

'A momentous day in the history of our laboratory'

VIPs participate in groundbreaking ceremony for MESA, the Labs' futuristic defense technology center

By Neal Singer

Tuesday morning (Aug. 19), National Nuclear Security Administration head Linton Brooks joined with Sen. Pete Domenici, R-N.M., Sen. Jeff Bingaman, D-N.M., Rep. Heather Wilson, R-N.M., and senior management from Sandia for an official groundbreaking that celebrated the beginning stages of construction of Sandia's \$462.5 million MESA complex.

Sandia participants in the ceremony, which took place in a large tent erected near the construction site at the southeast corner of Area 1, included Sandia President C. Paul Robinson, Senior VP for Defense Programs Tom Hunter, VP for National Security and Arms Control Al Romig, and Director of the MESA Program Don Cook.

The pleasant event, which went off smoothly and was videostreamed on Sandia's internal Web, seemed the Labs' ceremonial version of thanking the gods for seed corn and future success — given, of course, sufficient hard work.

Paul Robinson looked over an audience of approximately 200 people and said, "This is a momentous day in the history of our laboratory. . . . MESA is a linchpin of our people and of technologies coming together in the national interest."

"This is a day to celebrate the tangible reality of a vision," said Tom Hunter, who spoke of MESA's promise of making components "smaller, smarter, more functional."

Ambassador and NNSA Administrator Linton Brooks, who flew in from Washington for the occasion, conveyed "very high regards" from DOE Secretary Spencer Abraham, who had been scheduled to attend but was kept in Washington by the aftermath of last week's Northeast blackout.



MESA GROUNDBREAKING— Participating in the groundbreaking ceremony Tuesday of MESA, the largest construction project in Sandia's history, are, from left, Senior VP 9000 Tom Hunter, NNSA Administrator Linton Brooks, Rep. Heather Wilson, R-N.M., Sen. Jeff Bingaman, D-N.M., Sen. Pete Domenici, R-N.M., Sandia President C. Paul Robinson, and VP 5000 Al Romig. (Photo by Randy Montoya)

"MESA is more than a technological achievement," Brooks said. "It will help us attract the next generation of scientists and engineers to continue our national security work in an effective, safe environment. I am proud to be associated with this Laboratory."

Wilson praised Sandians. She told the audience, "You have a sense of humility that is probably not deserved. There is nothing like [these laboratories]

anywhere in the country, and arguably in the world."

Bingaman spoke glowingly of the MESA Institute, an offshoot MESA program that brought more than 40 students this year to work at Sandia and encourages trips here by their professors. "The MESA Institute will bring students, faculty, and other researchers from around the country to New

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Human Studies Board approval required for any Sandia research using human subjects

By Chris Burroughs

Sandia cognitive psychologist Chris Forsythe (15311) has words of caution to anyone doing research at the Labs using human subjects — always check with Terry first.

That's Terry Reser (3333), Sandia's Human Studies Board administrator and resident expert on human subject research.

"Terry can tell you what you need to do to prepare for these types of studies — how to fill out a proposal, what to include in it, what to be wary of, what training is required, how the process works, and how long it all takes," says Chris, who has conducted two research projects using human subjects in the past two years. "And be prepared to build extra time into your schedule to accommodate the process."

All Sandia research that involves human subjects or their personally identifiable data must be approved by Sandia's Human Studies Board (HSB) before it can proceed. Executive VP Joan Woodard, who champions the board, recently sent a memo to all Sandia managers and above reminding them of the importance of checking with the HSB before beginning any research that might involve human subjects.

"Research that involves human subjects has been a critical part of DOE activities for decades and is increasingly common here at Sandia," Joan

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Explosive Destruction System gets workout destroying munitions on both sides of the pond

By Nancy Garcia

Success has been the name of the game for the Explosive Destruction System (EDS), which wrapped up development testing of a new larger system in the United Kingdom this summer with the remarkable accomplishment of completing every test on its originally planned date during the five-month-long deployment.

Meanwhile, on this side of the pond one of the other three systems built by Sandia to dispose of aging munitions was used to destroy 15 mortar shells containing mustard agent that were recovered at the Spring Valley subdivision of Washington, D.C.

"When we started in 1998," says project manager John Didlake (8118), "we expected to destroy a maximum of six rounds in a year. This year we have destroyed 34 recovered munitions in the US and 22 in the UK, four rounds in one day, and nine rounds in one week." The Army is expanding the original mission of the EDS to include nonexplosively

"When we started in 1998, we expected to destroy a maximum of six rounds in a year. This year we have destroyed 34 recovered munitions in the US and 22 in the UK, four rounds in one day, and nine rounds in one week."

configured munitions and deployments, not only to public sites, but also to military bases where nonstockpile munitions are stored.

More than 100 munitions or bottles containing a chemical agent have been destroyed so far. The munitions are placed within a leak-tight chamber, where their metal shells are

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What's what

Sometimes the seemingly simplest little jobs turn into a Three Stooges-Marx Brothers extravaganza. That happens to me a lot. . . like a week ago in the office. I was going to move one of those little refrigerator cubes that hadn't been used in years off the top of the larger fridge where we keep food – and keep it and keep it and. . . but that's another story.

Well, I started to move the little fridge, but couldn't because it was plugged in. Hadn't been turned on in years, but it was plugged in. Behind the fridge it was on top of, which was wedged precisely (and tightly) between another, larger fridge and a Coke machine that probably weighs about 50 tons. As I stood there with pursed lips and an expression of bafflement, a colleague came along and asked what I was doing. I explained. Another colleague came along and asked why we were standing in front of a closed fridge with pursed lips and expressions of bafflement.

I explained again. Then, one by one, a few others stopped to see what was causing all the pursed lips and baffled looks, until we were just one short of the combined Three Stooges and Marx Brothers.

Then the Sandia engineering exposure kicked in (like the music-learning technique in *The Music Man*) and things began to happen. While one fetched a two-wheel dolly, two others unloaded the fridge with the little fridge on top and another borrowed a telescoping support from a photographic lighting rack. One then crawled atop the larger fridge with the telescoping photography support fully extended while the other four jockeyed for position with the the two-wheel dolly, and when it was firmly in place, tipped the fridge back.

Then, with a few impromptu colorful metaphors, the guy with the extended photo lighting support snagged the plug and the project ended successfully. The tough part was putting everything back in the fridge. Nobody wanted to touch any of that.

* * *

People-watching is always interesting. We come in all shapes and sizes and colors, and some of us make some pretty interesting choices in clothes, haircuts, hats, the bags we carry work home in, lunch bags, and other stuff.

But a really curious thing about people-watching is the surprising number of people who talk to themselves. And I don't mean those people whose expressions change as they amble along because things are running through their minds. No, I mean people who are just yakking up a storm.

Of course, I see them through my office window along a pretty heavily traveled walkway, and I can't hear them, so I don't know how loud the chatter is. But like the various shapes and sizes we come in, I see people whose lips are barely moving and others who seem to be practicing diction, people whose heads bob, people's whose eyebrows arch and furrow, and people who do all those as they walk along – all alone – outside my window.

And no matter how subdued or animated, I always wonder: What do they have to say to themselves?

– Howard Kercheval (844-7842, MS 0165, hckerch@sandia.gov)

Sandians win Women of Color in Government and Research awards

Four Sandians will be presented Women of Color in Government and Research awards during the Third Annual Research Sciences & Technology Awards Conference in Nashville, Tenn., Sept. 12-13.

Three will receive an Emerald Honor in different areas. One will be recognized as a "Young Scientist/Rising Star" for her contributions thus far. The recipients:

- **Sandra Begay-Campbell** (6214), Emerald Honor for Community Service. Sandra is a member of the University of New Mexico Board of Regents. She has a BS from UNM and an MS degree in structural engineering from Stanford University. Prior to joining Sandia, she worked at Lawrence Livermore National Laboratory. At Sandia she is a member of Sandia's technical staff in Wind Energy Technology Dept. 6214. Her primary focus is managing Sandia's involvement with Native American tribes to provide technical assistance for their renewable energy projects and to create a Native American renewable energy development plan. She is also on the national board of directors of Women in Engineering Programs and Advocates Network and a member of the National Academy of Engineering Committee on Diversity. Sandra is a former executive director of the American Indian Science and Engineering Society, a nonprofit organization with a mission of increasing the number of American Indian scientists and engineers.



SANDRA BEGAY-CAMPBELL

- **Felicia Durán** (6413), Emerald Honor for Professional Achievement. She is a nuclear engineer in the Risk and Reliability Analysis Department. She has had a key role in developing an object-based event sequence tree (OBEST) methodology and applying it to modeling and risk analysis for aviation system safety. From late 1999 through early 2003 she provided technical and project leadership for two DOE Nuclear Energy Research Initiative projects, one for risk-informed regulation for advanced reactors and another for smart equipment condition monitoring. Felicia has been selected for the Sandia Doctoral Studies Program and this fall will begin working on her PhD in nuclear engineering from the University of Texas at Austin. She has an MS in nuclear engineering from the University of New Mexico and a BS in materials science and engineering from the Massachusetts Institute of Technology.



FELICIA DURAN

- **Regina Gonzales** (2993), Emerald Honor for Most Promising Technologist/Scientist. (Story and picture in *Lab News*, July 25.)

- **Elebeoba May** (9212) for Young Scientist/Rising Star. She has a PhD in computer engineering from North Carolina State University. She joined Sandia in April 2002 and is contributing to Sandia's systems biology and bioinformatics research efforts. Elebeoba's research focuses on 1) developing models for metabolic and genetic processes using Xyce™, Sandia's parallel circuit simulator tool and 2) developing biological coding theory, where concepts from channel coding and cryptography are used to model and control genetic systems.



ELEBOBA MAY

The awards are being given by Career Communications Group (CCG), Inc., publisher of *US Black Engineer and Information Technology* magazine, *Hispanic Engineer and Information Technology* magazine, and *Women of Color Conference* magazine.

