



In This Issue:

Celebrating the excellence of Tech women in the sciences, engineering and technology.



Sylvia Medina, '86, founder of North Wind, a consulting firm in environmental engineering, construction and technical consulting industries.

A word from the Director . . .



*Colleen Guengerich
Director of Advancement and Alumni Relations
May, 2014*

Fellow Techies,

It is with pride that we bring you, what I have come to name, the “Women of Tech” issue of Gold Pan. Women are part of our 125 years. What a long way we’ve come and what potential the future holds!

For the first 50 years of Tech’s history, women did not enroll. The first woman, Irene Ryan, to graduate (in 1939) from NMT is featured in this issue. She went on to become a major player and decision maker in Alaska. A revolutionary woman in her day. Tech’s legacy of women scientists and engineers didn’t stop with her. It took another 20 years until there were TWO women to graduate from Tech, but they also went on to do stupendous things. The gates were opened and they just kept coming. Today, our female students graduate faster than their male counterparts. They are enrolled in every academic department. Remember the days when the male to female ratio hovered at 5 to 1? Today it’s closer to 3 to 1. Impressive.

This winter I had the pleasure to spend the day with

one of our most successful alumnae. Sylvia Medina, class of 86’, (Environmental Engineering) has just started her second business after selling her first company for a hefty profit. She is the mother to young children, and believes in women and philanthropy. She is the epitome of a well-rounded person who believes strongly in service.

I travel the U.S. meeting with you at alumni receptions. I see these traits in all of you, a desire to give back and to make a difference. As we are stepping up our efforts to fundraise and build strategic relationships with industries to help fund research positions, please think about ways you can help Tech grow to compete with larger universities. We all know we are as good as those other schools, and probably better.

We need our name out there. As state funding continues to decrease, strategic relationships with industry and with our alumni matter more than ever.

Please think about the people you know, the businesses you work with and the philanthropists who believe in the future—and the science and engineering that will get us there. Reach out to me and let’s find ways to work together to get Tech’s reputation to the people that can make a difference.


Colleen Guengerich
Director of Advancement and Alumni Relations



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inside GOLD PAN ALUMNI MAGAZINE

John Dowdle

*President, NMTAA
 Math, 1960*

We are nearing the end of the 2013-14 academic year and are celebrating the 125th anniversary of the university’s founding. Over this long period, the school and its name – New Mexico School of Mines, New Mexico Institute of Mining and Technology, and New Mexico Tech – have changed, but one key element has been constant: Tech’s focus on brain power and excellence in educating its students – past, present and future. This strong reputation for that excellence is a key factor in the school’s success.



President López and John Dowdle signing the MOU.

During the past year a Memorandum of Understanding (MOU) between the New Mexico Tech Alumni Association and the University was reached. This has been a four-year effort which culminated last year when the MOU was reviewed and approved by the NMTAA Board and then presented to President López. He liked the MOU and gave it his blessing. We are working to get approvals from state and federal authorities, in particular 501(c)(3) status so contributions will be tax deductible.

The NMTAA has continued to recognize contributions to Tech in two areas: the Distinguished Achievement Award and the Distinguished Service Award. At graduation this year two awards were given to Tech graduates. The NMTAA continues to provide financial support to outstanding students through a variety of programs including class gifts, a family foundation and individual gifts. We expect to continue to provide this type of support in the future and call on new graduates to recognize the importance of “paying back” through donations to the NMTAA.

To ensure future success we need to strengthen enrollment in the NMTAA and plan to increase our energy level. Implementing future plans will require both financial and human resources. We encourage this year’s graduates to join us. At this stage the outlook for the NMTAA is bright and the need for active participation to implement our plans is clear. I welcome you to join us.

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*Michelle Bourret
 Inside back cover*

<http://www.nmt.edu>

*New Mexico Tech is an equal opportunity/
 affirmative action institution.*

Dear Colleen,
I am enclosing some pictures that were taken at the mountain lab in the 1960's.



Mary Montgomery

Mary and Earl Montgomery were the first resident custodians at the mountain lab in the 1960's.



Earl Montgomery

My husband, Evan L. Ausman Jr., aka John, was employed by NMIMT after receiving his master's in geophysics in 1963. He recently found these pictures and thought they



Langmuir Labs, 1965. Students and maintenance workers built the road to the Langmuir Labs. Mary and Earl Montgomery were the first resident custodians. Earl and Evan would clear the road.

Photos submitted by Romaine Johns Ausman.

might be of interest to others.

We hope to come to Socorro for some of the activities during the 125th year celebrations. We spent six years in Socorro from 1960 to 1966. I was active in the Dames Club. This organization included faculty wives and the wives of married students. I helped publish a recipe book that was compiled and sold as a fund raiser for this organization. The recipes, in this paper back book, were submitted

by members of the Dames Club and offered interesting and varied use of hamburger.

The club held a graduation luncheon each year and honored the wives of graduates with a PHT, Put Hubby Through. I have no idea who organized this club but it could have been Sally Smith, Anne Hume, or maybe Jacque Workman. Monthly meetings were held in the homes of faculty wives. I am still in contact with the some of the Dames

Club members or their daughters. These teenage girls were a source of baby sitters for our five children. Our two youngest were born in Socorro. These two now live in Anchorage and Chugiak, Alaska and consider Socorro to their their home town.

We enjoy the Gold Pan and hope to continue to receive the printed edition.

Sincerely yours,

Romaine Johns Ausman

Dear Editor,

I very much enjoyed reading Thom Guengerich's profile of Bill Macey in the Fall 2013 issue of *Gold Pan*. Let me add a few personal reminiscences from the early 1980s, when Bill Macey first ramped up his giving to Tech to the generous levels that have meant so much to the college in the years since then.

I first met Bill when—probably in the 1980-81 school year—I flew in my small plane with Don Salmon, Tech's first Director of Advancement, to Ruidoso for a lunch date with Bill. At that luncheon, Bill listened to our description of scholarship needs at Tech, whipped out a check book, and on the spot wrote a nice check for student aid.

Don and Bill established a rapport at that meeting, which led, within a few months thereafter, to another meeting with Bill, this time with his wife Jean at their home in Tucson. Don and I again flew by small plane, and Bill

came out to meet us at the airport. At that meeting, Bill and Jean agreed to a very large gift in support of the planned theater-conference center.

Before appropriating funds for the center, the State Legislature had asked us to raise a significant portion of the cost from private sources.

Bill and Jean's gift, augmented by generous contributions from many Socorro business people (in a fund-raising effort led by Holm Bursum Jr.), achieved the goal and assured that the new center would become a reality.

At that Tucson meeting with the Maceys, we suggested that Tech might like to name the new Center for them. Bill's reaction was, "No, no, we don't need that," but Jean chimed in with agreement to the idea. Before long, with the approval of the Tech Regents, it became the Macey Center.

For the balance of our time at Tech—until the summer of 1982—Don

and I, and particularly Don, continued to interact with Bill and Jean Macey, and Bill made clear his love for New Mexico Tech and his commitment to it, which resulted in so much generous support in the years that followed.

I can't forget the time that the Maceys took us out to dinner in Denver (I need not say what mode of transportation we used to get there), and my jaw dropped when I caught sight of the bill, more than \$100 for a party of four. It must have been Denver's finest restaurant.

Ken Ford
Tech President 1975-1982

The William B. and Jean M. Macey Scholars Program

The Macey Scholarship is among the most prestigious scholarships awarded at New Mexico Tech. The program is named after 1942 New Mexico Tech graduate William B. Macey, and his late wife, Jean. Mr. Macey has been among the biggest supporters of New Mexico Tech over the

years, including significant contributors to the Macey Center building fund in the early 1980s. The Macey Scholarship is the top financial honor for New Mexico Tech undergraduate students.

A statement of no more than two pages describing why s/he should be considered for designation as a Macey Scholar is required. Students are also required to submit at least two letters of recommendation.

Selection(s) are based on accomplishments in the classroom/research laboratory together with institutional service and other activities that have brought credit to the student and to Tech. These could include awards, honors, membership in campus organizations, part-time jobs, service to the university, research endeavors and other relevant activities.

Awards are distributed during the academic year following selection. One must be currently enrolled at New Mexico Tech in order to receive the scholarship.

the women of tech

the first 125 years

For New Mexico Tech's first half-century, the campus was almost entirely male.

Irene Ryan (1909-1997) was the first female graduate of the New Mexico School of Mines in 1939 with a degree in geology.

Ryan was involved in the oil and gas exploration of Alaska and went on to be a member of the Alaska Territorial House of Representatives, and the Alaska State Senate. (see separate story). Ryan would be the only woman to attend Tech until the 1950s.



Irene Ryan, first female graduate of New Mexico School of Mines.

In 1952, Christina Lochman-Balk (1907-2006) became the first female professor at Tech.



Dr. Lochman-Balk.

She received her Ph.D. at John Hopkins in 1933 and moved to Socorro in 1952. She served as Dean of Women and took a teaching position at Tech. She dyed her hair green for St. Pats.

Throughout the 1970s, 80s and 90s, the female student population steadily grew. By 2001, women accounted for 32 percent of Techies. In 2013, the percentage of female students was close to 35 percent.

In June 2001, professors Dr. Sue (Field) Dunston and Dr. Doug Dunston launched the Women's Resource Center to draw attention to the needs of women and

the undercurrent of chauvinism in some areas.

"We identified a need for a sense of community that was more respectful of women," Sue Dunston said.

The professors invited women students to talk



Dr. Dunston.

about their experiences as women on the Tech campus, which then had a female/male ratio of 1-to-3. The professors edited and combined the students' individual recordings into an 11-minute montage titled, "Women's Voices." They presented the recording to Tech administrators.

"We felt like someone needed to stand up for these students," she said. "We went to [Tech President] Dr. Daniel

López and he was very supportive."

With funding from Dr. López, she and Doug Dunston established the Women's Resource Center in 2001.

"With the student's input, we began a program of speakers and events designed to support women students at Tech and to create a campus culture that responded more effectively to diversity."

Since its inception, the Women's Resource Center has hosted an annual "Meet the Women Faculty" luncheon in the fall, which has been very successful. Now, more than 100 people attend. At the event, the women faculty introduce themselves. Dr. Barbara Bonnekessen served as the director of the Women's Resource Center from 2008 to 2014.

"Young women – especially incoming female students – can identify with the faculty," Bonnekessen said. "Women need to realize they are not alone. For

a girl to be the only one in class can be a difficult position. One of the things that will annoy any woman – young or old – is for any guy to ask, ‘Well, why are you even here?’ It can put a burden on young women that they shouldn’t have to deal with. Tech is difficult enough.”

Under Bonnekesen’s leadership, the Center also began hosting monthly luncheons with different topics of discussion – from harassment to time management and many things in between.

The Center does not have a physical space, but still serves women on campus. “It’s really important for girls to have a place – virtual or not – to discuss these issues,” she said.

Three years ago, the Center started a special event called “Lady Ada Lovelace Day.” Faculty members dress up as famous female scientists from history and assume their personalities. Dr. Lorie Liebrock (computer science) was the first Lady Ada Lovelace and has been succeeded



Dr. Lorie Liebrock (dressed as Dr. Lorie Liebrock)

by Jordana George. Dr. Rebecca Rice (biology) is Barbara McClintock. Dr. Penny Boston (earth science) is Beatrix Potter. And Dr. Al Stavely (computer science, retired) is Mr. Babbage. The event is always in March, which is Women’s History Month.

Bonnekesen successfully secured a grant in 2013 for a pilot program to recruit women from

community colleges. The grant allowed current Tech female students to serve as mentors to potential transfer students.

Sue Dunston said she’d like to see more recruiting done at an earlier age.

“Middle school is when many girls quit thinking of science and engineering,” she said. “That’s a set of cultural expectations and norms that needs to change toward – as one of the students in the ‘Women’s Voices’ recording put it—a one-to-one ratio.”

On December 10, 2010 New Mexico Tech welcomed its first sorority to the campus: Alpha Sigma Kappa—Women in Technical Studies®. “Alpha Sigma Kappa” represents

the social side, while “Women in Technical Studies” recognizes the goal of academic achievement.

Alpha Sigma Kappa is restricted to women in Engineering, Architecture, Mathematics, and Sciences. Women have an ever-growing presence in these fields; however still remain a minority in undergraduate classes, which can be challenging. These challenges extend to the role of professional women in meetings, work assignments, and promotions, so they strive to build a network of women who understand these challenges and are available for each other as a support group.



