2005

From the Chair:

Greetings, I'm Dave Jackson, earthquake seismologist and newly Chair of ESS. I'm honored to lead a great department with outstanding students, staff, faculty, and alumni. Our instruction and research range from Earth's inner core to the outer reaches of the solar system; the physics, chemistry, and biology of earth processes; environmental sciences and natural hazards.



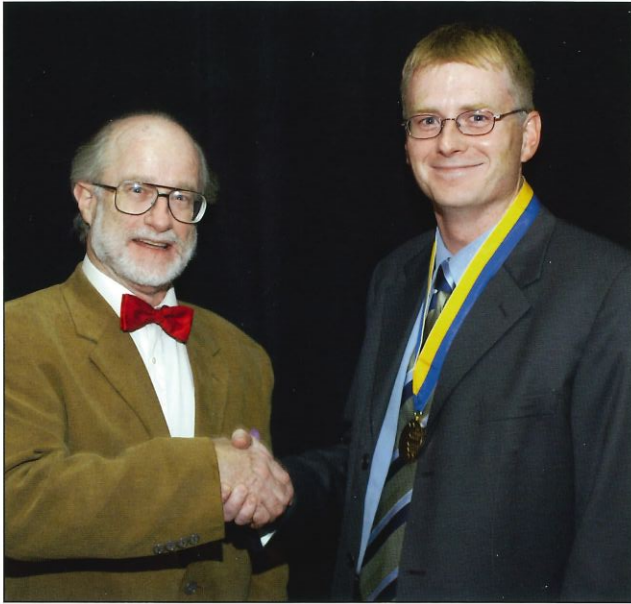
Many awards have come our way recently. Congratulations to graduate students **David Galvan** and **Colleen Milbury**, who wrote successful proposals to the NASA Graduate Student Research Program; **Megan Cartwright** won a NASA/Goddard Graduate Student Researcher Fellowship; **Max Werner** received a NASA Earth System Science Graduate Student Fellowship; **Alex Robinson** and **Justin Simon** earned UCLA Dissertation Year Fellowships for 2004-05—as did **Andy Czaja** and **Carrie Menold** for 2005-2006; **Melissa Giovanni** landed a 2004 National Science Foundation Graduate Research Fellowship; **Jonathan Hunt** and **Alex Webb** won UCLA Pauley Fellowships; and **Angelo Antignano** pulled down a prestigious Mineralogical Society of America Research Grant. Thanks to your generous help, we have been able to honor some of our outstanding graduate and undergraduate students with our own awards (see pages 9, 10, and 12). We've established a new cash prize for Outstanding Graduate Student Teaching Assistants—I have pledged a donation for this award, and I hope others will follow!

Our faculty, too, have garnered high praise. **Emily Brodsky** won the first Charles F. Richter Award for early career scholars from the Seismological Society of America; **Abby Kavner** earned a three-year NSF grant for measurement of thermal conductivity of Deep Earth Minerals; **Brian Horton** received the 2004-2005 Assistant Professor Faculty Career Development Award, and he was also awarded the Donath Medal of the Geological Society of America (see facing page); NASA selected **David Paige's** Lunar Radiometer Experiment instrument to fly on the Lunar Reconnaissance Orbiter in 2008 (see page 3); **Kevin McKeegan** won a four-year grant for analysis of elemental and isotopic composition of captured solar wind samples (page 3); **Margaret Kivelson** brought home the John Adam Fleming medal of the American Geophysical Union, and she was elected to the American Philosophical Society (founded by Ben Franklin, and instrumental in the Lewis and Clark expedition); and the AGU awarded its Whipple Award to **John Wasson**.

One chronic challenge became acute—faculty who establish outstanding reputations at UCLA become recruitment targets for other institutions. Geologists **Mary Reid** and **Gary Axen**, and geodynamicist **Paul Tackley** were lured away; seismologists **Emily Brodsky**, **Heidi Houston**, **Didier Sornette**, and **John Vidale** are accepting irresistible offers from other institutions. We'll be recruiting energetically for some time to come.

You probably wonder how you can help keep the Department at the cutting edge. First, let us know about your recent accomplishments and your whereabouts. Second, money never hurts! We most need graduate student support, and I've mentioned the fund for awarding great teaching assistants. We also have special needs—like maintenance of field vehicles—that we always find difficult to meet from the University budget.

Best wishes, and please keep connected!



Professor Ray Ingersoll (left) presented the Geological Society of America's 2004 Young Scientist award to Assistant Professor Brian Horton

GSA's 2004 Donath Medal Awarded to Brian Horton

Raymond V. Ingersoll

Brian Horton is superbly qualified to be this year's recipient of the Donath Medal, awarded to this promising young scientist who has already contributed greatly to our understanding of the interplay of sedimentation and tectonics. His publications document and discuss sedimentation within a Cenozoic extensional basin of Nevada, Cenozoic history of crustal shortening and basin evolution in the Altiplano Plateau and retroarc foldthrust belt of the Bolivian Andes, feedback mechanisms among climate, erosion and tectonics, the significance of fluvial megafans, basin development and crustal thickening in Tibet, and the dynamics of coarse-grained sedimentation in the USA Cordilleran foreland. In addition, he has recently conducted field research in Iran! Brian gets around!

Born in California in 1970, Brian attended the University of New Mexico as an undergraduate, where he received his BS in 1992; he received his MS from Montana State University in 1994, and his PhD from the University of Arizona in 1998. Both his MS advisor Jim Schmitt and his PhD advisor Pete DeCelles testify that Brian was not only the best graduate student they have supervised, but the best that they have known! In both cases, Brian arrived at his graduate institutions with thesis topics fully in mind, and even developed his own funding, including an NSF Graduate Research Fellowship. He went to Bolivia because it was the best place to combine detailed stratigraphic and structural analyses with regional tectonic controls in a frontier geologic setting.

Brian sets an example of rigorous interdisciplinary study of tectonics, structure, sedimentology, and stratigraphy in order to solve fundamental problems through the integration of field work, laboratory analysis and regional synthesis of active tectonic settings. All of Brian's field work (and that of his students) combines rigorous and detailed measurements acquired over long field seasons under logistically difficult conditions. As a result, each of his publications includes a major contribution of data, as well as insightful analysis and synthesis. Brian's publications are characterized by the most exacting standards of documentation and analysis; they are sure to have long shelf lives.

Since coming to UCLA in 2001, Brian has attracted a growing group of excellent graduate students, as well as frequent visiting scientists and post-docs. He has imparted to all who work with him, from undergraduate students to senior collaborators, his intense belief in rigorous interdisciplinary studies to solve fundamental problems in sedimentation and tectonics. □

On the cover: Researcher **Bill Moore** (MS '94, PhD '97), undergrad **Holly Caprio** (BS '04), and graduate student **Allen Husker** (from left) generating signals for a seismic line study across the Calico Fault. Photo by graduate student **Janet Harvey** (BS '03)

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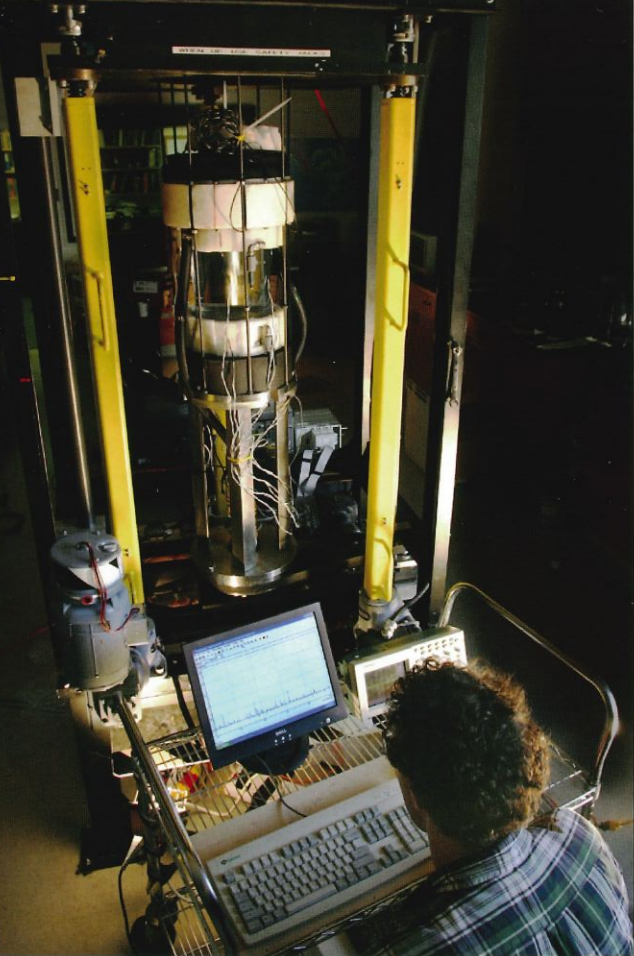
Lost Souls—
back cover

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Jon Aurnou operates the rotating magnetoconvection device in his laboratory

New State-of-the-Art Labs & Research at ESS

spinlab

Simulated Planetary Interiors Laboratory.

