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New Mexico Tech Department of Earth and Environmental Science

TECH TONICS

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Alumni Newsletter

Oct 2007

US and Mexican students at a high-accuracy precipitation gauge site within a high elevation oak savanna ecosystem in northern Sonora, Mexico. The three students (Luis Méndez-Barroso, Tonantzin Tarín, and Lorena Liuzzo) were dynamically calibrating the syphoning, tipping bucket rain gauge (while overlooking the mountainous landscape).

EES Students Participate in International Field Experiment to Study North American Monsoon in Sonora, Mexico

By Enrique Vivoni, Assistant Professor of Hydrology

Every fall, millions of students throughout the US are typically asked: "What did you do during

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your summer vacation?" A group of undergraduate and graduate students in the Department of Earth & Environmental Science have a very unique answer to this recurring question—they spent nearly three weeks in Sonora, Mexico, as part of a large international field campaign to study the North American Monsoon. The students—Alexis Martinez (BS in Environmental Engineering), Whitney DeFoor (BS in Environmental Science), and Luis Méndez-Barroso (MS in Hydrology)—helped plan, organize, and carry out a series of ecohydrological experiments in a remote, mountainous region in northern Sonora. In addition, several EES researchers participated in the field campaign, including Lorena Liuzzo and Luca Martini (visiting students), Soni Yatheendradas (post-doctoral research associate), and Assistant Professor Enrique R. Vivoni.

The North American Monsoon (NAM) is a regional atmospheric phenomenon that controls hydrological and ecological conditions during the summer season in the southwestern United States and northwestern Mexico. Given its regional extent, ecohydrological studies of the North American Monsoon require coordinated research efforts between US and Mexican scientists. New Mexico Tech's EES Department is playing a key role in these bi-national studies through several projects sponsored by the National Science Foundation and the National Oceanographic and Atmospheric Administration. These efforts have been carried out in close collaboration with scientists from the Universidad de Sonora, Instituto Tecnológico de Sonora, University of Arizona, University of New Mexico, and the National Center of Atmospheric Research. All together, twenty-one students and researchers from US and Mexico participated this year in the Sonora Field Campaign, engaging in scientific and cultural exchanges.

"What exactly were you doing in Sonora?" is a typical question the EES participants have fielded upon their return. Field activities for this year's summer campaign were quite varied and ranged from the deployment and calibration of a high-density rain gauge network in a mountain basin (see cover photo) to the characterization of evapotranspiration, soil moisture content, and soil properties around a meteorological flux tower (see photo page 3).

US and Mexican students and researchers dig a soil pit near an eddy covariance tower at a low-elevation subtropical scrub ecosystem in northern Sonora, Mexico. The students (Luca Martini and Javier Navarro), post-doctoral research associate (Enrico Yepez), and Assistant Prof. Juan Saiz Hernandez effectively sampled the pit for subsequent analysis.

US and Mexican students conducted intensive field measurements, instrument deployments and testing, and sampling of water, plants, soils, and air for isotopic and chemical analyses. These activities were carried out to understand the role that the land surface (including soils, topography, and vegetation) may play on the monsoon, in terms of energy and water exchanges at the land–atmosphere interface. Moreover, the experiments were designed specifically to help parameterize and test numerical models of hydrologic, ecologic, and atmospheric processes in the region.

Our EES students were responsible, in large part, for the success of the Sonora Field Campaign. For example, Alexis Martinez spent a lot of her time and effort in the design, deployment and calibration of a high-density rain gauge network in the Sierra Los Locos basin, a mountain watershed approximately 100 km^2 in size. The twenty rain gauge locations sample an elevation gradient from 600 to 1600 masl over a diverse set of ecosystems ranging from desert scrub to oak savanna. Whitney DeFoor was heavily involved in the sampling of air, tree leaves, and soil around an eddy covariance tower in order to determine, through isotopic methods, how total evapotranspiration is partitioned into soil evaporation and plant transpiration. This activity will be related to the various

measurements in the tower, including water vapor and CO_2 profiles, as well as soil surface characterization in the tower footprint. As a Jack-of-all trades, Luis Méndez-Barroso was essential in the field campaign, leading several activities and organizing students and researchers alike. His work in the design and deployment of vegetation transects, the rain gauge network, and soil characterization through pits and surface samples will provide critical data sets for remote sensing analysis and hydrological modeling currently underway in this region.

