Bio threats call for new global collaboration model

By Renee Deger

Senior Manager Ren Salerno (6820) took the podium during a recent biosecurity conference to begin writing a new chapter on global collaboration initiatives aimed at solving US national security challenges, particularly those posed by biological threats.

Ren unveiled a new collaboration model at Biosecurity 2011, a series of targeted breakout sessions staged during June’s 2011 BIO International Convention in Washington, D.C. The new approach would evolve many existing relationships that Sandia has with life sciences organizations worldwide into more strategic and technical development initiatives.

“Our national security used to be our problem alone, and — internationally — it was up to us to create unilateral arrangements or bilateral agreements to extend our resources into other countries and to work with them to implement our solutions,” Ren says. “But the threats today are increasing and becoming more complex as dual-use materials, technologies, and expertise propagate all over the world. We’re moving into an era of collaboration initiatives aimed at solving US national security challenges, particularly those posed by biological threats.

Ren is championing efforts to gain greater recognition for Sandia’s Countering Biological Threats programs, which provide the science, technology, and technical policy solutions for confronting on a global scale the entire lifecycle of a biological threat.

By Mike Janes

A Sandia researcher has developed a new technology with the potential to dramatically alter the air-cooling landscape in computing. Sandia is now seeking partners in the electronics chip cooling field to license and commercialize the device.

The “Sandia Cooler,” also known as the “Air Bearing Heat Exchanger,” is a novel, proprietary air-cooling invention developed by Jeff Koplow (8365), who was recently selected by the National Academy of Engineering (NAE) to take part in NAE’s 17th annual US Frontiers of Engineering Symposium.

Jeff says the Sandia Cooler technology, which is patent pending, will significantly reduce the energy needed to cool the processor chips in data centers and large-scale computing environments. The yearly electricity bill paid by the information technology sector in the US is currently on the order of $7 billion and continues to grow.

In a conventional CPU cooler, the heat transfer (Continued on page 6)
That's that

Note: Las News writer Iris Abeyta fills in with a That’s that column this week for editor Bill Murphy, who was on vacation.

Every fall, many of us make our yearly pilgrimage to Dixon Apple Farms. Located between Albuquerque and Santa Fe near Cochiti Canyon, Dixon is known for its scrumptious apples. Waiting in line doesn’t seem an inconvenience as we anticipate the first bite of the golden champagnes. This year, the Las Conchas Fire has seriously damaged the orchard: 100 trees and some of the farm’s equipment have been destroyed.

The orchard was started by Fred Dixon in 1944. He nurtured the farm for more than 60 years. Then his granddaughter, Debbie, moved to New Mexico to learn all about the apple business. Fred taught Becky all he knew. Recognizing the love and devotion Becky had for the farm, Fred turned it over to her and her husband, Jim Mullane, in 1996.

In a KOAT-TV Interview Jim Mullane said, “I thought I was going to fight this [fire], but it was like an animal coming down this mountain.” Becky told KOAT they still are hoping to harvest what they have.

Let’s hope the Mullanes can restore their orchard to its original glory. Let’s also hope that our other neighbors who were affected by the fire have strength and courage to weather their storm. For our Native American neighbors and neighbors to the north, let’s hope they are spared any more of the fire’s fury. And finally, let’s pray for rain.

The Lab News staff was recently notified by Writing that Works (APEX) that the Lab News received a Grand Award for publication excellence. The competition included 3,100 entries in 11 categories. Only 300 papers were selected.

The Lab News staff also won APEX excellence awards in publication design and layout, the IED user disruptor media campaign, science/technology writing, photography, and writing series.

It’s great when you love what you do and then are rewarded for it. As humbled as we are receiving these awards, we realize that our real rewards come from our readers, who read what we write and admire the photos we publish.

My 11-year-old grandson, CJ, is competing in the Rio Arriba County Fair again this year. We read the fair’s schedule, changed our plans, showed Pumba, Giga, and Pido, and, as always, we had a great time.

This year, Menno van Beusekom showed feed production (definitely not leftovers). His year-old Maine-cross steer gets fed pro beef cattle ration. I confess I am not an expert judge in this area, but I do know pigs and steers, and I know CJ has the winning entry in each division.

