

Sandia at Yucca Mountain Project: Providing data for hard decisions

Labs' quality testing helping complex project as it looks toward repository license application in 2004

By Will Keener

Sandia scientists — in the lab and inside Yucca Mountain — are conducting important experiments for the proposed geologic repository in Nevada that will permanently store America's high-level radioactive waste.

"Sandia's strength is in testing," says Cliff Howard, manager of the Labs' Yucca Mountain Project (YMP) Repository Test and Analysis Dept. 6855. "We're good at it, both in the field and in the lab. And the data we are developing are fed to modelers, who are working on the project's performance assessment."

Cliff, who spent 14 years in Carlsbad working in the test group on the Waste Isolation Pilot Project, knows whereof he speaks. Although he is quick to point out that YMP is an altogether different project (see "Different waste, different regulators . . ." on page 6), Cliff notes that Sandia's reputation and respect have grown steadily at the Nevada site by dint of its quality testing results.

Project managers Bechtel-SAIC have come to value Sandia's work on the project as they move forward with a complex effort to provide needed evidence to back up a repository license application. The application is due at the Nuclear Regulatory Commission by late 2004.

"Because natural systems are inherently uncertain, the tests and analyses we conduct are designed to support a risk-informed decision process," Cliff explains, driving north on US Highway 95 from Las Vegas toward the Nevada Test Site, where Yucca Mountain is located. "We are asking ourselves 'What are the chances of a certain scenario occurring?' and then 'What are the consequences of that?'"

(Continued on page 6)

This is the first in a series of occasional Lab News articles about Sandia sites, programs, and field projects at locations other than the Labs' main sites in Albuquerque and Livermore. Lab News staff members will visit the sites and report on work in progress.

Articles over the next year will feature Sandia work, facilities, and people in such places as Kauai, Russia, Tonopah Test Range, Carlsbad, Pantex, Alaska, and Washington, D.C.



STRICT CALIBRATION — Dave Bronowski (6117) checks gauges on a 12-inch sample of tuff from Yucca Mountain. (Photo by Randy Montoya)

International Security meeting



Some 250 people from 30 countries gathered for the three-day, Sandia-hosted 13th annual International Security Conference last week in Albuquerque. Concerns about and international reactions to the US's recent foreign policy posture dominated discussion. *Lab News* contributor John German was there; read his story on page 5.

DOE may continue using polygraph to screen some labs employees

Preliminary decision goes against NAS recommendation; Labs to express its concerns

By Neal Singer

In an action that surprised not only some Sandians but also members of Congress, the DOE has announced its preliminary decision to continue polygraph testing to root out defense-lab spies and other miscreants. The public comment period ends June 13. Sandia President C. Paul Robinson this week expressed some concerns and said the Labs will register its views during that process.

According to a DOE news release, the preliminary decision (announced formally in the April 14 *Federal Register*) was made by Secretary Spencer Abraham "in light of the current national security environment, the ongoing military operations in Iraq, and the war on terrorism."

"As the steward of the nation's nuclear weapons stockpile, the Department has an obligation to use the best tools available to protect the most sensitive information from being compromised," Secretary Abraham said. "We will continue to use counterintelligence-scope polygraph exami-

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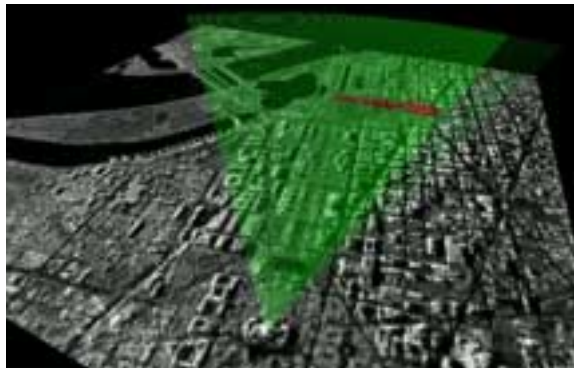
Labs sky scanner can detect a cloud of germs from three miles away

Ares is participating in DoD tests this week at Dugway

By John German

Someday soon the skies over US cities or upwind of major sporting events might be scanned for airborne biological agents using a device now under development at Sandia.

Named "Ares" after the Greek god of war, the



A SYNTHETIC APERTURE RADAR image of the Washington, D.C., area overlaid with a scan profile (green) showing the area the Ares system could scan if placed on the ground near the corresponding spot at the lower edge of the image.

telescopic scanner is mounted just inside the rear doors of a large passenger van.

The mobile biological weapons standoff detection system, as it's called, can be taken anywhere the concern exists that terrorists might release biological weapons agents into the air, such as anthrax, smallpox, tularemia, plague, botulinum toxin, or other bugs.

Once the van is stabilized and its rear doors opened, an ultraviolet pulsed laser mounted on a gimbal whips across a 90-degree wedge of sky once every 20 to 30 seconds, sending out 600 to 1,000 laser pulses on each pass.

A telescope and detector wired to a computerized location system follows the beam, watching for bright spots that could indicate the presence of smoke, diesel fumes, dust clouds, or something more sinister.

Bright spots

The beam more or less uniformly illuminates the floating dust and other contaminants normally present in the lower atmosphere, explains Ares developer Phil Hargis (1118). Where contam-

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Labs, SF airport collaborate on chem/bio study

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Emeritus program offers chance to continue service

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Regina Hunter honored for handicap advocacy work

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What's what

Sandia hosted its annual International Security Conference last week, offering diplomats and others from around the world an opportunity to get together and talk about, what else – international security issues. It was a gathering of the usual suspects: the US, Britain, Russia, China, Aruba. . . Aruba?!?! . . . Aruba? Isn't Aruba? . . .

Yep. It's one of the ABC islands, a colonial possession of the Netherlands, a tropical paradise off the northern coast of Venezuela. And, wait a minute – there was also a representative from Trinidad and Tobago, the island republic off the northeast coast of Venezuela.

Wouldn't a crisis in either of those places be a flu epidemic that layed all the steel bands low? Or, a shortage of pineapples and coconuts for happy-hour? Or a lost shipment of sunscreen for the surfside cabanas?

But come to think of it, wouldn't it be great if one of those – or, heaven forbid, all of them at one time – was the most serious crisis we had to face? Hmmm. . . Maybe next year we can get Barbados and St. Kitts & Nevis there, and more like them from other parts of the world the next year, and. . .

* * *

Be sure to read Will Keener's page-one story about Yucca Mountain, which launches what editor Ken Frazier calls "the first in a series of occasional articles" about Sandia locations other than Albuquerque and Livermore. We all know about those two, but many Sandians – especially newer or younger ones – may not know that you can find the blue thunderbird insignia in Hawaii, Alaska, and Russia, among other places.

We'll get a look at some interesting work in interesting places over the next year in this show-and-tell about "Sandia Elsewhere." Watch for 'em.

* * *

You may have noticed that what we get for working here – pay, insurance, holidays, vacation, etc. – has a new name. These used to be called collectively "benefits," but they're now known as "rewards." A wordsmith wag says there may be a sinister motive behind the change, pointing out that the word "benefits" infers entitlement while the word "rewards" infers gratuity, and that withholding gratuities is easier than eliminating benefits. HMMMM. . .

* * *

Photographers sometimes feel they don't get the credit they deserve for the work they do. Well, Randy Montoya (12640) gets no sympathy from his colleagues this time around. His spectacular photo of the Z Machine at the moment of firing turned up – credited – in a *New York Times* story about spectacular achievements of the Z Machine recounted in a paper delivered at the American Physical Society meeting in Philadelphia April 7.

And a two-page spread of the same photo was the intro to the story in an edition of *Telegraph Magazine*, a weekly publication of *The Telegraph* (London).

* * *

Tim Goering (6135) turned on his "Out of Office Assistant" recently so that it informed people trying to reach him by e-mail that he was away "assessing hydrologic runoff through the Upper Salt River Canyon."

Well, maybe. . . But while Tim's a hydrologist by education and profession, he's also a long-time river runner by avocation. What do you think he was doing?

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

New privacy practices for medical information go into effect: Have you received your notice yet?

Benefits Dept. 3341 provided the following information for employees and retirees:

Recently you may have read or heard about a new law enacted concerning the privacy of health information. Or perhaps you went to the doctor and were asked to sign a document regarding how he or she would use and disclose your health information. What is all the fuss about?

Back in 1996, Congress passed the Health Insurance Portability and Accountability Act, otherwise known as HIPAA, which mandated the most significant changes to the health care industry since the passage of Medicare. Initially, the law's emphasis was on the portability of health insurance, prohibiting discrimination based on health status-related factors, and implementing measures to fight fraud and abuse within the health care industry. The law also contained "administrative simplification" provisions concerning the privacy and security of health information, which were to come later.

Effective April 14, 2003, the privacy portion of the administrative simplification provisions went into effect. These provisions affect health care providers that transmit health information electronically and health plans, otherwise known as covered entities. (Note: Sandia's on-site Health Services Center is not a covered entity and thus health information used by the center or disclosed by or to it is not covered under these provisions.)

Limit disclosures, protect rights

In a nutshell, the provisions limit the uses and disclosures of individually identifiable health information as well as providing certain individual rights with respect to your health information. This law regulates how Sandia can use and disclose health information received from the health plans.

It is important to note that this law regulates only health information used and disclosed by the health plans and/or health information obtained by Sandia from the health plans. It does not regulate the use or disclosure of health information that Sandia may have received from other sources to use in connection with other programs, for example under the Family and Medical Leave Act, Americans with Disabilities Act, or worker's compensation. (Note: Even though certain health information Sandia receives is not protected under HIPAA, Sandia does protect all health information it receives as a common practice or as required by law.)

You may notice some changes

Because of these provisions, you may notice some changes when you call either your plan's member services department or the Benefits Customer Service Center. For example, you may find that you will be subject to more stringent requirements to verify your identity if you are accessing your own health information. Or, for example, if you call to get health information on your spouse, you will be given "minimum necessary" information only and will be required to get a written authorization if you need further information.

By now, you should have received your Notice of Privacy Practices for Sandia's self-insured health plans.

If you did not receive your notice, please contact the Benefits Customer Service Center at 505-845-2363, or if outside Albuquerque, 800-417-2634, then 845-2363. If you are covered under an insured plan and have not received a notice, contact the plan's member services department to obtain one. Employees can also access the Notice of Privacy Practices for the self-insured health plans on the intranet at <http://www-irn.sandia.gov/hr/benefits/health>.

The Benefits Department encourages you to read this document not only to become familiar with the plans' privacy practices but also to be aware of your individual rights under the new law.

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Recent Patents

Charles Cadden (8724) and F. Michael Hosking (1833): Coating System to Permit Direct Brazing of Ceramics.

James Buttz, David Shirey, and David Hayward (all 15252): Tandem Mobile Robot System.

Edward Thomas (12323) and Robert Rowe: Methods and Apparatus for Tailoring Spectroscopic Calibration Models.

Kenneth Peterson (14171) and Robert D. Watson (11500): Multilayered Microelectronic Device Package with an Integral Window.

Kenneth Peterson (14171) and Robert D. Watson (11500): Method of Fabricating a Microelectronic Device Package with an Integral Window.

Paul Galambos (1769), Murat Okandan (1749), Stephen Montague (1749), James Smith, Phillip Paul (8355), Thomas Krygowski, James J. Allen (1769), Christopher Nichols, and Jerome Jakubczak II (1703): Surface-Micromachined Microfluidic Devices.

