Climate Change Science in the Department of Geosciences

By Julia E. Cole and Jonathan T. Overpeck

What does climate change hold in store—searing drought, rising seas, killer hurricanes? Or will the effects be small? Perhaps we should be unconcerned; after all, as geoscientists we know the Earth has seen worse during its long history. In the public discussion of global warming, where is the science?

UA-Geosciences faculty are making important contributions to climate change science. Our historic strength in Quaternary sciences has grown into a substantial, multi-faceted research program aimed at understanding the dynamics and mechanisms of past climate changes that inform our understanding of ongoing and future patterns.

New developments include greater strengths in ocean sciences and climate modeling, and we use interdisciplinary approaches to understand the interplay among climatic, ecological, biogeochemical, and human factors in shaping the Earth’s environment.[1](http://www.geo.arizona.edu/research/info.html)

Just this fall, the contribution of climate scientists to reducing global conflict was recognized with the Nobel Peace Prize awarded to the United Nations’ Intergovernmental Panel on Climate Change (IPCC) jointly with former Vice President Al Gore. The IPCC marshals the work of thousands of scientists into a coherent, consensus assessment of the science and impacts of global environmental change that is broadly reviewed and carries weight among policy-makers.

A series of four reports issued over the past two decades has used ever-stronger language to implicate human activity in observed climate change. Faculty from the department played a role in the latest report, available online at [http://ipcc-wg1.ucar.edu/wg1/wg1-report.htm](http://ipcc-wg1.ucar.edu/wg1/wg1-report.htm).

Each chapter of the IPCC report is led by two “coordinating lead” authors from different countries, with a small group of additional lead authors and a larger group of contributing authors providing input. Over a period of two to three years, the chapters evolved from rough drafts, through extensive review and revision, into polished descriptions of the state-of-the-science, based on peer-reviewed papers.

...cont’d page 3
From the Department Head

I’m happy to write this first column in my new job as Department Head. UA Geosciences is a strong Department, and it got that way through the hard work and accomplishments of everybody, including, of course, Susan Beck, my predecessor.

So first, I want to express my thanks to Susan for all her efforts and achievements.

As in most years, the Department is facing both challenges and opportunities. We are pleased with the results of last year’s Academic Program Review. We were praised for our diverse strengths in research, the rigor and high reputation of our undergraduate program, and the excellence of our graduate program. The review team did a good job of making our strengths known to the administration. The team did identify some areas that deserve more attention, and we will be working on the following areas this year.

Undergraduate Program – We’ve seen a decline in majors for the past few years and are taking a close look at both our course requirements and our concentrations. We are considering an undergraduate concentration in what is sometimes called Earth System Science.

Space – The review team determined that we are not using our space effectively. We will need to take a hard look at how we are currently using our existing space in order to decide how to proceed.

Diversity – Both the self-study and the external review team noted that the faculty includes only three tenure-track women and one under-represented minority. We simply have to do a better job at recruiting and retention at all levels.

Budget Cuts – For the current fiscal year, we had to cut our budget by almost $70,000. The new Provost is committed to having this cut be the last one, but I saw an Arizona Daily Wildcat headline from 1987 that said the same thing.

Fund-raising – The past seven years have been great for building the Department’s endowment funds, and our alumni and friends deserve a lot of credit for their advice, support, and efforts on our behalf. Our current endowment benefit most from your support. The challenge before us, I think, is to find ways to be even more successful at future fund-raising efforts.

In other recent news, we had another successful round of industry recruiting this fall. Recruiters (often alums) from BP, ChevronTexaco, ConocoPhillips, ExxonMobil, and Schlumberger visited the Department during September—in search of both interns and permanent hires. Our students continue to be highly sought-after.

September’s Ores and Orogenesis symposium, honoring Bill Dickinson and organized by Eric Seedorff, was a big success, both in terms of the quality of the presentations and the greater than expected number of attendees.

This year’s Nobel Peace Prize has a UA Geosciences’ connection. The award was shared by Al Gore and the Intergovernmental Panel on Climate Change (IPCC). Our own Jonathan Overpeck was a coordinating author on the most recent IPCC report, and Julia Cole was an official contributor.

