Wind Can Keep Mountains From Growing

By Mari N. Jensen, UA College of Science

Researchers study gigantic wind-formed ridges of rock called yardangs that are found in Central Asia.

Wind is a much more powerful force in the evolution of mountains than previously thought, according to a new report from a University of Arizona-led research team.

Bedrock in Central Asia that would have formed mountains instead was sand-blasted into dust, said lead author Paul Kapp.

"No one had ever thought that wind could be this effective," said Kapp, an associate professor in the UA’s department of geosciences. "You won’t read in a textbook that wind is a major process in terms of breaking down rock material."

Rivers and glaciers are the textbook examples of forces that wear down mountains and influence their evolution.

Wind can be just as powerful, Kapp said. He and his colleagues estimate wind can be 10 to 100 times more effective in eroding mountains than previously believed.

The team’s paper, “Wind erosion in the Qaidam basin, central Asia: implications for tectonics, paleoclimate, and the source of the Loess Plateau,” is in the April/May issue of GSA Today.

Kapp’s co-authors are Jon D. Pelletier and Joellen Russell of the UA; Alexander Rohrmann, formerly of the UA and now at the University of Potsdam in Germany; Richard Heermance of California State University, Northridge; and Lin Ding of the Chinese Academy of Sciences, Beijing.

The American Chemical Society Petroleum Research Fund and a UA Faculty Small Grant funded the research.

The geoscientists figured out wind’s rock-sculpting abilities by studying gigantic wind-formed ridges of rock called yardangs.

Kapp first learned about yardangs when reviewing a scientific paper about Central Asia’s Qaidam Basin. To see the geology for himself, he booted up Google Earth—and was wowed by what he saw.

“ ‘I’d never seen anything like that before,’ he said. ‘I didn’t even know what a yardang was.’
From the Department Head

What’s new? There’s lots of news about people to report. Since our last newsletter, Clem Chase has retired. Clem, a Professor of Geophysics, joined the UA in 1983 and served as Department Head from 1991 to 1995.

Best known for his work in geodynamics, Clem is a big thinker who delights in not fitting into neat categories for his research. He finds interesting problems in our discipline and then solves them, no matter where they are. This is just one explanation for the fact that he has probably served on more student committees than most of us. The department will be having a gala in his honor in September and we will let you know what’s going on as that event approaches.

Gayle Zizzo, Geosciences’ Business Manager Supremo (I think that’s HR’s official job title for her) has retired. Gayle, a master of creative financing, is perhaps best known for keeping a steady hand on the department’s financial tiller for many years, ensuring that department heads don’t break the bank, that faculty and students don’t spend money they don’t have and that government auditors stay happy. Gayle was honored (and roasted) by her friends and family last November.

Jianjun Yin has joined the department as an Assistant Professor in the area of climate dynamics. Jianjun received his Ph.D. from the University of Illinois and was a research scientist at Florida State University before joining us this past January. Jianjun’s research interests include climate/earth system modeling, sea level rise and climate variability. His wife, Jianling Liu also joined the UA, as a research analyst with the Office of Institutional Research and Planning Support.

New additions to our staff include Sylvia Quintero, our new business manager, formerly with Chemistry and Biochemistry, and Alicia Saposnik, coordinator of our alumni programs – and editor of this newsletter. You’ll be hearing more from Alicia. Also new since last time are Isaac Way, our IT support analyst, and Mark Candee, collections manager and assistant curator of the department’s mineral museum.

Our advisory board has also seen some changes. We welcomed Ray Leonard as a new member. Ray is president and CEO of Hyperdynamics, a Houston-based company exploring for oil and gas in West Africa. Ray received his BS in Geosciences from the UA in 1975. Before taking his position at Hyperdynamics, Ray held executive positions with Amoco, YUKOS and the Kuwait Energy Company. After many years of superb service as chair of the advisory board, Steve Naruk handed over the gavel to Carlotta Chernoff.

In other alumni news, we held what we think is the second official meeting of the Front Range Alumni Group (FRAG) at the Wynkoop brewpub in Denver. Many thanks to board member John Dreier for organizing the event. Another Denver-area event is planned for September. If you live in the Front Range area, look for more information this summer.

We have launched a new fund to support departmental field trips. Kicked off by a donation from alum Keith Meldahl (PhD ’90) to honor Bill Dickinson, the Dickinson Field Trip Fund will allow us to support faculty-led trips without forcing our undergraduate students to dig ever-deeper into their pockets to pay for higher and higher course fees. Many of you know about this fund already, but please keep it in mind when you think of your field trip experiences when you were at the UA.

In research, a major initiative in Tibet is being spearheaded by Paul Kapp, thanks to new funding from NSF. At least a dozen faculty and students are on their way there as I write this piece. For some of Paul’s other work in the area, see the front-page article in this newsletter.