CJ’s nearly 8-year-old brother, Alex, can’t show animals yet, but still practices every day with Pepper, his gray horse quarter. Alex loves being a caretaker for the animal he can’t show. They spend time grazing and sleeping together.

When Jhett is not being roped by Alex, he is helping CJ give Felix a bath or exercising his pigs. Knowing showmanship is part of showing, Jhett does it all with a king-size smile.

There is a lot of excitement at football games (go Cowboys!), and basketball games (go Lobos!), and soccer (go Mackie and Maddie!), but this is the county fair; the experience is totally different. Attendees get the hands-on excitement of the experience. Pen after pen, you learn from teachers who are less than four feet tall as your boots get full of mud and you become an expert on whatever animal you see.

So you become captivated by the entire adventure. You enjoy the mud, the food, the animals, and families roaming around. It’s about hard work and family. Oh, and besides family, the best part of county fairs is the hamburgers. They might not be 98 percent fat-free, but they are to die for. I can hardly wait.

— Iris Abeyta, (505-544-1282, MS 0165, laboeyta@sandia.gov)

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DAMIAN ROUSON

Of blackboards and computer screens: Scientific programming in the 21st century

By Karen McWilliams

Since he was a college student, Damian Rouzon (8351) has been fascinated by the intersection of science and computing. Computer science has transformed scientific research, yet the fields still exist on separate planes. He takes on the challenge of rendering computer languages, so vital to scientific advancements, more accessible and easier to read in a new book, Scientific Soft-

ware Design: The Object-Oriented Way, published by Carnegie
bridge University Press this spring.

Rouzon is familiar with old black-and-white photographs of physicists working out difficult theories at a blackboard. To the layperson, those cryptic equations streamed across the board look like gibberish, but to fellow scientists it is a perfectly understandable code.

The 21st century equivalent of the blackboard could be the computer screens we use so much a part of today’s world. However, the mathematical symbols in common use 50 years ago have given way to incredibly complex programming languages that are difficult for fellow scientists to master. Most computer languages such as Fortran and C++ are not expressive. Code written in these lan-
guages is hard to decipher even among fellow researchers.

“This book comes out of my experience as a graduate student 15 years ago, when I was writing the first truly scalable Fortran,” Damian notes. Initial reviews from the publisher indicated that the book would have far more lasting value if it used the newly released Fortran 90 instead of the more commonly used Fortran 95.

This necessary adaptation proved the biggest challenge in the whole project — finding a compiler that could translate the high-level code added another year’s worth of work. Damian drew upon the expertise of colleagues Jim Xia (IBM Canada Lab in Markham) and Xiaofeng Xu (General Motors Corp.) to attain the material to Fortran 90.

With this book, Damian says, “the idea is to go behind the curtain and see the most fascinating features of modern programming languages, you can give your own code the same level of expression that is currently attainable with some proprietary solutions, but do so in a more open, scalable manner.”

Rouzon’s book is published, Damian is moving into a new phase of research. The first was developing the style of programming itself. The second was demonstrating that it can produce publishable science — in other words, papers that focus on the science, not the code. “The third phase is showing that we can get it to scale, that we can actually do science with this code, but fast code, and that some of what makes it pretty also makes it fast,” he says.

Now, coming full circle, Damian has returned to a visiting professor at the University of Cyprus (while still remaining a manager in Center 8300) to begin putting together what should be the first truly scalable demonstra-
tion of this programming style. “Ideally, this visit will demonstrate the ability to run problems that matter to scientists, on systems that matter, in a national lab-type setting,” he says.
In this diagram of the Sandia Cooler, heat is transferred to the rotating cooling fins. Rotation of the cooling fins eliminates the thermal bottleneck typically associated with a conventional CPU cooler. (Diagram courtesy of Jeff Koplow)

Cool tech

(Continued from page 1)

bottleneck is the boundary layer of “dead air” that clings to the cooling fins. With the Sandia Cooler, heat is efficiently transferred across a narrow air gap from a stationary base to a rotating structure. The normally stagnant boundary layer of air enveloping the cooling fins is subjected to a powerful centrifugal pumping effect, causing the boundary layer thickness to be reduced to 10 times thinner than normal. This reduction enables a dramatic improvement in cooling performance within a much smaller package.

