

## A word from the director . . .

# Greetings!



*Colleen Guengerich*  
*Director of Advancement and Alumni Relations*

Dear Alumni,

Another academic year has ended. Tech feels empty without the normal hustle and bustle of faculty and students. Every year at this time we are reminded that the students are the pulse of the university.

You will see rankings and statistics in this edition of *Gold Pan* which validate what all the members of the Tech family already know—we are awesome! While the numbers and statistics tell one story about Tech, I find our true greatness is in the everyday exchanges between the students, faculty and staff. In time honored tradition, Tech attracts brilliant students. These students come from all over the world and consist of many ethnicities and religions, yet the differences do not matter because seeking knowledge is a universal goal. The camaraderie of brilliant minds brought together is a wondrous thing to behold!

Tech is special. Not just for our outstanding academics. Not just for the professors who know their areas of research like none other and value passing their knowledge on to the students. Tech is the community which forms around our students, exemplifies what Tech is and how we are different from other schools. Think back to your days here and those hours-long sessions in the library trying to solve two problems, or staying up all night to cram for that Chemistry mid-term, and knowing, when you walked into class at 8 a.m. that every other student in that class also went without sleep. Think of the pranks you played during St. Pat's celebrations.

This edition of *Gold Pan* is written, almost in its entirety, by current Tech students. The editorial staff of *Gold Pan* was lucky to tap into the Technical Communications class and had them write the feature stories. They interviewed, photographed and wrote. From one alumni to you! Our thanks to the TC class!

Here's to the Class of 2015 who have been set loose on the world and to the ones who came before and led the way! And here's to the incoming class of freshmen, who cannot possibly know of the a great family they are about to become a part.

Colleen Guengerich  
*Director*  
*Office for Advancement*



# inside GOLD PAN

## ALUMNI MAGAZINE

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Dear *Gold Pan* readers:

We are happy to bring you a very special issue of *Gold Pan*. All of the feature articles in this issue are written by New Mexico Tech young alumni (current or recently graduated NMT students). These articles, and many to come in upcoming *Gold Pan* issues, were written as part of a popular science writing class available to both undergraduate and graduate students through the Technical Communication program in the CLASS (Communication, Liberal Arts, and Social Sciences, formerly Humanities) Department.

Most articles in this issue tie in to the opening of the spectacular new Bureau of Geology and Mineral Resources building (worth a trip to Socorro if you have the opportunity). However, we have also included articles that describe the activities of students in our small but robust Technical Communication program

(one of only about 30 BS in Technical Communication programs in the country). This past year, our students have participated in numerous client-based class projects in cooperation with organizations such as the New Mexico Geological Society and Puerto Seguro (a homeless day shelter in Socorro). Further, one author (Karen Balch) was the first graduate of our newly minted Graduate Certificate in Scientific and Professional Writing.

We hope that you enjoy the next several issues of *Gold Pan*. Also, we hope that you take the time in the near future to visit us in Socorro, to explore the new Bureau building and expanded Mineral Museum, and to talk to us about our new programs.

Sincerely,  
Steve Simpson  
*Associate Professor of Communication*  
Chair, CLASS Department

## TABLE OF CONTENTS

### DEPARTMENTS

From the Director .....	2
Letters to the Editor .....	4
Faculty @ Tech .....	15
Alumni Awards .....	22
Calendar of Events .....	26
Alumni Association News .....	31
People You Know .....	32
Where Are They Now ...	34
In Memoriam .....	35
The Last Word: <i>Angelica Perry</i> .....	39

### FEATURES

Research @ Tech <i>Geology</i> .....	5
Where Are They Now? <i>Rena Mae Bonem</i> .....	9
Graduation 2014 .....	20
Construction <i>Bureau of Geology</i> .....	23
President's Club Dinner	28

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Graduate Office .....	Press 3
Advancement .....	Press 4
Housing .....	Press 5
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# letters

letters to the editors

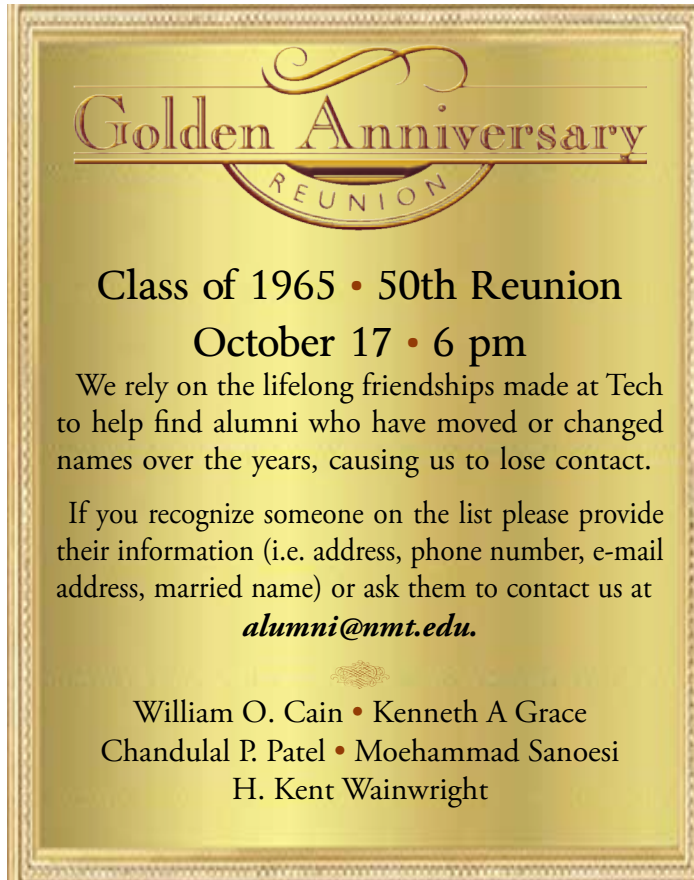
Dear Colleen

Enjoyed the last *Gold Pan!!* A little side note—there were some early day coeds at the School of Mines who attended for varying lengths of time, my mother (Genevieve Sparks) being one. She attended somewhere in the 1923-25 range, where she met my father.

After he went to Chile in 1925 (at that time, new hires went on a single status), she taught school at Tokay (I don't think there are any remnants of it left today) and also worked in Albuquerque until his return at the end of his 3 year contract. They were married and went back to Chile for another 30+ years.

Best Wishes,

*Bill Hawes*



**Golden Anniversary**  
REUNION

**Class of 1965 • 50th Reunion**  
**October 17 • 6 pm**

We rely on the lifelong friendships made at Tech to help find alumni who have moved or changed names over the years, causing us to lose contact.

If you recognize someone on the list please provide their information (i.e. address, phone number, e-mail address, married name) or ask them to contact us at [alumni@nmt.edu](mailto:alumni@nmt.edu).

William O. Cain • Kenneth A Grace  
Chandulal P. Patel • Moehammad Sanoesi  
H. Kent Wainwright



**Silver Anniversary**  
REUNION

**Class of 1990 • 25th Reunion**  
**October 17 • 6 pm**

**Save The Date**  
*For More Information Contact*  
[alumni@nmt.edu](mailto:alumni@nmt.edu).

## rankings



**NEW MEXICO TECH**  
**Ranked #2**  
**Best Public University for Return on Investment**  
*Wall Street Journal, 2014*

**NEW MEXICO TECH**  
**Ranked #2**  
**Best Value Colleges**  
*USA Today, 2014*

**NEW MEXICO TECH**  
**Ranked #3**  
**Top Public School Regional Universities (West)**  
*US News, 2014*

**NEW MEXICO TECH**  
**Ranked #8**  
**Top 10 Engineering Programs, Nationally**  
*USA Today, 2014*

**NEW MEXICO TECH**  
**Ranked #16**  
**Top Master's University**  
*Washington Monthly, 2014*



by melanie connick

Greer Price is currently the Director and State Geologist at the New Mexico Bureau of Geology and Mineral Resources. Although Price will soon be retiring, the legacy he leaves behind through his publications will continue to inspire others, geologists and the general public alike, to get as excited about geology as he has been.

During our recent interview, I watched as he excitedly removed the plastic wrap encasing a brand new copy of the book he considers his “labor of love,” *The Geology of Northern New Mexico Parks, Monuments, and Public Lands*. He carefully handed me the new book as if he was handing over one of his most treasured possessions.

Browsing through the book, *The Geology of Northern New Mexico Parks, Monuments, and Public Lands*, it is evident a large amount of time and energy was dedicated to the book’s creation. The book, edited by Price and published in 2010,

with many of the chapters written by Bureau staff, focuses on the geology of the northern half of New Mexico and specifically includes areas highly visited by the public and easily accessible by car.

This book explores the geology and geologic features for many well-known areas, such as the Valles Caldera National Preserve, El Malpais National Monument, and the Petroglyph National Monument. Also included in the book are locations you may have driven past without ever realizing there is a significant geologic formation just to the side of the road, such as the Echo Amphitheater found on US 84 just north of Ghost Ranch, New Mexico.

“You will need these books,” he explained. “They are important to my story.” He has already given me a copy of his other “pride and joy,” *Albuquerque: A Guide to Its Geology and Culture* by Paul Bauer, Rick Lozinsky, Carol Condie, and Price. Both books are important

to his story because they go back to his early interests in archaeology and geology.

### The Early Years

The story of how he became interested in archaeology and geology began in his early childhood growing up in New York City.

“I was born and raised in New York City, so geology is pretty exotic when you grow up in New York City,” explained Price. Central Park provided early exposure to geology with its “beautiful rocks,” mostly Manhattan schist.

How did the young Greer, a boy that grew up in the “wilderness” of Central Park, fall in love with geology?

After graduation from high school he had two interests, archaeology and geology. He attended Washington University in Saint Louis, MO, where he initially focused on archaeology. His undergraduate archaeology advisors suggested it



would be good to have somebody in his field with a knowledge of geology, changing Price’s focus to his new lifelong pursuit.

His love for geology developed as he began taking field courses and field trips. Price found inspiration to study geology in the form of his “charismatic” advisor, Dorothy Echols.

