

UNIVERSITY OF NEVADA, LAS VEGAS

Department of Geoscience

FALL, 2005

Geoscience Newsletter Committee: *Jean Cline, Ganqing Jiang, and Catherine Snelson*

Remarks from the Chair

It is wonderful to have this opportunity to tell you what has been happening in the Department of Geoscience. It has been a few years since our last newsletter, but we will make it an annual event in the future. We hope the newsletter will keep you up to date with our undertakings and accomplishments. As usual, the Department has undergone many changes in the last couple of years.

Both Dave Weide and Fred Bachhuber recently retired and they both were awarded the position of Professor Emeritus. We are always glad to see them show up on campus and they both continue to be sources of knowledge and history for the Department.

We are pleased to mention the promotions of some faculty. In 2004, Brenda Buck earned tenure and promotion to Associate Professor and I (Wanda Taylor) netted promotion to Professor. In 2005, Zhongbo Yu earned tenure and promotion to Associate Professor and Michael Wells was promoted to Professor.

We are excited to have hired new faculty in the last couple of years: Matthew Lachniet (Paleoclimatology), Michael Nicholl (Vadose Zone Hydrology), Patrick Drohan (Soil Science), Ganqing Jiang (Carbonate Sequence and Chemostratigraphy), Kimberly Johnson (Sedimentology) and Adam Simon (Economic Geology/Geochemistry). Each of them and their research specializations bring much needed expertise and capabilities to our course offerings and research programs.

I have been Chair for about a year and am still figuring out how to juggle administrative duties with both teaching and research. My goals as Chair are to shepherd the Department through continued success in enhancing our teaching and research abilities

and reputation nationally, limited expansion in the number of faculty including a geophysicist and a geomorphologist, and increasing the numbers of students in our undergraduate and graduate programs.

Some of our other faculty also have new administrative duties. Michael Wells is now serving as Associate Chair and is doing a great job with tackling schedules, projecting schedules into the future, and all of his other sundry duties. As many of you know, the previous Chair was Rod Metcalf. He is now serving as an Associate Dean of the College of Science, but continues to have a constructive and productive teaching and research presence in the Department. Jean Cline is now Project Manager for the Walking Box Ranch, which is to be a field station and museum near Searchlight, NV.

Our state-of-the-art equipment list keeps growing! Recently we purchased new XRF and XRD equipment. Clay

continued on page 2



Faculty at the 2005 retreat on Lake Mead. Left to right, row 1: Michael Wells, Adam Simon, Patrick Drohan; row 2: Catherine Snelson, Kim Johnson, Andrew Hanson, Matt Lachniet, Rod Metcalf; row 3: Zhongbo Yu, Gene Smith, Ganqing Jiang, Wanda Taylor, Jean Cline. Faculty not present: Brenda Buck, Dave Kreamer, Mike Nicholl, Steve Rowland, and Terry Spell.

Remarks from the Chair continued from page 1

Crow has that equipment up and running and it is exciting to have and use this equipment for both teaching and research. The differences in capabilities and technology are huge in comparison to the equipment we had 10 to 20 years ago. Matt Lachniet and Ganqing Jiang recently were awarded NSF funding to purchase and bring on-line equipment for stable isotope measurements and more equipment for NIGL (the $^{40}\text{Ar}/^{39}\text{Ar}$ lab).

Our students are doing well in terms of getting jobs or going on to graduate school, which is the ultimate measure of success. In addition, during fall 2004 eight undergraduate and graduate students presented at the GSA meeting and five presented at the AGU. The students also formed several new clubs and chapters including student chapters of AAPG, AEG, and SEG. Also, the more-or-less annual canoe trip through Black Canyon was a roaring success.

Please stop by and see us sometime or drop us an email and let us know where you are and what you are now doing. Be sure and update your contact information so that we can make sure the newsletter reaches you. The general department email address is geodept@ccmail.nevada.edu. Do check the department website as it has lots of interesting information about what we and former members of the Geoscience department are up to - <http://geoscience.unlv.edu/>. We always enjoy hearing from our friends and alumni!

Cheers!

Wanda J. Taylor



Dr. Dave Weide past and present...

Once upon a time back in the fall of 1973, a new Geoscience faculty member arrived on campus and was assigned four new courses, no start-up funds, no release time, and a tiny cubicle in the third oldest building on campus; then shared with the Biology department. That

new professor was Dave Weide. At the start of that Fall semester in 1973, the geoscience faculty consisted of 3 people: John Wilbanks, Chairman; Bill McClellan, paleontology and “soft rocks”; and Anne Wyman, mineralogy and petrology. For Weide it was to be a brand new adventure!

On the first day of the first meeting of my first class I calmly announced to the 105+ students who had signed up for Geography 101: “This will be an adventure for all of us; not only have I never taught **THIS** class before; I have never taught *anything* to *anybody* before this! We shall learn together.”