Samuel Miller, Paul McWhorter, M. Steven Rodgers, Jeffry Sniegowski, and Stephen Barnes: Microelectromechanical Apparatus for Elevating and Tilting a Platform.

Edward Cole, Paiboon Tangyonyong, Charles Hawkins (all 1739), Michael Bruce, Victoria Bruce, and Rosalinda Ring: Apparatus and Method for Analyzing Functional Failures in Integrated Circuits.

Gilbert Benavides (14184), Paul Galambos (1769), John Emerson (14172), Kenneth Peterson (14171), Rachel Giunta (14172), David Zamora (14172), and Robert D. Watson (11500): Packaging of Electro-Microfluidic Devices.



San Francisco International Airport unveils chem/bio defense collaboration with Sandia

Four-year relationship leads to first testing of chemical, biological defense at a major international airport

By Nancy Garcia

Calling himself "very pleased and excited," San Francisco International Airport spokesman Mike McCarron praised "the wonderful relationship" with Sandia that has led to the first testing of chemical and biological defense at a major international airport.

Speaking at a press conference that unveiled the airport's response capability, McCarron said, "What began as an informal conversation has evolved into a four-year working relationship. We've been the testbed for some of their latest and greatest technology."

Likewise, Duane Lindner (8101), deputy director for chem/bio defense programs, acknowledged the airport's "foresight and fabulous cooperation long before Sept. 11."

Sandians from both the California and New Mexico sites are working with the airport to evaluate detection and response systems for chemical or biological attack. These, Duane said, "would allow a very early warning and quick response plan so passengers could be moved out of harm's way or be treated" (in the event of a biological attack).

Once contamination is spotted, added McCarron, response options include evacuation or isolating air flow. Under evaluation are chemical detectors and detectors being developed to spot biological agents.

The research is an outgrowth of work with the Washington, D.C., Metro, begun in 1997

Sandia California News

with Argonne National Laboratory, to characterize chemical detection systems in a subway setting. That sensor system is now entering operation at several stations.

The San Francisco airport work goes by the acronym PROACT, for Protective and Responsive Options for Airport Counter-Terrorism. This demonstration and application program originally began in DOE's Chemical and Biological National Security Program and now continues under the Department of Homeland Security's Science and Technology Directorate.

"We believe the work will provide comprehensive insights to allow similar systems to be deployed elsewhere," said Duane. "The real learning has been in understanding how to put together systems that can be used in an end-to-end defensive capability."

The initial impetus for the Metro program was the sarin attack on the Tokyo subway system in 1995. "It was obvious that transportation



MEDIA — Susanna Gordon (8112), PROACT principal investigator, answers questions after the news conference.

"We believe the work will provide comprehensive insights to allow similar systems to be deployed elsewhere. The real learning has been in understanding how to put together systems that can be used in an end-to-end defensive capability."

nodes were attractive to terrorists," Duane said.

Calling the demonstration program "a huge work in progress," McCarron pointed out that the airport is also equipped to employ Sandia's decontamination foam, marketed commercially as "Decon 200." The foam is awaiting FDA approval for decontamination of people but can be used to decontaminate facilities.

Dale Dunham, head of emergency planning at the airport, showed reporters a bus that had been customized to support decontamination operations at the airport. The unit can be used to decontaminate both facilities and up to 1,800 people an hour. Nozzles and hoses mounted on the front of the bus spray foam, then shower heads that extend from each side of the bus rinse people with warm water. At the rear, blankets, towels or ponchos are distributed.

Reporters also toured a new emergency operations center, opened in February, that is 12 times the size of the old one. Plans for that center were set in motion after the 1989 Loma



HAVE FOAM, WILL TRAVEL — The airport had a bus customized to administer decon foam and rinse off with warm water under shower heads mounted on each side.

Prieta earthquake, which shook up the facility and stretched capacity of the former emergency operations center.



UNVEILED — Speaking publicly to the media for the first time about the ongoing airport research project, Duane Lindner describes the Sandia work there.

Wall Street Journal's Carla Robbins to give Truman Lecture May 12

Carla Robbins, diplomatic correspondent of the *Wall Street Journal*, is presenting the next Truman Distinguished Lecture at Sandia/California on Monday, May 12. It'll be videolinked to the Bldg. 825 auditorium in New Mexico at 11:30 a.m.–1 p.m. MDT. Robbins will speak about "America as Guardian and Bully."

A frequent writer about the war in Iraq and issues in the Middle East and North Korea, Robbins writes about diplomacy, defense, and national security issues from Washington and overseas. She received her doctorate in political science from the University of California, Berkeley, and later completed a Nieman fellowship at Harvard University. Among her awards are two Pulitzer Prize team awards, an Overseas Press Club Award, and a recent Weintal Prize for Diplomatic Reporting from Georgetown University.

Prior to joining the *Wall Street Journal* 10 years ago, she covered Latin America, the Middle East, and the US State Department for *US News and World Report*, having begun her career as a reporter and editor at *Business Week*.

New Emeritus Program offers retired large staff the honor and opportunity to continue service to Labs

By Chris Burroughs

A newly established Sandia Emeritus Program gives retired large staff — director level and above — the opportunity to continue to serve the nation by participating on panels and boards, not just as private citizens but with an association with the Labs.

Patterned after emeritus programs at universities and some companies, the Sandia program will encourage retired executives to visit the Labs and continue contributing through national panels, colloquiums, and strategic planning exercises.

In exchange, Sandia will help them maintain their clearances and provide office space as needed for their emeritus work. It will be a way for the retirees to continue to have contact with the Labs and remain in the Sandia network.

"We are excited to offer this program to retired Sandia executives, many of whom devoted so much of their lives to the Labs," says Labs President C. Paul Robinson. "It will give us the opportunity to have Sandia identified in their future contributions to the nation."

Last fall Executive VP Joan Woodard asked then Senior VP Roger Hagengruber (10), who retired in April, to help set up the program,

develop a charter, and coordinate with Sandia's legal and financial organizations to create a final program plan. The plan was recently unveiled with all retired directors and above invited to participate. Some 12 have already agreed. A total of 50 are expected to participate at a time as the program matures.

"Over the past several years we have seen many of our large staff retire, taking with them reservoirs of experience, knowledge, and good judgment that could be valuable to Sandia and our country," Joan says. "Some, but frankly too few, have been able to continue a relationship with Sandia. We see that one way this institution can adapt itself to address the human asset embodied in our retired leaders is through this new Emeritus Program."

As part of the program, the Executive Resource Center was moved to the third floor of Bldg. 802 into an area including a conference room and unassigned offices that will be used on an ad hoc basis by people participating in the program. The program will also provide business cards, e-mail accounts and Internet access, and facilities support for all emeritus activities. Geri Herrera (10) is the program's executive administrator, as well as the executive assistant to a Labs VP.

Each year Sandia will provide periodic briefings and tours, plus a dinner and lunch with Sandia executive management, to allow the program participants to stay in touch with evolving programs, facilities, and strategic direction and plans at the Labs. Roger says the cost of setting up the program ran about \$150,000, which included renovation of the facilities and purchase of equipment and furniture. It did not pay for Roger's time. He expects the annual cost of the program — including administrative support, annual dinner, some travel expenses for lab-requested activities, and equipment and supplies — will be about \$150,000. The return to the Labs will include emeritus time spent mentoring, participating on boards and panels, and more — which will all more than equal the administrative costs.

He notes the program will not pay people for their time to participate in the program.

"If they are paid at all, the participants will be paid by the organizations for which they are doing work," he says.

The program is open to all retired directors and officers of Sandia, including those who may have officially been retired into AT&T or Lockheed Martin. For more information, contact the Emeritus Office at 844-7310.

Polygraphs

(Continued from page 1)

nations as one of several tools to screen personnel requiring access to a high-risk information."

However, Abraham continued, "We will also continue to review and take additional views into consideration regarding possible future modifications to improve the program's effectiveness."

Sandia President Paul Robinson this week told the *Lab News*, "NNSA has assured us that the present rulemaking is an interim action. However, I was disturbed by some of the language that criticized the National Academy of Sciences study. I whole-heartedly endorse that study's findings, as I endorsed the earlier study by Sandia's senior scientists, who came to a similar conclusion. We will be registering our views as part of the rule-making process, but unfortunately we will have to continue the DOE counterintelligence polygraphs as required by law and continue the voluntary polygraphs as required by other government sponsors."

DOE's decision was unexpected because it came upon the heels of a study by the National Academy of Sciences that indicated strong reservations about the value of the test when used to examine large numbers of people on very general grounds. "Polygraph testing yields an unacceptable choice for DOE employee security screening between too many loyal employees falsely judged deceptive and too many major security threats left undetected," the Oct. 8 NAS report said (*Lab News*, Oct. 12, 2002). The test has more utility, the NAS found, for individuals questioned specifically about particular events that occurred at particular times.

Sens. Pete Domenici, R-N.M., and Jeff Bingaman, D-N.M., questioned the DOE decision, as did Reps. Heather Wilson, R-N.M., and Ellen Tauscher, D-Calif. Tauscher's district includes Lawrence Livermore National Laboratory and Sandia's California site.

"This is definitely not the more focused polygraph policy I had hoped DOE and the NNSA would develop," said Domenici in a news release. "I continue to believe that the system is too much, and an affront, especially since the polygraph program was so thoroughly criticized by the National Academy of Sciences. I hope the Department will rethink this situation."

Bingaman was reported in a local news story as "surprised and disappointed."

In a letter to the chairman of the House Armed Services Committee, Duncan Hunter, Tauscher called for hearings to be held.

"I am particularly surprised at the Department's decision to retain the use of the polygraph program after it was so thoroughly criticized by the

In a letter about the polygraphs issue to Sandia President Paul Robinson, received Monday and shared by Paul with the *Lab News*, DOE Secretary Spencer Abraham wrote, "I hope you will participate in the notice and comment process, and look forward to receiving your comments on this important issue as part of that process."

National Academy of Sciences," she wrote. "I therefore request your support for holding a hearing on the Department of Energy's use of the polygraph and the rationale that caused it to ignore the findings of a study that it itself had commissioned."

Wilson told the *Lab News* through a spokesperson that she does not agree with the DOE decision and does not believe that polygraphs are effective employee screening tools.

The DOE position is that the NAS report also concluded that if polygraph screening is used as a trigger for detailed follow-up investigation, and is not the basis for adverse personnel action, "there are good theoretical reasons to think appropriate procedures of this sort would improve detection of deception."

According to DOE's written Proposed Rules: "DOE does not believe that the issues that the NAS has raised about the polygraph's accuracy are sufficient to warrant a decision by DOE to abandon it as a screening tool. Doing so would mean that

"I was disturbed by some of the language that criticized the National Academy of Sciences study. I whole-heartedly endorse that study's findings, as I endorsed the earlier study by Sandia's senior scientists, who came to a similar conclusion."

Labs Director C. Paul Robinson

DOE would be giving up a tool that, while far from perfect, will help identify some individuals who should not be given access to classified data, materials, or information."

DOE said that of all federal and contractor employees who have completed a voluntary survey at the conclusion of the polygraph test, 97.1 percent have responded with favorable comments about the test.

Responses at Sandia to the mandated test have been mixed.