After completing his Master’s degree in 1974, Price entered a Ph.D. program at the University of Michigan in Ann Arbor, MI. He describes the experience as feeling like he was a “soft rock guy” trying to fit into a “hard rock guy” world. After a year and a half in the

program Price decided to take a break.

During subsequent years, Price worked as a geology instructor at the University of Missouri and as an exploration geologist for the Exxon Company USA working in Houston, TX and New Orleans, LA. After deciding he wanted to “do something different,” he packed up and moved to San Francisco, CA.

In 1982, he was approached by the Sohio Petroleum Company to work as a production geologist and was sent to work for a month at the North Slope in Alaska. He continued working with Sohio in San Francisco for the next four years until the office closed and he was laid off.

Price loved the San Francisco Bay Area and found his next adventure as a volunteer at the Marin Headlands. In exchange for volunteer work, Price lived at the Point Bonita Lighthouse keeper’s cottage. Although it “was a wonderful time in [his]



Greer Price at the Colorado River with Gus.

life” he needed money. Colleagues suggested he would be a perfect fit for work with the National Park Service.

### National Park Service and the Road to Socorro

In 1985, Price began working with the National Park Service. While with the Park Service, he worked at some of the most beautiful locations in the country including the Golden Gate National Recreation Area, Point Reyes National Seashore, and Great Basin National Park.

From 1986-1989, Price

worked at the North Rim of Grand Canyon National Park. The Grand Canyon occupied his summers with supervision of the rangers and development of programs. Price’s winter seasons were open for other adventures, such as the one winter spent living at the Point Reyes Lighthouse keeper’s cottage.

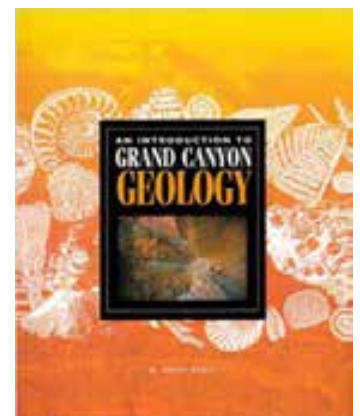
“In some ways, those were the three happiest years of my life,” Price said smiling.

In 1989, Price accepted a permanent position with the Park Service working as a writer, editor, and interpretive specialist at the South Rim of the Grand

Canyon. In 1993, his book *Grand Canyon: The Story Behind the Scenery* was published.

He stayed working with the Park Service until he felt he had “exhausted the career with the Park Service [he] had envisioned.”

In 1996, Price took a job as the managing editor for the Grand Canyon Association. As the managing editor, he wrote about the geology of the Grand Canyon and his book, *An Introduction to Grand Canyon Geology* was published in 1999. It was also during this time he made his first visit to Socorro and became familiar with the Bureau of Geology.



In 2000, Price helped organize a geology symposium on the South Rim of the Grand Canyon. In attendance were Chuck Chapin and Shari Kelly, employees from the Bureau. During a cocktail event, Price was introduced to Shari Kelly. He noticed her name tag indicating that she worked at the Bureau.

“I looked at her name tag and said, ‘Oh, that’s my next job! I’ve always wanted to come work for you people!’”

Price had no way of knowing at the time that the Bureau had been trying to fill a position for a geologist with experience communicating geology to the public and with knowledge of publishing and editing.

Before the end of the symposium, Price was introduced to Chuck Chapin. A few months later he received a phone call from Peter Scholle, Director of the Bureau, asking if he was serious about the comment he had made regarding working

for the Bureau.

Price later traveled to Socorro to visit and to meet the staff at the Bureau. Scholle gave Price the job announcement and indicated they really wanted him to apply for the job.



Dr. Peter A. Scholle

“One of the reasons I was attracted to it was it [...] seemed to combine a lot of my different skills: my skills as a professional geologist, my skills as a writer and editor, and my skills as somebody who in particular is interested in interpreting geology for the public,” Price said. “It seemed like a natural fit.”

In 2001, Price began his new career as the Senior

Geologist and Chief Editor for the Bureau and was very involved with the publishing program. Price and Scholle both felt the survival of the Bureau rested on increasing the public’s knowledge of the importance of the work being done at the Bureau.

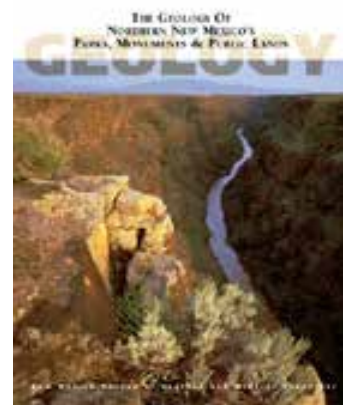
“Research takes time and money, and if you want that support you have to demonstrate why what you are doing is important,” Price said. “What we are doing is important.”

Price focused on promoting the importance of the Bureau not just to geologists but also to the people of New Mexico.

From 2002-2005, Price was involved with editing several books that were published by the Bureau as Decision-Makers Field Guides. The field guides include topics covering New Mexico’s energy, water resources, and mining.

“If we were some little state agency lost in the back corner of New Mexico, sooner or later

we would get voted out of existence by the legislators who fund us,” Price explained.



Under Price’s guidance, the Bureau’s publications have received several awards. Of note, his “labor of love,” *The Geology of Northern New Mexico’s Parks, Monuments, and Public Lands*, received the New Mexico Book Award for Best Science Book (2010).

### Price’s Legacy as Bureau Director

Price was promoted to Deputy Director in 2007 and although he wishes he had more time to concentrate on publishing, the promotion turned out to be a good thing. When



Greer Price, Regent Jerry Armijo and Dr. Daniel López at the Bureau of Geology ribbon cutting

Scholle retired as Director of the Bureau, Price was asked to take over the position as Interim Director.

At the end of a year-long selection process for the Director position, Price was asked if he would consider taking the job.

“What a great way to cap my career here,” he recalled saying about the Director position. Now that Price is about to retire, what does he envision for the future of the Bureau?

“Although we’ve always

had a reputation as a strong and committed organization, the Bureau today is far better and more broadly known than it has been for many years,” he said proudly.

The Bureau is now housed in a new \$24 million building located at the front of the New Mexico Tech campus. The Mineral Museum, the most visited public space of the Bureau, will be much larger and will be connected to a classroom for visiting school groups.

“When I was younger,

being a scientist was like being a doctor,” Price notes. “It was an honorable profession.”

What would Price say to these children if they were his? “It’s not about being a little version of me. It’s about being the best version

of you that you can be.”

Some of these young children visiting the Bureau will also find a passion for interpreting geology and will in turn leave behind their own legacy for future generations.





# where are they now?

dr. rena mae bonem

by karen m. balch

first *tech scholar's* significant science contributions began in the mineral museum



In the Maldives while on a trip around the world gathering material for a book on Coral Reefs

photo by Joseph G. Strykowski

# where are they now?

dr. rena mae bonem

Dr. Rena Mae Bonem grew up in Tucumcari, New Mexico, and lived there until she went to college. Her father married a woman from Oklahoma, and later became a lawyer. Bonem is the only scientist in her family. Her immediate family is involved in various aspects of law. Her father was a district judge; her mother was a legal stenographer; her only sibling, a brother, became a district judge.

## exposure to science

Dr. Bonem's first interest in rocks was as a young girl. She would pick up rocks in the driveway. Her mother would also take her out to collect fossils.

Bonem was active in the Science Fair in fifth and sixth grade. "In 1966, I went to the International Science Fair, held in Dallas, Texas. Everyone got to go to Germany, or other places. We took a Greyhound bus," she reflected.

Her brother, recently back from college, recommended she "try

a genetics test," Bonem recalled. "I was given two hamsters. The next thing I knew, I had sixteen hamsters." When she told him she was interested in fossils, he gave her his geology college textbook. She continued to collect fossils around the local area.

In her junior year of high school, she was invited to the National Science Foundation (NSF) program at Texas A&M. Her project detailed the contrast of Cretaceous fossils between New Mexico and Texas. What she discovered was "the species were remarkably similar. Only the formations were different." She explained, "it was a shallow sea and the same environment at the same time."

## college

Dr. Bonem was accepted to the University of New Mexico (UNM) with a full scholarship in 1966. She soon discovered the freshman classes had over 500 students. There were 120 in her geology class.

The dorms were full of students interested in sororities and fraternities. "I wasn't interested in the sorority life," she explained. After speaking to her geology professor, she transferred to New Mexico Tech. She was familiar with NMT, the geology program, and Socorro from the state Science Fair competitions (held on campus). In the fall semester of 1967, Dr. Bonem began pursuing

a B.S. in the Geoscience Department at New Mexico Tech.

At the time, there were few undergraduate female students at NMT. "There were about 900 students," she comments. "The legislature wanted to close campus, and there was a big push to grow to 1,000 students. General Studies was added, as were numerous degrees in science and engineering."



Through her junior year, continuing until 1971, she worked in the Bureau of Geology and Mineral Resources, which was at that time, the Bureau of Mines and Mineral Resources. She describes her experience as “wonderful” because she got to work in the Mineral Museum. “It was fairly small then,” she remembered. She was pursuing her geology degree while working, taking 20 credit hours, which included some computer science classes. Most of her work in the Museum was “computerizing specimens needing to be cataloged.” Mineral samples in the collection were gathered as early as the late 1800s and early 1900s. “There were several local minerals, including from the Kelly Mine.” However, what the public saw in the museum did not do justice to what the Bureau had. “There was more material in storage that could ever be displayed,” she pointed out. From 1968 to 1970, she was the Assistant Curator and Computer

Programmer at the Bureau, and went from working part-time to full-time. Rena Bonem was the very first student to be listed as a Tech Scholar. A Tech Scholar is acknowledged for the highest rank in scholarship. “It was just an honor they told me about,” she replied when asked if she was aware of the award. “I had a high GPA, and put in a lot of hours at the Bureau.” She also received the Best Student Paper Award from the SW Student Association of Geological Societies, received a National Science Foundation Traineeship, and was a Research Assistant (NM Bureau of Mines), while maintaining her very high GPA. She also received various other academic scholarships and was on the Honor Roll 1966-1971, her entire time at New Mexico Tech.