On July 1, 2004, Dave Weide; older, grayer, somewhat wiser, but in no way more subdued, retired from the Faculty of the Geoscience Department. What a long, strange, but

wonderful trip it has been. Numbers of students during 31 years? Yes, I kept a record: total number of students, 5,279; Geography 101, 4,022; Geology 101, 748; Geomorphology, 306; plus about 500+ in 15 other courses. It is no wonder I cannot enter a supermarket anywhere in town without someone saying.... “Hi! I had you as a teacher at UNLV back in 1976.....” So what does the future hold?

I plan to remain with the UNLV Geoscience Department on an “Emeritus basis” and I will continue to teach courses as the Department wishes, as a Part Time Instructor. There will be time for travel: I have a list of places to visit that I have kept since I was 12 years old. The first destination, the Panama Canal, will be followed by New Zealand and Australia. With that, thanks to all of you. You have made teaching most exciting and rewarding!

ExxonMobil Investing in the future of our students

In 2002, Bob Stewart, Manager of ExxonMobil recruitment, contacted the UNLV Geoscience Department because he was interested in potentially hiring some of our graduate students. After an initial assessment, official recruiting visits began and, since then, Bob has interviewed numerous students in the department.

Recent alumni who were hired with full-time status by ExxonMobil include: Holly Langrock (now Holly Novak), Ilsa Schiefelbein, Eric Fossett, and Tandis Bidgoli (M.S. students of Wanda Taylor), Jonathan Zybala (M.S. student of Andrew Hanson), and Darlene McEwan (M.S. student of Cathy Snelson). And, Jill Hammond—one of our former undergraduates—is also employed full-time at ExxonMobil.

Other UNLV Geoscience Graduate students who were hired for internships include Leigh Justet (Ph.D. student of Terry Spell) and Melissa Hicks (Ph.D. student of Steve Rowland). Several other graduate students have been invited to attend ExxonMobil fieldtrips and short courses. This past spring Amy Brock, Joe Kula, Robin Howley and Kati Gibler—all current graduate students—attended EM field courses.

ExxonMobil is a valued partner in our efforts to provide a promising future for our graduates—not only by hiring, recruiting for internships, and inviting our students to learn from their staff—but they continue to invest in our students’ education. We thank ExxonMobil for funds donated to the UNLV Geoscience Department to help finance our educational student field trips.



Andrew Hanson (Petroleum Geology), Bob Stewart (ExxonMobil), and Wanda Taylor (Department chair, Structure) relaxing during “Beer on the Balcony” during Bob’s recruiting visit to the department.

Student Clubs

The **UNLV Geology Club** encourages undergraduate student involvement in departmental activities and other geoscience-based organizations although membership is free and open to anyone who is interested. We sponsor educational field trips and social gatherings through fundraising and donations. Our current fundraiser is a canned soda/bottled water sale in the main office. Please email geoclub@unlv.nevada.edu for more information.

The **Society of Exploration Geophysicists (SEG) UNLV Student Chapter** has been recognized by our parent organization the Society of Exploration Geophysicists for two years as well as on campus by CSUN (Consolidated Students of the University of Nevada). We are a pre-professional organization designed to introduce student members to the careers in and practices of the petroleum industry. In addition, we are an interdisciplinary organization with active graduate and undergraduate students from the physics, engineering and geoscience departments. Our group has been very proactive in fundraising including a very successful on-campus candy sale. Currently, we are selling calendars containing pictures of local and regional geology taken by our students and faculty (for more information email segorg@unlv.nevada.edu). With our fundraising efforts we have been able to help support student members to attend the National AAPG/SEG Student Expo in Houston Texas the past two years and we hosted a field trip to the Nevada Test Site last spring.

The **AAPG UNLV Student Chapter** is affiliated with the American Association of Petroleum Geologists, along with the Nevada Petroleum Society. The goals of the AAPG student chapter are to serve as forum and network for students working on projects related to sedimentology/stratigraphy, structure, or geophysics, or for anyone interested in a career within the petroleum industry. The chapter meets on a monthly basis providing updates about meetings, developments within industry, and grant opportunities. We have been active in bringing AAPG Distinguished Lecturers to the UNLV Geoscience Department seminar series, as well as planning field trips to examine regional geology. The AAPG Foundation provides generous support in the form of research materials to be used by chapter members, grants to be used for field trips, and discounts and information regarding regional and national AAPG meetings. Grants supporting graduate and undergraduate student research in a variety of disciplines within geoscience are funded yearly by the AAPG Foundation and the Nevada Petroleum Society.

Alumni

Byron W. Cork, BS 1980: I am currently a math and science teacher at Pathways Secondary School in Pahrump, NV.

