Sandia preemptive spark helps find intermittent electrical short circuits in commercial airplanes

Finding a short before it finds you helps make aircraft safer

By Neal Singer

Airplane travelers addicted to worry sometimes fret about an engine failing or a wing falling off, but they rarely stress about wiring. But they might — if they knew there are miles of aging wiring, intertwined like spaghetti, behind the side panels of a commercial airliner’s fuselage. An intermittent electrical short due to frayed insulation can make lights blink or air conditioning falter, or even cause fatal crashes, as with flights SwissAir 111 or TWA 800.

The challenge to engineers is how to locate a wiring fault before — not after — it becomes a problem. That’s quite a trick. Sandia researchers believe they have helped achieve a solution.

The newly patented method — called PASD, for Pulse Arrested Spark Discharge — relies on a Sandia specialty called pulsed power, developed over decades of research. Usually the public thinks of this research — if it thinks of it at all — in terms of Sandia’s massive Z machine, which sends great bursts of electrical current down conduits as big around as a horse’s girth.

But the PASD device in its experimental state was only the size of a small refrigerator.

Now, licensed in late April to Astronics Advanced Electronic Systems of Redmond, Wash., and combined with that company’s other patented test methods, it’s the size of a small suitcase. It can be plugged into aircraft-dital wire harnesses, 40 wires at a time, to check them for the very small insulation breaks associated with intermittent faults.

These sporadic short circuits occur where two exposed conductors, or a conductor and aircraft frame, make temporary contact during flight. Vibrations caused by turbulence may cause wires to touch, interrupting power to

(Continued on page 4)
Paul Robinson honored with ANS Nuclear Statesman award

Former Labs Director and President C. Paul Robinson has been awarded the Henry DeWolf Smyth Nuclear Statesman Award by the American Nuclear Society’s annual conference, held this year in Reno, Nev.

An ANS news release cites milestones in Paul’s 40-year career: Head of the Los Alamos National Laboratory nuclear weapons program; nuclear industry executive during a stint in the private sector; chief negotiator and head of the US delegation in vital — and successful — US/URSS nuclear testing talks; director of Sandia; and highly visible and proactive leader of international initiatives to advance nuclear power generation for the 21st century.

Established by ANS’ National Nuclear Energy Institute in 1972, the Henry DeWolf Smyth Nuclear Statesman Award commemo- rates Smyth’s life and work. Smyth was a Princeton physicist who played a major role in the development of atomic energy and its subsequent use. Upon receiving the award, Paul said, “Henry Smyth combined strong leadership with scientific knowledge to create sound US and international nuclear policies. He also earned a reputation for swimming upstream against the political forces of his day to accomplish his work. Those same aims have set the directions for my own career, including opposition to some of the political jujets of our times. I am thus greatly honored to be included among those who have received the Smyth medal.”

The 10,500-member American Nuclear Society is a professional organization of scientists and engineers devoted to the applications of nuclear science and technology. Its members come from industry, academia, and government.

Vic Chavez named to UNM’s Anderson Schools hall of fame

Vic Chavez (10222) was inducted into the University of New Mexico’s Anderson Schools of Management Hall of Fame May 4.

One of several heroes selected for their professional success, contribution to the community, and ongoing commitment to education, Vic joins a distinguished roster of leaders from New Mexico and around the country.

“I’m proud to represent both Sandia and the community in receiving this recognition,” Vic says. “I hope this only encourages more people to give back to the community.”

Vic serves as manager of the Small Business Initiative, New Ventures, Entrepreneurial, Regional Economic Development and Small Business Advocacy programs at Sandia’s Office of Advocacy and Small Business Development.

Vic founded the New Mexico Small Business Assistance Program, which has helped more than 800 businesses throughout the state, and is responsible for the development and implementation of the Native American Initiative, which brings together the Department of Energy, and Sandia.

Chavez is a graduate of the UNM and received his master of business administration (MBA) degree from the Anderson Schools in 1999.

— Darrick Hurst
Wipeout? Not. Sandia's TufFoam™ churns up waves of interest — and agreements — from domestic surfboard makers

By Nancy Garcia

When the main manufacturer of blanks used for surfboard construction, Clark Foam, closed shop last July, and the industry’s surfboard manufacturing market appeared headed for a wipeout.

Hearing the news, LeRoy Whinnery (8778), who describes himself as "a warm-water surfer" (as opposed to his wife, whom he says "will surf anywhere"), believed he just might have a solution — a foam initially developed to protect sensitive equipment from harsh mechanical environments, TufFoam™.

Now two licensees are evaluating the Sandia-developed foam for this use and scores of inquiries are being explored about this field and other uses, including insulation and structural core applications.

The material is a water-blown close-cell rigid polyurethane foam that features formulations with densities as low as 2 pounds per cubic foot.

News of TufFoam’s potential replacement for surfboard manufacturing processing away through news agencies, television, magazines, newspapers, and trade journals since the licensing opportunity was announced in February.

"It can be used for thermal and electrical insulation, and potentially as a core material for the automobile and aerospace industries," says Scott Vaupen, who began the commercialization effort on Business Development Support Dept. 8529, where Jim Wilh-elm is now handling TufFoam agreements and inquiries. Jim points out the material is unique in its ability to withstand high-rate impact without fracture or loss of structural integrity. In addition, it’s also being considered for use as industrial thermal insulation for liquefied natural gas storage tanks.

Clark Foam closed its doors suddenly late last year, citing the impact of ever-tightening environmental regulations on the manufacturing of their polyurethane surfboard blanks. The move led to near-panic, particularly in California, by manufacturers and sellers of surfboards who fear they will not be able to find the high strength-to-weight ratio surfboard blanks necessary to make the boards. Surf historian Matt Warshaw, in an article in the Santa Barbara News-Press, said "it's the equivalent of removing lumber from the housing industry.

Largely due to its low density, Sandia's TufFoam might very well fit the bill as a drop-in replacement material. A key feature of TufFoam is that it does not contain toluene diisocyanate (TDI), the chemical used in the production of the polyurethane foam surfboard blanks that is most problematic with respect to environment regulations. Another attractive feature of the Sandia product is that all of the chemicals used to make TufFoam are commercially available in commodit y quantities. The material is currently formulated to be processed in a batch mode, but the processing schedule can be modified for machine mixing or injection molding.

Will a foam developed for America's nuclear weapons program save the domestic surfboard industry? Maybe. Leroy hopes so.

"Yeah, I'm really looking forward to surfing on a TufFoam board," he says. "That would be pretty awesome."

Feedback

Will Sandia raise education reimbursement to keep pace with tuition hikes? Why can’t I use government employees for ‘customer feedback' in my PMF?

Q: Considering the fact that colleges and universities have periodically raised tuition fees over recent years, is Sandia going to increase the annual tuition assistance reimbursement limits accordingly?
A: It is a fact that the cost of higher education continues to increase at a rapid pace; however, Sandia is not planning to increase the annual tuition assistance reimbursement limits. Tuition assistance, which is a benefit at Sandia, must remain available to all employees who meet the eligibility criteria. Based on Corporate Education budget analysis, increasing the reimbursement limits, or to realize that if a higher budget. Neither of these scenarios is likely in light of the corporation’s budget projections for the next several years. — BJ Jones (3500) ***

Q: I read the just-issued guidance from Kim Adams on Performance Management and need clarification on the topic of customer feedback. The guidance states, "It is inappropriate for managers and employees to ask for customer evaluation information from a government employer, as we do not have, individually, an official relationship with the government." Some of my employees spend 100 percent of their time on Work For Others where government employers are their direct and paying customers. As a manager, I have always sought input from these customers; it is a key component of the performance evaluations for my staff. I don't understand why we are being prohibited from seeking this critical input from our customers on employee performance. Please help to clarify this puzzling restriction.
A: We recognize the importance of customer feedback on how we, as a Laboratory, meet our customers' requirements. However, it is important that Sandia clearly maintain the responsibility to hire, manage, and direct its workforce. Soliciting feedback from government employees on a Sandian’s performance can create the appearance that the Sandian is a government employee and/or the appearance of bias on the part of the government. SOO has acknowledged this conflict, and in accordance with our contract, has directed its workforce and other federal employees to respectfully decline providing performance feedback on an individual Sandian. Similarly, Sandia is asking its managers and employees to not put a government employee in an awkward position by asking for performance feedback on a specific employee or group of Sandia employees.