She received her B.S. in 1970, but continued working towards an M.S. degree. Her specialization was in paleontology and was advised by Christina Lochman-Balk. Balk “was the only paleontologist,”



and Bonem was the only M.S. student who Balk advised at that time.

Bonem received her M.S. in the fall of 1971. Although the M.S. program at NMT was a two-year program, she had finished most of her undergraduate courses early and began taking extra hours. “24 hours. While this isn’t permitted at Baylor, I was taking 21-24 credit hours,” she explains. “I finished my thesis over the summer, doing field work.”

## research

Upon graduation, Dr. Bonem continued her education, pursuing a Ph.D. She explained that she had pushed through her Master’s degree quickly and “wanted to enjoy working towards my Ph.D.” An office mate suggested Bonem take a coral reef class since she was living in the Florida Keys at the time.

She enjoyed the course so much that she became certified in scuba

where are they now?

dr. rena mae bonem



Gathering material for her book on Coral Reefs. ***Palaces Under the Sea***

*photo by Joseph G. Strykowski*

diving. She also had the opportunity to work with Bob Ginsburg, a notable scientist, and says she was “able to incorporate part of [the reef studies] in her dissertation.” She spent time in Jamaica and the Florida Keys studying reefs.

In 1973, she studied reefs in Jamaica on and off. She says she “wanted to educate divers to protect the reefs.” She recognized a decline in the reef ecosystems, and has several publications on the coral reef system, environmental (i.e. hurricanes), and human impacts.

Bonem has been to the Great Barrier Reef a couple of times and mentioned that the Great Barrier Reef is in rough shape. “I’ve seen nicer reefs in the Red Sea and the islands in the Bahamas.” Basically, the best way to view reefs is to “get as far away from human development,” she confided.

In order to better study coral reefs, Bonem invented an underwater

drill, “a pneumatic drill, using skills I learned on regulators, and just stepped the pressure down in the first stage of the regulator.” The reefs are made of carbonate material. Using a drill to take core samples in the reefs has helped with research. “It’s inexpensive,” she continues, “and I immerse the drill in oil after every dive. Then I run fresh water through it.”



dr. rena bonem,  
professor and director of  
undergraduate geology  
programs at baylor  
university

In 1975, Bonem received her Ph.D. from the

University of Oklahoma. From 1975 to 1981 she held various assistant professor positions. In 1981, she became an Assistant Professor at Baylor University, in Waco, Texas, and she earned a full Professorship title in 1990.

She is currently the Director of Undergraduate Programs in Geology at Baylor and maintains a heavy teaching load while working with 80 advisees. She conducts research over semester breaks. In addition to her advising responsibilities, she is also an outside reader for theses and dissertations for the University of the West Indies, Mona, in Kingston, Jamaica.

She regularly teaches about coral reefs in her “World Oceans” class, which also discusses human impacts. There is a lab component to this course. “We didn’t get to go to the ocean,” she explained. “However, there was one special lab section one year. We did the entire lab over spring break in the Florida Keys.”

She said, “several students have followed in my footsteps,” when discussing her coral reef research and former students. “One is in charge of reef sanctuaries in the Gulf of Mexico. Another works with the USGS marine sanctuary in Hawaii. She’s in charge of a small island.” She likes to see her students succeed, no matter where they may be in their careers.

Her current research includes 1) preservation of storm events in the sedimentologic record of modern and ancient reef environments; 2) lagoonal patch reef development and comparison with fossil reefs and bioherms through time; 3) soft substrate adaptations of fossil invertebrates; 4) analysis of form and life habit of Devonian and Pennsylvanian



Explaining Jamaican Geology

photo by Merriellen Bonem

Rostroconch mollusks;  
5) human impact on reef  
systems.

### future endeavors

Dr. Bonem has received numerous awards and appointments over the years. She is a member of the Geological Society of America (GSA) and the American Association for the Advancement of Science (AAAS) and has served on numerous national and international scholarship committees. She is part of the SDI

where are they now?

dr. rena mae bonem



Rena putting her rescue dog through the paces for agility training

SCUBA Program Instructor Training Faculty and the National YMCA SCUBA Program Instructor Trainer Faculty. She was inducted into the Women Divers Hall of Fame in March 2001, and has been active at Baylor University and in the community

Another research interest includes dinosaur trackways in Texas. She is hoping to have time to continue her study of dinosaur track clays. Her most recent publication was in a 2014 bulletin for the New Mexico Museum of Natural

History and Science in Albuquerque, NM. The publication, "Stratigraphy of the Paluxy River Tracksites in and Around Dinosaur Valley State Park, Lower Cretaceous Glen Rose Formation, Somervell County, Texas," involved three non-consecutive years of research. "The dinosaur tracks in (this area) are among the best preserved and most abundant in the world" (Dattilo et al 307). They studied the tracks over the summer in 2009, the spring of 2011, and the summer of 2012. This research "reunites me with muddy

environments, lagoons and tidal flats." She has also been using Google Earth to spot new sites. She is currently working on the stratigraphy for Glen Rose. "A little further south, in about the same part of the section, is an area where track clays haven't been discovered," she explained.

When Rena is not teaching, reading theses, or conducting research, her hobby includes spending time training her rescue dogs for dog agility, a sport in which dogs race through obstacle courses while being judged on

time and accuracy.

Rena Bonem has only been back to Socorro and New Mexico Tech once since she graduated, and "it was in the late 70's," she adds. Her early interest in fossils and rocks led her to New Mexico Tech and the Mineral Museum. Here, she persevered as a top-award winning student and a notable geologist. Professionally, her accolades continue beyond her early days at New Mexico Tech. Her passion in science continues in her research and teaching.

# faculty spotlight

dr. fred phillips

by john mahmud

## fred phillips retires after 34 years at tech

Fred Phillips is a man who is always diving headfirst into new fields of study. Always at the forefront, he is well known for his work on using chlorine-36 for dating of groundwater and has published many papers on the topic. He is also known for his book



*Reining in the Rio Grande*, which discusses the environmental history of New Mexico's Rio Grande. Currently a Professor of Hydrology and the Director of the Hydrology Program at New Mexico Tech, he has been described as someone who has made tremendous contributions to New Mexico Tech.

## about

Fred Phillips enjoys outdoor activities such as fishing, hunting and backpacking. He tries to visit his favorite spot in the Great Basin between Death Valley and the Sierra Nevada annually to camp and map the area. He says, "It's good to have an area to kind of adopt and feel like you know it really well, and can really

dig deeply into it." Besides outdoor activities, he enjoys food and wine as things he can explore for a whole lifetime. Every year he saves a stomach from a deer or elk he gets while hunting and makes haggis in celebration of the poet Robert Burns' birthday. Generally haggis is unobtainable in the United States unless homemade, and not many people are willing to make it.

While his research focus has been in hydrology, he maintains an interest in ancient history and reads several books on the topic each year. His continued interest in history was part of his motivation to publish the book *Reining in the Rio Grande* in 2011. The book covers the environmental history of the Rio Grande and the changes it has undergone over the years. It features people such as Steve Reynolds, notable former New Mexico State Engineer, who worked to regulate water usage from the river. He also talks about water rights and predictions for the future of the environment.

Fred Phillips has been married to his wife Lois Phillips for 40 years. Lois currently works in the CLASS Department at New Mexico Tech and teaches German language classes. They have two sons. Andrew, the older son, works at Tech as a department technician in the MSEC building. The younger son, Geoffrey, lives in Denver and works for a software firm.



Fred making haggis in his Socorro kitchen

### awards

His accomplishments have been acknowledged with a variety of awards some of which he keep on the wall in his office. For his research on Chlorine-36 dating he received the F.W. Clarke Award in 1988. The Clarke Award is named after the man known as the father of geochemistry and is awarded to those who make an outstanding contribution to geochemistry or cosmochemistry. Phillips has also received the Meinzer Award in 2001, an award given to the author of a paper that advances the field of Hydrogeology. He is the only person to have received both the Meinzer award and the Kirk Bryan Award, which he received along with a colleague for their research paper "Terrestrial In Situ Cosmogenic Nuclides: Theory and Application." In addition to the awards he obtained over the years, he was granted Fellowship in the Geological Society of America in 1996. Later, in 2008, the American

Geophysical Union also granted him Fellowship, which is extremely difficult to acquire as only a fraction of a percentage receive this honor.

### education



Fred Phillips

In 1961 he started his education at local public schools in Bishop, Calif., where he grew up. From grade school on, he knew that he wanted to pursue a career as a teacher, as he enjoyed reading, learning and research. During high school he took a University of California extension course that raised his interest in earth science. After finishing high school

in 1972, he enrolled at the University of California in Santa Cruz where he worked towards a double major in earth science and ancient history. He had originally planned to major in computer science, which was a small field at the time.

However, he did not enjoy programming work and decided to take an introductory geology course. Later on, he received the highest grade in the class on the final exam and took that as a sign to switch majors. During his time at the university, he met his wife, Lois, and married at the age of 21.

Upon graduating with two bachelor degrees in 1976, he decided to pursue a master's degree in earth science. Later that year he enrolled in the University of Arizona where he obtained both his master's degree and Ph.D. in hydrology. Hydrology was a relatively new field, as issues such as groundwater contamination had just begun to spring up. Fred Phillips felt that this field

would impact the lives of others and he wanted to be a part of it.

For his master's degree, he worked on a project involving the impact of oil shale in situ retorting on groundwater quality in the Piceance Basin, Utah, a project corresponding with the 1970s energy crisis. His work in this project was to determine the potential for groundwater contamination due to the in situ retorting process. Finding that the potential was very high, he stated that it would have been a long-term environmental disaster if the process was put into use. Fortunately, due to the expensive costs and the crisis end of the environmental disaster was avoided.

His dissertation for his Ph.D in Hydrology was on the uses of noble gasses as paleoclimatic indicators. This was a process involving the solubility of noble gasses in water as the solubility would change due to temperature. By analyzing the concentration of noble gasses, it was





Isotope samples being collected from boulders atop moraines surrounding the Quelccaya Ice Cap in southern Peru.

possible to backtrack how the temperature in an area changed over time. After receiving his Ph.D he decided to research the newly developed chlorine-36 dating method and its applications. Chlorine-36 is an isotope of chlorine that has a half-life longer than carbon, which makes it an ideal isotope to use in geological dating. He is most well-known for his work with this isotope.