Members of Alpha Sigma Kappa participating in the “M” Mountain Run celebration.

biology-enthusiast uses
ORISE program to continue
research at national
laboratory

By Michelle La Vone



As a participant in the U.S. Department of Energy Carlsbad Field Office Fellowship Program, Karen Simmons has been able to continue her research on characterizing microorganisms collected from a salt dome near Los Alamos National Laboratory. Some microorganisms are capable of surviving at extremely high salt concentrations, so her research is helping determine how these microorganisms might interact with substances in the environment.

Although the realization that her time as a researcher at Los Alamos National Laboratory (LANL) in Carlsbad, N.M., was coming to a close crept up on Karen Simmons, her interest and enthusiasm in her microbiology project was far from dwindling.

Biology, after all, was a passion born from her childhood. “My parents had optical and stereo microscopes when I was growing up, and I enjoyed looking at a variety of

objects under them,” she recalled. “Microorganisms affect every area of our lives, from health to industry to the environment. As I started to realize how many microorganisms there are in the world and how big of an impact they have, I was excited to be able to

study them.”

With a bachelor’s degree in biology from the New Mexico Institute of Mining and Technology, Simmons applied and was accepted to the U.S. Department of Energy (DOE) Carlsbad Field Office Fellowship Program (CBFO), which allowed her to continue studying at the lab and learning about microorganisms. The program allows students to conduct mission-oriented research in DOE’s CBFO. It is administered by the Oak Ridge Institute for Science and Education (ORISE), which is managed by ORAU for DOE.

At LANL, Simmons characterizes microorganisms from a nearby salt dome and its overlying groundwater. Specifically, her research focuses on a Transuranic (TRU) waste repository where the salt dome is located. This repository was specifically chosen because of the effectiveness in preventing the waste from escaping, she noted.

“We want to know how the microbes will interact with the waste in the repository and how they would potentially affect the waste if the repository was ever breached and the waste escaped into the surrounding environment, including

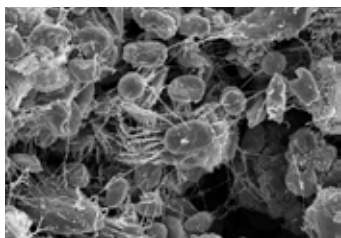


The U.S. Department of Energy Carlsbad Field Office is responsible for the Waste Isolation Pilot Plant and the National Transuranic (TRU) Program.

the groundwater,” she said.

Although high-salt environments are uninhabitable for most organisms because of the low water availability, a specialized set of microbes known as halophiles are able to survive the harsh conditions. Simmons incubates these halophiles under varying conditions at LANL and monitors their subsequent growth.

“Some of the experiments subject the halophiles



Tiny one-cell organisms called halophiles. Halophiles and methanogens are part of a hardy group of microbes called extremophiles, which thrive in the harshest environments on Earth.

to conditions similar to those in the repository, and others try to find out what the organisms do in a more ideal environment. This helps with developing models and scenarios that are required for regulatory purposes,” she said. One

of the goals is to see how the halophiles affect the solubility of the radioactive substances. This, in turn, helps determine how far escaped nuclear waste could potentially travel.

Simmons has been working on the project since 2010, following her graduation from New Mexico Institute of Mining and Technology, and has gained technical knowledge and skills in observation and analysis. She learns more about the microbes each day, and doesn’t plan on stopping anytime soon. Like all science, it takes time to understand the whys and hows.

“I didn’t realize that some microorganisms grew so slowly,” she said. “Some of our cultures have taken months or a year to show detectable growth. We are continuing to explore the potential of microorganisms that should be capable of various metabolic processes.” For more information about CBFO, contact cbfo.fellowship@orise.orau.gov.

Save the Date!

49ers 2014 October 16-18

Celebrate the 125th Anniversary of New Mexico Tech at the 49ers Homecoming.
Mark your calendars!



What was Tech like when you were here?
Who or what do you miss most?

Contact Colleen:

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See us on facebook at:

www.facebook.com/pages/New-Mexico-Tech-Alumni-Interaction/179837552054425

memories of a miner

irene ryan

irene e. ryan

Irene E. Ryan, born in the first decade of the 20th century, was a woman of firsts.

She was the first female aviator in the Territory of Alaska to fly solo, and the first woman to graduate from the New Mexico School of Mines. From her early years, it was clear that the woman born in Boston, Mass., in 1909 as Irene Esther Irvine was no ordinary individual.

After all, this was a woman for whom the Governor of Alaska ordered that flags be lowered to half-mast when she died in 1997.

Hers is a story of adventure and extraordinary achievement – all at a time when women, as a rule, didn't fly planes, become geological engineers, or run for public office. And so it was that a young Irene Irvine, fresh out of high school, was working in Border, Texas, as a bookkeeper for a construction company. As part of her job, she

often flew with her boss to construction sites, and that's when she first fell in love with flying. Meanwhile, an aviator uncle in Alaska regaled her with stories about the region, enough to entice her to move to Anchorage at age 22.

She arrived in Alaska with \$25 in severance pay from the construction company, and began her life of adventure.

First, she found work, beginning as a waitress and later as a bank teller. Irene began flying lessons at Merrill Field east of Anchorage, and on June 23, 1932, she was certified as the first female aviator in the territory to solo.

Whatever she saw from the open cockpit of her plane, flying over a still-primitive land once owned by Russia and inhabited by indigenous peoples, Irene wanted to learn more. She left the country now known as The Last Frontier to study geology at the New Mexico School of Mines.

It was there she met fellow



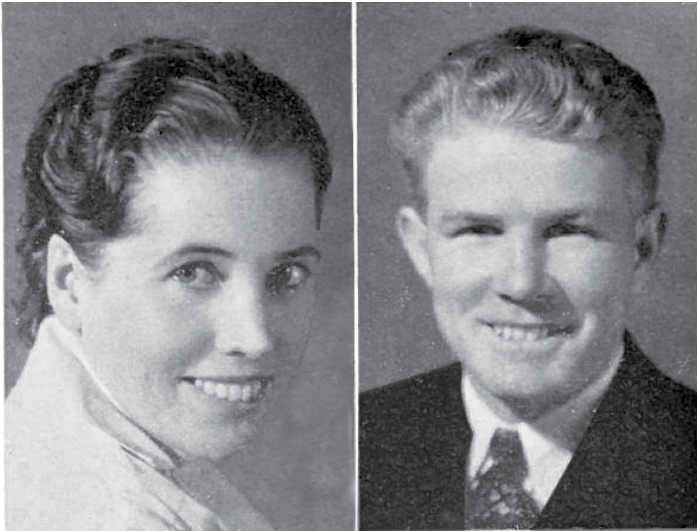
student John Edward “Pat” Ryan, who was studying geological engineering, the man who was to become her husband, business partner and political sounding board. The couple married on Feb. 19, 1938, and when she graduated from the School of Mines the following year, it was as Irene E. Ryan, the first woman to earn a diploma from the

school founded under a Territorial Legislature. Pat Ryan graduated in 1940.

Perhaps it was the still-lingering element of frontier that was part of New Mexico that drew her to Socorro and the School of Mines. Taking classes by and with a population made up entirely of men, must have been valuable early experience for what

was yet to unfold.

Accordingly, the Ryans's



Irene and John (Pat) Ryan, 1939

Ryan was an early pioneer in balancing marriage, work, motherhood and public service, long before the term “working mother” was coined. In February 1941, she gave birth to the couple's first child, Marcella. A month later, the couple moved back to Alaska, where their second daughter, Patricia, was born.

Sandi Sumner wrote an excellent book, *Women Pilots of Alaska*, that profiles 37 female aviators including Irene Irvine Ryan. The following history is from Sumner's book.

daughter, Marcella, recalled that the young family lived at Merrill Field in a 10-foot-by-10-foot tarpaper shack her father had built, before moving into an unfinished cabin in town. The cabin had no running water, and the family would trek into Anchorage once a week for Finn baths. Irene washed diapers in a bucket and hung them to dry over her daughter's stroller, while taking Marcella to the babysitter.

At the start of World War II, Irene was working for the Civil Aeronautics Authority (now the Federal Aviation Administration)

developing airfields in the territory, a job considered a wartime essential. Post-war, she designed Anchorage International Airport, among a host of others.

Dinner-table conversation centered on politics, and in the book, Marcella remembered people sitting around the table talking about the future of Alaska and its people. Among the family's treasured mementos are posters for the Kennedy-Johnson presidential ticket in 1960. Pat Ryan couldn't be politically active because he had a federal Civil Service job, but he encouraged his wife to do so.

And she did. Ryan was active in the Alaska Democratic Party, and served in the 1955 and 1957 Alaska Territorial House of Representatives, and the 1959 Alaska State Senate.

The information that follows was culled from an obituary on Ryan published in the *Anchorage Daily News*, which reads like an entry for Who's Who, or the Encyclopedia Britannica.

Ryan practiced as a consulting civil, mining, geological and petroleum engineer. She not only worked for a number of entities, but also owned her own consulting firm. From 1970 through 1974, she was commissioner of the Department of Economic Development for the state of Alaska, under Gov. William Egan. Legislators had a great deal of respect for Ryan's expertise in the extractive industries, atypical of a male-dominated governmental body.

Among the many projects to her credit is the construction of the military pipeline from Skagway through Canada through Fairbanks. Ryan, with her husband, also developed and built a housing subdivision in Anchorage.

She was a member of the Alaska Petroleum Section of the American Institute of Mining Engineers, Alaska; Miners Association, American Society of Civil Engineers, American Society of Professional Engineers,

American Society of Women Engineers, American Association for the Advancement of Science Arctic Institute, National Association of Geology Teachers, the Resource Development Council, and Commonwealth North.

Ryan also collected a number of honors, including an honorary doctorate of science degree from Alaska Pacific University in 1985, Alaskan of the Year in 1986, and her fellowship in the Society of Women Engineers.

In *Women Pilots of Alaska*, daughter Marcella said her mother was happiest in jeans and a wool shirt,

working at a mining site or taking core samples at a drill site.

Former Alaska Attorney General John Havelock once said, "It was really extraordinary that a woman could make her way in a man's world, in a man's topic." Irene later said, "I have found that the best way to be accepted on equal ground is just to go ahead and quietly do the job at hand."

She may have done her work quietly, but her achievements continue to reverberate.

New Mexico Tech is proud to have Irene E. Ryan among its corps of extraordinary graduates.



Irene and John (Pat) Ryan

The Irene E. and John E. "Pat" Ryan Papers, on repository with the University of Alaska, Fairbanks; Alaska Polar Regions Collections & Archives, document the couple's lives and work in Alaska from 1930 to 1997. A subgroup of the series (Irene E. Ryan Papers, 1939-1997) contains her unpublished autobiography as well as short biographical essays and notes about her life. The materials also include a 1939 catalog from the New Mexico School of Mines, diaries, calendars, appointment books and address books.

In one box are photo albums from Mrs. Ryan's tenure as Commissioner of the Alaska Department of Economic Development, her trip to Russia and China as a member of the U.S. Society of Women Engineers People to People delegation in 1986, family photos and an album documenting a birthday celebration for Governor Egan.

Her files cover such seminal issues of the time as statehood, energy resources, the Alaska pipeline, and the D-2 provision of the Alaska Native Claims Settlement Act. Mr. Ryan's records mainly include correspondence, client and subject files related to his work as a consulting engineer.

The archives in Alaska contain records that document their lives and work in Alaska. Irene's papers make up the bulk of the collection and include some personal papers, calendars, and photographs as well as correspondence, notes, and reports generated from her work in politics and as a consulting engineer. Although her work in the Alaska Democratic Party is well-documented, there are few records from her service in the Alaska legislature. The collection does include Ryan's reading files during her time in the legislature and as Commissioner of Economic Development.

a tech success story

sylvia medina

Editor's note:

Advancement Director Colleen Guengerich and Gold Pan writer Valerie Kimble spent a day with New Mexico Tech alumna Sylvia Medina in Idaho Falls, Idaho, where she has lived since 1988. They wanted to know what Medina was doing since graduating from New Mexico Tech; the visit unveiled some surprising facts and stories worth sharing.



Sylvia Medina, Class of '86

Sylvia Medina is a spirited woman, petite, dressed in what might be called laidback “city clothes” – long coat and boots, suited to the frozen winters in Idaho Falls. She belies her age of 51, moving with an energy of someone years younger. Sylvia picks us up at our hotel and off we go.

