EARTH AND SPACE SCIENCES

2010 NEWSLETTER

UCLA

GREETINGS FROM THE CHAIR:

The Department of Earth and Space Sciences has had a busy 2010. We've seen some changes in our faculty, with the arrival of two new faculty members and two retirements of esteemed colleagues. We are excited to share some exciting new research results coming out of the department, and proud to report that some of our students and faculty have received some of the highest honors in their fields. But on top of all that, we've enjoyed visits from alumni in several events over the year, and it has been fun and informative to connect or reconnect with past denizens of the Geology building's halls.

ESS continues to reap the benefits of UCLA's recent "Geosciences Initiative," in which we partnered with the Department of Atmospheric and Oceanic Sciences and the Institute of Geophysics and Planetary Physics in a major hiring push in areas of mutual scientific interest. The final two pieces of the puzzle fell into place this year with the arrival of two new faculty members, Aradhna Tripati, and Ulrike Seibt. You can read about their research and plans on pages 4-5. And, after years of research success and valued service, faculty members Robert McPherron and Vladimir Keilis-Borok have retired. Both continue to spend time in the department conducting research and interacting with students.

2010 saw more accolades for ESS faculty. Bruce Runnegar received the 2010 Paleontological Society Medal, their highest honor. Coming on top of his receipt of the 2009 Lapworth Medal, Bruce has now in very short order received the two highest awards of the international paleontological community. It is also a pleasure to note that Kevin McKeegan was elected Fellow of the American Geophysical Union. This distinction honors those who make exceptional contributions in the earth and space sciences. Also of note are several faculty research highlights. Dave Paige's Diviner instrument continues to return stunning thermal maps of the moon as part of the lRO mission which has detected water in the south polar region. Edwin Schauble and Aradhna Tripati participated in research pointing the way to determining body temperatures of fossils. Dave Jewitt and students have produced some stunning images that capture the effects of asteroid collision.

Not to be outdone, ESS students have also been busy winning awards. Grad student Beth Ann Bell won a prestigious NSF Graduate Research Fellowship. And Rachel Smith received the 2010 McKay award, given each year to the student who gives the best oral presentation at the annual meeting of the Meteoritical Society. Grad students winning prizes for outstanding presentations at international meetings included Paul Hayne and Matt Siegler.

This year many of you joined us in welcoming back Ed Warner (MS '71), who delivered the 2010 Alumni Lecture, and we hosted two other open campus events (see pages 6-7 for a recap and photos). If you haven't yet had a chance to attend we'd love to see you at one of these events in 2011.

On the budget front, California's woes continue. Though staff furloughs are thankfully in the rearview mirror, our undergraduate students are facing higher costs for their education, and the department continues to operate at reduced funding levels. In this context, every gift helps so it is a pleasure to acknowledge several particularly generous 2010 donations. A bequest from the estate of John W. West (MS '55) endowed support for students in Geology; a gift from Kathleen Devaney (PhD '92) will support geological field equipment and vehicles; and a donation from Emeritus Professor John Rosenfeld provides funds for department activities such as colloquia. These contributions truly help us focus on our passion: mentoring top students and doing novel, cutting-edge research. You can help by staying connected: let us know about your recent accomplishments and your whereabouts, and consider a donation that will help keep us at the forefront of the Earth and Space Sciences!

With best wishes,

Craig Manning

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On the cover:

2010 Summer Field students take a break from geologic mapping in the White Mountains, east of Bishop, California.

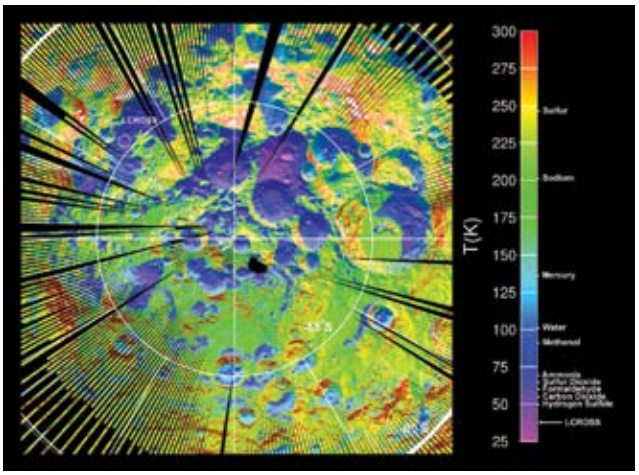
DIVINER FINDS EVIDENCE OF WATER ICE ON MOON

One of the year's most exciting discoveries was evidence for water on the Moon. As you know from last year's newsletter, ESS professor David Paige has been a key participant in this work. As detailed in October in two papers published in the journal Science, Paige's data from the permanently shadowed craters at the moon's poles and from a controlled lunar impact on the moon were used to model the stability of water ice both at and near the surface. The stability of water ice is an indication that it has existed in a particular location over an extended period of time.

"The temperatures inside these permanently shadowed craters are even colder than we had expected," Paige said. "Our model results indicate that in these extreme cold conditions, surface deposits of water ice would almost certainly be stable; but perhaps more significantly, these areas are surrounded by much larger permafrost regions where ice could be stable just beneath the surface." This lunar 'permafrost' is analogous to the high-latitude terrain found on the Earth and on Mars, where subfreezing temperatures persist below the surface throughout the year.