That’s all the news that I can think of for the moment, but for those of you who don’t know me well, here’s a brief synopsis: I got my undergraduate degree at Lafayette College and my PhD at Brown University. I’ve been a faculty member of the Department for 30 years (!), with time off here and there on sabbaticals (Tübingen, Germany; Ensenada, Mexico; and last year at Cornell University and the Sonoran Institute), two years (88-90) as a program director at NSF, and two years (97-99) as interim Department Head of Ecology and Evolutionary Biology.

Most of my research for the past 15 years has focused on the Colorado River Delta, where my colleagues, students, and I have been using the skeletal remains of mollusks, fish, and marine mammals to document the environmental and ecological consequences of upstream water diversions, and to provide guidelines for restoration. This work is both field-based and lab-intensive: we rely on stable isotopes for the insight they provide into growth rates, temperatures, and the volume of Colorado River water. I am “el Jefe” of a very informal group, the Centro de Estudios de Almejas Muertas, where our motto is “Putting the dead to work since 1992.”

This work has drawn me into discussions over cross-border environmental and water policy, most recently focusing on the environmental effects of running the long-dormant Yuma desalting plant. I’m also the project director for the Research Coordination Network—Colorado River Delta, an NSF-supported, five-year effort to facilitate research on the delta. You can find out more about this project at http://geo.arizona.edu/rcncrd/.

— Individuals —
Martha Alman
Jon Basskin
Jennifer Bonini
Clem Chase
Rolfe Erickson
Esmeralda Francisco
Jay Gandolfi
Paul Handverger
Tim Jull
Robert Laughon
Christopher Kit Marrs
Bob & Margaret Melzer
Gopal Mohapatra
Lorrel Nichols
Bernard Pipkin
William Sauck
Marc Sbar
Eric Seedorff
Elena Shoshitaishvili
David Steadman
Jeremy Weiss
Thomas Westervelt

— Corporations —
AFMS Scholarship Foundation
BP Corporation
ChevronTexaco
ConocoPhillips

Donors

Geosciences thanks our alumni and friends who are listed here for their generous contributions. The Department has been able to offer more financial support and field experiences to both undergraduate and graduate students because of your continued support.

The University of Arizona
Geosciences
Climate Change cont’d...  For the first time, this year’s report included a separate chapter on Paleoclimate that summarized how understanding past climate change is relevant to the future. We contributed to this report as the coordinating lead author (Overpeck) and a contributing author (Cole).

But the IPCC authorships are only part of the contribution that our department makes to the science of global warming. Back in the trenches, we and others in the department have established research programs that feed into the IPCC and the field of climate change science. The IPCC, and other climate change assessments, could not proceed without the broad and deep support provided by the scientific community in the form of peer-reviewed research. This is where our department makes a tremendous contribution.

A notable area of emphasis in Geosciences is the study of past drought, which UA geoscientists approach from many different angles. Both locally and around the world, paleoclimate data demonstrate that past droughts can be prolonged, extreme, recurring, and abrupt in their onset. A natural focus for much of the department’s drought research is the southwestern US, where climate change is expected to intensify drought and deplete water resources, even as population increases.

By characterizing the natural variability in drought, we can characterize the natural baseline of climate change that would be expected even in the absence of anthropogenic climate change. Most likely, this natural variability will occur superimposed upon human-caused changes. We are developing new reconstructions of drought from cave samples (speleothems; Cole, Beck, Patchett, and Quade) and working with tree-ring colleagues to understand the mechanisms behind drought reconstructed from dendroclimatic records. Other faculty (Overpeck, Russell, O. Davis, Flessa, Holliday, and Betancourt) are exploring how drought interacts with ecosystems, fire, and early human settlement in this region.

Paleoclimate records show that over the past few millennia, droughts in the western US have been more intense and prolonged than in the instrumental record of the 20th century. What causes these droughts? Working with climate modelers, we are embarking on a project to systematically characterize drought of the past few thousand years and then to compare the paleoclimate record with climate model output that provides information about the physical mechanisms of drought. These climate models are the same ones used for projection of future changes, and our data-model intercomparisons will help modelers understand where improvements in drought forecasting are needed.