First clue to her busy life is three cars seats, one for each of her children – seven-year-old twins Victor

and Takara; and dimpled, four-year-old Tiago, who we got to meet briefly. Her husband, Bruce Miller, a photographer who travels internationally, is at the couple’s beautiful countryside home, a rolling expanse of trees and grass dotted with children’s toys and guarded by the family dogs.

This pastoral scene belies the busy life of Sylvia Medina, whose brain must work overtime to juggle the many interests in her life, from the personal to the launch of a new business venture, far, far from the corporate world she left behind a few years ago.

We enter a nondescript building on Park Avenue in the city’s downtown sector. The area is like most older districts – some new businesses taking over empty spaces, antique stores, boutiques and colorful cafes that serve huge and delicious portions of fried potatoes; and why not? Idaho is potato country, God’s country – in more ways than one.

Walking through a plain office, we hit pay dirt: the working quarters for the Green Kids Club, an endeavor that combines Sylvia’s love for animals with her ideals for a healthy planet and a mission that teaching children to understand and respect the planet they call home is a way to save the environment, one child at a time.

It’s a comfortable space with a small pantry, the ubiquitous coffee machine and small fridge; Sylvia sits at a desk and works at two computers simultaneously.

The room is busy but not cramped, with huge, comfortable couches, toys and a television. Notes are scribbled on a whiteboard, and posted around the room are pictures and scrawled “I Love You” crayon notes from her children.

We sit and visit for a long time.

Let’s Go Back in Time

Sylvia Medina was born in Eloy, Ariz., but raised

in Flagstaff, as the third of four children. She was reared by a strong-willed mother who held tight religious views; her father was a civil engineer and land surveyor who, when Sylvia was younger, often took her along on surveying assignments.

“I worked for my dad for three summers starting at around age 13,” she said; and it is perhaps from him that Sylvia derived her interest in engineering. Her lineage is a mix of Spanish, French and Aztec bloodlines, a rich heritage and one of which she is proud.

How did she end up at New Mexico Tech?

“I ended up in Socorro by default,” she said, her parents having moved to the small town in central New Mexico for a brief period in the early 1980s. During her senior year of high school, Sylvia met a mentor who showed her how to raise animals, an interest which intensified and matured over time.

When her family left

town, Sylvia stayed in Socorro and enrolled at New Mexico Tech as a biology major, graduating with her bachelor’s in 1986. And, again, almost by default, Sylvia chose to earn a second degree in environmental engineering, which she received in 1988.

Much has changed since she last walked the sunny campus of New Mexico Tech.

“When I look back, there were just a few professors who helped me get through ... Tech needs to intervene when students are having problems,” she said, alluding to her own struggles at the time. Sylvia was pleased to hear that today, the Center for Student Success offers tutoring, and an Early Warning System that flags students who are failing a course or having personal issues, so that there *is* time to intervene, to meet with students and get them back on track.

What hasn’t changed is what Medina learned at New Mexico Tech: “Tech

teaches students to think, and how to get through tough problems,” she said. Indeed, teaching students to think creatively, and to apply theory to practice, remain hallmarks of the quality of education students still continue to receive at Tech.

Armed with two baccalaureate degrees in science and engineering, she then moved on to the University of Idaho for a master’s in chemical engineering.



Now What?

Sylvia knew she had to move beyond academia and into the real world. She got a job with EG&G, worked on the Three-Mile-Island program, and spent time at Department of Energy sites.

Over time, and at age 35, Sylvia pondered the idea of launching her own consulting firm. Daunted by the prospect of “risking it all” and no job benefits, Sylvia called her father for his advice. “Just do it,” he replied, and she did, in 1998. The result was North Wind, a consulting firm in the environmental engineering, construction, and technical consulting industries.

“I started North Wind at my dining room table,” Medina said, with a modest \$25,000 line of credit. “The first big contract that first year was for a quarter of a million dollars.” At its peak, North Wind had sales of \$124 million in just one year. As president, she oversaw 400 employees working in 16 offices.

In time, the business morphed into the North

Wind Group with nearly 500 employees under its umbrella. Headquarters remain in Idaho Falls, in a modern facility built during Sylvia's tenure; but many of its operations are now based out of Alaska, following the sale of NorthWind in 2009.

"One thing I learned at Tech was to surround yourself with good, technical people," she said. "I've always tried to hire the very best. At North Wind, I took care of my people," she said, including rewarding them with substantial cash bonuses based on performance. During her years at the Department of Energy's National Laboratory in Idaho Falls, Sylvia found herself one of only a few minority individuals – and one of the few woman in her group – among more than 50 men. "Fortunately, she said, "Tech taught me how to interact with men."

That sentence carries a great deal of weight, but perhaps only other women working in what are still male-dominated fields can understand its relevance.

"I've grown through it all – the good and the bad," she said.

Several years ago, Medina sold the company – for a handy profit – and was to stay on for four years during the transition. However, as often happens in the corporate world, she was squeezed out after three years.

Now what?



Enter the Green Kids Club

Sylvia found early success in the corporate world, but after giving birth to twins Victor and Takara in 2006, her priorities began to change.

"Everybody is so tightly



Sylvia Medina at Yellowstone National Park, where the concept of The Green Kids Club originated.

wound dealing with government contracts. It's a different world, very stressful" she said.

Sylvia also found that with twins, you don't sleep. "At all," she said. One day she found herself watching cartoons with the twins.

"From what I could see, there was nothing with any real substance," she said.

At the same time, Sylvia was acutely aware that unless attitudes change, the world as we know it is slowly disappearing.

"I saw it going away," she said. "I watched the animals disappearing

through our excursions to Yellowstone National Park and the nearby Grand Tetons, both areas where endangered species issues abound."

One day while rocking her daughter to sleep, Medina began to seriously ponder the realities of a changing world and what could be done about it; later, aboard a plane on company business, she began to develop the concept of what would become the Green Kids Club with the theme that "Our world is going away, and we need to save it." Medina also especially liked the club concept that anyone can join at no cost.

Here the storyline boards the serendipitous express for the trip of a lifetime. Sylvia and Joy Eagle, an illustrator and her collaborator, boarded a jet for New York City in February 2013 on their way to the 110th annual International Toy Fair, the second largest toy fair in the world with some 6,000 exhibitors.

Flying in to NYC, Sylvia happened to sit next to the founder of Infinity with Disney, and told him about the Green Kids Club. “I’m a pretty good

salesperson,” she said – and other points in this article will underscore that trait.

So here’s the storyline she told the corporate head: Two small children, who are my twins, drink the water from the magical green spring, and are instantly able to communicate with animals. The stories – eight so far – are a kind of travelogue series at this point, unfolding in different countries, and introducing readers to the flora and fauna indigent to each country, and issues that threaten the balance

of nature, including poaching and the growing list of endangered species.

Sylvia wrote the stories and Joy illustrated them. The Green Kids Club includes a collection of plush-toy characters from the book and tiny accessories, including a sleeping bag and backpack. Her toymaker also makes items for Disney and Sesame Street, among others. “I just stumbled into this network,” she said. Indeed, serendipity is a theme that seems to weave in and out of her life.

At any rate, her seatmate on the flight to NYC was impressed, and later stopped by the Green Kids Club booth. He wasn’t the only one. Sylvia found herself talking with representatives from Toys R Us, Disney, and two major box-store retailers. Orders for toys and books were coming in – with a possibility of landing a large client in the wings. She also met a CEO with Leap Frog, and talked with him about potential apps.

Medina also had an inquiry from a university asking her to write a book,



Toy Fair in NYC. Joy Eagle and Sylvia Medina



Sylvia Medina, Dr. Cathy Aimone-Martin and Jackie (Lynch) Francke

as told by the school mascot, about fracking, for which she would have to “pull out my technical background” to write. “Many toy companies both small and large are talking with us!” she said.

Which takes us back to Park Avenue, where the Green Kids Club crew is busy. Medina said she tried to have Green Kids Club merchandise made in the United States, but has found the cost prohibitive. The books themselves are

self-published, but can be outsourced for a fraction of the cost.

“I’ve been learning a lot about toys,” she said, information which has led to some modifications along the way. “It’s a whole different world compared to dealing with radioactive waste.”

And yet, the stories explore real-life activities and events.

For example, in *The Jade*

Elephant, the Green Kids overhear elephants talking about a plan to trample a nearby village (an event which actually occurred). The Green Kids lead an effort to get everyone to work together, even while introducing modern farming methods.

As Medina explains, at the back of every book is a “science section” with factual data and tips “on how to make a difference.” In other words, the book introduces

an environmental or wildlife issue, then offers suggestions on how each reader can help. As another example, in *Gorilla Roar*, the issue is poaching and the country is Rwanda. Ever the philanthropist, Medina sent 100 copies of the book to schools in the South African country.

“I try to make each story different,” she said, adding that among ideas for future books is one about Andean cats, which currently number only 2,500 worldwide. She also has an English-Spanish book called, *El Elefante de Jade*, which reflects “technical Spanish,” rather than conversational language.

Sylvia also is trying to start an international Skype program where Green Kids Club members become virtual pen pals with their global counterparts. The idea is to recruit children from around the world to plant a tree, to be kind to animals, to save water and bike to school instead of walk – all simple concepts that could have a tremendous impact.

“I know the concept is good – but I don’t know where it’s going to go,” she said.

A Philosophy of Philanthropy

Medina has a philanthropic outlook, and she practices what she preaches. Sylvia has been involved with the Institute for Economic Empowerment for Women (IEEW), whose motto is “Peace through Business” for the past seven years. She also is active in Women Impacting Public Policy, which she finds to be a good fit.

Sylvia serves as School Board Chairman of Holy Rosary Catholic School, which her children attend, and where she is active. The experience has brought her back to the faith of her childhood. “Watching 130 children singing a hymn lifts your heart,” she said.

A most ambitious project coming to fruition is to build a facility to house the Snake River Animal Shelter on 16 acres across

from a park. Sylvia’s powers of persuasion were enough to convince the Mayor of Idaho Falls to donate the land for the project; on the day of our visit, she squeezed in a City Council meeting, where she got the green light to continue. So far, the project has secured more than \$900,000 in cash gifts, in-kind donations and pledges toward a goal of \$1.3 million. Once the shelter is built and dedicated, Sylvia will resign her post as president of the shelter’s board of directors; she also heads the capital campaign.

An avid hiker and conservationist, she somehow finds time to explore the outdoors with Bruce and their children. They’re planning a trip to Disneyworld, and travel often to their other homes in Belize and Montana. In the meantime, Sylvia enjoys learning beading with her children and, with them, planning new adventure for the Green Kids series.

“A lot of things are

happening right now,” she said. “It’s very exciting, but I’m trying to step back and keep it in perspective. We’re learning about licensing and manufacturing. Shipping is another issue.”

From North Wind to winds of change, Sylvia Medina has had the creativity and the drive to

move from one field to its extreme opposite – and she does it with an innate enthusiasm, and a deep-seated sense of hope.

“I’m busy, but it’s a good busy,” she said. “Yes, I can say that I’m happy.”

*Valerie Kimble/
New Mexico Tech*



women of tech

lillian herkenhoff

mother of tech

lillian herkenhoff: the grand
matron of driscoll hall

One of the more influential women in the storied history of the New Mexico School of Mines/ New Mexico Tech never taught a formal class. Nonetheless, Mrs. Lillian Herkenhoff was recognized by many students as their mother-away-from-home, in her role as Grand Matron of Driscoll Hall, the student dormitory and where Mrs. Herkenhoff, a widow, reared her own four children

She was born Lillian E. Altemeyer on Nov. 28, 1882, in Ohio. Miss Altemeyer married Harry J. Herkenhoff (born in 1883 in Ohio) on Feb. 22, 1905, in Chicago, Ill., at the age of 22.

In time, the couple migrated west due to a connection Mr. Herkenhoff had with a cashier at Augustus Hilton's bank in San Antonio, N.M. The influenza epidemic claimed Mr. Herkenhoff's life in 1918, leaving behind a

young widow and four growing children.

As recalled by a grandson, Gordon E. "Corky"



Herkenhoff Jr. of San Acacia, Mrs. Herkenhoff settled in Albuquerque to work as a laundress for a

brother-in-law who lived there, however, the situation did not pan out. In 1920, she moved to Socorro to join the staff at the N.M. School of

Mines where she supervised the dining and residence halls from 1920 to 1933 and from 1941 to 1950.

