FANTASTIC FOUR — Sandia's Emergency Response Team sent four of its best to Los Alamos in late July to compete in the 14th annual Los Alamos Regional Hazmat Challenge. Team members Chris Mullaney, left, mission leader Dale Larez, John Ledet, and Eddie Gonzalez, brought home two second-place awards, including a second-place overall, and the coveted Sportsmanship Trophy. Read about the daunting challenge scenarios and the team's accomplishments in an account on **pages 6-7**. (Photo by Randy Montoya)

Inside . . .

2010 Employee Recognition Awards program honors 50 individuals, 61 teams; see **page 8.**

Sandia LabNews

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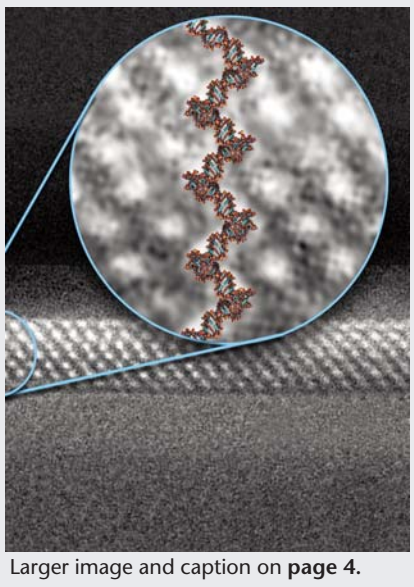
Managed by Lockheed Martin for the National Nuclear Security Administration

Sandia National Laboratories

Hard Science

Articles accepted for juried publications showcase Sandia's contributions to basic research

Kinked nanopores slow DNA passage for easier sequencing



Larger image and caption on **page 4.**

By Neal Singer

In an innovation critical to improved DNA sequencing, a markedly slower transmission of DNA through nanopores has been achieved by a Sandia-led team.

Solid-state nanopores sculpted from silicon dioxide are generally straight, tiny tunnels more than a thousand times smaller than the diameter of a human hair. They are used as sensors to detect and characterize DNA, RNA, and proteins. But these materials shoot through such holes so rapidly that sequencing the DNA passing through them, for example, is a problem.

In a paper published last week

(Continued on page 4)

Water/platinum interface demands closer attention

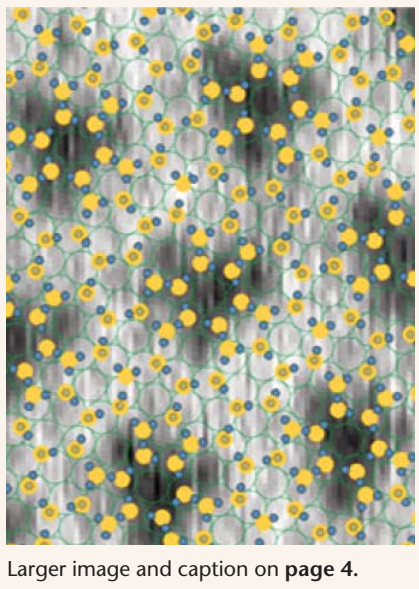
By Neal Singer

How water wets platinum is important for automobile catalysts, fuel cells, and cancer research, but Sandia researchers have discovered that basic science assumptions about this interaction do not hold true.

"The way that water molecules prefer to arrange themselves on platinum has been largely a matter of speculation," says Peter Feibelman (1130).

Working at ice-forming temperatures to stabilize the interaction long enough to view molecular details with a scanning tunneling microscope, and then basing computer simulations on the results, the Sandia

(Continued on page 4)



Larger image and caption on **page 4.**

That's that

As I write this, it's 65 years to the day since the US dropped the atomic bomb on Hiroshima in Japan. Three days later, Nagasaki came under an atomic attack. On Aug. 15, 1945, the Japanese people for the first time heard the voice of their emperor over the radio. In a broadcast that amounted to a surrender speech, the emperor said, "However, it is according to the dictate of time and fate that we have resolved to pave the way for a grand peace for all the generations to come by enduring the unendurable and suffering what is insufferable." In one of those bitter ironies of human existence, then, the atomic attacks that took thousands of lives — including innocent lives — had ended a war that might otherwise have claimed still millions of lives more.

I leave it to others to debate whether President Harry S. Truman made the right call in ordering the attacks and whether he was sufficiently briefed about the specific targets involved. If you start reading about the subject online, the complexities of the decision become apparent. In any event, I suspect that a million GIs in staging areas around the Pacific, awaiting orders to commence an assault on the Japanese home islands, agreed with their president.

Reflecting on this singular day, I thought about an interview my colleague Ken Frazier and I did with Brig. Gen. Paul Tibbets, the pilot of the *Enola Gay*. He was hand-picked by Maj. Gen. Leslie Groves, the Army officer in charge of the Manhattan Project, to command the nation's first nuclear bombing mission.

Thinking about the story that came out of that interview — we published it in the March 13, 1998, issue of the *Lab News* — I went back through our archives and read it again. Here's what Tibbets had to say about his role in the Hiroshima attack:

"I'll tell you one thing. There is nobody that I know of who would even think they'd like to see another one of these things [an atomic attack] take place. But by the same token, I would have to tell you that it was the only thing that could be done at the time. The *only* thing, because it would have taken more and more lives to do anything differently. I'm sure Japan would have surrendered if they [the US military] had blockaded the islands and starved them to death . . . but how many lives would it have cost us while we waited for, what, one year, 18 months, two years? [The Japanese] were dedicated to die to the last person. That was the way they were raised."

Was Tibbets correct in his assessment of how the Japanese people would resist? There was good reason to think so, but in any event, his analysis reflects the prevailing American perspective of the time.

During that *Lab News* interview, Tibbets recounted an Oval Office encounter he had with Truman in 1948. "Truman turned to me," Tibbets recalled, "and said, 'So what do you think?' 'I think I did the right thing, sir,' I said. And he said, 'You're damned right you did! Do you ever get any heat about it?' I said, 'Once in a while.' So he said, 'I tell you what. You refer them to me because I'm the guy that sent you to do it.'"

If you're interested in reading the full story, it's online at http://www.sandia.gov/LabNews/LN03-13-98/tibbets_story.html.

* * *

During the course of my career, I've had the chance to interview a few people whose names you'd recognize and I always anticipate them with a sense of — well — anxiety, I guess. That's certainly how I felt as I was about to interview Paul Tibbets. Here I was, about to sit down and talk to a man of profound historical significance, a man who'd been interviewed a million times by probably the best writers of his and subsequent generations. So I was pretty nervous, didn't know what to expect, didn't know if I was even up to the job. But whatever I expected, it wasn't what I got. In the first place, and surprisingly to me, Gen. Tibbets was not a physically imposing man. In fact, he struck me as quite small, a compact man to begin with, shrunken even more by age (he was 83 years old by this point). There seemed to me to be a feistiness about him, but no meanness. He was a man who did an extraordinary thing, a world-shaking thing, but when I met him, he seemed so . . . ordinary — a gifted, talented, and intelligent man, to be sure, the right man for the job, but an ordinary man. He wasn't larger than life, after all, as none of us are, but he accomplished things, and lived with things, that might bend or break more than a few of us. And maybe that was the most extraordinary thing about him.

See you next time.

— Bill Murphy, (505-845-0845, MS0165, wtmurph@sandia.gov)

Terry Michalske tapped to lead Savannah River National Laboratory

Terry Michalske, director of Energy, Resources, and Systems Analysis Center 6300 since July 2009, has been named director of Savannah River National Laboratory in Aiken, S.C.

SRNL is a DOE laboratory that supports DOE and the nation in the areas of environmental management, national and homeland security, and energy security.

TERRY MICHALSKE

In his role as Center 6300 director, Terry led efforts focusing on energy science and technology, systems modeling and optimization, and vulnerability and consequence management for major programs in DOE, DoD and Department of Homeland Security.

Among his recent notable career accomplishments at Sandia, Terry led a Labs-level initiative on energy security as director of Energy Innovation Initiatives Center 6100. He also led the Combustion Research Facility at the California site and the development of Sandia's bioscience strategy. Terry headed up Sandia's efforts on the National Nanoscience Technology Initiative in 2002 that ultimately led to the construction of the Center for Integrated Nanotechnologies at Sandia.

Regarding his new position, Terry said in an Aug. 9 SRNL news release that, "I am deeply honored to have the opportunity to lead SRNL's 900 distinguished scientists and research staff. SRNL is internationally renowned in its expertise in ceramics; environmental and chemical processing technology; glass waste forms and vitrification; hydrogen storage; and nuclear forensics, just to name a few of its core competencies.

"These are critical technologies. All are essential for meeting DOE's Office of Environmental Management's mission, and each holds a terrific foundation for growing SRNL's future in broader energy and national security missions."

Savannah River National Laboratory is managed for DOE by Savannah River Nuclear Solutions, a Fluor-Daniel partnership comprised of Fluor, Northrop Grumman, and Honeywell.

Congratulations

Married: Cory Sisk (10660) and Miguel Sanchez, Aug. 9, in Albuquerque, N.M..

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LOCKHEED MARTIN

Create change for your life, your nation, and your planet

S³: Safe, Secure, Sustainable fair is Aug 25; combines Safety Fair and Earth, Wind, and Sun event

By Stephanie Hobby

Being safe and practicing Earth-friendly activities will be the focus at this year's S³: Safe, Secure, Sustainable fair, a combination of the annual Safety and Security and Earth Wind and Sun fairs. Attendees will have the chance to see the newest electric cars, rescue vehicle technology, and green building techniques. The fair is 9 a.m.- 3 p.m. Wednesday, Aug. 25, in and around the Steve Schiff Auditorium.

Safety awareness is a top priority of the fair.

"I would encourage everyone, including visitors, construction contractors, and Air Force personnel, to come and see what this event has to offer," says co-coordinator Willie Johns (4122). "People are important to the success of the Labs, and we really do care about them. We want them to work safely both here and at home, so we'll be talking about things like electrical safety, as well as being safe around the house and on the roads."

"We expect that a lot of displays, particularly the alternative-fuel cars, will be things many of us have never seen before," says co-coordinator Katrina Wagner (4133). "Our community has so many great resources for people who want to live more sustainable, safer lifestyles, and we hope that people will take advantage of this opportunity to come out and learn about what our event has to offer. There will really be something for everyone there."

More than 80 exhibitors will be on hand to demonstrate things like acupuncture, firearms safety, and alternative fuel use. In addition, two guest speakers will present talks about safety awareness and healthy eating. From 9:30-10:30 a.m., Sandia occupational safety engineer Randy Fellhoelter (4122) will present "Shortcuts," a talk about the importance of remaining vigilant and aware of your surroundings in everyday activities. Marion Nestle will present "Food for Health and Environmental Sustainability" from 11 a.m.-noon. She is a professor at New York University in sociology and in the Department of Nutrition, Food Studies, and Public Health. Both presentations will be in the Steve Schiff Auditorium.

The BBQ on Wheels will have food available for purchase at lunchtime. The event is sponsored by Sandia's Safety Engineering, Security, Environmental Programs and Assurance, and Facilities organizations.

For information, including a list of exhibitors and additional information about the speakers, visit the event's homepage at http://info.sandia.gov/esh/s3.