Several faculty are also developing new paleoclimate records of systems such as El Niño/La Niña that exert a strong influence on southwest drought (Cole, Overpeck, and Evans). Our work aims to develop a global context for understanding drought, so its future variability and impacts can be more clearly anticipated.

The southwest is currently in the throes of a decade-scale drought that began in 1998, and that may signal the start of the drying trend anticipated as climate warms globally. Regional decision-makers are dealing now with questions of water scarcity and allocation, and they look increasingly to the UA for input on the climate science.

The NOAA-funded CLIMAS project (Climate Assessment of the Southwest, led by Overpeck) synthesizes and provides environmental information to stakeholders in a wide range of contexts—including water managers, agriculturalists, non-governmental organizations, and state and local governments. The hallmark of CLIMAS has been to provide information needed by environmental decision-makers in ways that are immediate and focused on their specific needs.

Other UA Geosciences efforts on climate change have gained broad exposure recently. A series of maps developed by Overpeck and Jeremy Weiss, for example, show the impact of rising seas on coastlines worldwide (figure 1; http://www.geo.arizona.edu/dges). These maps have appeared in publications as diverse as Rolling Stone and National Geographic in the past year.

Other efforts include ocean modeling studies that suggest the ocean’s role in absorbing atmospheric CO2 will change in unexpected ways as climate warms (Russell). Paleoclimate records from lakes in tropical Africa (Cohen and Overpeck) show new evidence of millennial-scale drying that highlight the range of potential variability and poorly understood mechanisms for drought in this region. The interrelationships among climate, land surfaces, erosion, fire, floods, tectonics, human evolution, and human activities are areas of research for many additional Geosciences faculty on a broad range of time scales (including Baker, Dettman, Flessa, Jull, Pelletier, and Reiners).

Bringing a geosciences perspective to the study of climate change means, among other things, that we integrate multiple systems (physical, chemical, biological), interacting over time, into an interdisciplinary research program on the Earth system and its variability. The department’s research contributions—especially in the context of the strong campus-wide global change program—is helping to make the UA a leading institution in understanding the science and impacts of climate change.

For more information, contact Julia Cole at jcole@email.arizona.edu, or Jonathan Overpeck at jto@u.arizona.edu, or see the Department of Geosciences web site at http://www.geo.arizona.edu.
David Sackenheim Retiring

By Joaquín Ruiz

So David is retiring! That’s a shame. In fact, it’s a tragedy since nothing will ever get done again in this department full of loose cannons.

I have known David for many, many years, and have always been impressed by his fantastic sense of humor in the face of adversity (read Geosciences faculty). David is one of those folks that make things happen. While I would not know from personal experience (my requests are always simple and straightforward, and my accounts are always in the black—hal), I have been told by faculty, students, and staff that David is a miracle worker.

If you needed to buy a gun to protect yourself against bears in Alaska, David would get it done. Never mind that the purchase agent had a heart attack when he heard the request. How about buying a $700K mass spectrometer in a rush without a bid because you forgot that the cost of the instrument was going up 100% over the weekend? Well, you would go to David. If you needed to buy a boat to fish—I mean do geology—in Alaska, you would ask David. I could go on and on, but would rather not face deportation.

It is clear that David got his sense of business from his family in Detroit, who as I understand were part of the “family” (read Sopranos). This must be the reason why nobody could tell David that any particular transaction could not be done. Anyone with a negative attitude would have to confront Tony. And this would not be Tony Zizzo, but the real thing with the baseball bat.

All joking aside, David, it has been a pleasure to have known and worked with you. You really made my life simpler and better because you helped further my work. More importantly, you brought happiness and a good feeling to the office that simply made life good. The world would be a better place with more people like you. Enjoy retirement and keep spreading good vibes. We will miss you greatly.

Industry Recruiting

This fall, BP Corporation, ChevronTexaco, ConocoPhillips, ExxonMobil, and Schlumberger each sent recruiters to visit the Department, interview students, and talk with faculty.