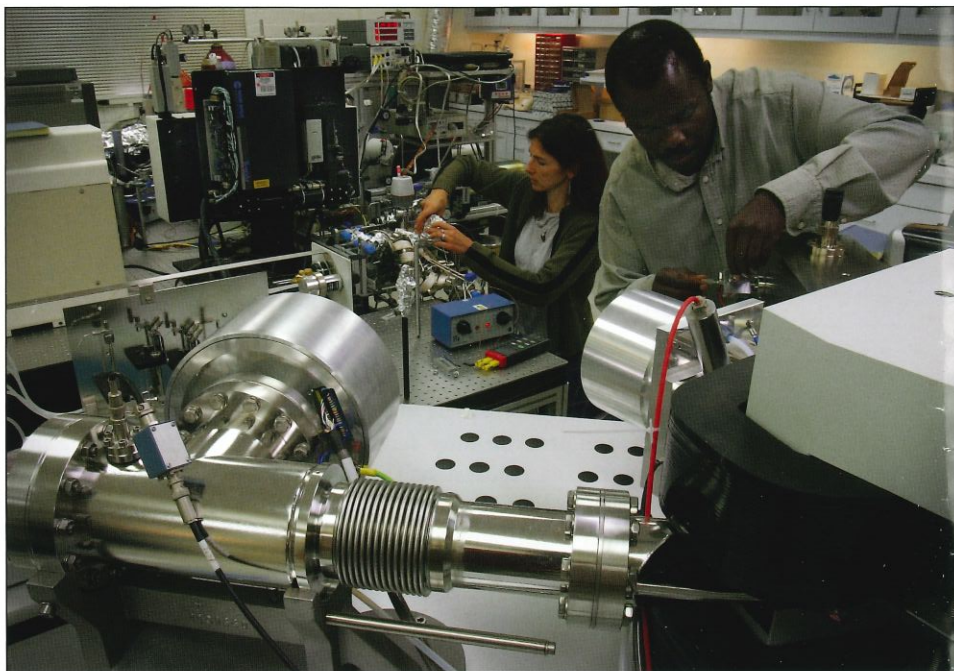
Assistant Professor **Jonathon Aurnou** strives to understand the details of dynamo generation within planetary cores. His research involves the development, with the help of two National Science Foundation grants, of a one-of-a-kind experimental apparatus that simulates rapidly rotating magnetoconvection in planetary cores. He is committed to using and developing new velocimetry techniques to experimentally reveal the detailed fluid mechanical processes that arise in such complex nonlinear convection systems. Jon hopes that carrying out world-class experimental and numerical simulations of planetary fluid mechanics and magneto-hydrodynamics in his Simulated Planetary Interiors Laboratory (SPINlab) will raise the national and international visibility of the UCLA planetary physics and geophysics programs, which will, in turn, attract more top student prospects to the Earth and Space Sciences graduate program.

PHOTO BY DR. JEROME NOIR

PHOTO BY DR. JEROME NOIR

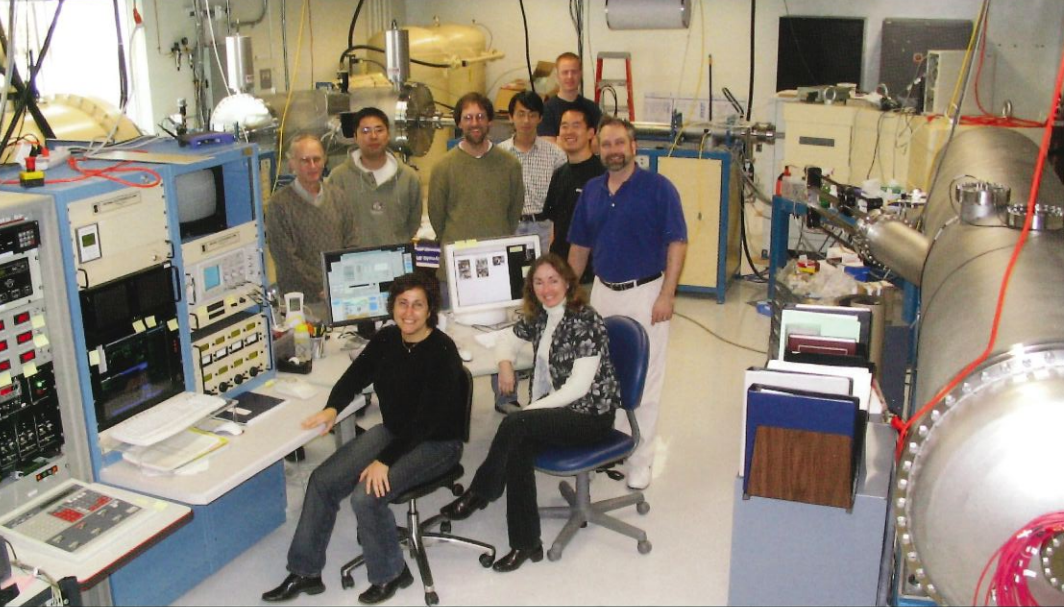
Stable Isotope Geochemistry and Cosmochemistry Laboratory.

Isotopes in geological materials trace the movement of the elements within Earth and the other planets. With this in mind, Professor **Ed Young** and his group have completed construction of a new laboratory composed of three mass spectrometers (two gas-source instruments and one multiple collector inductively coupled plasma source mass spectrometer, or MC-ICPMS) and four infrared and ultraviolet lasers for sampling. These instruments measure vestiges of planet-forming processes left behind in meteorites in the form of anomalous isotopic compositions of the major rock-forming elements Mg, O, and Si. Results are providing new time scales for rock formation in the disk of gas and dust that surrounded our nascent sun. The group also measures isotope ratios in a range of terrestrial rocks and waters representing a broad spectrum of research projects. One involves partitioning of Fe isotopes as a "barometer" of oxygen in Earth's deep mantle and as a fingerprint of biological activity. Another involves reconstruction of environmental changes accompanying the rise of animal life on Earth, as well as mass extinctions. As part of UCLA's participation in the NASA Astrobiology Institute, the laboratory is providing new data pertaining



Researchers Eric Tonui and Karen Ziegler at work in Ed Young's laboratory

to the longevity and global extent of so-called "carbon excursions." The stable isotope group has also taken on problems related to the environment. Chlorine isotopes can be used as tracers of the sources of organic solvent contamination in ground water; using the new MC-ICPMS, the group has shown that highly precise measurements of Cl isotope ratios can be made in organic solvents extracted from ground waters.



The MegaSIMS development team, students, and postdocs in the MegaSIMS lab—seated (left-to-right) are Dr. Mariana Cosarinsky and grad student Dianne Taylor (BS '03); standing are George Jarzebinski, Dr. Tak Kunihiro, Dr. Chris Coath (ion optician, currently at University of Bristol), grad student Ming-Chang Liu, Gary Glesener (BA '05), Dr. Peter Mao, and Professor Kevin McKeegan

MegaSIMS—A New Instrument for the Isotopic Analysis of Captured Solar Wind.

An important goal of planetary science is to understand how the tremendous diversity of objects in the solar system, from asteroids and comets to moons and planets, developed from a relatively well-mixed primordial solar nebula. From a cosmochemical viewpoint, one would like to know, in detail, what the average composition (elemental and isotopic) of this material was in order to better model the chemical and physical processes that led to differentiation. Since the Sun contains more than 99.8 percent of the mass of the solar system, it retains the average composition. In practice, "solar" elemental abundances are usually inferred from laboratory analyses of chondritic meteorites, because such measurements can usually be made with higher precision and accuracy than spectroscopic observations of the solar photosphere. However, this approach is problematic for volatile elements which are known to be fractionated, both elementally and isotopically, in various classes of primitive meteorites. A major advance would be to base solar compositions on the analysis of solar material, and to do so with a precision and accuracy useful for cosmochemistry. This is the goal of NASA's GENESIS Discovery mission.

Launched in August of 2001, GENESIS cruised to the Lagrange point L1, outside the Earth's magnetosphere, where it collected solar wind for more than two years by implantation into ultra-pure materials. It then returned these captured solar particles to the Earth for analysis in terrestrial laboratories. At UCLA, we will analyze the GENESIS samples to determine the elemental and, especially, the isotopic compositions of the captured solar wind. The mission's highest priority regards the isotopic composition of oxygen. Oxygen is the most abundant element in the rocky planets, yet our understanding of the solar oxygen isotopic composition is poorly constrained and highly model-dependent. Oxygen is known to exhibit isotopic anomalies of uncertain origin that are manifest in materials from the inner solar system on all spatial scales, from microns to planets. Knowledge of the bulk solar system oxygen isotope composition would be highly useful in constraining models for the evolution of dust and gas in

the solar nebula to form planetary materials. A problem is that there is currently no instrument on Earth that can perform precise isotopic analyses of the small amount (less than 8 ng/cm²) of implanted solar wind oxygen brought back by GENESIS. Aside from sensitivity requirements, analytical difficulties include contamination by ubiquitous oxygen on collector surfaces and the fact that most of what was collected is hydrogen, which leads to molecular ion (hydride) interferences in the mass spectrum. To solve this problem, Professor **Kevin McKeegan** and his research colleagues **Dr. Peter Mao**, **Dr. Takuya Kunihiro**, and ESS engineer **George Jarzebinski** are building a new mass spectrometer of a unique design. The new four million dollar instrument, dubbed "MegaSIMS," combines an ion microscope (the "SIMS" part) with a tandem million-volt particle accelerator (the "Mega" part) and a high energy multicollector mass spectrometer. It is an axiom that to measure a small sample, one needs a large instrument—and indeed, the MegaSIMS fills the old ESS machine shop. The team reports that the MegaSIMS is nearing the completion of initial tests, and they anticipate that a little bit of the Sun will come to southern California (literally!) sometime in the next year . . . stay tuned to learn what secrets it may reveal!

Lunar Reconnaissance Orbiter.

Professor **David Paige's** Diviner Lunar Radiometer Experiment is one of the six proposals NASA has selected to provide instrumentation and associated exploration/science measurement investigations for the Lunar Reconnaissance Orbiter (LRO), the first space-craft to be built as part of the Vision for Space Exploration program. Diviner will map the temperature of the entire lunar surface at 300 meter horizontal scales to identify cold-traps and potential ice deposits. The LRO mission is scheduled to launch in fall of 2008 as part of NASA's Robotic Lunar Exploration Program. The mission will deliver a powerful orbiter to the vicinity of the moon to obtain measurements necessary to characterize future robotic and human landing sites. It also will identify potential lunar resources and document aspects of the lunar radiation environment relevant to human biological responses. □



Summer Field Class of 1960 at Tar Springs-Huasna, near San Luis Obispo—Standing, from left: Professor John Christie, Len Ettinger, Rick Burgess, Larry Patzkowski, Dean McHenry, Gottfried Kesse, Steven Sznyter, John Miller, Irv Neder, Ted Theodore, Warren Nokleberg, and Virgil Bell; Kneeling, from left: Allen Hatheway, Larry Hurst, Dean Kelly, Gordon Pine, Don Ellis, Ron Surdam, Professor Clarence Hall, graduate student teaching assistant Charles Corbató.