Jerry W. Baughman, BS 1986: I am doing well and am managing a mineral exploration company based in Reno Nevada called Nevada Eagle Resources. From 1990 to the present time, I have been based in the Reno area. During 1990, I worked as a consulting geologist for Cambior (U.S.A.) Inc. conducting numerous property examinations. From 1991 to 1994 I worked as an exploration manager-USA for Southwestern Gold involved in precious metal exploration and oversaw all exploration and development projects and evaluated all property submittals for the United States. Since the fall of 1994 I have been acquiring gold properties in North and South America for myself and have leased properties to most of the major mining companies and to a host of juniors. I presently have about 40 active projects with 23 of the projects either leased or joint ventured. I have a web site (www.nevadaeagle.com) that gives additional information on what companies or partners are doing on the various projects.

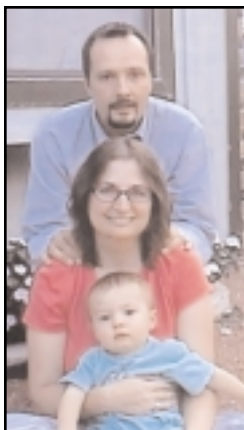
Sandy (Haws) Hodge, MS 1990: Sandy and her husband Tim are busy raising two daughters, 3 and 5 years old, in Arvada, Colorado. She also does ground-water consulting (mostly ground-water modeling) from her home for several large mines in northern Nevada. Tim works for the airlines and we try to enjoy the flight benefits as often as possible.

Lynn Oliver, BS 1990: After graduating from UNLV in 1990 I spent seven productive years in the mining industry working as an exploration geologist, mine geologist, and environmental manager. When the gold market crashed I was laid off with many others and decided to re-train and completed a degree in Landscape Architecture. I worked for a short time as a landscape architect and then accepted an offer to work with the Forest Service as a geologist and mineral administrator. Today I live in Bishop, California and work for the Inyo National Forest. I spend my time administering a variety of mining activities, reclaiming abandoned mines, and working on various geology and landscape architecture projects. I married my lovely wife Cheryl in August 2004 and we spend our off days exploring the beautiful Sierra and White/Inyo Mountains.

Jan Lamb, MS 1995: I am working for Sage Gold Inc. a Canadian Jr. This is a one-woman show in the states where we have 7 properties and I haven't yet been on all of them. I have been writing drilling permits and have a 3 man crew in the field sampling (2,700 samples). They started a week ago and have already torn up two ATV's. Lately I have been starting at 7am and work to 9 or 10pm. I am flying to Vegas

continued on page 4

tomorrow through Friday for an International Gold Symposium at the Mirage. We have a booth so today I am cramming (studying) info on our (and surrounding) properties. I am supposed to be a walking encyclopedia by tomorrow!



Anthony Feig, MS 1998: I completed my doctorate in Educational Administration and Foundations at the University of Texas at El Paso (UTEP) in 2004 and I currently work in the UTEP Department of Geological Sciences, where I conduct research on the cognition, professional development and barriers to completion for geoscience graduate students. I teach graduate courses in geoscience education for the department, and also teach graduate courses for the UTEP College of

Science's Master of Arts in Teaching Science program. I also design and oversee introductory and distance-learning geology curricula, and mentor the department's thirty-six graduate teaching assistants. I'm married to Dr. Cathy Willermet, a physical anthropologist and also the Faculty Coordinator of Learning Communities for the UTEP Entering Student Program, and we had our first child, Pierre William, in November 2003. We are expecting our second child in January 2006.

Tracy Cail Banks, MS 1999: After a 4 year stay at Virginia Tech, Tracy Bank (no longer Cail) is living in Knoxville, TN and working in Environmental Sciences at Oak Ridge National Lab. I am studying Chromium and Uranium transport and reduction and hope to see some fellow grads at the fall AGU meeting!

Joel Rotert, MS 2000: In late May 2004, my girlfriend, Joanna Lipske, and I left the U.S. to work for QGX, Ltd. (www.qxgold.com), a Canadian Junior exploration company exploring exclusively in Mongolia. We typically spend our workdays doing field work (geologic mapping and/or sampling), drafting cross-sections, planning drill holes, writing reports, or logging core and RC chips. Project assignments range from regional prospecting to district-scale exploration in various stages of development. We explore for a wide variety of deposit types including



volcanogenic massive sulfide, porphyry Cu-Au, low-sulfidation epithermal Au, sediment and vein-hosted Mo-W, and metallurgical coal. Our work schedule is flexible, but generally we work every day for six consecutive weeks and take two-week breaks in between where we either visit family and friends at home or travel elsewhere. Our field exploration camps consist of a few to many tens of gers, or yurts, the traditional mobile dwelling of the nomadic Mongolian people. Camps are rustic yet comfortable with cooks trained in Western foods. During the hot summer days, the side of the ger is rolled up to let the breeze flow through. Diesel or wood/dung stoves do their best to keep us warm in the frigid Mongolian winter. Our bathroom is a pair of gers outfitted with flush toilets and showers. The office is linked by satellite communication to the outside world and contains computers, a plotter, binocular microscope and other equipment necessary to maintain the workflow. While the length of consecutive workdays can be draining, we feel fortunate to work together in such a beautiful, culturally unique, and remote location while interpreting challenging geology. The opportunity is one we won't soon give up...as long as the metals and minerals market agrees!