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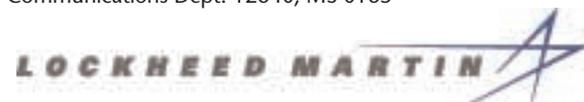
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Retiree deaths

Howard W. Schmalte (age 87)	April 30
Ben Jojola (80)	May 1
Harlan E. Lenander (85)	May 3
Derrell D. Dollahon (78)	May 5
Joanna B. West (77)	May 5
George S. Bennett (83)	May 7
Jose G. Martinez (86)	May 7
Helen M. Bond (81)	May 10
Marold K. Turpin (78)	May 10
Nick J. Kasnic (91)	May 16
Charles R. Barncord (83)	May 22
William M. O'Neill (90)	May 22
Yale Hamilton Knox (76)	May 24
Thomas E. Latta (73)	May 24
Mildred E. Mellen (85)	May 27
David A. Watt (77)	May 27
F. Mary Bacon (86)	May 28
Paul M. Beeson (67)	June 2
Charles J. Davis (85)	June 3
James D. Williams (70)	June 6
George Banos (74)	June 6
Toribio B. Luna (96)	June 7
Reynaldo C. Griego (62)	June 16
Mary M. Catallo (93)	June 18
Edith D. Caller (93)	June 19
Lorin B. Furrow (87)	June 19
Filberto Sanchez (85)	June 26
Paul G. Dominguez (64)	June 30
Jean M. Gillette (89)	July 3
Vernon R. Ivins (75)	July 3
Raymond L. Kollman (77)	July 8
Frank Reimer Emig (88)	July 12

Explosive

(Continued from page 1)

opened with an explosive charge. The contents are then neutralized with caustic chemicals and the effluent disposed of in an environmentally sound manner.

Designed by Sandia for the Army's Non-stockpile Chemical Materiel Program, EDS is intended for use with WWI- and certain WWII-vintage chemical warfare materiel. It can be used when a chemical munition is deemed unsafe to transport or store by routine means, when a stored munition is determined unsafe for continued storage, or when the limited quantity of munitions requiring destruction does not justify the use of other means.

The first three EDS units were designed to destroy munitions containing up to 1-pound equivalent of TNT. A fourth system completed in November 2002 can handle up to 4.5 pounds of TNT equivalent. It just completed tests at the Defense Science and Technology Laboratory in Porton Down, England. The testing demonstrated the ability of the large system to destroy three smaller munitions at one time. Processing multiple munitions in the systems to increase throughput and reduce cost is a primary desire of the Army. The Army will continue operational testing of the large unit this fall and winter at Aberdeen Proving Grounds in Maryland.

"The Spring Valley deployment in Washington, D.C., was a historic event for EDS since Spring Valley was the birthplace for EDS," John says. In May, one of the smaller EDS units was deployed to a parking lot about 100 yards from Sibley Memorial Hospital, where the rounds containing mustard agent, recovered from the



SUPPRESSION — Dave Cole and Gilbert Gonzalez (both 15322) ready the fragment suppression system that protects the chamber from damage from explosive charges used to open the sealed bottles or munitions so the agent can be neutralized in the chamber.

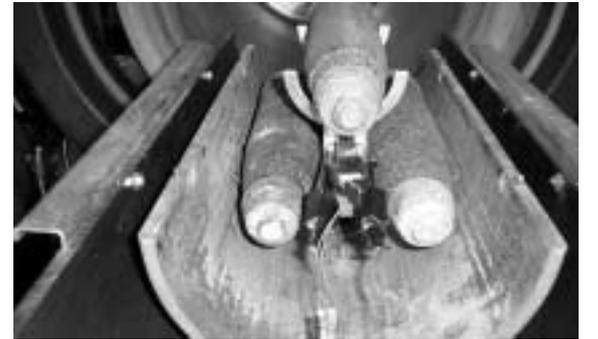
subdivision, were safely destroyed in the unit.

During WWI Spring Valley was a chemical weapon development and testing site operated by American University's extension service. After the war many munitions were buried at the site. In 1993, construction workers building upscale homes dug up an explosively configured chemical munition. The public location prevented the normal destruction method of packing tens of pounds of explosives around the munition, setting off the explosive, and letting the fireball consume the chemical agent. Concerned about the possibility of other sites like Spring Valley, the Army commissioned a survey that identified more than 100 possible sites for buried munitions in the US.

One possible site was proven when an armed and fused 4.2-inch mortar containing phosgene was recovered from a farmer's field in Gadsden, Ala., on land that was previously part of Camp

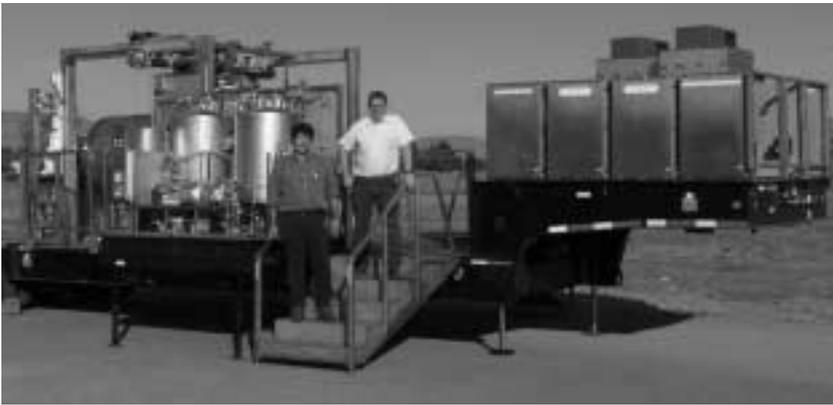
Sibert, a WWII Army training base. EDS destroyed the round in an operation staged about 100 yards from the farmer's home on the Sunday before Labor Day 2002. The farmer seemed to put his faith in the emergency responders, John says, leaving home only for church and an afternoon with friends during the major part of the destruction operation.

The EDS project is a combined effort between Explosives Application Dept. 15322 in Albuquerque and Engineering for Emerging Technologies Dept. 8118 in Livermore.



TRIPLET — Three recovered British 90-mm projectiles containing mustard agent were destroyed at one time in testing of the larger EDS at Porton Down, England.

Sandia California News



CHARGED UP — Dave Cole, left, and Gilbert Gonzalez, right (both 15322), work on a unit that has been equipped with burster charges.

MESA

(Continued from page 1)

Mexico and Sandia. I applaud that outreach effort very much." The MESA Institute is headed by Regan Stinnett (1903).

Said Domenici, who chaired the Senate committee that first committed funds to MESA, "The MESA project is a critical facility to the future of Sandia, bringing together businesses and scientists from all over the world. It can be a tremendous economic engine for New Mexico and the world." He listed three goals and hopes he has for the project: scientific work that would improve nuclear weapons systems, a rebirth of basic science for America, and that New Mexico share in that rebirth.

Al Romig hosted a video display of Sandia microtechnology.

MESA (for "Microsystems and Engineering Sciences Applications") is the largest project that Sandia has ever undertaken. An "under-ground-breaking" ceremony held last year celebrated the installation of utility lines. Thus far, \$200 million has been appropriated for engineering design, microelectronic tool upgrades, utilities

construction, and work in progress. Two of three building construction contracts have been awarded for a total of \$83 million, with approximately \$58 million subcontracted to New Mexico businesses. Upon completion in 2008, three major facilities are expected to house 648 researchers (including some from industry and academia) in 391,000 square feet of space.

The three buildings that formally comprise the project — a microfabrication facility, a microlaboratory, and a weapons integration facility — are expected to include advanced visualization labs and 'clean' rooms that will help modernize safety, security, and reliability functions of the U.S. nuclear deterrent and contribute to other national security missions.

The adjacent construction of an advanced computing facility and a nanotechnology center to be built just north of Sandia's Eubank gate means that an unusually capable and interrelated group of scientific facilities will be available for scientists from the Labs and industry, as well as for university faculty



SANDIA PRESIDENT C. PAUL ROBINSON speaks at the official ground-breaking of MESA flanked by New Mexico's congressional delegation, including, from left, Sen. Pete Domenici, R-N.M., Sen. Jeff Bingaman, D-N.M., and Rep. Heather Wilson, R-N.M. (Photo by Randy Montoya)

and students.

"A large planning team throughout Sandia worked to make this ceremony happen," said Cindy Olson (1900), senior management assistant to Don Cook.

Human studies

(Continued from page 1)

said in her letter. "Conducting research on fellow human beings is both a privilege and a serious responsibility. Such research requires careful planning and research design to ensure that both human subjects and Sandia are protected."

Institutional Review Boards (IRBs) — the generic name for Sandia's Human Studies Board — are mandated by federal law at institutions such as national laboratories, hospitals, and universities that conduct research involving human subjects. The HSB is an independent body charged with protecting the rights and welfare of human subjects.

"From 1993 to 1999 we averaged nine projects a year. Since 2000, we've had 23 new projects a year, and now we're poised for another, similar increase."

The primary tool for ensuring such protection is a careful review of all proposed human subject research. During this review, the board assesses what risks are involved and what measures will be taken to mitigate those risks, and determines if those risks are balanced by the potential benefits. The HSB then evaluates the study design to determine if subject selection is equitable and appropriate for the study, if recruitment is free of coercion, if potential subjects will have both the information and time necessary to make an informed, voluntary decision about whether to participate, and how subject privacy and confidentiality of data will be protected. The board also looks for potential conflicts of interest, monitors ongoing research, and assures compliance with applicable laws and regulations.

Who is on the HSB?

Human Studies Board members represent a variety of disciplines. As you might expect, that includes engineering (nuclear, electrical, civil, and mechanical) but also extends to physics, radiobiology, business, theology, law, nursing, occupational medicine, and human factors. The HSB also includes several community members who have no affiliation with Sandia other than serving on the board. Sandia's medical director, Larry Clevenger, is chair.

All HSB members are appointed by Sandia President Paul Robinson and serve two-year terms. The chair and administrator each serve five-year terms.

Some Sandia human subject research

A few recent examples of Sandia projects that required HSB review:

- Access control devices — Sandia researchers have been evaluating biometric verification systems (iris scans, hand geometry, facial verification, voice recognition) to verify identity for automated entry control applications.
- Back support system — Sandia researchers helped develop a unique cushion designed to relieve the lower back pains of office workers, motorists, and truck drivers, as well as quadriplegics and other people immobilized by reason of occupation or health.
- Smart leg — Sandia researchers, in conjunction with former Russian nuclear scientists, have developed smart legs — entire smart lower limbs — to replace those ampu-

This is where Terry comes in. Working closely with HSB Chairman Larry Clevenger, M.D. (3300), he makes sure that anyone conducting human subject research using Sandia folks, facilities, or funding is aware of their responsibilities. Researchers can find this information online in the recently revised *HSB Procedures Manual* which can be accessed from two HSB web sites. Terry also facilitates the mandatory training for HSB members and researchers, provides continuing education for HSB members, works one-on-one with researchers as needed, and facilitates all reviews of proposed research. To ensure that Sandia stays informed on pending legislation and issues related to human subject research, Terry maintains certification as an IRB Professional. He also represents Sandia on two national organizations, a New Mexico statewide IRB committee, and the DOE Human Subjects Working Group.