Fate of the Class of 1961 Allen Hatheway, Warren Nokleberg, and Steven Sznyter

Geology, as taught in the mid-1900s, had the strong legacy of field geologic mapping, created and fostered by a cadre of geologic greats who came West and were awestruck by the direct association of landform and tectonic and sedimentologic processes. Initiation into the ranks of West coast geologists was demanding and often conducted with overtones of hazing. There were far more casualties than successful graduates. We will not forget the caustic introduction to our first field course; the professor advised us to introduce ourselves to our neighbors, right and left, with the admonition that one of them would not be around at the end of the semester—no idle threat! Only about twelve of the sixty entering freshman survived to graduate. The “undergrubs” were outnumbered about three-to-one by graduate students. We recall the frustration of having to deal with a single-standard grading system, with undergrads competing for grades on an even basis with graduate students. This accounting tracks the post-graduate careers of several classmates of the UCLA Summer Field Class of 1960, who went on to graduate in the Class of 1961. The authors submit that the fate of the class mirrors the time between 1960 and 2005. For a more detailed version of this article, please see www.alumni.1961.ess.ucla.edu. We welcome any additional facts concerning the “fate” of any of the class members—please contact Barb Widawski at barb@ess.ucla.edu.

Virgil Bell, BA '61, made his career with the Bell Telephone System.

Richard Burgess, BA '61, is believed never to have practiced as a geologist.

Charles Corbató, PhD '60, is with the Office of the Vice President for Academic Affairs and Provost at Ohio State University. **Donald Ellis**, BA '61, matriculated to UCLA from service in the US Army. He joined Pacific Oil Well Logging, a petroleum exploration firm.

Leonard Ettinger may have earned a JD and practiced as a patent attorney.

Allen Hatheway, BA '61, served as an army officer, then got an MS in '66

and PhD in '71 from the University of Arizona in Engineering Geology. He's been an adjunct professor at USC in Civil Engineering and at Boston University in Engineering Geology. He joined the US Forest Service and consulted with engineering firms from 1969 to 1981. In 1981, Allen became a professor at the University of Missouri, Rolla, and retired from there in 2000. **Larry Hurst**, BA '61, is believed never to have practiced as a geologist. **Dean Kelly**, BA '61, went to work for Hewlett-Packard.

Gottfried Opong Kesse matriculated

with an undergraduate degree from Ghana, received an MS in Geology from UCLA. He served the Geological Survey of Ghana, and ultimately became Director. He retired from that position around 1999.

Dean McHenry matriculated to the UCLA MS program with a BS in Geology from Oberlin College. He is believed never to have practiced as a geologist.

John Miller matriculated to UCLA from an earlier career as an oil-field geophysical technician. He is believed to have returned to the petroleum industry as a practicing geophysicist.

Irving Neder, BA '61, PhD '73, matriculated to UCLA from the US Army. He joined the Geology faculty at West Los Angeles College and taught there until his death in 1996. He spent the field seasons of 1965-66 and 1966-67 with **Larry Frakes** (PhD '64), and **Jim Matthews** in the Horlick and Pensacola ranges in Antarctica, where Mount Neder (1010 m) forms part of the Anare range, Victoria Land.

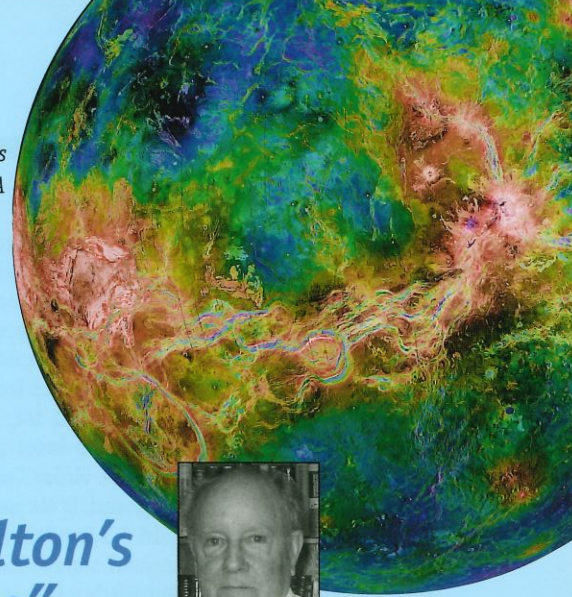
Warren Nokleberg, BA '61, was in the Bruin Band and the UCLA NROTC. He was a Line Officer in the US Navy from 1961 to 1965, then completed his PhD at the University of California at Santa Barbara in 1970. He became an associate professor of Geology at California State University, Fresno (1970-1976), and has been a research geologist for the USGS from 1970. His field studies have slowly migrated from the central Sierra Nevada to Alaska, to the Russian Far East, and farther west. He is currently Regional Coordinator for Northeast Eurasia for the Global Mineral Resource Assessment Project, and has written more than 260 scientific papers.

Larry Patzkowski, BS '61, worked for the Pacific Gas and Electric Company. **Gordon Pine**, is believed to have gone on to a PhD in Geology at the University of Arizona, and to have worked with the US Bureau of Land Management. **Steven Szynter**, BS '63, earned his degree at UCLA in Geology, with minors in Math, Chemistry, Physics, and Geography, with 257 semester units in Computer Applications. He joined Control Data Corporation as an information and technology specialist, and retired after 30 years of service. We'd know more about his work, but he suffers the usual limitations on disclosure attendant with high security clearance.

Ronald Surdam, BS '61, remained at UCLA to complete his PhD in Geology in 1967, then directly joined the Geology faculty at the University of Wyoming and served there until his retirement. He is a prominent expert on the zeolites, and was named Distinguished Professor.

Ted Theodore, BS '61, completed his PhD at UCLA in 1967, then joined the USGS where he remained as a very accomplished and highly published researcher until he retired in 2003. □

Photo of Venus
courtesy of JPL/NASA



Warren B. Hamilton's "Alternate Venus"

Alumni, faculty, students, and friends of the UCLA Department of Earth and Space Sciences found themselves enjoying plenty of good food and cheap wine on the evening of Wednesday, the 28th of April, 2004. Distinguished alumnus **Warren Bell Hamilton** (PhD '51) then provided lots of food for thought when he presented his lecture, "An Alternative Venus: Cold, Plume-free Planet Preserves 3.9 Ga Accretionary Surface."

Warren is a Distinguished Senior Scientist in the Department of Geophysics at the Colorado School of Mines. His studies are summarized in his article, "An Alternative Earth" in the November 2003 issue of *GSA Today*, wherein he rejects several assumptions basic to conventional interpretations as obsolete, and develops a picture of Earth's evolution and behavior that contrasts startlingly with dominant theory. His lecture on Venus applied this approach to another planet. Not everyone agreed with his approach, but all were certainly intrigued. You can judge for yourself, as Warren was kind enough to provide us with a summary of his lecture:

"Venus displays several thousand old circular structures, with topographic rims 10 to 2,000 km in diameter, that have the morphology, cookie-cutter superposition, and frequency/size distribution required of, and unique to, impact craters and basins. Old uplands are saturated with the structures, which there are variably eroded, whereas lowland structures are variably buried. The youngest include some of the largest, with rim diameters from 800 to 2000 km. Analogy with dated large lunar Imbrium impact basin requires ages more than 3.8 Ga. Venus preserves its surface of late-stage main

planetary accretion. Early investigators of Venusian radar imagery accepted the possible impact origin, hence great age, of these circular structures, but in the late 1980s impact was replaced by plume conjecture cantilevered from the assumption that Venus must lose as much heat as does Earth, despite its lack of plate tectonics and young volcanism, and therefore cannot have an old surface. Venusian plume speculations are unconstrained, wildly conflicting, and do not address circularity, morphology, and superposition.

The hot-Venus assumption behind young-surface conjectures has little basis. Venus' lack of a magnetic field (its core is likely solid), its positive correlation of topography and geoid (outer Venus is far stiffer than Earth), and its origin close to the Sun (less weakening volatiles, and less potassium, hence much less early radiogenic heat) indicate Venus to be much stronger than Earth. The most-modified of the 1000 quasi-pristine impact craters agreed upon by all are discriminated only arbitrarily from the best-preserved of the ancient, and mostly larger, circular structures. Broad, low volcanic constructs (unlike any terrestrial volcanoes in either morphology or distribution) inside impact basins are products of cogenetic impact melts; the largest melt piles buried their basins. Lowlands are floored not by young lava plains, but by ancient sediments (including deposits in a transient ocean?) derived from uplands. The plains are studded with small mud volcanoes (not lava cones) that, like minor deformation of the sediments, are due to top-down atmospheric heating." □

In Memoriam

Ted Lee Bear (BA '40) passed away on August 15, 2005 at the age of 88. He was born in Elsinore, California on June 15, 1917, attended high school in Santa Monica, and did graduate work at UCLA after earning his BA degree in Geology. Ted joined the Los Angeles consulting firm of Stanley and Stolz, and worked there until the outbreak of World War II, when he joined the Navy. He was decorated for his participation in the Normandy Invasion, and was later assigned to the US Naval Petroleum Reserve in Elk Hills, California. After the war, he returned to Stanley and Stolz until 1948, when he joined with Harold Hoots in a consulting practice. In 1957, when Hoots retired, Ted formed a consulting partnership with his long time friend, Philip Kistler (BA '40), which lasted 45 years. In 1957 the UCLA Geology Department asked Ted to teach an advanced course in Petroleum Geology to Geology majors and graduate students. He was honored as one of the Chancellor's Associates, served as a UCLA Foundation Trustee, and received the UCLA Alumni Award for Distinguished Service. Ted was also a devoted fan of UCLA athletics, carrying his enthusiasm as an avid Bruin fan into the classroom. Ted was invited to teach his course at the USC Geology Department—he taught the course at UCLA from 1957 to 1975, and at USC from 1974 to 1978. Ted Bear had an active record of service and leadership in the oil industry, and was a member of the AAPG since 1946 (Certified Petroleum Geologist No. 261). His numerous AAPG activities include a term as president of the Pacific Section, during which he had a key role in hammering out the provisions of the California State Registration for Geologists and Geophysicists. He served on the registration board from its inception, and in 1969 he was appointed by the governor of California to the original board and was elected president in 1975. He was elected chairman of the Wildcat Committee of the Western Oil & Gas Association in 1978. Ted's greatest love was for his family; he is survived by his wife of 45 years, Dixie, his son Dennis (Nancy), daughter Kendel (Tom Harding), son RJ (Joanna), six grandchildren, and two great grandchildren. [Pacific Section AAPG]