Ilsa Schiefelbein,

MS 2002: I am currently employed by ExxonMobil - US Production as a geologist located in Houston TX. I am working a fractured clastic tight gas reservoir in Piceance Basin, northwest



Colorado. My responsibilities include understanding the structural history of the basin, how fractures may or may not contribute to production, bringing forward drillable prospects, and working with Joint Venture partners to incorporate learnings from their drillwells. On the personal side,.....Rob and I are getting married in WI on Oct. 1, 2005. We have purchased our first house in Spring, TX (a northern suburb of Houston) and adopted a sweet little brown basset hound from the Lone Star Basset Hound Rescue.

Jared Lubben, MS 2004: I completed my M.S. in Economic Geology and the main objectives of my thesis were to identify geochemical and isotopic characteristics of ore fluids at a major Carlin-type gold deposit. I am currently employed as a project geologist with Placer Dome Exploration in Reno, Nevada. Placer Dome is one of the world's largest mining companies and has interests in 17 mining operations on five continents. I started with Placer as a contract geologist in May, 2004. On January 1st, 2005, I was hired as a full time geologist initially given responsibilities surrounding field data acquisition including geologic mapping, field sampling, and drill core/chip logging. In

April, 2005, I was promoted to project geologist and charged with the added project management responsibilities including the design of geochemical and geophysical surveys, oversight of sampling crews and other hired contractors, design of exploration drill programs, and budget management. During my time at Placer Dome, I have been able to tour some of the most profitable gold mines in the world, and work with several influential people in the mining industry.



Jonathan Zybala, MS 2004: I am currently employed with ExxonMobil in Houston, TX. As part of ExxonMobil's New Hire Development Program, I spent my first 8 months with the company in an Exploration rotation integrating various datasets including well logs, visual core descriptions, and 3D seismic data to help better constrain the structural history and its effects on the stratigraphy present in the Doba Basin of Chad, Africa. At present I am in my second 8-month rotation where I am working in Geophysical Recourses. This Technical rotation includes a subset of mini-projects and/or formal training in Geophysical Operations and Applications, Seismic Processing, Gravity and Magnetics. I am scheduled to complete my third rotation in the Production Company in October of 2006, after which I will choose a Skill Area to focus my career development, training, and future assignments within ExxonMobil. I am working hard every day to help meet the nation's toughest energy challenges!

Geoscience Donors

Anne Wyman Scholarship Fund:

Fred Bachhuber
Jean Cline
Ganqing Jiang

Steve Rowland
Wanda Taylor

Graduate Student Fund:

Patrick Drohan
Andrew Hanson

Wanda Taylor

Geoscience General: in Memory of Chris Scroggins

Howard J Adams
Jessica Adler
Fred Bachhuber
Loise Baker
Bechtel SAIC Company
Kenneth Bierman
Jeanne Brown
Nancy Christmann
Su Kim Chung
Teresita Constancio
Jennifer Cox
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Peter Starkweather
Eva Stowers
Chris Sugnet
LaTisha Tuggle
Diane Vanderpol
Glenn Vent
Kathy War
Penelope Whitten
C L Wilson
Andrea Wirth

Other:

Robert Belliveau / Desert Space Foundation
Marjorie Barrick Museum Gift Shop
Clark County School District
ExxonMobil
K Cash
Kalamazoo Materials Inc
Fredrick Mintz
Mountains Edge Builders CO-OP
New World Enterprises G.P.



Geology students studying ancient glacial rocks (Kinston Peak Formation) in Death Valley

DEPARTMENT AWARDS AND HONORS

Undergraduate Student Awards 2004 - 2005

Todd Arrowood, UNLV Bernada E. French Scholarship in Geology
Lora Griffin, UNLV Bernada E. French Scholarship in Geology
Stephen Hlohowskyj, UNLV Bernada E. French Scholarship in Geology
Tricia Livingston-Evans, Barnes & Noble Book Scholarship
Stephanie Mrozek, UNLV Undergraduate Research Award
Garrett Speeter, Barnes & Noble Book Scholarship