The Engine Room fast-tracks new hires, interns, and a flight-ready B61 thermal test unit

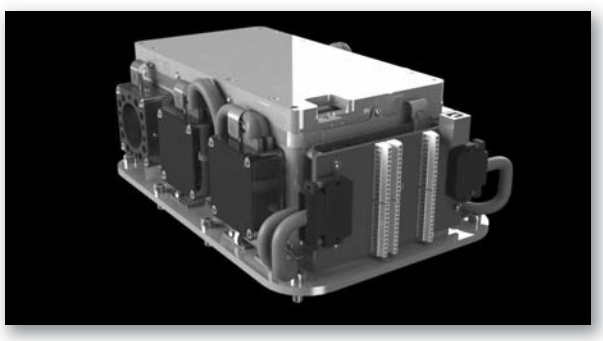
By Patti Koning

What do you get when you put six interns, eight new hires, and a few key experienced staff together into a mobile building for nine weeks? The answer is the Engine Room, an innovative program in which a 12-month project was compressed to nine weeks, enabling summer interns and new hires the opportunity to design, manufacture, test, and deliver an instrumentation system that will fly inside a B2 bomber.

MATTHEW WOHLWEND (8133) solders a part in the Engine Room's lab space. (Photo by Dino Vournas)

"Traditionally, a project like this would have been executed over a 12-month period," says Ryan Layton (8133), the project lead. "We've drastically shortened the timeframe by changing the way we structured and executed the project, as well as by increasing the team size. This nine-week project was intentionally designed to bring the new hires and interns up to speed very quickly, provide significant engineering challenges for them to tackle, foster the development of a strong working team, and, in the end, deliver a high-quality product to our customers in the B61 systems group."

The technical objective of the project is to deliver an instrumentation system to support an upcoming flight test for the B61 Life Extension Program (LEP). This particular instrumentation system is required to measure and record 33 channels of thermal data, operate continually for up to 24 hours, and weigh less than 10 pounds. These specifications are made even more challenging by the requirement to operate at extremely low



A COMPUTER RENDERING of the Engine Room's final product, the instrumentation system to support an upcoming flight test for the B61 Life Extension Project.

temperatures — lower than the temperature for which most commercial off-the-shelf electrical components are rated. This has led to the development of custom electronics and the execution of a comprehensive test and qualification plan.

Completing the project in nine weeks is about more than just compressing the timeline. Key elements to the project's success include breaking down the project into small "microtasks," which allowed for timely evaluation of concepts and fast design, fabrication, and testing iterations; reducing technical risk by basing the telemetry electronics on proven technology; integrating experienced staff into all aspects of the project; and providing a work environment that promoted communication and teamwork.

Partitioning the project into a suite of microtasks allowed the team to focus on critical areas early. "We made a conscious decision to drive deeper into specific areas of the design early, so we could get quick feedback on those details, and make adjustments in subsequent iterations," Ryan says. "It's incredibly gratifying. By the end of the nine weeks, the team will have seen two versions come to life from design through testing."

Three weeks into the project, the electrical engineering team had already designed, laid out, and manufactured two circuit boards. By the end of the fifth week, the Engine Room had developed a fully functional prototype.

"The rapid approach to prototyping is pretty amazing," says Brett Chavez (8135), a firmware engineer with eight years at Sandia who loaned his expertise to the Engine Room. "The team didn't wait for things to iron themselves out in terms of requirements. They got the ball rolling quickly, and it's been very beneficial to the project."

To develop the necessary electronics, the Engine Room team is leveraging technology developed through the Technology Maturation Program at Sandia. "The unit we are building will meet all requirements and expectations of our customer," Ryan explains. "A key element of this success was our ability to use micromodular instrumentation technology developed and proven over the last few years."

The Engine Room also heavily leveraged the knowledge and experience of more veteran Sandia staff. Ryan and the team note that the participation and guidance of experienced staff was critical to the training of the interns and new hires, as well as to the development of the design itself.

This rapid, project-oriented collaboration between new and experienced staff also has benefited the experienced staff. Brett, for example, has enjoyed interfacing with the Engine Room. "Being a mentor was a new experience," he says. "There have been some lessons learned for me as I prepare my firmware for someone else to take over."

The Engine Room is supported by two departments: JTA & H-Gear, managed by Kathryn Hughes (8133), and Telemetry Systems Engineering, managed by Robert Mariano (8135).

The two managers plan to apply this fast-paced approach to engineering projects in the future. "It's a great experience for engineers to work together, to develop strong teams that cross various technical disciplines as well as levels of experience and work approaches," says Kathryn. "This team has accomplished so much in so little time; it's a great reflection on each individual, the collective team, and the

Sandia CaliforniaNews

engineering infrastructure and resources here on-site."

Another component of the Engine Room is the space — a trailer in the Redwood Center broken into lab space, conference space, and workspace. Putting everyone in a single location was a deliberate decision, says Ryan. "New hires typically sit away from their group because they are uncleared. It's amazing how big of a barrier a seven-minute walk is to integrating people and ideas," he says.

Nathan Johnson-Williams (8135), a new hire who started in February, recalls having to hound coworkers on Office Communicator before he moved into the

INTERNS DANNY ANDERSON AND STEPHEN MARSHALL (both 8133) use The Engine Room's collaborative space to design a method for accurately calibrating the instrumentation system. (Photo by Dino Vournas)

Engine Room. "But now [in the Engine Room] everyone is together and there is a lot of energy, because it's new to everyone," he says. "The application is cool — flying on a stealth bomber — and there is a real 'let's-get-things-done' attitude."

The Engine Room's physical space avoids what Robert describes as "let's-have-a-meeting-tomorrow" syndrome. "Problems get solved immediately. That kind of interaction doesn't happen in traditional workspaces," he says. Robert and Kathryn are now converting some of their lab space in Bldg. 910 to accommodate a collaborative environment for small teams on future projects.

By Aug. 16, after only 44 working days of the program, the team will be ready to deliver a qualified instrumentation unit to their customer. That unit will come with more than 100 hours of shock, vibration, and thermal testing, a feature-rich user interface, and all the documentation necessary to prove to the US Air Force that the instrumentation system is robust enough to ride on their $2.1 billon bomber.

"I'm very proud of what we've accomplished this summer," Ryan concludes. "But I'm actually more proud of the way we accomplished it."

The Engine Room plants recruiting seeds

Despite the relative inexperience of the Engine Room team — Ryan Layton, the leader and most experienced team member, has only been at Sandia just over a year — they are designing a unit that is planned to fly on a $2.1 billion jet. "It's a heck of a recruiting tool and it lights a fire under new folks, such as myself, to design something interesting very quickly and learn how to engineer at Sandia," says Ryan.

For new hires, the Engine Room is about coming up to speed on how engineering projects are accomplished at Sandia. For interns, it's about completing an exciting project in the course of a single summer. For management, it is also about developing a recruiting pipeline and enhancing collaborations with universities.

Managers Kathryn Hughes (8133) and Robert Mariano (8135) took a different approach to recruiting interns for the Engine Room, which they credit Ryan with designing. Interns are typically hired through phone or on-campus interviews, but their approach was more rigorous. After culling through more than 150 applications, a subset of candidates was sent a questionnaire geared to highlight their experience and interest areas. From those responses, about three dozen were sent a technical challenge question directly related to the project to be executed in the summer. From the responses, 10 candidates were chosen to come to Sandia for a full-day interview.

"We spent the time and money to bring them out here, so they could be sure they liked what they saw and to get them excited about Sandia and engaged with the work," Ryan says. The candidates gave presentations to each other and Sandians, then had a series of one-on-one interviews with staff members. The entire group went to lunch with staff members and toured the campus. "We got a better read on the candidates and wound up with a really fantastic group of six," he says.

Matthew Wohlwend (8133), a senior at Notre Dame, applied for several summer internships, but Sandia was the only organization to bring him onsite for an interview. "This was a much better interview experience," he says. "I think because of the interview process, Sandia hired a group of well-rounded engineers. Everyone is the top of their class, but they are also easy to get along with and work with."

Ryan says the Engine Room is intended to build relationships with people and schools. "Even if our current interns don't return to Sandia, we'll have attached the Sandia brand to someone who has gone on to do great things, and that in turn helps recruit future interns and new hires," he adds.

— Patti Koning

DNA sequencing

(Continued from page 1)

online in *Nature Materials*, a team led by Sandia researchers report using self-assembly techniques to fabricate equally tiny but kinked nanopores. Combined with atomic-layer deposition to modify the chemical characteristics of the nanopores, the innovations achieve a fivefold slowdown in the voltage-driven translocation speeds critically needed in DNA sequencing. (Translocation involves DNA entering and passing completely through the pores, which are only slightly wider than the DNA itself.)

"By control of pore size, length, shape, and composition," says lead researcher Jeff Brinker (1002), "we capture the main functional behaviors of protein pores in our solid-state nanopore system."

The importance of a fivefold slowdown in this kind of work, Jeff says, is large because it allows more accurate determination of the translocation time, which correlates with polymer length.

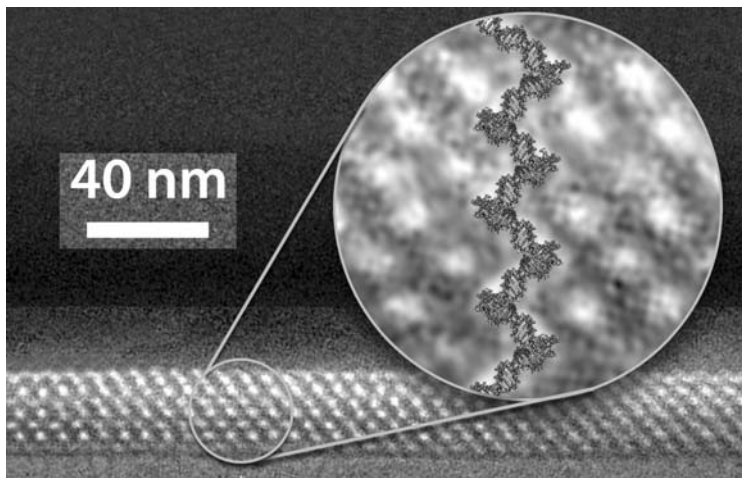
It also may allow resolution of features of the current fluctuations that relate to the polymer identity, e.g., the base pair sequence of DNA.

Also of note is the technique's capability to separate single- and double-stranded DNA in an array format. "There are promising DNA sequencing technologies that require this," says Jeff.

The idea of using synthetic solid-state nanopores as single-molecule sensors for detection and characterization of DNA and its sister materials is currently under intensive investigation by researchers around the world. The thrust was inspired by the exquisite selectivity and flux demonstrated by natural biological channels. Researchers hope to emulate these behaviors by creating more robust synthetic materials more readily integrated into practical devices.

Current scientific procedures align the formation of nominally cylindrical or conical pores at right angles to a membrane surface. These are less capable of significantly slowing the passage of DNA than the kinked nanopores.