Additionally, the high-speed rotation of the heat exchanger fins minimizes the problem of heat exchanger fouling. The way the redesigned cooling fins slice through the air greatly improves aerodynamic efficiency, which translates to extremely quiet operation. The Sandia Cooler’s benefits have been verified by lab researchers on a proof-of-concept prototype approximately sized to cool computer CPUs. The technology, Jeff says, also shows great potential for personal computer applications.

Broader energy sector applications

The Sandia Cooler also offers benefits in other applications where thermal management and energy efficiency are important, particularly heating, ventilation, and air-conditioning (HVAC). Jeff says that if Air Bearing Heat Exchanger technology proves amenable to size scaling, it has the potential to decrease overall electrical power consumption in the US by more than 7 percent.

Sandia is currently engaged in discussions with companies that have expressed interest in licensing the Sandia Cooler. The Labs will soon establish a separate process for exploring partnering and/or licensing opportunities in fields other than electronics chip cooling.

Sandia’s work on the cooler technology was funded initially through internal investments. Follow-on funding is also being provided by the Department of Energy’s Building Technologies Program within the Office of Energy Efficiency and Renewable Energy (EERE).

California Lt. Gov. Gavin Newsom visits Sandia/California for briefing on emerging energy research

Last month, California Lt. Gov. Gavin Newsom visited Sandia/California to learn about current and emerging energy research at the site. Hosted by Div. 8000 VP Rick Stulen, Newsom learned about Sandia’s advanced modeling and simulation capabilities, research into advanced engine design, cybersecurity work, and the site’s economic impact on the state of California. In the photo at top right, Rick explains how modeling and simulation work enabled by the Combustion Research Computation and Visualization building is helping advance engine design. At right, Center 8300 Director Bob Carling discusses the capabilities of the Combustion Research Facility. In the photo above, Chuck Mueller shows the lieutenant governor a high-speed movie of a new fuel-injection strategy. The movie was acquired through a window in the cylinder of an optically accessible compression-ignition engine.

(Photos by Randy Wong)
Sandia lends a hand to Las Conchas Fire monitoring, evacuees

Story by Heather Clark

Northern New Mexicans living in areas near the Las Conchas Fire can breathe a little easier thanks to employees from the National Nuclear Security Administration Radiological Assistance Program (RAP) team members from Sandia who helped monitor air quality in northern New Mexico.

Sandia also provided the following:

- Logistics Operations (10260) and Corporate Storage (10263-1) accepted a radioactive shipment from a truck that was en route to Los Alamos when the wildfire broke out, says manager Catherine Green (10263). Catherine says employees coordinated with security to get the truck on base and understand any consequences of storing the material here.
- Sandia’s HPC OneStep Support team (9326 and 9328) provides support for the Cielo supercomputer that it is run jointly with LANL, and gave added help when the supercomputer was shut down due to the fire. Sandia employees continued some Alliance for Computing at Extreme Scale activities, kept the help desk running for users at Sandia, Los Alamos, and Livermore labs, and kept them informed during the closure, Karen Haskell (9326) says.
- Three specialists from Media Relations and Communications Dept. 3601 worked in Los Alamos’ Joint Information Center in Santa Fe, providing information to reporters, addressing and dispelling rumors and misinformation, and sending out news releases.
- Denise Blakely, a geographic information system (GIS) analyst at Sandia, assisted the DOE Headquarters Emergency Operations Center (EOC) by contacting New Mexico state and local agencies for current imagery and map data for the area of the Las Conchas Fire. She helped connect DOE to web mapping services hosted by state agencies and put them in contact with the Los Alamos County GIS coordinator, who provided a current building footprint map. This geospatial information was used by DOE to monitor the progress of the fire relative to LANL’s property.
- Sandia employees also asked how they personally could help, says Pam Catancha (3652), who encouraged them to donate to emergency-relief organizations, such as the American Red Cross.