What’s new with me? I now refer to myself as a paleontologist by training and a conservation biologist by choice. My research has moved upstream, from the shell-rich beaches of the Colorado Delta in Baja California, to freshwater wetlands of the Colorado Delta in Sonora. I headed up a group of scientists from the University of Arizona and the Sonoran Institute in the US, and from the Universidad Autónoma de Baja California, Centro de Investigación en Alimentación y Desarrollo, Reserva de Biosfera Alto Golfo de California and Delta del Río Colorado, and Pronatura Noroeste in Mexico.

We have been monitoring water flow, water quality, vegetation and bird life in the Ciénega de Santa Clara, an important wetland in Mexico that is supported by agricultural wastewater from the US. Water that now flows to the Ciénega could be used by the Yuma Desalting Plant. Support for our efforts comes from major southwestern water agencies in the US and the Mexican government. We’re finding out if the just-completed trial run of that plant has affected this important wetland habitat. I’ve learned that transboundary water politics in the southwest is touchy stuff. Mark Twain is supposed to have said, “Whiskey is for drinking. Water is for fighting.” And for relaxation, I still race cars.

What’s coming up?

The 40th GeoDaze! 2011 saw the 39th running of GeoDaze – the first, best, longest-running student-run geosciences symposium anywhere. Watch out for special events and special news about next year’s gala event.

This newsletter will be entering the electronic era, with the e-version debuting next year. That means that we need your e-mail address. Please, please, send your e-mail address to Alicia Saposnik – alicias@email.arizona.edu. Or, if you are so inclined, you can now find us, “University of Arizona Geosciences,” on Facebook!

The William R. Dickinson Fund will help support departmental field trips. (photo by N. Elliott)
Submitted by John W. Lyons-Baral, UA AEG Student Chapter President

On February 5, 26 field trip participants spent a day at Sabino Canyon, studying the results of the 2006 debris flow event. Repairs to the canyon, erosive forces, and new plant growth may have reduced the visible evidence of the 2006 debris flows somewhat, but the canyon is far from recovered. Many debris levees were still present in the canyon bottom, and many landslide paths, levees and debris flow matrix were still present along the Phoneline Trail.

In addition to four AZGS guides—Ann Youberg, Joe Cook, Phil Pearethree and Mike Conway—the trip included UA graduate and undergraduate students from Geosciences, Hydrology & Water Resources, Mining & Geological Engineering and Chemical Engineering. Industry professionals from Saguaro Geoservices, Golder Associates, the US Forest Service Minerals Division and Pima County Regional Flood Control attended, as did three Pima Community College geosciences faculty. Hydrologist Jim Washburne gave a presentation about the invasive Arundo reed grass in the area.

Donors

Many thanks to the alumni, friends, and corporations listed below for their generosity and support.

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Andrew Alden
Megan L. Anderson
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Nancy Beckvar
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Gail S. Bock
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Terence L. Brit
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Regina Capuano
Maurice A. Chaffee
Carlotta Cheroff
Brooke P. Clements
J. Kelly Cluer
Andrew Cohen
Kenneth L. Cole
Diana Ware Collins
Darlene Coney
Kimberlee S. Coolbaugh
Stanley L. Coombs
Kenneth D. Cornelius
John Cormode
Karl B. Coyner
John E. Cunningham
Raj H. Daniel
James R. Daniels
Brian and Kristi Darby
George Davis
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Malcolm Hewitt Weiner Foundation
Huge fields of yardangs that can be seen from space look like corduroy. Wind had scoured long gouges out of the bedrock, leaving the keel-shaped ridges behind. Kapp wondered where the missing material was.

The team’s initial research was conducted using geological maps of the region and satellite images from Google Earth. Then Kapp and his team went to the Qaidam Basin to collect more information about the yardangs, the history of wind erosion and the dust.

“What we’re proposing is that during the glacial periods, when it’s colder and drier, there’s severe wind erosion in the Qaidam basin and the dust gets blown out and deposited downwind in the Loess Plateau,” Kapp said.

The term “loess” refers to deposits of wind-blown silt. Parts of the U.S. Midwest have large deposits of loess.

“Up until 3 million years ago, the basin was filling up with sediment,” he said. “Then like a switch, the wind turned on and basin sediments get sandblasted away.”

Known as the “bread basket of China,” the Loess Plateau is the largest accumulation of dust on Earth. Scientists thought most of the dust came from the Gobi Desert.

In contrast, Kapp and his colleagues suggest more than half of the dust came from the Qaidam Basin. Co-author Pelletier, a UA geomorphologist, created a computer model indicating that dust from the basin could have formed the plateau.

The wind is not having such effects now because the climate is different, Kapp said. Co-author Russell plus other research groups suggest the westerly winds shift north during interglacial periods like that of the current climate and shift toward the equator during glacial periods.