"These permafrost regions may receive direct sunlight at certain times of the year, but they maintain annual maximum subsurface temperatures that are sufficiently cold to prevent significant amounts of ice from vaporizing," said Paige.

Given that these permafrost regions are not in permanent shadow, surface lighting and thermal conditions in these locations would be far more hospitable for humans, which makes them of prime interest for future manned missions to the moon. The work led Paige and colleagues to conclude that large areas of the lunar south pole are cold enough to trap not only water ice but other volatile compounds (substances with low boiling points) such as sulphur dioxide, carbon dioxide, formaldehyde, ammonia, methanol, mercury and sodium.

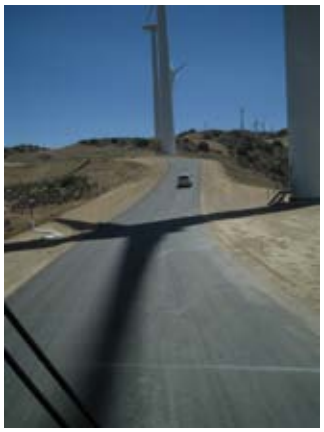


LRO/Diviner surface temperature map of the moon's south polar region. To learn more, go to http://diviner.ucla.edu.

LEARNING IN THE FIELD

The ESS curriculum has always endeavored to take maximum advantage of our unique geologic location in southern California. This is, of course, fondly remembered by many alumni who enjoyed summer field in the high Sierra, the White Mountains (see cover), Tick Canyon, as well as local treasures such as the Santa Monica Mountains and the San Andreas Fault. In a new twist on exploring California's geologic resources, ESS professors Dave Paige and Kevin McKeegan have developed ESS 101: "Earth's Energy: diminishing fossil resources and prospects for a sustainable future." The purpose of this new course is to provide students having a background in physical sciences with an opportunity to learn about energy resources (fossil fuels and alternatives) from an earth science and sustainability perspective. A highlight of the inaugural class last spring was a field trip to a solar energy plant near Boron and a wind farm in the Tehachapi pass.

ESS 101 students in front of a parabolic trough solar energy collector at the Kramer Junction Solar Electric Generating Station near Boron, California.



Giant turbines in the Tehachapi Pass near Mojave, California.

We continue to move towards a future that challenges our dependence on fossil fuels for energy. California leads the nation in developing sustainable energy alternatives, but there is much more to be accomplished. We strive to provide the geological and geophysical foundations that give UCLA students a boost as they contribute to the search for solutions to our energy needs.

ESS students and faculty often make the news with their research contributions. Links to the coverage can be found at www.ess.ucla.edu/news.php

ARADHNA *TRIPATI*

Assistant professor Aradhna Tripati grew up in Los Angeles and attended Cal State LA as part of the early entrance program, receiving her B.S. in Geology at the age of 17. She went on to complete her Ph.D. in Earth Sciences at UC Santa Cruz, then spent several years at the University of Cambridge and Caltech before joining ESS this year.

Professor Tripati and her research group focus primarily on the development and application of novel tools to document and understand historical climate change. Says Tripati: "it is clear that many of the physical, chemical, and biological systems on the planet have been and are being impacted by climate change. However, understanding the consequences of rising greenhouse gas levels or any other boundary condition on climate is a challenge due to a lack of information regarding the behavior of specific systems, for example sea ice, ice shelves and ice sheets, ocean heat transport, carbon storage in different terrestrial and marine reservoirs, and monsoon dynamics." So Aradhna and her group use key intervals in Earth's past to study the behavior of these and other systems, employing innovative experimental approaches to turn the geologic record into a rich laboratory for the study of climate processes. Although most of her work is laboratory-based, she also has a field program and does some computer modeling.

Tripati is also passionate about integrating research with education, through the mentorship of both undergraduate and high school students. She says she enjoys "providing an opportunity for students to apply what is learned in a classroom to fundamental questions, which aids in the development of critical thinking skills and gets them excited about science."

When not doing research or teaching, Aradhna enjoys discussing politics, history, or art. She also enjoys hiking, scuba diving, gardening, and is an avid writer and reader.

Sediments on the island of Spitsbergen, where Tripati has spent time mapping the distribution of cold- and warm-climate indicators in the Paleogene succession, and collecting samples to date the timing of climate changes in this region of the Arctic.

ULRIKE *SEIBT*

Ulrike Seibt is an Assistant Professor in the Departments of Atmospheric and Oceanic Sciences and ESS. She received her Ph.D. in Geosciences from the Max Planck Institute for Biogeochemistry in Jena, Germany. She was awarded the Marie Curie International Fellowship of the European Union, which allowed her to pursue postdoctoral studies at the Carnegie Institution, Stanford, and the University of Cambridge. Her last stop before joining the UCLA faculty was a European Research Council Fellowship at Pierre & Marie Curie University in Paris, France.

Seibt studies the interactions between physical and biological components of the climate system, with emphasis on terrestrial systems. She addresses a broad range of levels, from the tiniest leaf cells and soil microbes, all the way up to the global carbon cycle. The current focus of her research is on developing methods to obtain observational estimates of gross carbon and water fluxes between the atmosphere and terrestrial biosphere. Seibt explains that "we have a good mechanistic understanding of carbon-water- energy interactions at the leaf scale and extensive atmospheric data sets, but water loss and carbon uptake during photosynthesis cannot be measured directly at scales larger than a few leaves. Thus, estimates of terrestrial gross fluxes - photosynthesis vs. respiration, and transpiration vs. evaporation - still have large uncertainties at the continental to global scale."