"We had a pretty simple idea," Jeff says. "We use the self-assembly approaches we pioneered to make ultrathin membranes with ordered arrays of about 3-nanometer diameter pores. We then further tune the pore size via an atomic-layer deposition process we invented. This allows us to control the pore diameter and surface chemistry at the subnanometer scale. Compared to other solid state nanopores developed to date, our system combines finer control of pore size with the development of a kinked pore pathway. In combination, these allow slowing down the DNA velocity."



MAKING PROGRESS SLOWLY — This artist's conception illustrates DNA snaking through a Sandia-developed array of kinked pores, a difficult route that slows its passage significantly compared to "straight-shot" pores.
(Illustration by Mona Aragon)

The work is supported by the US Air Force Office of Scientific Research, DOE's Basic Energy Sciences and Sandia's Laboratory Directed Research and Development office.

In addition to Jeff, participating team members include Sandians David Adams and Carter Hodges (both 1832), with University of New Mexico (UNM) researchers Zhu Chen, Darren Dunphy, Nanguo Liu, Yingbing Jiang, and George Xomeritakas. Other research participants are from the UNM School of Pharmacy, the University of Illinois at Urbana-Champaign's Beckman Institute and Mechanical Science and Engineering Dept., and Purdue University's School of Chemical Engineering.

Jeff is a Sandia Fellow, and Distinguished and Regent's Professor of Chemical and Nuclear Engineering and Molecular Genetics and Microbiology at UNM.

Water/platinum

(Continued from page 1)

group presents a radically new picture of the initial interaction of the two substances.

They found that water molecules arrange in pentagons and heptagons in the primary wetting layer, not hexagons as their well-known arrangement in ice crystals suggests.

Since the primary wetting layer is a template for layers forming above it, understanding the initial structure should promote understanding of ice-crystal nucleation and growth, as well as aqueous chemistry and water flow at surfaces.

In an article published July 9 in *Physical Review Letters*, the researchers write that their unexpected result "underlines the importance of directly characterizing the first stages of water adsorption before claiming that one understands how water interacts with solids."

The Sandia team of Shu Nie, Norm Bartelt, Konrad Thürmer (all 8656), and Peter began with 1997 experimental results from the University of Göttingen in Germany. Those experiments showed that water initially grows as two-dimensional crystals on platinum, unexpectedly rotated so that they seem poorly aligned with the metal atoms.

Formation of a two-dimensional wetting arrangement has the well-understood meaning that water molecules are more attracted to platinum atoms than to each other. But why the rotation?

High-resolution scanning tunneling microscope images of the delicate system led the Sandia researchers to attribute the rotation to a clustering of water molecules lying parallel to the metal surface in a way that allows the molecules at the center of the cluster to bind particularly strongly to the metal, becoming, in effect, "molecular anchors."

The theoretical model proposed by the researchers added the surprising detail that the anchors' connections to the rest of the wetting layer is through water molecules arrayed in pentagons and heptagons, not hexagons.

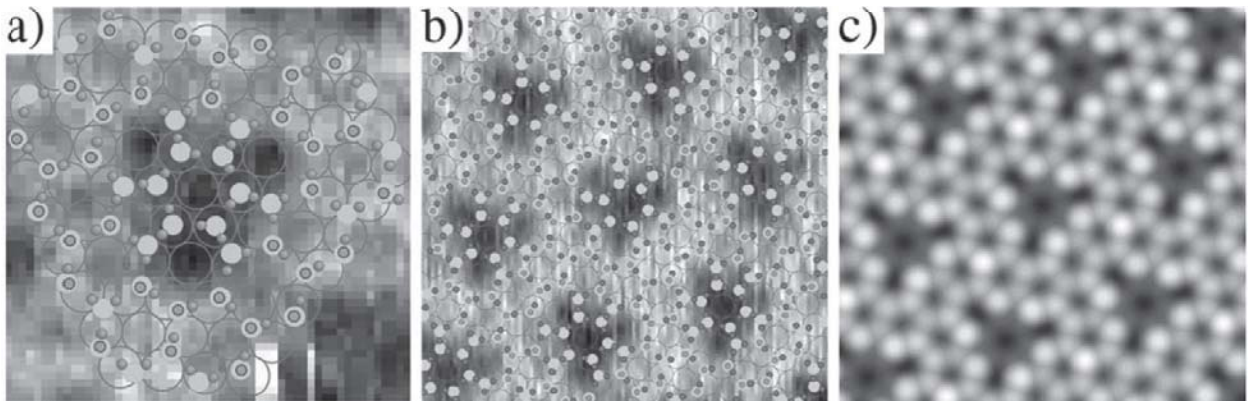
"We think the pentagon/heptagon arrangement allows bonds to bend down, connecting higher-lying with lower-lying molecules in a relatively strain-free way," says Peter. "This also suggests, however, that 3-D islands will not grow atop the wetting layer without substantial molecular rearrangement."

A similar scenario is likely true for water on other metal crystal surfaces, he says. "More image data and more calculations will clarify the picture, probably pretty soon."

Whether there are lessons from the metal studies that carry over to oxides and other insulators is an interesting question, "one I am drawn to," Peter says.

"We hope our results will yield a picture of value, down the track, for applications, but are happy enough to have made the progress we did."

The work was supported by DOE's Basic Energy Sciences department.



OVERLAY OF THE MOLECULAR MODEL on STM images of (a) a single triangle and (b) an ordered √ 37. Panel (c) shows a simulated STM image based on DFT charge densities.

US Senate delegation visits Sandia for briefing on capabilities, programs

A US Senate delegation headed by New Mexico senators Jeff Bingaman and Tom Udall visited Sandia July 31 for an overview of the Labs' capabilities and programs. The delegation toured several Sandia facilities, including the Weapon Integration Facility, the Microelectronic Development Laboratory, and the Neutron Generator Facility, and received briefings on Sandia's national security work for a range of federal agencies. Sandia President and Labs Director Paul Hommert served as executive host and Karl Braithwaite, senior manager in Government Relations and Strategic Planning Dept. 60, was technical host. The delegation included, from left, Al Romig, executive VP and deputy director for Mission Support; Kim Davis, acting manager of the NNSA Sandia Site Office; Jerry McDowell, executive VP and deputy director for National Security Programs; Sen, Jon Kyl, R- Ariz.; Sen. Jeff Bingaman, D-N.M.; Sandia Labs Director Paul Hommert; Sen. Bob Corker (front), R- Tenn.; Sen. John Thune (rear), R- S.D.; Sen. Tom Udall, D-N.M.; Steve Rottler, Div. 1000 VP and Chief Technology Officer; Sen. Jim Risch, R- Idaho; Mike Vahle, Div. 5000 VP (acting); and Mike McFadden, acting deputy manager of SSO. (Photo by Lloyd Wilson)

Report shows SS&TP fuels economy with jobs, tax revenue, spending

By Heather Clark

Sandia Science & Technology Park (SS&TP) businesses and Sandia sites in the research park spent $1.2 billion on goods and services and $2.3 billion in wages over the course of a decade, giving the local economy a major boost, according to a new report by the Mid-Region Council of Governments (MRCOG).

Albuquerque Mayor Richard Berry announced the report's findings Aug. 3 at a news conference at Ted Hobbs Park in the 250-acre master-planned research park. About 100 members of the Albuquerque business community attended.

"The Sandia Science & Technology Park is an excellent example of regional cooperation and coordination that is pushing economic development forward," Berry said in a written statement ahead of the announcement. "It is a model that has been recognized nationally for an innovative approach to regional economic development. The city of Albuquerque is proud to have been an active partner in this important job-creation project since its inception."

MRCOG assessed the research park's economic impact on the local and state economy from its inception in May 1998 through the end of 2009. The report also measured the number of Albuquerque-area jobs created in the park, population growth, spending in the community, and wage and salary levels.

"Institutions such as the Sandia Science & Technology Park are instrumental in creating economic stability within the region," said Dewey Cave, MRCOG's interim executive director.

The SS&TP's $1.2 billion cumulative impact on goods and services purchased, which is reported in 2009 dollars, led to tax revenue increases in the MRCOG region, which includes Bernalillo, Sandoval, Torrance, and Valencia counties, the report stated.

Economic activity generated by the research park resulted in gross receipts tax revenue to the state of New Mexico of nearly $58 million. The cumulative gross receipts tax revenue to the city of Albuquerque was $8.2 million, the report showed. Both figures are in 2009 dollars.

"Since its inception in 1998, the Sandia Science & Technology Park was founded as a partnership to promote business growth and facilitate collaboration with Sandia National Laboratories. The park has provided a remarkable boost to the economic community of New Mexico. This public-private partnership is a true testament to the importance of technology commercialization and its important role in job creation," said Sherman McCorkle, president and CEO of Technology Ventures Corporation and chairman of the board of the SS&TP Development Corporation.

ATTENDING A NEWS CONFERENCE to announce results of a Mid-Region Council of Governments report on the economic impact of the Sandia Science and Technology Park are, from left, SS&TP Executive Director Jackie Kerby Moore, Div. 1000 VP Steve Rottler, MRCOG interim Executive Director Dewey Cave, Technology Ventures Corp. President Sherman McCorkle, and Albuquerque Mayor Richard Berry. (Photo by Randy Montoya)

The average salary for full-time employees in SS&TP was $71,612 in 2008, much higher than the average salary for a full-time employee in the area, the report found. Private companies in the park paid an average salary of about $69,000.

"Since park jobs are primarily high technology, mainly engineering and research and development jobs, a high wage rate is associated with them," the report stated.

The SS&TP has been home to 2,284 jobs, including about 1,000 Sandia jobs, since its inception. The park's activities, including the Labs' facilities and employees, also have created 5,441 indirect jobs, for a total of 7,725 tied to the research park.

Sandia Labs facilities located in the park include the Center for Integrated Nanotechnologies, the International Programs Building, the Computer Science Research Institute, and the Innovation Parkway Office Center.

The SS&TP employed 1,942 people at the end of 2009, a drop of 169 jobs from the previous year due to the recession and the transfer of 116 jobs from the park to Sandia's facilities on Kirtland Air Force Base, the report said.

"The park has experienced a relatively small drop in employment in comparison to the level experienced throughout the city," the report stated.

Public investment in the park has been nearly $70 million, which includes DOE's contribution for construction and equipment, Sandia's management, land from Albuquerque Public Schools and the New Mexico State Land Office and landfill cleanup by Bernalillo County, the report said. Other federal, state and local governments also helped the park by providing grants or matching funds, the report said. For example, the US Economic Development Administration provided $3.4 million overall in grants for telecommunications infrastructure throughout the park. And the city of Albuquerque also contributed to infrastructure improvements in the park.

As of March 2010, investment in the park has been more than $331 million with 79 percent coming from private sources, says Jackie Kerby Moore (1933), the park's executive director.

"Twelve years ago, this area was nothing but dirt and tumbleweeds, but since then the jobs and investments have led people to invest in the surrounding area," she says. "The park has been a catalyst for economic revitalization in southeast Albuquerque."

The SS&TP is located next to Sandia, giving the park's tenant firms access to the Labs' scientists and engineers. Many tenants either supply Sandia with goods and services or technological products or have licensed and commercialized technologies that originated at the Labs.

The park was named Outstanding Research Park of the Year in 2008 by the Association of University Research Parks.