Therefore, since the last Ice Age ended about 11,000 years ago, the winds have blown from the Gobi Desert toward the Loess Plateau. During glacial periods, the winds blew from the Qaidam basin toward the Loess Plateau instead.

“During the interglacials, the basin fills up with lakes ... When it goes back to a glacial period, lake sediments blow away,” he said. “Our hypothesis is that you have lake development, then wind erosion, lake development, wind erosion, lake development—and so on.”

The team suggests wind erosion also influenced how fast the basin’s bedrock is folded. In Central Asia, bedrock folds and crumples because it’s being squeezed as the Indian plate collides with the Asian plate.

“The folding accelerated 3 million years ago,” Kapp said. “That’s when the wind erosion turned on. I don’t think it’s a coincidence.”

During the glacial periods, the winds whisked sediment out of the basin. As a result, the bedrock deformed faster because it was no longer weighed down by all the sediment.

Kapp calls the process “wind-enhanced tectonics.” The term “tectonics” refers to forces that cause movements and deformation of the Earth’s plates.

The whole process is driven by global climate change, he said. “The unifying theme is wind.”

Kapp and his team are quantifying the processes further as they analyze more samples they brought back from the Qaidam basin and Loess Plateau.

SEG Student Chapter News

The Society of Economic Geologists UA Student Chapter is gearing up for the summer Rocky Mountain field course. All semester, students have been active in the Rocky Mountain seminar, presenting each week on a different stop on the course, including Bingham Mine, Stillwater Mine and Yellowstone National Park. The trip will last two weeks and highlight mining geology throughout the region. The trip is funded by SEG travel grants and fundraising events including t-shirt and mineral sales.

Students have also been busy within the Tucson community. Over spring break, members volunteered at the Kino School, teaching students about the wonders of geology. On campus, two mineral sales were held to raise money for chapter activities. Students presented their research at GeoDaze, and SEG members Mariel Schottenfeld and Isabel Fay received awards for the best talk in their categories.

Other awards and recognitions include: Michael McCarrel and incoming student Cody John Davis recently received SEG fellowships for their research projects, and Mariel Schottenfeld and Phil Nickerson both received SEG student research grants to help fund their projects.

The chapter hopes to continue expanding and potentially participate in an international field course in the future. Any suggestions or interest of participation would be greatly appreciated. Contact Michael McCarrel at mcarre1@email.arizona.edu.
Paul S. Martin Remembered

By Mari N. Jensen, College of Science

Paul S. Martin, the University of Arizona geoscientist who developed the idea that overhunting drove North America’s large Ice Age mammals extinct, died Sept. 13, 2010 at his home in Tucson, Ariz. He was 82.

“More than 40 years ago, Paul framed a scientific question: What was the role of humans in Pleistocene extinctions? It’s the greatest “whodunit” in science,” said Karl W. Flessa, a UA paleontologist and a long-time colleague of Martin’s.

Martin insisted that early humans had hunted North America’s Ice Age big game, including ground sloths, camels, mammoths and mastodons, to extinction.

“The issue has engaged generations of scientists, students and the general public ever since,” said Flessa, professor and head of the UA department of geosciences. “Paul warmly welcomed both supporters and dissenters. I’ve never seen anything quite like it. It wasn’t just a matter of disarming his opponents with kindness. Paul really wanted to see things the way his opponents saw them, in order to understand even more about his favorite topic—Pleistocene extinctions.”

Vance Haynes, a UA professor emeritus of anthropology and geosciences, reiterated Martin’s desire to learn from people with different viewpoints and his thirst for knowledge: “Unlike so many people who get infatuated with their own theories, he spent his professional career inviting criticism. He put together two critical conferences about Pleistocene extinctions, and the volumes that came out of those were pace-setting.”

Martin’s wide-ranging interests made him an interdisciplinary researcher before interdisciplinary was a buzzword. Martin’s work bridged ecology, anthropology, geosciences and paleontology in a way that had not been done before.

A native of Allentown, Penn., Martin earned a bachelor’s degree in zoology from Cornell University in 1951. He earned his master’s degree and doctorate in zoology from the University of Michigan in 1953 and 1956, respectively. He was a postdoctoral researcher in biogeography at Yale University from 1955-56 and at the University of Montreal from 1956-57. He joined the UA as a research associate in the Geochronology Laboratories in 1957. He became an assistant professor in 1961 and rose through the ranks, becoming a professor of geosciences in 1968. He retired from the University as an emeritus professor of geosciences in 1989.

In addition to his studies of Pleistocene extinctions, Martin is also known worldwide for his and his students’ research on the long-term ecological and climatic records contained in packrat middens. He and his students also studied paleoecology and paleoclimate using other natural records, including pollen, tree rings and the vegetation preserved in fossilized ground sloth dung. The center of those studies was the UA’s Desert Laboratory, three buildings perched atop Tumamoc Hill, then just outside of Tucson and surrounded by desert.