Ulrike in a high arctic tundra near Thule, Greenland, operating her mobile lab platforms, which measure plant and soil fluxes with field chambers coupled to laser analyzers.

Professor Seibt's approach combines multiple tracers, which provide unique constraints on the carbon and water balance of terrestrial systems. She combines theory, numerical modeling, lab experiments, and field measurements of carbon dioxide, water, stable isotopes, and her "favorite molecule," carbonyl sulfide. She has already developed a model of carbonyl sulfide uptake by vegetation that can be implemented in biosphere simulations at regional to global scales, with the aim to improve our estimates of photosynthesis and transpiration from atmospheric observations.

With Seibt's appointment there is exciting new impetus for interactions between the two main geoscience departments at UCLA. We are delighted to welcome Professor Seibt to campus.

Chair Craig Manning, Alumni Lecturer Ed Warner, M.S. '71, and Jackie Erickson

Held annually in October, The ESS Alumni Lecture is our chance to host a lecture by and/or for alumni. At this year's event, which took place on Thursday, October 7, Ed Warner, M.S. '71, gave a talk entitled: "Tales from a Natural Gas Geek: Geology from Outside the Box. How an Apple Tree Led to the Largest Gas Discoveries of the 20th Century." Warner, who is known for discovering the Jonah Gas Field in Wyoming, as well as for pioneering work on the extraction of coalbed methane, offered an outstanding mix of geologic insight and tales from the gas patch.

Paul Carlton, '50, with his wife Robbie Carlton

David Ferreira, '85, with his wife Barb Ferreira

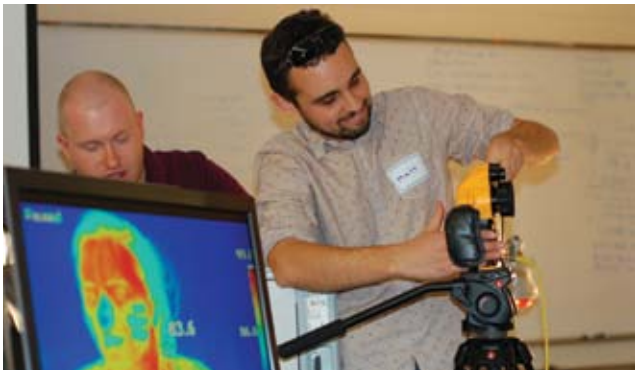
Steve Richardson, '82, with Sasha Richardson

Professor Bill Schopf with Scott Prior, '72

Glenn A. Brown, '51, with his wife Martha Brown

EXPLORING YOUR UNIVERSE

On Saturday, November 13, ESS co-hosted (with Physics & Astronomy) our second "Exploring Your Universe" open house, which was open to anyone from the community. Alumni, local residents, and several science classes were treated to educational demonstrations of earthquakes and natural disasters, magnetism, meteorites and impacts, fluid dynamics, and a host of rocks, minerals, and fossils on display. We hope to make this an annual tradition, so look out for more information in October, 2011.



UCLA ALUMNI DAY

On May 15, ESS took part in the second-annual UCLA Alumni Day. This event, which is hosted by the Alumni Association, is a great opportunity for alumni to revisit campus and reconnect with each other.

Several members of ESS's class of 1985 put together a mini-reunion at UCLA Alumni Day.

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ESS STAFF AND FACULTY GIVE BACK!

Emeritus Professor John Rosenfeld has always been a strong supporter of interdisciplinary interactions among all members of the department. This is why he has been a fixture at department seminars and colloquia throughout his long career at UCLA. However, seminars and colloquia aren't always enough, so when new postdoctoral scholar Michael Busch had the idea of creating a roundtable gathering to get people out of their offices once a week, John was inspired to help. He made a Platinum-level gift to ensure that all of these departmental gatherings would be able to continue without wanting for funding. Professor Rosenfeld exemplifies the generosity of the faculty, staff, and emeriti of the department: in just the past 12 months, many notable gifts have come from this group, including a Diamond-level gift from former department manager George and Velta Lapins, and Silver-level gifts from Professor Emeritus Clarence A. Hall, Jr. and Professor Bill Schopf and his wife, department researcher Jane Shen-Schopf. Other current and former ESS employees who have made gifts this year include Don Carlisle and Gloria Galvez-Carlisle, Diane Hunter, Ray Ingersoll, Margaret Kivelson, Craig Manning, and Christopher Russell.

Many thanks to, Kathleen Ann Devaney, Ph.D. Geology '92, for making a $50,000 pledge to ESS! On the advice of Professor Ray Ingersoll, Kathleen chose to allocate her gift for the purchase and upkeep of field vehicles. ESS has long depended on the generosity of alumni and friends for the maintenance and repair of field vehicles—not an insignificant endeavor, as the picture to the left attests! Now, for the first time in many years, with the added help of other ESS Alumni donations we will have the resources to purchase a new vehicle, a 2011 Chevy Silverado 4WD pickup truck, which we expect to receive in January.