In addition to the contributions of our EES students to the research efforts, a major part of the activities revolved around the binational cultural exchange among student and researcher participants. Many of the memories forged between US and Mexican students resulted from closely working together in the field, from our late-night discussions and research presentations, and from spending several weeks together in a remote, mountainous region. The very active hydrological cycle during the summer monsoon also provided first-hand field experience for our students. On many days, students were able to witness the formation of mountain convection and rainfall, the greening of the landscape in response to recent rains, and the flooding of small and large ephemeral channels during the monsoon season. These observations, in coordination with the experiments, helped participants to appreciate the complexity of this system.

Our current efforts will continue for the summer 2008, with a new set of experiments (and EES students!) tailored to address questions emanating from remote sensing, modeling, and data analysis activities. We hope this work positions New Mexico Tech for a larger set of multi-year, multi-institutional experiments spanning the North American Monsoon climate gradient (from Sinaloa, Mexico, to Colorado, US). More information on the Sonora Field Campaigns, including the experimental design, maps of the region, and data sets resulting from the field activities, can be found at **www.ees.nmt.edu/vivoni/sonora/www/** or by contacting Prof. Enrique Vivoni at vivoni@nmt.edu.

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Note from the Chair

The fall semester has begun and this year is more exciting (and stressful!) than any in recent memory. We are implementing the new undergraduate curriculum we developed over the past two years, with the result that most faculty are teaching new courses or greatly revamping established courses. Our motivation is to provide a more interdisciplinary experience for our undergraduates and to improve their problem-solving skills, while giving them more flexibility in tailoring their specific degree programs. Helping us in this effort are our two new geophysics faculty members. Cathy Snelson comes to us from the University of Nevada where as an assistant professor she developed a strong program in active-source seismology and petroleum exploration. Jeff Johnson will arrive in January 2008 from his post-doc at the University of New Hampshire, where he has investigated applications of infrasound in characterizing volcanic activity. We will be interviewing candidates this fall for our open position in hydrology. With that position filled we will have 22 tenure-track faculty, the largest we've been since the formation of our department in the 1950s.

Rick Aster was elected associate chair last January and will take over as department chair in July 2008. Both Rick and I, along with the rest of the faculty, hope to see many of you at the GSA and AGU meetings this fall. In the meantime, keep in touch.

Faculty Spotlights

Catherine Snelson at Masaya Volcano in Nicaragua, a shield volcano with mainly basaltic lavas that continuously emits sulfur dioxide gas

Catherine Snelson

Assistant Professor of Geophysics

I am thrilled to be here at NMT, joining the Geophysics group in the EES Department, and to introduce myself. I am a controlled-source seismologist that looks at problems from the surface doing earthquake hazard projects to petroleum exploration to crustal evolution. I received my BS in Geology in 1995 from California State University at Hayward (now known as Cal State East Bay) and then went to the University of Texas at El Paso (UTEP) where I received my MS in Geophysics in 1998 and my PhD in Geological Sciences with an emphasis in Geophysics in 2001. During that time I studied the crustal evolution of the Rocky Mountains and seismic hazards in the Seattle basin using seismic refraction data. From UTEP I joined the faculty at the University of Nevada Las Vegas (UNLV) until my arrival here at NMT this fall (2007).

While at UNLV, I focused primarily on the seismic hazards of southern Nevada using seismic reflection and refraction techniques utilizing sources from hammer to explosives to vibroseis. As I begin my journey here at NMT, I am continuing my work on seismic hazards in southern Nevada, and I have started working on understanding the coda overlap between airblast, broadband, and short period motions working with Lawrence Livermore National Lab (LLNL). In addition, I have two petroleum related projects in the Book Cliffs and Paradox Basin, Utah, and have two projects looking at active tectonics and crustal evolution in the central Walker Lane, Nevada, and Klamath Mountains, California.