However, it is acceptable to solicit customer response as to whether Sandia (not specific person) is meeting project requirements through such means as a customer satisfaction survey. Consequently, the challenge for the manager is to take this corporate feedback and combine it with other considerations such as quality of work, interpersonal skills, teamwork, communications, innovativeness, productivity, motivation, dependability, analytical skills, etc. to evaluate his or her employees on an annual basis.

— BJ Jones (3500)

TIMELY — In the foreground is a small version of a surfboard blank made from TufFoam™. (Photo illustration by Randy Montoya)

MATERIALS RESEARCHER LeRoy Whinnery poses with two TufFoam™ samples. Originally created for the National Nuclear Security Administration to protect sensitive electronic and mechanical structures from harsh environments, the foam’s properties may be ideally suited for surfboard blanks and other applications such as car bumpers and airplane wings. (Photo by Bud Pelletier)
Energy survery

(Continued from page 1)

US energy infrastructure, and improving efficiency and productivity.

For the past 100 years this country has been largely dependent on liquid fossil fuels — especially petroleum — for transportation, electricity, and even food production.

Lack of energy isn't the problem

Today, with the price of oil becoming unprecedented, the importance of energy-consumption worldwide — particularly in China and India — and oil being concentrated in volatile countries, it's time to manage our fuels better, Rush says.

"Energy is all around us — just look at the power of a wind turbine or wind farms," Rush adds. "It's not the lack of energy that's the problem; it's a knowledge shortage of how to manage and harness that power.

We believe the energy-survey approach is the best way to do this. If we don't follow this model, the whole world, including the US, could find itself living a lifestyle of the Third World.

A three-step approach

The SAND report outlines a three-step strategy for moving toward better matching of energy resources with energy needs.

The first step is to squeeze every unit of available energy from the current supplies. This goes beyond the implementation of higher-efficiency electricity-consuming devices (lighting, appliances, and motors) and vehicles (diesels and hybrids) to include waste-to-energy options such as the extraction of methane from landfills and the conversion of biomass wastes to liquid fuels. Making better use of limited fossil supplies will allow the country to "buy time" while it moves down the path toward energy survery, Margie says.

Holding the world's population to a level that the earth can sustain and converting energy demand at some point are also parts of Step 1. To address demand, consumer needs for energy must be reduced. The traditional view of an expanding world population and economy must level off so that it could surge to the point of "resource exhaustion, social upheaval, disease epidemic, and then collapse," notes the SAND report. An ultimate plan must have some commitment to hold growing populations in check. A final part of the initial step is to limit the use of fossil fuel resources — although the magnitude of potentially recoverable fossil fuels may never be known. Conservation must be a major part of the solution.

Storing energy a critical component

The second step involves storing energy for later use when there is no wind, the sun is obscured, or an energy supply is disrupted. Currently, the energy supply is used in limited ways, ranging from battery-powered units to managing brief interruptions to the Strategic Petroleum Reserve. Examples that could provide expanded energy storage include solar production of hydrogen for fuel cells, solar-powered conversion of plant oils and water to liquid fuels, and energy storage from solar thermal collectors.

"We're advertising the system now and we'd love to take orders," Mike Ballas says.

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Researchers apply energy surety to military bases

Proposed microgrid uses small power-generation units close to where people live, work, use power

By Chris Burroughs

A Sandia research team headed by Dave Menicucci (6217) has taken a Labs-developed energy surety model to a tangible level by applying it to military bases.

The team, working with the US Army, is looking at how small fuel generators can improve energy generation and transmission through a new system called the Energy Surety Microgrid.

"In today's grid system, power generators [coal, nuclear, gas] are located far from the load — the place where people live, work, and use power," Dave says. "This requires much distributed wiring and has a potential for power disruption."

What the microgrid team envisions for military bases is an energy surety system that uses more small generation units and storage near the load and less generation at big plants. It can operate with or without the grid. In addition to being smaller, the power generators would integrate a diversified fuel mix, include secure on-site fuel storage, and apply sustainable technology, such as renewable energy.

Rush Robinett, senior manager of the Energy and Infrastructures Futures Group 6210, says this model is "like back to the future."

"Military bases used to comanufacture energy in the same area as is proposed here," he says. "Now most are totally dependent on the grid for power."

Funding for the project comes from the US Army and the internal Sandia Laboratory Directed Research and Development (LDRD) program.

Energy systems with high levels of energy surety must be safe — safely supplying energy to end users, secure — using diversified energy sources; reliable — maintaining power when and where needed; sustainable — being able to be maintained indefinitely ("Indefinite" is based on the American Indian definition of seven generations or 200 years); and cost-effective — producing energy at an acceptable (and preferably lowest) cost.

Existing grid

Dave says the current grid system meets some of these criteria, while the proposed microgrid system for military bases would meet all.

"The existing [grid] system is general safe and secure," Dave says. "The generation and storage are reliable. The problem comes from the fact that generators are far away from people and the power has to be transmitted through thousands of miles of lines."

If any of these lines go down, either through an act of nature or terrorism, power will be disrupted and the country's national security could be threatened.

Dave also asserts that current generation methods are not sustainable.

"It's not that we are running out of oil and coal, it's that we can't predict the cost, implying that we can't afford it," he says. "The demand for more fuel from China and India are driving prices up. There are also limits to where we can drill." While the cost-efficiency of the current generation system is OK, Dave anticipates it may not stay that way for long.

Microgrid

The team believes the solution is what they are researching for Army bases across the country — a microgrid that reduces the single points of failure by cutting down the number of transmission lines.

In looking at the five criteria of an energy surety approach, the microgrid meets all. It is safe — it's not introducing any new dangers. It's secure because it uses a diverse mix of fuels — solar, wind, and oil. It's reliable because it uses a variety of types of generators. There is a redundancy of generation and storage. It's sustainable because it is using renewable energies. And, it is cost-effective because it uses energy sources that are readily available and appropriate for the site. (An example is that solar could be used in the Southwest and wind along the nation's coasts.)

Army & Sandia

Dave says there are two reasons Sandia paired with the Army in planning microgrid systems at military bases. Sandia is a national security laboratory and the team members, most of whom have been in the armed forces, understand how the military operates.

The research team is now working with the Army to develop an energy surety microgrid for a soon-to-be-selected military base. They are researching for Army bases across the country — a microgrid that reduces the single points of failure by cutting down the number of transmission lines.

MILITARY SURETY MICROGRID

(Indefinite Autoncircuit Power System)

THE ENERGY SURETY MICROGRID for military bases would be an energy system that uses more small generation units and storage near where people live, work, and use power and less reliance on big remote plants.

Energy surety

(Continued from preceding page)

and sustainable way. "Though we do not know if fusion can succeed as a practical terrestrial energy source, we believe that its promise is worth extensive investment," the SAND report says.

"While it might not be possible to fully accomplish all the goals in the energy surety model, striving toward them is far better than blindly marching towards energy depletion, environmental exhaustion, and esthetic despair, only to discover that the scare remaining resources are inadequate to meet needs," Rush says. "The big question now is how to make this happen in the real world. The driver may well be people's pocketbooks, caused by highly unpredictable fuel prices, coupled with increasing threats of terrorism."
Information security is an ‘unending race’ . . .