The park is a partnership of Sandia, DOE/NNSA, Lockheed Martin Corp., Technology Ventures Corporation, the city of Albuquerque, Albuquerque Public Schools, Bernalillo County, MRCOG, BUILD New Mexico/Union Development Corporation, the New Mexico State Land Office, the state of New Mexico, the Public Service Company of New Mexico, and the Economic Development Administration.

Where is the Work Planning & Control (WP&C) effort now?

By Jennifer Jennings-Carr

What did the independent assessment tell us?

Independent assessments of Work Planning & Control implementation, completed in June 2010, indicate that management attention is continually required to ensure full implementation of WP&C. Here are four high-level discoveries from the independent assessments:

• Some line WP&C procedures do not meet corporate WP&C requirements and/or are not fully implemented.

• Some line organizations have not identified and controlled their hazards at the activity/task level.

• Some line organizations have not implemented the Technical Work Documents requirements in MN471018, Work Planning & Control Manual, and Corporate Procedure ESH100.2.GEN.3, Develop and Use Technical Work Documents.

• Some line organizations have not effectively implemented feedback and improvement processes, including management oversight of activity-level work.

Development of the final report and a corrective action plan are in progress. For information regarding the status of the assessments in your organization, check with your manager or center or division ES&H coordinator.

What should I do based on this information?

You should continue to work on corrective actions from the organizational assessments. Look for the issues referenced in the four findings listed above in your local assessments.

What is the Verification and Validation (V&V)?

The V&V will look at all the corrective actions from the 2008 HS-64 audit Finding C-1 Corrective Action Plan (CAP). The V&V has begun and will conclude Sept. 30. The organizations slated for assessment have been notified. The purpose of the V&V is to:

1. Evaluate the effectiveness and sustainability of the corrective actions; and

2. Evaluate whether the corrective actions in the CAP eliminate or reduce the probability of recurrence of the deficiency.

The validation process will consist of personnel interviews, documentation reviews, and field observations. Line implementation criteria include:

1. Line organization implementing documents apply corporate WP&C expectations.

2. Line organization implementing procedures are understood by applicable members of the workforce and are followed.

3. Line organizations periodically evaluate the effectiveness of their implementation of WP&C, and deficiencies are identified and corrected per corporate processes.

4. There is evidence of management commitment and involvement in the WP&C process.

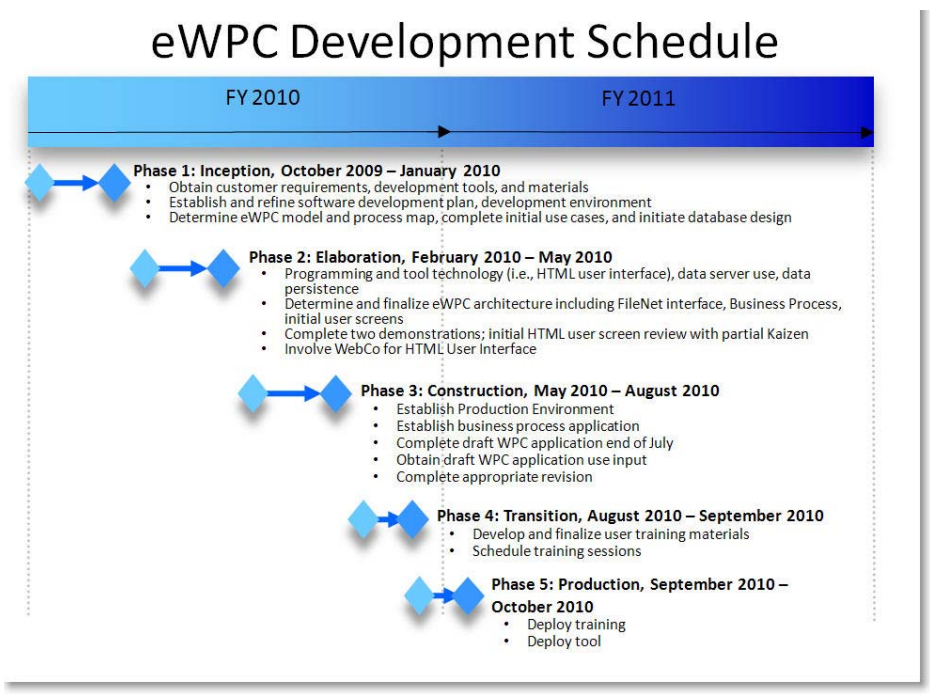
What is the latest information on the WP&C electronic tool?

Developing the corporate WP&C electronic application or eWPC is on schedule, with version 1.0 release slated for October 2010 (see below right).

Although the first version is primarily intended for applying WP&C to individual low-rigor, activity-level work activities, it may be applied to work activities at any rigor level. In the latter case, the work planner will need to manually complete certain steps (such as transmitting work package for higher-level management approval, authorization, oversight). Later versions will automate medium- and high-rigor features for these process steps.

The tool is intended to provide the methodical approach for consistent, complete, and evidential WP&C process implementation for individual activity level work activities. The eWPC tool implements the WP&C process provided by the WP&C manual and is illustrated by the process flow diagram located on the WP&C webpage. It is intended to be compatible with or supplement existing organizational WP&C processes. The tool does not replace an organization's WP&C process procedure.

Some tool features include a provision for using EIMS/FileNet document management system, a semi-automated Job Safety Analysis (JSA); and links to existing WP&C tools, including the rigor screening tool and Pre-Job and Post-Job Briefing checklists. There is increased efficiency in using the tool, as the tool builds activity-work packages that may be used for planning and authorizing new or repetitive work activities.



HAZMAT CHALLENGE

Sandia Emergency Response Team makes its mark at annual Los Alamos event

Story by Chris Mullaney • Photos by Margaret Mora
Except where noted

Imagine an overturned gas tanker trailer hit broadside by a pickup. It's been heavily damaged and is leaking from multiple gashes. Imagine having to stop those leaks and cut holes in the tanker and offload the product safely.

Imagine a railcar leaking deadly chlorine gas from damaged valves, 15 feet off the ground where an incapacitated rail worker lies on the tracks. Imagine a team of four responders, in fully encapsulating Level A suits, securing and making safe the loose railcar, pulling the victim to safety, and, loaded down with heavy metal caps, yokes, hardware, and tools, climbing to the top of the railcar to stop the leak.

Imagine you're in total darkness, lost in a maze of underground pipes and rooms. The environment is disorienting, filled with smoke and loud noise. Imagine a team entering and low-crawling to find you, getting you out of harm's way, and then treating damaged, bulging drums of biological hazardous material.

These were a few of the scenarios that were mocked up for competition at the 14th Annual Los Alamos Regional HazMat Challenge, held July 26-30. The competition provides an opportunity for emergency response teams to come together to network, practice technical skills, and learn new techniques under realistic conditions in a safe environment.

A good showing vs. teams from across the region

Sandia Emergency Operations Dept. 4136 sent four members of the Labs' Emergency Response Team (ERT) to compete in the HazMat Challenge: team lead Dale Larez, and members Eddie Gonzalez, John Ledet, and Chris Mullaney. They were accompanied and supported by two trainers and colleagues, Steve Saddoris and Ted Nee.

At the end of the five-day competition, Sandia's team came home with a second-place trophy in the overall competition, a second-place trophy in technical operations, and a special sportsmanship award. First-place overall was won by a team funded directly by the Department of Homeland Security, the Midwest City (Oklahoma) Fire Department.

This year, 10 teams in addition to Sandia and Midwest City competed: the Los Alamos National Laboratory hazmat team, the 64th Civil Support team, and fire departments from Los Alamos, Pantex, Portales, Espanola, Farmington, Santa Fe, Las Cruces, and Carlsbad. The US Department of Transportation and Environmental Protection Agency attended as advisers and proctors.

SMOKIN' — Eddie Gonzalez and Dale Larez, wearing bunker gear, move forward to rescue a victim in the confined space prop. The prop is full of smoke and completely dark with distracting music blaring. The confined space is made of a series of pipes ranging in diameter from two to five feet on multiple levels and inclines. (Photo by Ted Nee)

The challenges

The 2010 HazMat Challenge featured eight technical events and an oral quiz. The technical challenges had to be performed safely in 20 minutes or less, the faster the time, the better the score. Other judging factors were attention to detail and completion of all objectives. Teams were docked points for disregarding safety, inefficiency, missing cues and clues, or just not getting the job done.

Most of the challenges involved wearing Level A protective suits. Wearing a Level A suit is cumbersome, kind of like wearing a tarp or a tent, but provides the highest level chemical protection for the wearer. The suit does well at keeping chemicals out and away from the responder, but the bulky, low-visibility suit keeps the heat trapped in and becomes very hot and muggy.

In addition to the three events described above, other challenges included:

- **Responding** to a clandestine chemical lab where a suspect had been working on aviary bird flu strains and other biological weapons of mass destruction. The team had to respond in Level A suits to identify the hazards, get data on what was going on, and perform field chemical identification.
- **Responding** in Level A suits to a suspicious-package incident. The team had to identify the hazards and collect a powder sample. The sample was transferred to two other team members who used a field glovebox to do an on-site chemical analysis.
- **Answering** a call for a chemical suicide in a car.
- **Entering** a room in Level A suits and repairing leaking pressurized pipes, valves, and a cylinder.
- **Finding and securing** a lost radioactive source in a package delivery truck filled with mixed cargo.

On the last day of the weeklong competition, there was a two-acre, eight-station obstacle course that had to be completed in Level A protection. This course counted enough to make or break most teams.

Sportsmanship

It was hot, humid, and dirty. The stress level was high. Competitors were away from home and out of

their environment and element. Under these circumstances, a friendly "hello" or "good luck", or a cold water or Gatorade, mean a lot. Lending a hand backing a vehicle, letting others sometimes go first, understanding frustration, letting the little things go, cheering competing teams on, even pitching in to pick up trash — are all parts of real responses, drills, and competition. To recognize the importance of these values, the HazMat Challenge has a special award, the Sportsmanship Award. This award is determined by all the teams, all the staff, and all the proctors, with a vote for the team demonstrating the most sportsmanship. As a huge and humbling surprise to them, the Sandia ERT was chosen by their peers to also receive the coveted Sportsmanship Trophy.

Preparation

The HazMat Challenge events are taxing, both academically and physically. The team hit the books in preparation for the event, but last year's team and the training group ensured that the academic training was given to all the ERT members all year long. The training was for a better prepared ERT, to perform the mission better, not just success in the next year's challenge.

The team trained in Level A and B suits and bunker gear in the dark and in the heat. Training included running, lifting, moving rescue mannequins, and practicing with chlorine leak trainers. Albuquerque Fire Department and especially AFD Battalion Chief Robert Sanchez (who also works at Sandia), were instrumental in getting the team these prop trainers and opportunities.

Support

A number of organizations and individuals helped prepare the Sandia HazMat Challenge team. They included:

• The entire Sandia Emergency Response Team, led by Gary Baldonado, which kept the homes fires burning and fully supported the HazMat Challenge effort. The group collectively shouldered extra work while the 2010 HazMat Challenge team was in training or away for the competition. Sandia ERT member Andrew Leyba provided indispensable logistics support.