John McDougall Christie, professor emeritus, was famous for his work in structural geology and micro-tectonics, especially for his insights into the mechanical behavior of quartz in the geological range of temperatures and pressures. He died at home in Pacific Palisades, California, on May 7th, 2004. John was born in Calcutta, India, on December 4, 1931, where his father ran a jute mill. His stay in India was short . . . the family moved back

to their Scottish homeland, and Christie grew up in Invergowrie near Dundee. Christie attended the Grant Institute of Geology of Edinburgh University, and obtained his BS degree in 1953 and his PhD under the supervision of Professor Arthur Holmes in 1956. His thesis, "The Post-Cambrian Thrusts of the Assynt Region," is based on field work on a portion of the Moine and

related thrusts in the Scottish North-West Highlands. From 1956 to 1958 Christie assisted Professor Donald B. McIntyre of the Department of Geology at Pomona College in Claremont, California, with a National Science Foundation research project on the structural geology and structural petrology of the Orocopia Mountains, Southern California; he also was a part-time instructor in that department. In 1957 he came to the attention of Professor John C. Crowell, then chairman of the Department of Geology at UCLA. He made a favorable impression on the faculty of the department and, after all bureaucratic hurdles had been overcome, was hired. In the Fall of 1958, John began to teach and research at UCLA's Department of Geology as an assistant professor, advanced to associate professor in 1964, and to full professor in 1971. Soon after his arrival, he began a close partnership with Professor David T. Griggs that lasted until Griggs' death in 1974. Griggs deformed specimens of quartz and quartz rocks in his deformation apparatus, at specified rates and under determined conditions of temperature and pressure, dry or in the presence of water; Christie investigated the resulting samples under the microscope, measuring the crystallographic orientation of quartz grains. From their measurements they were able to state flow laws for quartz rocks as a function of physical conditions and the presence of water. Transmission electron microscopy became available, and John began to look into the internal evidence of strain within individual quartz crystals in collaboration with Professor Alan Ardell at UCLA's School of Engineering. At the magnification obtainable in this instrument, the regular three-dimensional pattern of silicon and oxygen atoms could be seen to be disrupted by dislocations, and the more a quartz crystal had been deformed, the denser were the dislocations. And the dislocation patterns were similar whether a specimen had been deformed experimentally or been taken from a metamorphic rock in the field. Mastery of electron microscopy led to a collaboration with Professor Arthur Heuer of Case Western Reserve University on specimens from the moon, one of the few instances when Christie became interested in rocks devoid of quartz. Laboratory work did not diminish John's fascination with observing and mapping structural phenomena in the field; he collaborated with colleagues and supervised students' thesis projects. The White and Inyo Mountains of eastern California was his favorite region, with a special preference for the rocks surrounding the Papoose Flat Pluton. Diligent and conscientious research did not prevent John Christie from serving equally as an administrator. For many years he was the graduate advisor for the Department of Geology, which later became the Department of Earth and Space Sciences, to the great benefit of generations of students. With equal dedication he served on major Senate committees, turning the affairs of the Library Committee and later of the Graduate Council into his personal concerns. John retired in 1994, but continued to have an office and to work in the Department of Earth and Space Sciences. In retirement, his main scientific interest was the effect of plate tectonics on the spreading and distribution of the orchidaceae family of plants. [Gerhard Oertel]

Orrin W. Gilbert (BA '44) passed away on May 21, 2003.

[Jean L. Gilbert]



Helen Tappan Loeblich, professor emerita, and a major figure in the paleontology community, passed away August 18, 2004. Born on October 12, 1917, in Norman, Oklahoma, Helen went on to become an international leader in the field of micropaleontology. She earned her BS degree in 1937 at the University of Oklahoma, Phi Beta Kappa, and received the Sigma Gamma Epsilon Scholarship Award for Outstanding

Senior in Geology—an MS degree followed in 1939. It was during this time at the University of Oklahoma that she met her soul-mate, Al Loeblich, Jr., whom she married on June 18, 1939, thus beginning a life-long scientific collaboration that resulted in major advancements in paleontology. They transferred to the University of Chicago where Helen received her PhD in Geology in 1942—both her master's thesis and doctoral dissertation were on Texas and Oklahoma mid-Cretaceous foraminifera. When Al received orders to report for military duty in 1942, Helen assumed all of his teaching responsibilities, becoming the first woman faculty member of Tulane's College of Arts and Sciences. At the end of World War II, Al obtained a position as curator of invertebrate paleontology and paleobotany at the United States National Museum in Washington, DC. Helen resumed her earlier work with the United States Geological Survey (USGS), this time with the Navy Oil Project in the Naval Petroleum Reserve of the Alaskan North Slope. In 1953 the Smithsonian Institution sent Al to Europe to collect foraminiferal samples and to study collections in the major European museums as background for Helen and Al's work on the *Treatise on Invertebrate Paleontology* volume on foraminifera. Helen was forced to take a leave of absence from the USGS, because of their policy of not allowing their personnel to work outside the United States. She obtained a Guggenheim Fellowship and—together with their four children and Al's mother—they spent a year traveling throughout Europe, collecting more than two tons of rocks and examining many historical collections of foraminifera. Helen illustrated with a camera lucida the type specimens they studied. From 1954 to 1956 Helen was an honorary research associate of the Smithsonian Institution and in 1957, the Loeblich-Tappan family moved to California where Al headed a micropaleontological program at Chevron Oil Field Research Company. Helen continued to work part-time for the USGS and in 1958 began teaching at UCLA, becoming a full-time faculty member in 1966, full professor in 1968, and vice chairman of Geology from 1973 to 1975. During her years at UCLA, Helen advised, mentored, and inspired numerous students, many of whom went on to achieve prominence in geology, paleontology, micropaleontology, and palynology. Her graduate students specialized in Cretaceous and Cenozoic foraminifera, Miocene diatoms, Cretaceous coccoliths, Cretaceous and Tertiary dinoflagellates, chrysophyte cysts, and radiolaria, as well as Paleozoic acritarchs and prasinophytes. Such a wide range of topics is testimony to Helen's breadth and knowledge in the fields of micropaleontology and palynology. During her lifetime Helen served on many editorial and society boards as well as various committees. She received numerous awards, including the 1982 Woman of Science Award from the UCLA Medical Center Auxiliary, the Paleontological Society Medal in

1983, the Raymond C. Moore Medal for "Excellence in Paleontology" in 1984, and the 1987 Woman of the Year Award in Natural Science from the Palm Springs Desert Museum, to name a few. Helen will probably be best remembered for her landmark papers and books as well as her prodigious scientific output, both as sole author and in collaboration with Al. Helen published 272 scientific papers and books, mostly with Al. A few of the most notable are: Their 1957 paper "Correlation of the Gulf and Atlantic Coastal Plain Paleocene and lower Eocene formations by means of planktonic Foraminifera" won Best Paper Award in the *Journal of Paleontology*. The 2-volume *Treatise on Invertebrate Paleontology, Part C. Protista 2. Sarcodina, chiefly 'Thecamoebians' and Foraminiferida* (1964) is a landmark publication in which they classified foraminiferida on the basis of external wall characteristics. Their 2-volume book *Foraminifera Genera and Their Classification* (1987) is their *magnum opus* in foraminiferal research. In it, they revised foraminiferal classification by considering the internal wall structure and studying the type-species of almost all valid genera in the literature. This book received the 1988 Award of the Association of American Publishers for the best professional and scholarly book in the field of Geography and Earth Science. Helen was also very proud of her book *The Paleobiology of Plant Protists* (1980)—it was voted the book publisher's best non-fiction book for that year. Helen was an achiever of the highest order; her research and publications were rigorous, scientifically grounded, and always first-rate. She was a superb writer and editor and improved the manuscripts of numerous students and researchers. She demanded excellence, not only from herself, but also from her students and colleagues. She instilled in her students a strong work ethic and commitment to be the best they could. In spite of her many scientific accomplishments and honors, Helen was extremely generous with her time and expertise, and always had time for her students. Apart from her scientific achievements, she was an excellent artist, illustrating all of her papers and designing and creating printing blocks for their Christmas cards, which showed their current research specimens adorned in a holiday theme. In addition, she designed bookplates for their extensive library and designed the 50th Anniversary Stamp of the Society of Economic Paleontologists and Mineralogists (now the Society for Sedimentary Geology). [Reed Wicander]

Clemens Arvid Nelson, professor emeritus of Geology, died after a brief illness on March 3, 2004, in Bishop, California at the age of 85. Clem was a renowned paleontologist specializing in trilobites, meticulous stratigrapher and participant in refining the Early-to-Middle Cambrian boundary, superb field geologist and author of geological maps, dedicated and inspiring teacher of both his students and his colleagues, and friend and helper to everyone in need. Born in St. Paul, Minnesota, on November 26, 1918, Clem was the only son of a family of six children born to Swedish parents Arvid and Olga Nelson. He studied geology in his home town's twin city of Minneapolis at the University of Minnesota and obtained his BA degree in 1941 and his MS the following year. Clem then worked briefly for the United States Geological Survey. That institution and he seem to have agreed with each other, because he continued his connection and kept producing impeccable geological

map quadrangles under the Survey's imprint throughout his career. Late in 1942 he joined the United States Navy and served throughout World War II until his discharge at the rank of Lieutenant in 1946. He immediately returned to his Alma Mater as a student and half-time instructor. Early in the summer of 1948, Clem had almost finished his doctorate and



was recruited for the post of instructor and lecturer by Cordell Durrell, chairman of the Department of Geology at UCLA. He was to start the Fall semester, but his mother died at that critical time, and his thesis was not finished in time. The UCLA Department came through with the job anyway, and Clem started teaching. His thesis, "The Cambrian Stratigraphy of the St. Croix Valley," was accepted by the University of Minnesota in 1949, and portions of it were published in