. . . and Sandia’s goal is to stay ahead, says Chief Information Officer Ken Washington

By Charles Shirley (4343)

Public interest in information security peaks when something bad happens in cyberspace. Nothing focuses the public’s attention on this issue like a newspaper headline that millions of names have been grabbed off a stolen hard drive or that thousands of names have been hijacked from a computer on a network.

Well, that “something bad” happened to 350 or so Sandians recently. They were among the roughly 1,500 individuals from across the nuclear weapons complex whose Social Security numbers and other personal information were stolen from an NNSA computer by a computer hacker.

Among cyber security specialists, the need to prevent this kind of event is constantly in mind. “We can’t promise theft of personal information from Sandia computers will never happen, but we do everything we can to keep the probability low,” says Sandia Chief Information Officer Ken Washington (4600). “Staying in front of hackers is an unending race. We think we’re ahead, and we intend to keep it that way.”

As with any topic related to security, Ken notes, it’s counterproductive to say much about how prepared you are, because part of successful security is keeping opponents in the dark. Nor is it wise, he adds, to say how much Sandia knows about potential threats, other than that they range from wannabe amateur hackers to well-qualified, well-equipped professionals around the globe.

Ken says Sandia has made many improvements over the past few years, is in the process of making others, and is constantly looking at still more actions to protect its systems from intrusion and its information from unauthorized access.

“Our network architecture is designed to make information available where there is legitimate need and to ‘wall off’ unauthorized users,” he says. “It’s a more sophisticated network structure now than just a few years ago, and the improvements haven’t stopped.”

At the same time, Ken acknowledges, Sandia can’t control what happens elsewhere.

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“I feel very bad for the people whose personal information was stolen,” he says. “I don’t want to minimize how serious that is, and how worried they are right now. I also want to assure everyone that we are moving as swiftly as possible to provide information to help the affected Sandians deal with this unfortunate situation.”

Sandia is taking a number of steps to minimize its cyber exposure and maximize the ability to safeguard Sandians’ personal information. Among them:

• A transition away from using Social Security numbers to the use of employee identification numbers;

• An increased use of encryption software for sensitive information;

• Implementation of two-factor authentication, which entails the use of both a password and a second (usually tangible) object such as insertion of a smart card into a card reader;

• Speedier deployment of security patches, small bits of code that “patch” security holes exploited by hackers.

These are just a few examples of how Sandia is constantly improving its information and network security, says Ken. “I don’t want to sound like I’m giving a feel-good message at an inappropriate time, but I do think our people need to understand that we’re paying attention.”

“...and Sandia’s goal is to stay ahead, says Chief Information Officer Ken Washington

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“One of Sandia’s strengths is that it has a culture that respects security,” he says. “More than any specific technology, that’s our most powerful protection.”

Identity theft prevention resources

Note: Sandia Chief Information Officer Ken Washington and OPSEC Manager Reggie Tibbetts offer the following suggested actions to all employees, including but not limited to those affected by the recent breach of the NNSA computer system.

Because this theft resulted in the compromise of Social Security numbers, we recommend that affected individuals consider a number of measures to protect their identity, such as those provided in the following web resources.


• Web resources for NM identity theft protection: http://www.ago.state.nm.us/known/idtheft/idtheft_pyflt.htm

• Web resources for CA identity theft protection: http://www.privacy.ca.gov/cover/identitytheft.htm

Links to a few specific files:

• How to “freeze” your credit files: http://www.privacy.ca.gov/sheets/ cidOsecurityfreeze.pdf

• Top 10 tips for identity theft protection: http://www.privacy.ca.gov/sheets/ cidOEnglish.pdf

• What to do if your personal information is compromised: http://www.privacy.ca.gov/financial/ sbh012105.pdf

“Many of these tips are useful reminders to us all,” says Ken, “but particularly relevant to the individuals affected by this particular theft.

“We very much regret the inconvenience and any harm this unlawful attack on the DOE computer system may cause any member of the Sandia workforce.”

Computer breach

(Continued from page 1)

employees (as well as to NNSA employees, who are the normal recipients of these periodic messages), NNSA Administrator Linton Brooks apologized for the delay in getting the word out to employees.

While explaining in the note that there were mitigating factors affecting the timing of the employee notifications, he concluded by stating that “All of you deserved better. I am working to minimize how serious that is, and how worried they are right now. I also want to assure everyone that we are moving as swiftly as possible to provide information to help the affected Sandians deal with this unfortunate situation.”

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While explaining in the note that there were mitigating factors affecting the timing of the employee notifications, he concluded by stating that “All of you deserved better. I am working to fix our procedures so that such an inadvertent delay cannot happen again. . . . I apologize for our failure.”

Labs VP of Security and Information Div. 4000 Ron Dietry says Labs’ senior management has been involved in a hands-on way in addressing the situation and is deeply concerned over the seriousness of the matter.

“I’m sure everyone at the Labs is concerned about what has happened. I share their concern. We’re working within Sandia and with DOE to determine the best course of action both to inform and assist the people who are affected and to minimize the chance of future incidents.”

Labs honors Sandians who have served in active military roles since 9/11

Over the past several years, the nation has called a large number of Reserve and Guard forces to serve active tours of duty, sometimes in combat zones in Afghanistan and Iraq, and sometimes in supporting roles to forward deployed soldiers, sailors, and Marines. Sandians, as a cross section of society, have been amply represented in those call-ups. During a recent ceremony at the Steve Schiff Auditorium, Sandians who have served tours since 9/11 were honored. Some of them are pictured here. Those in the photo are, from left, Robert Wright; Tony Teague; Michael Dominguez; Joe Mee; Tom Schonborg; Joe Barela; Larry Schoof; Craig Walker; Pablo Montoya; Andrew Kaemnisky; and Carmelo Anaya.

(Photo by Randy Montoya)
Taking issue with the perception that computer models lack realism, Sandia manager Eliot Fang (1814) told his audience that simulations of the nanoscale provide researches more detailed results — not less — than experiments alone.

His invited talk was delivered to members of the Materials Research Society at its recent semiannual general meeting.

Eliot derided the pejorative “garbage in, garbage out” description of computer modeling — the belief that inputs for computer simulations are so generic that outcomes fail to generate the unexpected details found only by actual experiment.

Eliot, manager of Sandia’s Computational Materials Science and Engineering Department, not only denied this bias but reversed it.

“There’s another, prettier world beyond what the SEM [scanning electron microscope] shows, and it’s called simulation,” he told his audience. “When you look through a microscope, you don’t see some things that modeling and simulation show.”

This change in the position of simulations in science — from weak sister to an ace card — is a natural outcome of improvements in computing, Eliot says. “Fifteen years ago, the Cray YMP [supercomputer] was the crown jewel; it’s now equivalent to a PDA we have in our pocket.”

No one denies that experiments are as important as simulations. “Equal partners, in fact,” says Julia Phillips, director of Sandia’s Physical, Chemical, and Nanoscience Center.

But the Labs’ current abilities to run simulations with thousands, millions, and even billions of atoms have led to insights that would otherwise not have occurred, Eliot says.

For example, one simulation demonstrated that a tiny but significant amount of material had transferred onto the tip of an atomic force microscope (AFM) as it examined the surface of a microsystem (see image below).

“The probe tip changed something very, very tiny on the surface of the material,” says Eliot. “It was almost not noticeable. But the property of the surface became very different.”

Laboratory observation couldn’t identify the cause of the property change, but computer simulations provided a reasonable explanation of the results.

As for predicting the reliability of materials that coat surfaces, Eliot says, “We find that when we compare our simulation models with data from the experiments, we get a more complete understanding.”

Says Sandia Fellow and materials researcher Jeff Brinker, “We’re using simulations quite a bit in support of Sandia’s water purification program and the NIH Nano-Medicine Center program. In all these cases I’m working with theorists and modelers to guide the design of synthetic nanopores so as to develop transport behaviors approaching those of natural water or ion channels that exist in cell membranes. How is this understanding achieved?