“Sandians are very generous and are always looking for ways to help others. Based on our experience with past disasters, we direct them to agencies that have the capacity to deal efficiently with disasters,” Pam says.

In addition to individual donations, Lockheed Martin also gave $10,000 in Sandia’s name to the American Red Cross to support all the families displaced by all fires in New Mexico, she says.

Traveling to Los Alamos on Tuesday, June 28, for the RAP team were Hans, Kevin Rolfe (1522), Mike Torneby (1387), Gary Baldonado (4136-1), and Jim Keagy (4128). They were joined by four RAP team members from the Pantex Plant near Amarillo, Texas, members of the Los Alamos Site Office and NNSA’s NA-42, and several Los Alamos RAP team members who supported their work, Hans says.

NNSA RAP teams provide assistance for all sorts of radiological incidents, including responding to facility or transportation accidents, providing technical advice by telephone, or sending state-of-the-art equipment to identify possible radiological hazards.

For the Las Conchas Fire, the team supported Los Alamos lab’s own extensive air monitoring network by placing additional air monitors at sites requested by the New Mexico Environment Department in Taos, Dixon, Embudo, El Valle, Chimayo, and Las Vegas, N.M. Jim and Mike also went to the Donaldson Complex Fire near Ruidoso to sample the air there to compare it to the results from the Las Conchas Fire monitoring.

“There are naturally occurring radioactive materials that are released from the vegetation and from extra heating of the ground,” Hans says. “You can’t make a direct comparison, but you can at least show that at a fire far away from Los Alamos, this phenomenon also occurs.”

The RAP air monitors are equipped with high-efficiency filters to collect particulate matter. They were set up at libraries, fire stations, and residences, including the home of a member of an environmental group called the Embudo Valley Environmental Monitoring Group in the remote community of El Valle, Hans and Kevin say.

Kevin says environmental groups had input about where to place the air monitors and curious onlookers watched when they were setting up equipment in some towns.

The filters were changed daily and sent to LANL and an independent laboratory in Colorado for testing. Hans says.

The team removed the air monitors on Tuesday, July 5, as it became clear the fire would not burn farther onto LANL property.

Kevin and Hans say the response to the Las Conchas Fire was more easily coordinated probably due to the experience gained during the Cerro Grande Fire that burned parts of Los Alamos 11 years ago.

“They were in place in advance and actually incorporated into some planning pretty early on. The response to this fire was more organized among the state, the Environmental Protection Agency, and DOE,” Hans says. And Kevin, who also responded to the Cerro Grande Fire, says: “We were more efficient this time. We knew the sampling that we were going to be doing.”

Hans and Kevin say there’s another group of Sandians who should not be forgotten when talking about support lent to the Las Conchas Fire. They thanked the managers and co-workers who covered for the absent team members during the massive wildfire.

— Stephanie Holinka contributed to this report.
After checking on friends and neighbors to make sure everyone was safe and able to evacuate, Randy and his family joined the long line of cars snaking off The Hill. They sat in traffic for 45 minutes, an unheard of wait in the town of 12,000. But Randy says law enforcement and firefighters were helpful and calm, and someone in the car ahead of him was passing bottles of water to those directing traffic. “It’s a little town — everyone knows each other. Neighbors were taking care of each other and offering any extra room in their trunks for others’ belongings. They really knew the potential for what was coming, and there was much less panic than you might think,” Randy says. “It was extraordinarily impressive.”

The week was full of nervously watching press conferences, checking on friends, and looking for diversions to fill the agonizing hours between briefings. Once the winds turned and the evacuation orders were lifted, Randy’s family — along with every other displaced Los Alamos family — headed back up The Hill, and were greeted with a “Welcome Home” road sign.

“It was a very tentative attitude about going back. Everyone was very appreciative of the efforts of those who were fighting the fire, the National Guard, and law enforcement,” Randy says. “What struck me was that every National Guard member we thanked said how honored they were to serve this town. They said they were grateful for the role this community played to protect this country, and they were glad to return the favor.