During their visits, the recruiters gave a general introductory session followed by individual interviews. Thirty-three students participated in the interviews. Some students were new to the Department, while others were close to completing their academic programs. The recruiters also met with various faculty members to talk about current issues in the oil industry as well as research trends in the Department.

BP Corporation, ChevronTexaco, ConocoPhillips, and ExxonMobil each made a generous financial contribution to the Department this year. During these times of economic challenge, their generosity is greatly appreciated by faculty and students alike.

Our thanks go to each company and their individual recruiters for their interest in our students and their continued support of the Department of Geosciences.

Faculty News

Andy Cohen (with Lisa Park PhD 95, David Dettman, and others) had a paper in the Proceedings of the NAS entitled “Ecological consequences of early Late Pleistocene megadroughts in tropical Africa.”

George Gehrels received NSF funding for the LaserChron facility.

Vance Holliday was on Arizona Illustrator (KUAT Public Television) talking about his research in Russia that was published in the journal Science. This research was mistakenly attributed to Vance Haynes in the last newsletter.

Jon Pelletier received a new grant from NASA to evaluate the hypotheses for glaciation on Mars.

Memorials

Henry Truebe (MS 82) died on August 13th from cancer. He received his MS at the UA under the guidance of Spence Titley. He worked a few years, and he then returned to school and received a PhD from the Department of Hydrology and Water Resources.

Henry was the owner of ALPEX (Alpine Exploration). He was a conscientious and creative person, a good geologist, and a whiz with remote sensing. The exploration and mining industry as well as the community has lost another good man.

Alumni Drawing Winner

Rebekah Wilson from Tempe, Arizona, will receive a Geosciences T-shirt for sending in her updated contact information.

Send in your updated contact information, and have your name added to the next drawing for a Geosciences T-shirt!
Forgotten History

Titley’s work with Astronauts, Grad Students, and Mapping of Lunar Regions and Landing Sites

By Alison Drain

A handful of pilots landed at Davis-Monthan, climbed out of their one-man aircrafts, and traded their flight gear for cowboy hats. It was the spring of 1964, and the test pilots—who had passed mental and physical exams to become astronauts—had just flown to Tucson to meet with Dr. Spencer Titley for their first good look at the moon.

Titley ushered a few of the 25 pilots to Kitt Peak’s McMath Solar Telescope, now known as the McMath-Pierce Telescope, for their first high-resolution view of the moon’s craters and lava seas. Titley was one of about 50 scientists who were training the astronauts to think like geologists.

I interviewed Dr. Spencer “Spence” Titley, trained economic geologist who became the chief planetary geologist of the department almost by accident. A self-proclaimed eclectic scientist, he took an interest in planetary geology when he met the “Father of Astrogeology,” Gene Shoemaker. In 1963, Shoemaker asked young Professor Titley to do some lunar mapping for the USGS under the auspices of NASA. And so it went: Titley spent many weeks over four years flying a Cessna back and forth between Tucson and Flagstaff, where he’d meet with other mappers to establish a scientific basis for traveling to the moon.

“Lunar science was big news in Tucson back then,” Titley said, seated at a table strewn with news clippings and photos of him with Mercury, Gemini, and Apollo astronauts. “It was the only act around as far as formal planetary studies went.”

At the time, President Johnson had obliterated Barry Goldwater in the 1964 election, Tucson was a lot smaller, and NASA was launching single-man rockets into space. Planetary science was just getting off the ground—but a good scientific case still had to be made before astronauts were to be moon-bound, and NASA needed to find a safe place for the lunar shuttle to land.

Titley and his colleagues worked steadily to map the surface of the moon from the McMath telescope, which required some creative instrumentation. They would focus a mirror image of the moon through “light boxes,” which held silvered mirrors that bounced images of quarter or gibbous or crescent moons onto a table. Three or four men would work simultaneously to copy the telescope images and annotate lunar photographs. The work wasn’t easy, even for a geophile like Titley. “The moon is a planetary surface with a very different history from that of the Earth,” he said. “You want to hold on to your conventional interpretations of landforms. But when you’re looking at the moon, you’re faced with a different surface and different processes; the moon’s surface is in some ways like a fossil Earth. You have to be willing to completely revise your interpretations of things.”