This fall (2007), I am teaching Exploration Seismology (ERTH 445), which is an upper-level undergrad/grad course. This course is a survey course of seismic methods and will provide the students with hands-on experience in seismics. The majority of the class has already participated in a seismic refraction experiment this term, and they will have the opportunity to participate in a seismic reflection study later in the term to look at an active fault in Louisiana. We will also go out around Socorro and collect seismic data using the Geode system at the IRIS PASSCAL Instrument Center. In addition, I am team-teaching Earth Processes 101 with Drs. Mozley and Jeff Johnson. In spring 2008, I plan to teach a Reflection Seismic Data Interpretation course at the upper-level undergrad/grad level. We will be utilizing the university grant Landmark software and, in particular, getting the students exposed to Seisworks. In the future, I plan on also teaching a Seismic Reflection Data Processing course and a Seismic Refraction Imaging course.

Jeff Johnson

Assistant Professor of Geophysics

I listen to volcanoes with seismometers and microphones to better understand eruption mechanisms and to quantify eruption fluxes. This work causes me to travel far and wide to seek out volcano "laboratories" where eruptions occur "reliably." Recently I've returned from Santiaguito vol-

cano, Guatemala, where kilometer-high pyroclastic-laden explosions occur hourly, and a sequence of block lava flows has been erupting for years. This fascinating activity caused me and my graduate student team (including first-year geophysics program MS student Richard Sanderson) to "sherpa" car batteries, dataloggers, and cameras out to the active dome and to the summit of neighboring Santa Maria at 3700 masl. After shuttling heavy loads up steep and muddy trails my doting students were rewarded with a wind-ravaged tent, canned food, and an unparalleled view down into the throat of an active vent (below).

There it goes again… hourly eruption of Santiaguito's Caliente Vent as seen from the summit of Santa Maria.

Preliminary results from this Santiaguito project reveal a hereto fore never observed connection between dome surges (in which more than 10^5 m^3 of rock is accelerated from rest) and long-period volcanic earthquakes. We have been able to directly observe these earthquakes with digital video, doppler radar, and thermal imagery and develop well-constrained source models for generation of this

enigmatic type of volcano seismicity that is commonly observed at many volcanoes. These results are now being published as part of my NSF EAR-funded work entitled "Toward understanding the relation between volcanic eruptions, seismicity, and infrasound." (For more information, see this website: **earth.unh.edu/johnson/SANTIAGUITO/SANTIAGUITO.htm**)

My multi-disciplinary geophysical approach to volcanology has grown from seismometers and microphones and now involves an array of new technologies, which together facilitate improved understanding of eruption dynamics. My new "Volcano Geophysics Lab" now under construction at New Mexico Tech will house an arsenal of sensors that are used to quantify the volcanic energy budget and detect static and elastic deformations. In this lab we will build a repository of more than 100 infrasonic sensors that can record low frequency sounds (below 20 Hz) and will be used to map the acoustic wavefield produced by a volcano. Unlike conventional ground-based seismology, the low-frequency acoustic wavefield enables precise eruptions source dynamics and localization. The infrasound laboratory will have applications reaching beyond far-flung international volcanoes. Here in Socorro, for instance, we plan to install dense networks of infrasound sensors to record the acoustic waves radiated by regular man-made blasts, such as those at EMRTC. Such data can ultimately be used to invert for the 4-D velocity (i.e., temperature and wind structure) of the atmosphere. Data collection for this study will be facilitated by instrument loans from the on-campus housed PASSCAL.

I am thrilled to be joining the EES team and complement existing strengths of volcanologists and seismologists alike. As a team we look forward to being one of the few departments able to offer geophysical volcanology and volcano seismology within the curriculum. We also have grand plans to facilitate student undergraduate and graduate involvement in geophysical field volcanology and take advantage of burgeoning exchanges with observatories in Ecuador, Mexico, and Guatemala—countries which, needless to say, are chock full of volcanoes in active eruption.

Bio Sketch: Professor Johnson arrives in Socorro with wife and children after spending several years as a research assistant profes-

sor at University of New Hampshire. Prior to New Hampshire he was a postdoc at HIGP at University of Hawaii (2002–2003) and did his PhD in Geophysics at the University of Washington and undergraduate (BS Geological and Environmental Sciences and MS Geophysics) at Stanford University.