The Porphry, the student yearbook, was first published in 1925 under the direction of School of Mines President Edgar H. Wells. The very first photograph featured in *The Porphry* was that of Lillian Herkenhoff, to whom the first edition was dedicated:

Dedication – To Lillian Herkenhoff this book is affectionately dedicated. Loyal and true and helpful, she has been our mother away from home.

For the record: *The Porphry* was published every year from 1925 to 1941.

Publication began again in 1948 and continued unabated until the 1970s.

As a young widow rearing four children, Mrs. Herkenhoff became a role model for many students in her era and beyond. All four of her own children – Gordon, Walter, Earl and Harriett – made their own marks in the early history of the school, and went on to successful careers.

She did this without benefit of Social Security benefits or other assistance programs which simply did not exist at the time.

Her sons all graduated from the New Mexico School of Mines with degrees in mining engineering: Gordon in 1928, Walter in 1935 and Earl in 1936. Daughter Harriet was the longtime secretary for President Wells.

Gordon, a civil engineer, founded Gordon Herkenhoff and Associates, one of the state's most prominent firms. He served as the director of the state Bureau of Public Welfare. He also received the Distinguished Alumnus Award from New Mexico Tech

Walter was superintendent for the Kennecott Copper Co.'s mine in Santa Rita, N.M. He also worked for several years in Los Alamos.

Harriett married a mining graduate, Eric Erickson, who worked for Anaconda Copper Mining Co and the Army Corps of Engineers. While secretary for President Wells in 1928, Harriett saved most of the university's official records in a fire that destroyed the Old Main building.

Grandchildren and great-grandchildren of Mrs. Lillian Herkenhoff are still among the strongest supporters of New Mexico



Tech, including Gay Herkenhoff-Dwyre and Corky Herkenhoff. A generous endowment fund at New Mexico Tech in mineral engineering bears the Herkenhoff name.

Mrs. Herkenhoff and her children established living quarters in the basement of Driscoll Hall and had various jobs at the school. Corky recalls that his father worked in the kitchen for a while. The Herkenhoff grandchildren must have had difficulty pronouncing the family matron's surname, because they all grew up calling her "Granny Turkey," he said.

So-called women's activities back in the mid-1920s were mostly confined to the social pages of local newspapers.

As such, the May 18, 1925 edition of the *El Paso Herald* carried this item:

"President and Mrs. Wells entertained the seniors with dinner at the Val Verde Hotel on Sunday, May 17. The 13 seniors and members of the faculty will be the guests of the women of Socorro at the Val Verde at a luncheon on Wednesday, and Mrs. Lillian Herkenhoff, matron at the dormitory, will be the hostess of a senior luncheon on community day."

More than two years later, as reported in the Dec. 29, 1927 issue of the *El Paso*

Herald, Mrs. Herkenhoff was among the guests at a luncheon hosted by Mrs. Pierre Allaire of San Antonio, N.M., with guests "reliving memories of the early days in New Mexico."

In 1955, records show that Mrs. Herkenhoff moved to Spokane, Wash; and, years later, to Mesa, Ariz., where she died in November of 1981, a year shy of her 100th birthday.

By Valerie Kimble/
New Mexico Tech

Lillian Herkenhoff Memorial Fund

This endowment will fund a professorship in Mineral Engineering in the name of Lillian Herkenhoff as well as provide monies for scholarships and mineral purchases for the Mineral Museum at Tech.

Donations may be sent to:

Advancement Office
New Mexico Tech
801 Leroy Place
Socorro, N.M. 87801

To contact us, please call 575.835.5616 or email advancement@admin.nmt.edu. Thank you.

women of tech

christina lochman-balk

past faculty

Among the mid-20th century pioneers charting a path for women in higher education was Dr. Christina Lochman-Balk, a world-famous scientist and respected teacher, who arrived at New Mexico Tech as a “trailing spouse” until Fate intervened.

She is remembered as a woman ahead of her time, not only for her success as a researcher and scientist, but also for her early role in recycling and mentorship for women.

Christina Lochman was born in Springfield, Ill., on October 8, 1907. She received both her bachelor’s and master’s at Smith College in Northampton, Mass., before earning her Ph.D. in geology from Johns Hopkins University in Baltimore, Md., in 1933.

She taught at Mt. Holyoke from 1935 to 1947. A chemist and educator, Mary Lyon founded the then-Mount Holyoke Female Seminary in 1837, nearly a century before women gained the right to vote. The college, the first of the Seven Sisters (the female equivalent

of the once predominantly male Ivy League), was founded to encourage higher education for women as a serious pursuit.

Dr. Robert Balk had joined the Mt. Holyoke faculty in 1935 as chairman of the Geology Department, and it was only natural that the two would gravitate to one another. He was born in Estonia in 1899 and emigrated to the United States in 1924 for a position with the Department of Geology at Columbia University.

With their marriage in 1946, Christina Lochman-Balk was reduced to the position of instructor, as nepotism laws did not permit a husband and wife to serve as faculty at the same time. This would happen to her again at the University of Chicago in 1947; and later at New Mexico Tech.

It was in 1952 that the couple left Chicago for New Mexico Tech in Socorro, where Robert Balk joined the professional staff at the New Mexico Bureau of Mines and Mineral

Resources under director Eugene Callaghan (1949-57). While he enjoyed teaching, Robert Balk missed working in the field, and the Bureau job again afforded him that opportunity. Christina Balk,



meanwhile, was hired as a stratigraphic geologist with the Bureau.

Everything changed for her on the morning of Feb. 19, 1955, when TWA flight 260 from Albuquerque to Santa Fe, with her husband onboard, crashed into the Sandia Mountains a few minutes after takeoff. Robert Balk and 12 other passengers aboard the plane perished.

Robert Balk was headed east for a meeting of the scholarship committee of the National Science Foundation, and chose

Flight 260 so he could meet briefly in Columbia, Mo., with his daughter, Mary. Initially believed to be pilot error, the cause later was revised to imply that instrument failure was to blame for the crash.

Gold Pan credits information culled from *The Crash of TWA Flight 260* by Charles M. Williams (UNM Press, 2010) and “In Memory of Christina Lochman-Balk, 1907-2006,” by Jane C. Love, former managing editor of “New Mexico Geology,” a Bureau publication, for much of the information in this article.

One source described the situation as one in which a housewife is sent back to work following a tragedy, but this viewpoint fails to give sufficient credit to Christina Lochman-Balk, the individual.

Here was a woman who was a respected paleontologist, who enjoyed an international reputation for her work in Cambrian trilobites, and who already had a presence within the Bureau. (Trilobites [“three lobes”] are a well-known

fossil group of extinct marine arthropods whose first appearance dates to the Early Cambrian period 521 million years ago).

It's possible that as the 1950s gave way to the 1960s, an era of radical change, Christina Balk may have by then grown tired of the restraints of nepotism, and would have broken free of them to pursue her own research and personal goals.

Christina Balk did stay on with the Bureau until 1957, when she joined New Mexico Tech's Department of Geology under Clay T. Smith, who was later quoted as saying that her arrival immediately elevated the department's national status. She could teach any course the department offered, including optical mineralogy, if necessary.

Jane Love, a onetime graduate student under Dr. Balk, described her as a woman of intelligence with an indomitable spirit and physical stamina, known for her warm personality and sense of humor. Dr. Balk recognized that geology was a non-traditional field

for women, and made it a special point to encourage her female students. The tribute includes delightful memories from several of Dr. Balk's graduate students, including the following from Rena M. Bonem, Professor of Geology at Baylor University: "I remember hiking through the fields (some occupied by bulls) and mountains of Montana back five miles to a remote outcrop where there was a block whose surface was covered by trilobites. We carefully removed the entire surface and placed it in our backpacks.

"On the way back out, I thought I was going to die, and Dr. Balk just kept going. She finally stopped to take a break about a mile from her truck, and when I tried to stop, she said I could keep moving. I explained that I needed a break too, and she understood."

And there is this lovely section: "Christina also is remembered locally for befriending a great many of Socorro's cats. Rena Bonem

remembered caring for 36 Siamese cats while Christina went to the International Geological Congress in Prague in late August 1968; however, as the first day of the technical sessions was to begin, the Soviet Union invaded Czechoslovakia.

"I still have an image in my mind of her stopping Russian tanks and telling them that she needed to get back to her cats because she had a novice cat sitter at home," she recalled. Allan Sanford, who was a neighbor and professor of geophysics at New Mexico Tech, explained how Christina kept them all fed: "When the Rio Grande dried up nearly every summer in the early 1970s, we would recover from potholes a large number of carp that Christina would freeze and use as cat food."

Mary Franklin, a Socorroan with connections to both the community and the college, recalled this: "Long before cities were recycling, Christina and my mother were collecting paper, cardboard, aluminum and glass as a way to raise money

for the (animal) shelter. Christina drove all the recycling to Albuquerque and sold it."

Christina Lochman-Balk retired from New Mexico Tech in 1972; she moved to Santa Fe in 1993, where she lived in a retirement community until her death on March 8, 2006. She was 98 years old.

In 1964, Christina established an endowment fund in memory of her husband. She also established a fellowship in her own name to support student research in earth science in 1986. In 1996, she was awarded the President's Citation from The Paleontological Society for her distinguished accomplishments, and she was elected as a Fellow in the American Association for the Advancement of Science.



president's club dinner—2014

2014 president's club dinner
The annual President's

Mexico Tech Chamber
Orchestra performed in



Gaby Benalil conducts the New Mexico Tech Chamber Orchestra

Club Dinner on April 12 was a great success, thanks to the generosity of our students and other volunteers. The event serves as “Thank You” to the benefactors of the President’s Club Scholarship fund. More than 150 guests attended, including students, donors and speakers. Members of the student chapter of the Institute of Electric and Electronic Engineers assisted with valet parking and escorting guests to the front doors of Fidel Center. The New

the atrium of Fidel Center, while the New Mexico Tech Tea Club served teas from the Victorian era, in recognition of the 125th Anniversary of New Mexico Tech. Members of Tau Beta Pi and the Student



Government Association assisted guests with name badges and escorted them to the third floor terrace for a cocktail hour.

Guests were escorted to their seats by members of the student body. The dinner was a reminder that New Mexico Tech is celebrating their 125th Anniversary throughout the year. The room was arranged in the Victorian style of the late 1880s through the mid-1900s. Long tables were



and hyacinths enriched the atmosphere with a light fragrance emanating throughout the room.

Dr. Daniel López, President of New Mexico Tech, welcomed the guests. Gaby Benalil, New Mexico Tech Orchestra conductor and music instructor, enchanted the guests during dinner with her cello. As dessert was being served, the spotlight went up, the lights began to dance and the music quickened. Reynaldo Maestas, a mariachi soloist, sauntered through the ballroom, singing in celebration of Dr. Daniel López’s tenure at Tech. Richard Carpenter, the President of the New Mexico Tech Board of Regents, presented a plaque



Reynaldo Maestas

filled with bric-a-brac: candelabras, ivory picture frames and photos of the time period. Hydrangeas

in recognition of Dr. López's 20-plus years of service to New Mexico Tech.



Reverend Andrew Pavlak,

Melissa Jaramillo-Fleming, Vice President of Student and University Relations, introduced the first guest speaker of the evening, Reverend Andy Pavlak, pastor of San Miguel Catholic church, which is celebrating its 400th anniversary in 2015. Reverend Pavlak spoke of the grant that the Hilton Foundation bestowed upon the church to finish renovations of the church and to build a Smart Classroom for after school programs to benefit students of Socorro.

Jerry Armijo, Treasurer of the New Mexico Tech Board of Regents, presented two awards. The award for Distinguished Faculty was presented posthumously to Dr. Stirling Colgate, New Mexico Tech President from 1965 to 1975 and long-time physics professor

and researcher. Stirling's wife, Rosie, accepted the award and spoke of their years at New Mexico Tech and the impact that Stirling had on the physics world.



Rosie Colgate, accepting the Distinguished Faculty Award posthumously for her husband, Dr. Stirling A. Colgate

Armijo presented the Distinguished Alumni Award to Brian Luginbill, who graduated from New Mexico Tech with a degree



Jerry Armijo presenting Brian Luginbill with the Distinguished Alumni Award.

in Petroleum Engineering in 1979. Brian established the Excellence in Energy Scholarship, which will provide financial support for undergraduate students in the Petroleum Engineering Department.



Caitlin Guenther, a recent recipient of the President's Club Scholarship.