The interdisciplinary nature of Martin’s own research fueled a spirit of collaboration and creativity in the students from zoology, botany, geology and anthropology who gathered and conducted research on “The Hill,” as people called it.

Former graduate student David W. Steadman said, “There were graduate students with highly varied backgrounds who did lots of fieldwork together and ate lunch together…. All of us up there truly appreciated what we had. Nobody had to tell us that we had something special going.”

The importance of going into the field to study the natural world was a crucial component of Martin’s approach to research. His wife, Mary Kay O’Rourke, said, “A thing that is most remarkable about Paul’s life is his vast array of field experience…. He was all about the field work.”

Martin’s field trips were legendary because he inspired people to explore, enjoy and study the natural world. Steadman said, “I look back on those days with euphoria. He knew the best places to go, the neatest regions to explore…. He made everybody, no matter what your background or your educational level or expertise, feel welcome and that they could contribute.”

Martin’s interest in the natural world started in childhood and was encouraged by his parents, Steadman said. Martin attended Cornell University to study zoology and fell in love with Mexico while on a bird-collecting field trip.

The trip began Martin’s life-long interest in Mexico and in how tropical flora and fauna came to be. “He was smitten by the lifestyle of rural Mexicans and by the Mexican countryside,” said Steadman, now associate director for collections and research at the Florida Museum of Natural History at the University of Florida in Gainesville. “There was something about Paul that put him in a really special good mood once he was south of the border.”

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<td>Sericitic and advanced argillic mineral assemblages and their relationship to copper mineralization, Resolution porphyry Cu-(Mo) deposit, Superior district, Pinal county, Arizona, Eric Seedorff</td>
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**Paul S. Martin continued from page 5**

Martin’s devotion to field work and love of remote places was particularly notable because he had contracted polio in the early 1950s and often needed a cane or crutches to get around.

Once Martin and his wife visited Steadman at a remote field camp in the Galapagos accessible only by boat. Camp was a two-mile hike over lava and up a cliff. “I questioned whether Paul could make it,” Steadman said. “He said, ‘I’m going to make it, don’t wait for me.’... After I don’t know how many hours, here shows up Paul. Bloody – there wasn’t a place that wasn’t cut. Bloody, sweaty and grinning from ear-to-toe.”

Haynes said, “He was a remarkable person, and I thank my lucky stars that I was associated with him. He’s going to leave a big hole in the profession.”

Martin is survived by his wife, Mary Kay O’Rourke, an associate professor of public health at the UA; his sons Andrew, Neil and Thomas; two nieces and four nephews; and two granddaughters.

Donations can be made to the Paul S. Martin Quaternary Studies Fund to support field work in Quaternary paleontology.

Mailing address: Paul S. Martin Fund, Department of Geosciences, Gould-Simpson Building, University of Arizona, Tucson, AZ 85721.

Checks should be made payable to “Department of Geosciences, University of Arizona.”

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**Geosciences**

**UA Science**
Fall Scholarships

Molly Dendas received a Bert S. Butler Graduate Scholarship for $4,125.

Katrina Gressett received a Bert S. Butler Graduate Scholarship for $4,550.

Lepolt Linkimer received a Peter J. Coney Graduate Scholarship for $4,675.

Brendon Johnson received a Chevron Scholarship for $1,300.

Goran Buble received a John and Nancy Sumner Scholarship for $1,300.

Melissa McMillan received a ConocoPhillips Scholarship for $4,550.

Jennifer La Sure received an Economic Geology Scholarship for $4,125.

Caitlin Orem received a Graduate College Scholarship for $4,125.

Esther Posner received a Graduate College Scholarship for $4,125.

Mariel Schottenfield received a Graduate College Scholarship for $4,125.

Clare Tochlin received a Sulzer Graduate Scholarship for $4,125.

Mark Trees received a Sulzer Graduate Scholarship for $4,125.

A total of $27,773 was awarded.

Spring Scholarships

Molly Dendas received a Sulzer Graduate Scholarship for $4,125.

Russell Edge received a ConocoPhillips Scholarship for $4,550.

Jennifer La Sure received an Economic Geology Scholarship for $4,125.

Melissa McMillan received a ConocoPhillips Scholarship for $4,125.

Kathryn Metcalf received a ConocoPhillips Scholarship for $4,550.

Devon Orme received a Sulzer Graduate Scholarship for $4,125.

Alissa Scire received a ConocoPhillips Scholarship for $4,550.

A total of $30,150 was awarded.

Summer Scholarships

Madison Barkley received a BP Scholarship for $1,300.

Goran Buble received a John and Nancy Sumner Scholarship for $1,300.

Matthew Dettinger received a Peter J. Coney Scholarship for $1,300.

Sophie Everatt received a Paul S. Martin Scholarship for $1,300.

Brendon Johnson received a Chevron Scholarship for $1,300.

Andrew Kowler received a H. Wesley Peirce Scholarship for $5,367.