### work and projects

In 1981, Fred Phillips came to New Mexico Tech to work as an Assistant Professor. Since then, he has worked his way up to be a Professor of Hydrology in addition to being the Director of the Hydrology Program at New Mexico Tech. He taught 14 different courses at Tech and has 140 peer-reviewed publications.

He has dedicated a large portion of his career to

developing groundwater dating methods using the Chlorine-36 isotope. These Chlorine-36 isotopes form when cosmic ray particles react with argon in the air or other elements in rocks. The concentration of this isotope can be measured in order to determine how long the rock or material in question has been exposed to these cosmic rays. As Fred Phillips was one of the first people to develop Chlorine-36 dating methods, he is an expert on the subject and has

published voluminously in publications worldwide.

In 2005, Fred Phillips became the principal investigator in a multidisciplinary research project known as the CRONUS Earth Project. CRONUS stands for Cosmic-Ray Produced Nuclide Systematics on Earth Project. The project involved 13 institutions including New Mexico Tech and was funded by the National Science Foundation. The goal of the project was to

## Faculty spotlight

dr. fred phillips



Phillips during field research

investigate cosmogenic nuclide production. By determining what affects the nuclide production it would be possible to take those factors into account in when utilizing dating methods such as chlorine-36 dating. With the first volume on the results of the project already published and the second to be released at the end of the year, Fred Phillips believes that he can soon say that the project is complete.

### field research

Fred Phillips has done extensive research in the area between Death Valley and the Sierra Nevada mountains. He has several papers published on the chronology of

glaciation in the Sierra Nevada along with studies on the tectonics and faulting and how that has influenced the uplift of the mountain ranges. During his research there, Lisa Majkowski, the current director of the Office for Student Learning at Tech, worked with him to co-author a paper on the role of low-angle normal faulting active tectonics of the northern Owens Valley California. Lisa is very appreciative of Fred Phillips for allowing her to work and learn from him. She said that when looking back on the map she produced for the co-authored paper and some of her earlier maps, she couldn't believe the same person made them.

He has also done research abroad on every continent except Africa. One time was in the Kunlun Shan in Tibet, where he was part of a research team investigating the uplift rate of the Tibetan plateau. He also conducted research in Antarctica on saline lakes to determine if the salt content was from the surrounding landscape

or from groundwater. He mentioned that a lot of the time on the Antarctica trip was spent sitting in a helicopter getting to and from the research site. He prefers places where he can camp out and get to know the place.

### retirement

Fred Phillips is retiring June 30, 2015, after which he hopes to devote more time to research. "I think

it is time to open up more opportunities to younger faculty," Phillips said. "I also want to spend more time with my family.

Phillips believes that he has contributed significantly to groundwater and surface exposure dating, and he is glad to be a part of one of the strongest Hydrology programs in the United States.



Haggis is a savory pudding containing heart, liver and lungs; minced with onion, oatmeal, suet, spices, and salt, mixed with stock, traditionally encased in an animal's stomach

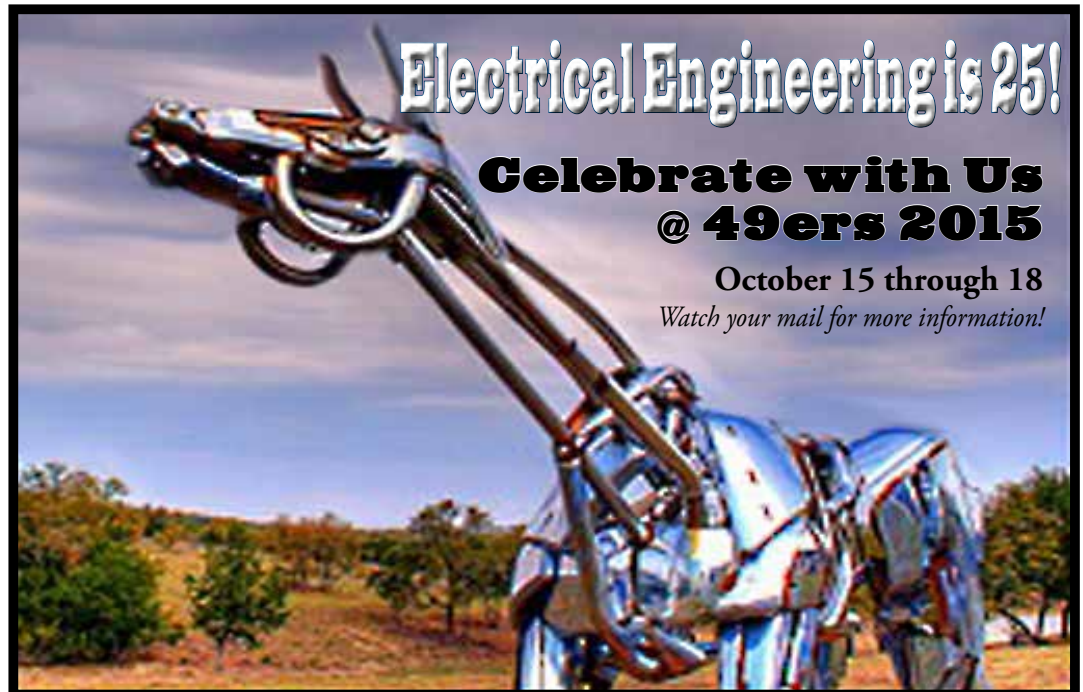
## graduate education day at the roundhouse

Representative Don Tripp, NMT class of '69 and Speaker of the NM House of Representatives, met with two Tech students during *Graduate Education Day* in Santa Fe on January 30, 2015. *Graduate Education Day* is meant to increase awareness and garner support for all post secondary programs, graduate students and employers of graduate students.

Eight graduate students spent the day at the Roundhouse and presented research posters to legislators, lobbyists and other interested people.



Stewart Youngblood, Speaker of the House Don Tripp, and Olivia Chavez



*Save the Date!*

September 17-18, 2015

New Mexico Tech's 21st Annual  
PRESIDENT'S GOLF TOURNAMENT

For more information contact

**KIANE POUND** • [kpound@admin.nmt.edu](mailto:kpound@admin.nmt.edu) • 575.835.5618

Registration form at: [nmt.edu/golf-tournament](http://nmt.edu/golf-tournament)

# Graduation



Average GPA: 3.24  
71 percent had GPAs of 3.0 or greater

34 percent of graduates received one 'F' at New Mexico Tech

Five graduates finished with a perfect 4.0 GPA.

Youngest degree recipient: 20 years old

**Total Degrees Awarded:**  
8,052 Bachelor's degrees  
3,056 Master's degrees  
432 Ph.D.'s.

75% of undergraduates are from New Mexico

**Mechanical Engineering Department**

Awarded the most degrees:  
60 Bachelor's degrees  
17 Master's degrees.



Dr. Van Romero presented the *Distinguished Research Award* to Dr. Reid Grigg, a scientist and researcher at the PRRC for 23 years. Dr. Grigg earned his bachelor's and Ph.D. from Brigham Young University and completed a post-doc at the University of Lethbridge in Canada. His research focuses on the study of carbon dioxide in enhanced oil recovery. He has authored or co-authored more than 110 publications and is an active leader in the Society of Petroleum Engineers.

His nomination for this award was supported enthusiastically by his colleagues in Missouri, Utah and Texas, as well as the cabinet secretary of the N.M. Energy, Minerals and Natural Resources Department.

# 2015!



## Dual Degrees /2 diplomas

Alyssa-Marie Lucero

(*Biology & Chemistry*)

James Price

(*Math & Physics*)

Joseph Gabaldon

(*Electrical Engineering & Math*)

Nathaniel Miller

(*Electrical Engineering & Physics*)

Cassandra Rodarte

(*Psychology & Biology*)

Caitlyn Clarkson

(*BS Materials Engineering,  
MS Materials Engineering*)

## Double Major /1 diploma

Natasha Nettleton

(*Biology & Chemistry*)

Paige Murray

(*Biology & Psychology*)

Moniara Romero

(*Physics & Math*)



Dr. Warren Ostergren, Vice President for Academic Affairs presented the *Distinguished Teaching Award* to Dr. Mehrdad Razavi. Dr. Razavi earned his bachelor's and master's degrees at Shiraz Engineering University in Iran, and his Ph.D. from Washington State University, where he won the Outstanding Graduate Student Award. Razavi joined the Mineral Engineering Department in 2007, and teaches geotechnical engineering, soil mechanics, geostatistics and foundation analysis & design.

All the students praised Dr. Razavi for the high quality of his lectures, his ability to explain complicated concepts and his willingness to help students.



# alumni association awards

## distinguished achievement award

The New Mexico Tech Alumni Association presents awards at graduation to those who are exceptional in their field and have promoted the university through their performance.



Ed Fries, Distinguished Achievement Award winner, 2015 and Paul Shoemaker, Alumni Association President

## This year the *Distinguished Achievement Award*

honoree was Ed Fries. Ed Fries graduated from New Mexico Tech in 1986 with a bachelor's in computer science. He created his first video games for the Atari 800 in the early 1980s, even before he came to Tech. He joined Microsoft in 1986, and spent the next 10 years as one of the early developers of Excel and Word. Ultimately, he moved from the Microsoft Office team to pursue his passion for interactive entertainment

and created Microsoft Game Studios.

Over eight years he grew the team from 50 people to more than 1,200, published more than 100 games including more than a dozen million-plus sellers. He co-founded the Xbox project, helping to make Microsoft one of the leaders in the video game business. He was a prime promoter of that platform to game developers and had an important role in the acquisition of other game developers.

In 2004, Ed retired from his job as Vice President with Microsoft to continue his work in the video game industry as board member, advisor and consultant to a broad range of publishers, independent game developers, and media companies. In 2007 Ed launched his own startup, Figure Prints, an innovative company that uses color 3D printing technology to bring video game characters to life, such as those in World of Warcraft. In the summer of 2010, Ed released "Halo 2600," a "demake" of the Halo video game series for the Atari 2600.