Said Bill Knauf (deputy director and chief of staff 5000), in an interview with the *Lab News*, "Many of us who have taken [the polygraph test] have found it neither intrusive nor out of the ordinary. In my case — and I've taken the test a num-

ber of times — it always has been administered straightforwardly and professionally. There aren't any major issues about it. All the test does is establish an indication, not a conclusion, of possible deception, which other steps would validate or disprove.

"As long as the polygraph is used as one tool in a series or combination of tools, I would be comfortable suggesting its use."

Larry Clevenger, director of medical and health services (3300), holds a different opinion. "When it's used by a skilled investigator in an interrogation mode with a high probability of offense, a polygraph may be useful," he told the *Lab News*. "But its utility — used in a screening mode and applied to a large population in which most of the individuals are innocent — is not documented. The risk of error is very high. The dilemma is that [on the one hand] you may be calling an honorable person a liar, or [on the other] giving false reassurance that the person tested has done no wrong."

Among Larry's professional hesitations are that the tests are unprotected from "operator bias" and have "no validation, no threshold, no external review, and no cross-validation — yet a false positive has as ominous consequences as a drug test."

Despite rumors of emotional damage to employees who have taken the test, Larry himself has seen only one complainant from among test-takers; Sandia counselors, he says, have seen none.

Of course, "Sandians may feel complaining is useless," he said, and fear to step forward to be counted.

Sandia senior scientist and physician Al Zelicoff, who has been one of the most outspoken opponents of the polygraph program, was distressed by the decision and expressed his displeasure in various internal memos. He told the Associated Press that the careers of some scientists have been ruined due to false positive results on polygraph tests.

The polygraph device records changes in bodily responses such as respiration and perspiration in the form of a real-time graph visible to the examiner, who may pursue more detailed replies based on a subject's initial responses.

None of the major spies discovered over the past 20 years have failed polygraph tests; still, the possibility of leads elicited from less skilled operatives remains, apparently, a DOE objective.

DOE invites public comments in response to the notice of proposed rulemaking. Members of the public should send their comments to US Department of Energy, Office of Counterintelligence (CN-1), Docket No. CN-03-RM-01, 1000 Independence Ave. S.W., Washington, D.C. 20585. Alternatively, comments may be e-mailed to: poly@hq.doe.gov. The notice of proposed rulemaking and supporting documentation is available on DOE's Internet home page at this address: <http://www.so.doe.gov>

International policy shifts and rifts dominate discourse at annual International Security Conference

Participants seek to explain, understand changing US foreign policy posture

By John German

Concerns about and international reactions to the United States' recent foreign policy posture dominated discussion during the 13th annual International Security Conference last week in downtown Albuquerque.

Some 250 people representing 30 countries gathered for the three-day, Sandia-hosted event, formerly known as the International Arms Control Conference.

The meeting is a primary exploration and discussion meeting for those who shape policy options for dealing with threats to regional stability and international security.

This year's conference, themed "International Security Challenges and Strategies in the New Era," featured panel discussions on the responsible exercise of power on the world stage, terrorism threats and approaches, changing relationships among the world's governments, and containment of nuclear weapons technology and materials.

"We changed the name of the conference this year to reflect the new realities of the international arena," says conference chair Jim Brown (5302).

"These realities include strong anxieties regarding terrorism, the proliferation of weapons of mass destruction and their delivery systems by state and non-state actors, the changing status of old and new treaties affecting the strategic balance, and the future of both bilateral and multi-lateral agreements."

9/11 ended post-Cold War era

Labs President C. Paul Robinson, an ambassador and former arms control negotiator, kicked off the conference by urging participants to help their nations "move beyond the present state." Paul introduced keynote speaker Ambassador Linton Brooks, current NNSA Administrator, also a former arms control negotiator.

After making a surprise announcement (see "Roger Hagengruber cited for lifetime achievement" below), Brooks said 9/11 ended what had been called the "post-Cold War era" and signaled

There is a renewed focus on "a threat that has always been here, but is now starkly visible."

a renewed focus on "a threat that has always been here, but is now starkly visible."

America's enemies no longer need armies to threaten the US, he said. Today, "shadowy networks" threaten the US with chemical, biological, and radiological weapons "for less than the cost of a single tank," he said.

"That's not new to a lot of the people in this room," he said, "but it is a major change for the United States." The change in the outlook of Americans, he added, is driving US foreign relations.

Brooks posed a question to conference participants: What if, he asked, terrorists have weapons of mass destruction (WMDs) and are not amenable to traditional notions of deterrence?

He urged conference participants to think outside existing and Cold War-era treaties and international arrangements and to keep an open mind.

"You can give policy makers ideas that can fundamentally change how we cooperate," he said.

Power and principle

In a panel discussion on terrorism, Michael Krepon, President Emeritus of the Henry L. Stimson Center, raised several questions about the Bush administration's effort to continue to "fuse power and principle."

Dave Nokes, Sandia VP for National Security and Arms Control, said 9/11 "turned Americans' attention to terrorists' abilities to creatively exploit America's vulnerabilities and weaknesses."

Maureen McCarthy, former NNSA chief scientist and now head of the science and technology directorate at the Department of Homeland Security (DHS), described the organization and



INTERNATIONAL Security Conference Chair Jim Brown (5302, left) talks with Prof. Dingli Shen of Fudan University, Shanghai, China, during a reception at Sandia's International Programs Building. (Photo by Bill Doty)

missions of DHS and pointed out that "injecting science and technology into urban environments is one of the greatest systems engineering challenges you can imagine," rivaling nuclear weapons engineering.

She also urged rigorous nonproliferation efforts. "If we lose the battle on the nonproliferation front, we will lose the battle on the homeland security front," she said.

A new type of terror

Uziel Rubin, a terrorism expert and consultant to the Israeli government, said terrorist acts in the past were committed largely in pursuit of political ends. The new objectives of terrorism are "to express frustration, exact revenge, or obey divine commands."

"9/11 was this type of terror," he added.

The new type of terrorism is indifferent to international standards and is more conducive to use of WMDs than in the past, he said.

The best solution, he said, is to "put firewalls between states supporting terror and weapons of mass destruction. How to do that is a matter for discussion."

High standard of evidence

Roger Hagengruber, now-retired Sandia senior VP and current director of the Institute for Policy, Security, and Technology at the University of New Mexico, provided an analysis of survey data gathered by UNM's Institute for Public Policy over the last decade.

Roger said the data (available in their entirety at <http://www.unm.edu/~instpp/>) suggest that although Americans' instinctive reactions to the idea of nuclear weapons tend to be negative, when asked to respond to in-depth questions about the value of nuclear weapons for deterrence, their responses tend to be significantly more positive.

In addition, 75 percent of Americans polled this year, when asked whether the US should attack a country providing sanctuary to terrorists, said yes. But 45 percent said the US should be certain before it retaliates with military force.

"We have a very high standard of evidence," he said.

Roger Hagengruber cited for lifetime achievement

NNSA Administrator Linton Brooks surprised Roger Hagengruber with the Department of Energy's "Distinguished Associate Award" during opening remarks at the 13th Annual International Security Conference.

Brooks presented Roger with a plaque bearing the following citation, signed by DOE Secretary Spencer Abraham:

"Roger Hagengruber's legacy to the laboratory and to the nation is embedded in the original language framing Sandia's purpose: '...exceptional service in the national interest.' Roger selflessly placed the nation's needs above Sandia's interests, mentored the Labs' future leaders as the foremost expression of service to his country, and championed technological innovation fundamental to national security. His foresight and dedication to the security interests of the United States have enabled him to make unique contributions. Roger made the world a better place in which to live."

Roger was earlier presented NNSA's Distinguished Service Silver Award recently in Washington by NNSA Administrator Brooks.

The Distinguished Service Silver Award is the second highest award granted by the NNSA



NNSA ADMINISTRATOR Linton Brooks (left) surprises retired Sandia Senior VP Roger Hagengruber with the Department of Energy's Distinguished Associate Award as conference chair Jim Brown (seated left) and Labs President C. Paul Robinson applaud. (Photo by Bill Doty)

administrator in recognition of achievements that substantially contributed to the accomplishment of the NNSA mission or major programs. The award consists of a silver medal or award plaque bearing the DOE and NNSA emblems and a presentation citation.

Different waste, different regulators, different rock — YMP isn't WIPP

Sandia held sole responsibility for the scientific research at the Waste Isolation Pilot Project (WIPP) in Carlsbad, but Labs workers are part of a much larger team at the Yucca Mountain Project (YMP) in Nevada. Sandia is one of six national laboratories working with the US Geological Survey and several private companies at the site to provide scientific data to be used in the design and assessment of the repository's long-term performance.

"The principal difference is that this is a DOE program for disposal of high-level waste and spent fuel from nuclear power reactors," explains Cliff Howard, Manager of YMP Repository and Test Analysis Dept. 6855. "The principal regulator here is the Nuclear Regulatory Commission (NRC) and not the Environmental Protection Agency (EPA.)" DOE's Office of Civilian Radioactive Waste Management (headed by former Sandian Margaret Chu) oversees YMP.

Twenty percent of the electricity used in homes and businesses across the US is made from nuclear fuel. When reactor fuel can no longer produce electricity efficiently, the spent nuclear fuel is removed from the reactor and stored in cooling ponds or dry storage facilities near the power plant. This fuel and some reprocessing residues, known as "high-level radioactive waste," are designated for disposal at the proposed Yucca Mountain repository.

The YMP repository, inside of Yucca Mountain about 100 miles northwest of Las Vegas, has been proposed for permanent geologic disposal of this waste. Site studies began more than 20 years ago.

The rock is very different, Cliff notes. At WIPP, stable and homogeneous beds of salt ran for miles, with tidy marker beds, which helped miners know exactly where they were mining. Studies showed that these beds have remained intact for 225 million years.

At YMP, the main horizontal tunnel, or drift, bores through four different geologic zones of volcanic rock. The rock was deposited as a massive blanket of hot ash during eruptions about 12 million years ago, cooling into a dense, welded rock, called tuff. Later seismic activity in the area created fractures through some of the rock units, tilted normally horizontal beds, and caused faults, where some rock horizons slipped vertically downward. Some of the tuff has voids of various sizes, caused by the trapping of gases in the viscous ash during the formation of the rock. The rock also contains zeolites, minerals that can actually slow the movement of radioactive materials.

"We have to demonstrate we can make confident predictions for performance over 10,000 years," says Cliff. "But generic approaches aren't appropriate here because of the distinctive rock types." — Will Keener

Crushing rocks — the scientific way

To develop a sound basis for licensing the proposed Yucca Mountain high-level waste repository, Ron Price is studying it one rock at a time. Ron has been breaking rock samples from the Nevada site in the Geomechanics Lab, located in a metal building just east of Sandia's Technical Area 1, for the past two decades. Recently, he was doing it with great purpose.

"I started studying the tuffs at Yucca Mountain in 1981," says Ron, a staff member in the Yucca Mountain Project Repository Test and Analysis Dept. 6855. "Now I'm back to studying the same rock I was then."

Ron's work is critical to an understanding of the matrix rock properties at Yucca Mountain, where government officials are designing and hoping to build a high-level radioactive waste repository. Combined with field experiments inside the mountain (see "Sandia at Yucca Mountain . . ." on page one), Ron's work offers up the vital numerical and descriptive information needed for repository modeling, design, and performance assessment.