Ryan Leary received a Peter J. Coney Scholarship for $1,300.

Nicholas McKay received a Wilson Thompson Scholarship for $1,040.

Kate Metcalf received a Peter J. Coney Scholarship for $1,300.

Jason Mizer received a Kenneth A. Lovstrom Scholarship for $1,500.

Mallory Morell received a Chevron Scholarship for $1,300.

Rachel Murray received a Bert S. Butler Scholarship for $1,300.

Jill Onken received a Bert S. Butler Scholarship for $1,300.

Devon Orme received a Peter J. Coney Scholarship for $1,300.

Ryan Porter received a John and Nancy Sumner Scholarship for $1,300.

Esther Posner received a Chevron Scholarship for $1,300.

Cody Routson received a Bert S. Butler Scholarship for $1,300.

James Ryan received a Chevron Scholarship for $1,300.

Roxana Safipour received a Peter J. Coney Scholarship for $1,300.

Alissa Scire received a Chevron Scholarship for $1,300.

Joshua Spinler received a Maxwell N. Short Scholarship for $1,257.

Diane Thompson received a Paul S. Martin Scholarship for $1,300.

Claire Tochlin received a Chevron Scholarship for $1,300.

Sarah Truebe received a Kartchner Caverns Scholarship for $809 and a Sulzer Scholarship for $500.

Kevin Ward received a Chevron Scholarship for $1,300.

Justin Wood received a John and Nancy Sumner Scholarship for $1,300.

A total of $37,773 was awarded.

Field Camp Scholarships

Allysa Abbey received a Geosciences Field Camp Scholarship for $979 and a Diane Ferris Field Camp Scholarship for $721.

Erin Abel received a Vorhees Field Camp Scholarship for $1,700.

Christy Caudill received a David Moore Field Camp Scholarship for $1,800.

Xennephone Hadeen received a Vorhees Field Camp Scholarship for $1,700.

Miles Hearn received a Vorhees Field Camp Scholarship for $1,700.

Courtney King received a Vorhees Field Camp Scholarship for $1,700.

Jason Mizer received a Chevron Field Camp Scholarship for $1,700.

Braden Ruddy received a Mayo Field Camp Scholarship for $1,700.

A total of $13,700 was awarded.

Galileo Circle Scholarships

The following students received a $1,000 Galileo Circle Scholarship from the College of Science.

Madison Barkley, PhD
Ching-Chih Chang, PhD
Russell Edge, PhD
Sarah Ivory, PhD
William Lytle, BS
Fariq Mustapha Kamil, BS
David Pearson, PhD
Alissa Scire, PhD
Diane Thompson, PhD

For more information on Geosciences Scholarships, please see “support a student” on the Geosciences web site at www.geo.arizona.edu or contact Alicia Saposnik, Geosciences Alumni Program Coordinator, at 520-626-8204.

For more information on the Galileo Circle, please see “support UA Science” on the College of Science web site at http://cos.arizona.edu or contact the College of Science Development Office at 520-621-6797.
The 39th Annual GeoDaze

The 39th annual GeoDaze Symposium was held at the Student Union Memorial Center, March 30 - April 2.

The 37 talks and 36 posters showcased graduate and undergraduate student research in economic geology; paleoclimate; biogeochemistry; geophysics; geochemistry; geochronology; geoscience education; surface processes; and tectonics, structure, and sedimentology.

Dr. Peter Molnar, of the University of Colorado, gave the keynote address, “Mantle Dynamics and the Rise and Fall of Mountain Belts.”

13 cash awards were presented to students at the awards ceremony on April 1. For a complete list of award sponsors and winners, see page 9. GeoDaze closed with a captivating performance-poem, “Tectonic Petrameter: A Spoken-Word Journey through Earth History and Alternative Method of Teaching the Geologic Time Scale,” by graduate student Esther Posner, followed by a slideshow of student photography. To view the slideshow, go to http://earth.geo.arizona.edu/geodaze/2011/index.html.

Friday’s activities concluded with the annual GeoDaze party at the home of professors Susan Beck and George Zandt. Students, faculty, alumni, and department friends attended. Many were up bright and early the next morning to attend the GeoDaze field trip to the Mt. Wrightson area of the Santa Rita Mountains, sponsored by ConocoPhillips and led by Dr. Charles Ferguson of the AZGS.

As part of a new tradition, GeoDaze joined with other departments in the School of Earth and Environmental Sciences to create EarthWeek 2011, allowing students from Geosciences, Atmospheric Sciences, the Laboratory of Tree-Ring Research, Hydrology and Water Resources, and Soil Water and Environmental Science to share and learn from one another’s research. EarthWeek’s plenary speaker, Jorge Cham of “PhD Comics,” drew a standing-room-only crowd—quite possibly the largest group of graduate students ever to assemble on the UA campus—with his talk, “The Power of Procrastination.”