The evening's second guest speaker, Caitlin Guenther, is a recipient of the President's Club Scholarship. She spoke of the necessity of the scholarship for her to complete her dual bachelor's in astrophysics and math this year. All of her other resources for financial aid had dried up

and the scholarship made it possible for her to finish. She is now planning to attend the University of Melbourne in Australia to continue her studies in astrophysics.

The evening culminated with closing remarks from Dr. López and Melissa Jaramillo-Fleming, thanking the guests and donors for their contributions to the President's Club Scholarship and reminding everyone of the need of continued support and dedication to the students of New Mexico Tech.

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 or 575-835-5352.



spotlight on faculty

dr. claudia dias wilson

Dr. Claudia Dias Wilson discovered at an early age that she wanted to study engineering. Growing up in Brazil, Wilson was always surrounded by engineers. Her father, and a couple of cousins were engineers – so it was natural for her to gravitate towards engineering.



“I started thinking about studying sciences or engineering when I was about 14,” she said. “I enjoyed chemistry, physics and math – and I didn’t enjoy geography or history as much. So, I knew it had to be science or engineering.”

Wilson has been on faculty at Tech since 2005 and relishes working with the engineers of tomorrow. She is the advisor to the concrete canoe team and

the steel bridge team (senior design class teams), both of which compete at a regional conference. In addition to her teaching load, she also conducts federally-funded research, examining whether public buildings would withstand earthquakes in New Mexico. (Yes, central New Mexico has seismic potential.)

She and her husband, Dr. Afonso Souza, have a 2½ son, Andre, and they live in Socorro.

As a teen-ager, she considered pursuing architecture, but she thought it was too closely related to the arts and didn’t incorporate enough numbers, math and physics.

“I was afraid I’d get discouraged,” she said. “I had cousins and family friends who are architects and civil engineers and my parents took me to talk to them and encouraged me to start considering engineering. My parents started talking to me about the advantages of civil engineering. They said, ‘Try it because it is close

to architecture but it is a much broader field which will give you an endless number of opportunities.’ If I had done architecture, it would have been difficult to switch to engineering. But with a bachelor’s in engineering, I could have easily switched to architecture if I didn’t like it.”

Her extended family is full of engineers, but she credits her mother and father as her strongest influence.

In Brazil, college entrance exams are discipline-specific. Once accepted into a school of engineering, prospective college students in Brazil would have to take a completely different entrance exam for a different program.

She applied to the Universidade Federal de Minas Gerais in Brazil, but ultimately she accepted an offer that she couldn’t refuse – a full-ride athletic scholarship at Florida State University in Tallahassee. Claudia was a competitive swimmer as a youth; her prime races were the

400 meter individual medley and the 200 meter backstroke. She was the Brazilian champion a couple times, which garnered the attention of U.S. college swimming coaches.

“It’s hard to do sports in Brazil [while in college],” she said. “The professors there aren’t very understanding. So, I went to Florida State and joined the team and they paid for everything.”

The life of a student-athlete may seem rigorous and demanding, but the school did everything to



make the full schedule as hassle-free as possible.

“They spoiled us,” she said. “They put us in

apartments. Our meals were all made for us – and on our schedule. If we had class during meal time, they’d make sure meals were ready for us at all times. We had a maid come in once a week. They paid for tutors. I just had to go to school and swim. It was unbelievable. I am so grateful that I was given so much.”

When she arrived in Tallahassee, she was not fully fluent in English. She could read well, but she wasn’t fully confident in her writing or conversational abilities. That soon changed. “I had no choice but to pick it up fast,” she said.

Claudia’s family lives in Belo Horizonte, a city of about 2.5 million residents in southeast Brazil, about five hours north of Rio de Janeiro. When Claudia was 5 years old, her father started his own Ph.D. program in France, where the family lived for six years. That international experience – and learning a new language – helped her feel comfortable coming to the United States for the first time as a 19-year-old

college freshman.



Belo Horizonte, Brazil.

Throughout her bachelor’s program, she never felt any challenges or obstacles being a woman in an engineering program. Instead, she felt like she had to prove herself because she was an athlete.

“It was harder for professors to accept that I was an athlete, but it was never a problem that I was a woman in a male dominated field,” she said. “It’s always in the back of their minds; they treat you different because they don’t think you’re serious. They thought I was there for the scholarship. That was something that really bothered me, especially when I was starting out. But I was a good student and when I got the best grades in the class, they took me seriously.”

Wilson finished her

bachelor’s in five years, but the university kept her on scholarship for the fifth year – even after she had used her four years of athletic eligibility.

As she was finishing her master’s degree – also at Florida State – she had hoped to go to work designing bridges. She visited civil engineering firms to get an idea of the daily routine of civil engineers – and she didn’t like what she saw.

“Working for a large bridge design firm, would require me to sit in a cubicle, be responsible for one aspect of design of each bridge and have very little interaction with people,” she said. “I had the wrong idea. I knew I would like the end product, but not the day-to-day activities and what it would require. That was disappointing.”

She had worked as a Teaching Assistant and occasionally filled in for professors, both of which she enjoyed.

“That’s when I started thinking about a Ph.D.

program,” she said. “A lot of firms require a Ph.D. for bridge design anyhow, so I thought it would be a good idea whether I stayed with bridge design or decided to teach.”

At Florida State, graduate students are not often allowed to teach engineering classes, but the faculty made an exception for Wilson. She taught Engineering 201: Statics.

“I absolutely loved it,” she said. “I had 100-plus students and I loved it. That’s when I decided that I wanted to teach.”

She finished her doctorate during the summer of 2005 and accepted a faculty position at New Mexico Tech at about the same time. Claudia and Afonso moved to Socorro that August when she began teaching. The couple met in Brazil when they were both involved in competitive swimming. He did his bachelor’s in Brazil, his master’s at Florida State and his doctorate at the University of Texas-Austin, where he still maintains a research position in marine biogeochemistry.



Dr. Afonso Souza, Claudia, and Andre.

She truly enjoys teaching college students because they bring such enthusiasm to engineering and research.

“They’re just so fresh and full of energy,” she said. “I

can propose anything and they’re up to the challenge. In class or with research, you can come up with an idea that seems like so much work, but the students say, ‘Oh, that’s cool.’ ”

Every spring, Wilson takes a large group of upperclass student to the American Society of Civil Engineers regional conference. This event hosts student competitions in the steel bridge design and construction, concrete canoe and technical papers.

This year, the Tech steel bridge team finished second in the region, which qualifies them for the national competition in Akron, Ohio.

“I’m really excited for them,” she said. “They

spent an enormous amount of time on those projects. ”

The team of eight students is Bjorn Boydston, Jason Fang, Jesus Flores, Breanna Gonzales, Stefan Ketchan, Sam Mied, Will Ross and Austin Wall. They took on the steel bridge as their senior design project; however, the competition requires much more than the class project.

“I focus more on design, management aspects, economics and presentation – not necessarily on the quality of the welding,” she said. “Fabrication must be good for the competition, but it’s not really part of senior design course.”

Six other students threw themselves into the concrete canoe competition: Patrick Gallegos, Jonothan Kruse, Taylor Murphy, Merline Montoya, Alex Oliphant and Mario Rodriguez.

“I’m really proud of them,” Wilson said. “It was really challenging this year. It’s a demanding project and they really took it seriously.



The Steel Bridge team is (standing) Will Ross, Bjorn Boydston, Austin Wall, Jason Fang, Stefan Ketchan; kneeling are Jesus Flores, Dr. Claudia Wilson, Breanna Gonzales, and Sam Mied



The concrete canoe team is (back row) Jesus Flores, Jonathon Kruse, Mario Rodriguez, Taylor Murphy; in the middle row are Patrick Gallegos, Alex Oliphant; in front are Dr. Claudia Wilson, Merline Montoya, and Robin Skelton. In the bear suit is Sam Mied)

They had a really good canoe and we were really competitive. The theme this year was pirates and they dressed up as pirates even for their presentation. It was hilarious!”

Another Tech student earned second place in the technical paper competition. Ivan Perez Gonzales wrote a paper based on research he has been doing with Wilson. He summarized their work on developing a prioritization method for structures that have initially failed screening for seismic performance.

“We came up with a prioritization method where we would essentially look at some of the features of the buildings that had not passed the rapid visual screening and determine which should be analyzed first,” she said.



Ivan Perez-Gonzalez won second place in the Technical Paper Competition

That research project was initially funded by the Federal Emergency Management Agency, or FEMA, through the New Mexico Department of Homeland Security and Emergency Management, in 2010.

“They weren’t pleased with the results because we found that most structures aren’t passing the visual screening and need further analysis,” she said. “I think they are seriously concerned with the amount of work and money that would be required to address all these issues. Unfortunately,

they preferred to focus their efforts and funds in resolving flooding related problems.”

She continues to work on characterizing buildings and their earthquake-worthiness, but students are now funded by the National Science Foundation’s Alliance for Minority Participation program.

While at Florida State, Claudia found role models in faculty, including several women. She said the most influential was Dr. Lisa Spainhour.

“She was in my department and I had classes with her,” Claudia said. “It’s important to see women managing so well their family lives and their career. I’ve had lots of women role models, but I think the biggest is my mother, who is not an engineer. She’s the most hard-working person I’ve ever known. She always told me I can do anything and be anything as long as I worked hard.”

*By Thomas Guengerich
New Mexico Tech*

career services

sam myers simms

Alumna Sam Myers Sims recently returned to Tech's campus in search of interns for The Aerospace Corporation, where she is a project engineer for the Space Innovation Directorate. Having worked with interns from other universities in the past, Sims was eager to incorporate Tech students into Aerospace's program



"The research going on at Tech is amazing," she said. "It made me really proud to share it with my co-worker who was very impressed."

With parents in the U.S. Air Force, Sims grew up traveling the world. She considers Albuquerque her hometown, having spent three years in elementary school there and ultimately graduating from Manzano High School. Her father,

a chemical engineer, was a regular judge for the New Mexico Science Fair. So during elementary school she made the annual trip down to Socorro and knew early on she wanted to attend Tech.

As a metallurgical engineering student, her favorite class was a multi-semester design course.

"I loved the hands-on aspect and it taught me to work in a team," Sims said. "It was also very fulfilling as a student to be able to turn in a final product to a customer. My favorite non-engineering course was Dr. [Frank] Etscorn's Wok Cooking, where I knew I would get to eat a great meal once a week and listen to his stories."

Speaking about the impact of her Tech professors, she said "I have three professors that really stand out for me, and not for the classes they taught but for taking the time to sit down and talk with me. Dr. Osmal Inal, Dr. Purcell and Dr. Gillian Bond would tell me how I was doing, what I could do



Sam Myers Sims strikes a pose at a launch site with one of the communications dishes.

better, and gave me advice. You don't get that at other schools."

Sims pursued graduate studies at Vanderbilt University, where she felt it was lecture and test-centered, rather than the hands-on atmosphere she had experienced at Tech.

"I was operating and

preparing samples using a Transmission Electron Microscope (TEM) at Tech," Sims said. "At Vanderbilt you had to be a Ph.D. student before they would let you anywhere near the TEM. I feel Tech gives so much more to their undergraduate students than other institutions."

Asked if she faced any challenges as a woman in STEM, she said, “I am very direct and to the point. Working on projects I will fully explain my opinions and push everyone to get things done. I think sometimes there is the double-standard in that a woman is labeled bossy or domineering, but a

man doing the same thing is labeled a go-getter or self-starter. Overall in my college and professional careers I haven’t had to deal with any overt issues because I am a woman in a male-dominated field. But I would say the challenge was in middle and high school. Being labeled smart or a nerd, which tend to have negative



Sam Myers Sims with her children waiting for the Mythbusters show to start. Yes, she’s wearing a New Mexico Tech shirt “from back in the day.”

connotations at that age, is hard to deal with.”

Currently Sims’ main project at The Aerospace Corporation is mission assurance on three university-built satellites that will be part of a larger mission consisting of 13 satellites and one rocket.

Sims describes her work as, “Talking to the university teams on a weekly basis to keep abreast of their schedules, and issues, as well as provide them technical advice. I’m helping to make sure they are successful on orbit and that they don’t do anything

to harm their neighbors on the rest of the mission.”

Sims was excited to come back to Tech saying, “It had been a long time since I’d been on campus. I just wanted to stay and hear more about the great work being done at Tech.”

Alumni with internship and employment opportunities are asked to reach out to Career Services at 575.835.5060 or careerservices@admin.nmt.edu.