Recently in the Geomechanics Lab, where technician Dave Bronowski (6117) was busy setting up another sample for testing, Ron and Dave had a large collection of labeled specimens from the Topopah Spring Tuff formation in Nevada. The rocks ranged in size from one-inch-diameter to one-foot-diameter cylinders. The red tuff — shards of glass fused into rock during a Mount St. Helens type event — is carefully marked as to orientation and photographed before it goes into the testing machine.

"This sample gives a good example of the lithophysae," says Ron, pointing to a void in the rock. These voids formed during deposition of the rock when pockets of gas were trapped by ashfalls with the consistency of molasses, he explains. The thick layer of tuff at Yucca Mountain is generally divided into three horizons, with the central zone the most dense and homogeneous.

"Heat and pressure rearranged molecules in the center into a dense hard rock and this is the zone where most of the data has been collected," Ron continues. Then several years ago, the concept for the design changed after mining got under way for the main drift. "More data were needed in the upper and lower parts of the three zones, which are more lithophysae rich."

During the past few months, Ron and Dave have been busy providing the needed data. Because samples were at a premium, the two used 6- and 12-inch samples taken from a cross drift inside the mountain and samples of various sizes from four large boulders collected by the US Geological Survey at nearby Busted Butte. In each case the samples are carefully mounted in a one-million pound rock press, instrumented, squeezed, and the results recorded, using software designed by Sandia's Robert Hardy (6117).

Ron analyzes the results, calculating stress and strain at failure, and sends the information along to Bechtel-SAIC and Sandia scientists, who use the information in creating their numerical models. (See



PIECING IT TOGETHER — Ron Price (6855) puts the pieces of this 12-inch tuff sample back together to better describe the failure mode. This sample cracked under about 600,000 pounds of force.

(Photo by Randy Montoya)

Lab News, Aug. 23, 2002, for more on all of the Labs' organizations involved.) Part of the analysis is a physical description of how the samples failed, Ron says. "The rock is so ultra-fine-grained, it behaves more like glass than a classic igneous rock," he says. "Once it begins to crack, it goes.

"We want to know how the rock changes under stress. As the rock is squeezed, for example, it decreases in length and broadens. These measurements give us the necessary elastic properties. We continue to test until it fails, then we note the stress, strain, and other information and feed that into our models." Sometimes the samples come out fairly intact, Ron notes. "Other times they come out like this," he says, holding a plastic bag filled with rubble.

While most samples are tested at room temperature, some are carefully heated in a lab oven and measured regularly until they reach 200 degrees Celsius. Then they are instrumented and tested to failure.

Sample size is critical to getting accurate information on rock strength, Ron notes. He sees his data as complementary to the larger-scale work going on in the tunnel. "Together this will give us the best picture," he says.

Although now finished with a major part of the experimental work for the license application, Ron and Dave are not likely to soon be out of work. "We'll continue to gather data for performance confirmation as operations begin," he says. "We want to know if it's going to perform the way we said it would." — Will Keener

Yucca Mountain

(Continued from page 1)

Sandia has done experiments that will answer parts of the puzzle when fitted together with the work of other experimenters at the Experimental Studies Facility, the name given to the cluster of experimental alcoves along the main tunnel drift and to the support structures at the two tunnel portals. Sandia's testing has focused on the mechanical and thermal response of the rock to heat and pressure, Cliff explains.

Much of the work in the project for managers like Cliff and his boss Andrew Orrell (6850) involves meeting with other team members to make sure experiments are on track, quality assurance issues are being addressed, and the architecture of having multiple teams feeding data for modeling repository performance and providing design information continues to be robust.

To make such a meeting later this day, Cliff gets started before 5 a.m., picking up a visitor and heading for Yucca Mountain. As the desert flows

past and the sun peeks over a range of mountains to the east, he is discussing the unique challenges posed by volcanic tuff, a dense, welded ash that showered down on the site 12 million years ago.

"The plan for YMP is that it will be in an active operating mode for about 75 years. We have to be able to answer questions about mechanical stability and worker protection in the mine. How many rock bolts will we need to use? What about wire mesh? What other structures and components are needed to operate in the underground environment to emplace radioactive waste packages weighing in excess of 90,000 pounds? In order to build a safety case you'd normally go to civil project experience from the mining of tunnels and other similar work. But mining isn't done in volcanics and there are few civil projects to turn to for analogs. There's almost nothing out there that's comparable, so you can't go to a textbook to consult."

Instead, experiments must provide the values to plug gaps in the knowledge base.

At a building just outside the north portal of the Yucca Mountain drift, nearly 100 miners, experimenters, and support staff have gathered for the 7 a.m. safety and operational briefing. To

get this far — to the verge of a trip into the tunnel — visitors must have been trained in general underground and radon safety and the operation of a self-rescue device, to be used in the event of a fire inside the tunnel. It's clear at the briefing that safety is important in this operational environment. "Radon readings are high near the south portal and may require respirators," a foreman informs the assemblage. A radioactive gas that is found in many places, radon can be encountered in higher-than-normal concentrations in the YMP tunnels, requiring precautions.

After strapping on a belt with the self-rescuer and a battery-powered lamp, which attaches to his hardhat, Cliff is ready for a trip inside the mountain. Visitors carry a card, showing they have received safety briefings and a radon dosimeter. Paperwork to ensure accountability for all workers is also a part of the process. Soon in a diesel-powered, open mining car, Cliff joins other workers rolling into the five-mile-long drift.

The main drift is 25-feet in diameter, generally horizontal, and carves a U-shape through the mountain. A 16-foot cross-drift has also been

(Continued on next page)

Yucca Mountain

(Continued from preceding page)

bored off the main tunnel into the rock horizon where most of the wastes will be stored. At the top of the tunnel bore runs a large-diameter air duct. A conveyor belt, used to carry "muck" or rock debris from the boring machine during the three-year drilling effort, runs down one wall. Along the other wall, thick high-voltage cables snake their way into the drift.

Just beyond the cross drift, the train comes to a stop at Alcove 5. Here two key Sandia experiments were conducted. To determine how heat will influence the rock, experimenters placed a heater, powered by several thousand watts, into a small bore and measured heat flow in the surrounding rock. "This helps us calculate the thermal conductivity of the rock," says Cliff.

Further down into the alcove, technicians are at work near a group of small bores that surround a large heated room. A bank of high-voltage control panels stands nearby. The boreholes allow for sampling water and studying the temperature and physical response of the rock to the large cylindrical heater. This is the drift-scale test, where according to a read-out on a large signboard, the rock received more than 6.09 million kilowatt-hours of heating. Heated from December 1997 to January 2002, the room is now in the cooling phase. However, a visitor, looking into the room through thick glass windows, can still feel the heat. "It will take several years to cool down, and measurements will continue from time to time to understand that process," Cliff says.

The water samples will be critical for modeling of another phenomenon associated with the repository, possible corrosion of the waste packages. "We need to know the chemical environment inside the drift," says Cliff. In fact the rock has about 10 percent pore space. The water, which fills about 80 percent of the pore space, gets hot and moves away from heat sources. (The high-level waste containers will generate heat.) After the rock cools, the water condenses again.

Later in the morning, Cliff walks past a giant boring machine, now in storage outside the south portal, and through an unlighted portion of the main drift to examine another large-scale Sandia test. In this case, workers cut two five-foot-tall



TIGHT QUARTERS — Ron Taylor (6855, center), Dave Bronowski (6117), and a third worker use some gentle persuasion to insert a one-meter-square flat jack into a slot cut in the rock of a Yucca Mountain exploratory drift. The two onlookers in foreground are from the Test Coordination Office, which is run by Los Alamos National Laboratory.

slots into the wall of the drift, about a yard apart. Experimenters placed flat jacks into each slot to essentially squeeze the rock together using hydraulics and measure its stiffness. Midway between them, a borehole filled with instruments measured changes in the rock.

"We were able to map the fractures on the surface and in the borehole between the two flat jacks. Ron Price (see "Crushing rocks . . ." on page 6) does similar work with samples that range from one inch to 12-inches. We're taking a cubic-meter-size sample here and extending his work to get the engineering properties that will help

design and support systems and help us assess stability during seismic events."

Before returning to Las Vegas, Cliff takes a radio, clears with ranch control, and starts up toward the crest of Yucca Mountain in a government pickup. From the top, the classic basin and range topography spreads in all directions. There is still a lot of work ahead for Sandia on the application to NRC, he says, between bites of a rye-bread sandwich, specially made for him by his daughter, Nalin. "We have to try to finish some experiments before we lose our craft help in the tunnel. There are real hard decisions yet to be made."

Ares project

(Continued from page 1)

inants are concentrated in a plume, more UV light is reflected, he says.

If a cloud of aerosol particles is detected, he says, the system quickly maps its boundaries using time-of-flight information associated with the UV pulses and positional information from the gimbal and determines the location of the most concentrated portion of the cloud.

It then probes that portion of the cloud looking for the presence of biological materials.

Because biological materials naturally fluoresce, or shift the color of light they reflect when exposed to UV light, the Ares system can tell whether a cloud contains biological aerosols by looking for very specific wavelengths, or colors, of fluorescent light in the UV-illuminated cloud.

The detection, mapping, and analysis takes approximately 10 seconds.

Detect to warn

"This is a 'detect to warn' system," says project manager Al Lang (5713). "It can't identify the particular bug, but it can tell you that a cloud has bio-content so you can take protective action."

The Ares prototype system works best out to about three miles, he says.

Currently no standoff detection capability exists either on the battlefield or in the homeland security community, he adds.

The Department of Defense is evaluating the capabilities of several developmental systems,



SKY SCANNER — Randy Schmitt (left) and Mark Johnson (both 1118) examine the Ares mobile biological weapons standoff detection system. (Photo by Randy Montoya)

including Ares, during a series of field tests this month at Dugway Proving Ground in Utah.

Dugway specializes in creating plumes of airborne particulates and biological simulants with well-characterized optical signatures.

The detection hardware also could be mounted on the rooftop of a building for more permanent applications, says Al.

Noisy environments

The Sandia prototype device, built from commercially available components to keep costs down, seems rather straightforward on its surface, Al says.

But the technical challenge lies in discriminating between the normal airborne contaminants, such as plumes of diesel exhaust and pollens, from deadly biological particulates, and

doing so with very few false alarms.

"It's straightforward in a scientific sense, but it is a whole lot more difficult to get it to work reliably in environments where you'd expect a lot of noise, including urban and battlefield environments," he says.

The Sandia team has been field-testing the system night and day with a variety of simulants, including floating flour and dust, in the sky over a remote area near Sandia's 10,000-foot sled track in Area 3.

The Dugway test series, which began Monday, is evaluating each system's ability to detect and discriminate among several types and concentrations of contaminant plumes, he says.

The Ares system is expected to meet the DoD's operational requirements, he says.

Negotiations are underway with a private company to develop a cooperative research and development agreement that would result in the Ares technology being commercialized for both the military and homeland security sectors.

Sandia has been working on the basic technology for the Ares system since about 1993, says Al. But it wasn't until 9/11 and the anthrax letter mailings in fall 2001 that the National Nuclear Security Administration asked the Sandia team to focus on biological standoff detection for homeland security applications.

The project is funded by the NNSA's Office of Nonproliferation Research and Engineering.