## distinguished service award

This year the New Mexico Tech Alumni Association *Distinguished Service Award* is honoring a couple who have made the largest ever donation to New Mexico Tech – Chuck and Jessie Headen. Charles F. Headen was an astute and highly successful "land man." He and his wife Jessie are posthumous recipients of this year's Distinguished Service Award. This recognition acknowledges, among many things, the extremely generous bequest to New Mexico Tech from the Headen estate.

Mr. Headen was 87 when he passed away in 2011. Upon his death, Mr. Headen bequeathed the majority of his vast property holdings to New Mexico Tech. The Headen Trust is a fund of more than 11 million dollars that exists for the sole purpose of providing scholarships to New Mexico Tech students. To commemorate

their donations, the new Bureau of Geology and Mineral Resources building is named in their honor.

Chuck served in World War II as a pilot and aviation instructor. During the war, Chuck and Jessie met in Corpus Christi, Texas. On a lark, they decided on the first day of spring to marry for a month, an impulsive union that endured for 62 years.

Dr. López became fast friends with Headen soon after he came to Tech in 1987. Dr. López said



Emily (Luann) Lukens, accepting the Distinguished Service Award for Charles and Jessie Headen from President López and Paul Shoemaker

that Chuck contributed generously to community causes, in addition to New Mexico Tech.

Chuck's sister Luann accepted the award on behalf of Chuck and Jessie.

# construction complete!

new mexico bureau of geology and mineral resources building  
the charles and jessie headen center.

by paula r. tapia

## mineral museum gets new digs

The New Mexico Mineral Museum will double its mineral display from 2,500 specimens to over 5,000 as the museum relocates to the newly constructed New Mexico Bureau of Geology and Mineral Resources Building, otherwise known as the Charles and Jessie Headen Center.

May 1 marked the beginning of the transition from the old mineral museum location in the Gold Building to the new location on the northeast corner of the New Mexico Tech campus. This new

location ensures the museum's visibility and accessibility to the general public.

Students and staff began moving archived material and research collection specimens from the Gold extension in early April. As one can imagine, moving the specimens has been no easy task. Archived specimens were transported by hand or by cart to the new building for storage. All specimens that were on display in the old location will be carefully secured and carried over to their new home in the lighted display cases of the more

accessible museum. The museum will be closed for the first part of the summer while the move is completed.

According to a history compiled by Robert Eveleth, the Bureau's Senior Mining Engineer (retired), the museum was established in 1899 and has since been one of the largest and most luminous mineral collections in the world. The original mineral collection, in fact, won an award in the 1904 St. Louis World's Fair. Originally designated for educational use, the collection has become a public archive of mineral

history that has undergone change, tragedy, and growth.

On July 5, 1928, the entire original museum collection was destroyed when the Old Main Building caught fire. The fire was believed to originate from a janitor's closet beneath a main stairwell. Everything, except a few vital records in a fire-proof safe, was lost to the flames. The award-winning collection disappeared in an instant. One of the museum's first curators, Charles R. Keyes, had made plans to build a separate fire-proof building to house and protect the valuable collection.



construction complete!  
 new mexico bureau of geology and mineral resources building  
 the charles and jessie headen center.

However, after Keyes' death in 1905, the plans were dismissed and the collection was settled in Old Main to be lost a little over 20 years later. Edgar H. Wells, the



Edgar H. Wells

school president at the time and the first Bureau of Mines director, commenced rebuilding the museum, relocating it to Brown Hall, Old Main's replacement. Purchasing the C.T. Brown collection in 1938 gave the museum a much-needed boost. The collection continued its growth over the ensuing decades. To avoid future loss of other important records associated with the museum, the collection was cataloged on a computerized system

around 1970. A New Mexico Tech student, Rena Bonem, along with New Mexico State Bureau of Mines geologists, took on the task of preparing thousands of IBM cards to store data on the over 8,000 specimens within the collection at that time.

The complete collection now totals over 15,000 specimens. Even with so many specimens in the collection, the museum's new location in the new Bureau of Geology Building accommodates the collection's increasing size. While most of the current themes – New Mexico mining districts, United States, the Americas, world, gold, and fluorescent specimens (located in a small black-walled room equipped with black light) – will stay the same, there



Wire gold crystals



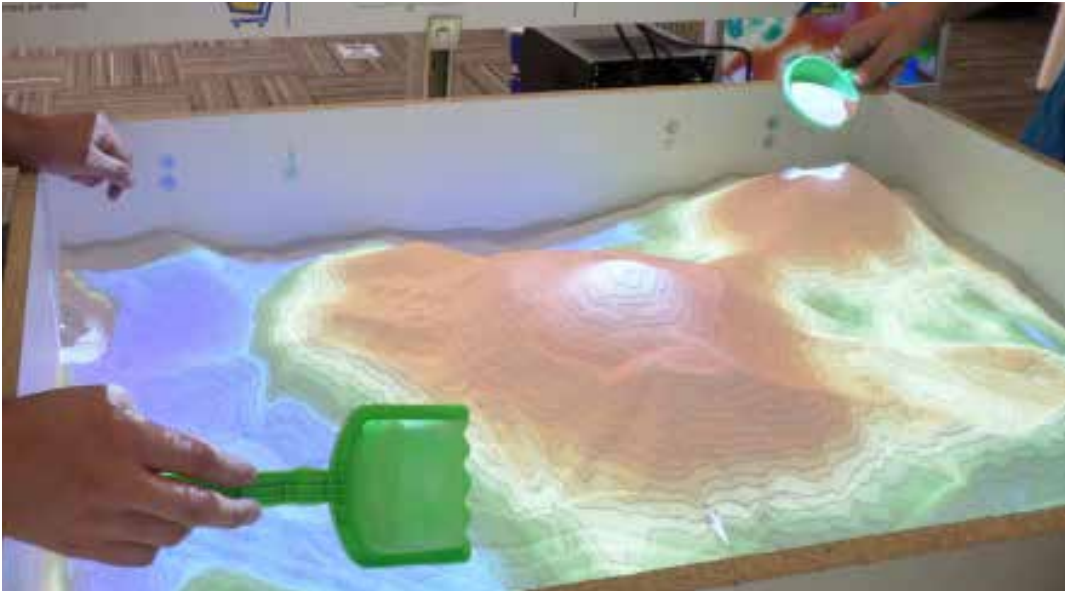
Stairway to upstairs classrooms

is room for added themes that were not previously included in the main showcase. Any specimens not chosen for display will remain secured in the archives storage area on the second floor of the museum.

Other aspects of the museum have been relocated as well. The smaller classroom in the Gold Building has

now been replaced by a much larger classroom on the second floor of the museum. Visitors participating in classroom exercises will trek up a geometrically captivating stairway to a balcony that overlooks the main floor before entering the classroom. Staff members hope that the new classroom space will provide opportunities for





### Topographical sandbox

more class offerings and experiences for students of all ages.

Perhaps one of the more innovative new educational features will be an augmented reality topographic sandbox. These sandboxes are equipped with mapping technology that generates topographic lines around the elevated areas of the sandbox. As the sand is moved around, the lines adjust accordingly, creating a new map. The sandbox will include an additional option for virtual water to fill the lowest points of the sandy terrain. If the virtual water is disturbed,

the water will slosh up onto the dunes just as it would in the physical world. Intel demonstrated a sample sandbox at the May 8 ribbon-cutting event. There are now plans to build one for use in the Bureau building to share with the Earth and Environmental Sciences Department. Among many positive changes, the museum staff expects to see a dramatic increase in the amount of visitors to the new location. Because the museum is immediately visible upon arrival to campus from Bullock Boulevard, tourists and geologists alike will be able

to locate and access the museum with ease.

Further, the new building offers more opportunities for partnership with the geology publications office. Instead of being in two separate buildings, the Bureau of Geology Publications Office now resides across the hall from the museum. This new partnership will create an even greater customer-friendly atmosphere as the publications office will begin selling geology books and accessories for a general audience. In addition to publication sales, the mineral museum will continue to have

sales cases full of precious specimens for the public to purchase.

Overall, the new mineral museum is sure to become another amazing reason to visit Socorro and New Mexico Tech for years to come.



Ribbon-cutting ceremony

# calendar of events

## alumni receptions

2015 events through December. All dates subject to change. Go to [www.nmt.edu/advancement](http://www.nmt.edu/advancement) for details.

### JULY

- 13 San Jose, CA
- 14 Oakland, CA
- 15 Sacramento, CA
- 16 Reno, NV
- 18 Santa Fe, NM
- 19 Los Alamos, NM
- 23 Midland, TX  
Summer Mummers

### AUGUST

- 6 Salt Lake City, UT
- 8 Elko, NV

- 24 Baltimore, MD
- 25 Washington DC
- 26 Fairfax, VA

### SEPTEMBER

- 17 – 18 Socorro  
President's Golf Tournament
- 29 SPE Houston, TX
- 30 San Antonio, TX

### OCTOBER

- 1 Austin, TX
- 15 – 18 Socorro  
49ers Celebration
- 20 Farmington, NM
- 21 Durango, CO
- 27 Silver City, NM
- 28 Tucson, AZ

- 29 Phoenix, AZ
- 8 Roswell, NM
- 9 Artesia, NM

### DECEMBER

- 10 Carlsbad, NM –  
Christmas on the Pecos

## local events

July through December

### 1ST SATURDAY OF EVERY MONTH:

- *Very Large Array Karl G. Jansky Extend Tour.*
- *First Saturday Star Party*
- *Hammel Museum open to the public 9am to Noon*



### JULY

- 3 Fourth of July Holiday  
NMT Closed
- 4 Socorro  
NMT 23<sup>rd</sup> Annual  
Fourth of July  
Concerts and  
Firework display  
[www.nmtpas.org](http://www.nmtpas.org)
- 10 -12 Magdalena  
Old Timers' Reunion
- 31 NMT Semester ends

### AUGUST

- 1 Socorro  
Community yard sale



- 15-16 Socorro  
Hot August Night  
Celebration
- 16 NMT Convocation
- 17 NMT Semester begins
- 22-23 Socorro  
Toy Train Show and  
swap meet
- 27- 31 Socorro  
County Fair & Rodeo