“I can’t say enough about the people who fought the fire, the officials and reporters who gave us timely, accurate information, and the residents who calmly left everything behind. Even though tragedy was averted in Los Alamos, Chief Tucker (of the Los Alamos County Fire Dept.) kept talking about those who had lost their homes. It was out of his jurisdiction, but that’s how people there are — just trying to look out for their neighbors.”

Las Conchas Fire through the eyes of a Sandia photographer

New Mexico was in the midst of a reprieve from the eastward-charging Wallow Fire smoke, but just as firefighters were taking control of Arizona’s largest wildfire on record, flames in the Santa Fe National Forest were getting ready to make their own history in New Mexico.

On June 26, a large pillar of smoke rising to Albuquerque’s north was the first indication that this fire was going to be a big one. Sandia Lab News photographer Randy Montoya, along with his wife, Catherine, and daughter Amanda, went there to evacuate his mother, Lorenza Montoya, pack up a few mementos from a life lived in Los Alamos, and potentially say goodbye to his childhood home, where his mother has lived for the past 45 years. With camera in hand, he documented the exodus, and seven tense days later, the repopulation of the town.

“I’m very proud of the behavior of that little town and how it behaved under heavy stress,” Randy wrote in an email once his family was safely in Albuquerque. “It was worse this time because it was no longer theory of catastrophe to us — we’d seen devastation here before.

Thoughts of the Cerro Grande Fire, which destroyed the homes of more than 400 families and caused more than a billion dollars in damage to the town, loomed heavily over the evacuees, who didn’t know if they’d see their homes again. Those memories, so firmly seared in the minds of Los Alamos residents, were impossible to ignore as firefighters raced to hold back the flames.

“My mother, who is the most level-headed person at 92 years old, was ready with medications, clothes, important papers, and photos in 30 minutes,” Randy says. “My oldest sister was impressed, but my mother replied that this was the fourth time she — and her neighbors — had been evacuated, and that at least it wasn’t the Cuban Missile Crisis.”
Bio threats
(Continued from page 1)
and recovery but primarily for domestic use," says Duane. "Now we've begun to examine, and our sponsors have begun to think about how we can use this internationally. That means working very closely with public health officials in other nations and local scientific communities on the kinds of innovations that will function with their infrastructures and resources.

Expanding threats
The world's rapidly expanding population, especially in the developing world, is driving the rising demand for dual-use technologies and materials. And the demand is for more locations with more deadly, and potentially dangerous, materials that are simpler to use. "We increasingly rely on dual-use technologies to meet our basic energy, food, and public health needs," Ren says, "and with this mass proliferation of dangerous and potentially dangerous materials comes the dramatic increase in the potential that these materials could be used—accidentally or intentionally—to harm us." The same life sciences, in particular, have experienced tremendous growth as developing nations look to expand their infrastructures and resources that will function with their infrastructures and resources.

The strategy documented that "Advances within the life sciences hold extraordinary potential for beneficial progress, but they also can empower those who would use biological agents for ill purposes." The point was raised earlier in World at Risk, a 2008 congressional report on weapons of mass destruction and the dangers of biological weapons.

The National Strategy for Countering Biological Threats, released in late 2009, recognized the now-challenging task of expanding life sciences to pose national security. The strategy documented that "Advances within the life sciences hold extraordinary potential for beneficial progress, but they also can empower those who would use biological agents for ill purposes." This is the point that was raised earlier in World at Risk, a 2008 congressional report on weapons of mass destruction and the terrorist threat, which stated more pointedly: "The United States should be less concerned that terrorists will become terrorists. . . . [T]errorists are trying to acquire, develop, and potentially dangerous materials comes the dramatic increase in the potential that these materials could be used—accidentally or intentionally—to harm us." The same life sciences, in particular, have experienced tremendous growth as developing nations look to expand their infrastructures and resources that will function with their infrastructures and resources.

The IBTR program, with sponsorship from the US State Department, is Neal Singer, who's been writing about science for the Lab News and for the general public as part of Sandia's media relations team since 1995, is the author of a new book that takes fresh look at that philosopher's stone of energy sources, nuclear fusion. Neal Singer: "Creating an Ultimate Energy Source: Wonders of Nuclear Fusion" is Neal's first book. It is available in hardcover at the Lab Store, in paperback online, and at local bookstores.