1951 in the *Journal of Paleontology*. Promotions at the University of California were, and still are, granted only slowly and after painful scrutiny. On the occasion of Clem's proposed advancement from instructor to assistant professor in 1949, his chairman, still Cord Durrell, mentions in a letter to the University president that, despite a heavy teaching load, the candidate had started field work to re-investigate the Type Middle Cambrian Section in the Inyo Mountains of California, where no new work had been done for over fifty years. This must have impressed President Sproul, because Clem entered the tenure track as an assistant professor, step I, in the Fall of 1950. Tenure and associate professorship came in 1958 and full professorship in 1964. Clem was chair of the Department twice—from Fall of 1966 to that of 1969, and again from 1970 to 1972. From 1975 to his retirement in 1987 Clem served as undergraduate advisor, guiding and inspiring his department's younger students to navigate the bureaucratic maze of formal requirements and prerequisites, and—more importantly—to enjoy learning. He took many generations of undergraduates to the crowning course of their curriculum, "Advanced Field Geology," run from a field camp on the slopes above Owen's Valley near Big Pine—"God's Own Country," as he called it. He made them work long, hard days, and most of them loved it. Clem was a wise and fatherly advisor to the students he led to their master's and doctor's degrees. He held rather progressive views on many social issues—though the original motivation probably came from his wife Ruth, Clem was an outspoken advocate for women's rights, long before it was widely adopted or "politically correct." His was one of the earliest voices that set us on the path of equal opportunity for women students and faculty, a long tradition of which the UCLA Department of Earth & Space Sciences is justifiably proud. Clem and Ruth moved to the Owens Valley in 1987, after his retirement from UCLA. Ruth died in 1989, but Clem stayed active in the geology of eastern California and was a remarkable source of support for younger generations of geologists working in the White-Inyo Range. He led interested parties on trips into his favorite country, especially Poleta Folds and Papoose Flat. Clem kept up on new research and often asked, "Did you see that new paper by so-and-so?" in a tone that led one to believe that he was skeptical about that particular paper. As he aged, Clem was less able to get off trail or up into the high country of the White Mountains, but he was always

willing to take a drive and point at things from the roadside. He showed keen interest in any new results, whether they were on mapping, geochronology, or structural geology. Clem's maps truly inspired generations of geologists to work in eastern California. Clem is survived by his sister Marjorie (Art Anderson), sister Lorraine Gibson; son James (Kris), son Jack (Erin), daughter Peggy (Peggy Beck), sister Eleanor (Art Carlbom), grandchildren Chani and Michael Colburn and Jeremy, Joshua, Taylor, Shawn, and Matthew Nelson, and two great grandchildren, Peyton and Ashley Colburn.

[Gerhard Oertel, Wayne Dollase, Rick Law]

Many friends, colleagues, and former students sent anecdotes about and expressions of appreciation for Clem, which may be viewed on the UCLA Department of Earth and Space Sciences website at www.ess.ucla.edu/faculty/nelson.asp.

Parke D. Snavely, Jr. (BA '41, MA '51) passed away on November 24, 2003, as a result of complications following a stroke, at the age of 84. Parke had a long and distinguished career with the United States Geological Survey, spanning nearly 60 years. His geologic mapping of the Cenozoic Oregon and Washington Coast Ranges is classic work. Begun in 1946 and continuing through the mid-1990s, it provided the basic geologic and tectonic framework both onshore and offshore. Field studies by Parke and his Fuels Branch colleagues established the Centralia-Chehalis coal district as a major energy resource, which now sustains a large generating plant supplying power to Puget Sound. Parke also popularized his geologic findings in a series of guidebooks outlining the geology of the Oregon Coast. Although largely done in support of energy resource evaluations, his mapping is now being applied to seismic hazards and other problems in the Cascadia forearc. Parke's efforts to correlate onshore geology with offshore marine data were a life-long research interest, and his numerous onshore-offshore geologic profiles of the Cascadia margin provide unique insight into its evolution. Parke's broad interests were reflected in his position as a research geologist both in the Pacific Marine Geology and Western Regional Geology branches of the USGS. He served as Chief of the Pacific Coast Branch of Regional Geology, where one of his memorable assignments was to have Tom Dibblee map the San Andreas Fault south of San Francisco. Parke was instrumental in establishing a marine program for the USGS as its first Chief of the Office of Marine Geology, initiating international cooperative research programs with the governments of Canada, Spain, Liberia, Japan, and Taiwan. Parke also acted as an external advisor to academia, supported student and faculty research, and worked with an array of industry, state, and Survey colleagues to establish the igneous history, stratigraphic framework, and oil and gas potential of the Pacific Northwest. Parke's first love was field work, and he was proud to have received the Dibblee Foundation's Dibblee Medal for his significant contributions to geologic mapping. He also was a past recipient of the Department of Interior's Distinguished Service Award. Parke was a mentor to many young geologists who will miss his wise counsel. Parke is survived by his wife of 61 years, Anne, daughters Pamela and Deborah, son **Parke Snavely III** (BS '75, PhD '84—a geologist with ExxonMobil), four grandchildren, and a great-granddaughter. [Ray E. Wells]

A very special "Thank You" to all of our 2003-2005 donors . . .

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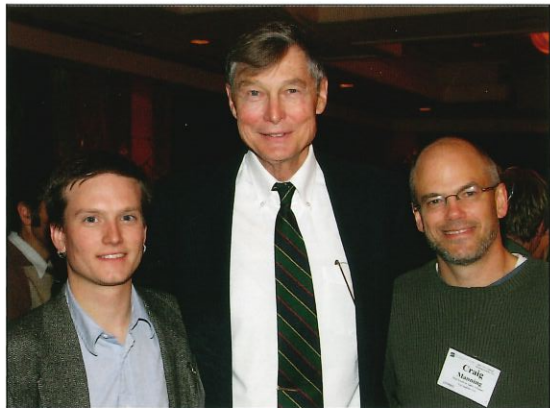
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Earth & Space Sciences Class of 2004—Bottom row, from left: Student Affairs Officer Lauri Holbrook, Clint Colasanti, Takeo Hirooka, Irving Flores, Monica Mehlman, Holly Caprio, Benjamin Wu, Andy Yu. Row 2: Evan Cholfin, Renee Cheung, Michelle Hopkins, Jorge Vazquez, Dan Eastmond, Prof. Ray Ingersoll. Row 3: Lauren Cooper, Bobby Gillis, Mike Taylor, Prof. Heidi Houston, Sabrina Mayerberger, Jennifer Garrison, Bernard Guest, Mike Mischna, Kristin Ebert, Misa Cowee, Mary Kairouz, Prof. Gary Axen. Row 4: Prof. Emily Brodsky, Prof. Paul Tackley, Prof. John Rosenfeld, Prof David Jackson, Prof. Jerry Schubert, Prof. John Vidale, Prof. Kevin McKeegan, Prof. John Wasson, Prof. Edwin Schauble, Prof. Brian Horton, Jan-Oliver Kliemann, John Herland, Prof. Paul Davis.

PHOTO BY CARL MURRAY
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Alex Robinson, first recipient of the W. Gary Ernst Graduate Student Support Fellowship (left), was introduced to Gary Ernst (center) by Professor Craig Manning at the 2003 GSA meeting in Seattle.

ESS Honors and Awards—2004

ESS Excellence in Graduate Student Teaching Award
Matthew Ryan Bourke

W. Gary Ernst Graduate Fellowship
Alexander Clemens Robinson

John & Frances Handin Scholarship
Evan Joshua Cholfin
Steven Michael Skinner

Clem Nelson Summer Field Award
Renee S. Cheung
Clinton Valiant Colasante
Michelle Diane Hopkins
Eric Lee Weigand

2003-2004 Earth & Space Sciences Degrees

Doctor of Philosophy

- Jennifer Marie Garrison** *Petrogenic Processes at Cotopaxi Volcano, Ecuador: Investigations Using U-Series Disequilibria and Other Isotopes* (Professor Reid) *Geology*
- Bernard Guest** *The Thermal and Structural Evolution of the Central Alborz Mountains, Northern Iran* (Professor Axen) *Geology*
- Jessica Lynn D'Andrea Kapp** *The Thermal and Physical State of the South Tibetan Middle Crust* (Professor Harrison) *Geology*
- Zhen Liu** *Numerical Modeling and Analysis of Neotectonics in New Zealand—an Integrated Study of Faults, Lithosphere Dynamics, Continental Collision and Orogeny, and Coupling of Surface Erosion with Mantle Processes* (Professor Bird) *Geophysics & Space Physics*
- Michael Andrew Mischna** *Obliquity-driven Climate Change on Mars* (Professor Paige) *Geophysics & Space Physics*
- Michael Halford Taylor** *The Tectonic Development of Conjugate Strike-slip Faults in Central Tibet; Implications for the Dynamics of Continental Collisions* (Professor Yin) *Geology*
- Jorge Antonio Vazquez** *Timescales of Magma Storage and Differentiation in Caldera Magma Chambers* (Professor Reid) *Geology*
- Zhen Jiang “Andy” Yu** *Spacecraft Magnetic Field Observations as a Probe to Planetary Interiors* (Professor Russell) *Geophysics & Space Physics*

Master of Science

- Misa Melina Cowee** (By Comprehensive Examination) *Geophysics & Space Physics*
- Daniel Jonas Eastmond** *Composition of Modern Sand from the Sierra Nevada, Constraints on Actualistic Petrofacies of Continental-margin Magmatic Arcs* (Professor Ingersoll) *Geology*
- Kristin Ann Ebert** *Exhumational History of the Orocoxia Schist and Development of Upper Plate Structures of the Orocoxia Fault, Southeastern California* (Professor Yin) *Geology*
- Robert James Gillis** *Crystallization, Deformation, Cooling and Sedimentation of Some Bolivian Rocks* (Professor Horton) *Geology*
- Andrew Nelson Hock** (By Comprehensive Examination) *Geophysics & Space Physics*
- Allen Leroy Husker, Jr.** (By Comprehensive Examination) *Geophysics & Space Physics*
- Mary Elizabeth Kairouz** *Structural Analysis of the West Salton Detachment System, Southern California* (Professor Axen) *Geology*
- Jan-Oliver Kliemann** (By Comprehensive Examination) *Geophysics & Space Physics*
- Sabrina Simone Mayerberger** (By Comprehensive Examination) *Geophysics & Space Physics*