Sandians from both the New Mexico and California sites have supported the Ares project. The following centers have been directly involved: 1100, 2300, 5700, 6100, 8100, 8300, 8400, and 8900.

Microsystems roadmap offers vision of field's futures

Five-year project, funded partly by Sandia, provides speculative view of 20 emerging technologies

By Neal Singer

Roadmaps that purport to portray timelines into the future of technology offer less certainty than maps that describe roads in more customary dimensions. But when the future vision has been created by a concurrence of 400 experts from 325 companies on five continents, the roadmap may offer at least a starting point from which researchers, managers, and funding agents can plan.

Such is the case with the 614-page *International MEMS, Microsystems, Top-Down-Nano Roadmap*, published early this year by MANCEF — the Micro and Nanotechnology Commercialization Education Foundation — under the leadership of Steve Walsh. Walsh is a Sandia consultant who is the Albert Black Professor of Technology Entrepreneurship at the Anderson School of Management of the University of New Mexico.

The work, five years in the making and funded in part with \$15,000 from Sandia's MESA project, maps the past, present, and future of more than 20 emerging technologies in the micro and nano fields, says Steve.

"The point of the volume is not to tell people what to do but help people develop their own roadmap, plus be a general industry guide," he says. "If you're trying to decide

"The point of the volume is not to tell people what to do but help people develop their own roadmap, plus be a general industry guide."

about commercial prospects of various MEMS endeavors, or get a better sense of the current two hot issues, optical or biomems; trends in sacrificial surface micromachining and who's doing what; understand which technologies work now, and which are likely; if you want reliability experts who know where that portion of a field is going, or packaging people, or front-end people; if you're going for multiple-chip or integrated-into-a-single chip solutions, or solutions involving MEMS front, end, or middle placement; or a whole raft of other aspects of micro- and nanotechnologies, this volume may be helpful," he says.

Says Marion Scott (Director 1700), listed as one of the leaders in the effort, "I think the document will be useful, and helpful in giving perspective. Of course it's not like a roadmap in CMOS [Complementary Metal Oxide Semiconductor], where microelectronics is a well-developed area that has fundamental scaling laws

that are well understood, enabling the roadmap to be something people stay with consistently. The roadmap in a new area like microsystems and MEMS is to some degree a speculation as to how these fields will evolve and develop."

Said another long-time microsystems developer, David Williams (Director 1400), also listed as part of the leadership group, "I think it's a very important document. It clearly is the most comprehensive and complete roadmap available. I have concerns about the accuracy of any speculative roadmap, of course, but this is wonderful work by an international community. It's something we need to pay attention to."

Among Sandians listed as chapter leaders are Wahid Hermina (9800), Jill Hruby (8240), Jay Jakubczak (1703), Sita Mani (1749), Fred Sexton (1762), and Regan Stinnett (1903), as well as former Sandian Paul McWhorter (MEMX).

Credited for initial leadership are Al Romig (VP 1000) and Don Cook (Director 1900).

Other project funding sources include the US semiconductor manufacturing association SEMI (\$40,000), the European microsystem association IVAM (\$20,000), and various manufacturers and distributors of microsystem products.

Information on how to obtain copies of the volume may be obtained by e-mailing info@coms2002.org.

Dome comes down in Demolition program derby



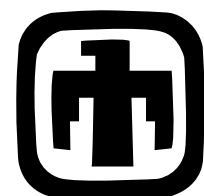
"THE DOME" — otherwise known as Bldg. 852, a spherical landmark at Sandia for four decades — met its end at the hands of a Sandia-contracted demolition crew early in the morning of April 17. Opened in May 1959 and originally known as the Sphere of Science (see historic photo at left), the geodesic dome served variously as a Sandia visitors center, home to the Labs Community Relations group, and other purposes. It has been unused for several years. The building was demolished as part of Facilities Management's Decontamination and Demolition program. In addition to the Dome, about 66,000 square feet of other substandard space will be removed in Albuquerque and Tonopah this year, says Ed Williams (10864). The space where the Dome now stands will provide much-needed additional parking for the north part of Tech Area 1.

Feedback

Q: *The Contractor/Consultant Badge/Clearance Request Form (SF 7643-CEC dated 4-2002) stated, "A minimum of 48 hours is required for processing." This was interpreted as 2 business days. The new form dated 7-2002 states, "A minimum of 5 business days required for processing." Recently, I received the following feedback from a senior manager (president of a local company) who had to be badged: "the Badge Office operation seems to be very efficient." In light of this positive feedback, please clarify the 48-hour to 5-day process change. From my line perspective, 5 days is not acceptable.*

A: Thank you for your inquiry on the Contractor/Consultant Badge/Clearance Request Form (SF7643-CEC). The form basically changed for two reasons. The majority of our customers (close to 95 percent) were interpreting the 48-hour processing time as six eight-hour business days rather than 48 clock hours or two business days. However, we were occasionally receiving faxes at 3 p.m. on Friday and individuals were showing up on Monday (48-hours) to pick up badges. The second reason is that at this time last year we were processing approximately 300 of these forms per month. To date we are processing over 600 per month, with no additional staff. The process for approving these forms is both complex and time consuming. For example, in order to approve just one form, our specialist must verify the citizenship, contract number, the company name, expiration date, and the approving manager's signature. This information must then be entered into a separate database in order to have a badge ready for the individual.

We felt that to better serve our customers, we needed to clarify the information on the form (from 48 hours to 5 business days) and extend the time frame required to process these requests so that when the individual shows up in the badge office, a badge is ready for him or her. The staff in Personnel Security realizes that there will be times when an emergency situation occurs and we will make the extra effort at that time to ensure that a clearance request is processed immediately. — L.A. West (3100)



Regina Hunter humbly accepts award for advocacy efforts on behalf of handicapped people at Sandia

'I thought, I haven't done anything to deserve this'

By Chris Burroughs

On March 27 Sandia risk analyst Regina Hunter (6804) found herself on stage at the upscale Ramada New Yorker hotel in Manhattan being honored for her advocacy efforts on behalf of handicapped people in the workplace.

She was among 10 people from around the country named "Employee of the Year" by *CAREERS & the disABLED* magazine — the others representing such organizations as NASA, AT&T, US Post Office, Shell Lubricants, Goodrich, and IBM.

"As I was getting the award I thought, I haven't done anything to deserve this," says the diminutive Regina, who gets around on crutches. "The others had done so much more than I did. I was accused of humility at the ceremony, which amuses all my friends."

Blase Gaudé (5933), who nominated her for the award, says she certainly deserves this honor — and more. "She has done so much to make the Labs a better place to work for Sandians with handicaps," Blase says.

For example, he says, Regina, a founding member of Sandia's Disability Awareness Committee (DAC), campaigned to get more handicap parking spaces. For many years, handicapped people had to park in slots signed "medical" parking, and they were most frequently filled by cars owned by people with medical problems who were not handicapped — or by people with no physical problem at all. She, together with the DAC, worked with Sandia's Medical Department to have specific parking slots marked handicap parking. Now, anyone who does not have a handicap placard who parks in those slots can get a parking ticket and a \$100 fine.

She helped coordinate several Sandia Disabilities Awareness Days that made it possible for able-bodied people to discover what it's like to be disabled. Currently she is developing a plan for recruiting accomplished disabled job candidates and has begun to evaluate who's internally responsible for funding the accommodations a disabled employee might need. At her own building (Bldg. 823), she worked with Facilities to improve a steep entrance/exit ramp that was difficult to maneuver.

Regina has also participated in the Sandia mentoring program and has been active in mentoring new employees and student interns.

Regina, a 23-year Sandia employee who developed the first risk-based approach to building management (called RAMPART for Risk Assessment Method — Property Analysis

and Ranking Tool, *Lab News*, July 13, 2001), is a "go to" person in Division 6000, notes Center 6800 Director Dennis Berry.

"She is regularly sought out by staff and managers from other departments and centers, usually to help 'save' a critical study or report that has missed its mark or is way behind schedule," says Dennis. "This reputation for 'delivering in a pinch' is one of Regina's strongest attributes and one that she has instilled in the many students she has mentored over the years."

Her optimistic "can do" attitude has seen her through a lot of pain and brought her many successes over the years.

It dates back to 1952 when at age four-and-a-half she contracted polio, part of the last big group in the country to get the crippling disease. She was living in northern California, and the one remaining iron lung in the state was reserved for her. But she didn't need it.

At first she was paralyzed from the neck down and doctors told her parents that she would never walk again, but she did. Then they told her she would always have to wear leg braces, and she didn't. It took 13 orthopedic surgeries for her to walk with crutches.

She credits some of her incredible recovery to well-wishers around the world. Regina says she got polio during National Pet Week — the same week her two little kittens, Fluffy and Seven-Toed Pete, were stolen. She happened to live next door to a reporter for a local newspaper who wrote a story about it.

"Who could resist the little crippled girl whose kittens were stolen?" Regina says. "The story spread throughout the country and world."

Two months after she was stricken with polio, she was named Polio Princess of Humboldt County (Calif.) where she lived. American troops in West Germany heard about her and named her their Polio Princess for their March of Dimes Drive. Regina became a March of Dimes poster child and got many cards wishing her well from people she didn't know. She also received a commendation from California's secretary of state.

Regina says she spent most of her life between the ages of 6 to 16 in a Shriner's Hospital where she had the operations and follow-up physical therapy. The hospital had an accredited grade school and high school that allowed her to learn at her own pace. Between operations she attended public schools in Oregon, where her family lived. Because of the nature of her father's job, her family moved around a lot, and she attended 18 different public schools by the time she graduated from high school. "I never had any trouble, though, and was always caught up."

Her passion was science, and after high school she attended the University of Oregon for her BA and the University of Illinois for her PhD, majoring in geology.

Regina joined Sandia 23 years ago doing performance assessments on the Yucca Mountain project. She has since done similar assessments for WIPP and other programs. Her RAMPART software program assesses the risks of terrorism, natural disasters, and crime to buildings.

She says she enjoys her job and her life and adds that her "career goal is to have fun."

About disabilities in the workplace, she says they are "just a cost of doing business."

"Disabled people get the job done as well as anyone else," she says.



LITTLE REGINA HUNTER, seen here in a newspaper photo from 1955, was a March of Dimes poster child.



REGINA HUNTER helped establish new official handicap parking spots. For this and other activities with Sandia's Disability Awareness Committee (DAC), she was named "Employee of the Year" by *CAREERS & the disABLED* magazine.

(Photo by Randy Montoya)

Center director surprises Regina

Regina Hunter was giving a presentation to a group from Texas A&M, also attended by her Manager Darryl Drayer (6804) and Center Director Dennis Berry (6800). Soon, one by one, other members of her department came in, followed by her friend Blase Gaudé.

In the middle of her presentation Dennis said he had something to say, and proceeded to announce that Regina had been named Employee of the Year by *CAREERS & the disABLED* magazine.

"I was surprised," she says. "I should have figured it out when Blase came in the room."



RISK ANALYST VISITS WORLD TRADE CENTER — While in New York, Regina Hunter visited the site of the World Trade Center. "My job is to determine risks to buildings. There's no way I could ever have predicted this risk. Two buildings were attacked, and four city blocks are gone. Many people who died weren't from New York. We all share this risk of terrorist attacks on any part of our nation," Regina says.