• Last year's ERT HazMat Challenge team, the trailblazers who brought back lessons learned and invaluable insights for training and preparation. Trainers in departments 4136 and 4137 used the input from last year's HazMat Challenge team to custom-build quality emergency response operations training, drills, and exercises throughout the year.

• The Labs' emergency management training, drill, and exercise staff, particularly Steve Saddoris and Ted Nee, who accompanied the team to the Los Alamos competition to provide coaching and logistical assistance.

• Margaret Mora (4136), who on her days off travelled to Los Alamos to help the team get ready for each tightly scheduled event and to be in the right place at the right time with the right gear and the right information.

• Management support: ERT administrative team leads Bill Wolf, Carol Bonney, and Rick Romero, and department managers Eugene McPeek (4136) and Michael Knazovich (4137).

TEAMWORK — John Ledet and Dale Larez "buck" a ladder to get to the top of a leaking railcar while Chris Mullaney and Eddie Gonzalez return from "doing a 360" to determine hazards all around the area. The Sandia ERT HazMat Challenge team set a record for the least amount of time to complete the hazard mitigation of the railcar for the second year in a row.

Embodying Sandia's values

Why did the Sandia ERT team succeed? On the way back from the competition, team members talked about the event. When they started thinking about the factors that led to success, one thing seemed to stand out: The team members are not all cut from the same mold. Ethnically diverse, the team also brought a diverse range of experience to their roles on Sandia's Emergency Response Team. The team concluded that they succeeded by embracing ethics and diversity, and adhering to Sandia's corporate values — integrity, excellence, service to the nation, each other, and teamwork.

Team lead Dale Larez summed up the team's attitude when he observed, "We want to go back next year to bring back the first-place trophy."

The team — strength in diversity

Chris Mullaney is the oldest member of the team. He has been an ES&H professional and emergency responder with Sandia for 21 years. Before coming to Sandia he spent 11 years in the US Navy. He has a background in radiation protection and chemistry.

John Ledet is able to shift on the fly to make any combination of members a true team. His knowledge of high-tech monitoring equipment gained the team many points. John brought his experience in logistics, hazmat, transportation, and delivery of hazardous materials.

Photos by Randy Montoya

Eddie Gonzalez brings into play the fast actions and reactions he has cultivated on the soccer field to help the team achieve success. Eddie, a former semipro soccer player now playing for the New Mexico Club A-1 team, is strong, fast, and a technical leader regarding hazmat tactics, constantly looking for another, better, more efficient way to get tasks done.

Mission leader Dale Larez, a former Rocky Flats and Sandia Special Response Team security lieutenant, demonstrated true leadership by valuing the entire team's input, but at times had to make the hard, time-critical, definitive call. Dale led the diverse team in the weeklong challenge, as well as in the physical training and preparations during the month leading up to the event. Without Dale spearheading this effort, the Challenge would not have been a success, and Sandia may not have had a team.

"It is our intent when we're on duty to make sure that everyone goes home safely every day."

— Mission leader Dale Larez

SCRAMBLING — Sandia ERT members, from left, John Ledet, Chris Mullaney, Eddie Gonzalez, and Dale Larez work feverishly to repair leaks while in Level A suits at a pressurized "valve tree" prop. Pressurized water simulates multiple releases of corrosive and poisonous liquid.

The trainers

GOT YOUR BACKS — Sandians Ted Nee, left, and Steve Saddoris accompanied the Emergency Response Team to the Los Alamos HazMat Challenge, where they provided coaching and logistics support. Ted and Steve have worked with the team for months preparing for the competition.

50 individuals, 61 teams

2010 Employee Recognition Awards program honors teams, individuals for exceptional contributions

More than 300 Sandians — individuals, team representatives, and their guests — gathered July 10 at the Embassy Suites Hotel in Albuquerque for the 2010 Employee Recognition Night, Sandia's annual celebration of exceptional service, leadership, technical accomplishment, and teamwork.

This year, the awards honored 50 individuals and 61 teams for their contributions to Sandia's mission success.

Labs Director Paul Hommert wrote in the awards program, "As we celebrate, I know that you will remember that your achievments are part of the larger fabric of how the Laboratory and all of its members support the national security challenges of the country. You have much to be proud of and I want to thank you for all your work."

The individual recipients are pictured on the next few pages. A complete listing of team winners and team citations and the names of individual team members begins below, right. Individual citations are on TechWeb.

Not pictured among individual winners: Kelli Collins, Robert Graham, Ronald Kensek, Charles Meyers, Jerry Simmons

Individual honorees


Helgi Adalsteinsson
8953


Janet Ahrens
6753


Nancy Aldridge
4219


Karen A. Baca
11200

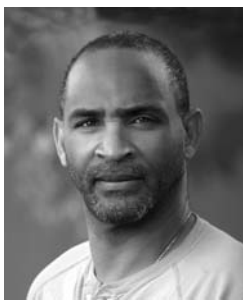

Christina Bailey
10503


Irene Bentz
5761


Ruby Chavez
5099


Tim Cohen
9001

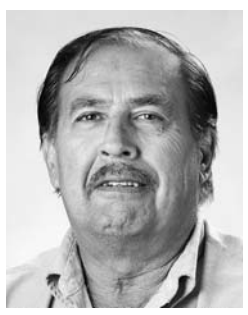

Max Decker
5575


Johnny Ellison
8517


Steven Feador
9312


Michael Frisch
8513


Tanya Gallegos
10691


Manuel Gonzales
1100


Roger Hartman
6416


Cedric Hawkins
2542


Richard Heintzleman
5353


Scott James
8365

Team honorees

60th Anniversary Team

Celebrating Sandia's distinguished past and bright future, the 60th Anniversary Team coordinated events across the country commemorating Sandia's enduring commitment to ensuring our nation's security.

Team members: Luis Amezcua, Patty Zamora, Sandhya Rajan, Mac McDuffie, Meg Luther, Ami Peterson, Tara Camacho-Lopez, Chris Miller, Stephanie Holinka, Erik Webb, Cheryl Garcia, Barbara Cochrane, Willie Johns, David Cunnington, Wendy Bechdel, Michael Lanigan, Steve Kempka, Darryl Drayer, Darell Rogers, Sam Bono, Michael Vittitow, Heidi Ammerlahn, Johanna Anez, Ken Ball, Sally Bangora, Kevin Bieg, Doug Bloomquist, Chris Brigman, Daniel Carroll, Pam Catanach, Alicia Cloer, Margaret Davis, Kelly Doty, Darrell Fong, Neil Fornaciari, Susanna Gordon, Shannon Guess, Sandra Rougemont, Marie Hoagland, Dorothy McCoy, Lloyd Wilson, George Rhynedance, Gloria Zamora; California Team members: Chuck Oien, Leticia Longoria, Mike Janes, Shannon Yeoman, Erik Ridley, Susanna Gordon, Kelly Doty, Karen Scott

ARAV-C Navigation Components Team

Successful delivery of an avionics inertial navigation subsystem (INS) with a newly designed high performance roll stabilized inertial measurement unit called Roll Stabilized Raptor (RSR).

Team members: John Wronosky, Anthony Perlinsky, Cynthia Blain, Victoria Getts, Keeven Hurtt, Etta Tsosie, Arthur Gariety, Johnny Silva, Andrew Petney, Gregory Mann, Troy Satterthwait, Dennis Lierz, Jac Pier, Robert Carlton, Ronald Diegle, Gary Fischer, Gregg Jones, Delia Madrid, Sharlene McLane, Katelyn Mileshosky, Tammie Neill, Larry Lee Pucket, Matthew Sena, Jerad Simon

ARAV-C Team

The development of this target started only 18 months ago and represents an incredible milestone in the successful ARAV high fidelity family of targets.

Team members: Mark Montavon, Scott Kowalchuk, Jerod Madsen, Patty Thomas, Linda Sparling, Jeffrey Gilkey, Michael Sekerak, Robert Goodwin, Clarence Marquez, Mark Miszkiel, Charlie Patterson, Kevin Staley, William Noel, Wendy Brothers, David Outka, Guy Prevost, Rafael Caicedo, Jonathan Christensen, Corey Cook, Dan Harrison, George Leuenberger, Terry Litts, Joshua Lucas, Luis Molina, Bruce Page, Kanmau Pupuhi, Michael Slattery, Austin Lee Wareing

BlackBerry Limited Area Approval Team

This multicenter team recently completed a successful, multiyear effort to obtain DOE approval to operate Sandia-owned BlackBerrys in the limited areas of Sandia.

Team members: Ken Keahbone, Ken Bernier, Mike Gomez, Anthony Aragon, Scott Ashbaugh, Roberta Evanoff, Kevin Fahey, Benjamin Huff, Marcia Jacobs, John Long, Brian Maxwell, Richard Pinsonneault, Charles Shirley, Roger Showalter, Bud Siple, Matthew Snitchler, Dallas Wiener, Elizabeth Wingle

Chemical Facility Operational Technology Demonstration (OTD) Project

The Chemical OTD project completed a final demonstration of procedures and technologies enabling rapid and effective restoration of transportation hubs following a chemical contamination incident.

Team members: Mark Tucker, Mollye Wilson, Veronica Lopez, Rita Betty, Theodore Borek III, Kevin Crown, Ashley Nicole Allen, John Brockmann, Donna Edwards, Patrick Finley, Matthew Hankins, Zach Heath, Pauline Ho, Robert Knowlton, Paula Krauter, Jonathan Leonard, Daniel Lucero

Countermeasure Quantification, Integration and Flight Test Team for Missile Defense Agency Mission

The team's effort contributed to a successful target flight designated as FTG-06 for MDA. This marks a major milestone for the Payloads program.

Team members: Kurt Kunzler, Gary Ashcraft, Adam Peters, Chris Russell, Michael Sumulong, David Weigand, Roman Martinez, J. Jordan Carnahan, David Muron, Lloyd Irwin, Timothy Campbell, Owen Henderson, Justin Johnson, Robert Graham, Robert Williams, Albert Brown, Joseph Perry, Tony King, Mary Harris, Lisa Kennicott, Melvin Krein, Clinton Landron, James Moore, Daniel Jackson Peacock, James Vanderburg

Cryogenic ZR Target Capability

For establishing the capability to perform cryogenic target experiments on the ZR facility for both fusion and dynamic materials programs.

Team members: Keegan Shelton, Seth Root, Drew Johnson, Michael Jones, John McKenney, Thomas Mattsson, Charles Nakhleh, David Hanson, Andrew Lopez, Gordon Chandler, Ruth Smelser

CSI: Dognapping Workshop

The team provided the successful CSI: Dognapping program for 168 students, addressing the shortage of future scientists and engineers by engaging the students in solving a science mystery.

Team members: Bianca Garcia, Hongyou Fan, Cory Jo Zarick, Thu Doan, Alia Saad, Timothy Boyle, Rona Hammetter, Eric Branson, Janelle V. Branson, Bernadette Hernandez-Sanchez, Sarah Hoppe, Patrick Burton, LeighAnna Ottley, Derek Wichart, Krista Hawthorne, K. Chris Monroe, Lindsey Evans, Constantine A. Stewart, Arthur Graziano, Daniel Yonemoto, Bill Hammetter, Dominique Foley Wilson, David Steele, Kyle Fenton, Andrew Collord, Tim Lambert, Brian Kaehr, Denise Bencoe, Geoffrey Brennecka, Adam W. Cook, Anna Gorman, Richard A. Kemp, Jacob Kesner, Sean T. Winters

Dark Storm Integration and Deployment Team

For technical excellence in design, deployment and operation of a unique computing environment for WFO customers based on Red Storm technology.