EES Alumni Receptions for Fall 2007

We will be hosting Alumni Receptions at GSA–Denver and AGU–San Francisco this fall. Details are not yet finalized, so check the EES alumni home page for specifics. If you are attending the meetings or live nearby, we hope you will be able to attend these events to see old friends and catch up with the faculty.

GSA: October 29. This reception will held jointly with UNM, NMSU, and UTEP. It will be listed in the GSA program of alumni receptions as the "Rio Grande Universities."

AGU. The meeting is December 10–14. The time and place for our reception is not yet set.

Alumni News and Notes

Alumni Relations and Fund Raising

by Andrew R. Campbell, Professor of Geology

It's been a great year for our fund raising effort. Our big event this year was the establishment of the Clay T. and Sallie Smith Student Fund. We kicked it off with a dinner in February 2007 with about 80 people in attendance. Sallie Smith attended with her son Dean. The attendees included alumni, colleagues, and many friends from town, and we were all entertained with old slides of Clay in the field with students. Numerous people got up and shared personal stories about Clay and Sallie and the impact that the Smiths had had on their lives. It was particularly fun to hear Dean Smith share childhood remembrances about his dad heading out for "the field." It was an enjoyable evening with good food, fond memories, great company, and a chance to say *Bon voyage* to Sallie before her move to Southern California. The Smith Fund will help students with all aspects of field studies. Thanks to those of you who made donations to get this fund started.

Sallie and son Dean Smith at the Clay T. And Sallie Smith fund-raising dinner

Bill Chavez (BS Geology '76, former Clay Smith student), wife Josie Chavez, and Marj Austin, a close friend of Sallie's. Bill helped host the dinner and related stories about Clay.

Betty Wilson, Dean and Sallie Smith, and Andy Campbell

Attendees enjoyed great company and a nice dinner in the upper lobby of Macey Center.

EES Alumni Fund Donors

We would like to thank the following people who have generously donated to the Alumni fund from November 2006 through August 2007.

DIAMOND $10,000 and above

CORUNDUM $2,000 –$9,999

Pat Butler

TOPAZ $500 –$1,999

Ray Bellande
Debi Maucione
Arthur Riese
Charlotte Rowe
Socorro Lions Club
Dean Smith
John & Betty Wilson

QUARTZ $200 –$499

Robert Bowman and Karen Bailey-Bowman
Dennis Buck
J.R. Doty
Michael Graham
Carol Laroche
Tom Laroche (with matching funds from ChevronTexaco)
Amy Lewis
Shannon Logan
Jerry Oliver
Stavros Papadopulos
Marion Richter
Linda Trocki
Terry Wallace

FLUORITE $0 –$199

Rick Aster & Jan Tarr
Susan Bilek and Glenn Spinelli
Paul Bauer and Peggy Johnson

Rena Bonem
Andrew Campbell
James Cappa
David Carroll
Richard & Louise Chamberlain
Russell Fisher
Jo Fullerton
Charles Garvey
Julie Hagenbuch
Charles Hammond
Vic Hansen
Melvin Hatch
John & Diane Hawley
James Johnson
Richard Jones
David Jordan
Geri & Dan Klinglesmith
Paul & Kay Krehbiel
Philip Kyle
Bill & Norma Lorang
Ken Mallon
Swen Mangnuson & Debra McElroy-Mangnuson
John & Amy McCoy
Tracy McFarland
Donald Meyer
Kathy Muller-Ogle
John Musgrave
Cheryl Pulaski
Catherine Stewart-Roche
Regina Rone
John Shenk
Whitney Skaling
Mr. & Mrs. Daniel B. Stephens
William (Bill) Stone
William Sullivan
Carol Lynn Tiegs
Lee Wilkening

EES Alumni Awards

Bayani Cardenas (PhD Earth & Environmental Science-Hydrology '06) won the G. Moses and Carolyn G. Knebel Distinguished Teaching Award for teaching undergraduates from the Jackson School of Geosciences at the University of Texas at Austin for 2006–2007. And he did it during his first semester teaching! It is also quite the honor. The Jackson School is large (they currently have a search out for 24 or more new faculty) and his competition is a lot more experienced. He is currently only one of two junior (Assistant Professor) faculty.