*By Nicole Gayer
New Mexico Tech*



Sam Myers Sims in the facility where her team puts together the rocket with the satellite payload.

**NEW MEXICO TECH'S
Fall 2014 Career
and
Graduate School Fair**

**Tuesday
September 16, 2014**

**Macey Conference
Center**

9:00am -2:30pm

**Recruiters, register for
the Fair and post open
positions at:**

<https://www.myinterfase.com/nmt/employer>

construction notes

bureau of geology

bureau of geology
construction ahead of
schedule

The new building that will house the Bureau of Geology and Mineral Resources is ahead of schedule and under budget.

The new Bureau building will be 85,000 square feet and three stories. The new Bureau will be able to consolidate all its lab spaces into the new building. The New Mexico Mineral Museum and the Bureau's bookstore will have modern, accessible spaces for the public. The building was expected to



be completed in March 2015, but construction is already at least one month ahead of schedule, according to Director of Special Projects Miguel Hidalgo.

“It’s going to be a stunning building,” Bureau Director Greer Price said. “It’ll be the first time we’ll all be in one building in more than 50 years. I think it’ll be a landmark and a nice addition to the campus.”

The main lobby will feature public spaces – the Mineral Museum on the north side and the publication office on the south side. Administrative offices will be above the publication office. The museum will include a second-floor classroom for visiting school children.

Currently, the Bureau has most of its offices in one building, with the museum and some laboratories in the Gold Building. Price said he expects to see an increase in visitors once the Bureau relocates.

“People have a hard time finding us and finding the museum,” Price said. “The new building will be the first thing people see when they come in on Bullock Avenue.”



Socorro Mayor Ravi Bhasker, President Daniel López, Director Greer Price and County Commissioner Danny Monette.



The west half of the building will have three floors, with labs on the first and second floor. The second and third floors will house offices, conference rooms, and classrooms, including a Smart Classroom.

Price said the new museum will allow for much larger exhibits. Currently, less than half of the museum's collection is on display. Price said the exhibit space will almost double.

As of May 1, the general contractor, Bradbury Stamm, is currently working on site utilities, interior floors, plumbing and mechanical rough-ins, exterior insulation, siding and roofing systems.

"The weather has been very cooperative," Hidalgo said. "That's one reason we're doing so well. And there's been no major snafus. Often, when you

start to see the building come out of the ground, you start uncovering underground utilities and other subsurface problems, but everything has gone as planned."

Hidalgo said he is working diligently with the contractor to stay ahead of schedule on ordering casework, cabinetry and other equipment.

The project has also allowed Tech students to observe and learn about construction. Civil engineering students with

professor Dr. Claudia Wilson have been visiting the site on Friday afternoons to get an on-the-ground look at project management.

The construction project is funded by \$18 million in general obligation bonds, approved by the voters of New Mexico in November 2012, and a \$6 million appropriation approved by the state Legislature and Governor Susana Martinez in March 2013.

*By Thomas Guengerich
New Mexico Tech*



new v.p. for academics named

warren ostergren

dr. ostergren named new v.p.
of academics

New Mexico Tech President Dr. Daniel H. López announced on May 21, 2014, that Dr. Warren Ostergren has been selected as the new Vice President for Academic Affairs.

Dr. Ostergren is a professor and chair of the Mechanical Engineering Department at Tech. He was selected after a national search created a pool of 25 applicants and four finalists. He officially takes over the job effective July 1, 2014. Dr. Peter Gerity announced his retirement in mid-2013 and officially stepped down in January 2014. Dr. Mary Dezember has served as interim vice president.

“In the end, Dr. Warren Ostergren was selected for this position because he presented the best mix of appropriate education, skills and experience,” Dr. López said. “Specifically, he has proven to have a unique talent for dealing with difficult problems

and constraints and how to manage growth in a constrained fiscal environment.”

The four finalists each spent a day on campus, meeting with the Council of Chairs, interviewing with Dr. López and hosting a public forum. The university also allowed interested people to submit anonymous comments about any of the finalists.

Overwhelmingly, the comments for each of the candidates were positive; López said Ostergren had the most widespread support – from faculty, staff, students and the research divisions.

Those comments helped gauge the depth and breadth of support on campus, López said. However, two other factors weighed the most. “First, the reviewing committee had very

positive commentary about Dr. Ostergren,” he said. “Second, during the interview with me, he came across as the most knowledgeable about New Mexico Tech – because he works here – and how to deal with conflicting interests. He demonstrated a level of maturity and temperament – attributes that are difficult to quantify, but important to consider in selecting an individual who has the best potential to succeed in this position.”

Ostergren earned his bachelor’s in mechanical engineering from the University of Rochester in 1967, his master’s in engineering from Brown University in 1969 and his Ph.D. in mechanics from Rensselaer Polytechnic Institute in 1976.

He worked for GE from 1968 to 1999, first in Schenectady, N.Y., then in Lynn, Mass., finishing

his GE career as F414 Engine Program Manager. Throughout his time with GE, he was largely involved with gas turbines and aircraft engines.

In 2001 and 2002, Ostergren worked as Vice President of Engineering at WASTECH in Portsmouth, N.H. and took his first academic job, serving as adjunct professor at York County Technical College in Wells, Maine.

Ostergren joined the New Mexico Tech faculty as an adjunct professor in 2003 and became an associate professor in 2004. He has been the department chair since 2009 and also serves as an adjunct in the Management Department.

He is the P.I. or co-P.I. on four research grants. He has served as thesis advisor or committee member for 44 New Mexico Tech students in mechanical engineering and management.

In 2007, he won the Distinguished Teaching Award, which is presented at commencement.



Dr. Ostergren accepting the Distinguished Faculty Award from Dr. López in 2012.

Graduation



THE
AVERAGE
GPA IS 3.218!

67 PERCENT HAVE
GPAS OF 3.0 OR
GREATER!

5 PERCENT HAVE GPAS
LOWER THAN 2.5.

ALMOST ONE-THIRD OF
GRADUATES (32 PERCENT)
RECEIVED AT LEAST ONE F.



Two graduates
finished with a
perfect 4.0 GPA.

The male-to-female
ratio of this year's
Graduating Class is
2.1 to 1.



As of May 2014,
New Mexico Tech
has awarded 7,787
Bachelor's degrees
in the history of the
Institute, 2,941
master's degrees and
417 Ph.D.s

2014!

The most well-represented department was Mechanical Engineering, with 45 bachelor's degrees being awarded over the year. Mechanical Engineering is also the most well-represented department in master's degrees as well, with 15 master's degrees.

One student completed his bachelor's degree in three years. And 146 - or almost 65 percent - completed their bachelor's degree in 6 years or less.

MORE THAN 75 PERCENT OF THE UNDERGRADUATES HAIL FROM NEW MEXICO.

ONE STUDENT RECEIVED 2 SEPARATE DEGREES: A BACHELOR'S & MASTER'S DEGREE IN BIOLOGY.



alumni awards

igor gonzales

jose lópez

The New Mexico Tech Alumni Association recognized two graduates for their career achievements at the commencement ceremony. The 2014 Distinguished Achievement Award winners are Jose López, M.D. and Igor Gonzales.

Mr. Igor Gonzales

Gonzales came to New Mexico Tech as a Fulbright

Executive Vice President and Chief Operating Officer for Barrick Gold on May 2, 2012. He was previously President of Barrick's South America region, a position he held since 2005.

Gonzales joined Barrick in 1998 and has over 30 years of experience in the mining industry. He played a key role in

strong performance in safety, production and cost management.

He is a board member for two mining companies, Hubbay Minerals and Sierra Metals. He is currently retired and lives in Peru. Igor is a prime example of the professional distinction and achievement that a sound technical and managerial education that New Mexico Tech can provide.

Dr. Jose López

López is a New Mexico native. He grew up in tiny Penasco, north of Taos, where he graduated from high school. He then graduated from New Mexico Tech with a bachelor's in chemistry. While at Tech, he was a Tech Scholar and the

recipient of the Morris F. Stubbs Award given to the top Chemistry Graduate. He went on to receive his M.D. from the UNM School of Medicine in 1981, graduating summa cum laude.

He has since become a nationally known and highly respected authority on thrombosis and blood coagulation. He is currently the Chief Scientific Officer at The Puget Sound Blood Center as well as Professor of Medicine in the Division of Hematology at the University of Washington School of Medicine.

Dr. López has published more than 350 academic papers and has been cited 7,245 times ... and counting.



Igor Gonzales accepting the Distinguished Alumni Award from Tech president López and Alumni Association president John Dowdle at the 2014 commencement ceremony.

Scholar. He earned a Master of Science degree in Extractive Metallurgy in 1984. He previously had earned his bachelor's degree in Chemical Engineering from the University of San Antonio Abad in Cusco, Peru. Gonzales was appointed

the successful growth of Barrick's South American business unit and has also been integral to the development of the Pascua-Lama project. Under Mr. Gonzales' leadership, the South America region consistently demonstrated



John Dowdle congratulating Dr. Jose López for receiving the Distinguished Alumni Award at the 2014 Commencement.

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1960's

Raul A. Deju
(Class of '66/'69) BS/PhD
Just published "Planet in Conflict" with Dr. Tapan Monroe dealing with the conflicts between environmental protection, social equity and energy production.

Barney P. Popkin
(Class of '64-'65) Hydrology.
Popkin is a consultant on ADB and USAID funded projects in Africa, Asia, Latin America the Caribbean and the Middle East.

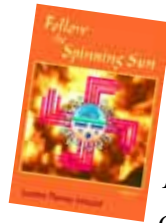
1970's

Leandro Thomas (Tom) Gonzales
(Class of '70/'71) BS/MS recently retired from the Los Alamos National Laboratory where he worked as a mathematician, nuclear physicist, and engineer. He has now written his first novel.

Follow the Spinning Sun, www.FollowTheSpinningSun.com explores why the Anasazi



abandoned their beautiful homeland in what is now the Bandelier National Monument, making way for the Los Alamos Scientific Laboratory and the founding of the town of Los Alamos.



Gonzales' book has been nominated for the International IMPAC Dublin Literary Award - an award presented to a novel which makes a lasting contribution to excellence in world literature. The Award is jointly sponsored by the City of Dublin, Ireland and IMPAC, a productivity improvement company which operates in over 50 countries. *Follow the Spinning Sun* is available at Amazon, Barnes and Noble, neighborhood bookstores, and Sunstone Press.

Gonzales earned his bachelor's in mathematics at Tech in 1970 and his master's at Tech in 1971.

James Ivie
(Class of 1972) is a regional engineer for Gulf of Mexico and Southern Louisiana for Baker Hughes in Lafayette, La., where he has worked for 25 years. He also recently welcomed great-granddaughter, Abigail, to his family.

1980's

Scott W. Tyler
(Class of 1983), EES Awarded the Hem award in hydrogeology from the National Groundwater Association. Tyler worked with Dan Stephens and continue to work with Fred Phillips, Phil Kyle and John Wilson in the department. Contact him at:



775.224.3815, www.ctemps.org or www.unr.edu/geology/people/scott-tyler

1990's

Diane (Morris) Jaramillo
(Class of '96) Associates in General Studies, was promoted to Corporate Document Control Coordinator for KMG Chemicals Inc., headquartered in Houston. She is in charge of one plant, two divisions, and the corporate office. She is responsible for documentation, policies, procedures and more, which keeps her hopping! She lives in Pueblo, Colo., with her husband, two cats, two horses,

and three dogs. She wrote that, "In my spare time, what little there is of it, I participate in trail rides and gymkhanas with my horses."

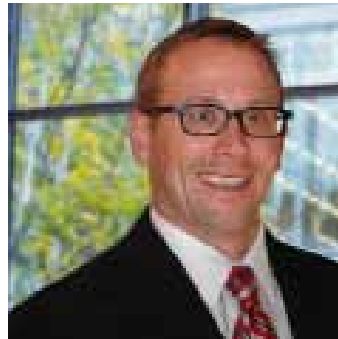
Patrick Radabaugh

(Class of '95) BS in EE from New Mexico Tech and a master's degree in EE from Michigan State University.

Dewberry, a privately held professional services firm, recently promoted Patrick Radabaugh, a licensed Professional Engineer, has been promoted to associate at the firm's Denver office. The firm said the Radabaugh's work has helped grow the water/wastewater engineering practice in the Southwest region.