DIAMOND DONORS ($25,000+)
Kathleen Ann Devaney
John W. West Estate
Harold H. Sullwold, Jr. Estate

PLATINUM DONORS ($10,000+)
George and Velta Lapins
John Rosenfeld

GOLD DONORS ($5,000+)
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Liang-Chi Hsu
Bill Schopf and Jane Shen-Schopf
Scott D. Warner
Jack W. Wood

Donor funds have a huge, positive impact on our students and our research. Especially in this time of budgetary challenges, your philanthropy will benefit all aspects of our work in the field, including our undergraduate summer field program, our Departmental vehicles, and field research by our graduate students. Donor funds are even used to improve our teaching in the classrooms by providing upgraded technology, and by underwriting of student projects and demonstrations.

Every dollar counts. Please consider making a tax-deductible gift to UCLA's Earth & Space Sciences Department. To make an online gift or see more information about the donor funds listed on this page, visit the "Giving to ESS" website at http://www.ess.ucla.edu/giving.asp, or contact development officer Kerri Yoder at 310-794-9045 or kyoder@support.ucla.edu.

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Tim Wagner
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Frank H. Weber Jr.
Wells Fargo & Company
Fei Xu
Ke-Shan Zou

Earth and Space Sciences Class of 2010—Front row, from left: *Hairong Lai, Feifei Jiang, Robin Reith, Kristina Walowski, Johanna Hoyt, Michael Huh, Sean Hurt, Jonathan Harrington, Rohan Kundargi, Kirsten Eckert, Hanying Wei, Megan Cartwright, Pamela Hill, Margy Kivelson, Lauri Holbrook.* ***Second Row:*** *Cary Wicker, Craig Manning, Larry Lima in front of Kate Forster, Jessica Sidhu, Jon Cantwell, Michael Brooks, Jonathan Hernandez, Sara Freeman, Erik Johnson, Helen Feng, Colleen Milbury, Britney Schmidt, Jon Aurnou, Faye Knight.* ***Third Row:*** *Jiang Liu, Paul Burgess, Eric King, Eli Gurian, Miguel Cisneros, Richard Goldman, Edwin Schauble, Ed Rhodes, John Rosenfeld, Kevin McKeegan just behind Steven Joy, Katie Dyl, Ray Walker, Ray Ingersoll, Dave Jackson, Tom Robinson.* ***Uppermost Row starting halfway across picture****: Martin Connors, Joe Rudnick, Abby Kavner, Ed Young, Chris Russell, Clarence Hall*

DEGREE CANDIDATES

DOCTOR OF PHILOSOPHY
W. Paul Burgess
Megan Cartwright
Sara E. Cina
Kathryn A. Dyl
Pamela S. Hill
Steven Joy
Eric M. King
G. Codi Lazar
Colleen A.E. Milbury
Britney E. Schmidt
Hanying Wei

MASTER OF SCIENCE
Miguel F. Cruz
Eli A. Gurian
Feifei Jiang
Hairong Lai
Justin Lee
Jiang Liu

BACHELOR OF SCIENCE
Michael D. Brooks
John T. Cantwell
Miguel Cisneros
Kirsten E. Eckert
Helen S. Feng
Sara A. Freeman
Richard L. Goldman
Jonathan A. Harrington

BACHELOR OF SCIENCE (CONT'D)
Jonathan A. Hernandez
Johanna F. Hoyt
Michael C. Huh
Sean M. Hurt
Erik N. Johnson
Larry G. Lima, Jr.
Robin C. Reith
Jessica Sidhu
Shayan R. Simantob
Kristina J. Walowski
Cary S. Wicker

BACHELOR OF ARTS
Katherine L. Forster
Rohan K. Kundargi

AWARDEES

EUGENE B. WAGGONER UNDERGRADUATE SCHOLARSHIP
Robin C. Reith
Kristina J. Walowski

JOHN & FRANCES HANDIN SCHOLARSHIP
Jonathan A. Harrington

CLEM NELSON SUMMER FIELD AWARD
Miguel Cisneros
Shayan R. Simantob

CLARENCE HALL SUMMER FIELD AWARD
John T. Cantwell
Johanna F. Hoyt
Michael C. Huh
Sean M. Hurt

DEPARTMENT HONORS
Helen S. Feng

EXCELLENCE IN STUDENT TEACHING
Ivy Carpenter
Paul Day
Eli Gurian
Robert Lovdahl
Daniel Petrizzo
Deborah Weiser
Matthew Wielicki

W. GARY ERNST FELLOWSHIP
G. Codi Lazar

EUGENE B. WAGGONER GRADUATE SCHOLARSHIP
Rachel Stevenson

ROBERT J. HORODYSKI FIELD PRIZE
Paul Day

HAROLD AND MAYLA SULLWOLD SCHOLARSHIP
Soderlund, Krista

CONSTANTINE AND PERINA PENUNZIO SCHOLARSHIP
Jonathan Hunt

1952

ROLAND BAIN, BA (MA in 1954) both in geology. "My undergraduate work was in the Chemistry Building (3rd floor), my graduate work in the new GEOLOGY Building! I was privileged to have studied under such iconic professors as Axelrod, Crowell, Durrell, U. S. Grant 4th, Murdoch, Nelson, Popenoe and Putnam. My first job was with Texaco in the LA Basin, this stint for two years. This was followed by a Fulbright Scholarship in Paris (l'Institut Francais de Petrole and Sorbonne) for a year, then off to Sacramento with Texaco for seven years. My consultancy in the Sacramento Basin started in 1964 and ended with my retirement in 2004. Commencing in 1966, I've compiled an annual review of exploration activities in the Sacramento Basin and presented such to the Sacramento Petroleum Association."