Team members: Joe Sanders, Robert A. Balance, Curtis Keliiaa, Geoff McGirt, Dave J. Martinez, Lee Ward, Enid Brown, Archie Gibson, Gloria Gibson, Suzanne Kelly, L. Scott K. Maruoka, Melanie Mead, Stephen Monk, David Morrison, John Naegle, James Schutt, William Vonderheide, John Zepper

Design and Implementation of the New Military Liaison training complex and Weapon Display Area

For outstanding contributions to the design and implementation of the new Weapon Display Area and Military Liaison Training Complex

Team members: Sheryl Hingorani, Heather Schriner, Marie Vaughn, Cristina Montoya, M. Anthony Chavez, Bill Beenau, Judy Hubbard, David Logsted, Tina Stetson, Dennis Croessmann, Neill Gilbertson, Mark Greenslete, Brian Kinler, Ajoy Moonka, Timothy Peterson, Christine Riddle

Disposal of No Defined Use Depleted Uranium Items

The team completed treatment of 172 kg of pyrophoric depleted uranium items to ensure safe, compliant, and cost-effective disposal of a difficult waste stream.

Team members: Neal Sullivan, Jesse Bland, Martin Brennan, Michael Spoerner, Dianna Muller, Tom Polachek, Michael Vallejos, Phyllis Peterson, Gary Bender, Bill Bixby, Chad Hjorth, Michael Roth, James Duncan, Jim Thompson, Patrick Murphy

Division 10000 Vice President's Safety Council

The Division 10000 Vice President's Safety Council is a high-performance team that implements programs to enhance the safety and security culture for division employees

Team members: Kristin Flores, Kym Lee, Daniel T. Sanchez, Robert Petro, Tyler Burch, David Cocaine, Susan Leach, Kyong Lee-Young, Amanda Sisneros, Kelly Westlake

Division 6000 Space Consolidation Project

For outstanding teaming across various divisions to improve Division 6000's space utilization metrics, creating cost savings and efficiencies.

Team members: Karla Simoes, Tracy Dunham, Barbara Jaramillo, Taunja Osborn, Yvonne Vallegos, William Tierney, James Davis, Betsy Galloway, Teresa Bennet, Laurel Taylor, Inez Anaya, Dorean Archuleta, Debbie Chavez, James Chorba, Lynn Fitzpatrick, Theadore Gunther, Gail Hughes, Nicole Morgan, Patrice Sanchez, Evelyn Serna, John T. Harding

DSA SMU/Nexus Product Lifecycle Management Configuration Management Team

Development of a product data management system that provides a single, integrated source of product definition and change control, based on configuration management industry standards.

Team members: Timothy Meeks, Chris Russell, Dennis Nelson Jr., Ann Hodges, John Shaw, Barbara LaGree, Jeremy Plake, Wilbur Martin,

(Continued on next page)


Shanalyn Kemme
1725


Robert Lill
10610


Chris San Marchi
8222


Ramona Myers
411


Ciji Nelson
6416


May Nyman
6736


Harold Ortiz
5933

(Continued from preceding page)

James Tristan Thompson, Mark Garrett, Daniel Wilcox, Marlo Maxson, Daryl Stephens, Richard Chavez-Hatton, Douglas Cotter, Brenda Evanetich, Michelle Griffith, David Kunsman, Richard Liedke, Harold Radloff, Abraham Sego, Charles Vanecek

DTRA FIT-P Program Team

Nominated for excellence in developing science-based understanding for next-generation hard-target data recorder and fuze technologies.

Team members: Lonnie Diehl, Thomas Martinez, Leonard Gragg, Kelly Klody, Patrick O'Malley, Henry Apodaca, Scott McEntire, Marcia Anderson, Gina Gregerson, Chat Hettler, Hae-Jung Murphy, Aaron Niese, David Wackerbarth

Explosive Destruction System (EDS) German Traktor Rocket Team

For expanding the capability of the Explosive Destruction System to treat German Traktor Rockets, thereby resolving a critical need in the chemical weapon demilitarization program

California team members: John Didlake, Brent Haroldsen, Dan Golling, Tom Raber, Mien Yip, LeRoy Whinnery, Bob Crocker, Bob Bradshaw. **New Mexico team members:** Peter A. Montoya, Jerry Stofleth, Mollye Wilson, Ashley Nicole Allen, Gilbert R. Gonzalez, David Cole, Mark A. Naro, Edward Steven Virostko, Weldon Teague, Ed Vieth, Jonathan C. Leonard, Rita Betty, Robert Bradshaw, John E. Brockmann, Robert Crocker, John Didlake, Edwin Duckett, Keith Frakes, Daniel Golling, Daniel A. Lucero, Thomas N. Raber, W. Venner Saul, Mark D. Tucker, LeRoy Whinnery Jr, Mien Yip

Facilities Transformation Team

This team transformed the Facilities Management and Operations Center into a mission-focused, process-driven organization which seeks to maintain service levels while improving efficiencies by 30 percent.

Team members: Anthony G. Chavez, David Wisler, Shelley Whitener, Ralph Cipriani, Ron Maes, David Bailey, Dave Hendrick, Stephen Rudisell, William Kolb, Camille Reyes

Family Day 2009 Core Team

This exceptional team planned and delivered a successful, safe and secure open house event under budget for more than 12,500 Sandians and their families.

Team members: Ami Peterson, Amy Tapia, Louie Trujillo, Anthony G. Chavez, Dorothy McCoy, Doug Bloomquist, David Keese, Pablo Montoya, Lynnwood Dukes, Luis Amezcua, Carol Anne Bicher, Walter M. Heimer, Willie J. Johns, Lisa Kaneshiro, Michael Lanigan, Jeremy Michaels, Patrick Ortiz, Steven Pope, Darrel Rogers, James A. Smith, William Wolf, Patty Zamora, Pam Catanach, Oscar Cox, Charles Montoya

Fleet Services Organization

In recognition of your daily application of Operational Excellence principles in your operations.

Team members: Gilbert Sanchez, Diana Goold, Mark Crawford

Harvester

The Harvester team designed an airborne radiation collection system providing national leadership with an urgently needed capability against the threat of a domestic nuclear attack.

Team members: David Calkins, Jennifer Dellinger, Marcia Espander, Eduardo Padilla, Catherine Gonzales, Walter Caldwell, Howard Arris, Robert Koudelka, Glenn Barker, Kevin Schmidt, Joe Sanders, Matthew Allen, Stephen Martin, Jennifer Powell, Brian Schwaner, Henry Shefelbine, Robert Winters

Heating Systems Modernization (HSM) Project Team

The HSM Team established the approach to replace the failing steam plant and designed, constructed, and commissioned replacement systems with minimal impact to site operations.

Team members: Tim Peterson, Pete Argo, Jenny Dubbs, Ronald W. Chapman, Jennifer Lovejoy, Tanya Gallegos, Boyd Smith, Nick Durand, Michael Rocco, John E. Graveline, Christie Simmons, David Hofmann, Philip Pelzman, Douglas Schreiber, Bill Leinnewebr, Daniel Stephens, Rick Johnston, Jim Smith, Roger Bell, John Anderson, Mateo Aragon, Laura Draelos, Christopher Evans, Kelley Garcia, Rebecca Lopez, Mario Ramirez, Troy Rogers

Hifes Flight Segment Diode R&R Team

For the completion of test anomaly rootcause analysis, diode replacement process, and requalification of electronics while minimizing the impact to delivery of flight qualified hardware.

Team members: Paul Vianco, Gayle Echo Thayer, Kate Olsberg, Irene Bentz, Ana Nevarez, Mike Tritt, Kent Hanrahan, Aaron Murray, John McClendon, Rob Mills, Jim Klarkowski, Woody Woodstra, Brett Eller, Joe Mulkern, Kevin Schmidt, Michael Bredmann, Paul Claassen, Seferino Crollett, Lisa A. Garcia, Stephen Garrett, Jeffrey Green, Melisa Heller, Leslie Juarez, Robert Kipp, David Smith, Sara Sokolowski, Michael Swanson

High Power Microwave Team

For consistently providing cutting edge compact pulsed power and RF design and development in a strongly customer (WFO and DP) focused environment.

Team members: John Borchardt, Larry Lucero, Larry D. Bacon, Jeff Williams, Derek Lamppa, Gary Denison, Jeff Alexander, Jason Shelton, Joshua Usher, Paul Primm

Integrated Surety Solution (ISS) Secure Ground Transport (SGT) Demonstration

For successfully executing a challenging technical demonstration of an advanced surety concept in a Secure Ground Transport test platform

Team members: Kevin Schmidt, John Hatley, James Wiseman, Steve Silva, Albert Anaya, Lisa Andersen, Titus Appel, Hillary Armstrong, David Becker, Jay Brotz, Gregory Corbett, Brian Geery, David Gelet, Steven Haney, Michael McLean, William Morse, Stephen Sanders, Patrick Schindler, Douglas Stark, Robert Tooley, Kenneth Wallace, Derek Wartman, Carla Weatherred, Adrian Wong, Marisa Ruffolo

Kings Bay South Enclave Team

For exceptional service in the design, implementation, and testing of the South Enclave Water Front Restricted Area Security System at Kings Bay.

Team members: James Randolph, Jack Connell, James Walker, Cheryl Herrera, Diane Armijo, Lonnie Atencio, Kevin Esquibel, J. Luis Fernandez, Steve Strickland, Lee Carlson, Daniel Keller, Bob Dooley, Sam Olsen, Ken Hammond, Brad Norman, Rory Schell, Linda Chance, Robert Elder, Pamela Kissock, Patrick Lynch, Stephen Sanderson, Walter Smith, Christine Whitley

Kitten Operating System Virtualization Team

For demonstrating the viability of virtual machine technology for HPC applications at a scale two orders of magnitude beyond any previous study.

Team members: Kurt B. Ferreira, Kevin Pedretti, Michael Levenhagen, Ronald Brightwell, Courtenay Vaughan, Suzanne Kelly

Menu 2010 Exercise Team

RPSD develops capabilities to render exceptional service in the national interest by developing a series of methods to rapidly quantify radioactivity in consumer food products

Team members: Nina Poppelsdorf, Brenda Maes, Sonoya Shanks, Rosie Preston, Luis Valdivia, Mike Buvinghausen, David Herrington, John McCulloch, Theodore Simmons

Mesa Fab Trusted Foundry Accreditation Team

In recognition for achieving Category 1A Trusted Supplier Accreditation for Trusted Foundry Services for microelectronics through the Department of Defense Trusted Supplier Program.