He has more than 15 years of experience in wastewater treatment plant planning, design, and construction. He has served as project manager, lead engineer, and construction manager on various wastewater projects including lift stations, treatment facilities, process optimization, and planning studies. Radabaugh's specialties include master/facility planning, flow and load projections, chemical and biological process modeling (including Biowin), process optimization, process design, energy conservation, clarifier

modeling, and biological phosphorus removal. He earned his bachelor's



from New Mexico Tech and a master's in environmental engineering from Michigan State University. He is a member of the Water Environment Federation and the Rocky Mountain Water Environment Association. Dewberry is a leading professional services firm with a proven history of providing architecture, engineering, and management and consulting services to a wide variety of public- and private-sector clients.

Established in 1956, Dewberry is headquartered in Fairfax, Va., with more than 40 locations and 2,000+ professionals nationwide.

2000's

Kendra Velasquez

(Class of '06) Graduated from the University of Colorado, Anshutz Medical

Campus School of Dental Medicine in May 2013, and received a Degree of Doctor of Dental Surgery. Working in Rio Rancho, NM at Sundance Dental Care.

Jake Scarbrough (Class of '07/10), BS Mechanical Engineering/MS Engineering Management and **Jessica Trujillo** (Class of '99/08) BS Chemical Engineering/MS Material Engineering were happily married on Friday, Sept. 27, 2013, at Nature Pointe in Tijeras, N.M. Jake proposed to Jessica while in London, England, in June 2012. Both continue to work at Los Alamos National Laboratory.



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calendar of events

july through december

JULY

4



21st Annual Fourth of July Concerts and Firework display - New Mexico Tech Performing Arts Series and EMRTC present music, family fun, and food. Fireworks! Free. 11 a.m. to 10 p.m. N of Macey Center. Bring your own chairs. **Do not bring fireworks to this site.** www.nmtpas.org.

5

First Saturday Tours at the VLA

First Saturday Guided Night Sky -Telescope viewing at Etscorn Observatory

AUGUST

2

First Saturday Tours at the VLA

First Saturday Guided Night Sky-Telescope viewing at Etscorn Observatory

16

NMT Convocation

17

Fall Semester begins

23

Hot August Car Show

30-31

Socorro County Fair



SEPTEMBER

6

First Saturday Tours at the VLA

First Saturday Guided Night Sky Telescope viewing at Etscorn Observatory

16

NMTCareer Fair

18-19

President's Golf Tournament

18 VIP flight

19 Two flights



OCTOBER

4

First Saturday Tours at the VLA

First Saturday Guided Night Sky-Telescope viewing at Etscorn Observatory

10-11

12th Annual Socorrofest

16-18

49ers Celebration and Alumni Homecoming – 125th Anniversary NMT



NOVEMBER

1

First Saturday Tours at the VLA

Exploration Day- opportunity for potential students to explore Tech.

First Saturday Guided Night Sky-Telescope viewing at Etscorn Observatory

18-23

27th Annual Festival of the Cranes - Bosque del Apache Refuge



21-23

Festival of the Cranes Arts & Crafts Fair

DECEMBER

6

First Saturday Tours at the VLA

First Saturday Guided Night Sky -Telescope viewing at Etscorn Observatory



Luminarias on the Plaza, Art Stroll & Christmas Electric Light Parade

20TH ANNUAL

PRESIDENT'S CLUB
GOLF TOURNAMENT
September 18-19, 2014

www.nmt.edu/presidents-club/golf-tournament



alumni receptions

upcoming receptions

golden reunion

upcoming receptions

JULY

7

Artesia, NM

Wellhead Restaurant
332 West Main Street

8

Midland, TX

Clear Springs
Restaurant
5707 Andrew Hwy

AUGUST 2

Elko, NV

TBA

FALL

Check the Alumni

Events page @

[www.nmt.edu/](http://www.nmt.edu/advancement)

advancement

for updated
information

**Locations we hope to
be visiting, fall of 2014**

Los Alamos, NM
Tucson & Phoenix, AZ
Farmington, NM
Alexandria, VA
Bethesda, MD

OCTOBER

16-19

49ers at New Mexico
Tech Campus
Opening Reception
6-8pm Fidel Center
2nd floor

50th class reunion elicits golden
memories of days gone by

Four New Mexico Tech alumni shared memories of their student days on the Socorro campus and provided updates on their current lives. Keith Dowler, Ronald Fortune and Nelson Welch, Class of 1964, and Scott Baum, Class of 1954, shared the spotlight at the May 9, 2014 Golden Reunion Dinner. Accompanying the honorees were spouses Connie Dowler, Nedra Fortune, Nina Welch and Karen Baum.

Scott Baum, the elder statesman of the group, knew each of the New Mexico Tech presidents from Dr. E.J. Workman to Dr. Daniel López. He noted that the current president



Scott Baum ('54)

“has done a marvelous job, one of the best (presidents) we’ve ever had.”

After graduating from Tech with a degree in petroleum engineering, he joined the U.S. Army and then attended law school. “It was downhill from there until I met (my wife),” Baum said. He recalled the late Langdon Taylor as an excellent petroleum engineering professor. Langdon once asked Baum to make a speech about

the oil and gas business to a group of international graduate students.

“They were from foreign countries and didn’t know people owned mineral rights – not a clue!” The result, he said, was learning how to get “rich people to put their money into dry holes.” Baum entertained the gathering with anecdotes throughout the evening.

Nelson Welch graduated with a bachelor’s degree in math, while wife Nina received her PHT (Pushing Hubby Through). Welch graduated 16th in a class of 27 men (no female graduates in 1964) before becoming a high school teacher for eight years. He then joined the N.M. State Police, where current Albuquerque Police Department Chief Gordon



Ron & Nedra Fortune; Nelson & Nina Welch; Keith & Consuelo Dowler; Scott & Karen Baum



Nelson Welch

Eden was one of his students. Welch left law enforcement in 1984 and currently works in the legal profession for both the prosecution and defense.



Nina Welch, Tech writer Valerie Kimble, & Nelson Welch

Welch spent his first summer at Tech living in the dorms. The following semester, “I was on academic probation,” he said, so in 1958 he returned to Deming to marry his high school sweetheart, Nina. The couple had part-time jobs as weekend managers of El Camino Motel, at the request of the young son of the

owners. Steve Torres had graduated from college, was single and drove a hardtop Thunderbird convertible he liked to take to Albuquerque on weekends, and he hired the Welches to cover his weekend shift at the front desk.

The couple was awakened with a knock at the door of their apartment in married student housing Aug. 27, 1961. It was Torres, who offered the couple free housing at the motel, and \$200 a month “which paid for my tuition and groceries,” Welch said. Both went on to other jobs for Nelson’s final two years at Tech. On Nov. 22, 1963, Nina was at the college switchboard, while Nelson was working for local radio station KSRC. The teletypes went wild that day, he recalled.

Here Nina takes over. “Louie Grandjean called me at the PBX board and told me to keep one line open for President Workman, and to put through any calls from Washington, D.C.,” she said. Finally, at 9 p.m. that evening, with a nation mourning the loss

of its young President, Workman told Nina: “You’ve done a good job; let’s close it up and go home, girl.”

Today, the Welches live in Rio Rancho and have three grown children.

“I remember Welch,” said **Keith Dowler**. “He was trouble! But he was fun.”



Keith Dowler

In 1959, Dowler was working at the then-American Car Foundry where boss Richard Matuszeski, a Tech graduate and member of the Board of Regents, was instrumental in arranging a Student Co-op Program opportunity at the school for him.

After taking the entrance exam, Dowler recalled being told that based on his exam scores, “If you

had come here as a regular student, you would not have been admitted – you stunk!”

Dowler, a native of Las Vegas, N.M., worked after high school as a signal maintenance lineman for the Santa Fe Railroad. He married his high school sweetheart, Consuelo Maes, and in 1960, the couple moved into Tech married student housing with their son, Ron. Dowler participated in numerous campus student housing activities, played golf and faculty basketball, and assisted in many children’s sports.

He graduated in 1964 with a degree in metallurgy. “I’m so happy I came to New Mexico Tech,” he said, citing the lovely people he met. He praised his wife, Connie, as “the one who has kept me going from the time we married until now.”

Connie concurred, saying her husband had a wonderful experience at Tech. “He melded into the Tech community with the younger students, to

alumni receptions golden reunion

by Valerie Himble



Alumni Award winner Dr. Jose López, NMTAA President John Dowdle, VP of R&ED Dr. Van Romero

say nothing about the wonderful education he got here,” she said. After graduation, Dowler was rehired with the ACF industry in Albuquerque, and the couple welcomed daughter Susan Marie.

Later, Dowler worked for the Fairbanks-Morris Co. in Beloit, Wisc.; aboard the U.S. Fulton Navy ship in the Mediterranean; and on an oil rig in the Gulf of Mexico advising on water purification systems. In 1974, he was named group leader in Material Science Technology at Los Alamos National Laboratory, retiring in 1994. The couple lives in Rio Rancho where they participate in church and community activities. The Dowlers have four grandsons, one granddaughter and a great-grandson.

Ronald Fortune was one of 26 co-op students in 1960, “and we threshed our way through,” he said. During his first two years at Tech, he worked in the canyon with engineers John McLain and Hank Giclas, who instilled in him a love for toiling in the field, and an appreciation for patience and professionalism.

“My four years at Tech continue to be very special to me, where I received a great education and met



Ron Fortune

my wife, Nedra, with whom I celebrated our 50th anniversary in 2012,” he said.

Fortune began his college life as a chemistry major, but ended up graduating with a degree in physics.

“When I left in 1964, none of us got a job offer anywhere,” he said, adding that he then joined an agency in the Canal Zone in Panama “that turned me into a surveyor.” Six years in Panama gave Fortune a greater appreciation for what the world was like. “While I wasn’t able to

States, where Ronald began a new career in land surveying in Denver, where he and Nedra still live. Within a few years, he had earned his Professional Land Surveyor’s License, and over time transitioned from survey party chief to survey technician, draftsman, CAD operator, and engineering technician. Field work “is a young man’s game,” and Fortune completed his working career behind a desk.

For her part, Nedra graduated in 1983 as a programmer/analyst. “She



Linda Vigil López, Scott Baum (‘54) and Karen Baum

capitalize on my degree in physics, the background was great training for the area of geodcity,” he said.

As the Vietnam War was winding down in the late 1970s, so was the federal budget. The Fortunes returned to the United

got a good start right here,” Ronald said. “She did her school proud.” He and Nedra retired a few years back, enjoy their family (including three granddaughters), travel when possible, and appreciate bluegrass “any time.”

in memorium

Kay Robert Brower, 85, a longtime Socorro resident, died on Saturday, January 4, 2014, after battling COPD for many years.



Dr. Brower served as a chemistry professor at New Mexico Tech for 40 years. Dr. Brower received the Distinguished Researcher Award at Tech in 1991. Dr. Michael Heagy, professor of chemistry, said, “Kay was a brilliant physical organic chemist who carried out some highly thought-provoking experiments by combining explosives/shock waves with organic chemistry. In many respects he was perfectly suited for New Mexico Tech’s expertise in explosives and energetic materials research.”

One of his last publications in the *Journal of Physical Chemistry* was “Reactions of Organic

Compounds in Explosive-Driven Shock Waves.” One of his earlier publications in the *Journal of the American Chemical Society* involved collaboration with the great William J. le Noble where they explored pressure and volume effects on aromatization of organic molecules.

“His breadth and scope of chemistry cast a wide net, as Kay was one of the very chemists who published easily in organic, inorganic and physical chemistry journals – a truly noteworthy accomplishment,” Heagy said. “I’ve occupied his office for 17 years since I started at New Mexico Tech. When I arrived, I knew that there were some very big shoes to fill given his outstanding research record.”

He was born in Altus, Okla., on June 7, 1928. He spent most of his childhood in Hutchinson, Kan. In 1945, he won a Pepsi-Cola Scholarship and enrolled at MIT. In 1947 he met Elise Edfors, a student at Simmons College, whom he married in 1948. They had two daughters, Karen

Brower Darnall, born in 1951, and Candace Brower, born in 1953.

In 1956 the Brower family moved to Socorro, where Kay served as a chemistry professor at New Mexico Tech for 40 years. Kay was preceded in death by his parents, Frank and Virginia Brower, and his three siblings, Judy Ward, Mary Lou Saloga, and Philip Brower.