Roseanna Neupauer (PhD Hydrology '00) won the best teacher award in Civil and Environmental Engineering at the University of Colorado at Boulder for 2006–2007.

Alumni News

Abe Mercado (PhD Hydrology '72) wrote in October 2006:
"We (Alia & Avraham) are both retired. I'm still doing some consulting--especially if the subject is interesting and the pay is good.

As you might remember we have two children--a daughter and a son. Our daughter Taly is doing interesting research in genetic engineering of fruit trees. She has two amazing kids. She lives in Kibutz—just on the Lebanese border. They were lucky as they were hit by only one rocket. We built a new home there—mostly for the use of our daughter and her family.

Our son Eyal is an expert in orthopedic surgery. He also has two amazing kids. They stay now in Toronto for postdoc in pediatric surgery. Hopefully, they will return home by mid 2007. They built their home in The Izrael Valley."

Editor's Note: Abe also did a sabbatical here at New Mexico Tech in the early 90s.

Daniel Blodgett, MD (MS Geology '73) wrote in October 2006:
"I moved to the Sierra foothills near Yosemite in 2000. I have a holistic medical practice in Oakhurst and Fresno. I married Valerie, my psychologist wife, in 2004. My daughter, Eva, is getting her BS in Biology at New Mexico Tech. In my leisure time, we hike and

climb the Sierras, fish, raft the numerous rivers, and enjoy our rural home amidst the live oaks and animals."

John S. Hingtgen (BS Geology '85) wrote in October 2006:
"After doing an MS at the University of Wisconsin specializing in wind energy generation, I took a position with the California Energy Commission working in the Renewables Office. My work there focuses on programs to develop large renewable energy generation in California and neighboring states that are connected through the regional power grid.

I enjoy different types of folk and social dances in my free time, such as Scandinavian folk, Scottish country, and contra dance. On weekends, I like to explore the Sierra Nevada and northern California."

H. Kirk Jones (BS Chemistry '96, MS Hydrology '99) wrote in November 2006:
"I'm still living in Denver. I work for an Australian group out of Brisbane, and I am now the director of the division here in Golden. We perform enhanced precious metals recovery at closed or "end of mine-life" gold mines and follow-on reclamation of cyanide, ARD, and metals. It's all done with biologically engineered fluids that are site specific, which we develop here in the lab. It is exciting and interesting work, and I am really enjoying it. Still learning everyday. I wasn't very happy in the consulting world. I discovered I am more suited for the R&D side of things and industrial process. I have been here (with this company) for about 7 years now. Time goes by fast, doesn't it?"

Valerie Lane (BS Environmental Science/Hydrology '96) wrote in January 2007:
"On February 1, 2006, I relocated to the Boston area to become a senior member of technical staff for GeoTrans, Inc., and the operations manager for the Harvard Division. The Harvard Division consists of three offices: Harvard, MA, and two offices in the Albany, NY, area at Schuylerville, NY, and Hudson Falls, NY. I had previously been living in the Washington DC area, where I was a project hydrogeologist with S.S. Papadopulos &

Associates, Inc., from 2001 to January 2006. Prior to my work at S.S. Papadopulos & Associates, Inc., I was a research hydrogeologist at the University of Waterloo in Ontario, Canada, where I received my MSc in Earth Sciences."

Vladimir Ispolatov (PhD Earth & Environmental Science-Geochemistry '01) wrote in February 2007:
"After leaving seismic industry (and Arabian Desert) in summer 2003, worked for 2.5 years at Laurentian University and Ontario Geological Survey, based in Sudbury, Ontario, Canada. Participated in an industry/government-sponsored Discover Abitibi Project, doing detailed field mapping, structural studies, and studies of gold mineralization in the Kirkland Lake area (Northern Ontario). In winter 2006, relocated to Vancouver BC, and currently work as geologist for Barrick Gold."

Thomas I. Pope, III (MS Geology '65) wrote in April 2007:
"Retired after 20 years with ITT in Colorado Springs as engineer helping conduct tests at White Sands and other government sites. Also taught mineralogy and petrology at University of Colorado at Colorado Springs. Previous 10 years with Baroid in Houston as geochemist in synthetic clay mineral program. Graduate work at University of Chicago and University of Wisconsin."