**Bio threats**

*Wonders of Fusion* introduces complex topic to a broad audience

First book by Lab News science writer Neal Singer examines ultimate energy source

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Sandia shines in DOE Security Protection Officer team competition

By Iris Aboytes

A Sandia trio — Joseph (Joey) Branch, Norman Baca, and Ruben Padilla (all 4233) — recently won the DOE three-man team event at the annual DOE Secu-

rity Protection Officer Competition (SPOTC). The three-day event was held at NNSA’s Pantex facility in Amarillo, Texas. This is the first time a Sandia team has won this particular competition.

The team was comprised of first team from DOE Headquarters, URENCO, United States Enrichment Corporation PUGD, and the Kansas City Plant.

All three Sandia participants have com-

peted before, so they knew what to expect. When the dust cleared and the winners were announced, Sandia had won five awards, three firsts and two seconds in the seven-event competition. Their closest competitor, the Kansas City Plant, was 50 points behind.

To prepare for the competition, the team began attending physical workouts designed especially for them by HHE professional John Pier. They included conditioning, endurance, and stretches. Obstacle courses are not very muscle-friendly, so they worked on flexibility and endurance. That condition-

ing lasted for about an hour every day. From there they would do a cardio workout and then spend time on team training.

The drills were designed by their coaches, Lt. Andy Trench and Capt. Jim Short (both 4211), to mirror the competitive events.

“Our team was a contender from the beginning,” says Pat. “Norman, Ruben, and Joey are in good physi-

cal shape and have the determination to succeed, not just individually but as a team. Shooting accurately with speed is challenging. Add to that mentally challeng-

ing tasks, and you have a SPOTC competition. That is where we focused our training and preparation.”

Targets were engaged in specific order based on colors, numbers, and sizes. It’s the little things that can prevent a team from winning. Safety was foremost in the training during the SPOTC competition. If the team is the safest, best mentally, and physically prepared, have the required skill, and is team motivated, you’ll have a winning team. We had a winning team.

And Joey agrees. “From previous experi-

ence, he says, “Pat and I know the challenge to be overcome in winning the coveted award. We emphasized the importance of shooting within individu-

al and team limitations accurately and moving as a team. Most important is communi-

cation as a cohesive team, watching each other before, dur-

ing, and after each event.”

Ruben says the team did not go for speed. “We weren’t in the youngest team or the fastest,” says Ruben. “We were methodical in our approach. We paid attention to detail and concentrated on accuracy and safety. At the suggestion of Joey, our captain, we practiced every evening after the competition. Win-

ning was very surreal.”

The three-week preparation time was put to great use, says Joey.

“Along with Pat and Andy, Eloy Giron, Dan Seaebrook, and Frank Del-

gado (all 4211) helped us at the live-

time range. We also had some members of our management staff attend some of our courses.

It felt great to have that type of support while competing.”

“Our team is very thankful for getting the opportu-

nity to represent Sandia in this year’s SPOTC. We’ve all been members of previous SPOTC teams before, but this team was one of the most focused and determined. In these types of competitions, everyone can shoot and everyone can run. The team that handles the stress the best ends up winning. I am glad it was our team.”

“All of the attention is nice,” Joey says, “but I just hope this recognition spills over to our pro force as well.”

Employe death

Frank Lujan was short in stature but he was taller than most men

Frank Lujan, Jr. (10242) died on June 25. He was 56 years old and had been at Sandia almost 28 years. His wife, Debra Lujan, works in Dept. 5761. Together they have three sons; Jason, Dominic, and Adrian, and a granddaughter, Jaslyn.

“Frank was a Sandia contracting representative, responsible for supporting the manufacturing liaison efforts at the Laboratories,” says his boss, Ian Cheng (10242). “He guided solicitations, issuance, and docu-

mentation of purchase orders through the procurement system. He took a lot of pride in the number of transac-

tions he could process, and often led the department in that area on a monthly basis. His experience, grasp of proc-

urement processes, and customer relation skills made him a favorite buyer for multiple technical line customers who needed to get things done.”