He is survived by his wife and daughters, as well as three grandchildren, Natasha Darnall, Nicole Scurrah, and Matthew Wood, and four great-grandchildren. A memorial service will be July 4, 2014, to celebrate Kay’s life and his scientific love of high-pressure kinetics (explosives). To view information or leave a condolence, please visit www.danielsfuneral.com.

Robert C. Byrd died 14 October of natural causes in Las Cruces, New Mexico. He was 90 years old. “Byrd”, as he was known to his many friends, was born in Bryson City, North Carolina. After

attending the Merchant Marine Academy and wartime service in the Pacific Theater, he enrolled at New Mexico School of Mines, graduating in 1952 in Mining Engineering.



Byrd spent the majority of his career with Asarco, managing mines in Mexico and later throughout the Americas, except for a short period when he worked for Newmont at O’okiep in South Africa, and Kerr-McGee at Grants, New Mexico.

Among Byrd’s more challenging assignments was managing Asarco’s Neptune Mining subsidiary in Bonanza, Nicaragua during the Sandinista Revolution and subsequent nationalization.

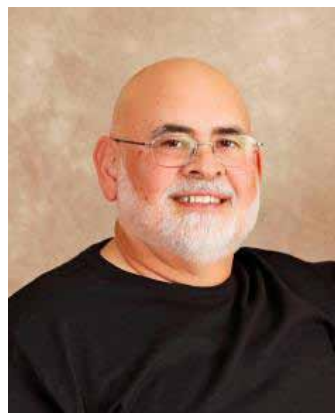
Byrd is survived by his wife of 64 years, Kay, children Robert (Hilkka), Katy (Jim) and Bebe, six grandchildren, and several great-grandchildren.

Lawrence Ira Cordray

May 28, 1943 – February 7, 2012 Lawrence Cordray died on Tuesday, February 7, 2012, in Grand Junction. Born in Colorado Springs on May 28, 1943, he spent his growing up years in Colorado primarily in the Somerset, Paonia, and Grandby areas. He married Linda Moschner in Glenwood Springs in 1970. After moving to Socorro, New Mexico, Lawrence attended the New Mexico Institute of Mining and Technology and graduated with a BS Degree in Environmental Engineering. He worked in the copper mining industry in Silver City, New Mexico, where they lived and raised their family. They moved to Colorado Springs in 1991 and then to Palisade in 1996. Lawrence liked rock hunting, reading, and playing the cash five lottery. He is survived by Linda; daughter, Anne and Merlin Namuth of Broomfield, Colorado; son, LT Benjamin and Jennifer Cordray of Charleston, South Carolina; sister, Ruby

and Jim Springsteel of Rock Springs, Wyoming; sister, Louise Humphrey of Colorado Springs, Colorado, and sister, Rita Taylor and Terry of Grand Junction. He is also survived by five grandchildren, Gabrielle Namuth, and Margaret, Rebekah, Emma, and Samuel Cordray. Funeral arrangements have been entrusted to Mesa Funeral Service.

Frank A. Ortega, 64, a resident of Los Alamos passed away unexpectedly on Dec. 11, 2012. Mr. Ortega was a dedicated husband, father, grandfather, sportsman, and avid weight lifter. He was a lifetime member of the NRA.



He retired from Los Alamos National Laboratory in April of 2012. Upon

retirement he spent his time with his grandchildren, the loves of his life.

He was preceded in death by his parents Pedro and Siprianita Ortega. Mr. Ortega is survived by his loving wife of 43 years Lillian Ortega; daughters Emily Schmidt and husband Matthew M, Terri Cannon and husband Matthew Q; grandchildren Sophie, Olivia and Adam Schmidt, Jason and Ian Cannon; sisters Edwina Weathersby and husband Tommy, Patricia Oliver and husband Jerry, Diana Contreras; brother Richard Ortega; numerous other loving relatives & friends.

In lieu of flowers donations may be made to the Los Alamos YMCA or to Los Alamos Sportsman's Club.

Rupert B. Spivey

peacefully left this world on January 21, 2013. Born November 3, 1927 in Marietta Township, North Carolina to parents Cora and Wilmer, Rupert graduated from Fairmont High School, attended Mars Hill College and

graduated from New Mexico Institute of Mining and Technology with a degree in Mining Engineering. He was also selected to participate in the Sloan Fellowship Program at Stanford University. Rupert served in the Merchant Marines during WWII and in the Army during the Korean Conflict.

While in New Mexico, he fell in love with Cecilia E. Rowe and they married on December 28, 1954. His career was long and varied: as a design engineer with Allis-Chalmers Company in Milwaukee, WI, as a mining engineer with San Manual Copper Corporation in San Manual, AZ, and as a supervisor/manager for Kennecott Copper in Silver City, NM and Exxon Mining Company in Houston, TX. After working into his 70s, he retired while residing in Albuquerque, NM.

In addition to his career, Rupert loved baseball (playing minor league baseball himself), enjoyed coaching his two boys

in baseball, football and tennis and took satisfaction in helping all three children with their studies. He was also an avid reader – continuing his quest for lifelong learning.

Rupert was preceded in death by his wife Cecilia and is survived by his daughter Mary Anne (husband Jack), his son Everett and son Robert (wife Pu Yong). Grandchildren include Rochelle and Samuel. He also leaves behind his sister Coralie, brother Elwood and 6 nieces and nephews. He was preceded in death by his sister Elizabeth, his brother Carroll and his parents.

Frank Titus, a geologist and water expert whose career in New Mexico spanned much of the last half century, died December 21, 2013.

“He was, in many respects, sort of the conscience of the water community,” said Bruce Thomson, recently retired head of the UNM’s Water Resources Program.

Born in Los Angeles on April 10, 1928, Titus arrived in New Mexico in 1956 to work at the U.S. Geological Survey. His specialty was hydrogeology, the crucial study of how water moves through the ground beneath our feet. His early years in New Mexico included stints as a professor at New Mexico Tech and as a groundwater adviser to the head of what was then called the New Mexico Bureau of Mines and Mineral Resources.

Titus left New Mexico in the early 1970s to work as a consulting geologist, but returned to the state largely for good in the late 1980s.

In 1994 his former colleagues at the USGS had just delivered a devastating analysis of the Albuquerque area’s groundwater resources. City leaders had long claimed Albuquerque’s great advantage over other desert cities was a seemingly limitless aquifer: “an underground lake larger than Lake Superior,” as boosters claimed in a 1984 magazine ad. The USGS work showed the



“Lake Superior” claim was dangerously wrong. The trick was to get the community’s politicians and policymakers to accept what the researchers were telling them.

While the scientists involved had to guard against overt advocacy, recalled former USGS scientist Mike Kernodle, Titus, then working in the private sector, was under no such constraints. “We definitely needed him to keep things going,” Kernodle said.

In the years that followed, Titus moved in and out of government service, including a three-year stint

as science adviser to the New Mexico state engineer. But he always spoke out. “There is no source of water available to us outside of the supply we now have so we’ve got to learn to live with what we’ve got,” Titus said at a 1997 public forum on regional water planning. One of Titus’ key contributions was leadership in a group that in the late 1990s developed a “water budget” for the Albuquerque metro area and surrounding communities. When he died, he was beginning to work on a 21st-century update, according to Thomson.

Titus is survived by his partner Fancher Gotesky of Magdalena; children, stepchildren and foster children – “in our family, we didn’t distinguish between this or that kind of child,” his son Greg Titus explained—and by his brother Bill.

Family members say a memorial gathering will be held in the spring, but no date has been chosen.

Hugh Eugene Woody (1935 - 2014), 78, of Crystal River, Fla., passed away peacefully Monday, Jan. 20, 2014, at Sunshine Gardens in Crystal River under the care of his family and Hospice of Citrus County.

A native of North Carolina, he was born June 20, 1935, to Floyd and Lelia (Cox) Woody. He graduated from Warrick High School in Newport News, Va., June of 1954. He joined the U.S. Air Force and served two years in Japan, his last tour of duty was Homestead Air Force Base in Florida. He married his wife of 54 years, Patsy Swaim, in 1959 and received his bachelor's in mining engineering from New Mexico Institute of Mining and Technology in January of 1964.

He worked for 4½ years in phosphate mining in Polk Co., he then moved to South Florida and worked for Houdaille-Duval Wright, Koppers, CSR, Rinker and one year at Ocean Cay for Marcona Ocean Industries. He

was an avid salt water fisherman and spent most of his free time fishing.

In addition to his parents he was preceded in death by a sister, Josephine in 2013. Mr. Woody is survived by his wife, Patsy (Swaim) Woody; a son, Gregory Woody a daughter, Cynthia Lee (husband Ernest) two brothers, James Woody (wife Lynn) and Arthur Woody (wife Virginia); three grandchildren; and several nieces and nephews.

In lieu of flowers the family is requesting a memorial contribution to Hospice of Citrus County or the Alzheimer's Association.

David H. Smith, a longtime Farmington resident and native New Mexican, passed away Saturday, Jan. 25, 2014. He was born May 14, 1921, in Cedarvale, to Harry and Pearl Smith. David enjoyed his family's ranching life in Torrance County.

In 1943, he graduated

from New Mexico School of Mines (now New Mexico Institute of Mining and Technology) with a degree in mining engineering and was then called to service in the United States Army Air Corps. Following training in Texas and Florida, David served as an aircraft maintenance and repair officer in Okinawa and in the Philippines. He was married to Helen Ruth Brooks, originally of Fort Worth, Texas, for 64 years, until Helen's passing in November 2012. Pursuing David's engineering career, the couple lived in southeastern New Mexico and Texas during the early years of their marriage.

They enjoyed Farmington in the 1950s before moving to Kanab, Utah, and Page, Ariz., where David worked for 10 years on the construction of Glen Canyon Dam. Later, Bureau of Reclamation projects took them to Chama, to the Red Grande Valley, and back to Farmington in the mid 1970s. A 32nd degree Mason, David served as a

worshipful master at the Masonic lodge in Page, Ariz., and was a member in the Daylight Lodge in Aztec and the Order of Eastern Star. As an avid fisherman and hunter, he was a life member of the NRA.

David is survived by his niece, Norma Siviers, and husband Mark of Fort Worth, Texas; niece, Nadine Hughes of Albuquerque; nephew, Larry Brooks, and his wife Debbie of Washburn, Mo.; niece, Linda Hart of Fort Worth, Texas; Ron Brooks and wife Karen of Farmington; as well as many other who loved him. Cremation will take place and no services will be held.

To submit an obituary for publication in Gold Pan, please e-mail Thom Guengerich at tguengerich@admin.nmt.edu, or mail the information to the Advancement Office at 801 Leroy Place, Socorro, NM 87801, attention: LaVern.

the last word

michelle bourret

Michelle Bourret discovered her interest in Earth science early in her college career. She enrolled in a number of science courses as a freshman at the University of California-Santa Cruz and found her calling.

“I liked the geology-oriented classes because I would learn about a geologic process in class, and go outside and see that process outside,” she said. “Everytime I go for a hike, I have an idea of what created that landscape.”

A California native, Bourret is not a fish out of water in the desert. She didn't take long to discover the wonders of nature in New Mexico. One of her favorite activities is hiking and exploring the great Southwest. She spends a good deal of time hiking the mountain trails, saying

that her favorite hiking spots are in the Magdalena Mountains just west of Socorro.

In addition to hiking, she enjoys running, rock-climbing and bicycling. She also is a regular patron of the Socorro Farmer's Market.

“I've always been a fan of farmer's markets,” she said. “It's the freshest produce in Socorro grown by your neighbors. Who can complain about that?”

Michelle didn't take a direct route to graduate school, however. After earning her bachelor's, she took a job with the U.S. Geological Survey in Boulder, Colo. There, she worked in a water chemistry lab for four years.

“I was interested in a more



challenging job,” she said. “I didn't think I could get that with just a bachelor's degree.”

Since arriving at Tech in the fall of 2012, Michelle has been working with Talon Newton of the Bureau of Geology and Mineral Resources on a study of groundwater at the White Sands Monument.

For her master's thesis, Michelle is using mathematical modeling methods to examine how the shallow groundwater at the Monument interacts with the surrounding hydrologic systems. Understanding how the

groundwater in the dune field reacts to changes in the hydrologic system is important for the Park Service for resource planning.

“What drew me to this project was working in White Sands. It's such a beautiful and special place in New Mexico,” she said. “Plus, there's a good chance that pumping might impact the hydrological system around the dunes and impact stability over time; this is an important project.”

Michelle hopes to defend her thesis and finish her degree by the end of 2014.





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