(Photo by Regina Hunter)



JOHN R. MILLER, president of Equal Opportunity Publications, presents Regina Hunter with the *CAREERS & the disABLED* Employee of the Year Award.

Mileposts

New Mexico photos by Michelle Fleming
California photos by Bud Pelletier



Michael Garcia
25 5913



Rebecca Hunter
25 9103



Mark Kiefer
20 1642



Peter Davies
15 6100



Grace Petines
15 8529



Ronald Ralson
15 2346



Brian Stallard
15 5907



Dale vanDongen
15 3110



Frank Villareal
15 10258

Recent Retirees



Sharon Bremer
25 9714



Jerry Powell
25 10266



Lynn Zirkle
40 8233



John Dexter
25 9322

Sandia annual report wins 3 of Labs' 7 top Communicator Awards

Sandia publications received seven Crystal Awards of Excellence — the top award — in the Communicator Awards 2003 Print Media competition.

Three of the seven Crystal awards were for the *Sandia Annual Report 2002/2003*, "Helping Our Nation Secure a Peaceful and Free World Through Technology." The annual report received separate Crystal Awards for photography, design, and overall.

Also receiving Crystal Awards of Excellence were these publications:

- *Building the Bombs: A History of the Nuclear Weapons Complex*, in the brochure/other category (it's a hardbound book).

- "Labs Accomplishments 2003" special issue of the *Lab News*, magazine/association category.

- *Sandia Technology* special issue "The Global Nuclear Future," magazine/government category.

- *SNL Environmental Report 2001*, annual report/other category.

The Communicator Awards is an international awards competition that recognizes outstanding work in the communications field. Industry professionals judge the awards. There were 3,730 entries from throughout the US and several foreign countries. The Crystal Award of Excellence goes to those entrants "whose ability to communicate places them among the best in their field."

Eight other Sandia publications received the Communicator's Award of Distinction, given "for projects that exceed industry standards in communicating a message or idea."

The eight (and the category) are "Sandia Retiree Ed Sisneros Rides into the Future....," writing/feature article; "Attacks: Sandia Terrorism Analyst Gives His Perspective," writing/news writing; "Elementary Students Receive New Shoes for Holiday," writing/news release; *Sandia Technology* "The Global Nuclear Future," design, magazine interior; *SNL Environmental Report 2001*, writing/annual report; "Chemical Weapon Sensor in Wind Tunnel," photography/people/portrait; "Theoretical Physicist Studies Flatness of Water," photography/people/portrait; and "Wanted, New Technologies for a New Economy," brochure/other.

★ Congratulations

To Janey Carroll (3341) and Kevin Marbach (5735), married in Albuquerque, April 12.

Nine women receive Heather Wilson's Recognition Award for service to state



NINE SANDIA WOMEN are among about 40 New Mexico women who have received Rep. Heather Wilson's, R-N.M., 2003 Recognition Award for women providing special service to New Mexico. The awards were given in celebration of Woman's History Month at an awards ceremony in Albuquerque. Seven of the nine Sandia recipients are pictured here with Rep. Wilson: From left, Carolyn Olona (3333), Amy Tapia (12650), Brenda Delaurentis (10502), Laurel Moore (12650), Heather Wilson, Kathleen Holt (6849), Dominique Foley Wilson (contractor to 3554), and Elizabeth Holm (1834). Sandia winners not pictured are Tina Nenoff (6245) and Christine Morgan (9333).

Reader Service information

Retirees (only):

To notify the Labs of changes in address, contact Carol Wade, Benefits Dept. 3341, at 505-845-9705, e-mail cawade@sandia.gov, or Mail Stop 1021, SNL, Albuquerque, NM 87185-1021.

Others:

To receive the *Lab News* or to change the address (except retirees), contact Michelle Fleming, Media Relations and Communications Dept. 12640, at telephone 505-844-4902, e-mail mefleme@sandia.gov, or Mail Stop 0165, SNL, Albuquerque, NM 87185-0165.

Employees:

If your Mail Stop is not receiving enough copies of the *Lab News* for everyone, please call Honario Anaya, Mail Services Team 10268-4, at 844-3796. (At Sandia/California contact the Mail Room at 294-2427.)

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

MISCELLANEOUS

ENTERTAINMENT CENTER, w/shelves, 2 large video cabinets, fair condition, you pick up, \$15 OBO. Wilcox, 884-0217, dwilcox@byu.edu.

LAWN MOWER, Briggs & Stratton, 21-in., 3.5-hp, \$40; weightlifting set, 2 benches, bars, weights, \$30. Sanders, 822-1486.

COMPUTER, Compaq Presario, includes desk & CD burner, \$350. Chavez, 259-0305.

FIREPLACE INSERT, wood-burning, w/blower, works great, comes w/cord of wood, \$750 OBO. Gallegos, 293-8885.

HeNe LASER & POWER SUPPLY, diode lasers & misc. optical equip., \$75. Meikle, 299-4640.

HEADERS, for 454 Chevy engine, w/let Hot coating, \$75; Scotts push lawn mower, reel-type, \$45. Aragon, 888-3473.

PA EQUIPMENT, Crown PB-2, 800W amp, great condition, \$400. Adams, 281-6767.

DAY BED, black metal, w/mattress, excellent condition, \$150. Colgan, 344-3776.

GIUITAR, '61 Pimentel classical, student model, cedar on mahogany, hard case, \$400. Sides, 293-4171.

RIDING MOWER/TRACTOR, Sears, never used, like new, cost \$1,500, asking \$995. Campbell, 294-6000.

TOW DOLLY, Kar Kaddy II, Model KK260, 8-ft.-wide, \$450. Kadlec, 299-2034.

QUEEN-SIZE BED, 4-poster, rice carved, includes mattress & box spring, \$300 OBO; GE washer & dryer, \$100 for both. Torres, 238-5544.

PRESSURE/LINEAR TRANSDUCERS, w/cables, 16-in. & 24-in. safety light screens, w/controllers, reasonable individual prices, \$2,500 all. Buckhannon, 899-9245.

SOUTHWEST AIRLINE TICKETS, 2 roundtrip, one expiring 11/03, one expiring 1/04, \$300 ea. Tapia, 280-8888.

PICKUP SHELL, full-size, 8-ft. bed, blue, fair condition, \$50. Herreid, 899-0851.

MONITOR, 17-in., color, \$45; recliner, \$35; baby bed, \$50; baby travel bed, portable, mesh, \$25; luminaries. Long, 294-4591.

SAND, clean, ~ 2-1/2 yds., you haul, free. Sprauer, 275-0092.

RAILROAD TIES, used, you pick up, call for location, free. Fuller, 294-3089.

MOVING BOXES, ~ 60-70, assorted sizes, free. Konkel, 298-4403.

WATER SOFTENER, Demand by Kenmore, good condition, \$100. Barnaby, 255-5624.

WASHER, Maytag, heavy-capacity, Speed-Clean dryer, white, good condition, \$100 pair. Montoya, 352-1521.

FLUORESCENT LIGHT FIXTURES, Thomas, 4' x 6', 120-V, w/bulbs & chains, ideal for workshops, \$25 & \$30 ea. Gonzales, 877-4914.

BIKE TRAILER, will carry 2 children, mint condition, \$55. Smith, 823-04721.

FUTON, black metal frame, mattress, excellent shape, \$100 OBO; patio table, round, 2 chairs, \$25; 15-in. monitor, \$35. Smith, 259-9441.

GARAGE SALE, over 40 families, Four Hills neighborhood, south of Central/Tramway, look for balloons, May 3-4. Finch, 296-6663.

SOFA & CHAIR, Southwestern print, navy blue, forest green, excellent condition, \$250 OBO. Carrasco, 259-1663.

TIRES, 4, BF Goodrich, LT235/85R16, all-terrain, T/A Kos, 7/32-in. of 16/32-in. tread depth, \$60. Beer, 350-3455.

SERGER, Baby Lock Image, 2/3/4 thread, self-threading, tensionless, differential feed, great condition, retail \$1,499, asking \$900 firm. Wong, 856-1050.

CRIB, Pali, made in Italy, high quality, glossy white, option to rock or roll, drawer, \$390. LeGalley, 797-2643.

PORTABLE EVAPORATIVE COOLER, Convair, from Costco, used twice, in original box, new \$230, asking \$189. Pitts, 293-5481.

"CHERISHED CREATIONS" Arts & Crafts show, Cottonwood Mall, May 2-11, mall hours, free parking, free admission. Self, 296-4137.

CARGO COVER, Subaru Forester, tan, hardly used, \$25. Coverdale, 286-2664.

BARBECUE GRILL, propane, \$40; PC & monitor, 133 MHz, Windows 98, \$100; March EM1000 Workout Center, \$200. Boggan, 332-3179.

DRESSER W/MIRROR, triple-wide, \$60; 3-drawer dresser, \$40; provincial couch, beige/gold, \$40; computer, monitor, keyboard, printer, \$100. Crosby, 260-1070.

BIKE RACK, Yakima, for vehicles w/rain gutters, early version Raptor mount, locks, holds 4 bikes, \$60. Mirate, 286-2664.

AUTO BRA, '03 Honda Odyssey, black, like new, cost \$75, asking \$50. Donald, 350-3071.

MATTRESS SET, queen-size, firm, excellent condition, \$200 OBO. Rondelli, 890-5972.

GIRL'S BEDROOM SET: matching hutch & bookshelf, headboard, w/twin mattress, box spring & frame, excellent, \$200 OBO. Graham, 896-2231.

BABY SWING, car seats, tub, backpack, carrier, playpen, high chair, toys, more, \$5-\$15; Medela pumps. Smith, 869-4318.

TORQUE WRENCH, Proto Professional, 50-250 ft.-lbs, 1/2-in. drive ratchet head, 26-1/4-in. long, model 6014, never used, \$80. Brokaw, 271-1328.

PUPPIES, German shorthaired pointers, championship lines, great hunting prospects, available mid-June, \$500. Prairie, 856-1156.

TREADMILL, NordicTrack, excellent condition, \$100. Walters, 857-9767.

MOVING BOXES, size varies, Westside, 65 boxes, \$1 ea., take all or none. Locke, 301-2483.

SILENT AUCTION, Shandiin Child Development Center, lobby of Coronado Club, May 14, 10-6 p.m. Giersch, 845-5013.

BUNK BED, twin/full combo, blue metal frame, w/mattresses, also have comforters & sheets, \$250. Brown, 823-9155.

BABY STUFF: backpack, jogger, high chair, crib, snuggly & more. Konopka, 299-9059.

GAS DRYER, SpeedQueen, XL capacity, almond, great condition, \$90; 2 almost new twin-size mattresses, \$100. Davis, 828-0298.

WHEELBARROW, pick, used once, you haul, free OBO. Richardson, 463-0829.

BARSTOOLS, 2, oak, excellent condition, originally \$500, asking \$250; dining room table, w/4 chairs, \$200 OBO. Potter, 292-5224.

DINING TABLE, maple, 5' x 3'6", w/leaves & hutch, set \$300; gas lawn mower, 5-hp, \$35. Kearns, 898-4122.

BREAST PUMP, Medela, fully automatic, double-sided pump, leather carrying case, good condition, \$125. Fjelseth, 858-0978.

LATERAL FILE, large, 5 shelves, professional quality, organize office & tax records, cost \$825, asking \$225. John, 345-4006.

LOVESEAT, cream, 2 end tables, coffee table, sofa table, cherry finish, maple TV hutch, excellent condition. Freeman, 296-3452.