Congratulations to co-chairs Russ Edge and Devon Orme and the members of the GeoDaze committee. A very special thanks goes to all of our alumni, friends, and corporate sponsors, whose financial support makes GeoDaze possible each year.

Finally, thanks to all of the students, faculty, staff, Advisory Board members, alumni, and friends for making the GeoDaze tradition a great success again this year.

Plans are already underway for a special 40th GeoDaze anniversary, March 29 - 31, 2012. Don’t miss it!

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GeoDaze Donors

Special thanks goes to the following alumni, friends, and organizations for their financial support, which helps make GeoDaze possible each year.

— Individuals —
Erin Abel
Jeanine Ash
Gerard J. Beaudoin
Thomas Biggs
Barbara Bohn
Edwin & Liza Bulte
Carlotta Chernoff
Anthony B. Ching
Gary Colgan
Raj Daniel
Terrence Gerlach
Armand Groffman
John M. Guilbert
James Hardy
James Hays
Gary Huckleberry
William Jenney, Jr.
Richard D. Jones
Leann Kelly
Susan Kidwell
Charles Kluth
Peter L. Kresan
Joseph Lyonski
John R. Matis
Scott McBride
Edgar J. McCullough, Jr.
Norman Meader
Sally Meader-Roberts
Mark A. Melton
Caitlin Orem
Lynn Peyton
Richard S. Pfirman
Nancy Naeser
Robert Peterson
Miles G. Shaw
Gilbert Stern
Spence & Helen Titley
Frank Wagner III
Jennifer Wagner
Herbert Welhener
Kiriaki Xiluri

— Corporations —
BP Corporation
Chevron
ConocoPhillips
ExxonMobil
Hydrogeophysics
Montgomery & Associates
Sonshine Exploration
GeoDaze Awards

Errol Montgomery & Associates
Best Overall GeoDaze Presentation
$2,000 Award to Lepolt Linkimer
Chevron Corporation
Runner-up Best Overall GeoDaze Presentation
$1,000 Award to Andrew Laskowski
Edgar J. McCullough, Jr.
Best Overall GeoDaze Poster
$500 Award to Matthew Dettinger
Barbara D. Bohn
2nd Place GeoDaze Poster
$300 Award to Adam Hudson
Gilbert Stern
3rd Place GeoDaze Poster
$200 Award to Sarah Ivory
John M. Guilbert
Best Economic Geology Talk
$250 Award to Isabel Fay
Sara L. Peyton
Best Geochemistry/Geochronology Talk
$250 Award to Elias Bloch
BP Corporation
Best Geophysics Talk
$250 Award to Justin Wood
Hydrogeophysics, Inc.
Best Paleoclimate (Lakes & Surface Processes) Talk
$250 Award to Jessica Conroy
Gerard J. Beaudoin
Best Paleoclimate (Caves, Oceans, & Modeling) Talk
$250 Award to Nicholas McKay
Peter L. Kresen & Scott McBride
Best Structural/Tectonics/Sedimentology Talk
$250 Award to Mariel Schottenfeld
Miles G. Shaw
Best Undergraduate GeoDaze Talk
$500 Award to Fariq Mustapha Kamil
Herbert E. Welhener
Best Undergraduate GeoDaze Poster
$250 Award to Cassie Fausel

Faculty News

Lee Allison was appointed to a two-year term on the Advisory Committee for the Geosciences Directorate of NSF.

Vic Baker received the 2010 Distinguished Career Award from the Geological Society of America Quaternary Geology and Geomorphology Division. The award was presented at the GSA Annual Meeting in November.

George Davis was elected Vice President and Councilor of the Geological Society of America, which means that in July he will become President Elect of GSA. George was invited to attend the Penrose Conference on Strain Localization in Rocks, to be held in Spain this summer, and looks forward to this opportunity to test some of his new thinking on detachment faulting in metamorphic core complexes. Finally, George is among the founding members of the Parrhasian Heritage Foundation, whose goal is to establish a 500 sq km heritage park in Greece to sustain an area of cultural significance, rich natural beauty and archaeological sites, and local communities working within a protected landscape.

Paul Kapp was the recipient of the Geosciences Advisory Board’s 2011 Outstanding Faculty Award.

George Zandt was elected a 2011 AGU Fellow. This honor is limited to one in a thousand members and represents a major accomplishment. George joins Clem Chase, Jonathan Patchett, and Mike Drake (joint faculty member) as AGU Fellows.

Staff News

Kiriaki Xilouri-Lauria won an Award of Excellence from the College of Science Staff Advisory Council (CoSSAC).

Student News

Jeanine Ash was recognized as a 2011 UA Science Ambassador by the College of Science at the 2011 College of Science Awards Ceremony.

Percival Gou received the Geosciences Departmental Outstanding Senior Award for 2010-2011.

Alena Kimbrough was recognized for Excellence in Undergraduate Research at the 2011 College of Science Awards Ceremony.