Intellectual challenges aside, the schedule wore on with Professor Titley. For months, he’d leave Tucson at 3 or 4 p.m. to catch the terminator, the boundary between light and dark, where the moon’s yin meets its yang, in just the right spot. He’d finish in Flagstaff by midnight. Then return to Tucson, get a few hours of sleep, and teach classes the next day. Often, he mapped for five or six days of the week. When lunar orbiters started returning images faster than humans could process them, Titley mapped a potential landing site for Apollo 17, and then left the time-consuming work for good.

He showed me two of his ten maps, both perfectly preserved in a manila sleeve, with a dated font being the only clue that they’re decades old. Each of the maps took months to complete: they’re meticulously drawn and stratigraphically color-coded, making a history of violent impacts and volcanism look exquisite. If he ended his mapping career before he would have liked, he left with some of the first lunar maps ever made and dozens of memories to unfold along with them. Giving up his side project allowed him to focus entirely on his real calling: teaching.

The Apollo 11 lunar landing marked a peak in the prominence of the US space program. At the time, the University of Arizona had an established program for poultry science but no department for the study of planets. In 1964, when three assistants of astronaut Gerard Kuiper wanted to apply geology to planets, Titley had stepped in to advise them. Through the last of the Apollo missions, he continued advising young planetary geology researchers and teaching a selenology course—in addition to teaching and advising in economic geology—until 1973, when the Department of Planetary Science was formally established.

Today, that department’s Lunar and Planetary Laboratory is leading a mission to Mars—a first for a public university—but we don’t hear much about Titley’s astronauts, his lunar maps, or the Geology Department’s accomplishments in our understanding of the planets.

“Were we exciting times back then,” he said with pride as he reminisced. “We were a small department, but our scientists’ hard work and important contributions to the Apollo missions cannot be understated.”

Titley doesn’t map the moon anymore, but he isn’t entirely through with it. “I still look at the moon—I spend an awful lot of time looking at it,” he said. I asked Titley what else he plans to do. “I enjoy teaching, and I thoroughly enjoy students. I wouldn’t be here if I didn’t.”
Fall Scholarships

Geosciences Graduate Scholarships

Robert Dietz received an ExxonMobil Scholarship for $4,082
Eric Flood received a Sumner Scholarship for $4,507
William Guenther received a Butler Scholarship for $330
Shundong He received a Conoco Scholarship for $4,632
Christian Manthei received a Sulzer Scholarship for $4,082
Phillip Nickerson received a Sulzer Scholarship for $4,082
Amanda Reynolds received a Peirce Scholarship for $4,632
Christian Rios Vargas received a Lowell Scholarship for $10,000
Jennifer Roskowski received a Peirce Scholarship for $4,082
Joel Saylor received a Conoco Scholarship for $4,632
Hande Tok received a Sumner Scholarship for $4,507
Alexander Winant received a Sulzer Scholarship for $4,082
Sarah Thompson received an ExxonMobil Scholarship for $4,081

A total of $57,731 was awarded

UA Graduate College Scholarships

Alison Drain received a Grad College Fellowship for $4,082
William Guenther received a Grad College Fellowship for $3,751
Nicholas McKay received a Grad College Fellowship for $3,000
Madison Barkely received an Arizona Scholars Scholarship for $10,000

Outside Scholarships

Nicholas McKay received an Institute for the Study of Planet Earth Fellowship for $5,000
Barkely Madison received an Israel Diamond Institute Scholarship for $4,506
Rachel Henderson received an Israel Diamond Institute Scholarship for $4,081
Renata Jasinevicius received an Israel Diamond Institute Scholarship for $4,081

Geoscience students received a total of $96,232 in scholarship support for the Fall semester.