1954

PAUL MERIFIELD, BA Geology: "I am mostly retired; however, I continue to teach ESS 139, Engineering & Environmental Geology. This coming winter quarter will be the 42nt year. I try to keep the information current but am always on the lookout for current lecture material. David Ferreira provided me with some information on the Burbank/North Hollywood groundwater contamination that I have used, and I would appreciate any additional items (case histories, new techniques, etc.) from those of you working in the environmental field. I also have served on the Los Angeles County Engineering Geology and Soils Review and Appeals Board since 1974 (Allen Seward and UCLA grad Kim Bishop are the other geologists). Some interesting case histories for my lectures have come from this source, and it keeps me up to date on the latest grading requirements. I am also available for expert witness work but haven't had any cases for several years. My only publication in recent years is a memorial to Donald L. Lamar, my long-time business partner. This can be viewed on the AEG website under "Legendary People," or GSA Memorials. My main passion is volleyball. I play each year in the Huntsman Senior Games in St. George, Utah, and in the USAV national championships, which provide a wonderful excuse to visit places in the U.S. where my wife and I have not been (recently Austin, Atlanta, and Minneapolis). I hope to see you at Alumni Day and the distinguished alumni lectures."

Allen W. Hatheway, '61

1959

GORDON JONES BA Geology, is curently Chairman of the Board, Monterey Institute for Research in Astronomy (www.mira.org). His brother Bob (long time on UCLA staff) is currently Senior Scientist, Center for Materials Research at Stanford.

JOHN STOTTS, BS Geology, is alive and well, lives in Taft, CA, by choice.
He prefers to stay under the radar, and two years ago at age 80, retired from active duty in the oilfields after 49 years including the bad ones. "I am going of a fieldtrip this Saturday to have a look at the Ridge Series of rocks along the Ridge Route aka I5. I shall check in again in four or five years."

1961

ALLEN W. HATHEWAY, BA, ten years retired as Professor of Geological Engineering at the University of Missouri, has completed his 12-year task of compiling what he calls the "only reliable technical book, worldwide," on Remediation of Former Manufactured Gas Plants & Other Coal-Tar Sites. The tome is 1,096 pages in length and is available from Taylor & Francis Group (CRC Press). Allen is a CA registered Geologist, CEG and PE (Civil) and an Honorary Member of AEG. He lives with wife Dina, at Rolla, Missouri, and has seven grandchildren. He's been on a quest to reduce the threat of coal tar in the environment, through his website (www.hatheway.net). His passion is about promoting expert geological field observation as the most reliable source of gasworks cleanup information.

1966

RICHARD SLADE, BA Geology, began his full-time professional career in 1967. While continuing to work full time, Richard was able to obtain an MS degree in engineering geology from USC in 1974. Following 16 years as a groundwater geologist for other firms, Richard formed Richard C. Slade and Associates LLC, Consulting Groundwater Geologists (RCS), in 1983 and continues to serve as its President and Principal Groundwater Geologist. Located in Studio City, RCS provides consulting services in groundwater resource development, aquifer testing, the siting and designing of new water wells, and providing field services during the construction and rehabilitation of water wells for cities, water districts, vineyards and wineries throughout California. Also, in December 2008, the Superior Court of Los Angeles County selected Richard to be the Watermaster of the Upper Los Angeles River Area (ULARA). As such, Richard is the 3rd Watermaster since the 4 groundwater basins in ULARA region were adjudicated in 1979. As an adjunct to his professional work with wineries, Richard and his wife Linda, greatly enjoy wines and have constructed a wine cellar in their house. Richard and Linda also enjoy international traveling. They have three children (all married) between them and enjoy visits with their three grandchildren.

1969

BOB PRESLEY, PhD Geology, has been retired from Texas A&M for 6 years but still lives in College Station, Texas. He and his wife Teri travel a lot to see the 6 children and 10 grandchildren they share but also travel for pleasure internationally. They've toured in France, Italy, Greece, Croatia, Jordan, Egypt, Peru, Ecuador and other places in the past couple of years and will have visited Tanzania by the time you read this. They've seen some interesting geology!

Steve Ehrenberg, '78, and wife June Evelyn, enjoying the weather.

1971

PARKE D. SNAVELY, III, B.S., celebrated his thirtieth year with ExxonMobil in December, 2010. After spending the previous five years as supervisor of West Africa regional geology with ExxonMobil Exploration, Parke moved to ExxonMobil Development Company last year to head up their Uncertainty Analysis program, coordinating hydrocarbon resource assessment activities for worldwide field development projects. Parke also serves as captain of ExxonMobil's annual participation in the Susan G. Komen Race for the Cure. Parke and his family continue to live in Houston. His youngest daughter, Rachel, has recently enrolled as a freshman at the University of Texas, Austin, Jackson School of Geoscience.

1972

BILL CORNELL, PhD, has retired after almost 40 years as a faculty member at UT-El Paso and has moved to Fort Collins, CO to be 700+ miles closer to his grandson.