Models computationally link a variety of size and time scales to create an experimental design. We use as much experimental information as possible to validate our methods,” says Alex Stepanyuk.

“The trick is picking a correct modeling strategy from our toolbox of methods.”

Asked whether simulations are merely more complex versions of what a graphic artist produces — a product of the imagination, in short, that cannot accurately reproduce new details — Slepoy provisiously entertains the idea: “A graphic artist has to make choices that are somewhat subconscious: what size objects to represent, how close in to zoom, what details to include and exclude, and are there people out there who liked what he drew. So do we.

But there the similarity ends. For us in computer simulations, the questions are more technical: Does the modeling strategy agree with experiments and is it consistent with established models? Does it have mathematical consistency?”

A further advance in accurate model development, he says, is that “now we’re developing automated methods to tell us whether we’ve satisfied accuracy requirements, rather than doing that by just manually looking at results. The method automatically tunes the model to satisfy the entire set of conditions as we know them.”

There is also the matter of cost, says Eliot: “With smart people developing numerical methods, models, and algorithms to use computers to study real cases, we find we can rerun calculations merely by changing computer parameters. Thus the cost to push science forward is much cheaper than running experiments — particularly in nanoscience, where the realm is so small that experiments are difficult to perform, testing devices are not available, and data acquisition is a challenge.”

For all these reasons, he says, “This is why at CINT [the Sandia/Los Alamos Center for Integrated Nanotechnology], theory and simulation is one of its five thrusts. People view modeling and simulation as a critical component of nanoscience.”

“We need to sit back and put our mindset in a different mode,” he told his audience. “We’re all too busy doing [laboratory] research [instead of considering] how we can leverage resources to push our science to the next level.”

Modeling tools include meso-scale (an intermediate resolution capability functioning between the atomic and macro scales), classical atomistics (classical force-field theory), Density Functional Theory (a one-electron approximation of quantum theory, where an electron interacts with atoms but not with another electron), and the full quantum model (electrons interacting with other electrons and four or five ions).
Execs’ safety & security walkthroughs: Fact and fiction

Storied inspections have mostly positive results; demonstrate commitment to ES&H/Safeguards & Security

By John German

Since April 2004 Sandia’s four top execs have conducted 21 ES&H/Safeguards & Security surveil-
lanes, aka safety & security walkthroughs, of Sandia facilities. Lab President and Director Tom Hunter
has personally led 11 of the inspections. The Lab
News was invited to tag along with Tom on one
recent surveillance.

When a group of suits including Labs Direc-
tor Tom Hunter entered the normally quiet hall-
ways of the Corporate Storage Services Dept.
10268 Mobile Offices just after 8 a.m. June 8, they
were greeted with wide-eyes and surprised faces.

But when Tom explained the purpose of the
visit — to conduct an unannounced safety and
security walkthrough of the group’s facilities —

“The staff was surprised at first, but this is what we do. We have a
lot of high-level visitors. This is not a put-on, not a show. I was
proud that they did so well. They always do.”

Dept. 10268 Manager Joe Costales

The Corporate Storage Services team got high
marks in nearly every area. The department’s
safety metrics were posted on hallway bulletin
boards. Its staff is knowledgeable about Behavior-
Based Safety (BBS, see below), four staff members
are trained BBS observers, and one is on the Labs’
BBS advisory committee. Team lead Mike
Dominguez left an ISO 9000 training class to
join the tour.

“The purpose is not to go out there and find
problems,” he says. “The purpose is to have
staff members knowledgeable, invested, and
aware of their work and its hazards? Do they have
a sense of control over and responsibility for their
own and others’ safety? Are they part of the big-
ger picture?”

“The staff was surprised at first, but this is
what we do,” said Dept. 10268 Manager Joe
Costales after the visit. “We have a lot of high-
level visitors. This is not a put-on, not a show. I
was proud that they did so well. They always do.”

**Most walkthroughs unannounced**

The majority of the walkthroughs are unan-
nounced, says Craig Nimmo (12003), division
security/ES&H coordinator for Sandia’s
Executive Office. Most locations are chosen ran-
domly, although some are chosen because of
past problems.

Tom shoots for two surveillances a month.
He has been known, when time allows, to ran-
domly select and inspect a second facility on the
way back from a planned surveillance, Craig says.

“The purpose is not to go out there and find
problems,” he says. “The purpose is to have
another set of eyes on processes and operations,
so in case an organization missed something or
gets complacent about a hazard, it can be
resolved.”

The visits also demonstrate, he says, “that
Sandia’s executive management, along with its
other priorities, has a strong commitment to
ES&H.”

Poor housekeeping — general messiness, clut-
er, or haphazard work space organization — is
the number one type of finding. Improper hazard
signage on doors and containers is another com-
mon deficiency.

**More positives than negatives**

Several months ago a walkthrough resulted in
a work stoppage, ordered by the host VP, in a lab-
oration when the VP learned of the surveillance
team’s observations. The stoppage lasted two
weeks, until the deficiencies were corrected. But
that case is the exception, Craig says.

On balance, the results of the walkthroughs are
positive, with most organizations aware of
and deliberate about safety issues associated with
their work, he says. Each surveillance typically
results in half a dozen to a dozen minor action
items and as many noteworthy practices.

Results of past surveillances are available at
http://www-irn.sandia.gov/organization/
dv3/e3h.html.

“There have been more positives than nega-
tives,” he says.

Tom and the other execs now carry Spot
Awards — ranging from movie tickets and dinner
certificates to pay bonuses — to hand out when
the situation warrants.

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**Behavior-Based Safety defined**

Behavior-Based Safety (BBS) is a systematic
way to identify behaviors that prevent acci-
dents; remind, reinforce, and refocus workers
on these behaviors, and measure and manage
these behaviors as leading indicators of accidents.
BBS, which supplements traditional safety
programs, is proactive and focuses on behavior
rather than compliance. Employees manage and
run the BBS process. Trained observers watch
their peers work and identify concerns. More
than 120 Sandians are trained BBS observers.

Data from observations are entered, anony-
mosly, into a database and analyzed by the
Labs’ BBS steering committee, which brings
concerns to management’s attention.

Sandia has contracted with ProAct Safety, a
Woodlands, Texas, firm, to help implement
BBS. Organizations that adopt BBS achieve 60 to
85 percent reductions in injuries in three years,
according to the company.
Goodbye, old friend: Sandia's ASCI Red, world's first teraflop supercomputer, put out to pasture after thoroughbred career

Participants at informal wake recall struggles and glories of nine-year run

By Neal Singer

On the table rested a picture of the deceased — a row of identical cabinets that formed part of the entity known as ASCI Red, the world's first teraflop computer.

Still one of the world's 500 fastest parallel-processing machines after all these years — nine — it was being decommissioned.

"I've never buried a computer before," said Justin Rattner, Intel chief technology officer, to 30 people from Sandia and the Intel Corp. who gathered June 12 in Room X-10 in Bldg. 880 to pay their respects. "We should go around the room so everyone can say their final farewells." "Let's break out the beer," said one attendee, opening a bottle of water.

There was a simple white frosted cake — an abbreviated cylinder encircled near its base and top by two strings of small simulated pearls. Topped by small pink flowers and a silver ribbon, the cake resembled a hat that could be worn by a very elderly lady, and indeed, ASCI Red was very old by supercomputer standards.

Sandia VP Rick Stulen (1000) eulogized, "ASCI Red broke all records and most importantly ushered the world into the teraflop regime. It still holds the record for the longest continuous rating as the world's fastest computer, four years running."

'Almost mystical in scalability'

Stulen said Rattner, "There's a sense of sadness and also of satisfaction: the passing of such a great machine and the incredible affection so many of you show for this inanimate object that occupies this floor space."