- 29 Socorro  
County Fair Parade

### SEPTEMBER

- September 4-6 Socorro  
el Camino Run Car Rally
- 6-14 Socorro  
New Mexico Fire and  
EMS Expo
- 7 Labor Day



- 17-8 Socorro  
NMT President's  
Golf Tournament
- 25-29 Socorro  
San Miguel Fiesta
- 26 Socorro  
M – Mountain Fly-in

### OCTOBER

- 2-3 Socorro Hamfest
- 8-11 Socorro  
Alamo Indian Days
- 10-12  
Socorro 13<sup>th</sup> Annual  
SocorroFest
- 14-17 Magdalena  
22nd annual  
Enchanted Skies Star  
Party  
Tours of the Very Large  
Array and Magdalena  
Ridge Observatory [http://  
enchantedskies.org/  
index.php](http://enchantedskies.org/index.php)
- 15-19 Socorro  
49ers Celebration



16 Academic Holiday  
No Classes  
24-26 Socorro  
Oktoberfest

**NOVEMBER**



14-15 Socorro  
36th Annual  
New Mexico Mineral  
Symposium  
17-23 Bosque del Apache  
28th Annual  
Festival of the Cranes



20-22 Socorro  
Festival of the Cranes  
Fine Arts/Crafts Show  
26-27 NMT closed for  
Thanksgiving



**DECEMBER**

5 Socorro  
Electric Light Parade



5-6 Socorro  
Luminaries on the  
Plaza Walk

7-11 – NMT Finals Week



Photo from the cover of *El Arrastre, '64*

24-January 3  
Tech Closed for the  
Holidays



January 13  
Dallas, TX



January 27  
Santa Fe, NM



February 17  
SME Denver, CO  
March 19



Louisville, KY  
May 2



Albuquerque, NM  
May 8



Socorro, NM  
May 9  
NMT Graduation



May 13  
Pittsburgh, PA

**SAVE THE DATE**  
September 17-18  
New Mexico Tech's  
21st Annual  
**PRESIDENT'S GOLF  
TOURNAMENT**  
kpond@admin.nmt.edu  
575.835.5618 or:  
nmt.edu/golf-tournament

# president's club dinner 2015

from gold dust to star dust

The annual President's Club Dinner on April 11, 2015 was a great success, thanks to the generosity of our students and other volunteers.

The event serves as a "Thank You" to the benefactors of the President's Club Scholarship fund.



President López



Rosie Tripp and Speaker of the House, Don Tripp



President of the Board of Regents, Deborah Peacock and her husband, Nate Korn



Regent David Gonzales



John Meason and Regent Jerry Armijo



Evening cocktails on the balcony



Student speaker Mika Myers



Sam and Raven Goswick



Frank Etscorn, nicotine patch inventor, with his wife, Sheri



Meri and Mike Stanley, Tony Ortiz, Gina Chavez



Tech alumnus Rob McAlpine



Dr. and Mrs. Warren Ostergren

More than 150 guests attended, including donors, regents, students and guests.

The President's Club Dinner is held every spring. Invited guests include those who have donated \$1,000 or more during the previous year. For more information contact Colleen Guengerich at [cguengerich@admin.nmt.edu](mailto:cguengerich@admin.nmt.edu) or 575-835-5352.



Bill Marble, Distinguished Alumnus 2015, Deborah Peacock, President of the Board of Regents, President Dan López

The *Distinguished Alumni Award* was presented to Bill Marble New Mexico Tech class of 1972 with a B.S. in petroleum engineering and computer science. As the chief engineering officer for Hallwood, he was among the earliest and most successful innovators in “shale”. His first attempt at a true “shale” well was in



Bill Marble

1980. Bill drilled and fracked hundreds of wells in West Texas, the Chalk and CBM. By the end of 2001 Bill and his team were leading the industry in the development of numerous innovations which today are common practice in both shale and unconventional oil and gas exploitation. He has drilled in the USA, Canada and Poland, and been solicited by various countries such as Hungary, The Netherlands, and the UK for shale planning advice. Bill is engaged in various roles on behalf of a small group of investors pursuing energy ventures in offshore Alaska, Canada, Kansas and Mexico.

President of the Board of Regents, Deborah Peacock presented the *Distinguished Faculty Award* to Dr. Chelsey Z. Hargather who is the Engineering Education Specialist and adjunct professor of Materials Engineering. Joining New Mexico Tech in 2012, she has re-designed and taught the freshmen introduction to engineering courses with a new hands-on active learning approach. She performs institutional research on student retention, persistence, and completion rates. Chelsey is Chair of the Outreach Committee, teaching, advising, and serves on graduate committees. Her research



Dr. Chelsey Hargather area is of computational materials science with applications to improving the performance of Ni-base superalloys used in commercial jet engines.

Chelsey received a Ph.D. in Materials Science and Engineering from Penn State in 2012 and her B.S. from Virginia tech in 2008.



Dr. Chelsey Hargather, Distinguished Faculty. 2015, Deborah Peacock, and President Dan López

# diversity week @ tech

call for alumni participation

QuASAR has joined forces with OSL, Res-Life, the Alumni Association, International Programs, and various other NMT organizations with the goal of creating awareness and acceptance during Diversity Week. We have planned workshops and interactive demonstrations throughout the week of 49ers and hope to culminate on Friday, October 16, 2015, with a celebratory theme similar to the "It Gets Better" campaign. Workshops and activities all week will be geared at education and resources regarding the needs of students who may not fit into the mainstream.

This is where we can use help from the alumni. We hope to build a panel or panels of people who have faced a variety of diversity-related obstacles in learning and/or in the workforce, and have been able to navigate them successfully. We want as many representations as possible, with people willing to share their personal stories to our diverse student population. These diversities include, but are not limited to: Health (mental and physical), Learning differences, Age, Cultural, Racial, International, Women and Gender minorities, Veterans, LGBTQ+. We will finish off the evening with a celebratory potluck and hope to have various short performances throughout that evening.

If you have faced diversity-related challenges and are willing to participate, and/or have ideas for giving voice to underrepresented needs or how to support our student population, please let us know. Contact Ryder Fox, QuASAR president at [quasarnmt@gmail.com](mailto:quasarnmt@gmail.com) or at (651) 497-1184 with any questions or to sign up.

# Save the Date!

## 49ers 2015

### October 15-18

Parade October 17 • 11 am

California Street

**Mark your calendars!**



2014 49ers Parade photos at

<http://bit.ly/1EW3wRW>

Contact Theresa:

[tkappel@admin.nmt.edu](mailto:tkappel@admin.nmt.edu)

Like us on facebook at:

[www.facebook.com/pages/New-Mexico-Tech-Alumni-Interaction/179837552054425](http://www.facebook.com/pages/New-Mexico-Tech-Alumni-Interaction/179837552054425)

# alumni association news

a letter from your alumni association

Dear Readers:

Congratulations to the newest alumni of New Mexico Tech – both undergraduate and graduate – who received degrees on May 9. The work and years you put into furthering your education were substantial. The intensity of that work will no doubt continue as you pursue your future careers.

Honors go to this year's recipient of the Distinguished Alumni Achievement Award, Ed Fries (B.S., computer science, 1986, New Mexico Tech). Ed distinguished himself as a developer and an executive at Microsoft. His impact on the video gaming industry is enormous, and his fingerprints are on products that reach into most homes.

You may know that the Alumni Association has incorporated as a not-for-profit entity under the laws of the State of New Mexico and has been designated as a 501(c)(3) organization by the IRS. That means contributions to the Alumni Association are now tax deductible. The Association has recently set a goal to raise \$350,000 to begin formal operations based in Socorro. These funds will sustain the Association's work in support of the alumni population and the university for up to three years.

If you have questions about these plans, wish to make a contribution, or simply want to know more about the Association, you can find us on Facebook or LinkedIn by searching for "New Mexico Tech Alumni Association." Alternatively, you can contact us using old technology and write to P. O. Box 2944, Campus Station, Socorro, NM 87801.

Tech continues to experience growth in enrollment (a blessing) and a decrease in state-provided funding (a curse). Dr. López reported in a column in the Albuquerque Journal's Business Outlook magazine in

April of this year that Tech's faculty members are taking on bigger instructional loads in an effort to sustain educational quality while remaining within the resource constraints that apply to Tech's educational mission.

While Tech sustains impressive external research funding, it faces reductions in federal research support. Nonetheless, Tech continues providing high-quality education and research opportunities for students in science, technology, engineering, and math. The university will redouble its efforts in the coming year to secure research funding from many external sources. The New Mexico Tech Alumni Association will, along with you, assist Tech in its mission to provide an extraordinary education to the next generation of global leaders in science, engineering, and other professions.

Sincerely,



Paul E. Shoemaker

*President*

*New Mexico Tech*

*Alumni Association*

*(B.S., Physics, 1971, New Mexico Tech)*



# people you know

1970's

**Dr. Charles Culp '70**



Dr. Charles Culp, professor of architecture at Texas A&M University, recently received the prestigious E.K. Campbell Award of Merit from the Life Members Club of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers. The award, which includes a \$10,000 honorarium, was presented at the January ASHRAE conference in Chicago. Culp earned a bachelor's in physics from New Mexico Tech in 1970.

A lifetime member of the ASHRAE College of Fellows Culp is serving a three-year term on ASHRAE's board of directors through 2015.

Since joining the Department of Architecture faculty in 1999, he teaches high-performance building design and simulation,

environmental design, and heating, ventilation and air conditioning systems classes.

A licensed engineer and holder of numerous U.S. patents, Culp has more than 40 years of academic and professional experience in engineering, research, teaching and management.

Culp also serves as associate director of Texas A&M's Energy Systems Laboratory, implementing its Continuous Commissioning tools. The CC process, which typically results in a 20 percent reduction in a building's energy use, has yielded more than \$100 million in energy savings since its inception in 1995. Culp also led the team that developed the CC diagnostic software. In addition to his CC duties at the ESL, he has conducted more than \$14 million of externally funded lab research in low-energy use commercial and residential building design, software control algorithms, energy studies, low-velocity air movement studies, air movement in ducts, measurement and verification technology, advanced gaming

technology and building energy codes.

After finishing at New Mexico Tech, Culp earned a Ph.D. in Solid State Physics with an Electrical Engineering minor from Iowa State University.