Graduate Student Awards 2004 - 2005

April Azouz, UNLV Lilly and Wong Fong Scholarship in Geoscience
Wendy Barrow, AWG Chrysalis Award, UNLV Bernada E. French Scholarship in Geology, UNLV Graduate Professional Student Assn Summer Grant, UNLV Graduate Professional Student Assn Travel Grant, UNLV GREAT Assistantship, GSA Student Grant, GSA Travel Grant
Tandis Bidgoli, UNLV Bernada E. French Scholarship in Geology, UNLV GREAT Assistantship
Joshua Boxell, UNLV Bernada E. French Scholarship in Geology
Amy Brock, UNLV Bernada E. French Scholarship in Geology, Sigma Xi Grant, AAPG Research Grant, GSA Research Grant, UNLV Graduate Professional Student Assn Travel Grant, GSA Quaternary Division Farouk El-Baz award Honorable Mention
Darren Burgett, UNLV Lilly and Wong Fong Scholarship in Geoscience
Peter Druschke, UNLV Bernada E. French Scholarship in Geology, GSA Wanek Fund Grant, Nevada Petroleum Society Grant
Katie Gibler, UNLV Lilly and Wong Fong Scholarship in Geoscience
Melissa Hicks, UNLV Bernada E. French Scholarship in Geology, UNLV Graduate Professional Student Assn Fall Grant
Aaron Hirsch, UNLV Edwards and Olswang Scholarship, UNLV Graduate Professional Student Assn Travel Grant
Denise Honn, UNLV Edwards and Olswang Scholarship, UNLV Graduate Professional Student Assn Travel Grant
Robyn Howley, Nevada Petroleum Society Scholarship
Joseph Kula, UNLV Edwards and Olswang Scholarship, GSA Student Research Grant (2004 & 2005), UNLV Graduate Professional Student Assn Summer Grant, UNLV Graduate Professional Student Assn Fall Grant, UNLV GREAT Assistantship, UNLV Bernada French Research Scholarship
Ernesto Moran, UNLV Edwards and Olswang Scholarship
Tom Muntean, GSA Structure and Tectonics Division Award
Penelope Padmore, UNLV Bernada E. French Scholarship in Geology
Feng Pan, DRI Aileen and Sulo Maki Hydrology Fellowship, NSF/EPSCoR ACES scholarship
Audrey Rager, UNLV Edwards and Olswang Scholarship, Nevada Space Grant
William Rittase, UNLV Edwards and Olswang Scholarship
Shane Rumsey, UNLV Graduate Professional Student Assn Research Award
Nathan Suurmeyer, UNLV Edwards and Olswang Scholarship, UNLV Graduate Professional Student Assn Award
Lael Vetter, UNLV Edwards and Olswang Scholarship, GSA Late Pleistocene mammoths and climate transition
Shelley Zaragoza, Nevada Space Grant Consortium Scholarship, National Dean's List, Shell Oil International Award for Exploration Geophysics, UNLV Bernada E. French Scholarship in Geology

Faculty and Staff Honors/Awards

Brenda Buck: BLM Soils analysis in the Las Vegas Formation, BLM Dust transport in the Las Vegas Valley, SNPLMA High-resolution satellite-imagery, Clark County USGS Mapping of Sprint Mountain SE 7.5' Quad AZ-NV, UNLV Source of salt minerals associated with landscaping rock, UNLV Potential release of heavy metals in landscaping materials, UNLV Salt mineralogy in arid soils of the Virgin River Valley, NMSU Gypsic paleosols as indicators of tectonics UT, K Cash Atacama desert soils as an analogue to Mars, NRCS Soil analyses and specialist support grant, ACS/PRF Gypsic Paleosols as indicators of diapirs Mexico, DRI Visiting scientist position during sabbatical

Jean Cline: Chair 2005 Gordon Conference on Inorganic Geochemistry, Invited lead author, SEG's 100th Anniversary Volume paper on Carlin-type gold deposits, NSF & USGS 2005 Gordon Research Conference on Inorganic Geochemistry, USGS Searchlight Mining District (Mineral Deposits in So. NV), UNLV Walking Box Ranch interdisciplinary research, Society of Economic Geologists 2004 International Exchange Lecturer (Europe, Asia, Africa and Australia), UNLV College of Science 2003 Distinguished Researcher

Patrick Drohan: BLM Soils analysis of the Las Vegas Formation, BLM Dust transport in the Las Vegas Valley, SNPLMA High-resolution satellite-imagery, Clark County UNLV Cercocarpus ledifolius stands on Mt. Charleston NV, UNLV Puebloan ruins in Mesa Verde National Park CO

DEPARTMENT AWARDS AND HONORS continued

Maria Figueroa: Nominated Rookie of the Year, classified staff awards

Andrew Hanson: USGS Clark County Minerals Assessment grant

Ganqing Jiang: NSF Equipment award stable isotope mass spectrometer, ACS Sequence and chemostratigraphy Cambrian succession NV

Matt Lachniet: NSF Equipment award stable isotope mass spectrometer, Research profiled in 1/05 Geotimes: Monsoon in Central America weakened during early Holocene (~8200 years ago), with oceanographic circulation changes associated with rapid draining of ice-contact lakes in North America (2004 Geology)

Steve Rowland: NSF High school research/curriculum Tule Springs Pleistocene site, UNLV Foundation 2003 Distinguished Teaching award

Catherine Snelson: 2003 Presidential Early Career Award for Scientists and Engineers (PECASE) and DOE Early Career Award for Scientists and Engineers, the highest honor bestowed by the United States government on young scientists at the outset of their careers. The award, given by the Executive Office of the President of the US, was conferred upon Snelson at the White House. DOE LLNL Imaging sub-surface structures Las Vegas Basin, SNPLMA High-resolution satellite-imagery Clark County, NESC Real-time Earthquake network Las Vegas Valley, UNR USGS LLNL Seismic instrumentation in Las Vegas, USGS Quaternary faulting and seismic sources Las Vegas, DOE Earthquakes in Southern NV hazards and risk

Wanda Taylor: USGS Quaternary faulting and seismic sources Las Vegas, DOE Earthquakes in Southern NV hazards and risk, DOE Earthquake Hazards and Risks in Southern Nevada

Zhongbo Yu: UNLV 2004 Barrick Scholar award in recognition of major research contributions.