1978

STEVE EHRENBERG, PhD, started a new job in May 2010 as Shell Chair in Carbonate Geosciences at Sultan Qaboos University in Muscat, Sultanate of Oman. "Last seen heading out of LA for a post-doc in Oslo, I ended up working most of my career in the Norwegian state oil company, Statoil. On the occasion of Statoil's merger with Norsk Hydro in 2008, I retired and joined a Dutch consulting company in the delightful town of Leiden. But Now for Something Completely Different. I am indeed missing my wife and 4 kids back in Stavanger, but hopes are that the wife will commute and the others will use my base for their adventure holidays. I am especially looking forward to meeting my first grandson, Romeo, next month during my own holiday."

Dudley Slater, '80, with daughter Kathrina, son Toryn, and wife Laurie.

1980

DUDLEY SLATER, BS Applied Geophysics, lives in Portland, Oregon, with his wife Laurie, son Toryn, and daughter Kathrina.

1981

ALLEN GLAZNER, PhD Geology: "My book, Geology Underfoot in Yosemite National Park came out this spring; if only I'd gotten a copy into Oprah's hands before she took her recent camping trip to Yosemite, I'd be a millionaire now. It's the first color book in the series. I'm in my third year as Chair at UNC, and each year seems to be harder for some reason, although at least I don't have to decide how raised money is allocated, because there isn't any. This past year I've been involved in geologic training for astronauts, both classroom and field--a dream for someone who, as a schoolkid, got up in the wee hours to watch the Mercury, Gemini, and Apollo launches. I was surprised to learn that today's astronauts drive minivans and Priuses rather than supercharged red Mustangs."

1983

DIETER LETSCH, BS Geology: "I graduated from Colorado School of Mines with an MS in Geology in 1986. I have since worked for Chevron primarily in Petroleum Exploration, and have lived in many different places – Houston, California (Bay Area), Perth Australia, Lagos Nigeria and Bangkok Thailand, where I am currently located. I am married with one child, and we love living overseas. Besides the fabulous travel opportunities, we have learned a lot about many different cultures, and it has been a great experience for our 11-year old boy. The other thing you learn is to be resourceful – not much upsets us now, and we always figure out a way to get what we want done! Unfortunately, I have not had

Allen Glazner, '81, with wife Mary "studying modern carbonate environments on Grand Cayman (that's how an igneous petrologist describes a 'Caribbean vacation')."

much contact with fellow UCLA alumni, but I did meet up with a group traveling to China to experience the solar eclipse of July, 2009. Although the weather was not completely cooperative (we did catch a few glimpses of the eclipse), we had a great time meeting fellow alumni, and learning some astrophysics from Professor Mark Moldwin, who was leading the trip.

1985

KAREN LOOMIS, B.S. Geology (Stanford – Ph.D., Geology, 1990): "I'm pleased to report that I'm currently an Adjunct Professor at Santa Barbara City College in the Department of Earth & Planetary Sciences. This fall semester I'm teaching three subjects: Oceanography, Physical Geography, and Environmental Geology. I really enjoy teaching and feel fortunate to have the opportunity to share my knowledge that I acquired at UCLA! Also, bringing real-life examples from the petroleum industry and environmental consulting to the classroom seems to be holding my students' interest. p.s. In the spirit of UCLA, I report the weekly Bruin football scores to my students, and I strategically color-code my handouts in blue and gold!"

Members of the 1984 Summer Field class, courtesy of Karen Loomis, '85, who is second from the left.

1988

KENNETH KELSCH, B.S. Geology: "My family and I continue to work with Chevron working overseas now for 22 years. We moved from Bangkok Thailand June 2009 and now work in the Partitioned Zone (PZ) which is between Kuwait and Saudi Arabia. For myself, I always realized working in the oil industry I would likely end-up working in the Middle East. It turns out I've learned a lot about the people and the culture of which many have a distorted view in Kuwait/Saudi Arabia. There is significant potential for hydrocarbon resources to benefit the world in this area--resources that will help bring energy to the world for 100+ years--but significant research and testing are required. With our three children, Kelsey (17), Austin (15), and Hayley (13) we are pleased to see them learn and grow. This year we will see our first of three children graduate from high school and move on to college."

1993

MIC FARRIS, Ph.D. Space Physics: "I'm currently Senior Manager of the Advanced Sensor Applications Section at Areté Associates, where I had previously served for several years as Corporate Senior Scientist. Areté is a technology firm creating and developing technologies that support our defense and intelligence communities. We've been growing steadily over the past 30 years, having around 350 employees in several locations around the country, including Washington DC, Tucson AZ, and my location in Northridge CA. We've recently received a patent on which I am a co-inventor. The US patent (#7,800,529) was awarded on September 21 of this year, and is the first of three applications we have on Methods and Apparatuses for Creating and Processing Universal Radar Waveforms.

1994

JULIE BARTLEY Ph.D., is in her second year as an associate professor at Gustavus Adolphus College. Last year, she left the University of West Georgia for the small-college environment in southern Minnesota. She teaches Principles of Geology, Sed/Strat, Paleontology, and Evolution of the Earth (thankfully, not all at once). This year, she's serving as interim department chair, which keeps her busy, in addition to starting up a new lab and various research projects.

1995

DAVID AND TRACEY DIRKIN (both BS '95) live in Portola Hills, CA. David is currently working with Environ Strategy in Irvine. They have four children: Bethany (7), Brianna (5), Jordan (2) and Ethan (1). They enjoy family time at parks, trails and nature centers. In their ample free time (ha!), they love to sleep.