Spring & Summer Degrees

Bachelor of Science

Dana Brodie • Milan Dewan • Carl Dickason, II
Jared Hamilton • Jacqueline Reynard • Michael Strickler
Mayo Thompson • William Westdyke

Master of Science & Doctor of Philosophy

Kevin Anchukaitis, PhD
“A stable isotope approach to neotropical cloud forest paleoclimatology,” Michael Evans

Amy Eichenlaub, MS
“Exploration of genetic links between breccia pipes and porphyry copper deposits in a Laramide hydrothermal system, Sombrero Butte, Pinal County, Arizona,” Eric Seedorff

Tessa Harden, MS
“A 12,000-year probability-based flood record in the southwestern United States,” Victor Baker

Lynnette Kleinsasser, MS
“Geochronology of the Adu-Asa Formation at Gona, Ethiopia,” Jay Quade

Andrew McCarthy, PhD
“Behavior of sodium clinopyroxenes under compression,” Robert Downs

Arda Ozacar, PhD
“Complex rupture processes of large strike-slip earthquakes and receiver function analysis of crust and upper mantle in active tectonic settings,” Susan Beck

David Pearson, MS
“Thermobarometric constraints on the Late Cretaceous tectonic and magmatic evolution of the Coast Plutonic Complex, western British Columbia, Canada,” Mihai Ducea

Kimberly Tait, PhD
“Inelastic neutron scattering and neutron diffraction studies of gas hydrates,” Robert Downs

Congratulations and best wishes to all of our graduates!
Graduate Student Field Trip to the Grand Canyon

By Ryan Porter

This summer the Department offered its third annual Incoming Graduate Student Field Trip to the Grand Canyon, August 17-19, organized by graduate students Kelly Stair and Ryan Porter.

Twenty-one students and professor Rick Bennett participated this year. We began the trip with a talk by Bob Webb from the USGS, who works on debris flows in the Grand Canyon. Then we headed up to northern Arizona to Sunset Crater and the Grand Canyon.

Sunset Crater National Monument is home to the youngest volcanics in Arizona. In the park students had the opportunity to examine the cinder cones and walk out on a basalt flow.

We spent two nights in the Grand Canyon National Park and hiked down through the layers of strata to Plateau Point, which overlooks the Colorado river and the Vishnu Group, to the base of the canyon.

This trip is a great opportunity for new students to meet each other and see some of the most dramatic geology in Arizona. We greatly appreciate the Geosciences Advisory Board’s continued sponsorship.

Student News

Toby Ault, graduate student, received a Research Fellowship from the National Science Foundation.

Alyson Cartwright, graduate student, received a full-year fellowship for sustainability from the Science Foundation Arizona (see http://www.sfaz.org/).

Robert Dietz, graduate student, received a travel award from ISPE.

Charlene Estrada, undergraduate student, received a 2007 minority scholarship from The Association for Women Geoscientists.

Scott McBride, graduate student, received a GSA grant with outstanding mention.

Mike McGlue, graduate student, received the Kerry Kelts’ Outstanding Student Award in the Limnogeology Division of GSA.

Rachel Novak, graduate student, received an American Geological Institute Minority Geoscience Scholarship.

Cody Routson, graduate student, received a full-year fellowship for sustainability from the Science Foundation Arizona (see http://www.sfaz.org/).

Mark Your Calendars

The 36th annual GeoDaze Symposium will take place April 3-5, 2008, in the UA Student Union. For more information go to http://www.geo.arizona.edu/geodaze.
The Ores and Orogenesis Symposium was a huge success. One of the highlights of the week was a dinner in Bill’s honor on the evening of September 27. Over 150 people attended. After a brief overview of Bill’s amazing career, we heard stories and saw a collection of photos about Bill and Jackie from those who know them best, Bill’s former students and colleagues. This was a real treat!

The all-star lineup of speakers started with Stephan Graham (PhD 76, Stanford) from Stanford University, followed by Ray Ingersoll (PhD 76, Stanford) from UCLA. Next we heard from Eric Seedorff (PhD 87, Stanford) from the UA, Terry Jordan (PhD 79, Stanford) from Cornell, and Tim Lawton (PhD 83, UA) from New Mexico State. Tim has the distinction of knowing Bill as a graduate student at both Stanford and the UA. Stories from colleagues at the UA from George Davis and George Gehrels followed. George Gehrels shared stories about Bill’s amazing work with undergraduate students on the Colorado Plateau.

Finally, Jon Spencer talked about Bill’s career and about growing up with Bill and Jackie. It was a fun evening, and we hope Bill and Jackie enjoyed it as much as we did.