Michael Wells and students investigating Quaternary normal faults in Death Valley.

Some Random Thoughts on Volcanology at UNLV-Programs, Research and People

by Gene Smith



Teaching and research in volcanology at UNLV goes back to the early 1980s when we first taught introduction to volcanology as an experimental course. The first master's theses projects under my direction covered a wide range of topics from carbonitites at Mountain Pass, California (Clay Crow) to mineralization at the Cyclopic Mine in Arizona (Ingrid Myers), to the geology of the Wilson Ridge pluton (Dan Feuerbach and Terry Naumann). Most of the early volcanology research was centered about the Lake Mead area and especially the River and McCullough Mountains. One of the earliest studies (1982-84) was cooperative work to map the McCullough Range Wilderness area with Lawford Anderson at the University of Southern California. Lawford and two of his USC graduate students mapped the Precambrian part of the wilderness area while graduate student Casey Schmidt, undergraduate Mike Weber and I mapped the volcanic rocks. Casey became intrigued with the McCullough range and decided to study the area to the north of the wilderness area for her master thesis research. Late during the field season she came to my office and said that she had discovered a feature that might be a caldera. I got really excited about her observations and went in the field with her the next day. It turned out that she had discovered the McCullough Pass caldera. Since its discovery in 1985, this caldera has been used by UNLV field classes for their field training in volcanic stratigraphy. Many of you probably got your first taste of volcanic rocks by working in and about the caldera.

A major milestone was the establishment of the Center for Volcanic and Tectonic Studies (CVTS) in 1986. The purpose of CVTS was to coordinate the research effort for the State of Nevada's Nuclear Waste Project Office to evaluate the hazard of volcanic activity about the proposed high-level nuclear waste repository at Yucca Mountain. The CVTS became the department's first research center and was an important part of the department until its disbandment in 2000. CVTS supported a large number of graduate students and a wide range of projects. Among the grad students who received support are Erin Cole, Lance Larsen, Tracey Cascadden, Shirley Morikawa, Kelly Rash, Alex Sanchez, Kelly Boland, and Lori Dickson. CVTS hired the department's first post doctoral fellow, Dr. Jim Faulds (now at the Nevada Bureau of Mines and Geology). Following Jim were post-docs Mark Martin, Gene Yagodzinski, Tim Bradshaw and Jim Mills. Additionally, Dan Feuerbach, Terry Naumann, Ed Thomas, Shirley Morikawa, Alex Sanchez and Deb Keenan worked for the CVTS after receiving their MS degrees at UNLV. Many students also served as laboratory or student assistants. These included Yagang Wang, Tracy Tuma Sweitzer, Sara Crooks, Kristin Kampschroe, Dawn Peterson, Lisa Danielson and Andy Smith. CVTS was also responsible for supporting the operation of the UNLV's Rock Chemistry Laboratory. Many of you will remember our Rigaku 3030 X-ray spectrometer. This instrument produced over 1000 analyses for student and faculty research. This instrument was a workhorse for chemical analyses from 1989 till its replacement in 2004.

The volcanology program got a big boost in 1996 with the addition of Terry Spell to the geoscience faculty. Terry is interested in caldera systems and has done a considerable amount of work in the Jemez Mountains of New Mexico. Leigh Justet received her MS and Ph.D. working in the Jemez Mountains under Terry's direction. Currently Kati Gibler (one of Terry Naumann's former students from the University of Alaska) and Penny Padmore are doing master's thesis research within the Valles Caldera in the Jemez Mountains. Terry Spell and I started a joint project in the northwest part of Yellowstone Park. Terry has a student working on the rhyolites domes (Nicole Nastanski) and one of my grad students (Kristeen Bennett) is studying the basalts. In addition, Terry obtained the funding, designed and constructed a state of the art $^{40}\text{Ar}/^{39}\text{Ar}$ rock dating lab. This lab has provided dates for a wide variety of projects and is being used by geologists worldwide.