Team members: Marcelino Armendariz, Gary Simmons, Tracy Peterson, Michael Busse, Benjamin Huff, Richard Dondero, Natalie Barnett, Gregory Baum, Jayne Bendure, John Benecke, Emily Crespin, Anthony Farino, Rita A. Gonzales, Dale Hetherington, Reuben Paul Keller, Frank Loudermilk, Thomas Rogers, David Stein, Laura Whittet

MISSE 7 & 8 Team

Successful Delivery and Integration of the Materials on International Space Station Experiment (MISSE), the first space flights of the commercial FPGAs to evaluate radiation tolerance.

Team members: Jonathan Donaldson, Mythi To, Irene Bentz, Sara Sokolowski, Gayle Echo Thayer, David Bullington, Brandon Witcher, Kent Hanrahan, Jeffrey Kalb, Dan Kral, David Lee, Ethan Blansett, Dennis Clingan, James Daniels, Tracie Durbin, David Heine, Kathleen Olsberg, Christopher Wojahn

Mission Support Team for the Kauai Test Facility

Sandia's Kauai Test Facility completed one of the most aggressive launch campaigns in its history. The 6 launches were in support of the AEGIS BMD.

Team members: Lina Castillo, Margaret Scheffer, Reuben Martinez, Wayne Itokazu, Govinda Haines, Steve Breeze, Wes Crownover, Wilson Brooks, Jon Christensen, Alonzo Lopez, Judy Davenport, Michael Bejarano, Marc Kniskern, Michael Lensi, Terry Littz, Edward Madder, John S. Rathbun, Scott F. Rowland, Walter Rutledge, David Salguero, Mark Skobel, Rodrick Stanopiewicz, Steven Yesner

Moonlight Lab and Network Team

For exceptional effort and devotion in developing the Moonlight Lab and Network, benefiting numerous projects at Sandia.

Team members: Doug Ghormley, Randall Smith, Bradley Nation

Nautilus Team

Nautilus' stunning 2009 successes are having profound effect on future DOD system requirements and inspired the delighted sponsor to propose vastly expanding Sandia capabilities.

Team members: Leanne May Storey, Adam Church, Andrea Mae Walker, Sam Miller, William Cordwell, Tim Draelos, Patricia Cordeiro, Marie-Elena Kidd, Martin Murphy, Otis Salomon, Mark Torgerson, Jennifer Trasti

Neutron Generator Final Assembly Team

For exceptional teamwork, lean manufacturing processes, and superior throughput in the NG Final Assembly Area.

Team members: Debra King, Timothy Montoya, Susan Shelton, Bill Shiffrar, Moses Jones, Bruce Bowles, Glenn Roubik, Mary Bonner, Muhammad El, Pamela Walker, Richard DeCesare, Dee Dee Griffin, Juanita Marker

Nexus FPA Test and Characterization Team

The Nexus FPA Test and Characterization Team successfully completed the optical-electrical performance evaluation of flight units for use in a high consequence satellite system.

Team members: Siv Limary, Gary Whitlow, Rosa Montoya, Joe Luis Rodriguez, Monica Luz Espinosa, Alan Hsu, Walt Zubrzycki, Robert Yawakie, Steve Young, Rex Kay, Jose Guillen, Adam Brewer, A. Robert Ellis, Erik Fosshage, Paul Gibson, Joseph Lyle, Jaime McClain, Alice Sobczak, Georgia Yawakie

Office of Counterintelligence

For exceptional service, enhancing Sandia's counterintelligence and counterterrorism missions and positively impacting the DOE nuclear weapons complex, the DOE Counterintelligence Office, and the intelligence community.

Team members: Marci Witkowski, Ruth Griffis, Linda Hillis, Lucille Boone, Gina Sada Rightley, Ken Fisher Jr., Alicia Anastasio, Stephanie Balderrama, Calvin Guymon, Gerald Hendrickson, John Hudenko, Randy Mcclelland-Bane, John Paulson, Dennis Rehmeier, Kimberly Sandoval, David Stout, Janet Walters, Bruce Held

OPUS Test & Analysis Team

The OPUS Test & Analysis Team developed innovative tests, supported by simulation, demonstrating an effective solution to a difficult problem in the OPUS design space.

Team members: Kurt Metzinger, Scott Sanderville, Jason Wilke, David Pace, Stephen Attaway, Gilbert Gonzales, Edward Virostko

Phoenix Series of LNG Fire Tests

For extraordinary performance on the two largest liquefied natural gas (LNG) fire experiments ever performed in support of public safety

(Continued on next page)


Stephanie Otts
5341


Lori Parrott
550


Cynthia Pepe
2735


Ronald Renzi
8125


J. Brian Rigdon
6385


Mark Rodriguez
1822


David Saiz
1832


Adrian Sanchez
10549


Paula Schoeneman
10656


Peter Schultz
1435


Robert Simonson
1716


Michael Spoerner
4139


G. Steven Sultemeier
4030


Katherine Sutton
5747


Geoffrey Torrington
5711


Billie Weatherly
910


Caren Wenner
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David Wheeler
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Joel Wirth
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Emily Wright
6702

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and national security.

Team members: Stephen Coffing, Anay Luketa, Tom Blanchat, Jill Sou-Anttila, Caren Whenner, RyAnn Washburn, Regina Deola, James Arnold, Dann Jernigan, Allen Ricks, Richard Jensen, Paul Helmick, David Bishop, Richard Simpson, Sheldon Tieszen, Michael Bejarano, Edward Bystrom, Byron Demosthenous, Ryann Fisher, Sylvia Gomez-Vasquez, Charles Hanks, M. Michael Hightower, Jeffrey Mercier, Paul Montoya, Mark Nissen, Michael Vigil

PLM Configuration Management I.T. Solutions Team

For deployment of a COTS engineering product configuration management system as a major component of the Sandia Product Lifecycle Management solution set.

Team members: Jeremy Plake, Daryl Stephens, John Shaw, Jeremy Dencklau, Jason Kritter, Timothy Meeks, James Thompson, Abe Sego, Brenda Evanetich, Tom Cox, Marlo Maxson, Richard Chavez-Hatton, Ann Louise Hodges, Wilbur Martin, Chris Russell

Pocket IMS Explosives Detection Development Team

The Pocket IMS Team developed and delivered a novel hand-held explosives detection system with demonstrated sensitivity capable of detecting explosive vapors.

Team members: David Alexander, Mary Lyn Groves

Project Estimating Tool Team

Project Estimating Tool, Version 2, (PET2) produces high fidelity, ROM cost estimates with robust and professional report presentation to a wide variety of users.

Team members: Tasha Perea, Yvonne Petrova, Nikki Lobato, Bernadette Edge, Jay Clise, Donna Baros, Lisa Branum, Rebecca Campbell, Maxine Gallegos, Stanley Garrison, E. Joyce Gearou, Alice Kare, Lisa Teraji

Power Source Study Team

For outstanding competency and commitment carrying out the VP 2000 commissioned study to identify replacement technology for a fielded power source.

Team members: Steven Showalter, Donald Hardy, Scott Whalen, Christopher Apblett, Andrew Shugard, Peter Van Blarigan

Radioactive Material Relative Risk Study Team

For developing a realistic and reproducible analytic method to assess the relative risk associated with terrorist use of different radioactive materials and forms.

Team members: Marvin Larson, Susan Longley, Len Connell, Mark Ladd, Theodore Borek III, Adam Youtzy, Jason Bolles, John Brockmann, Fredrick Harper, Heather Pennington, William Rhodes III, Steven Pope, Lawrence Trost

Red Sky

For outstanding technical and operational excellence in delivering an innovative, energy-efficient, commodity-based supercomputer with Top-10 world-class performance.

Team members: Joel Stevenson, Kathryn Chavez, Sophia Corwell, Dave Martinez, Russell Goebel, Dino Pavlakos, Rob Leland, Jeff Ogden, Joe Mervini, Jessie Livesay, Robert Amdahl, Robert Balance, Doug Doefler, Marcus Epperson, Kevin Kelsey, Stephen Monk, John Naegle, John Noe, Mahesh Rajan, James Schutt, John Zepper

Remote Sensor Anomaly Team

For exceptional work mitigating an obscure and difficult problem on a nationally critical and one-of-a-kind aging remote sensor.

Team members: Kurt Lanes, Howard Kimberly, Kevin Harrison, Michael Swanson, Steven Gardner, Kevin Robbins, Glen Magee, Rich Hunt, Barbara Funkhouser, David J. Miller, George W. Trevor, Lisa Wilkening, Allan Yaklin

Salinas Energy Dissipation ASC Level 2 Milestone Team

For technical excellence in the development of improved energy dissipation models for predicting mechanical response of weapon systems to hostile environments.

Team members: Will Holzmann, Michael Starr, Garth Reese, Chris Riley Wilson, Todd Simmermacher, Manoj Bhardwaj, Michael Jew, Michael Ross, Daniel Segalman, Nathan Spencer, D. Gregory Tipton, Timothy Walsh

Sandia Energy Management Team

This team strives to implement projects that will reduce energy consumption, increase water conservation, reduce green house gas emissions, and increase renewable energy use at Sandia.

Team members: Lucille Roybal, Marti Adams, Erika Barraza, Israel Martinez, Michael Rocco, Matthew Brito, Christopher Evans, Norman Wasson

Sandia ITER Team

For outstanding team productivity and scientific progress in providing excellent technical results that have in many cases defined the technical needs of the ITER Project.

Team members: Jimmy McDonald, Fred Bauer, Thomas Lutz, Dennis Youchison, Gregory Natoni, Rebecca Coats, Steve Sultemeier, Michael Ulrickson, Joseph Kotulski, Michael Pasik, Joseph Garde, Frank Dempsey, Suzette Beck, Stacey Foster, Steven Goods, Marcelini Jordan, Cynthia Maxwell, Rena Yellowrobe

Small FerroElectric Neutron Generator Product Realization Team (SFENG PRT)

The SFENG PRT rapidly recovered from being shut down to begin design/development-to-manufacturing transition in support of LLCE for the W87 by December 2012.

Team members: Bobbie Williams, Robert Grubbs, Carla Busick, Daniel Ray Garcia, Karen Shin, Adrian Romero, Jeannette Moore, Scott C. Jones, Amanda Young, MaryAnne Heise, Sharon Trauth, Roger Moore, Stephen Crowder, Even Dudley, Scott Gillespie, Odelia Griffin, Everett Hafenrichter, Laura Halbleib, Gary Harms, Charles Jojola, Saskia King, Steven Lockwood

Stage 2 Solar Energy Grid Integration Systems (SEGIS) Team

For exceptional teamwork running the SEGIS program that enables high penetrations of photovoltaic power into "smart grids" through developments of inverters, controllers, energy management, and communications.

Team members: Ward Bower, Carolyn David, Lisa Sena-Henderson, Scott Kuszmaul, Abbas Akhil, Sigifredo Gonzales

Starry Night

Broadly engaging Sandia experts, the Starry Night team elucidated an unanticipated level of foreign nuclear design capability and illustrated linkages in international nuclear proliferation.

Team members: Aaron Otzenberger, Joe Saloio, Thomas Hafenrichter, Rachael Carlson, Melody Teixeira, Stephen Attaway, Daryl Reckaway, Michael McReaken, Adam Wadin, Tom Massis, Edward Bystrom, Christopher Colburn, Kevin Fleming, Jerry Fordham, Roger Harmon, Bryant Morgan, Mark Nissen

SunBlur Team

The SunBlur team made a significant technological breakthrough that supports our sponsor's mission.