So, how much human subject research goes on at Sandia? Terry says in 1992, the year Sandia established the board, the HSB reviewed two projects. After that, things got busy.

"From 1993 to 1999 we averaged nine projects a year," he says. "Since 2000, we've had 23 new projects a year, and now we're poised for another, similar increase."

There's no single source for the new volume, but there has been an increase in funding and increased interest in human subjects research from throughout the labs.

Chris' work, which falls in the area of cognitive systems development, is a prime example of this new trend. In 2002 he was awarded a contract from the Defense Advanced Research Projects Agency (DARPA) to develop a real-time machine that can infer an operator's cognitive processes. This year he's been working on the Next Generation Intelligent System Laboratory Directed Research and Development (LDRD) Grand Challenge that integrates extraordinary perceptive techniques with cognitive systems. A human subjects study is currently underway to evaluate the prototype cognitive system.

Prior to initiating each study, Chris had to fill out a detailed proposal, informed consent form, and other required paperwork to describe the purpose of the study, methodology, data analysis and retention, risks and benefits of the research, measures to protect data, proposed subject pool, and subject recruitment methods. For one proposal, he also gave a short presentation before the HSB,

tated from auto accidents, diabetes, or other causes.

- Instant shooter ID kit — Explosives experts at Sandia, working with a Colorado company, have devised a technique to help police officers at a crime scene quickly narrow the list of suspects in a shooting to those who have recently fired a gun.
- Human/machine interface — A Sandia researcher is exploring new online communication methods that will allow a person "to be in two places at once."
- Group decision making — Sandia researchers are developing new methods to assist groups working in high-consequence, high-stress, time-critical tasks, especially those for which it is impractical to adequately train or prepare.



BACK SUPPORT SYSTEM — One research project that required Human Studies Board approval was the back support system. Here Sandia researcher Mark Vaughn, right, checks out a back support system for a wheelchair with Russian visitors' Dimitry Zhiltsov, left, and Andrei Voloshin, who also worked on the project. (Photo by Randy Montoya)

but that isn't always necessary.

For Chris the review and approval process took six to eight weeks, but in many cases all the steps can be completed in a week or less.

"Federal law allows three levels of rigor when reviewing a proposal," Terry explains. "Each is based on the level of risk involved and is gauged according to the standard of 'minimal risk,' which means that the probability and magnitude of harm anticipated in the research are not greater than those encountered in daily life, including routine physical or psychological exams. Generally, the higher the risk, the more rigor is applied to the review, but other criteria also factor in. For example, all classified human subject research requires the highest review rigor, even for a minimal-risk study."

Terry also points out that risk isn't limited to physical trauma. "Several other types of risk may come into play [psychological, sociological, financial, and legal, for example] and each has several dimensions [probability, magnitude, duration, frequency, and reversibility]."

He adds that since 1992 much of the human subject research conducted at Sandia has hovered near the minimal risk mark, and review by the full board (the highest rigor) has been uncommon.

"But that is changing," he says. "Science is expanding into new areas like biotechnology, gaining new understanding and potential for mischief in established fields like genetics, and delving deeper into how people relate to technology. Each time we push those boundaries, we ratchet up the level of risk, or at least lessen our level of certainty that we recognize, understand, and are mitigating all the potential risks involved."

One thing that won't change is Sandia's commitment to protecting human subjects and HSB vigilance in ensuring that protection.

For more information, including guidelines on how to determine if your activities constitute human subject research and FAQs, visit the HSB home page on the internal web at <http://www-irn.sandia.gov/HR/medical/hsb/hsbhome.html> or on the external web at <http://www.sandia.gov/health/hsb/index.html>. Or call Terry, at 845-9171.

Shared Vision program finds research 'sweet spot' between Lockheed Martin, Sandia

By Bill Murphy

Lockheed Martin's Shared Vision program with Sandia is all about finding the "sweet spot" for research and business goals between the two corporations, says Dorothy Stermer (1310), Sandia's Shared Vision program lead and the Labs' key liaison with Lockheed Martin on the program.

Lockheed Martin, through its Corporate Engineering and Technology Office, launched the Shared Vision program with Sandia in 1999, providing corporate-level research and development funding to support cross-business-area research partnerships with the Labs. Over the years, as the value of the program has been demonstrated, Lockheed Martin has substantially increased the annual investment.

The research projects consist of a collaborative effort involving one or more Sandia researchers and their counterparts from a Lockheed Martin operating company.

The call for 2004 Lockheed Martin/Sandia

Shared Vision program proposals has been issued; proposals are being accepted through the end of August.

Dorothy likens Shared Vision to Sandia's own Laboratory Directed Research and Development program; both represent investments in strategic technologies that may or may not have immediate programmatic application but are clearly important for future developments. Most Shared Vision work is conducted under a Lockheed Martin umbrella CRADA (Cooperative Research And Development Agreement) between the Labs and Lockheed Martin, and the work is highly valued by both parties.

"Lockheed Martin realized that to get the most benefit themselves, it's in their best interest to find those areas that represent a sweet spot for both of us," she says. Direct Shared Vision funding comes from Lockheed Martin corporate resources, with additional funds from the various operating companies. Sandia's contribution is represented by its long-term and pre-existing investment in foundational capabilities that the Shared

Vision program taps into.

In 1999-2000, Lockheed Martin set up 14 Technology Focus Groups (TFGs) in technical areas that cross-cut Lockheed Martin companies; that is, technologies that are important to multiple operating companies within the corporation. It is from those TFG strategies and activities, in which Sandia is invited to participate, that the broad direction for Shared Vision projects is laid out. From there, principal investigators from individual operating companies can partner with Sandia PIs to develop Shared Vision proposals, which are submitted to the LM business areas by their operating companies each year in August.

At the end of a rigorous review process, projects are selected by the Lockheed Martin Corporate Review Technology Board, with the announcement of selected projects coming in November.

Dorothy says project funding levels vary but at the high-end, one investment contributes to the Support Enterprise Model project, a multiyear effort to develop a logistics support tool for assisting with business decisions related to Lockheed Martin's Joint Strike Fighter program. Other focus areas of recent Shared Vision projects include MEMS, robotics, optics, sensors, RF technology — all areas of strength for Sandia and supportive of Lockheed Martin's business objectives.

Dorothy notes that the Shared Vision funding represents "seed money"; other projects and other funding sources have grown out of Shared Vision research — and out of the relationships that have developed between Sandia and Lockheed Martin researchers.

In addition, Sandia's programs are enhanced substantially by this relationship. It facilitates collaborations among scientific and engineering equals. Also, Lockheed Martin is a source of competitive commercial engineering, quality, and business practices that are transferred to Sandia. As with Sandia's other commercial partners, the Shared Vision relationship provides a means of translating technologies into state-of-the-art products available to military, homeland security, and commercial customers.

Mike Collins, Director of Information Technology in the Corporate Engineering and Technology Office and Lockheed Martin's lead for the Shared Vision program, says research partnering between Sandia and Lockheed Martin is "a natural."

"We are a systems house; Sandia is a systems house," he says. "We employ more than 50,000 scientists and engineers; like Sandia, we have a very high ratio of technical staff. The demographics line up. We have an alignment of vision; an alignment of missions . . . and together our complementary capabilities better serve the public interest.

"Generally, the [Shared Vision] program has hit on just about all cylinders right from the start," Collins says. "All in all, the operating companies are extremely satisfied with the role Sandia has played in our research program. We've made great strides since 1999; the relationships we've built up have knocked down a lot of misperceptions on both sides."

Collins notes that the relationship between the Labs and Lockheed Martin in the Shared Vision program is about partnering, not oversight. And that partnering relationship has been fruitful, he says.

Dorothy is careful to point out that Sandia and DOE have built in many safeguards to assure that Lockheed Martin is neither unfairly favored — nor unduly discriminated against — due to its role as manager of Sandia for DOE.

"With Lockheed Martin," Dorothy says, "we're very attentive that we do not give them special preference in opportunities for research partnerships. We do for them what we'd do for any private sector organization."

For more information about applying for Shared Vision funding, check out the program's web site on Sandia's internal web by the index search words "LM Shared Vision" or go to URL https://www-irn.sandia.gov/partnerships/business-development/lockheed-martin/shared-vision/LM_Shared_Vision.html.

Robotics project cited as an exemplary model of Shared Vision Program

The Automated Assembly/Disassembly and Human Motion Planning Project, one of the first Lockheed Martin/Sandia Shared Vision projects — and one that grew to become one of the largest — was singled out recently for special recognition as an exemplary model of Shared Vision partnering.

During a special ceremony at this summer's semiannual corporate program review of the Shared Vision program, Sandia VP Al Romig (now Div. 5000, then Div. 1000), Lockheed Martin Research Engineering VP Jack Hammond, and Research Engineering Director Chester Kennedy congratulated each member of the Automated Assembly/Disassembly team, lauding their contributions to and participation in the 1999 – 2003 project.

The Automated Assembly/Disassembly and Human Motion Planning Project, headed by researcher Terri Calton (15312), focused on lever-

aging Sandia's research and software development investments in automated assembly and motion planning for integration into Lockheed Martin's corporation-wide business initiatives. The technical focus emphasized extending Sandia's core automatic planning algorithms to include human modeling and human factors analysis capabilities for Lockheed's virtual manufacturing and maintenance processes. The resulting software product provides the necessary simulations and job aids and diagnostics for tremendous cost savings in supportability and maintainability from design inception.

The project has been cited frequently by Lockheed Martin Shared Vision Program Manager Mike Collins as an excellent example of a high-performing, collaborative partnership arrangement with Sandia.

Among those in attendance for the review, directors David Goldheim (1300), Steve Roehrig (15200), and Bill Guyton (15300)

shared in the team's recognition.