Carl L. Axness (BS Math '75, MS Math '77, MS Hydrology '84) wrote in April 2007:
"Senior member technical staff, Sandia National Laboratories. Married, four children. Current project: Finishing an off-grid PV-solar home in Rio Rancho. Obtained PhD in Civil Engineering from the Univerisidad Politecnica de Cataluna in 2000. Advisor: Jesus Carrera."

Carolyn (Monk) Estell (BS Geology '02) wrote in June 2007:
"After teaching high school Earth Science for two years I had the opportunity to begin working with the STATEMAP bedrock geology mapping group. Currently a Geological Assistant at Indiana Geological Survey. I plan to begin working toward a MS in Geology at Indiana University this fall."

Brian Vaitkus, BS Biology, Environmental Science '96) wrote in June 2007:
"Brian has finished medical school: after six years classroom and clinical education, he has become graduate from NCNM, the National College of Natural Medicine. He completed coursework with honors as a MSOM (Masters in Science of Oriental Medicine), and ND Naturopathic Medical Doctor. For the MSOM degree he authored a thesis entitled "Re-introduction of Traditional Wans in Modern Practice of Chinese Medicine." For the ND degree, another thesis entitled "Parkinson's Disease: a Holistic Approach for Patient, Family and Physician" was written. Living in Portland, Oregon, Brian will enter private practice as a Licensed Acupuncturist and Naturopathic Doctor."

Antonio Pimentel, (BS Geology '84) wrote in July 2007:
"I married 27 years ago. My wife name is Vilma and I have a son that is now 22 and my daughter is 18 years old. After I graduated from Tech, I came back to Venezuela and worked in the Mining industry for 5 years, then I moved to the oil sector where I have been working since I had work as a production, reservoir, and modeler geologist in several countries. The last two have been Saudi Arabia and now in Syria. I still remember my time at Tech, Socorro, and my friends. Thank you very much to the faculty and the University that give me the opportunity to be an alumni."

Charlotte Rowe (BS Geology '81, PhD Geophysics '00) wrote in July 2007:
"Recently appointed to the National Research Council's Committee on seismology and geodynamics. Celebrating my 5-year service anniversary at Los Alamos National Laboratory in August, 2007."

Ryan T. Jakobowski (MS Hydrology '06) wrote in February 2007:
"I accepted an offer from MWH in which I'll be working with hydrologic and geochemical models to predict impacts to water resources from (mainly) metallic mining projects. For one project I am interacting with **Doug Oliver** (MS Hydrology '01) who is based out of their Salt Lake City office."

Alumna Makes Socorro More Tasty

By Susan Delap, Computer Publishing and Graphics Specialist

Patty Frisch (MS Geochemistry '02), former Assistant Curator of the New Mexico Bureau of Geology's Mineral Museum, sits across from me at a table in her own coffeehouse and says, "I gave up my dream job, but Socorro needed a good coffeehouse." So what propelled this successful scientist into restaurant management?

Patty Frisch outside her coffeehouse in Socorro

Patty's husband, Karl, had always been a bike enthusiast, and when artist Doug West closed his gallery on the Socorro Plaza in 2003, Karl and Patty bought the building and opened Spoke N' Word Cycles, a bicycle shop. Karl managed the bike shop while Patty did the bookkeeping. The other part of the building was leased to Martha's Black Dog Coffeehouse. When Martha closed her restaurant two years later, Patty and Karl remodeled the interior and launched the Manzanares Street Coffeehouse in May 2006. Through a string of bad luck with managers, Patty ended up managing the fledgling coffeehouse until it was established. Because she was still managing the books for the bike shop, helping raise

three children: Stephanie (7), Miriam (4), and Carina (2), and expecting a fourth in September 2007, Patty reluctantly gave up her position at the Mineral Museum.

Today the coffeehouse is flourishing with a steady stream of clients who enjoy coffee, espresso, Italian soda, gelato, bakery treats, or tasty sandwiches--my favorite is the Hippie: hummus and feta cheese. Most Friday nights have live music featuring bands from as far away as Alaska.