COMPUTER TABLE, large, w/shelves, drawer, detachable printer stand, wood veneer, excellent condition, \$55. Malcomb, 294-6975.

MICROWAVE, GE over-range top-vent, white, small cracks, \$75 OBO; road bike, Trek, DuraAce, Mavic, 50cm, \$425. Rector, 604-0310.

SOUTHWEST AIRLINE TICKET, roundtrip, anywhere Southwest flies, expires 6/28/2003, \$275 cash. Bendure, 281-7441.

PHONE, Nextel i50sx, hardly used, like new, good sound quality, \$45. Jones, 203-2338.

CRIB MATTRESS, excellent condition, \$20. Maestas, 836-7336.

SWIMMING POOL, 16' x 27' x 4', above ground, Doughboy, great for cool summer fun, \$375. Burchard, 884-5424.

TIMESHARE, unit 1 of North Harbor III, Slidell, Louisiana, week 47 (red week), \$1,500 firm. Cox, 865-3043.

JOHN DEERE DIESEL 650, w/LandPride rototiller, excellent condition, call for details, \$6,000. Martin, 861-7029.

TRANSPORTATION

'89 CHEVY SILVERADO 2500, 350, AT, AM/FM, shell, liner, hitch, 18/20-mpg highway, 174K miles, \$1,700. Gajewski, 323-3774.

'86 CUSTOM FORD VAN 150, fully loaded, TV, VCR, AT, PS, PB, PW, AC, \$5,000. Duran, 294-8260.

'90 CHEVY SILVERADO, V8, 4x4, AC, AM/FM/cassette, 172K miles, excellent condition, \$4,500, make offer. Valdez, 268-5375.

'99 MERCURY GRAND MARQUIS GS, V8, AT, AM/FM/cassette, keyless entry, AC, PS, dual airbags, 46K miles, excellent condition, \$10,000. Sanchez, 292-1982.

'84 CAMARO Z28, V8 engine, AT, needs minor work, \$1,500 OBO. Gutierrez, 877-2580.

'96 IMPALA SS, original owner, rare gray/green, garage kept, 42K miles, excellent condition, \$18,900. Torres, 294-7273.

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 (We will edit longer ads).
2. Include organization and full name with the ad submission.
3. Submit the 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.**

'00 CORVETTE COUPE, 6-spd., loaded, 12-disc sound, HUD, platinum, performance pkg., 10.2K miles, immaculate condition, \$34,000. Gillingham, 281-1842.

'99 SATURN SL, 4-dr., 5-spd., 1.9L SOHC, platinum/gray, AC, AM/FM/cassette, dual air bags, ABS, 57K miles excellent condition, \$6,300. Baca, 345-6082.

'95 MERCURY VILLAGER, V6, 3.0, AT, AC, AM/FM/cassette, stereo w/6 CD changer, cruise, ABS, \$3,000. Nation, 298-5605.

'95 HONDA CIVIC DX, sedan, 4-dr., 5-spd., dark gray, original owner, 67K miles, excellent condition, \$7,200 OBO. Garcia, 232-2010.

'86 FORD F250, extra gas tank, shell, fully loaded, original owner, 90K actual miles, \$3,500. Heard, 877-3839.

'78 JEEP CJ5, lifted, 35-in. tires, roll cage, 258 straight 6, T18 transmission, runs well, \$4,900. Wells, 350-6200.

'96 FORD EXPLORER XL, 4-dr., 2WD, V6, 4-spd., w/OD, AC, PS, PB, blue, 90K miles, \$4,500. Youchison, 237-2391.

'98 FORD F150 XLT, V6, ext. cab, 3-dr., garage kept, 80K original miles, excellent condition, \$7,500. Nguyen, 344-9216.

'01 FORD F150 XLT, 4x4, Supercrew, 4-dr., 50K miles, excellent condition, \$21,000. Babb, 898-4379.

'92 GMC 1/2-TON, 5-spd., long bed, AC, white, new tires, 84K miles, good condition, \$4,400 OBO. Barnes, 281-0500.

'02 GMC ENVOY SLT, power everything, leather, On-Star, Bose, alloy, sunroof, tow pkg., 30K miles, \$28,800. Robertson, 822-9804.

'98 FORD RANGER XLT, Supercab, V6, 4.0, camper shell, 32K miles, excellent condition, \$12,000. Chavez, 864-4893, ask for Michael.

'88 RX7 CONVERTIBLE, w/new top, rotary engine, mechanically sound, cosmetically challenged, 117K miles, make offer. Beeler, 822-9463.

'01 DODGE RAM 1500, 5.4L, V8 sport, 1 owner, all power, 3-in. lift, many extras, \$19,800. Fromm-Lewis, 332-1280.

'94 FORD EXPLORER, Eddie Bauer, 4x4, V6, AT, 1 owner, power everything, AC, AM/FM/CD, \$7,100. Shortencarier, 856-0618.

'95 FORD CONTOUR, 4-dr., 4-cyl., ABS, cassette, 45K miles, excellent condition, \$4,000. Draper, 281-2663.

'93 CHEVY G20 CONVERSION VAN, needs engine & some bodywork, best offer. Resnick, 292-3825.

'99 LINCOLN TOWNCAR, executive series, new Michelin tires, 53.7K miles, excellent condition, \$16,300 OBO. Blain, 293-3971.

'94 NISSAN KING CAB, 4x4, sunroof, tow pkg., 116K miles, good condition, NADA \$6,875, asking \$5,650 OBO. Lynam, 896-0124.

'92 FORD F250 XLT, ext. cab, V8, AT, PW, PL, 24K miles on new engine, extra clean, \$7,500 OBO. Argo, 235-2484.

'98 DODGE AVENGER, 5-spd., AC, PS, PB, sunroof, red, 75K miles, \$8,000. Kadlec, 804-6070.

'96 PONTIAC TRANSPORT SE MINIVAN, 6-cyl., red two-tone, 36K miles, very good condition, \$6,400. Funkhouser, 857-9245.

'01 CHEVY SUBURBAN LS, 4WD, AT, 37.1K miles, excellent condition, \$28,500 OBO. Burkinshaw, 237-7416 or 833-5183 after 5 p.m.

RECREATIONAL

'88 ALLEGRO, 27-ft., 454 engine, split bath, AC, jacks, micro generator, awning, sleeps 6, 38K miles, \$14,000. Cordova, 299-1652.

'82 COLEMAN SUN VALLEY POP-UP CAMPER, sleeps 4, sink, 3-burner stove, furnace, awning, \$700. Olson, 296-8641.

'01 POLARIS GENESIS PERSONAL WATER-CRAFT, ~50 hrs. run time, seats 4, w/trailer, \$6,000. Laiche, 798-1986.

'96 KAWASAKI VULCAN 750, garage kept, like new, 3,200 miles, excellent condition, \$3,000 OBO. Carrasco, 363-5370.

'82 YAMAHA 600 MAXIM, 4-cyl., red, needs work, ~50K miles, \$50 as is. Smith, 291-0545.

'96 HONDA VFR750, extras include Micon pipe, tall windscreen, cover, excellent sport-touring bike, \$4,100. Smith, 828-3903.

'83 HORNET CAMPER, sleeps 4-6, refrigerator, heater, 4-burner, stove, oven, bathroom, \$1,500. Costin, 821-4951.

SAILBOAT, AMF Minifish, very good condition, can be carried in pickup bed, \$450. Neidel, 873-4903.

'96 BAJA ISLANDER, <80 hrs., garage kept, open bow, 350 engine, SS prop, tandem trailer, cover, \$22,000 OBO. Shanks, 898-4994.

'92 COLEMAN SHENANDOAH CAMPER, used under 45 days, view & bid, Sunday, May 4, 2-4 p.m., call for information & address. Zeuch, 296-4969, before 8 p.m.

'87 BOUNDER, Class A, 31-ft. basement model, 454 turbo 400, loaded, 40K miles, excellent condition, \$15,000. Paboucek, 821-2049.

'98 HONDA Z50, low hours, wide tires, great for first timers, \$600. Myers, 865-6371.

CABIN CRUISER, 22-ft., \$3,000 in extras, great condition, \$6,400. Bascom, 298-1636.

MOUNTAIN BIKE, Cannondale SM 500, Biopace chainrings, 26-in. wheels, Suntour components, nice shape, \$175. Jones, 856-7439.

'86 HONDA NS400R, Rothmans Replica, 2-stroke triple, excellent vintage racer, rare, fast, \$4,000. Iveson, 473-5869.

'92 YAMAHA SECALL, 600cc, black, new seat, service manual, 9,800 miles, excellent condition, must see, \$1,850. Gugliotta, 293-7233.

'02 HONDA 919, under warranty, never dropped, 5,100 miles, must sell, \$6,400. Delgado, 440-8599.

RECUMBENT "TRIKE," S&B, 12-spd., good shape, \$375. Weishuhn, 281-6980.

'98 SPRINGDALE LITE TRAVEL TRAILER, 21-ft., king & bunk beds, microwave, refrigerator, stove, HVAC 3486UVW, clean, \$9,500. Harrison, 821-9099.

'99 PALOMINO FILLY POP-UP CAMPER, fully equipped, excellent condition, \$3,700. Peterson, 867-5484.

BIANCI BICYCLE, new tires, \$100 OBO; wanted: used 5-string banjo, just learning. Nelson, 459-9225, ask for Dave.

'83 CHENOWETH DUNE BUGGY, street legal, 1835 cc, V.W., excellent condition, must see, \$6,500. Ward, 994-1522, ask for Cliff.

REAL ESTATE

3-BDR. HOME, 1 bath, carport, large corner lot, near base, excellent condition, \$85,000. Carr, 266-1687.

3-BDR. HOME, 1-3/4 baths, fireplace, hot tub, mountain/city views, excellent investment property in Sandia Heights. Otero, 400-1750.

3-BDR. HOME, 1-3/4 baths, 1,600 sq. ft., new carpet, excellent view, great backyard, near base, NE Heights, \$143,000. Gale, 299-1247.

MOUNTAIN PROPERTY, 4.5 acres, Thunder Mountain, phone, water on property, electricity nearby, heavily wooded, \$59,900. Schifani, 889-4565.

2-MASTER-BDR. TOWNHOME, 2 baths, near Ladera golf course, save commission, FSBO, \$107,000. Strader, 710-4601.

3-BDR. MOSSMAN BRICK HOME, 1-3/4 baths, hardwood floors, 2-car garage, workshop, Louisiana/Comanche area, \$155,000. Baynes, 681-0502.

2-BDR. HOME, 2-1/2 baths, 2-car garage, hardwood floors, 2,092 sq. ft., Tanoan, gated community, \$234,900. Gutierrez, 856-3672.

2-BDR. COUNTRY HOME, 1 bath, loft, 1,800 sq. ft., 23 acres, 10 miles south of Datil, phone, electric, solar well, barn, \$126,000. Jones, 877-9073 or 243-8604, http://mywebpages.comcast.net/maj666.

3-BDR. HOME, 2-baths, > 2-yrs. old, all new throughout, mountain views, available now, 1 minute to Eubank gate, \$145,000. Epperson, 271-9880.

3-BDR. MOBILE HOME, 2-baths, '79, 14' x 70', 1 acre next to river, lots of trees, nice. Elycio, 565-8874.