Although, I am beginning to slow down a bit (getting old is not recommended), I am still fairly active. I still teach the volcanology course every other Fall Semester. Recently I added a final project to the course and many of the students choose to model volcanic eruptions. The model demonstrations at the end of the semester can be quite exciting. Last year, an eruption of Mt. St. Helens was so realistically explosive that it threatened to dump ash on cars in the parking lot behind the Lilly Fong Geoscience Building. In addition to teaching, I have an active group of students doing volcanology research. Matt Faust and Shara Stowell are studying young basalt fields in southwestern Utah, Matt McKelvey and Denise Honn are working on calderas in central Nevada, Kristeen Bennett is studying basalt flows in Yellowstone Park, and Audrey Rager is working on craters on Venus and other planets. Yes, I did say Venus. Audrey is interested in the large crater-like coronae structures that are unique to Venus. This study is exciting for me because I began my career in planetary geology (I actually did my Ph.D. project in the field of astrogeology) and it is great to get back into this field.

The future looks bright for volcanology and igneous petrology studies at UNLV. Our department is known as a great place to do volcanology, so we receive a bunch of new graduate school applications every year. Luckily, we are able to convince some of the best applicants to come to UNLV to study volcanology. I would like to close by saying that with an excellent volcanology/igneous petrology faculty (Terry Spell, Rod Metcalf, Clay Crow and myself), the success of our Ph.D. program, and the acquisition of new analytical equipment, I predict a successful future for volcanology/igneous petrology at UNLV.

Steve Rowland — a rare “living fossil” from the Department of Geoscience’s “Paleozoic Era” — looks back over 27 years at UNLV

In the fall of 1978, when Steve Rowland joined the UNLV Geoscience faculty, the department had eight professors and one technician. There were no graduate students at all. Faculty members taught Geology 101 labs, whether or not they were teaching a GEY 101 lecture section. Steve came to UNLV as an invertebrate paleontologist, with a special interest in archaeocyaths (Cambrian reef-building calcareous sponges) and Cambrian stratigraphy.

The Department faculty had another new face that year — a Visiting Professor named Gene Smith, on leave from the University of Wisconsin-Parkside. Gene returned to Parkside the following year, but he came back to UNLV as a regular faculty member in 1980. If those pre-graduate-program years of Geoscience at UNLV are analogous to the Paleozoic Era, Steve and Gene are like chambered nautiluses — metaphorical “living fossils” with their heritage in the nearly forgotten distant past. Of the sixteen professors now in the Department, Gene and Steve are the only ones who were here prior to 1990 — two weathered old cephalopods in a drawer full of shiny neogastropods.

The Department’s “Mesozoic Era” began in 1982 with the initiation of its Master’s program. Steve’s first M.S. student, Kirk Hardy, studied the stratigraphy and sedimentology of the Tapeats Sandstone. “Kirk was a very capable and independent student,” Steve recalls. “He didn’t need much help, so I didn’t spend much time with him in the field. For that reason I didn’t learn very much from his study. He wrote a great thesis that won the UNLV Alumni Association’s outstanding thesis award, but I was disappointed that I had not been more involved in his research. Ever since then, I have tried to spend more time with my graduate students, especially in the field.”

A series of Master’s students followed, including Jon Rice, Joe Parolini, Lynn Oliver, Jeff Donovan, Readin Wilson, Xiaoping Zhou, Slava Korolev, and Melissa Hicks. And it is primarily through his graduate students that Steve has expanded his research horizons. A good example is Michele Kissell (now Michele Jones). As an undergraduate geology major at UNLV in the early 1990s, Michele had never outgrown her childhood fascination with dinosaurs. She asked Steve if she might be able to do an independent research project on dinosaurs. Although there are no dinosaur fossils in Southern Nevada, Steve knew of some unstudied camel and bird tracks in the Miocene Horse Spring Formation north of Lake Mead. Birds are descended from dinosaurs, so studying Miocene bird tracks is not much different than studying Mesozoic dinosaur tracks. Michele took the bait, and her undergraduate trackway project led her to spend a year at the University of Colorado studying real dinosaur trackways with Martin Lockley, who is *the* world expert on the subject. Michele then returned to UNLV as Steve’s graduate student. Building on her undergraduate project, as well as her year with Lockley, she studied the tracks of the Horse Spring Formation for her Master’s thesis. In the process, she taught Steve a few things about vertebrate trace fossils. Steve is now involved in a study of Jurassic vertebrate tracks exposed in the Aztec Sandstone in Valley of Fire State Park.

More recently, Steve has expanded his vertebrate research interests beyond footprints to actual bones. Geoscience Department alumnus Robert Needham, who had been a student in Steve’s first paleontology class at UNLV in the fall of 1978, was working at the Clark County Museum, and he asked Steve to collaborate with him on a museum publication about the Devil Peak ground sloth. This was a nearly complete skeleton of a Shasta ground sloth that had been found in a cave south of Goodsprings. Through the research conducted for that Clark County Museum publication, titled *Ice Age Ground Sloths of Southern Nevada*, Steve became fascinated with giant ground sloths and other Pleistocene mammals. That interest in turn led to one of his students, Jeff Gromny, conducting a detailed thesis study of the morphology of the Devil Peak sloth. Another of Steve’s students, Liz Glowiak, is in the final stages of a thesis study of the Pleistocene mammals from Gypsum Cave. And yet another student, Lael Vetter, is just beginning a study that will involve the use of stable isotopes to address paleoecological questions concerning Columbian mammoths that lived in Las Vegas Valley. “Each of these studies has been a bit of a stretch for me,” Steve says, “but each of these students has been willing to dig into the literature, talk to other researchers, learn what



continued on page 10

Steve Rowland *continued from page 9*

sorts of research questions are worth asking, and figure out how to get the answers. Through these grad students, I have muddled my way into the field of vertebrate paleontology, which is a completely new area of research for me.”