Ever the scientist, Patty runs statistical analyses on data such as cost of goods vs. labor. The numbers tell her that her coffeehouse is doing well, and it's safe to think about returning to her true passion in life: science. "My best experience ever was getting my Master's degree," she says, as she reminisces about working with geochemistry professor Dave Norman. Once she finds the right manager to take over the coffeehouse, she'll be free to resume her career in earth science.

I bumped into Patty last week and met the new addition to the family: Lillian Sophie—a beautiful 4-day old girl—born on Labor Day!

EES News and Notes

EES Faculty Awards and Honors

In July 2007, **Enrique R. Vivoni**, Assistant Professor of Hydrology, was named this year's "Most Promising Engineer–Advanced Degree" award winner by the Hispanic Engineer National Achievement Award Conference (HENAAC) Selection Committee, an independent group of representatives from industry, government, military, and academia. HENAAC was established in 1989 as a means of identifying, honoring, and documenting the contributions of outstanding Hispanic American science, engineering, technology and math professionals.

In November 2007, **John L. Wilson**, Professor of Hydrology, was selected as the recipient of the American Geophysical Union's Hydrologic Sciences Award for 2006. The Hydrologic Sciences Award is given for outstanding contributions to hydrology over a career. It is the most prestigious honor of AGU's Hydrology Section. The award was presented to John at a ceremony at the AGU national meeting in December 2006 in San Francisco.

The December 2006 issue of *GSA Today* cited **Kent C. Condie,** Professor of Geochemistry, as one of a handful of "Exceptional Reviewers" selected by the editors of the journal *Geology*. The citation criteria include accepting as many review requests as possible and returning them in a timely manner; being perspicacious, incisive, and fair, and remarking equally on the strengths and weaknesses of a manuscript. In short, the exceptional reviewer reviews as he or she would like himself or herself to be reviewed.

Robert S. Bowman, Professor of Hydrology, was elected a Fellow of the Soil Science Society of America in 2007.

Glenn Spinelli, Assistant Professor of Geophysics, was invited to be a 2008/2009 Joint Oceanographic Institutions distinguished lecturer which he accepted.

EES Staff Changes

By Andrew R. Campbell, Professor of Geology

Patci Mills at her retirement party

This summer we had some changes in the office staff. After 23 years in the department Patci Mills has retired. Patci joined the department in 1984 while we were still spread all over campus. She started in Eaton Hall where professors Norman, Johnson, Kyle, and Campbell had their offices, and her first computer was a DEC Rainbow. After we consolidated the department into the Mineral Science and

Engineering Complex (MSEC), she became the head of the department office. We know that many of you alumni benefitted from her tireless work in straightening out grad contracts, finding work-study jobs for undergraduates, and generally helping you navigate through whatever paperwork and red-tape was thrown in your way. Retirement will give Patci more time to spend with her daughter and grandchildren. We all wish her the best of luck and will retain many fond memories of her as the departmental administrator and as a friend. To see more pictures and video from her retirement party, visit this EES website link:
www.ees.nmt.edu/pmills/retirement/

Connie Apache has also left the department. She transferred to the New Mexico Bureau of Geology to work for Director Peter Scholle. She was with our department for 19 years. She started as a technical typist and was great with equations. But as the faculty entered the modern age and started doing their own word processing, she became our expert in purchasing. I'm sure that many of you had her able assistance in getting supplies ordered for your research projects. We will miss her presence in the department, but are happy that we will still be able to walk across campus to say hello to her. Good luck, Connie, in your new position.

Connie Apache

EES Student Recruitment 2007

By Susan Delap, Computer Publishing & Graphics Specialist

EES held their annual student recruitment event in March 2007. We have found that inviting prospective students to see New Mexico Tech and the surrounding geology as well as meeting prospective peers and faculty is an effective recruiting tool.

John and Betty Wilson hosted everyone the first night at Weems Gallery in Old Town, Albuquerque, and introduced them to museums and other sights in the area.

The next day the students toured the NMT campus and EES facilities, traveled to San Antonio to view the Rio Grande well transect area, and enjoyed a famous green chile cheeseburger at the Owl Bar. The afternoon included additional tours of campus, the IRIS PASSCAL Instrument Center, and the USArray Array Operations Facility. Dinner was hosted by Dave Johnson and Karyn DeBont at their home.