Leandra X. Marshall was accepted to an REU (Research Experience for Undergraduates) this summer at Oregon State University’s College of Ocean and Atmospheric Science. Leandra will be working with Dr. Frank J. Tepley on volcanics from the Aucanquilcha Volcanic Cluster (AVC) in northern Chile to understand the development and evolution of this magmatic system over time.

Kendra Murray was awarded a 2011 GSA graduate student grant. She also has a scholarship from the Achievement Rewards for College Scientists (ARCS; Phoenix Chapter), and so is the 2011-2012 ARCS Prentice Scholar. In addition, Kendra was awarded the 2011 College of Science Award for Excellence in Service.

Josh Spinler won an Outstanding Student Paper Award from the Tectonophysics section of AGU for his poster at the 2010 AGU fall meeting. Josh was also selected as Geosciences’ Outstanding Mentor/Teaching Assistant for the 2010-2011 academic year.

Sarah Truebe won a Philanthropic Educational Organization (PEO) Scholar Award ($15,000) and a Global Change Dissertation Improvement Grant ($1000).

Jeremy Weiss was selected to attend the National Center for Atmospheric Research (NCAR) Advanced Study Program, “Statistical Assessment of Extreme Weather Phenomena under Climate Change.”

Mark your Calendars for the GeoDaze 40th anniversary, March 29 - 31, 2012. Planning for special alumni events is underway!

Find us on Facebook

Stay current on Geosciences news and keep in touch with the Department on Facebook. Search for “University of Arizona Geosciences.”
Alumni News

Joseph M. Acaba (MS 92)
Joseph received the 2010 College of Science Alumnus of the Year Award.

Libby Anthony (MS 79, PhD 86)
Libby received the Geosciences Advisory Board’s 2011 Geosciences Distinguished Alumni Award.

Brooke Clements (MS 91)
Brooke received the Hugo Dummett Diamond Award at the 2011 meeting of the Association of Mineral Exploration, British Columbia (AMBC). The award recognizes Brooke’s role in the discovery of the Renard cluster of diamondiferous kimberlites in Quebec in 2001. Brooke was formerly the Vice President, Exploration, for Ashton Mining of Canada Inc., and led the team of diamond explorers that discovered the Renard cluster, which will become Quebec’s first diamond mine. Hugo Dummett worked closely with Peter Coney on terrane analysis of Australia and, while Vice President, Exploration, for BHP minerals, was a strong supporter of the UA Geosciences Department.

Carroll Chernoff (PhD ’02)
I am still working with ConocoPhillips in Houston, now Exploration Manager for the Northern Gulf of Mexico group, where I am excited to be kicking off a new drilling program in south Louisiana. I look forward to seeing some of our Houston-based alumni at the summer intern picnic (as yet unscheduled).
-Carroll.B.Chernoff@conocophillips.com

L. Courtland Lee (MS 67)
My talk at the 2010 Tucson International Gem and Mineral Show can be seen on www.vimeo.com/13926849. Gem Dinosaour Bone and Teeth: A possible solution to the ivory problem?
-L.Clee@boxbee.com

Jeff Toxey (MS 97)
I have recently moved back from a four-year assignment in Jakarta, Indonesia. I’m back in Houston and working as the Geoscience Supervisor for Angola Block 15 Kizomba Satellites in the ExxonMobil Development Company.
-jeffrey.k.toxey@exxonmobil.com

Bill Warneke (BS 50)
Bill has worked since 1957 in the Florida phosphate industry as a Manager of Technical Development and Consultant. Bill married Jean, his wife of 62 years, while at the UA and lived in Polo Village. He has five sons (the last two were twins!), six grandchildren and four great-grandchildren. He and Jean have lived in Lakeland, Florida for 53 years.
-WCWROCKHND@aol.com

Ken Yeats (MS 85)
I transferred from Lagos to Jakarta in 2010, and am now Lead Geologist for Chevron’s deepwater Kalimantan gas projects. Carolyn and I are enjoying the urban upgrade. Thanks to UA, I still manage to find structural complexities even in “purely stratigraphic” plays.
-kjyeats@chevron.com

Bill Warneke (BS 50) sent in this picture of Geosciences students and faculty on a field trip in what he believes are the Whetstone Mountains, circa 1950. Bill’s in the front row, far right. Bill was able to identify three others in the photo. If you recognize yourself or anyone else, please let us know. We’ll reprint the photo with as many identifications as possible in a future issue.