Among the recognized team members were: Terri Calton (15312), Project Leader; Dorothy Stermer (1310), Sandia's Shared Vision Program Manager; Mike Barron, Lockheed Martin technical team; Frank Nutt (15309), financial support; Peter Watterberg (15221), technical team; Susan Homer (1310), admin support; Barbara Esch (10018), finance support; Patrick Xavier (15221), technical team; Michael Dobbins, Lockheed Martin technical team; Jo A. Thomas, Lockheed Martin project support; Dolores Miller (15221), project support; Kevin Abshire, Lockheed Martin Project Leader (and Terri's customer); Deborah Payne (1312), former Sandia Shared Vision Program Manager; Sharon Blauwkamp (9120), project support; Kathy Cash (15312), project support; and David Hensinger (9231), technical team.

Terri told the attendees at the ceremony that

the project embodied "the truest spirit of the words 'Sharing a Vision.'"

She noted that she and her team have seen their work on the project successfully transitioned from research to development, and ultimately integrated and applied in systems.

Lockheed Martin is already reaping benefits from the software, Terri said.

She noted that early results from the project provided both Sandia and Lockheed with improved analytical capabilities and were considered by Lockheed a valued contribution to its win of the Joint Strike Fighter Program. Today, she said, the underlying algorithms are used in Sandia's Defense Programs, and the integrated software tool is regularly used throughout Lockheed Martin's Aeronautics Company as part of the Joint Strike Fighter System Design and Development Program and other programs as well as being integrated into Lockheed Martin's corporation-wide business initiatives.



THE AUTOMATED ASSEMBLY/DISASSEMBLY and Human Motion Planning Project team, pictured here with Sandia and Lockheed Martin officials, was honored recently as an exemplary Shared Vision project. Terri Calton, lead researcher for the project, is third from the right in the front row.

Instant Shooter ID Kit helping US military distinguish combatants from noncombatants



FRIEND OR FOE? Maj. Mike Tachias (12210) of Sandia's Protective Force, a member of the US Army Reserve, and Pam Walker (2552), Sandia principal investigator for a Labs-developed technology that is being marketed as the Instant Shooter ID (ISID) Kit, demonstrate use of a new version of the kit being adopted by the US military to distinguish between combatants and noncombatants in overseas military operations. Police departments all over the country are using ISID Kits to identify quickly at crime scenes suspects who might have recently fired guns. The kits have helped police resolve several homicide investigations (*Lab News*, Nov. 1, 2002). Law Enforcement Technology, Inc. (LET) of Colorado Springs, Sandia's commercial licensee for the technology, recently repackaged the video-tape-

sized ISID Kit into a compact version that fits into the vests of US soldiers. The smaller kits, called RIFF Kits — for "Rapid Identification – Friend or Foe" — have been purchased by the US Army and US Marine Corps for possible use in Iraq, Afghanistan, and Liberia, according to LET company officials. Like the larger ISID Kits, the RIFF Kits each contain a small fiberglass swab that can be rubbed on the hands and arms of a suspected combatant. About one minute after the swab is doused with a proprietary liquid chemical also contained in the kit, small blue spots will appear against the white swab if gunpowder residues are present, indicating the suspect has possibly fired a weapon. Mike says he is scheduled to leave for Afghanistan with the Army Reserve in October. (Photo by Randy Montoya)

Feedback

Parking abuse burns reader

Q: I park in the "old water tower" parking lot and would like to see the number of parking spaces designated "Carpool" be reduced or eliminated, since these spaces are continually and flagrantly being abused. It has become an annoyance to those of us who walk past these spaces after parking some distance away, only to see a car whisk into one of these spaces and an able-bodied person emerge — alone. Are carpool spaces really serving the purpose for which they were intended?

A: I can understand your frustration with drivers who appear to be flaunting the requirements to park in carpool spaces. The requirements to park in a carpool space are to have two or more people ride together and to have the appropriate placards displayed in the windshield. Many times a carpool may drop passengers at other locations and continue on to park in the most convenient area for the driver. If you witness unauthorized people parking in carpool spaces please contact the Security Desk Lieutenant at 844-3155 for SPO response. Carpools are valuable to Sandia as a method of pollution prevention and setting a positive example in the local community. Unfortunately, we have seen a reduction in the number of carpool requests and as a result there will be fewer carpool spaces allocated across the Laboratory. — *Ed Williams (10864)*

Sandia helps top cops improve security at potential New Mexico terrorist targets

Coursework encourages interagency coordination, cooperation

Leaders of seven New Mexico law enforcement agencies attended a Sandia-taught training course recently that will help them protect the state's infrastructures from terrorist attacks.

The course helped state law enforcers look at buildings and other high-profile targets the way a terrorist does — identifying security weaknesses. Then course participants learned ways to correct those weaknesses using both procedural and technological security upgrades.

Real-world risk assessment

The course also gave the participants a chance to conduct a risk assessment on an actual high-profile building in the Albuquerque area.

The course was taught by Labs security experts in Security Systems and Technology Center 5800 who specialize in risk assessment. Since Sept. 11, 2001, they have worked with federal, state, and local government agencies and private companies to conduct risk assessments at hundreds of locations nationwide.

They also have developed a family of Risk Assessment Methodologies (RAMs) for several

types of infrastructures — including dams, electrical power transmission systems, water supply and treatment systems, and chemical facilities — that might be attractive as terrorist targets.

Twenty-seven people, most at the executive command level (chiefs, deputy chiefs, and their staffs) of their various agencies, completed the RAM class on Friday, Aug. 8, by participating in a brief graduation ceremony at the Albuquerque Police Department Training Academy.

They represented the APD, Bernalillo County Sheriff's Office, Santa Fe Police Department, Roswell Police Department, New Mexico Department of Corrections, New Mexico National Guard, and the Bureau of Indian Affairs.

"We hope this course will give members of the local law enforcement community skills and methods that are available at the federal level to make New Mexico safer," says Sandia organizer Gil Baca (50).

"We also want to help create a cadre of people who can work together as interagency teams to conduct risk assessments all over the state."

— *John German*

How to Save the Environment 101



TOUCHING THE SKY — Don Helfrich of Sandia's Environmental Restoration Technical Areas Dept. 6133 shows WERC students and mentors how to accurately mark a site on a map using Global Positioning Satellite technology.



WALKING THE TALK — Ed Mignardo, assistant task leader in Sandia's Environmental Restoration Technical Areas Dept. 6133, leads a group during a site-assessment exercise.

On a warm July morning, 25 high school students from throughout New Mexico and Texas roamed across WERC Site No. 1 in the dry Manzanito foothills on Kirtland Air Force Base. Their job: assess this fictional environmental site, including a covered landfill with some problems, and make recommendations about long-term environmental stewardship.

WERC (Waste-Management Education and Research Consortium) is a New Mexico consortium for environmental education and technology development.

Along to help the students in this task were teachers or mentors assigned one-to-one for each student, the staff of the WERC Summer Academy, and numerous workers from Sandia's Environmental Restoration Project, which hosted this year's weeklong event.

"We wanted the students to think about this site and what they would do about it," says Caroline Byrd, who coordinated the project for Sandia's Site Closure Dept. 6135.

The students used the exercise as a learning

tool to understand both environmental protection issues and those of long-term stewardship — looking after the sites for generations to come. Demonstrations, talks, and tours supplemented the students' knowledge during the week. The final exam: a presentation to their peers of their approach to the site.

This is the thirteenth year for the WERC Summer Academy, according to WERC Academy Project Manager Deb Thrall of the University of New Mexico.

In addition to the fieldwork, the week gives students an introduction to a variety of career possibilities in the environmental field, says Barbara Valdez, WERC Logistics Coordinator from New Mexico State University. "Meeting the people who do this kind of work is a unique part of the program," Valdez says.

"We like to give the students an open question that doesn't have a black and white answer," says Cassie Benson, UNM graduate student and Academy staff member. "It gives them a dose of reality." — Will Keener

Photos by Randy Montoya



FIELD CONFERENCE — High school students and a mentor confer to try to get the lay of the land during a field exercise in the Manzanito foothills. Sandia hosted the weeklong WERC educational event.



FLAGGING THE SITE — Laura Hlinak, a teacher from Santa Fe High School, prepares to place a pin flag during a site-assessment exercise.

OPSEC reminds us to protect sensitive information

Sandia's Operations Security office announces accomplishments for past year

By Michael Padilla

Discovering that a piece is missing from a jigsaw puzzle can be frustrating, especially if hours have been spent strategizing, setting, and interlocking hundreds of other pieces.

That's how an adversary might feel if they are trying to retrieve information, but are still searching for the last piece of data. Using OPSEC principles to protect sensitive information will frustrate adversaries and in most cases they will move on to look in other areas, says Reggie Tibbetts (12224), Sandia's OPSEC program manager.

Information collected and assembled can very well resemble a jigsaw puzzle. A piece here, a piece there, can eventually lead to revealing various types of information. Tying those pieces of information together could lead to information that may have a higher level of classification up to possibly classified.

OPSEC, short for "Operations Security," works to prevent the inadvertent compromise of critical and sensitive or classified information about various programs and activities.

Inadvertent releases of information include talking about sensitive information in public places, information thrown in the trash or recycling containers instead of shredding, displaying and posting information, and transmitting sensitive information via radio, cell phones, and faxes.

Reggie says the goal of the program is not to be the watchdog, but to assist Labs employees in securing sensitive information. Reggie stresses that OPSEC does not replace other security disciplines; it supplements them.

"Our goal is not to find fault, but to bring OPSEC information to an organization that will assist its people in understanding what OPSEC issues their organization may be facing and how to fix those issues," he says. "We want the organization to invite us back, so we are very careful not to use names but rather communicate specific ideas or countermeasures they can use to continually improve the protection of their critical information."

Last year, Reggie says, OPSEC worked hard to deliver the program's message and to help organizations understand they have direct ownership in the requirements of protecting sensitive information and the requirements surrounding OPSEC. "This has created a mindset within those organizations that have partic-

ipated and has developed closer relationships and a better understanding of OPSEC," he says.

One major change implemented in the last year was actively increasing the program's "on-your-site up-close-and-personal OPSEC road show awareness presentations," Reggie says.

In the past year more than 2,400 individuals attended and participated in OPSEC education and awareness presentations. OPSEC was presented to 15 Sandia centers and eight Sandia remote sites and contractual sites.

OPSEC boasts 57 major accomplishments in distributing messages throughout the Labs. The primary goal is to reach out to as many Sandia employees as possible through various mediums. This includes stories in *Lab News*, *Sandia Daily News*, *Porcelain Press*, and Video

Sandia. During the last year, more than 100 signs were installed in Sandia buildings. E-mail was sent weekly to directors, managers, and working group members.