"You're seeing we should get a life," quipped Bill Camp (1400). He also said that ASCI Red had the best reliability of any machine ever built, and "was supercomputing's high-water mark in longevity, price, and performance."

"It was almost mystical in scalability," said Rob Leland (4300). "All these other machines would be tailing off and Red would still be cruising along." Rattner gave some insight into the general feeling about what was, after all, only a machine when he spoke about his own emotions when ASCI Red proved successful. "I remember, shortly after the teraflop barrier was broken," he told the group, "I would say to myself as I drove by in my car: The world's fastest computer is sitting in that nondescript building in Beaverton, Ore., before it was moved to Sandia. It gave me tremendous satisfaction. When Chuck Yeager cracked the sound barrier or Armstrong landed on the moon, I wouldn't be tailing off and Red would still be cruising along." Rattner went over to Intel to help design the computer, said that the chip was a third-generation chip, and so the design was accomplished in only three months with great reliability. After that, Intel got out of the supercomputer business so as not to compete with customers who might want to enter.

"An indication of how good the reliability was," said Jim Tomkins (1420), "was that the hardware reliability remained the same when Sandia took it over from Intel."

The idea for the machine in the first place, as well as the programs that ran the computer nearly flawlessly, were developed by Sandia over nearly a decade of leadership in massively parallel processing. Speakers at the wake gave particular credit to project business leadership.

Ed Barsis had the vision

"When I saw what these guys were doing," said Mike Vahle (5500), "I decided there was a good career in designing networks to support the supercomputers that [former Sandian, ret.] Ed [Barsis] and Bill [Camp] brought here."

Others suggested that the key to Sandia's coup in fielding the first terascale system was Ed Barsis' vision and acumen in fostering the right climate at DOE. When we first talked about running a machine with 10,000 processors, it seemed ludicrous," Rattner said, apparently anticipating massive downtimes. But instead of 27 hours average time between hardware-caused interrupts — the figure predicted in the design phase — Red achieved an average of several hundred hours.

He praised the relationship that developed between Sandia and Intel personnel during construction of the machine and when it was deployed.

Art Hale said he noticed "a certain look" on the faces of competitors from other labs when they learned that Sandia had gotten the go-ahead on the teraflop project.

ASCI Red first broke the teraflops barrier at Intel in December, 1996 and topped the LINPACK top-500 computer ratings seven consecutive times from June 1997 to June 2000. Originally rated at 1.6 teraflops, an Intel chip upgrade from 200 to 333 megahertz raised it to 3.1 teraflops just when it looked as though its world supremacy would be lost, said Archie Gibson (4335). It remains, nine years after it was first turned on, still one of the 500 fastest computers in the world.

One last look at the old clunker

Michael Hannah (00301), project lead until 2002 charged with keeping the machine running, walked through ASCI Red saying he "was taking one last look at the old clunker." He emphasized that the machine was not being decommissioned because of technical problems. "It's not a reliability issue, because ASCI Red is still reliable," he said. "It is about getting more bang for the buck with nine-year-newer technology and terminating significant costs in space, power, and cooling."

Jammed into the same small air-cooled building were other supercomputers, including Sandia's Thunderbird capacity supercomputer, running at approximately 60 teraflops. In a new building, next door was Red Storm, clipping along at roughly 40-t-flops.

"Having so many machines in so little space keeps us innovative," says Archie. By supercomputer standards, Sandia's ASCI Red, the world's first teraflop machine, was ancient, but what a run it had! Here, designer Jim Tomkins (left) talks about ASCI Red and its accomplishments with Intel officials Justin Rattner and Stephen Wheat. Rob Leland looks on at right. (Photos by Paul Edward Sanchess, 4328)
**Guidelines updated for external web publishing**

By Julie Hall

If you're new to web publishing at Sandia, want to review best practices for website accessibility, or don't know if you should refer to the California site as "Sandia/California" or "SNL/CA" on your page, there's a new resource out there for you.


The site provides newbies with helpful instructions, such as for getting an account on the corporate server, viewing details of a directory, and setting up a Dreamweaver site. It also provides resources for more experienced web authors, such as Sandia's requirements for external websites, appropriate use of the Sandia logo, and the type of "cookies" allowable on the site.

The guide will replace WebMentor and the External Web Publishing Guidelines, which until now have been the publishing guides for Sandia websites.

A new feature of the site is an editorial style guide for Sandia's external web. Developed by Media Relations and Employee Communications Dept. 3651, the style guide addresses common spelling, punctuation, and style questions that arise in publishing web content, such as how and when to use em dashes and whether congressional should be capitalized (it shouldn't — see style guide entry under congress).

The Web Publishing Guidelines site was developed after several groups at the New Mexico and California sites expressed interest in revising Sandia's web publishing guidelines combined their efforts. The groups included members of the Public Relations & Communications Center, WebCo, SWIFT, Human Resources, and the Technical Media Relations & Strategic Communications group in Livermore, California.


Many entries came about by compiling and resolving inconsistencies found on many upper-level Sandia web pages. Here's a sampling of questions the guide addresses:

1. On the web, what is the correct way of referring to Sandia's site in Livermore, California?

The guide is also helpful to those publishing content on Sandia's Restricted Network (SRN), which is a critical information source for DOE and the Sandia site. The guide addresses: Sandia's site in Livermore, California?

**Stylin' — Style guide tackles common inconsistencies**

Ever wonder about the difference between "compare" and "comprise" or how to correctly refer to the California site? Sandia’s new Web Editorial Style Guide has the answers. Go to http://webguide.sandia.gov and use either the alphabetical or topic listings to look for answers to your vexing style questions.

The basis for the guide was the Sandia Lab News style pages, which have been around for more than 15 years and address capitalization, punctuation, usage, and other style issues that commonly arise in publishing Sandia's employee newspaper.

The Web Editorial Style Guide has the answers. Go to the website because everyone knows what it stands for.

3. True or False. Words should be capitalized if you want to give them more emphasis.

4. Which of the following demonstrate proper use of hyphens?

   a. state-of-the-art laboratories; b. illegally-parked cars; c. world-class scientists and engineers; d. a and c; e. none of the above

**Answers:**

1. (d)
2. False — Many acronyms and initialisms that are familiar to a Sandia audience do not mean anything to those outside Sandia (by the way, WSNR stands for White Sands Missile Range).
3. False — Capitalization should be limited to proper names, titles when preceding a name, and other situations as described in the style guide.
4. (d) Use hyphens in compound adjectives belonging together but not in compound adjectives ending in -ly.

**Library at Sandia/New Mexico and the Public Relations & Strategic Communications group in Sandia/California.**

"Sandia's website is its 'face' to the external world. It's important for us to present a cohesive, consistent website to our many audiences, and this guide is designed to help do just that," says Chris Miller, manager of Media Relations & Employee Communications.

The guide is also helpful to those publishing on the SRN. "The SRN is a critical information source for laboratory operations and information," says Carla Scott of SWIFT. "As the volume of content on Sandia's Restricted Network grows, we feel it's important to provide clear, relevant guidance for its web authors."

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**A team comprising three Sandia and three Kirtland Air Force Base Security Police Officers (SPOs) competed last week in DOE's Security Protection Officer Training Competition (SPOTC).**

The annual competition, hosted by the DOE's Central Training Academy in Albuquerque, lasted four days, June 11-15. It included individual and team events in pistol, long rifle, and physical fitness.

"It is quite demanding in that 100-degree heat," says Protective Force Manager Bill Wieland (4211). Team members included Lt. Christopher Duran (4211), Adam Ortiz (4211), Mike McKinnis (2915), Nathan Mallory (KAFB), Michael Mojonnier (KAFB), Brandon Jackson (KAFB), and team coach Lt. Tommy Serna (4211), did not compete.