Team members: Benjamin McBride, Michael Hohimer

System-of-Systems Analysis Toolset (SoSAT) Development and Application Team for the Army Future Comb

For exceptional performance and dedication in the innovative development and application of SoSAT to provide Army FCS and Integration Programs unprecedented information for decision making.

Team members: Darryl Melander, Marie Gendereau, Hai Le, Aaron Aguilar, Jesse Hatcher, Alan Nanco, Christopher Atcitty, Steven Handy, Kimberly Welch, Gio Kao, Dennis Anderson, Liliana Andrade, Simeon Bochev, Kathleen Cash, Matthew Hoffman, Harvey Ogden, Denise Padilla, Bruce Thompson

W80-1 JTA3 High Fidelity Test Team

This team successfully coordinated a flight test of a W80-1 Hi-Fidelity JTA at the Utah Test and Training Range on Aug. 25, 2009.

Team members: Marlin Kipp, Eden Eager, Lawrence DeChant, John Anderson, James Berg, Bernard Browne, Kevin Carbiener, Gloria Christensen, Bruce Hamilton, Colleen Koenig, Joseph Miller, Albert Romero, Howard Royer, Alfred Ver Berkmoes, Jose Vigil, Bobby Weaver, Walter Wolfe

W88 JTA2 Refresh/TestWorks

The W88 JTA2 Refresh team employed an innovative design, qualification and production approach to reduce the total cost and cycle-time of traditional JTA development programs.

Team members: Catherine Baca, Sharon Del Prete, Cathy Sanchez, Steven Grieco, Michael Rimbert, James Metzler, Timothy Mooney, Derek Baptist, Bruce Brunett, Jennifer Franklin, Shera Guzzetta, Benjamin Jaseph, Jerrod Peterson, John M. Van Seyoc, Richard E. White

Z Center Section Team

For making numerous substantial improvements to the safety and efficiency of operating the Z accelerator's center section, which performs at Z's highest power densities.

Team members: Tommy Mulville, C. Shane Speas, Michael Sullivan, Jeffrey Kellogg, Eric Breden, Matthew Kernaghan

Center 2900 Energetic Restart Team (Tonopah)

2900 Energetic Operations Restarted at TTR and WETL and successfully resumed Lab and flight testing in support of stockpile evaluation and other national security programs.

Team members: Richard Crowder, Lori Zarembo, Rick Scarine, Glen Watts, Steve Ohrt, Todd Houchens, Karl Hess, Bob Sherwood

Integrated Surety Solution Secure Ground Transport Demonstration

For successfully executing a challenging technical demonstration of an advanced surety concept in a Secure Ground Transport test platform

Team members: Doug Stark, Ken Wallace, Marisa Ruffolo, Steve Haney

International Thermonuclear Experimental Reactor Test Module Manufacturing Team

For successfully manufacturing, on a compressed schedule, complex test modules critical to validating ITER first wall designs

Team members: George Audycki, Steve Goods, Gordon Gibbs, Annette Newman, Brian Hilliday, Ron Carr, Bryant Morgan

Metal Organic Framework Team

For inventing and characterizing an entirely new class of radiation detection materials

Team members: Ron Houk, Raghu Bhakta, Mark Allendorf, Patrick Doty

Rapidly Deployable Chemical Detection System User Interface Development Team

For exhibiting outstanding creativity, innovation, and flexibility to develop a novel web-based command and control system for the RDCDS chemical defense program

Team members: Joseph Lewis, Ann Yoshimura, Stephen Mueller, Hope Niblock, Craig Hokanson

Secondary Reachback Data Mining and Analysis Team

For outstanding support of the Department of Homeland Security Secondary Reachback Program

Team members: Dov Cohen, Kristen Hertz, Andrew Rothfuss, Arlyn Antolak, Tim Tooman, Isaac Shokair, Edward Walsh

Mileposts

New Mexico photos by Michelle Fleming


Leroy Holmes
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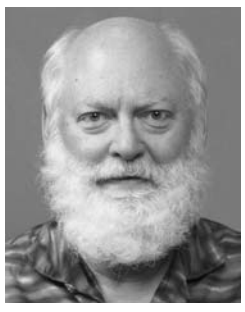
Donald Hardy
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Joel Miller
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Lisa Ann Mondy
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Ronald Price
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Pamela Puissant
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Judy Hubbard
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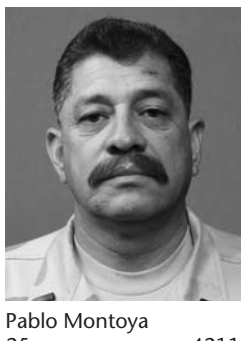
Doug Mangum
25 2820


Pablo Montoya
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Patti Thomas
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Robert Leland
20 1400


James Ohlhausen
20 1822

Fried green tomatoes and dodging tornadoes — what a ride!

Story by Iris Aboytes

LEANING INTO IT — Susie leans into one of the hundreds of curves she encountered on her way to "conquering the dragon."

What did you do on your summer vacation? As school children going back to school, if we had not gone to Disneyland, it wasn't worth mentioning. Susie McRee (9328) and her riding buddy, Deb Fuller, went to Disneyland. Well, not really, but they had such fun it felt that way as they rode their motorcycles through 37 states in three weeks.

"Deb asked me if I wanted to ride to Vermont to visit her brother and his family," says Susie. "I began to think we could stop in Warner Robins, Ga., where I grew up. Then, since we were so close to Tail of the Dragon [a famous stretch of prime motorcycle highway in North Carolina] and Blue Ridge Parkway, we could go there, too. Over Christmas break, I had maps spread all over trying to hook the 37 states together."

Riding a motorcycle is an idea Susie had toyed with for a number of years, but she waited until her daughter was 18 years old and on her own. One of her friends began riding and that helped Susie with her decision. She test rode a BMW and loved it. She purchased a 2007 BMW R1200R and joined the local BMW club. She knew that by joining a club there would always be someone to go riding long distance. That is how she met Deb.

Susie carries SPOT, a tracking device that allows her to send safe arrival messages to family and friends. The whole trip was tracked and exported to a web page.

THE ROUTE — Susie plotted their trip that took her and riding partner Deb through 37 states and 7,100 miles in three weeks.

Their first day began with a 650-mile ride to Sherman, Texas. "We saw javelina, armadillos, and drove by a camel farm," says Susan. "It was a long and humid day."

The next day was even longer. They rode 800 miles to Pensacola, Fla., and arrived in Warner Robins on the third day. Deb had never been to the South, so she got to experience eating boiled peanuts and fried green tomatoes.

"We met Don, who has been selling peaches and boiled peanuts on the roadside for 40 years," says Susie. "It is interesting that Georgia peanuts go to restaurants and wineries, while Portales, N.M., peanuts are sold on the roadside. While we were there we toured the Allman Brothers' former house and museum, called the Big House."

On their way to Tail of the Dragon, they rode through Macon to eat at the H&H Café run by two sisters, both called mama. When the Allman Brothers made it big, they took mama on tour with them. It was mama who had given them six plates of food, when they could only afford three. One of the sisters died at 94 in the kitchen, doing what she loved.

Their next destination was Tail of the Dragon. It is a stretch of road that has more than 318 curves in 11 miles.

YESSS! — Susie and Deb give an enthusiastic thumbs-up after they "conquered the dragon," a series of more than 318 curves in 11 miles that makes up the famous Tail of the Dragon stretch of prime bike-riding road in North Carolina.

"We were very anxious about this ride, unsure of what to expect — semis, cars crossing the center line, and hairpin curves. When they got there, Susie and Deb found out the top of the road had been closed due to rock slides. They had to come back down, ride all those curves again. We were sweating.

When they got on the Blue Ridge Parkway in North Carolina, "It was like Disneyland for motorcycles," says Deb, "more than 400 miles of paved road with gentle curves and limited access. The speed limit was 35-45 miles per hour."

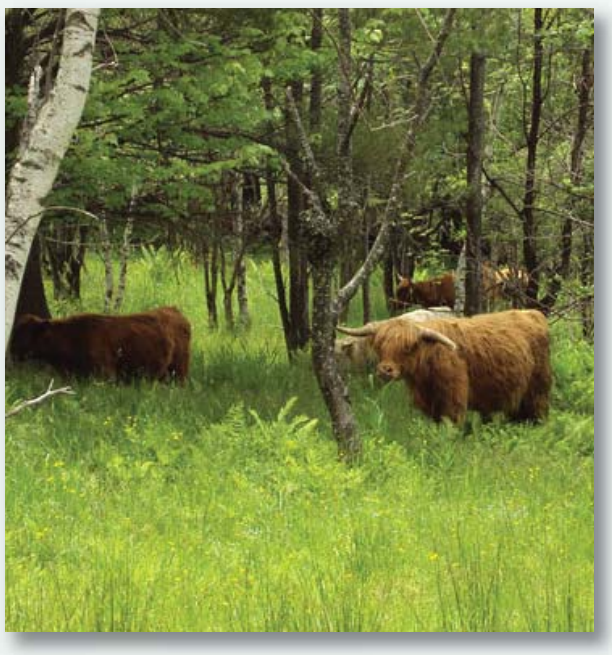
"We have a lot beautiful country," says Susie. "We dodged tornadoes and flooding in most states after we left Blue Ridge.

"It was beautiful getting to Deb's brother's house. They had a moose in the backyard the week before we arrived. A family of fox was currently living under their porch."

From Deb's brother's house the riders went to Stowe, Vt. where they had fresh pressed cider and cheese chocolate samples. Lunch was eggplant pizza. Then it was time to head home.

"I was a little anxious," adds Susie. "There would be no stopping points; we just needed to hit the road. I had gone down on ice the first part of May and was still having shoulder and rib issues. Can I really do this? I took a deep breath and pressed forward.

"What great country we live in," says Susie, "I just can't say it enough. We had lots and lots of rain, missed tornadoes, saw beautiful lush green valleys and brick roads and beautiful homes. We met wonderful people who were so willing to share their folklore. Oh, the smell of the flowers and trees, tunnels that gave way to the beautiful sunlight. We saw indescribable, majestic beauty."



"VERMONT DEER" — Shaggy Scottish highland cattle in New England visibly take notice of the motorcycles passing by.

ALONG THE WAY — Susie and Deb met Don, who sells boiled peanuts and peaches at his roadside stand.

Deb and Susie got home on schedule. Susie was sore from sitting, but had no complaints. Yes, they reached their goals and rode across 37 states, but they did more than that.

"I proved to myself I could do it," says Susie, "in spite of my having almost two heart attacks a day. I feel like I accomplished something for me, lots of self-satisfaction. I admit it. I am an adrenalin junkie and enjoyed experiencing every little part of the trip. Well, maybe not the hard rain, rough winds, and horrific traffic back east.

"And yes, just ask me. I will tell you about my summer vacation to Disneyland. Not really. Well, it was for us. We travelled 7,100 miles. What's next? Alaska in 2011!"

If you are interested in the full ride report, it is posted on the Land of Enchantment BMW message board at: http://nmbmwmc.org/forum/viewtopic.php?f=4&t=3249.