Thirty-nine major reviews of projects, programs, and buildings at Sandia were conducted in the past year. The reviews provided recommendations on how to better prevent inadvertent releases of sensitive information.

A "Guide to OPSEC" at Sandia will be printed and delivered to all employees by early October. The guide will assist Sandia employees in understanding OPSEC principles.

Micky Hogue, OPSEC program administrator, says the most challenging aspect of the job is keeping up with all the work involved in creating plans, documenting reviews and assess-



The OPSEC puzzle: don't give away the pieces

"Our goal is not to find fault, but to bring OPSEC information to an organization."

ments, and other actions within OPSEC.

"Meeting with people and telling our story is actually very easy and enjoyable — it's just that getting the chance to do that often enough is difficult. Sandians are very busy and don't have a lot of time for training or awareness sessions. But once they have experienced one of our OPSEC awareness presentations we receive multiple requests for additional presentations," says Micky.

Feedback

For construction workers' safety, slow down on Eubank
Besides which, it's the law!

Q: Why do so many vehicles go over 40 mph on Eubank (between Central and the gate, even at 6:30 on a Friday morning) when the speed limit is only 25? I can understand people wanting to continue to go about 40 mph. I'll admit even I often go about 30 to 40 mph in places if traffic and construction permits. I always feel safer going with the flow than being the one guy causing everyone to tailgate and pass, so that doesn't bother me much. However, I certainly cannot understand why so many vehicles are going over 40 (with one going significantly more than that).

A: Enforcement of the speed limits of 25 mph on Eubank during construction is the purview of the Albuquerque Police Department and the Bernalillo County Sheriff's Office. We have expressed our concerns with the city and the contractor performing the work. There has been sporadic enforcement, and, as a reminder, please note that fines are doubled in construction areas. The speed limit is established at 25 mph for the protection of the workers; it would be a real tragedy to have a construction worker killed or injured by a Sandia driver unnecessarily speeding to his or her job site. — Ed Williams (10864)

Measuring OPSEC success

Reggie Tibbetts says OPSEC receives numerous e-mails and phone calls concerning its services.

"Our measurement of effectiveness would be the high amount of traffic we receive in person, e-mail, and through phone calls requesting additional OPSEC support, including OPSEC awareness presentations or answers to OPSEC issues and questions," Reggie says.

Here are a few comments:

"OPSEC has promoted awareness within our organization of how easily information can be gathered that brings together people, access levels, and program information thus making people targets of interest,"

writes one employee. "Reggie and his team have shown us how to stop this inadvertent flow of sensitive information and I'm happy to say we have implemented many of his suggestions."

Another Sandian writes, "The training was comprehensive, very informative, and entertaining. The training heightened the awareness of possible OPSEC issues and concerns not only in our classified/unclassified-working environment, but also in our everyday lives."

To learn more about OPSEC or to schedule a presentation, call Reggie at 844-5244 or Micky at 844-6640.



Sandia's Custodial Services mops up competition in annual awards program at UT-Austin

By Bill Murphy

Sandia's Custodial Services has cleaned up in Austin, walking away with two top awards in a major annual cleaning industry symposium, including the top honor, best overall custodial program.

Sandia for the past several years has used an innovative new approach to cleaning buildings; it's called "Operating System 1" — or OS1®, for short — described by its developer as the first "operating system" for the cleaning industry. So powerful, effective, and efficient a tool is OS1 that it is being adopted by the custodial operations of major corporations and institutions around the country, including Sandia.

In winning the award for best overall OS1 program, Sandia's custodial team bested challengers from Boeing, Delta Center (in Salt Lake City), the University of Massachusetts, and University of Texas-Austin.

OS1 transforms industrial-scale custodial functions from an ad hoc art to a measurable, repeatable — and objectively manageable — science.

Jim Rush, Manager of Site Operations Dept. 10848, of which Custodial Services is a key component, notes that in OS1, every aspect of large-scale cleaning — with emphasis on the word "every" — has been turned into a process. The once-yearly OS1 audit, conducted by OS1 developer and cleaning industry legend John Walker, president of ManageMen, Inc. of Salt Lake City, features page after page of check boxes. Each check box represents one piece of a totally integrated system.

Jim says the audit isn't a "white gloves inspection." Rather, he says, "the audit looks at whether you're doing the OS1 processes. . . . Everything in the audit has a simple 'yes or no' answer. There's no room for ambiguity; you're either doing the system or you're not."

Sandia has improved its OS1 audit each year since it implemented the system; this year, its audit score of 89.367 percent was good enough to earn the award at the annual symposium for best

Before Sandia started doing OS1 a few years ago, its 85 custodians did things 85 different ways.



LINDA HALL (10848) checks out a load of wash at Custodial Services' new on-site laundry facility. Moving the laundry on-site has saved the Labs approximately \$60,000 a year. Custodial Services recently was recognized as the top OS1 custodial program in the country. (Photo by Randy Montoya)

2003 OS1 audit (in addition to its award as best overall program).

OS1 emphasizes team cleaning vs. zone cleaning; it places a high value on training and development; it emphasizes worker health and safety; and makes a cost-effective virtue of the environmentally responsible use of cleaning chemicals.

Before Sandia started doing OS1 a few years ago, Jim says, its 85 custodians did things 85 different ways. Each custodian "owned" one or more buildings and was fully responsible for how the cleaning was done. Under the team cleaning approach, functions are divided among four sub-

ject-area specialists (light duty, vacuum, restroom, and utility), all the teams use the same processes, and all the buildings are cleaned the same way. The cleaning teams tackle 3.2 million cleanable square feet in 322 buildings.

Jim credits much of Sandia's success in implementing OS1 to the quality of the Custodial Services Leadership Team, consisting of management and the team leads. "We key off of the team leads," he says. "They're vitally important."

Other major discriminators for Sandia this year, Jim says, include:

- Establishing an on-site laundry facility for cleaning cloths and mop heads (saving an estimated \$60,000 a year).
- Moving bulk storage of supplies to the outside-the-tech area maintenance warehouse for easier access (especially for new hires who required escort within tech areas).
- Dramatically reducing lost work days, reflecting heightened safety awareness for custodian teams.
- Winning the New Mexico Green Zia Environmental Award for notably reducing cleaning chemical usage.

- Implementation of a "Functional Leadership" approach among the custodial management team.

- Implementation of a "Learn and Earn" process to accelerate employees' opportunities to earn more, faster. (Learn and Earn is the first OS1 certification program to be written into a formal labor agreement — it is part of the Labs' agreement with the Metal Trades Council.)

- Implementation of a "No Access" card program, a customer service approach (developed by the Sandia custodial staff) that has now been adopted by ManageMen, Inc.

Being "number 1" in the OS1 world is gratifying, Jim says, but it doesn't leave room for being complacent.

"You definitely put a target on your back," he says, "and there are a lot of excellent programs out there that would love to take that award away from us. But we're still improving. This is a journey about the best way to do a task. And we're not standing still."

Feedback

Bottom line on 'My Benefits' vs. 'My Rewards': Your 'pay' is still your 'pay'

Q: Recently, the name of the Benefits web page was changed to "My Rewards." I find this not just a little patronizing, as it seems to imply that Sandia management feels that our well-deserved and hard-earned benefits that are an integral part of our compensation are simply generous offerings on the part of a benevolent management. In addition, I now have to remember that our Benefits page has been renamed, as I go searching for it for a few seconds. Everyone else in the corporate world calls them benefits. Why do we need to coin our own terms?

I think it should be changed back. I am not a cynical, pessimistic employee who believes that everything management does is at my expense. I enjoy working at Sandia, and I believe that in many cases, I enjoy better benefits and compensation here than I would elsewhere. I simply think the name change is a little demeaning to the intelligence of the extraordinary people who work here.

A: The "My Benefits" button on the Sandia home page was changed to "My Rewards" because the content of the page was expanded to include information on more topics than just

benefits. The web page includes personalized information on the four components of Sandia's Total Rewards Package — Pay, Benefits, Work Environment, and Learning as well as general Human Resources information. Sandia has been using the term "Total Rewards" for several years to describe the suite of "stuff" available to you as a result of working at Sandia, and it is a term that is used by many companies. Your benefits are still called "benefits," and your pay is still called "pay."

There was not enough space on the Sandia home page to say "My Total Rewards" so it was shortened to "My Rewards." We certainly are not trying to be patronizing or to demean the intelligence of the people who work here. We are merely trying to reflect the true contents of the web site.

Since the definition of reward is "Something given or received in recompense," it supports the concept that benefits, pay, etc., are an integral part of what you receive in return for your services.

— BJ Jones (3500)

Mileposts

New Mexico photos by Michelle Fleming



Jim Harris
40 1733



Wade Adkins
35 2991



Elefio Montoya
35 2992



Paul E. Royer
35 2565



Sam Wallace
35 6113



John Hogan
25 2910



Bob Patton
25 2552



Reggie Tibbetts
25 12224



Joyce VanBerkel
25 5913



Eva Wilcox
25 9725



Robert Berg
20 10252



Anthony Chavez
20 10825



Paul Demmie
20 9232



Sharon Downs
20 10848



Tim Gardner
20 14192



Rick Givler
20 9114



Marjorie McCornack
20 6536



Adele Montoya
20 3131



Ken Smith
20 2346



Bonnie Apodaca
15 10500



Charles Hanley
15 6216



Feedback

A good sub-\$25 meal is hard to find, reader says; also, why not change policy to allow 'banking' vacation hours above current 240-hour limit

Q: Sandia's team award allowance hasn't changed for more than 10 years (\$25/person). It is getting hard to find a restaurant that serves quality meals for less than \$25 ea., especially in California. The Compensation Manual states, "The \$25.00 limit applies to the entire event (e.g., lunch plus merchandise, tax, tips, etc)."

Is there any process similar to our travel per diem that evaluates the appropriateness of the team award amount? If so, how does it work such that the amount has not changed for over ten years? Since the funding to support these awards is collected during compensation review, now would be a good time to announce a change.