Seventeen federal and contractor SPO teams from across the nuclear weapons complex, as well as from federal and local law enforcement agencies, competed.

The team was selected following tryouts among SPOs who responded to an announcement.

Although the team did not receive any awards, its members performed admirably, says Safeguards & Security Center 4200 Director Mike Hazen.

"I am so proud of our team," he says. "There is no doubt in my mind or anyone who watched them train and participate has the numbers and times they are putting up." The team did receive medals, however.

"I am so proud of our team," he says. "There is no doubt in my mind or anyone who watched them train and participate has the numbers and times they are putting up."

— John German
In 1999-2001, when Sandia computer scientist Guylaine Pollock served as president of the prestigious international IEEE Computer Society, she was treated like a queen.

From a private tour of Peter the Great’s palace, to dinner at the teahouse patronized by Henry Kissinger, to hosts ordering one of everything on the menu for her to sample at an elite restaurant, to assistance by a butler at a palatial hotel, Guylaine appreciated the numerous opportunities to gain insight into various cultures of the world.

“That was one of the most exciting periods in my life,” Guylaine says. “I traveled to Russia, China, Hong Kong, Japan, Brazil, Argentina, Chile, Mexico, the Virgin Islands, Canada, Ireland, England, France, Romania, and Austria, to name a few, and discovered the tremendous following the IEEE has throughout the world.”

Getting to that point was the culmination of a lifelong love of computers that started when she was a toddler.

Guylaine calls herself one of the first computer babies, having grown up with computers before most people ever heard of them. Her father was an early computer scientist who started in the field in the 1950s. In the 1960s he worked on the Apollo space missions at NASA’s Johnson Space Center in Houston.

“I remember as a little girl playing on the keypunch machines in the college computer center and falling asleep on the floor in the shadows under the computer tables while my father worked,” Guylaine says.

When she was four, Guylaine became the mascot of the Pasadena (Texas) High School computer club for which her father served as advisor. Club members dressed her up in a refrigerator box decorated to look like a computer. Costumed in the box, she rode a float in the school’s homecoming parade, where she was supposed to throw candy at the crowd. But instead of throwing the candy, she wound up eating most of it.

At the age of six Guylaine taught the Hollerith computer code to her first-grade class, and falling asleep on the floor in the shadows under the computer tables while my father worked,” Guylaine says.

When she was 14, she met Rear Admiral Grace Hopper, the “Mother of Cobol,” for the first time. When she was 12 she audited her first college FORTRAN class. When she was 6, her father taught her the course at Navarro College.)

“She liked Sandia and Albuquerque so much she agreed to take the job at the Labs. She’s been here ever since.

Today, Guylaine’s work focuses on software security and security issues for US critical infrastructures, as well as other software aspects, including systems analysis. She also conducts information technology (IT) risk assessments.

“Shortly after joining Sandia, Guylaine became involved with the IEEE. Throughout her career, she has served in many elected and appointed volunteer positions within the organization — positions such as vice presidents for conferences and tutorials, treasurer, awards chair, and society ambassadors. In 1998 she ran for an international election to serve as the IEEE Computer Society president in 1999-2001. She has received several standing ovations while performing.

When asked why she was so active in the IEEE, she said, “Bottom line, it never occurred to me to not participate. I have always considered being active in one’s professional organization an important part of being a professional.”

She says participation in IEEE also helped her develop skills that that “better enabled me to pursue Sandia’s mission per management’s encouragement.”

Piano second love

If computers are Guylaine Pollock’s first love, her second is piano. She’s been playing piano since she was in the third grade and has taken 13 years of piano lessons stringing into adulthood. She plays concert-level piano and in the past has received several standing ovations while performing.

She was awarded a music scholarship upon graduation from high school that she used at Navarro College and East Texas State University. She is just six hours short of a minor in music on her BA.

While not all computer scientists are pianists, Guylaine sees a definite correlation between piano playing, mathematics, and computer programming.

“Numerous abstractions, patterns, and fractional components are used a lot in each of these areas,” she says.

Guylaine still plays regularly and is now working on Gershwin’s Rhapsody in Blue.

Retiree deaths

Eugene H. Copeland (age 85) . . . . . . . . . . . . . . . . . . . . . . . . . . April 28
Alice L. Brinkley (81) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . April 28
Ann E. McFarland (92) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . April 28
Luciano Chavez (88) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 1
Jeanette M. Bremnessel (79) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 3
John J. Sarks (69) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 4
Ann R. Hawk (83) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 8
Paul D. Martin (96) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 12
Gerald W. Van Gundy (97) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 15
Wayne E. Miller (84) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 26
Luther K. Horning (64) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 26
Marl E. Snyder (86) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 27
Severn Starzynski (86) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . May 27

Dave Chacon makes quick visit to Sandia before returning to Afghanistan

CONGRATULATIONS TO DAVE — Dave Chacon, right, (4324) is welcomed back to Sandia by Bob D’Spain, center, and Phil Cox (both 4329), left, after a year in Afghanistan where he serves in the US Army Reserves attached to Seventh Special Forces Group. He was home for a quick two-week visit and returned last week to Afghanistan, not expected back until Labor Day. Dave was recently promoted to lieutenant colonel. Here he attends the annual Department 4324 summer picnic.

GUYLAINE POLLOCK is both a talented computer scientist and a concert pianist. (Photo by Randy Montoya)
Turning Heads not DaVinci Code in sales numbers but very inspirational and powerful in impact

By Iris Abeytes

Turning Heads, a just-released book, might not sell 600 million copies like The Da Vinci Code but the covers sold will hopefully make a difference in extraordinary women’s lives. In the pages of Turning Heads are portraits of grace and inspiration. They are the photos of women who have lost their hair to cancer treatments.

The women in the book come from all over the country. They include a cowgirl, a surfer, a state court justice, a nun, and a singer, among many others. Their bond: cancer.

Framed in its pages is the portrait of Sandian Becky McIntyre-Pacheco (2433). About four years ago after losing her sister to breast cancer, she was diagnosed with the same cancer. “The mammogram didn’t show anything,” says Becky, “but I was concerned because a mammogram had not revealed my sister’s cancer.” Becky saw her doctor and she was taken to a lump.

She had a bilateral mastectomy. “I am glad I did,” says Becky. “The pathologist found precancerous cells in my left breast.”

“I recovered from surgery fairly well but my first chemo treatment rocked my world. I developed blood clots in my jugular, pneumonia, allergy to the medication, and a staph infection. My immune system was shot, and my hair fell out.”

The American Cancer Society contacted Becky about having her photo published, and she agreed and was included in the book. Fifty-nine well-known photographers donated their time to take the pictures. It was the photographers’ willingness that ensured the birth of the book.

The women included in the book are not ashamed of the way they look. They are proud they are getting better and want to share how they feel and what it’s been like. Says Jackson: “...the next time you see a bald woman — on the street, at a party, in a store — instead of turning away, you might smile and stand up a little straighter.”

Becky is back at work; her cancer is in remission. While she was going through her worst time, her son was sent to Iraq. “I was so ill,” says Becky, “he was given permission to come to see me the day before he left. I told him to fight his battle and I would fight mine.” Becky and her son both feel fine. “I am happy to say he came home safely.”

The book published by Independent Publishers Group gives a portion of its proceeds to cancer research.

This month in the past

50 years ago . . . The Coronado Club celebrated its Quinquennial (five-year) anniversary with an all-day Western-themed party June 25 and the opening of the new swimming pool. . . . The Lab News answered a question about whether a telephone number was a Sandia Base extension or an Albuquerque number. “Here’s a way to check and it’s accurate in most cases. If the third digit is a 1 or 2 it probably is a Base number. A further check: If the last two digits are between 10 and 31, inclusive, it is a likely Sandia Base military phone. Between 32 and 63, inclusive, it probably is a Sandia Corp. business phone. If they are 64 or higher chances are good it is a Sandia Base extension number.