2-BDR. HOME, 1 bath, remodeled, new roof, stucco, furnace, hardwood floors, single garage, outbuilding, Ridgecrest, FSBO, \$125,000. Kovacic, 256-9867.

FOUR HILLS HOME, 2,600 sq. ft., 3-car garage, RV pad, .36 acre, 20-ft. ceilings, great custom, awesome city/mountain views. Bruskas, 323-1055.

3-BDR. HOME, 2 baths, near Los Lunas high school. Clibon, 565-8637 or 865-3381, ask for Nancy.

3-BDR. HOME, 1-3/4 baths, 1,768 sq. ft., +900 laundry/exercise/storage, several upgrades, large kitchen, carport, shop, security, \$123,000. Cooper, 899-4227.

WANTED

SOUTHWEST AIRLINE VOUCHERS, 2, valid through 8/15/03. Bielek, 828-2180.

GOOD HOME, indoor cat, neutered male, 3 yrs. old, Seal-point/White Snowshoe mix, blue eyes. Gallegos, 899-9004.

ROOMMATE, 3-bdr. home, nice backyard, nonsmoker, NE Heights, Tramway/Copper, must like pets, \$600/mo., utilities included. Schneider, 610-4327, after 3 p.m.

MOTORCYCLE, Enduro or dirt, street legal. Plummer, 823-1619.

STEINWAY PIANO, only looking for models A, B, or C, strong preference for C. Podolny, 323-3685.

GOOD HOME, almost-new ferret cage, 2-level, w/ramp, 36"L x 18"W x 27"H. Hoffman, 294-4167.

PATIO TABLE, wrought iron, green color, w/mesh top, hole for umbrella. Carson, 856-7858.

OUTDOOR FOUNTAIN; stainless darkroom sink. Shields, 286-5917.

NORAH JONES TICKETS, 2, July 25. Ortiz, 765-1111.

HOUSEMATE, nice new house, Four Hills area, quite neighborhood, \$400/mo. +1/2 utilities. Sokolowski, 615-8618.

SUMMER HELP, general home maintenance, hauling, painting, etc., must have transportation to East Mountains. Hefelfinger, 379-9487.

TVC Equity Capital Symposium set

Technology Ventures Corp.'s 10th Annual New Mexico Equity Capital Symposium will be held May 14-15 at the Hyatt Regency Albuquerque. TVC was established by Lockheed Martin as a nonprofit business to match up equity investors and researchers from the national labs. More than half of the investment opportunities to be presented to investors involve entrepreneurs and technologies emerging from DOE/NNSA laboratories, including Sandia and Sandia/CA, Los Alamos, and for the first time ever, Lawrence Livermore National Lab. Presenting companies are featuring technologies based on clean energy, health sciences, homeland security, and information technologies. For information on attending the event, considered to be the premier showcase for emerging technology companies in New Mexico, call 246-2882 or visit www.techventures.org.

Like father, like daughters**Daughters of *Lab News* photographer Randy Montoya document annual Take Our Daughters to Work Day**

TAKE OUR DAUGHTERS TO WORK DAY — Sandians enjoyed the company of almost 800 special guests during this year's annual event sponsored by Sandia Women's Action Network. In the photo on the left, girls anticipate a test shot of the Annular Core Research Reactor while facility manager Ron Farmer (6431) explains the bright blue glow of the core while his 14-year-old daughter Amanda, in white lab coat, makes sure dad keeps the expla-



nation short. In the photo at right, Samantha Phelps, age 10, gets a little help from her Grandpa Jerry Mercer (15322) as they ready her explosive imprint art to fire. Patterns from leaves and pennies are stamped into a small brass plate using 16 grams of explosives.

Daughters to Work Day photos by Amanda Montoya, age 9 (left photo), and Laura Montoya, age 11

Feedback**Readers cite snags in transition from Netscape Navigator to Internet Explorer; take issue with 'helter-skelter' parking in Kirtland lot**

Q: *I don't know who makes the decisions to update and change software, but a little more thought and testing needs to be completed before changes are made. We're switching from Netscape to Internet Explorer 6.0. The P-card reconciliation won't work with Explorer. The TIF viewer for looking at IMS drawings works okay with Explorer 5.0 and Netscape, but not with 6.0. Markview wouldn't work with 6.0, but does with 5.0 (which is what they had to load back on my machine so I could look at invoices). There were problems with TEDS when a previous version came out and it wouldn't work right in Netscape, but would in Explorer. Before upgrades are made, they need to be tested by a group of real users who can find at least part of the problems before they get forced on everyone. We should not be forced to go out and individually buy different plug-ins in order to retain the same capability that we had before.*

A: Users of Sandia's web-based services have, as you point out, encountered inconveniences during the change from the Netscape web browser to Internet Explorer (IE) for Windows and Macintosh. (Unix will continue to use the Netscape browser.) We tried to minimize problems by allowing for a transition period of approximately a year. Unfortunately, it wasn't possible to synchronize all the changes. The overwhelming majority of Sandia corporate web applications, however, now work with IE, and the rest were expected to be compliant by Spring 2003.

In some cases, maintaining full compatibility during the transition would have consumed an unacceptable amount of resources. P-Card reconciliation, which you mentioned, is being replaced by Oracle. So rather than redesign an application that would soon be retired, we chose to ask customers to continue using the Netscape browser for a few months.

Of the other web tools you mention, the TIF viewer has been tested and should work. MarkView has been reconfigured so that most people no longer need the MarkView plug-in. You also mention trouble with TEDS during a previous upgrade; TEDS is now compatible with the current version of IE. Call the Help Desk at 845-2243 if you have problems with these or any other web application.

Even though we weren't able to prevent all inconveniences, we did a large amount of planning and testing. A project in FY01 evaluated Sandia's browser needs and chose IE for Windows and Macintosh, on the basis of a number of criteria important to both users and support staff. The Browser Migration Project, beginning in FY02, coordinated the switchover. Despite the inconveniences and a few unexpected difficulties, we believe the transition has been about as smooth as it could have been made in an environment as complex as Sandia's.

— Don Schroeder (9630)

Q: *Parking these days is at a premium. More and more individuals are parking in the lot directly across Wyoming from the SLFCU. As of now, vehicles are parked helter-skelter all over the place and just driving through the lot is a real hazard. Is there a possibility that this lot could be striped so people would have some guidance in parking?*

A: The parking lot across Wyoming from the Sandia Laboratory Federal Credit Union belongs to the USAF. We will request that they stripe the lot to reduce the possibility of accidents and improve the appearance of the lot. If they agree, the striping will be performed based on their priorities and budget constraints.

— Ed Williams (10849)

From nukes to flutes

FROM NUKES TO FLUTES — For the past five years, when Greg Hassig isn't working to keep America safe at the Neutron Tube Design Organization (2564), he works to bring a sense of peace and calm to life by making flutes. He makes these beauties to relax, to play, to give away, and even to sell on occasion. Ironically, out of all of his woodworking accomplishments, Greg says he is most proud of a working all-wood clock. He also has a practice that friends have termed "the Random Act of Fluteness," in which every 10 flutes he makes, he gives one away. "It's almost as much fun to give one away as it is to make them. And I enjoy making them."

(Photos by Randy Montoya)

90th birthday open house for retiree Sam Blaylock

Sandia retiree Sam Blaylock is celebrating his 90th birthday. A retiree from the Lab in 1978, with work history also going back to Trinity Site era, Sam and his family are inviting colleagues from his days at Sandia and others interested to an open house party in Los Lunas, N.M., Saturday, May 17, 1-4 p.m.

If you would like to celebrate and reminisce about the days at the Lab with Sam, please call for info to 865-7770 or 865-9765.

Like father, like daughters**Daughters of *Lab News* photographer Randy Montoya document annual Take Our Daughters to Work Day**

TAKE OUR DAUGHTERS TO WORK DAY — Sandians enjoyed the company of almost 800 special guests during this year's annual event sponsored by Sandia Women's Action Network. In the photo on the left, girls anticipate a test shot of the Annular Core Research Reactor while facility manager Ron Farmer (6431) explains the bright blue glow of the core while his 14-year-old daughter Amanda, in white lab coat, makes sure dad keeps the expla-



nation short. In the photo at right, Samantha Phelps, age 10, gets a little help from her Grandpa Jerry Mercer (15322) as they ready her explosive imprint art to fire. Patterns from leaves and pennies are stamped into a small brass plate using 16 grams of explosives.

Daughters to Work Day photos by Amanda Montoya, age 9 (left photo), and Laura Montoya, age 11

Feedback**Readers cite snags in transition from Netscape Navigator to Internet Explorer; take issue with 'helter-skelter' parking in Kirtland lot**

Q: *I don't know who makes the decisions to update and change software, but a little more thought and testing needs to be completed before changes are made. We're switching from Netscape to Internet Explorer 6.0. The P-card reconciliation won't work with Explorer. The TIF viewer for looking at IMS drawings works okay with Explorer 5.0 and Netscape, but not with 6.0. Markview wouldn't work with 6.0, but does with 5.0 (which is what they had to load back on my machine so I could look at invoices). There were problems with TEDS when a previous version came out and it wouldn't work right in Netscape, but would in Explorer. Before upgrades are made, they need to be tested by a group of real users who can find at least part of the problems before they get forced on everyone. We should not be forced to go out and individually buy different plug-ins in order to retain the same capability that we had before.*

A: Users of Sandia's web-based services have, as you point out, encountered inconveniences during the change from the Netscape web browser to Internet Explorer (IE) for Windows and Macintosh. (Unix will continue to use the Netscape browser.) We tried to minimize problems by allowing for a transition period of approximately a year. Unfortunately, it wasn't possible to synchronize all the changes. The overwhelming majority of Sandia corporate web applications, however, now work with IE, and the rest were expected to be compliant by Spring 2003.

In some cases, maintaining full compatibility during the transition would have consumed an unacceptable amount of resources. P-Card reconciliation, which you mentioned, is being replaced by Oracle. So rather than redesign an application that would soon be retired, we chose to ask customers to continue using the Netscape browser for a few months.

Of the other web tools you mention, the TIF viewer has been tested and should work. MarkView has been reconfigured so that most people no longer need the MarkView plug-in. You also mention trouble with TEDS during a previous upgrade; TEDS is now compatible with the current version of IE. Call the Help Desk at 845-2243 if you have problems with these or any other web application.

Even though we weren't able to prevent all inconveniences, we did a large amount of planning and testing. A project in FY01 evaluated Sandia's browser needs and chose IE for Windows and Macintosh, on the basis of a number of criteria important to both users and support staff. The Browser Migration Project, beginning in FY02, coordinated the switchover. Despite the inconveniences and a few unexpected difficulties, we believe the transition has been about as smooth as it could have been made in an environment as complex as Sandia's.

— Don Schroeder (9630)

Q: *Parking these days is at a premium. More and more individuals are parking in the lot directly across Wyoming from the SLFCU. As of now, vehicles are parked helter-skelter all over the place and just driving through the lot is a real hazard. Is there a possibility that this lot could be striped so people would have some guidance in parking?*

A: The parking lot across Wyoming from the Sandia Laboratory Federal Credit Union belongs to the USAF. We will request that they stripe the lot to reduce the possibility of accidents and improve the appearance of the lot. If they agree, the striping will be performed based on their priorities and budget constraints.

— Ed Williams (10849)

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