A: This limit is governed under federal IRS guidelines requiring any award, e.g., cash, merchandise, etc., provided by a company to an employee above the limit to be taxable. These awards are considered a "de minimis fringe" benefit. Sandia policy is to maintain our team celebration awards at this level and avoid the issues associated with taxing these awards. This limit is consistent with the Lockheed Martin corporate policy as well as other outside companies. While not available to purchase food, the Special Recognition Award program allows the Lab to recognize contributions above this initial level. Should the federal code change, the Labs' policy in this area will be reviewed.

— BJ Jones (3500)

Q: Employees are allowed to "bank" 240 hours of vacation time. After the 240 hours is reached, employees must use any excess on a monthly basis, or lose the time. Our DOE customer (all federal workers) are allowed to bank 240 hours, but have the current year to use any excess over the 240 hours (known as "use/lose" — same as the 80 hours of) — why does Sandia not adopt the system used by our DOE customer/owner? We use the "use/lose" system for our "flex" time, so why not for our vacation time?

A: Sandia used to require employees to use all their vacation by the end of the fiscal year or lose it. The level of approval needed to carry over vacation days into the next fiscal year increased as the number of days increased. The process was largely manual and administratively burdensome for the Payroll organization. It also caused many employees to take vacation at the same time of year in order to avoid losing it — the last two weeks in September were very quiet around here.

The cap on the number of vacation hours was implemented when Sandia moved its Human Resource Information System to PeopleSoft. The move to PeopleSoft was part of larger effort to use commercial software for administrative systems whenever possible. Management decided to make as few changes to the software as possible in order to facilitate the implementation of new releases, and they decided to change processes and policies as necessary instead. PeopleSoft could handle vacation in a number of ways, but not the way we used to handle it or the way you propose. The vacation policy was changed to reflect the method in PeopleSoft that best met our objectives.

Please feel free to contact the Benefits Customer Service Center at 845-2363 if you have questions about your vacation. — Larry Clevenger (3300)



Kathleen (20 yrs., 5744) and Ronald (25 yrs., 9336) Olsberg

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

MATTRESS & BOX SPRINGS, twin, pillow-top, top-of-line, used less than 2 mos., \$200 OBO. Expander, 286-8728.

WHEELCHAIR, Jazzy, electric power, candy-apple red, easy indoor mobility, \$700 OBO. Walker, 294-2293.

PALM M100, Franklin Covey, never used, \$40 OBO. Wagner, 823-9323.

BABY ITEMS: clothes, newborn-24 mos.; swings, electric & bather, \$30-\$50; stroller, \$5; coffee table, \$10; propane grill, \$30. Bogdan, 332-3179.

TELESCOPE, Edmond Astroscan, 4-in. reflector, \$100; Lobo basketball season tickets, 2 chairbacks. Bass, 856-2407.

HOOVER STEAMVAC, cleans carpets, upholstery & bare floors, instructions & cleaning fluids, like new, \$160. Lockwood, 298-9563.

DRESSERS, 2, w/mirrors, \$50; brown couch, \$50 OBO. Romanelli, 291-9313.

CONTEMPORARY SOFA, purple chenille, w/3 multi-color accent pillows, perfect condition, used for only 1 yr., \$375. Welch, 615-0431.

TRUNDLE BED, Tema, \$35; 3-panel folding screen, \$40; large wall mirror, walnut frame, \$95. Shepherd, 828-9743.

ELK PERMIT, archery, unit 12, either sex, 8/30-9/22, best offer; rifle permits, units 2 & 6A, bulls/cows. John, 345-4006.

ELK COW PERMIT, 6A, unit-wide, \$475 OBO. Chavez, 565-2188.

CAR TIRES, Bridgestone, BT 70, steel-belted radial, 205/65R15, 94S M+S, ~20K miles of tread, \$25 ea. Casbourne, 268-3942.

ELECTRIC STOVE, \$60; office chair, \$20; round table, 4 chairs, \$30; microwave, \$15; girl's clothes, size 4. Martinez, 292-4585.

PIANO, Kimball spinet, good shape, \$800. Owen, 293-8149.

YARD SALE, Aug. 22-23, 8 a.m.-2 p.m., Four Hills, right "Y," 2.3 miles, left to 1600 Catron SE. Pitts, 293-5481.

TABLES: glass-top coffee; sofa tables; 2 matching solid-top end tables, cherry finish, great condition, \$250. Lang, 881-7087.

SOFA, Southwestern design, w/recliners on each end, high back, excellent condition, \$350. McCutcheon, 332-3892.

FUTON, queen-size, cathedral 9 layer, w/mattress & mattress cover, good condition, \$225. DeYoung, 828-9500.

EXERCISE MACHINE, Easy Rider, \$50; tenor banjo, 4-string, \$50. Lewin, 898-2303.

BULL SNAKE, ~5-1/2-ft. long, w/tank, hood, heat rock, day/night heat lamps, \$75 firm. Barreras, 246-8285.

WATERBED, queen-size, pine, bookshelf headboard, email for photo, \$100 OBO; family tent, canvas, 10' x 20', \$25. Cameron, 266-3260, cpcameron@aol.com.

NORDICTRACK MTN 750, console w/LED display, 1 yr. old, like new, \$400. Parnall, 869-4199.

DORM REFRIGERATOR, Sears, ~1.35-cu. ft. capacity, runs fine, \$35. Barnard, 771-4620.

YAMAHA GUITAR, stand, electronic tuner, book, case, great for beginners, \$150. Stein, 323-4975.

MONITOR, Viewsonic A75s, 17-in. CRT, \$60; 4-port USB PCI card, \$10. Davis, 268-0768.

TONY LITTLE'S GAZELLE FREESTYLE, w/training video, hardly used, like new, serious buyers only, \$100 firm. Romero, 296-8493.

ALEXIS HOTEL, Seattle, 2 nights, deluxe guestroom, \$125. Owens, 839-4286.

BURLEY BUGGY, seats 2, like new condition, \$125 OBO. Tharp, 792-0790.

HEDGE TRIMMER, 16-in., Craftsman Bushwacker, electric, excellent condition, \$20; edger/trimmer, 15-in., Craftsman, 1/2-hp, auto feed, \$15. Dwyer, 271-1328.

MOTORCYCLE HELMET, leather jacket, almost new, Shoei RF-700, M 71/8-7/1/4, First Gear size S. Benecke, 286-2154.

DINING ROOM TABLE, French Provincial, extension leaves, custom table pad, 6 chairs, finest quality. Dollahon, 821-6355.

SPEAKER SYSTEM, Acoustic Response series 707, 15-1/4" x 27-1/4" x 15-1/2", gray felt, 150W, 12-in. main, 2 subs, 1 woofer, \$10 ea. Thompson, 292-2877.

DINING ROOM SET: table, 6 chairs (2 captain's), china cabinet, hutch, colonial-style, excellent condition, \$750. Loukota, 294-7353.

KING-SIZE BED, light-colored, lodge pole, w/headboard, footboard, & frame, \$500. Moore, 344-1982.

POOL TABLE, Brunswick Commander, 88" x 48", accessories, great for teenagers, \$225. McGee, 857-0661.

HARD PLASTIC POND: 50" x 30" x 12" deep, oval, \$20; 24" x 14" deep, round, \$10; chain link fence, 8' tall x ~25' long, w/misc. parts, \$25. Vining, 323-5146.

MOVING BOXES/WRAPPING PAPER, ~40 boxes, various sizes, includes several wardrobe boxes, free. Hart, 821-2390.

SOFA SLEEPER, matching recliner, \$200 OBO; '01-'03 OEM GSXR exhaust, \$75 OBO; '01-'03 OEM GSXR chain/sprockets, \$40 OBO. Gallegos, 417-3282.

EXERCISE/BODY BUILDING MACHINE, Weider, \$75; TVs: 27-in., \$25; 20-in., \$10; 5-in., \$5. Krein, 899-8312, ask for Ted.

WASHER & GAS DRYER, Whirlpool, both run well, \$150 ea. or \$250 for both. Gariety, 822-1339.

DVD PLAYER, Panasonic DVD-S35, progressive scan, multiple formats, \$55. Hale, 298-1545.

MAC, Motorola Power PC, 4GB HD, Sony 17-in. color monitor, HP LaserJet printer, everything, \$300. Oberkamp, 292-4366.

ALTO SAXOPHONE, soft case, perfect for student, \$295 OBO; mountain bike, Gary Fisher, 21-spd., like new, \$150 OBO. Pougues, 453-8816.

POOL TABLE, Sportsraft, 6' x 3', suitable for children, \$75. Kimberly, 293-5835.

PIANO, Baldwin spinet, excellent condition, \$700 OBO. Rogers, 286-2143.

FISH FINDER, Hummingbird TCR, new, never used, \$170; home design software, Punch Professional, \$25. Pardo, 884-8638.

TELESCOPE, B&L Schmidt-Cassegrain, 4-in., all conceivable extras, including drive corrector, 3 tripods, porro prism, \$500. Shaw, 857-9236.

BEDROOM SET: triple dresser, mirror, armoire, nightstand, queen headboard, \$650; computer desk, w/hutch, \$65; dorm refrigerator, \$45. Wright, 293-7956 or 241-2668.

DRUM, rosewood Jembe, \$275; NURIT 2085 CC machine, \$250; Osprey in-frame pack, 3,000 cu. in., \$45. Wolf, 232-0930.

CAMPING TENT, 3-room dome, 17' x 10', used twice, \$85 OBO. Madrid, 459-5087.

COMPUTER HARDWARE: 64MB AGP video cards, \$40; Zip 250, external, \$50; Zip disks, CD-ROM drive, \$15, more. Cocain, 281-2282.

SAXON, advanced math, algebra 1/2; Abeka, grammar, 11-12, English 5/6/7, history 6, health 5; Diana Waring Romans & Reformers, HS conference tapes. Baney, 294-8970.

PATIO TABLE, 72-in., rust; La-Z-Boy recliner, tan; brass headboard, queen-size. Hayes, 332-0457.

GRAND PIANO, Baldwin L, walnut, good condition, '82, \$7,500. Nelson, 881-7850.

WOODSTOVE, Atlanta Huntsman model, w/fireplace set, \$250. Greer, 281-4688, leave message.

FREEZER, 14 cu. ft., Fridgidaire, manual defrost, only 2 yrs. old, paid \$300, asking \$145. Wong, 856-1050.

TIMESHARE, 1 full week, worldwide resorts, expires 11/30/03, \$650 flat fee. Gonzales, 890-5614.

POOL TABLE, Camelot, oak, green felt, \$1,500; Wurlitzer piano, spinet, ebony, \$1,100, both in excellent condition. Myers, 899-1188.