In the late 1990s the Department entered its “Cenozoic Era,” with the beginning of a Ph.D. program. Far from abandoning his academic roots in Cambrian paleontology, Steve now has two Ph.D. students who are studying Cambrian fossils. Melissa Hicks is wrapping up a comparative study of archaeocyathan reefs in China and Nevada, and Marty Erwin (a Ph.D. student in the Department of Biological Sciences) is beginning a study involving Cambrian trilobites.

“As I look back over my nearly twenty-seven years at UNLV,” Steve reflects, “I feel extremely lucky for three things in my academic career: (1) to have found my niche in a department and university in which my career was able to evolve and mature along with the institution, (2) to have interesting, fossiliferous rocks exposed nearby, and (3) to have had the privilege of working with a group of enthusiastic, intellectually excited, hard-working graduate students. It is an academic cliché to say that I have learned more from my students than they have learned from me, but that’s truly how it feels. And I’m having way too much fun learning new things to think about hanging up my rock hammer in the near future.”

In Memorium

Kris Scroggins *(by Steve Rowland)*

One of the Department’s most energetic and enthusiastic alumni, Kris Scroggins, died of a heart attack in February of 2003, at the age of fifty-five. He was a senior scientist on the Yucca Mountain Project.

Kris graduated from our Department in 1986 with a B.S. in geology. Steve Rowland fondly remembers Kris as a student in his Geology 101 class in the early 1980s. “He was the perfect student — mature, enthusiastic, and bright,” Steve recalls. “Kris would hang around after class, to ask questions and talk geology. Throughout his undergraduate career, Kris was always a role model for other students.”

Kris loved cars, and he was a superb shade-tree mechanic. On one memorable Geology 102 field trip, the starter motor on one of the UNLV suburbans died. Kris took charge of the situation. After starting the engine of one of the other vehicles, he crawled under it and removed the starter motor — while the engine was still running.



He then replaced the dead starter motor on the other vehicle with the good one, and away we all went. That is not a skill you find in the average geology student; clearly, Kris was not your average student.

After graduation, Kris worked in the mining industry for five years, including gold exploration projects in several western states, British Columbia, Mexico, and Honduras. In 1991 Kris was recruited by SAIC to work on the Yucca Mountain Project. He spent the remainder of his career supervising drilling at Yucca Mountain, where he became an enthusiastic advocate of the project. Kris loved field work, and he loved talking with people about geology. He especially loved giving Yucca Mountain tours to the public. He was also a frequent guest speaker in Steve’s “Geology of Southern Nevada” continuing-education course, in which he would discuss his Yucca Mountain work.

Kris is remembered fondly and missed by faculty who were privileged to have him as a student and friend, by his many friends and co-workers at the Yucca Mountain Project, and by his family, including six grandchildren. The Scroggins connection with UNLV continues through Kris’s wife Lee, who is an executive assistant at the Lied Library.



Nate Stout

(by Dave Weide)

Nathan Forrest Stout (b.8-22-48) died May 28, 2005 at the age of 57. For 14 years, since 1991, Nate had served the UNLV Geoscience Department as staff illustrator and cartographer. Nate first arrived on the UNLV Campus in 1977 asking the very straightforward question... “Are there any opportunities in Geology for a person

confined to a wheelchair?” I assured him that there were and encouraged him to enter the B.S. program in geology. Showing, at times, heroic courage, there was no field trip Nate had to miss! His fellow students and I saw to that, by carrying Nate wherever he needed to go! This physical labor eventually caused me to have a hernia — which then prompted the building of the “Nate Stout Memorial Elevator” on the north end of the Lilly Fong Geoscience building! Nate took several courses in cartography in addition to the full B.S. curriculum and earned his bachelor’s degree in 1986. He spent five years as a freelance cartographer and scientific illustrator before joining the UNLV Geoscience Department. During his career, Nate produced illustrations for many books, scientific papers and geologic and geographic maps. In addition to the Geoscience Department, Nate produced maps and drawings for faculty in numerous UNLV departments always using his scientific training to suggest improvements and additions to the original author’s manuscripts. We shall miss not only his fine, accurate and artistic craftsmanship but also his constantly upbeat and enthusiastic personality.



Faculty and students enjoying a Friday “Beer-on-the-Balcony”

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