Thanks to everyone who contributed photos for the slide show.
List of the Lost (A – J)

The Department has lost track of some alumni and friends. If you have contact information for anyone on the list below, please send an email to lesa@email.arizona.edu.

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American Association of Petroleum Geologists (AAPG)!

This national award recognizes one outstanding Earth Science educator in the US each year. Bob is the first community college teacher to ever win the award in the more than 70 years the award has been given. Congratulations Bob!

Simon Kline (BS 99)

Simon completed his MS at Syracuse University three years ago under Paul Fitzgerald. Simon’s thesis area was Antarctica. After Syracuse, he lived in Seattle, where he began his career with Science Applications International Corp. (SAIC) as a geologist. He relocated to Wilmington, NC, this year, where he received SAIC’s Chevron Program Safety Employee-of-the-Month Award this past June (see Simon’s photo to the right on page 11).

Keith Meldahl (MS 86, PhD 90)

I’m a Geosciences graduate (Karl Flessa was my advisor), and I have always enjoyed reading the Geosciences newsletter. I have a book coming out in November. "Hard Road West—History and Geology along the Gold Rush Trail" (University of Chicago Press). It follows the route...
of the forty-niners across the American West to the gold fields of California. The book weaves together the story of the emigrants' experience on their overland journey with the geologic story of the land they crossed. The audience is lay geology readers and history buffs. Look for it in bookstores near you.

~kmeldahl@miracosta.edu

Elena Shoshitaishvili (PhD 02)
Elena and Richard welcomed George Shoshitaishvili Clarke to their family on December 27th, 2006. The photo to the right shows George when he was about three months old. The seismic onesie artwork on the shirt was done by friend Trey Wagner (PhD 05).

~Elena.Shoshitaishvili@bp.com

Julie Stratton (BS 92)
I loved the UA, and every time I visit my family (all still in Tucson), I roam the campus.

~docwho2000@comcast.net

Michael Strickler
I've moved to Seattle, Washington, and I'm a geologist for ARCADIS BLL in the environmental division.

~mstrick84@gmail.com

Jeff Wynn (PhD 1974)
I received the Spring 2007 edition of the UA Geosciences Newsletter, and more than usual this was a treasure, a “keeper,” for me. One way or another, it honored three of my most cherished professors while I was a student at the UA: George Davis, who with irrepressible humor taught all my structural geology classes; Spence Titley, who taught both of my Econ Geology classes and showed me the type-locality for Jaguars at Helmet Peak; and John Sumner, who taught several of my geophysics classes. They prepared me extremely well for my career in the USGS—indeed, made it possible. I also noted that a recent awardee of the John and Nancy Sumner Fellowship was Sarah Thompson, who comes from Vancouver and worked with us several years ago as a summer intern on several Cascades volcanoes. If she represents UA standards, then send us more! I've been with the USGS since 1975, so this newsletter stands as a testimony to the ageless quality and contributions of these great professors.

I also noted an article in the Alumni News about Terry Gerlach. Terry and I graduated together in 1974, and eventually our paths crossed again when I became chief scientist for volcano hazards with the US Geological Survey. When I moved to Vancouver, WA, in 2002, I discovered Terry had an office only 100 meters away, and we were able to renew our friendship decades and several continents later. Keep up the good work—this newsletter reminds me and others that the best years of our lives were spent in the bright intellectual ferment of the UA Geosciences Department.

~jwynn@usgs.gov

Geoff Wynn in front of an active volcanic extrusion referred to as the Cookie Monster.
Please update your contact information!

Name: ____________________________________________________________

(Please check one of the boxes below to indicate which address you prefer as your mailing address.)

☐ Home Address: _________________________________________________

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Phone: ___________________________ Phone: ___________________________

Email: ___________________________ Email: ___________________________

Company: ________________________ Department: _____________________

Job Title: _________________________

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Email: ___________________________ Email: ___________________________

Please share your news for the next newsletter!

New Job? Kids? Back in school? Retired? Attend a national meeting? Take a trip? See a classmate? Please send us your news (and a photo which will be returned) for the next newsletter.

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