Bachelor of Science

- David Thomas Ayres** *Engineering Geology*
- Holly Caprio** *Engineering Geology*
- Renee S. Cheung** *Geology*
- Clinton Valiant Colasanti** *Geology*
- Sara Jane Dunbar** *Geology*
- Takeo Hirooka** *Paleobiology*
- Michelle Diane Hopkins** *Geology*
- Monica Ariel Mehlman** *Geology*
- Benjamin Shiu-Kei Wu** *Applied Geophysics*



Earth & Space Sciences Class of 2005—Bottom row, from left: Prof. David Jackson, Dean Tony Chan, Jean-Pierre Williams, Elizabeth Cochran, Alexander Robinson, Justin Simon, Regina Kruglyak, Tamara Yerkes, Mina Tanikawa, Prof. Ray Ingersoll, Prof. John Rosenfeld, Student Affairs Officer Lauri Holbrook. Back rows, from left: David Gingrich, Matt Bourke, Prof. Brian Horton, Max Werner, Prof. Gilles Peltzer, Prof. Jon Aurnou, Prof. John Vidale, Prof. Chris Russel, Prof. Paul Davis, Galen Fowler, Dr. Elizabeth Johnson, Jennifer Dahlberg, Prof. Edwin Schauble, Jessica Yehling, Prof. Ray Walker, Xianzhe Jia, Prof. John Wasson, Eric Weigand, Prof. David Paige, Alvin Wong, Prof. Kevin McKeegan, Mari Takagi, Evan Cholfin

ESS Honors and Awards—2005

W. Gary Ernst Graduate Fellowship

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Eugene Waggoner Scholarship

Andrew David Czaja

ESS Excellence in Graduate Student Teaching Award

Melissa Katherine Giovanni

Janet Carolyn Harvey

Anat Shahar

Dianne Jeannette Taylor

Jelena Tomic

John & Frances Handin Scholarship

David Arthur Gingrich

Michael deWitt Lien Scholarship

Alvin Ka-Kin Wong

Clem Nelson Summer Field Award

Regina Kruglyak

Walter Harris Summer Field Award

Tamara Suzanne Yerkes

Alumni & Industrial Affiliates Award

Alma Delia Quezada

2004-2005 Earth & Space Sciences Degrees

Doctor of Philosophy

- Elizabeth Scott Cochran** *Earthquake Rupture Initiation and Fault Structure: I. Triggering of Earthquakes by Earth Tides II. Seismic Anisotropy near the Hector Mine Rupture III. Post-seismic Displacements Observed with InSAR* (Professor Vidale) *Geophysics & Space Physics*
- Galen James Fowler** *Responses of the Geomagnetosphere to Sudden Changes in the Solar Wind Dynamic Pressure* (Professor Russell) *Geophysics & Space Physics*
- Alexander Clemens Robinson** *Geologic Evolution of the Western Himalayan-Tibetan Orogen: Implications for Continental Subduction and Extension during Collision Tectonics* (Professor Yin) *Geology*
- Justin Ibrahim Simon** *High Resolution Dating Studies of Rhyolite Magmagenesis at Long Valley, California, and CAI Evolution in the Protoplanetary Disk* (Professor Reid) *Geology*
- Scott Martin Thompson** *Magnetotail Current Sheet Structure and Dynamics Using Multi-point Spacecraft Measurements* (Professor Kivelson) *Geophysics & Space Physics*
- Jean-Pierre Williams** *Geological and Geodynamical Studies of the Origin and History of the Tharsis and Valles Marineris Regions of Mars* (Professor Paige) *Geophysics & Space Physics*

Master of Science

- Natanya Maureen Black** *Structure and Hanging Wall Stratigraphy of the Las Cuevitas Detachment* (Professor Axen) *Geology*
- Matthew Ryan Bourke** *Sedimentological and Paleoenvironmental Analysis of the Southeastern Kishenehn Basin, Northwestern Montana* (Professor Horton) *Geology*
- Megan Lee Cartwright** (By Comprehensive Examination) *Geophysics & Space Physics*
- Jean Elias Elkhoury** (By Comprehensive Examination) *Geophysics & Space Physics*
- David Andrew Galvan** (By Comprehensive Examination) *Geophysics & Space Physics*
- John William Hernlund** (By Comprehensive Examination) *Geophysics & Space Physics*
- Xianzhe Jia** (By Comprehensive Examination) *Geophysics & Space Physics*
- Leigh Anne Smith Riedman** (By Comprehensive Examination) *Geology*
- Mari Takagi** *Distribution of FeO/(FeO+MgO) in Semarkona (LL3.0): Implications of Chondrule Formation and Nebular Evolution* (Professor Wasson) *Geochemistry*
- Maximilian Jonas Werner** (By Comprehensive Examination) *Geophysics & Space Physics*

Bachelor of Arts

Gary Benton Glesener *Earth Sciences*

Bachelor of Science

- Evan Joshua Cholfin** *Paleobiology*
- Jennifer Denise Dahlberg** *Astrophysics/Geophysics & Space Physics*
- Arthur Clyde Edwards, IV** *Geophysics & Space Physics*
- David Arthur Gingrich** *Geology*
- Regina Kruglyak** *Engineering Geology*
- Eric Lee Weigand** *Geology*
- Tamara Suzanne Yerkes** *Geology*
- Jessica Karin Yehling** *Geophysics & Space Physics*
- Alvin Ka-Kin Wong** *Geology*
- Mina Tanikawa** *Geophysics/Applied Geophysics*

Alumni News

An asterisk (*) after a name indicates that the person has a webpage listed and hot-buttoned in our online Alumni Directory at <http://www.ess.ucla.edu/alumni.asp>. Please email barb@ess.ucla.edu, if you'd like your webpage to be included.

1932

Jerome J. O'Brien, BA, an "oil biz legend," is now 99! He celebrated with a full day of birthday parties when he turned 90, on October 6, 1996—including gifts from the Emir of Bahrain and from Ronald Reagan, and a papal blessing on parchment, flown in from Rome.

1938

Robert H. Paschall, BA, was an Air Photo Interpretation Officer in the US Navy, as were **Clem Nelson**, **Al Kerr** (BA '36, MA '38), **Ted Bear** (BA '40), and several others associated with UCLA—the navy was strong on geologists for that sort of work, because very few people were then acquainted with aerial photographs.

1939

Joseph W. Kean, Jr., BA, was 86 when he was informed by the United States Marine Corps in 2003, that he had been given an honorary promotion to full Colonel on their retired list!

Henry J. Muller, Jr., BA, is a US Army Brigadier General (retired). He lives in Montecito and celebrated his 89th birthday last April 7th!

1941

George Feister, BA, and **Robert D. Johnston**, (BA '41), recently visited **Ted Bear** (BA '40), who suffered a stroke some years ago, but continued to reside in his home in Dove Canyon, California, under the loving care of his wife Dixie until



Bob Johnston (from left), George Feister, Ted and Dixie Bear

his death on August 15, 2005 (see photo above and *In Memoriam* on page 6).

1951

Norman Bradley, BA, has retired from flood control and water conservation projects, and is enjoying his family of four children and four grandchildren.

Tod Harding, BA (MA '52), graduated from UCLA on a Friday and went to work at Humble Oil (later Exxon) the following Monday. He found Professor **John Crowell** to be "most inspirational,"—especially "his insistence on high quality work . . . he made geology much more than just another way to earn a living, and I ran this experience into 44 years of actively practicing geology at Exxon."

1953

Don Hagen, BA (MA '57), is thankful that—in spite of old-age aches and pains—he's still able to ski, mountain bike, windsurf, and play tennis. He's now into ballroom dancing with a lovely lady from Alexandria, Virginia, sings tenor in a classical choir, and does

volunteer work for Habitat for Humanity and on a local festival at Sandpoint, Idaho.

1954

James Rammelkamp, BA, is semi-retired, but has continued working as an engineering and hydrogeology consultant. Recent projects include the Malam-paya onshore gas treatment plant in Luzon for Shell International and site investigation of the Santa Rita 660 MW gas-fired power plant in Batangas Bay, Luzon, assessing liquefaction risk for an offshore cooling water intake pipe in a high earthquake risk area.

1958

X.C. Colazas, BA, though retired, is kept very busy with part-time teaching and occasional consulting in the oil business—and has made recent trips to Greece, Italy, and Croatia.

Ed Kiessling, MA, is contributing to an economic geology chapter in a publication on the Palos Verdes Peninsula. He spent a week visiting his son, who is assigned to the USS Gary, in Japan.

David L. Weide, BS (PhD, '74 Geography), officially "retired" from the Geoscience Department of the University of Nevada Las Vegas after 24 years of service. He will continue to teach and mentor graduate students as a "P-T-I" (Part Time Instructor) and plans to complete geologic mapping on eight quadrangles in a corridor between Las Vegas and the Nevada/California state line. Dave served as curator of mineralogy and petrology for the Geology Department at UCLA, and remembers some of the other staff members from that time: illustrator/draftsman **Julie Guenther**, thin section technician **John DeGrosse**, spectroscopist **Gerhard Stummer**, staff photographer **Lowell Weymouth**, invertebrate paleontology curator **Takeo Susuki** (BA '49, MA '51) and administrative assistant **George Lapins**.

1959

LouElla Saul, MA, is a research associate in invertebrate paleontology at the LA County Museum, having been a senior museum scientist for many years. Her husband, **Dick Saul**, (BA '56) passed away in 1995.