Kenneth "Mac" Kelsch, '88, center, with daughter Kelsey (17), wife Shauna, son Austin (15), and daughter Hayley (13).

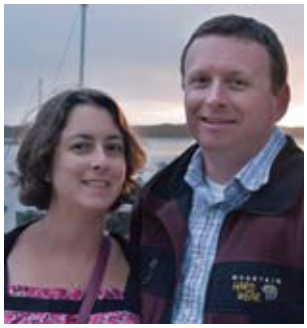
Bethany (7), Brianna (5), Jordan (2) and Ethan (1), children of David and Tracey Dirkin, both BS '95.

1996

KEVIN GRAZIER, M.S. G&SP, is happy to report that the book he co-authored, *The Science of Battlestar Galactica*, came out on November 1.

1997

JEREMY BOYCE, B.S. Geology, completed his Ph.D. at MIT, where he met his wife, ESS faculty-member Caroline Beghein. He is currently splitting his time between UCLA and Caltech, and recently published the paper "Lunar apatite with terrestrial volatile abundances" in the journal Nature. Jeremy and Caroline are eagerly anticipating the May 2011 arrival of their first child.



Jeremy Boyce, '97, with his wife Caroline Beghein.

CASEY LEE JENSEN, PG, CEG, B.S. Geology (Engineering Geology), is a Senior Engineering Geologist with URS Corporation in the downtown Los Angeles office. "I live in Glendale with my two sons, Christian, 13 and Alexander, 8. I enjoy working on the many complex projects within Los Angeles County including the LA Reservoir, High Speed Rail, and Subway to the Sea. My boys and I recently took up Olympic Recurve Archery as a hobby sport. It is always a pleasure to hear from my classmates, professors and graduate student teachers at lacaseyjensen@yahoo.com."

1998

IAN MACMILLAN, B.S. Geology. "After graduating from UCLA I eventually went to UCSB to do my graduate work in Geology. Met my wife while at an NSF conference in Costa Rica. I eventually left UCSB and taught at Pomona College for two years in their Geology program. After that I spent three and a half years working as an environmental consultant managing the Los Angeles Unified School District building program. Got a dog. Somehow I transferred my science background from plate tectonics and structural geology to air pollution and other environmental sciences in that time period and now I am working for the South Coast Air Quality Management District. I guess it is fair to say that my current job entails applying science to real world problems of politics and economic development. Also, just a few weeks ago my wife had our first child, a daughter (see photos below). Hope everyone from our epic class of '98 is doing well. I miss you all and look fondly back on those days (who can forget that 8 week summer camp in Caliente, NV and Chocolate Lake near Bishop?).

Ian Macmillan, '98, and family.

1999

TIMOTHY LIN, B.S. Geology (BA psychology), is currently an intern physician in surgery/emergency medicine at Harbor-UCLA Medical Center after having graduated from medical school earlier this year.

2005

AARON J. HEICK, M.S., was recently promoted to the rank of Lieutenant Colonel in the U.S. Air Force Reserve. Aaron is also eagerly anticipating a new addition to the family. His second son Christian is expected to be born at the end of January 2011.

2006

ELIZABETH JENSEN, PhD, recently joined the Planetary Science Institute, and published the following article: "Faraday Rotation Response to Coronal Mass Ejection Structure" http://www.springerlink.com/content/v553463771j4j401/

2007

MARK CHING, B.S. Engineering Geology, was deployed in support of Operation Iraqi Freedom (OIF) VIII-IX from 2008 to 2009 as a machinegunner with C/1-185th Armor Battalion, California Army National Guard, earning a Combat Action Badge. He completed his M.S. in Civil (Geotechnical) Engineering at UCLA in June 2010, and is currently working as a Staff Engineer/Geologist at URS Corporation in Los Angeles.

Mark Ching, '07.

HILARY STRONG, B.S. Geology, married Daniel Petrizzo (Ph.D. '11) on October 16th, 2010 in San Diego, California. Several ESS alums, current students, and faculty members were in attendance. Dan and Hilary were married on a yacht, then spent the evening cruising around San Diego bay. Hilary is currently working for ExxonMobil in Houston, Texas, as an operations geologist. Dan is finishing his PhD studies concerning mass extinctions and climate change in ancient times. The two spend a lot of time flying back and forth between LA and Houston, and are looking forward to eventually settling down in California together.

Center: Hilary Strong Petrizzo, '07, and Dan Strong Petrizzo (PhD '11). Far Right: Mark Ching, '07, and Andy Wilcox, '06.

David W. Baker, '69

DAVID WARREN BAKER, Ph.D. Geology '69, died December 27, 2009, in Great Falls, Montana. Dr. Baker worked as an assistant professor of geological sciences at the University of Illinois at Chicago Circle from 1970 to 1976, then as a research geologist for Gulf Oil Corporation in Pittsburgh from 1976 to 1983. In 1984, he returned to Montana, where he set up his own company, Little Belt Consulting Services in Monarch, a natural resources consultantcy. Dr. Baker's scientific accomplishments include contributions to knowledge of local and regional geology, in particular unraveling the pre-Cambrian plate tectonic history of Montana and adjacent states. Community service was very important to David Baker throughout his life. In recent years, he drew particular enjoyment from his involvement in the annual Science and Engineering Fair for middle- and high-school students, where he served as a local and regional judge, and mentored several students.