WOOD LATHE, Delta, heavy-duty cabinet model, 46-541P, mobile base, variable speed, indexing, hand wheel, \$750. Hostetler, 898-3785.

QUEEN BED FRAME, twin bed frame, \$20 ea.; infant/toddler car seats, 2, \$25 ea.; infant stroller, \$15. Chu, 858-1135.

WASHER & DRYER, Kenmore, heavy-duty, super-capacity, brand-new, used ~ 8 times, paid \$1,200, asking \$800 OBO. Pritchett, 270-4585.

NORDICTRACK, deluxe model, good condition, benefit First UMC, \$100; clean; broken concrete for landscaping, free. Furnish, 884-6626.

DISHWASHER, \$50; roll-about microwave cabinet, \$20; small stereo cabinet, glass front, \$15; hanging lamp, \$5; table & chairs. Van Deusen, 291-8196.

GARAGE SALE, 9/1/03, 8 a.m.-12 p.m., kids toys & clothes, adult road bike, much more, 1418 San Rafael NE (east of Tramway). Salerno, 332-9155.

UPRIGHT FREEZER, Kenmore, 15.1 cu. ft., w/lock, works great, \$150. Dennis, 296-4653 or 259-1328.

BUFFET/HUTCH, silverware drawer, \$400; pedestal table, w/leaf, round, oak, \$200; Pfaltzgraff Villa Flora dinnerware, 12 place settings, no chips, \$95. Pierce, 681-5088.

AUSTRALIAN SHEPHERD PUPS, pure-bred, excellent work, guard, family companion, dbl. registered, 3 males, \$50. Lopez, 864-1918.

'01 GOOSENECK TRAILER, 20' x 8', enclosed, 2 6,000-lb axles, workbench, shelves, sink, great condition, photos available, \$6,500. Durant, 890-7999.

How to submit classified ads

DEADLINE: Friday noon before week of publication unless changed by holiday. Submit by one of these methods:

- E-MAIL: Michelle Fleming (classads@sandia.gov)
- FAX: 844-0645
- MAIL: MS 0165 (Dept. 12640)
- DELIVER: Bldg. 811 Lobby
- INTERNAL WEB: On Internal Web homepage, click on News Center, then on Lab News frame, and then on the very top of Lab News homepage "Submit a Classified Ad." If you have questions, call Michelle at 844-4902. Because of space constraints, ads will be printed on a first-come basis.

Ad rules

1. Limit 18 words, including last name and home phone (If you include a web or e-mail address, it will count as two or three words, depending on length of the address.)
2. Include organization and full name with the ad submission.
3. Submit ad in writing. No phone-ins.
4. Type or print ad legibly; use accepted abbreviations.
5. One ad per issue.
6. We will not run the same ad more than twice.
7. No "for rent" ads except for employees on temporary assignment.
8. No commercial ads.
9. For active and retired Sandians and DOE employees.
10. Housing listed for sale is available without regard to race, creed, color, or national origin.
11. Work Wanted ads limited to student-aged children of employees.
12. We reserve the right not to publish an ad.

TRANSPORTATION

'99 HONDA CIVIC EX COUPE, ground effects, chrome wheels, intake/exhaust, premium sound, 45K miles, excellent condition, \$16,500 OBO. DeBassige, 710-3775.

'00 FORD TAURUS SE, all power, graphite blue, 24K miles, excellent condition, \$9,500. Claussen, 293-9704.

'98 FORD F150, 3-dr., excellent condition, must sell, \$6,900; '01 Buick LeSabre, all options, On-Star, 20K miles, like new, \$19,900. Dinh, 561-0865.

'87 HONDA PRELUDE, 5-spd., AC, sunroof, needs distributor, 225K miles, \$500. Prior, 281-5532.

'86 FORD F150, 4x4, 4-spd. transmission, white, new tires, great work truck, \$2,800 OBO. Welch, 459-3017, ask for Greg.

'89 TOYOTA CAMRY DX, 5-spd., AC, PW, PS, CC, more, very good condition, blue book \$1,825, asking \$1,200. Smith, 869-4318.

'54 FORD F100 PICKUP, 440, AT, 8-3/4, straight body, chrome bumpers & grill, \$6,000. Gallegos, 249-4416.

'96 CHEVY CAMARO Z28, V8, power everything, leather, many new parts, 129K miles looks & drive like new, \$7,250 OBO. Trujillo, 203-7811.

NISSAN SENTRA E, 5-spd., 2-dr., AC, rear defrost, cassette, Michelin tires, CB, 233K highway miles, outstanding maintenance, \$1,800. Hatcher, 266-0932.

'01 MITSUBISHI ECLIPSE GT, V6, 3.0L, 5-spd., leather, black, custom wheels, 32K miles, warranty, \$14,850. Abeyta, 463-5529.

'79 MAZDA RX7, white w/black bra, excellent condition, a must see, \$2,950 OBO. Atencio, 459-0185.

'03 MERCURY GRAND MARQUIS GS, sedan, 4-dr., V8, 4.6L, 4K miles, \$21,000. Scott, 275-7429.

'97 FORD EXPLORER, loaded, aluminum wheels, rack, like new interior, security system, 25.6K actual miles, \$8,400. Dobias, 856-7841.

'90 ACURA INTEGRA LS, 5-spd., CD, gold, sporty, great commuter, 30-mpg average, 143.5K miles, \$2,500 OBO. Lanam, 710-8254.

'02 SUBARU WRX WAGON, loaded, rear spoiler, blue, 100K warranty, excellent shape, \$18,500. Bourbon, 898-3032.

'83 MAZDA RX7, good tires, good car, needs paint, 83K original miles, \$1,250 OBO. Biswell, 281-9039, ask for David.

'91 MAZDA B2600i, extended cab, 4x2, 4-cyl., 5-spd., AC, nice stereo w/CD custom wheels, good shape, \$3,500. Theisen, 764-8540, ask for Lisa.

'95 JEEP WRANGLER, white, hard top, 78K miles, \$8,000 OBO; '95 Mazda 626 engine, \$700; '85 GMC 5.0 V8 engine, \$500. Sanchez, 550-1523.

'99 CHEVY CAMARO SS, convertible, white/white top, fully loaded, new tires, 1 owner, excellent condition, \$16,000 OBO. Carr, 890-0075.

'93 MERCURY TRACER WAGON, AT, 1 owner, 79K miles, excellent condition, runs great, \$2,100. Dunn, 821-8001, ask for Walter.

'94 TOYOTA 4 RUNNER, AT, cruise, AC, CD/cassette, brush guard, & more, 103K miles, excellent condition, \$6,500. Lininger, 856-1542.

'96 CHRYSLER CONCORDE, 46K miles, below book, \$6,600; '93 Lincoln Mark VIII, 32K miles. Veltkamp, 271-0325.

'98 SUBURBAN, 4x4, all power, leather seats w/warmers, CD/cassette, 3rd seat, 77K miles, \$16,500. Vigil, 856-3558.

'97 BMW Z3 ROADSTER, leather/chrome package, racing green, Harmon-Kardon sound, new Yokamaha tires, low miles, \$17,500. Hanks, 292-1551.

'02 JEEP WRANGLER, 4x4, AC, AM/FM/CD, roll bar, rear seat, removable lock box, 17K miles, mint condition, \$14,200. Lanes, 856-6237.

'92 JEEP CHEROKEE LAREDO, 4WD, 5-spd., 6-cyl., AC, AM/FM/cassette, alloy wheels, tow pkg., 158K miles, \$2,000. Bickley, 293-4694.

'87 NISSAN PULSAR, new motor & tires, excellent condition, \$3,000 OBO. Corominas, 710-1791.

'87 MERCEDES 300E, dealer serviced, 63K pampered miles, excellent condition, \$7,950. Williams, 342-9222.

'89 FORD AEROSTAR, running board, blue & gray, 104K miles, runs well, clean, \$1,850. Snedigar, 839-8560.

'99 SATURN SL, 4-dr., 5-spd., 1.9L SOHC, AC, AM/FM, platinum/gray, 58K miles, owe \$6,000, asking \$5,500. Baca, 345-6082.

'99 TOYOTA RAV4, 4WD, 4-dr., all power, 1 owner, 78K miles, perfect inside & out, \$11,900 OBO. Hoffman, 352-2089.

'01 TOYOTA CAMRY LE, 4-cyl., AT, PW, PL, CD, remote, 8K miles, transferable extended warranty, \$14,250. Paananen, 332-2076.

'03 HONDA PILOT, tow hitch, roof rack, sagebrush color, 8K miles, perfect, \$29,500. Donald, 350-3071.

'97 GMC JIMMY, 4-dr., 4WD, PW, PL, fairway green, tow road, excellent condition, \$8,200. Ross, 720-6560.

'00 CHEVY BLAZER, 4WD, AT, CD, remote start-up, new tires, alarm, good condition, \$15,000, willing to negotiate. Ortiz, 865-0021.

'96 PONTIAC GRAND AM, 6-cyl., PW, PL, CD, green, new brakes, 108K miles, clean, \$3,500 OBO. Mendez, 299-2980.

'90 GMC 1/2-TON, long bed, 350 V8, 4-spd., AC, shell, bed liner, runs well, \$2,900. Toya, 898-0491, ask for Anthony.

'93 MERCURY SABLE, 3.8 V6, PS, PB, AT, power adjust seats, 74K miles, excellent condition, \$3,100. Fleming, 293-9421.

'90 SUBARU LEGACY STATION WAGON, 97K miles, good condition, \$2,500 OBO. Ballard, 797-3871.

'86 FORD F150, short bed w/shell, 76K miles, very good condition, blue book \$2,389, asking \$2,000 OBO. Hill, 897-2968.

'00 MUSTANG GT, V8, AT, gray leather, Mach stereo, 17-in. rims/tires, loaded, silver, 22K miles, \$12,500. Jones, 293-1065 or 251-9723.

'97 CHEVY CAVALIER, 2-dr. coupe, teal, well maintained, 98K miles, \$2,800. Duda, 440-3735.

'01 LANDROVER DISCOVERY II SE, leather, dual sunroofs, 6-CD, alloy wheels, loaded, 29K miles, \$25,500. Romero, 286-6325.

'96 WINNEBAGO ADVENTURER, 32-ft., sleeps 6, 2 ACs, Ford 460, warranty, ~37K miles, super clean, \$34,950. Cincotta, 292-4168.