40 years ago . . . A new tape-controlled lathe went into operation in Sandia’s Development Shops. “One of the outstanding features of the new lathe is its ability to cut a continuous variable curve without the use of a previously manufactured template.” . . . A new 22-foot shock machine with unique impulse capabilities in addition to normal impact features was added to the environmental test facilities at Sandia’s Livermore Laboratory. “The basic purpose of the shock testing machine is to generate shock pulses for testing components and systems to their expected environmental limits.”

30 years ago . . . Sandia was directing exploration activities in the Los Medanos area salt beds southeast of Carlsbad, N.M., the site then being considered for ERDA’s radioactive waste pilot plant — now open and operating as the Department of Energy’s Waste Isolation Pilot Plant. A hydrological study was made of the area using separate drill holes to gain data for the calculation of possible radioisotope migration. . . . On June 8-9, Sandia successfully conducted Da Vinci II, a manned scientific balloon flight to determine how air pollutants change as they move through the atmosphere.

20 years ago . . . Rosalie Crawford, secretary to the Labs’ first president, George Landry, and to every president until 1986, retired after 37 years of service. Irwin Welber was the last one she worked for before retiring June 30, 1986. . . . Technology Transfer: Transparent PLZT ceramics, an electrooptical shutter technology that culminated in protective devices — aircraft windows and pilots’ goggles — against thermal and flash effects of weapons was transferred from its Sandia home base to industry.

10 years ago . . . New badge readers were added during the renovation of the Bldg. 800 lobby area, replacing the old guard gate. They were “part of an effort to soften the appearance of security requirements as Sandia’s mission evolved in the post-Cold War world, bringing more visitors from industry and nondefense work to the Labs.” . . . The Lab News announced that the
Manager Promotions

New Mexico

David R. White from Manager, Data Analysis and Visualization, the Windows systems group for Sandia. David also led the CUBIT Mesh Generation project for two years.

As manager for the Data Analysis and Visualization Department, David directed his group in research that resulted in applications in scientific visualization for modeling and simulation, image analysis of the space shuttle wing, business and patent information visualization, and homeland security.

David received his BS and MS degrees in civil engineering from Brigham Young University in 1995 and 1996, and his PhD in civil engineering from Carnegie Mellon University in 2003.

John Bowers from PMTS, CDM Program Management Dept. 2545, to Manager of that same department.

John was hired in 2003 and has since worked as program engineer in the Concurrent Design & Manufacturing (CDM) program, where he focused mainly on the CDM components for the W76-0, W76-1, and W88 programs. A former US Coast Guard officer, John’s industrial experience is related to electronic component development and manufacturing. He worked at Custom Electronics, Inc. in Onenita, NY, for 21 years, and was the engineering manager for the last 15 of those 21 years.

John is a registered Professional Engineer in Maine and New York.

John received a BS in civil engineering in 1977 from the US Coast Guard Academy. He earned his MS in industrial engineering from State University of New York, Binghamton, in 1989, and his MS in business economics from the State University of New York, Oneonta, in 2002.

Pat Milligan from PMTS, Enterprise Information Systems Development and Support Dept. 4524, to Manager of that same department.

Pat joined Sandia in 1990 and was a developer in Security Information Systems and spent 11 years as a team member and project leader on various information systems projects in a number of IS departments. He also spent four years in Corporate Outreach as a project leader responsible for programs with local business organizations, science and engineering educators, outreach and public communications with the community.

Pat’s latest assignment was as the project leader for the Partnerships, Agreements, and Licensing System (PALS).

Pat received his BA in computer science from Abilene Christian University, and his MS in information systems from Texas Tech University.

Jimmy Romero from CMRS, Corporate Contracts and Policy Management Dept. 10730, to Manager of Accounts Payable Dept. 10503.

Jimmy joined Sandia in 1998 as a buyer in the Corporate and Strategic Purchasing Dept. He worked with Save-Just-Time. He then worked for three years as a buyer in Construction Procurement. Most recently, Jimmy worked as a policy analyst in Corporate Contracts and Policy Management.

Jimmy graduated with distinction from the University of New Mexico with a BA in economics. He also received an MA in public administration with an emphasis in public finance from UNM.

Currently, Jimmy is pursuing a PhD in political science with a concentration in public policy at UNM.

Steve Launtschlegler from Team Leader, Test and Assembly Lab Dept. 5423, to Manager, Range Integration and Lab Support Dept. 5423.

Steve joined Sandia in 1989 in the Design Definition department. His work included exercises in layout design and testing, and lethality and countermeasures studies for early missile defense and space based systems.

Sands Missile Range, and other locations.

Steve transferred into the Aerospace Center’s Large Rocket Systems department. After a promotion in 1996, Steve became Resident Range Manager of the Kauai Test Facility (KTF) in Kauai, Hawaii, serving as the on-site representative for Sandia’s local interactions with the US Navy and external agencies requesting use of the DOE/Sandia facility.

Returning to Albuquerque in 2000, Steve became the team supervisor for the (then named) Aerospace Systems Development Center’s Test & Assembly Lab.

He has been involved with the testing, flight certification, and fielding of programs at KTF, Vandenberg AFB, Kodiak Launch Complex, White Sands Missile Range, and other locations.

Steve received his associate degree in design engineering technology from Stark Technical College, Canton, Ohio.

Medical screenings for Cold War-era employees

Sandra employees will be offered DOE-funded program looks for exposure to hazardous materials, agents

Former Sandia employees will soon be able to obtain free medical screenings as part of a DOE-funded medical examination program. Eligible workers will be contacted soon on details about the screenings. The program will be available to all former workers employed at Sandia since its inception who may have been exposed to potentially hazardous agents such as asbestos, beryllium, lead, noise, radiation, solvents, and silica.

Former employees who worked at Sandia, including its facilities outside of New Mexico, will be able to obtain medical examinations related to these exposures. In order to focus its efforts effectively, the program is currently collecting historical information to identify work areas and jobs where workers may have been exposed to these hazardous agents.

The program is being conducted under cooperative arrangements among DOE, the Johns Hopkins Bloomberg School of Public Health, and Boston University. DOE is providing funds as part of a congressionally mandated program to attend to the potential medical needs of Cold War-era employees who may have been exposed to hazardous materials when they served at the national laboratories. Under the arrangement with DOE, the Johns Hopkins Bloomberg School of Public Health and the Boston University School of Public Health will provide the medical examination program to former Sandia employees.

Relying on experience gained from similar successful programs at Los Alamos National Laboratory and the Nevada Test Site, experts from the two schools have begun to collaborate with Sandia and its trade unions to identify former workers who may have been exposed.

By the program’s pace continues to accelerate, a variety of organizations will be contacted to help get the word out to as many former workers as possible and to encourage participation. Program announcements and updates will appear in the Lab News and other venues. In addition to general announcements, the program expects to begin contacting former workers directly by mail within the next two to three months.

Terry Cooper from SMTS, Environmental Compliance and Assurance Dept. 10333, to Manager of that same department.

Terry began working at Sandia in 2004 and has since been the Waste Program project lead for Sandia in Dept. 10339. Before coming to Sandia, Terry was the environmental compliance manager for Kirtland AFB. His work included air, water, waste, and audit programs. Prior to working at Kirtland, Terry worked at International Technology Corporation as a contractor to DOE on environmental compliance and permitting issues.

From 1987 to 1990, Terry worked for the Defense Mapping Agency as a terrain analyst with the Abrams tank program.

Terry earned a bachelor’s degree in geological sciences from New Mexico State University in 1986.

Scott Ashbaugh from PMTS, Analysis and Modelling Dept. 6274, to Manager, Material Control & Accountability Dept. 4216.