The third day gave students several outdoor options including a driving tour of Socorro and surrounding geologic points of interest,

Bonfire at San Lorenzo Canyon

Box Canyon, and Water Canyon Mesa Trail with everyone joining in a picnic lunch at Water Canyon Campground. Afternoon options were tours of the Sevilleta National Wildlife Refuge, Quebradas, and Arroyo del Tajo areas. For dinner, everyone met up at San Lorenzo Canyon—the high point of the visit—where students enjoyed hiking and dinner in the sand around a bonfire.

EES Faculty Retreat 2006

By Robert S. Bowman, EES Chair, Professor of Hydrology

The EES faculty held their annual retreat on 10 November at the Sevilleta National Wildlife Refuge north of Socorro. Each year the faculty takes this opportunity to discuss long-term educational goals, new and upcoming research opportunities, and ways to improve the university experience for our students.

Front: Ariel Dickens, Shari Houston (student representatives), Pat Mills, Penny Boston, Sue Bilek, Fred Phillips. Middle: Bruce Harrison, Peter Mozley, Rob Bowman, Rick Aster. Back: Andy Campbell, Dave Johnson, Jan Hendrickx, John Wilson, Mark Murray, Gary Axen

Alumni Update Form

SEND US YOUR NEWS!!! Use the form below or online at
www.ees.nmt.edu/alumni/

Name _____

Street _____

City_____State/Prov_____Country _____

Zip/Postal Code_____Phone _____

Email _____

Web page _____

Year Graduated _____

Degree/Major _____

Occupation _____

Company/Organization _____

NEWS _____

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Mail to:

New Mexico Tech
Dept of Earth & Environmental Science
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Socorro, NM 87801 USA

Five Days to Live and Die at the Newberry Volcanic Complex, Bend, Oregon

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After gambling our money away during a layover at the Las Vegas airport, we found ourselves landing in Sacramento. There we met up with Volcanological Society of Sacramento (VSSAC) member Jim Jensen to go on a five-day excursion at the Newberry volcanic complex outside of Bend, Oregon. Coming from Socorro we were used to the heat, but not the humidity. But how did we ever manage to leave Socorro? Jim Jensen (BS Geology '72) decided that amazing geology needed to be shared, so he and Mike Jaworski (MS Geology '74) combined their funds so that we, two current students here at NMT, could be awed by geology and people otherwise inaccessible to us on graduate pay.

Crater overview from atop Paulina Peak

At the Newberry volcanic complex there was more than we could do during the five-day field trip, but we managed to fit most of it in. The trip started atop Paulina peak to get a broad overview

The legend, Jim Jensen

of the intracaldera geology below. Inside the crater we were able to visit two spectacular lakes (complete with shoreline terraces and hot springs), the central pumice cone amongst others, various caldera rim features, as well as the Big Obsidian Flow. The nice thing about a volcanic complex that last erupted ~1.3 ka is that most of the volcanic features from the eruption still exist today—even the vegetation hasn't totally recovered from the most recent activity. Once we were outside of the crater the scenery definitely changed, while the story of the Newberry's eruptive history unfolded beneath our feet. Hundreds of cinder cones and buttes dotted the skyline as we traveled through a lava cast forest and into the cold depths of an amazing network of lava tubes. Multiple marrs and other phreatic features were observed and discussed as well. And for those of you who love pumice, we saw at least a lifetime's worth. To sum it all up, the Newberry complex is a world-class volcanic classroom.

The long and the short of our amazing adventure at Newberry is that it would never have happened without NMT alumni extending a hand to us—the current generation of students at NMT. To our surprise, the VSSAC group took such a liking to our NMT crew and the description of our New Mexico geology that they are coming to this great state for their annual trip next fall to see what the hype is all about. So, if you are doing cool things with geology and want to share your experiences with the next generation of future employees, here is your opportunity. You can give the Director of Alumni Relations, Andy Campbell, a call and let him know what you or your organization are up to and how you want to help. By sharing your experiences, resources, and time with the current generation at NMT, you can help keep NMIMT at the cutting edge of science—where she belongs.