'98 SUZUKI RM 250 MX, dirt bike, excellent running & cosmetic condition, very nice, very fast, \$2,500 OBO. Buteau, 856-7705.

'89 HUNTER SAILBOAT, 23-ft., trailer, 8-hp outboard, sleeps 4+, sink, stove, porta-potty, reefer, VHF, more. Harcourt, 268-0218.

'84 HARLEY-DAVIDSON SPORTSTER, garaged, lots of chrome, & extras, 700 miles on custom engine, \$5,800 OBO. Trujillo, 883-7697.

'97 PACE ARROW VISION, model 36B, Chevy 454, 2 slideouts, garaged, no pets or smokers, fully equipped, very clean, \$56,000 OBO. Kerr, 744-4802.

'00 BUELL CYCLONE 1200, Vance & Hines exhaust, carbon fiber interior, new rear tire, 10K miles, \$5,100. Jensen, 832-9067, ask for Karl.

'00 BUELL M2 CYCLONE, Forcewinder air filter, Vance & Hynes muffler, saddle bags, 8K miles, runs great, \$6,000 OBO. Myers, 865-6371.

REAL ESTATE

4-BDR. HOME, 1-3/4 baths, 2 large living areas, 1,910 sq. ft., large lot, Taylor Ranch, \$135,000. Lin, 821-6183.

3-BDR. HOME, 2 baths, 2,010 sq. ft., 2 fireplaces, great room, ceramic tile, Berber carpet, Jacuzzi, kitchen island, Westside, \$160,000. Garcia, 280-5815.

3-BDR. TOWNHOME, 2-1/2 baths, 2-car garage, clean, easy I-40 access, only \$600 down. Butler, 401-0617.

4-BDR. HOME, 2-1/2 baths, 2-car garage, 2,412 sq. ft., 2-story, pool, near Hoffmantown church, \$252,000. Mehler, 823-9020.

8.345 ACRES, stunning East Mountain land, La Mediera Estates, view of 4 mountain ranges. Mulligan, 291-8539.

3-BDR. HOME, 2 baths, 2-car garage, refrigerated AC, many upgrades, cabinets, lighting, faucets, security system, etc., \$147,000 OBO. Soto, 280-2151.

WANTED

GOOD HOME, young male pitbull terrier, found on 8/2, dark brindle, friendly, playful, loves tug-of-war. Myerly, 275-5695.

WALK-IN FREEZER, 16' x 16', for Candy Kitchen Wolf Rescue, nonprofit corporation. Wiseley, 293-3643.

DRUM SET, for our church, free or cheap. Highland, 877-0673.

STATIONARY BIKE, air resistance-type, w/articulated arm motion, must be in good to excellent shape. Barker, 899-2018.

LIGHT PICKUP, prefer ext. cab, or Subaru wagon, good condition, low mileage, less than 8 yrs. old, for student, less than \$5,500. Appel, 292-0463.

ROOMMATE, 4-bdr. home, privacy, near Big I, UNM, bike trail, park, golf course, \$600/mo. Mattes, 255-2454.

MASSAGE TABLE, used, good condition, portable. Johnston, 292-7277.

HOUSEMATE, own bdr., bath, living room, entrance, free laundry, quiet, mature preferred, \$375/mo., negotiable w/lease. McDonald, 268-5005.

GOOD HOME, pit bull, 1 yr. old, friendly, has shots. Padilla, 877-2653.

DUAL BREAST PUMP, Medela Lactina; rocker/glider for baby's room, very good condition. Rezac, 281-1816.

WORK WANTED

HOUSESITTER, while you are away, pets, plants, no problem, references available. Thomas, 281-0585, ask for Sara.

LOST & FOUND

LOST: wide-band, full-circle abalone ring, w/white metal, unknown time/location. Hope, 831-7364.

FOUND: gold brooch, 823 parking lot, Aug. 11. Martinez, 844-3027.



Sandia, Kansas State University developing rapid disease detection system for farm animals

As Mike Whitehair quietly moves through the pen of cattle, something captures his attention. The Abilene, Kan., veterinarian pauses, pulls out a cell phone and punches in a code — not to make a call — but to start through a series of questions on the tiny screen regarding clinical signs he may be seeing in the cattle and illnesses they could represent.

Such is the vision of the Rapid Syndrome Validation Project for Animals (RSVP-A) being developed jointly by Sandia and Kansas State University.

"This joint effort offers a unique opportunity which builds on the strengths of both institutions: the agricultural expertise and experience of Kansas State and the security and systems engineering capabilities of Sandia," says Cecelia Williams (6245), Sandia researcher.

The project is an Internet-based system for rapid detection and reporting of infectious disease outbreaks in cattle.

Susan Caskey (5324), the Sandia RSVP project lead, says, "With the success of RSVP within the human population, it seemed the ideal model to use for monitoring animals. With the help of K-State, RSVP-A was created using the models developed within the human system."

Whitehair, co-owner of the Abilene Veterinary Hospital, is helping K-State veterinarians test the initial version of the project in a private practice setting.

"The need to be able to quickly recognize disease symptoms — whether introduced naturally, accidentally, or by humans intent on havoc — has never been more important," says K-State research veterinarian and project leader Mark Spire. At stake is a multibillion-dollar industry in Kansas that is the leading agricultural income generator, he said.

Kansas was home to 6.35 million head of cattle during 2001, according to data kept by the US Department of Agriculture. The state annually ranks at or near the top in cattle feed-

ing and beef processing.

"As a result, Kansas imports more than 4 million head of cattle for grazing and feeding purposes and nearly 2 million for slaughter," Spire says. "As a net importer of livestock, this large movement of cattle from every region of the country into Kansas has the potential to introduce diseases not native to this area. Plus, the risk of introducing pathogens is significantly increased by the movement of workers, vehicles, and visitors to and from cattle operations every day. And since most of the animals are concentrated in large facilities, the high density in small areas heightens the risk of catastrophic economic losses resulting from acts of agroterrorism or from naturally introduced diseases."

The RSVP-A system will help scientists and agencies determine, down to the county, where clusters of animals are showing similar, but unusual symptoms. However, cattle owner anonymity is built into the program, says Whitehair. The project, modeled after Sandia's RSVP-H software for humans and funded by Homeland Security funds through the USDA and ultimately the Kansas Animal Health Department, has been in development for 1-1/2 years and in the testing phase a few months.

Although the system initially focused on cattle, it may be extended to other species, says Brad DeGroot, veterinary epidemiologist with K-State's Department of Diagnostic Medicine and Pathobiology, who is also working on the project.

The RSVP-A project may be the tool to fill a gap in this country's livestock disease diagnostic systems, says Kevin Varner, Topeka, Kan.-based veterinarian-in-charge with the USDA's Animal and Plant Health Inspection Service (APHIS).

"We have an excellent system for finding diseases that we expect to find — diseases that we already know about," says Varner, citing brucellosis, pseudorabies and tuberculosis. "We've historically not done a good job of quickly detecting emerging diseases in this country."

The initial test phase, which began earlier this year, will last two years, Varner says. At the end of that time, if the system still looks feasible, the testing could either be extended or the program could be launched nationally.

"The focus is to capture data at the point of activity when the practitioner is in the field, so we're not asking him or her to remember to do a report when they get back to the office," DeGroot says.

The project, if successful, will give veterinarians a way to pool their observations so that they can spot a potential looming crisis in advance,



VETERINARIANS will be able to use a cell phone to enter information into RSVP-A, an Internet-based system for rapid detection and reporting of infectious disease outbreaks in cattle.

DeGroot says. Veterinarians look at client cattle every day to determine why they are sick or not performing well. They examine lamenesses, skin and mucosal lesions, birth defects, diarrhea, central nervous system problems, deaths, and various other maladies in the course of their daily work. The RSVP-A system takes the information they gather beyond the individual farm or veterinary clinic and into a central databank.

Using the handheld devices may seem foreign to some veterinarians at first, but the fact that each unit is a working cell phone and personal organizer should help practitioners adapt. Plus, once a veterinarian is familiar with the software, it takes less than a minute to enter the data if he or she sees unusual symptoms, DeGroot says.

"The only way to prepare for the unknown is to practice," said Whitehair.

Eventually, the technology may allow for transmission of photos of the clinical signs in question.

The system's initial testing is being done in the five-county area that Whitehair's practice covers — home to about 225,000 head of cattle. That phase, begun in the spring, is expected to continue for about a year, through typically busy and quiet times on cattle operations.

This month the testing will be expanded to 15 collaborating veterinarians.

"With the success of RSVP within the human population, it seemed the ideal model to use for the monitoring of animals. With the help of K-State, RSVP-A was created using the models developed within the human system."

Retiree Ed Roth publishes book on integrated product design, manufacturing

Retired Sandia engineer Ed Roth has recently co-authored a book with Professor Robert Campbell titled *Integrated Product Design and Manufacturing Using Geometric Dimensioning and Tolerancing* (Marcel Dekker 2003). (Geometric dimensioning and tolerancing is the national standard for product definition.)

The book reveals methods for designing product and manufacturing systems that alleviate the constraints that now exist among design, manufacturing, and inspection engineers. It presents real-life case studies based on Ed's consulting.

In his Sandia career, Ed was involved in three diverse technical areas: He was first a component designer. Then in advanced manufacturing development he developed laser welding of bridgewires to harden weapons and worked with many of Sandia's suppliers troubleshooting problems. He spent his last years at Sandia in exploratory systems, designing antiterrorist systems including the prototype Safe Secure Trailer, access denial, barriers, directional munitions, antiriot backpack foam systems, and explosives containment.

After retiring from Sandia, Ed founded Productivity Services, Inc., a company providing support designing product and production systems. He says he's worked with more than 100 companies in that role. He will give a workshop for the American Society of Mechanical Engineers on GD&T: Integrating Design and Manufacturing at the University of New Mexico on Nov. 8.



UNIVERSITY OF NEW MEXICO football fans — many of whom work at Sandia — cheer at a game last year in the north end zone. The fans call themselves the Red Menace and have adopted the north end zone as their home. Last year some 50 Sandians bought season tickets in the north end zone and supported the Lobos together. They also joined others in donating money to buy tickets for disadvantaged children. Season tickets are still available through Aug. 26 by calling Lee Roy Lucero at 299-3629. The season tickets can be purchased only with a credit card.