Frank’s wife, Debbie, says, “I loved Frank very much. He used to say, ‘I may not get my reward here on Earth, but in heaven. Frank loved working at Sandia and the people he worked with. He was very smart and well-

versed. He worked hard and did a good job.”

Saw the good in people

“My dad was a great man,” says his son, Adrian. “He led by example. He didn’t yell at others; instead he saw the good in them. My friends were in awe of my dad. They looked forward to seeing and hearing his little pep talks. We’d talk for hours in a better way.”

His friend and schoolmate, Rochelle Lar (3502), says that Frank came to work at Sandia because he heard this was the best place to work. He had both bachelor’s and master’s degrees but hired on as a custodian, says Rochelle, because “he wanted to get his foot in the door.” His goal all these years was to become a member of the laboratory staff.

Frank had many passions; one was working in the South Valley to provide services to the elderly. Before coming to Sandia, he was director of youth programs at Youth Development Inc.

For Fred Romo (10248), Frank epitomized the qualities desired in a Sandian. “Procurement is a unique position,” says Fred. “A significant portion of Sandia’s budget passes through contracts for goods and services. To that end Frank made significant contributions to Sandia’s mission in how many contracts he placed, how much money he saved, how many contracts he completed, how much rev-

enue he provided to small business, and how much busi-

ness he did in the state of New Mexico. Frank was a great ambassador for Sandia.”

“He was a true UNM Lobo fanatic — especially the Lady Lobos. He was a long-time season-ticket holder. He was a Lobo Booster Club and UMN, Alumni Association member.”

Fred says that to supplement his Sandia income, Frank had two jobs, earning awards from his other jobs. Becky McNees-Pacheco (5573) recalls Frank as “a true gentleman.”

“His top three loves,” Becky says, “were God, family, and the Lobo. Any of these could get him excited. Frank read his Bible every day, keeping it as his desk for easy reading. His love for his family ran deep. I would tease him about the way he said ‘Deh’ with so much love. He would then go on to tell me how beautiful she was and how his heart pounded when he first met her.”

“When his granddaughter came he claimed he wasn’t ready to be a grandfather — too young — but she quickly stole his heart.”

Carleen Bardwell Shirk (10242) says Frank had a fun personality and great sense of humor. “He always lived our department meetings,” says Carleen. “He would always walk with a swagger while singing a song. He loved music and going to concerts. He had a drawer full of CDs at his desk and would welcome sharing any of his music just so he could discuss it later.”

Enjoyed the simple things

“Frank was the kind of guy who epitomized persever-

ance and standing up for one’s beliefs,” says Fabian Aragon (10691). “I always felt energized after talking with him. I wish Frank would have been able to realize his dream of being promoted to an exempt staff position. Though Frank was really ambitious, he also expressed how blessed he was to have such a great family and was thankful for all the blessings in his life. He was a man who enjoyed the simple things in life, like eating lunch. He would light up when he would share his feel-

ings about eating a good sandwich.”

For Louella Roybal (10380) and others, Frank was their kindred spirit. “He adapted to each personality and could relate to you based on your own personality. If you loved books, he would talk about books. He was an avid reader and was always willing to share a recommendation.”

“Frank was a take-charge kind of man. As a member of various organizations, he always had great ideas and was never shy in sharing, but recognized he didn’t have all the answers and welcomed new and fresh ideas. Frank may have been short in stature, but he walked with a proud stride that made him tall and confident and set him apart from most.”

Two days after Frank’s death, his family discovered an email message from Frank. He told them how much he loved them and felt he hadn’t said enough. He told them he wanted to leave this earth knowing that he had fought the good fight. He encouraged them to remember all things that their faith had taught them and to live as they should accordingly.

— Iris Aboytes

Attention Sandia retirees: Annual Retiree Social scheduled for Aug. 19

THE 2011 Retiree Social will be held Aug. 19, 12:30-3:30 p.m. at the Embassy Suites Hotel Con-

ference Center. There will be plenty of room for gathering of friends, good food, reminiscing, and catching up on each other’s lives. Sandia will also provide a park-and-ride service from Hoffman-

town Church. An invitation with event details will be sent to retirees via mail in late July.