BARBARA E. HANER, former UCLA geology librarian, passed away November 19, 2010. She is survived by her husband David and their daughter Suzanne Scherzinger.

DONALD MURPHY, B.S. Geology '85, was killed in December, 2009, by a hit and run driver. Don worked for the County of Orange as an engineer doing wetlands studies. He is survived by his wife and 2 daughters.

ELIZABETH ANNE MYHILL, Ph.D. G&SP '91, of Silver Spring, Maryland passed away at the age of 49 on May 5, 2010, after a long battle with breast cancer. Dr. Myhill was born in the Netherlands on September 28, 1960 and moved to the United States at the age of one. She has since lived all over the United States and Canada. She has been a professor of Physics, Geology, Astronomy, and General Physical Sciences at Marymount University in Arlington, Virginia since 1993. She is survived by her devoted husband David Williams (Ph.D G&SP '87), her loving sons Sam and Oliver Williams, her parents Norton and Margaret Myhill, and her brother William Myhill, as well as many loving friends.

Parke D. Snavely Jr., '41

PARKE D. SNAVELY, JR., A.B. '41, M.A. '50, a U.S. Geological Survey emeritus geologist, passed away in 2003 as a result of complications following a stroke. Parke, who was 84, had a long and distinguished career with the USGS spanning nearly 60 years. In his memory, the Geological Society of America has established the Parke D. Snavely, Jr. Cascadia Research Award Fund, to be granted annually, for the purpose of providing support for field-oriented graduate student research that contributes to the understanding of the geologic processes and history of the Pacific Northwest convergent margin, or to the evaluation of its hazard or resource potential. In 2007 the USGS Pacific Coastal and Marine Science Center dedicated the Research Vessel Parke Snavely, a 34-foot open stern, aluminum-hulled catamaran principally used as a seafloor mapping boat.

Mary R. Watson

MARY RITA WATSON, wife of longtime ESS professor Kenneth Watson and a great friend and supporter of the department, passed away peacefully on June 20 with her family by her side. She was 93. First in her family to attend college, Mary graduated from Albertus Magnus in 1937 and subsequently worked as a biology research assistant at Princeton, where she met her future husband, Kenneth Watson. During World War II, the couple moved to British Columbia, Canada, where their son Douglas was born in 1943. While there, Mary was a biology lab instructor at the University of British Columbia. In 1950, Mary and Ken became Bruins when Ken accepted a teaching position at UCLA and the young family quickly embraced the culture and climate of West Los Angeles. Their second child, Rita, was born in 1952, and their third child, Marcia, was born in 1955. After several years as a stay-at-home mom, Mary returned to her field of interest as a scientific research assistant at UCLA, where she relished her work and the camaraderie of her colleagues until her retirement at age 83. Mary led an extremely full and active life right up until the time of her death. A longtime parishioner of Corpus Christi Church, she was a eucharistic minister, brought communion to the sick, and was involved in bible study, bereavement assistance, meditation and book groups. Her faith was very important to Mary, strengthening her compassion for others and heightening her awareness of the importance of forgiveness. Mary was also an avid sports fan and loyally supported her Bruins through thick and thin. She treasured her family, lovingly supporting and enjoying the company of her children, sons-in-law and grandchildren, all of whom adored her. She was the unifying center of her family. She lived her life to the fullest and with gratitude for her blessings, often saying with a smile, 'This Is the Day the Lord Has Made, Let Us Rejoice and Be Glad." She is survived by her son Douglas of Bend, Oregon; daughter Rita Sakkis (husband Nicolas) of Moraga; daughter Marcia Larsson (husband Jim) of Oakland; and her grandchildren, Mark, Whitney and Michael Watson; Louisa, Julia and Lily Sakkis; and Stuart, Daniel and Joanie Larsson. She was predeceased by her husband in 1986.

JOHN W. WEST, B.A. '53, M.A. '55, died July 20, 2009. Mr. West left ESS a generous bequest, which will provide funding to generations of geology students at UCLA.

RICHARD WISEHART, B.S. Geology '68, died March 23, 2010 at the age of 63. Richard retired from the U.S. Department of Agriculture Forest Service as a geotechnical engineer with 36 years of service. He worked for the City and County of San Francisco as a civil engineer after his retirement from the Forest Service. While working for the Forest Service, he engineered logging roads, runways for air tankers, located wells for campgrounds and foundations for buildings among many diverse projects, including projects in Guam. Richard also served as a public information officer and equipment officer for forest fires across the country as well as other disasters including Hurricane Katrina and recovery of the Space Shuttle Columbia. In 2004, he received the National Engineer of the Year Award for the U.S.D.A. Forest Service. He enjoyed hiking the outdoors, geocaching, bowling, travel, computers, and spending time with family and friends.

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Summer Field Class, 1974: standing, left to right: Robert Crippen, Gary Ernst, Phil Behrman, Peter Moore, Alice Campbell, Ken Shay, Jeff Stone, Jim Norman, Mike Vediner, Tom Troutman. Seated, left to right: Clarence Hall, Jim Goodrich, Donald Cocek, William Wood, Gary Parkinson, Ken Smith, Jeff Dinauer, Guy Nakasu.