1961

Allen W. Hatheway, BA, now a retired professor of geological engineering of the University of Missouri School of Mines, and living at Rolla, Missouri, delivered the invited keynote speech

at GEOLINE 2005, the International Symposium on Linear Infrastructure, held by the International Association for Engineering Geology, at Lyon, France, in May of 2005. To his surprise, he was feted at a reception in the old City Hall of Lyon, with the award of an inscribed bronze medal by Lyon Mayor Gérard Collomb, who is also President of Greater Lyon. Allen is an Honorary Member of the Association of Engineering Geologists, and served as its president in 1985. He mentions that **Richard J. Proctor** (MS '58) was made an Honorary Member of the Association of Engineering Geologists in 2004.

Warren J. Nokleberg, BA (PhD, '70 at UC Santa Barbara in Geology), is a research geologist at the USGS in Menlo Park, and will soon complete 36 years of US government service! Four of those years were as a US Navy Regular Line Officer, after being a Midshipman in the UCLA Regular NROTC. His field studies have slowly migrated from the central Sierra Nevada to Alaska to the Russian Far East and farther west—the international studies consist of large collaborative projects in which new data and interpretations on regional metallogenesis and tectonics are published in English in the West. He is currently regional coordinator for Northeast Eurasia for the Global Mineral Resource Assessment Project. Warren greatly appreciates the high-quality and inspiring courses from the “old crowd” of Geology Department

professors like **Carlisle, Christie, Corbato, Crowell, Ernst, Hall, Lane, Murdoch, Nelson, Poponoe,** and **Watson** and the fine camaraderie of his fellow undergrad students. Warren can be contacted by email at wnokleberg@usgs.gov.

1962

Phil La Mori, MS, is a consultant doing site remediation at Cape Canaveral Air Force Station.

1969

Eugene Fritsche,* PhD, retired as a geology professor from California State University, Northridge four years ago. He and his wife Sue have been enjoying a wonderful life of retirement. In the summer of 2003 they went with their children and grandchildren on a family trip throughout southern Utah to enjoy the Colorado Plateau country. In October, 2003, he led a field trip through the Santa Monica Mountains for the Coast Geological Society. Christmas, 2003, was spent with their extended family in the Sierras. In March, 2004, Gene and Sue undertook a 75-mile philanthropic hike in support of three charities. The hike, booked as “LA Zoo to Point Mugu,” traversed the length of the Santa Monica Mountains in seven days and raised \$8,600 for the charities. Last April, they had a great time touring Morocco for two weeks. During the summer they spent two weeks touring Mongolia and then stayed in Ulaanbaatar another two weeks to build houses with Habitat for Humanity. Last October they attended the Habitat

for Humanity Jimmy Carter Work Project in Veracruz, Mexico, helping to build 150 houses in five days.

1971

David A. Gardner, BS (MS '73), is Senior Vice President, Water Resources Manager of Fugro, West, Inc., with more than 30 years of experience managing and directing projects involving ground-water resources and environmental engineering in California.

1970

Jonathon Ericson, BS (MA '73, PhD '77 Anthropology), took structural geology the year UCLA changed to the quarter system. Jon was sorry to learn of the passing of **John Christie**, “a great teacher and model for me.” Now Chair and a Professor in the Department of Environmental Health, Science, and Policy at UC Irvine, he spoke about John Christie at the campfire of his environmental geology field class in May of 2004; it was the last time the class will ever be offered by Jonathon, making it a “double farewell.”

1972

Scott Prior, BS (MS '74), does development geology and geophysics and geosteering of horizontal wells at Wilmington Field (under the Queen Mary) for Thums Long Beach Company. Scott and Ellen's daughter Anne married Scott Haley on the 20th of March of 2004.

1974

Bonnie Bloeser, BA (MS '78), continues to be challenged at Aera Energy

LLC in Bakersfield as the Reservoir Management Geologist for the giant South Midway Sunset Field in the southern San Joaquin Valley. Managing the drilling opportunities for three major turbidite reservoirs (Monarch, Webster and Moco T), in addition to surveillance in this 25,000 bopd field keeps her petroleum geology skills sharp. She ventured along the Inca Trail to Machu Picchu and into the Amazon with her daughter Hillary (now in her third year at UC Berkeley), in January for a very exciting adventure.

1978

Kata McCarville, BS, completed her dissertation on avian paleontology of Fossil Lake, Oregon, in 2004. The deposit had been interpreted for over a century as lacustrine, but Kata's work shows it is actually set in a diatreme-maar complex. She has joined the faculty at Upper Iowa University, where she is coordinating a degree program in Environmental Science. You may have seen her last year in *Geotimes* and other popular science venues as she recognized and reported the first evidence of sauropod urination—a large scour-and-fill basin at the Picket-wire dinosaur track site in Colorado—resulting in a lot of contacts from authors of children's books about “gross stuff!” She is married to invertebrate paleontologist, Gale Bishop, the director of the Sea Turtle Conservation Program on St. Catherines Island, Georgia—and they have two children (Jameson, 10; and Kelia, 14).

1980

William D. Carlson, PhD, is a professor and holds the Peter Flawn Centennial Chair in Geology at The University of Texas at Austin—his present focus is quantitative analysis of textures in metamorphic rocks as a means of understanding the atomic-scale processes that govern metamorphic recrystallization. Bill was awarded the Dana Medal of the Mineralogical Society of America for 2005, in recognition of his “continued outstanding scientific contributions through original research in the mineralogical sciences.” In his acceptance speech and subsequently, Bill thanked many of his professors from UCLA, (among others)—namely, **Gary Ernst**, his ideal supervisor; **Wayne Dollase** for awakening in him a deep sense of the intrinsic beauty of mineralogy, crystallography, and crystal chemistry; and **John Rosenfeld**, from whom he learned petrography; as well as **Art Boettcher/Montana**, **Peter Bird**, **John Christie**, and **Ron Shreve**. He also cited **Mark Cloos** (PhD ‘81), **Carl Jacobson** (PhD ‘80), and (with particular thanks) **Sorena Sorensen** (PhD ‘84) as three very special individuals from his student days back at UCLA, whose friendship and scientific advice he has continued to value immensely down through the years; as well as **Allen Glazner** (PhD ‘81), **Lang Farmer** (PhD ‘83), **Bruce Nelson** (PhD ‘85), **Warren Thomas** (BA ‘73, PhD ‘79), **Mick Apted** (PhD ‘80), and **Steve Lipshie** (PhD ‘84).

1981

Bruce Bilodeau, MS, accompanied by his wife and



Clare, Laura, Becka, and Brian Marshall in the Washington Monument, under a piece of carved Yule Marble

family, is having great fun working for Caltex in Duri, Indonesia. He says that the work is interesting, and there’s lots of it. Living conditions are good—the company provides nice suburban housing in a camp-like environment (actually more like a very funky country club). One big plus is they are getting lots of opportunity to travel, but a drawback is that Duri is so remote it takes a long time to travel anywhere and for communication (except email). They can’t drop down to the local grocery or department store because there pretty much isn’t one, but they’re learning to adapt. Bruce says that celebrating Christmas in the largest Muslim country in the world is, “interesting!”

1983

Clare Marshall, MS, and **Brian Marshall** (PhD, ‘84) have fond memories of leading an ESSO field trip, number 13, in 1982, to the western Sierra Nevada and the gold country. They have two kids, both girls, both scouts, and both forced

into being knowledgeable (if not honestly interested) in geology. Their older daughter’s Girl Scout Troop earned a “Bronze” award, by trying to make the Yule Marble into the Official State Rock of Colorado (see photo above). The Yule is a brilliant white medium grained marble, and it was chosen by this troop because of its color—it makes the geological symbols of Colorado red, white, and blue. The mineral is red (rhodochrosite, adopted in 2002), the Yule Marble is white (adopted in 2004—the governor signed the bill on March 9th!), and the gemstone is blue (aquamarine, adopted in 1971).

Scott Warner, BS, was promoted at Geomatrix Consultants in 2003 to vice president, practice leader for their environmental group in the Oakland office, and to their Board of Directors. He became a co-editor for a new American Chemical Society book on DNAPL and chlorinated solvent remediation.

1985

Stephen Defibaugh, BS, is a senior geologist for Miller Brooks Environmental. He’s been California program manager for their Conoco-Phillips work, overseeing management of the assessment and cleanup of over 100 underground storage tank sites since August of last year. Before that, Steve was vice president of Block Environmental. He lives in Mission Viejo with his beautiful wife Sharon and children (Phillip, 13, Grace, 11, and Ethan, 8). Steve and Sharon came to their Class of ‘85 Alumni Reunion Liquidus, which was hosted by **Lauri Holbrook** (BS ‘84), who is now the Department’s student advisor. Others who attended were **Dave Ebersold** (BS ‘85), **Dave Ferreira** (BS ‘85), **Richard Gladson** (BS ‘86), **Eirik Haenschke** (BS ‘85), **Mike Hunziker** (BS ‘85), **Stana Buchholz Korth** (BS ‘84), and **Lily Fong Soley** (BS ‘85).

J. Patrick Frascogna, BS, began his career as a legislative assistant to the Honorable William M. Thomas, Congressman for the 20th Congressional District of California. As an aide to the congressman, he was responsible for a variety of issue areas, including the United States Forest Service, Bureau of Reclamation, Bureau of Indian Affairs, Bureau of the Interior, in addition to energy, environmental and transportation affairs. After his tenure in Washington, DC, Pat studied in Italy and Germany before returning to the United States in 1987. He matriculated at the Mississippi

School of Law and later received his doctor of jurisprudence degree in 1990. Pat began working for the Hinds County, Mississippi Public Defender's Office in 1992 as one of three initial staff attorneys for the newly created office. He entered private practice in 1995 as a partner in the law firm of Frascogna-Courtney. With all of this, Pat considers his wife of seven years, Lisa, and six-year old son, Franco, to be the most notable mentions and accomplishments (even surpassing the Tick Canyon experience!) of his life.

Karen Loomis, BS (PhD Stanford, '90), and her husband George Koutoulas have moved to "big sky country"—Bozeman, Montana. They own NCF Graphic Solutions, a custom printing and promotional products business with clients throughout the United States, and internationally. They can customize any printed forms your company uses, and they also embroider or imprint apparel/promotional items. So if there's anything they can do for you, call them at 1-800-253-6583!