UA Geosciences, 1950

Bill Warneke (BS 50) sent in this picture of Geosciences students and faculty on a field trip in what he believes are the Whetstone Mountains, circa 1950. Bill’s in the front row, far right. Bill was able to identify three others in the photo. If you recognize yourself or anyone else, please let us know. We’ll reprint the photo with as many identifications as possible in a future issue.
Celebrating good times in mining industry at the Exploration Roundup conference in Vancouver, Canada in late January were the followingWildcats:

Front Row Left to Right: Wolfram Schuh (PhD 93), George Sanders (76), Tom McCandless (PhD 94), Matthew Gray (MS 88), Brooke Clements (MS 91)

Middle Row Left to Right: Stan Keith (MS 78), Ben Porterfield (MS Mineral Economics, 93), Peter Megaw (PhD 90), Clancy Wendt (MS 78), Lance Miller (PhD 94), John-Mark Staude (PhD 95), Frank Nelson (MS 64), James Lang (PhD 91), Eric Jensen (PhD 03)

Back Row Left to Right: David Lajack (94-96), Eric Seedorff (Current Professor), Raul Diaz (MS 85), Eugene Schmidt (MS 75), Moira Smith (PhD 90), Rick Fredericksen (MS 74), Chris Osterman (MS Geol. Eng. 84), Louis Lepry (MS 81), Joe Piekenbrock (MS 83)

Also present at the conference, but not in the photograph were: Wojtek Wodzicki (PhD 95), Dave Johnson (PhD 00) and Scott McBride (MSc 08)

Memorials

Eric R. Braun (MS 69)
Eric Braun died unexpectedly April 9 of natural causes while on vacation in Palm Springs, Calif. Eric had a distinguished career in economic geology spanning more than 40 years. After working for AMAX and EXXON Minerals Co., he started his own geological consulting company, APEX Minerals, in 1983. In 1998 he was hired to run the Peruvian exploration program for Cyprus Minerals, and he and his family moved to Peru. Eric worked for Cyprus and then for BHP Billiton in Peru before returning to Missoula in 2005. His most recent consulting work took him around the world to Kazakhstan, Mongolia, Cambodia, Laos, Australia, Argentina, Chile and Peru.

Elizabeth S. Childs
Elizabeth Childs, donor of the Orlo E. Childs Undergraduate Scholarship and widow of Orlo Childs, passed away in February at the age of 88, in Indianapolis. Burial was in Ann Arbor, where she met Orlo when he was teaching there. The Orlo Childs Scholarship continues to support undergraduate students studying the Colorado Plateau or the Rocky Mountain Region.

James R. Gless (BS 53)
James Gless died of a heart attack in 1988. His son Doug writes, “He had retired after working for Chevron for 25+ years as a petroleum geologist/engineer. He always spoke highly of the education he received at UA and it definitely took him far. He worked throughout the oil fields of California, Iran and the North Sea. We all miss him.”

Gretchen Luepke Bynum, 1943 - 2010

Gretchen Luepke Bynum (BA 65, MS 67) was a pioneer in her field: She entered the geology profession when few women pursued careers in geology.

Born in 1943, Gretchen’s fascination with rocks and minerals began at age five, when she started gathering specimens on her family’s 20-acre Tucson ranch and learned to identify them. By the time she was a young teen, Gretchen was exhibiting specimens from her collection at the Tucson Gem & Mineral Show. With her passing on July 3, 2010 in Fremont, CA, the mineralogy community lost one of its most active members.

After earning her Bachelor’s and Master’s degrees in Geosciences from the University of Arizona in 1965 and 1967, Gretchen became the first woman scientist with the then US Geological Survey Branch of Pacific Arctic Marine Geology. A distinguished 32-year career as a USGS geologist followed. Gretchen’s professional expertise was in the field of sedimentary river and marine sands and heavy minerals, and she was the author and/or editor of many books and papers in the field. After retiring in 1999, she continued with the USGS as an emeritus.

Gretchen was a long-standing member of Bay Area Mineralogists and served as BAM President from 1979 to 1980. She was an active participant in BAM, assisting in administrative matters until shortly before her passing. Although primarily living in the San Francisco Bay Area, Gretchen maintained her membership in the Tucson Gem & Mineral Society and continued to enter competitive mineral displays each year at the Tucson Gem & Mineral Show, frequently winning best-in-class awards.

Gretchen was a woman of many talents and interests. She played the flute in the University of Arizona marching band, and continued to play flute with a variety of other bands throughout her life. She loved the outdoors and supported many environmental organizations.

Gretchen is survived by her husband Robert F. Bynum, and by her sister Kristin Coleman (husband Steve Coleman), her brother John Luepke, and nephews John Robert Luepke and Michael Tapia Luepke. She is missed also by a large group of former coworkers and geology and mineral collecting friends. As one of them wrote of her, “She was social, kind, considerate, and had a wry sense of humor.”

Gretchen Luepke Bynum
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: _________________________

Email: _________________________

Company: _______________________

Department: _____________________

Job Title: _______________________  ☐ Business Address:

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Phone: _________________________

Email: _________________________

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 by US mail, E-mail (alicias@email.arizona.edu), or the web (http://www.geo.arizona.edu/people/alumni.html).

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