1980's

**Dana Adkins-Heljeson '83**



Dana Adkins-Heljeson, the web manager for the Kansas Geological Survey, received the second annual KGS Outstanding Support Staff Recognition Award. He was presented the award for his work on the KGS website, which features technical databases, interactive maps, educational materials, a bibliography of Kansas geology and online publications. Adkins-Heljeson earned a bachelor's

in basic science at New Mexico Tech in 1983. Prior to moving to Kansas, Adkins-Heljeson was a bibliographer for the New Mexico Bureau of Geology and Mineral Resources.

2000's

**Annie Hohmann '09**



New Mexico Tech graduate Annie Hohmann graduated from the prestigious Engineer and Scientist Development Program on Nov. 3, 2014, while working at China Lake, Calif. Hohmann earned her bachelor's in chemical engineering in 2009.

Hohmann joined the ESDP program after college. The three- to five-year program offers employment while ambitious engineers and scientists mentor with leading science professionals. Many of the projects include the nation's latest defense, warfighter



weaponry and propulsion projects.

ESDP graduates work at China Lake for Naval Air Warfare Center Weapons Division (NAWCWD). A majority of significant advancements in weaponry have been developed and tested here. As the warfighter moves into the future, NAWCWD is leading the way by developing state-of-the-art weapons and technologies.

“I liked the flexibility of trying the work before you fully commit to it,” Hohmann said. “I found the area I liked from among many available to ESDP participants. Supporting the warfighter and working with great people is what I like best.” To graduate, participants must reach a required promotional level, earn a Level 2 Defense Acquisition Workforce Improvement Act certification and complete at least three rotational assignments. Each new college graduate is required to complete 300 training hours.

NAWCWD is a Department of the Navy

organization dedicated to maintaining a center of excellence in weapons development, and includes battleship integration, airborne electronic attack, robotics and more. For information on exciting ESDP job opportunities and qualifications, visit [www.navair.navy.mil/nawcwd](http://www.navair.navy.mil/nawcwd).

### 2010's

#### Chad Meyers '02 and Michelle Beierle '03



Chad and Michelle Beierle with their 2 sons

In the fall of 1999, Chad Meyers and I, Michelle Beierle at that time, both arrived in Socorro, NM to attend our first year at NMT. Chad was preparing to study Mechanical Engineering and I was preparing to study physics with an emphasis on astrophysics. I showed up to school early to attend the fall orientation; Chad

had already attended the orientation in the summer. The fall orientation culminated in a street dance located between West and South Halls (as the school layout was at that time). This dance is where Chad and I first met. Chad made small talk with me and we began dancing. We became instant friends and soon began dating.

Chad graduated from NMT in May 2002 after only 3 years at NMT (he had some hefty class loads, but loved it) with his Bachelor's Degree in Mechanical Engineering. Chad immediately moved to Fresno, CA.

Chad came back to visit in August 2002 and proposed to me at a park in Albuquerque. I graduated the following year, in May 2003 with my Bachelor's Degree in Physics with astrophysics option. The following month, June 2003, Chad and I got married on the beach in Monterey, CA – it was beautiful! Now, 2 boys and nearly 12 years later, we are happier than ever!!



Cody Champion

#### Cody Champion '14 and Lydia Wermer '13

Cody Champion and Lydia Wermer each received the very competitive Graduate Research Fellowships through the National Science Foundation. Cody earned his bachelor's and master's in biology, finishing in 2014. He is now working on his Ph.D. in microbiology at New Mexico State University.



Lydia Wermer

Lydia earned her bachelor's in mechanical engineering in 2013 and is working on her Ph.D. is Aerospace Engineering at Worcester Polytechnic Institute.

# where are they now

Michael Bauer '05

Akemi (Ito) Bauer '03

Hidataro Ito '09

## Tech Alumni/Family Reunion happened in Tokyo last year.

Three Tech graduates gathered for an alumni reunion (and family gathering) in Tokyo in 2014.

Michael and Akemi (Ito) Bauer, and Hidataro Ito are all Tech graduates. The Bauers took their three daughters to Tokyo and spent some time with family.

Akemi (Ito) Bauer graduated from Tech in 2003 with a master's in environmental engineering. She currently works at ECCI (an environmental consulting firm) in Little Rock, Ark., as a senior environmental engineer. She earned her Professional Engineer license in 2010 and primarily works on Clean Air Act permitting and bioremediation projects.

Michael Bauer graduated from Tech in 2005 with a two bachelor's in computer science and in biology. He earned his Ph.D. from the University of Arkansas at Little

Rock in bioinformatics in 2013. He is an assistant professor in the Division of Biomedical Informatics, working in the Myeloma Institute for Research and Therapy at University of Arkansas for Medical Science. His primary research focus is the molecular profiling of multiple myeloma using Next Generation Sequencing. Bauer was a member of the Pygmy

Rugby team and still plays with Little Rock Stormers Rugby Club. His team ranked fourth in the nation for Division 2 last year.

The Bauers live in Little Rock with their three daughters: Kana (7 years old), Sana (4) and Mana (2). They are expecting their fourth child in June. Hidataro Ito graduated from Tech in 2009 with

a master's in engineering management. After graduation, he returned to Japan and currently lives in Tokyo with his wife Naoko, daughter Niko (4 years old) and son Sazamaru (2). With his pharmacist background, he is working at life science division of Fujitsu providing information technology service for medical and pharmaceutical industries.



The extended Bauer and Ito family in Tokyo in 2014

# in memoriam

## **Dr. Colin Timothy Buckley, MD, PhD**



Colin Timothy Buckley, MD, Ph.D., 43, died unexpectedly January 25, 2015.

Colin was born on May 19, 1971, in Seattle, to Virginia and Patrick Buckley. He was the second-oldest of eight siblings in a large, blended family. Though his early childhood was spent in Seattle and in Kansas City, Mo., he grew up in Socorro and Sacramento, Calif.

He earned a bachelor's in 1994 in general studies and a master's in chemistry in 1998, both at New Mexico Tech. He then earned his doctoral and medical degrees at the UNM.

As a resident in dermatology, he distinguished himself for surgical skill as well as attentive and sympathetic care for his patients. While in medical

school, Colin helped to found Life Biosciences, an Albuquerque-based biotechnology firm. Despite his academic and professional obligations, Colin maintained an enthusiastic interest in physical fitness, especially through football, rugby, and weightlifting.

Colin was a loving husband and father. His greatest happiness and deepest devotion dwelled in Pamela, his wife of 16 years, and his sons, Alexander, Christopher, and Thomas.

## **Professor Paige Walrath Christiansen**



Paige Walrath Christiansen, 91, of Sylva, N.C., passed away April 11, 2015. Paige was born July 7, 1923, in Miles City, Mont. During his long professorship at New Mexico Institute of Mining and Technology in Socorro,

N.M., he captivated students and the general public with stories of the Wild West, Spanish travels in the west and of pioneers of gold and silver stories. During his tenure he wrote hundreds of journal articles and eight books.

In his early years at Michigan State University he ran track and played football. He then served his country in World War II for four years in Europe before returning to Michigan State to finish his degree and won two national championships for high hurdles.

## **Professor Robert Cormack, 1934-2015**



Dr. Robert Cormack, professor of psychology, passed away Saturday, March 14, 2015, in Socorro.

Dr. Cormack was the longest-serving, full-time member of the faculty, having come

to Tech in 1968.

Cormack received the Distinguished Teaching Award in 2004. For almost 30 years, he delivered the proem at commencement. Cormack retired recently and was granted emeritus status on Friday, March 13. Cormack is survived by his son Dr. Lawrence Cormack, who is a professor of psychology at the University of Texas at Austin, and four daughters, Nadia, Tania, Sonia and Chandra Salgado.

"Dr. Cormack was an institution at New Mexico Tech," said university President Dr. Daniel H. López. "He was a very accomplished researcher and teacher. The Tech family is saddened by his passing."

Donations can be made to the Dr. Robert Cormack Scholarship Fund, New Mexico Tech, Office for Advancement, 801 Leroy Place, Socorro, NM 87801.

## **Clarence Wally Cheasebro 1944–2014**

Clarence (Wally) Cheasebro, 69, Aztec, died at home on May 13, 2014. Cheasebro was born Oct. 13, 1944, in Lincoln, Neb. He graduated



**Clarence Wally Cheasebro**

from Graceland College in Lamoni, Iowa, where he was the district heavyweight wrestling champion. An elementary school teacher for 32 years in Missouri, Chinle and Many Farms, Ariz., and Farmington, Cheasebro had a master's degree in education from NAU in Flagstaff, Ariz., and a master's degree in science teaching from New Mexico Tech. Early in his career, he coached junior high wrestling and refereed high school wrestling matches. Cheasebro raised goats and showed them at the county fair. He served as a firefighter with the Cedar Hill Volunteer Fire Department and was an EMT. He was a Lions Club district governor and sang with the Four Corners Harmony Barbershop Chorus. After he retired

from teaching in 1999, he worked at Dominos Pizza in Aztec and at A-Med Supply in Farmington. He also was an over-the-road truck driver. Cheasebro was an elder in the Community of Christ and served in different capacities, including pastor and treasurer. He is survived by his wife, Margaret; and son, Philip.

**Richard J. Deubel**



Richard J. Deubel, 65, of Edgewood, N.M., died January 4, 2015, following a brief illness.

Richard earned his bachelor's in biology from New Mexico Tech in 1972. He retired from the New Mexico State Engineer's Office and then began his own water rights consultation business. He was a passionate outdoorsman, enjoying fishing, bow hunting, boating, camping, back packing, mountain climbing

and more. Richard was also a huge blues music fan and rarely missed a blues festival.

Richard was an avid Harley Davidson enthusiast, traveling through Alaska, Mexico, across Canada and to Sturgis. He was a loving son, father and grandfather, "He was the greatest father ever."

**Keith E. Dowler**

1934–2014



Keith Dowler, 80, graduated from New Mexico Tech with a degree in Metallurgical Engineering. In 1965 he established a Metallurgy Lab at Fairbanks-Morse Research Center in Beloit, WI. Returning to New Mexico in 1979, he was employed at the Los Alamos National Laboratory as Group Leader in the MST Division, and retired to Rio Rancho in 1994. Keith and his wife of 61 years, Consuelo enjoyed

traveling, playing golf camping and dancing.