1988

Rachel Fischer,* BS, is still consulting on environmental projects, but has also established a small press. The first offering from Oma Books of the Pacific is a zesty poetry collection!

Miguel Moreno,* PhD, is the Director of the NASA Precollege Awards of Excellence in Mathematics, Science, Engineering, and Technology (PACE/MSET), a

program designed to close the education gap in MSET fields for minority students. He and his wife Gladis are proud of their daughter Pamela, who recently graduated from USC with a BS in Psychology and Computer Science.

1990

Gilles Bussod, PhD, has moved around quite a bit since graduating from UCLA: first to Los Alamos National Laboratory (LANL) as a postdoc; then Bayreuth, Germany as a visiting fellow at the Bayerisches Geoinstitut. In 1993, he received a second doctorate, in Geophysics, from the University of Paris VII, and was offered an appointment as full Professor in Lille, France. Instead, Gilles returned to LANL as a research scientist, continuing work on the effect of solid-liquid and solid-solid phase transformations on mantle flow in the asthenosphere of the Earth (400km-600km). He developed a "rock melting" tool for self-encasing drilling, patented in 1997. Gilles switched from working on mantle flow problems to doing flow and transport field experimentation, serving as PI for the Busted Butte Underground Test and LANL project leader for the Yucca Mountain Project until 1999. He's now living a peaceful life in Vermont with his wife KyuHee, step-children Paawee and Poqueen, and their Old English Sheep Dog Lilu. At New England Research, Inc., Gilles

is working on a variety of basic and applied environmental problems with fellow scientists from Lamont, MIT, and Stanford. Also involved in oil and gas reservoir studies, he serves as a member of the EPA's Science Advisory Board (Radiation Advisory Committee), and is an adjunct Professor in geology at University of Vermont.

Bob Ilchik, PhD, took the position of Senior Exploration Manager with Sino Gold Ltd., in Sydney, Australia last year. He's running an exploration program for Carlin-type gold deposits in the so called "Golden Triangle" of Southern China, splitting his time between China and Sydney. Bob recalls taking a field class from **Clem Nelson** at the Poleta folds in the White Mountains. Having heard about the spectacular drive through Silver Canyon, he "harangued" Clem about driving there in two of the "tinny" UCLA Econovans. They inched their way down the extremely steep road, "trying to keep that delicate balance between skidding

tires, over-heating brakes, and cliffs of no return . . . stopping to unload all passengers to creep down the steepest parts . . . Clem was always "willing to take on adventure to show students the fun that can only be found in the field . . . he will be missed by those lucky enough to have known him."



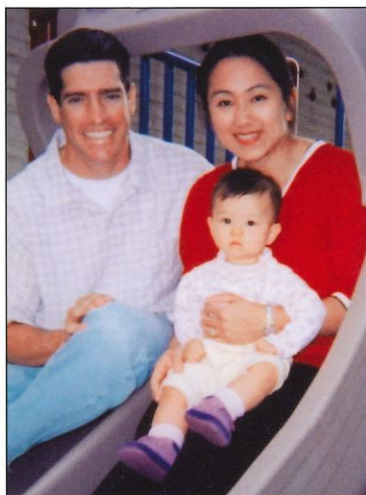
Beth, Mike, and Camden Murphy

1993

Mike Murphy, BS (MS '97, PhD '00), is an assistant professor at University of Houston, and does structural geology/tectonic research in Nepal, Tibet, and Mexico. He met his wife Beth, now an assistant professor at Baylor College of Medicine in Pediatric Gastroenterology, at UCLA. Their baby Camden was born on April 18, 2005 (see photo above).

1995

David Dirkin, BS, and **Tracey (Wu) Dirkin**, BS, married in 1998, and celebrated the birth of their daughter Bethany on January 24, 2003 (see photo at left)—and David passed the Registered Geologist Exam!



David, Tracey, and Bethany Dirkin

1995

Sandy (Lee), BS, and An Yin are married and the proud parents of beloved three-year-old Daniel. Sandy received her MS in Environmental Engineering at USC in 2000 and is now enjoying motherhood and assisting with An's research in the Himalayas.

2002

Christopher Avalos (formerly Dueñas), BS, changed his last name to his stepdad's as a Christmas

present to him. Chris works for Earth Tech, Inc., spending most of his time at Edwards Air Force Base.

Friends of ESS

Gene Kaula-Slater, widow of Professor Emeritus **Bill Kaula**, is now married to Grant Slater, an emeritus professor of Biochemistry at UCLA. After combining their Los Angeles households, they moved to Valle Verde, a retirement community in Santa Barbara. Gene would like old friends

to keep in touch; you may contact her by email at GeneKaula@aol.com.

Gary Lane,* ESS faculty 1958 through 1973, has been a professor emeritus at Indiana University for ten years. Gary's daughter Ann, an officer at Bank One in Louisville, and Garry McCandless have a new daughter, Mary Leighann McCandless; his son Charles, a professor of Particle Physics at Drexel University in Philadelphia, and his wife

Joyce have children Aurora, 8, and David, 9 months; Gary's daughter Susan, a microbiologist at Norton Hospital in Louisville, married Anthony Casebeer in February. At the Salt Lake City Geological Society of America meeting in October, Gary had a lot of fun at the symposium titled "The Echinoderm Legacy of Gary Lane." There were 14 oral papers and two posters—virtually all of the experts on fossil echinoderms took part!

Please help us find a "lost soul". . . We've lost contact with:

Mabel Grouard '26	Julius Arceneau '50	Mathilda Van Zele '56	Robert Patterson '68	Jean Konishi '81
Charles Miller '27	Verner Crackel '50	Morton Levy '57	Ernest Rich '68	Susan Shoemaker '81
Douglas Hamelin '28	Howard Dohlen '50	George Yonkman '57	Lee Harvill '69	William Hildreth '82
C. Paver '28	Paul Franklin '50	Jean Paul Chavez '58	Alan Eastwood '70	Andrew James '82
J.H. Ellis '29	George Hazenbush '50	Harold Erickson '58	Lee Madland '70	Ellen McKay '82
William Bailey '31	Alfred Hopkins '50	James Gamble '58	William Renison '70	Charles Roberts '82
Holmes Miller '32	Louis Louis '50	Donald Robinson '58	Paul Sroka '70	Barry Temple '82
Stanley Mitchell '33	Jerome Petrie '50	John Sargent '58	Hsueh-Cheng Cheng '71	Dana Barber '83
Roy Mead '34	David Smith '50	John Truhlar '58	Chester Herbst '71	Lynn Muradian '83
Russell Simonson '34, '36	Robert Smith '50	Bobby Blanks '59	Terry Hirsh '71	Susan Smith '83
Fred Varney '35, '37	Bruce Haw '51	Arthur Freitag '59	Rudolph Ratliff '71	Pamela Endler '84
Horace Cline, Jr. '36	Albert Morejohn '51	James Higley '59	Clarence Winge '71	Kurt Miller '84
Robert L. Johnston '36, '38	Melvin Scribner '51	Doralee Howell '59	Kelly McSpadden '72	Ofra Stauber '84
Ralph Rampton '36	John Adams '52	Donald Walls '59	Mark Tippets '72	Jane Vanderaarst '84
Olai Torkelson '36	Thomas Drescher '52	Donald Dailey '60	Michael Binder '73	Leslie Ekas '85
Gerald Burton '37	John Dryden '52	Gerald Hagerman '60	Susan Block '73	Barbara Meller '85
Harold Christler '37	Donald Hangen '52	Anthony Lloyd-Morris '60	Rande Burton '73	Jean Richter '85
Richard Daum '37	Edward Uren '52	Julio Olaechea '60	Ahmed Ali Fouda '73	Cindy Hifumi '86
John McCloskey '38	Jerome Ardavanis '53	James Robertson '60	Suzanne Wardenaar '73	Cindy Windham '86
Garnet Oliver '38, '40	Jacob Bruynzeel '53	Gary Thompkins '60	Heather Hanunian '74	Andrea Baum '91
Earl Cooper '39	Dean Bryson '53	James Babcock '61	Mark Cinque '76	Nevine Boghossian '91
P. Kinney '39	Hossein Farmy '53	Lawrence Hurst '61	Richard Gunther '76	Marie Ong '91
Henry Wise '39	Bruce Hanson '53	Norman Olin '61	Thomas Meier '76	Rachel Ellisor '92
Charles Wright '39	Albert Hoblit '53	Billy Moser '62	Richard Berman '77	Dianne White '92
Paul Garton '41	Russell Hood '53	Edwin Edwards '63	Marta Block '77	Janet Ann Graff '93
Grover Gauntt '42	Jack Leach '53	Anthony Karpinski '63	Karen Freedman '78	Yuyao Xu '93
Roger Hoeger '42	John Todhunter '53	James Robison '64	Steven Ihnen '78	Xinmin Chen '95
Walter Foley, Jr. '43	John Landry '54	Robert Hope '66	Shyu-Wanq Miin '78	John Meigs-McDonald '95
Joseph Bell '44	Harold Millott '54	Stuart Johnson '66	Samuel Feldman '79	Deborah Sanders '95
Jack Tompkins '46	W. Keys '55	John Swegle '66	Mark Rogers '79	Rebecca Cave '96
John Grady '47	James Lindsay '55	Thomas Tahara '66	Richard Tanner '79	Yao Li '96
William MacKersie '48	Robert Starr '55	Stanley Uehara '66	Roderick Trice '79	Kyna Mallery '96
Howard Robbins '48	Victor Wright '55	Robert Hart '67	Donald Windrim '79	Patricia Teston '96
Daniel Sokol '49	Richard Anderson '56	Edmond Lawrence '67	Susan Yudovin '79	Li Ma '99
Perry Wood '49	Richard Delsasso '56	Alan Grobecker '68	Robert Tucker '80	Jason Mejia '99
Louis Alvarez '50	Howard Sonneman '56	Barbara Mandel '68	Robert Koerner '81	Eric Woodruff '99