Prior to joining Sandia in 2004, Scott was an acting group leader for the Nuclear Design & Risk Analysis group and the D- Division Energy & Environment project lead at Los Alamos National Laboratory.

Scott has worked primarily in the area of nuclear reactor safety for the last 15 years, both supporting the US commercial nuclear industry and the US Nuclear Regulatory Commission. He has extensive experience in nuclear reactor severe accident analysis, DOE facility authorization basis work, and probabilistic risk assessment.

Scott received his BS in aeronautical engineering from Cal Poly, San Luis Obispo, and his MS in aerospace engineering from Embry-Riddle Aeronautical University.

Steve Launtschlegler from Team Leader, Test and Assembly Lab Dept. 5423, to Manager, Range Integration and Lab Support Dept. 5423.

Steve joined Sandia in 1989 in the Design Definition department. His work included exercises in layout design and testing, and lethality and countermeasures studies for early missile defense and space based systems.

Sands Missile Range, and other locations.

Steve transferred into the Aerospace Center’s Large Rocket Systems department. After a promotion in 1996, Steve became Resident Range Manager of the Kauai Test Facility (KTF) in Kauai, Hawaii, serving as the on-site representative for Sandia’s local interactions with the US Navy and external agencies requesting use of the DOE/Sandia facility.

Returning to Albuquerque in 2000, Steve became the team supervisor for the (then named) Aerospace Systems Development Center’s Test & Assembly Lab.

He has been involved with the testing, flight certification, and fielding of programs at KTF, Vandenberg AFB, Kodiak Launch Complex, White Sands Missile Range, and other locations.

Steve received his associate degree in design engineering technology from Stark Technical College, Canton, Ohio.
Disabilities Awareness group to meet

Sandia's Disabilities Awareness Committee will meet July 12 to discuss issues of concerns around disabilities. The committee meets on a monthly basis and is open to all interested persons. Membership consists of Sandians who address disability awareness, education, and solving disability problems throughout the Labs. Meetings are held the second Wednesday of each month in building 823, Rm. 4255 at 11:30 a.m. Anyone with a general interest or who wants to discuss a specific disability issue is invited. For information, contact Jeneane Taylor (1300) at 845-9646 or sjtaylo@sandia.gov or Susan Carson (6143) at 845-8713 or sdcarso@sandia.gov.

Memorial to honor memory of lifelong Sandia contractor, cyclist

Harry Ives, the on-site contractor who worked with Sandia's pulsed power programs for many years, will be honored soon with a memorial in the place he loved to ride his bicycle, the Rio Grande Bosque bike path. Harry, a member of both BikeABQ (http://bikeABQ.org) and the New Mexico Touring Society (http://nmts.org), died in late 2003 as a result of a bicycle accident while commuting home from work via the South Gate. BikeABQ, a non-profit 501(c)3 organization, is raising money for a memorial to Harry that will be constructed along the Bosque bike path. The memorial will consist of a bench plus a large vertical steel slab (a monolith) on which is laser-etched a poem, “The River Trail,” that Harry wrote.

The memorial will be located near the new Tingley Beach Fishing Ponds and is south of the new Zoo-to-Aquarium train station at Tingley Beach. For information on how to help support the memorial and honor this colleague who biked to work years before it was cool, contact Mary Ann Sweeney at maryannsweeney@earthlink.net.
Team Sandia competes in Food Box-ing Olympics on National Hunger Awareness Day

By Iris Aboytes

Held on the sprawling concrete-paved grounds of Roadrunner Food Bank, 27 teams from local companies were on hand to participate in the second annual Food Box-ing Olympics.

There was excitement in the air as the temperature was in the 90s, and a spirited wind welcomed the teams. Roadrunner donated boxes containing 30 different food items for senior citizens in New Mexico in need and the athletes were anxious to get started.

As the teams arrived they huddled together and prepared themselves mentally. Nervous were on edge as a competitor declared, "I am not even thinking about winning, I just got to live through this." Albertsons brought five teams (all from management, including a regional manager). They planned on being triumphant.

The members wore a mix of jeans and tee shirts, and white shirts and ties; one member was obviously a butcher. He wore his white coat (For good luck?). Their Adidas and Nikes and loafers with tassels were set to accelerate and they were ready, wearing their Sandia Serves shirts.

Team Sandia arrived looking tanned, rested, and ready, wearing their Sandia Serves shirts. Their dress might be understated but they were focused, methodical, and prepared. They knew this competition was not about winning and losing but about uniting and winning.

The goal was simple: fill as many boxes as possible with 30 food items in a ten-minute period. Each team had six members. One member assembled the boxes, while five pushed and filled a grocery cart at maximum speed. Ann Perkins from the KRST-FM afternoon show sounded the horn, and the competition began. In the first heat, 183 boxes were filled. Six teams competed at the same time. Bankers were removed their ties, women wiped their faces, and the players were excited.

"Contributions to the Food for Kids program is school based," says Melody Wattenbarger, Roadrunner Food Bank. "It is wonderful how our community has come to respond to the needs of our neighbors." Melody ran the food drive in 2006.

"It really isn’t work,” says team leader Pauline Bruska (10263). “It is a lot of fun and a great opportunity to partner with other businesses in the community for such a great cause. Can you imagine how long it would take Roadrunner to fill the boxes? I’m already working on fielding more Sandia teams for next year’s event. We hope to have as many teams as Albertsons did.”

Log your hours, help your community

Community Involvement (3652) invites folks to log their volunteer hours in the Sandia Serves database. If you are interested in volunteering, visit the Volunteer Opportunities website and watch the Sandia Daily News.

To find out more about volunteering, visit http://www-irn.sandia.gov/organization/div12000/ctr12600/ct402program/volunteers/Volunteermain.htm

Old Mother Hubbard went to the cupboard and the cupboard was bare

Roadrunner Food Bank’s Food for Kids pantry program gets a boost from Division 10000 Diversity Council

By Iris Aboytes

Does this sound familiar? Your child comes home and the first thing she/he does is go to the cupboard and the shelves are empty? "Contributions to Roadrunner Food Bank drop off during the summer," says Melody Wattenbarger, Roadrunner Food Bank.

"Hunger is less on people's minds during the warmer months. We associate hunger with holidays and with winter, and giving to hunger relief work always increases during those times of the year." The Division 10000 Diversity Council held a Food for Kids food drive in May to fill the empty shelves at Roadrunner Food Bank.

"The Division 10000 Diversity Council held a Food for Kids food drive in May to fill the empty shelves at Roadrunner Food Bank. The drive collected 668 pounds of food, $545 in cash, and online donations of $2,156. Each dollar donated converts to three pounds of food. That converts to 8,438 pounds of donated food.

 decade. The donations were given to Roadrunner in honor of National Hunger Awareness Day.

"The Food for Kids program is school based," says Melody, "so it shrinks during the summer. We keep it going as much as possible by moving it to community centers and other suitable locations." Low-income families can count on free breakfast and lunch at school to feed their children during the school year. This vital assistance is gone during the summer and already stressed families have to provide two extra meals for their children each day. Some children get free meals during the summer food program offered in parks, but most do not, and summers end up being hungrier times for far too many families.

The rate of poverty among children under age 18 in New Mexico is 26 percent while the national average is 17 percent says Melody. In New Mexico 18 percent of children regularly miss meals due to a lack of income in their homes. "Nutritional deficiencies of even a relatively short-term nature adversely influence children’s behavior and their ability to concentrate and to perform tasks," says Melody.

"Division 10000 Diversity Council holds a yearly holiday gift drive, and decided they wanted to do more," says Pauline Bruska. "Members of our team volunteered at Roadrunner Food Bank and decided to expand our community involvement and coordinate a summer food drive. Division 10000 employee support has been outstanding. I can’t believe we tripled last year’s giving. Because the division food drive has been so successful the past two years, plans are underway to have a Labs-wide drive next year.”