**Ruth Ann Duggan**

After a wonderful life with husband David and daughter Erin, God has called Ruth Ann (Aerts) Duggan to the end of her 55 year earthly journey.

Ruth was the Brown Award winner in 1981, when she earned her bachelor's in physics at New Mexico Tech. Her education at Tech served her well in her career at Sandia National Laboratories, allowing her to compete well with the myriad of master's and Ph.D's. on staff there. She was active in recruiting fairs on behalf of Sandia down at New Mexico Tech, having a hand in getting a number of talented Techies to start their careers at Sandia.

Her career of 24 years at Sandia National Laboratories was spent developing security analysis methodologies including Physical, Information, Border, Cooperative Monitoring, Nuclear Non-Proliferation Verification, and Insider. Her last years were spent teaching international nuclear

security at various locations around the globe. She had the privilege to visit over 29 international locations during her life.

Ruth was an active member of Our Lady of the Assumption Parish and volunteered on many levels from teaching Religious Education Classes to serving on Parish and School councils.

Her passions include astronomy, old books, genealogy, crocheting, and going out to a movie. Her greatest joy came from time spent family and friends while entertaining at home or traveling all over the United States, especially when playing games, scrapbooking, and assembling jigsaw puzzles.

**Hart Gleason**



Hartley “Hart” C. Gleason was born in Worcester,

Mass., on March 28, 1915.

He spent his childhood in Worcester and attended Clark University for two years, then traveled west to attend the New Mexico Institute of Mining and Technology “School of Mines,” graduating with a degree in petroleum and geological engineering in 1939.

His work in the oil field was interrupted by World War II when he joined the Army Air Corps in December 1942 and served as a test pilot until February 1946. He continued in the oil industry, and started his own company, Mountain Crude Marketers. Accepting a new challenge, he went to work for Fenix and Sisson (Engineering consultants to the Atomic Energy Commission), which led him to the University of California’s Lawrence Livermore Laboratory. Then he worked as a drilling engineer, designing and supervising underground nuclear events.

Returning to the private sector in 1978, he began the consulting firm of Gleason Engineering in Grand Junction. In 1987 he

moved to his cabin home in Placerville, adding the fields of home inspections and foundation and septic system designs. Hart loved living in the mountains and the outdoor activities. He enjoyed golf and was an avid skier until he was 94.

Hart was a registered professional engineer for 60 years in Wyoming and later in Colorado and Utah. He was a Legion of Honor member of the Society of Petroleum Engineers, Rotary Club of Telluride, Elks Lodge 692, American Legion Post 12 and Christ Presbyterian Church.

Hart passed away peacefully on Nov. 29, 2014, from complications of pneumonia.

**Adam Mark Goswick**

Adam Mark Goswick, 31, passed away Thursday, October 9, 2014. Adam was born April 6, 1983 in Fort Smith, Ark. Adam was seven when they settled in Albuquerque.

He became a Cub Scout, and followed that path all the way to his Eagle Scout Award when he was only 14. Adam was an active

member of the Covenant Presbyterian Youth Group throughout middle and high school, participating in several mission trips to Mount Pleasant, Utah, Estes Park, Colo., and Deming, N.M. His travels as a Boy Scout took him on a Philmont trek, a sailboat cruise at Florida Sea Base, and a bicycle hike in Moab, Utah.

Adam began work as a busser at Garduno’s at the age of 15. Ready to quit after the first day, his parents persuaded him to give it three weeks. He stayed more than 10 years, through high school and college, working as a bartender for the last several years. He graduated from La Cueva High School in 2001.

Adam was a proud graduate of New Mexico Tech where he received his bachelor’s in mechanical engineering and felt himself forever a “Techie.” He worked for two years for Applied Industrial Technologies in Denver before feeling drawn back to Albuquerque.

**John Leo Orman**  
1949–2015

John Leo Ormand was raised in Albuquerque,



**John Leo Orman**

and graduated from New Mexico Tech in 1971 with a B.S. in physics, and was an officer of the Alumni Association in 1994. For the last four years he had lived in Hillsboro, Oregon.

**John W. "Bill" Powell**

John W. "Bill" Powell, 75, died Saturday, Feb. 4, 2012, at Hospice Family Care in Casa Grande, Ariz.

Bill was born February 21, 1936, in Deming, N.M. He married Carol Dowding, of Hanover, N.M., in 1956. Bill earned his bachelor's in mining engineering at New Mexico Tech in 1958. He and Carol then moved to Climax, Colo., where he worked for Climax Molybdenum Co. for 18 years and became an expert in the block-caving mining process. He also worked for Hecla Mining Corp. in Wyoming. In all, he spent

43 years in underground mining management.

A gifted musician, he played guitar, harmonica, some trumpet and piano. He played with many groups and family members in Colorado and New Mexico. He loved making music and was especially fond of jazz and Dixieland,.

When he retired in 2000 in Wyoming, he decided he was tired of snow and cold weather, so he and Carol moved to Alamogordo, where they resided for 10 years prior to their relocation to Casa Grande. In New Mexico, Bill was active in the Alamo Senior Center, playing guitar and harmonica there and for various nursing homes in the area, and for St. John's Episcopal Church services. He was also active on the ASC Nutritional Council. Gardening and hulling pecans were other activities he enjoyed here.

Survivors include his wife of 55 years, Carol Powell; two sons, William L. Powell, of Casa Grande, and E. Scott Powell, of Laramie, Wyo.

**Abe Silver Jr.**

Abe Silver Jr., former member of the Board of Regents at New Mexico Tech, died of congestive heart failure at the age of 89.

Silver joined the Board of Regents in 2007, a position he held through 2012.

Silver was a prominent businessman and a stalwart member of Santa Fe's philanthropic community. He was well-known in Santa Fe, along with his wife of 64 years, Marian. Together, the Silvers were involved in many Santa Fe charities and community causes, including The Santa Fe Opera, the Boys & Girls Clubs and the Museum of New Mexico Foundation. Abe and Marian Silver were named "Santa Fe Living Treasures" in 2008 for their work with museums, the Santa Fe Chamber of Commerce, Temple Beth Shalom Christus St. Vincent Regional Medical Center, and Rotary, among other organizations.

In 2010, then-Gov. Bill Richardson awarded the couple with the Governor's Award for Excellence in Arts.



The Silvers also were involved with the founding of Temple Beth Shalom. Other awards included Philanthropist of the Year for St. Vincent Hospital Foundation, Distinguished Community Service Award from the New Mexico Anti-Defamation League and the Paul Harris Award from the Rotary Club of Santa Fe.

Silver was born in Greenwood, Miss., on Feb. 17, 1926. Abe graduated from Tulane University in New Orleans. He met his future wife, Marian Petchesky in New Orleans, and the couple married in Santa Fe.

Silver is survived by his wife; son John and his wife, Gloria; daughter Margaret and her husband, Scott Jones; and daughter Carolyn.

# the last word

angelica perry

## Technical Communication Graduate Writes for Change

Angelica Perry (B.S. '14) took a leap of faith this spring: she left the comfort of her job in New Mexico Tech's Career Services and moved to Pittsburgh, PA. She aspired to be a professional grant writer for a nonprofit organization, a passion she developed as a student in NMT's Technical Communication program and as a volunteer for Puerto Seguro, a homeless day shelter in Socorro, NM. She had no jobs lined up. She simply jumped in feet first. Mere weeks after landing in Pittsburgh, she found herself overseeing \$34 million of grant funding for the Glade Run Foundation, a Pittsburgh-area nonprofit. "Deciding to move was terrifying," Angelica reflected. "I have never lived more than an hour from my immediate family, [...] it seemed so much easier to stay in New Mexico where everything was familiar and comfortable. Then I reflected on all of the great people I admired in my life and realized that they all had faced this same

dilemma: play it safe or follow your dreams. I knew exactly what would make me happy."

Angelica is the Grant Writer /Professional Writer for the Glade Run Foundation, the fundraising arm of Glade Run Lutheran Services.

Angelica graduated with a B.S. in Technical Communication (TC) and a specialization in Earth sciences. She credits her love for grant writing to Professional Writing Workshop, a required senior-level TC class. Dr. Elisabeth Kramer-Simpson, had tasked the class with writing grants for Puerto Seguro. Altogether, TC students have generated \$12,000 in grant money for the homeless day shelter. Angelica later secured an additional \$2000 on her own from the Episcopal Diocese of the Rio Grande. "My brief introduction to [grant writing] connected my skill set with my passion for nonprofits and completely changed the way I saw myself making a difference in my community," Angelica said. The following summer, Angelica enrolled in a

proposal writing workshop in Chicago through the American Grant Writers' Association and passed the Certified Grant Writer® exam.

During her senior year at Tech, Angelica continued her volunteer fundraising efforts for Puerto Seguro. As president of the NMT chapter of Engineers without Borders, Angelica organized a campaign in collaboration with 9 other student clubs to purchase supplies for and assemble 500 packs containing canned foodstuffs and toiletries for the homeless. The packs were donated to Puerto Seguro and distributed to needy across New Mexico.

Angelica's experiences at Puerto Seguro and at Tech have been invaluable in shaping her career goals and her sense of social justice. "At Puerto Seguro," she said, "one of the most valuable lessons I learned was the ultimate consequences of untreated or ignored mental illness. The way mental illness is addressed in this country is embarrassing and shameful. As a society, we are too quick to shy away from an issue that seems dangerous and



Angelica Perry, Cheryl Martin, Development Associate and Sheila Talarico, Executive Director of Glade Run Foundation.

unpredictable, and I saw firsthand how this affects individuals dealing with mental health problems and their families."

Angelica also credits the Technical Communication program that pushed her "far outside her comfort zone" and the critical thinking skills that she learned as a student at a STEM school. "Working closely with scientists and engineers will completely change the way you see the world and approach problem solving," she said. "I really internalized the idea that no problem was too big to be solved."

"Like everything else I've worked on in the past, [complex social issues] are just big problems that need solutions. It is my job to communicate to a donor how their contribution will work toward these solutions."



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