

Testing, testing leads to safe nuclear weapons arsenal

Departments 2955, 2956 build 'testers' used to determine if weapons are working properly

By Chris Burroughs

Editor's note: This is part of a series of Lab News articles covering Sandia's Nuclear Weapons Surveillance Program.

When realtors talk about the value of a piece of property, they always emphasize "location, location, location."

When members of the nuclear weapons community talk about the safety, security, and reliability of the nuclear weapons arsenal, they refer to "testing, testing, testing."

And in this era where weapons testing by underground explosions of nuclear devices is banned, non-nuclear testing remains one of the few ways available to determine if weapons will work when they are supposed to and not work when they are not supposed to.

That is where Departments 2955 and 2956 come in. They build system test equipment (STE) to conduct non-nuclear testing that determines if nuclear weapons are safe, secure, and reliable.

"Our product consists of the complete design and implementation of test systems, including electrical hardware, mechanical hardware, software, and documentation," says Oscar Hernandez, Manager of Test Equipment Design Dept. 2955. "Our efforts support the mission of the Stockpile Surveillance Program by providing the design, development, and maintenance of test systems used in evaluating stockpiled weapons."

Every year 11 weapons are randomly pulled

for testing from each of the nine enduring stockpile systems, making for about 100 weapons tested annually. Eight of the 11 weapons systems are typically sent to Sandia's Weapons Evaluation Test Laboratory (WETL) at the US National Nuclear Security Administration (NNSA) Pantex Plant near Amarillo, Texas, where they undergo more than 700 tests on "testers" built by the two departments (*Lab News*, Jan. 24). The tests are conducted by 18 Sandia engineers and technicians who work at the WETL facility.

The current 40-year-old WETL structure houses about \$90 million in testing equipment and is the only US facility that conducts systems-level tests on nuclear weapon non-nuclear subsystems and components. Earlier this year ground was broken for a new 30,000-square-foot, \$22 million WETL facility that will replace the old building when it is completed in 2004. In addition, the weapons program is setting aside \$30 million over the next several years for Sandia engineers to



CHECKING OUT TESTER — From left, Richard Fitak, Stephen Graham, and Patricia Bonham (all 2955) check out the W80 Command Disable System tester that will be shipped to Pantex. The tester was designed and built by Sandia engineers and technicians in Albuquerque. (Photo by Randy Montoya)

build a new generation of modernized testers.

Nuclear weapons disassembly

The sampled weapons, which are turned over to the NNSA by the military, go through a disassembly and inspection (D&I) process by BWXT personnel at the Pantex plant. The

(Continued on page 5)

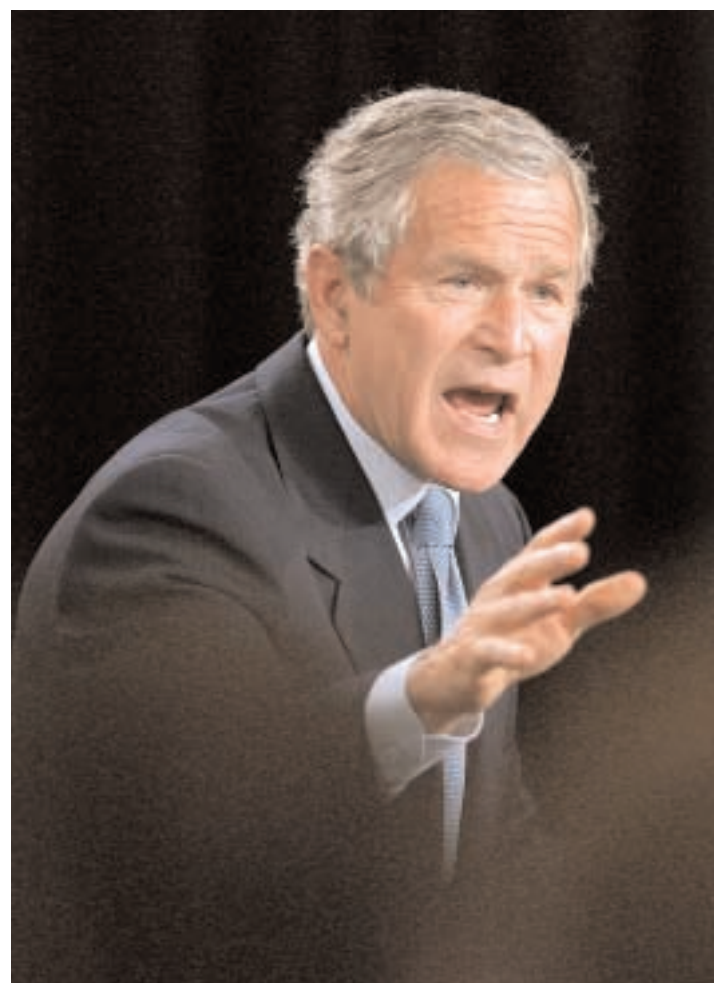
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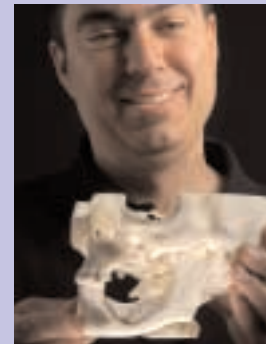


Bush lauds Sandia partner as small business role model

PRESIDENT BUSH spoke before an audience of 3,000 Monday morning at MCT Industries in Bernalillo, north of Albuquerque, on the theme of helping small businesses. MCT manufactures, among other things, custom trailers, including one made to carry the Enhanced On-Site Container (EONC), developed by Sandia for the US Army to transport obsolete chemical munitions safely to on-site demilitarization facilities. Mark McAllaster (5832), program manager of the EONC program, and colleagues were there with a prototype EONC, as were Sandia President C. Paul Robinson and team members for Sandia's Z machine, for which MCT makes some parts. In his remarks, the president said America's biggest and most important job in the months and years ahead is to "make sure our homeland is secure." And the best way to do that, he said, "is to hunt the killers down one by one and bring them to justice. . . . They need to know that as long as they want to hurt our country, there is no cave deep enough for them to hide in." As the nation confronts international terror, Bush said, its greatest strength is "the heart and soul" of the American people.

(Photo by Randy Montoya)

Robocasting produces implant



Sandia scientist Joe Cesarano and his team fashioned a jaw implant using Robocasting, a technique he originally developed to build defense components out of ceramics. Read about the implant in Neal Singer's story on page 7.

Successful Homeland Security visit lays next stage for budding relationship

By Bill Murphy

The national labs are the Department of Homeland Security's "factory for ideas and technologies," DHS official Penrose (Parney) Albright said last Friday during a high-level visit to Sandia.

Albright, Acting Director of Plans, Programs, and Budget, accompanied DHS Under Secretary for Science and Technology Charles (Chuck) McQueary on a two-day trip to review work at Los Alamos National Laboratory and Sandia. Next week, the two, along with other DHS officials, are scheduled to visit Sandia/California and Lawrence Livermore National Laboratory.

Sandia and Lawrence Livermore team to co-host Homeland Security Executive Summit in California. See Page 3.

The DHS and DOE/NNSA are forging a cooperative relationship in which the NNSA labs will provide primary R&D resources for the new department while still carrying out their traditional nuclear weapons mission for DOE. McQueary and his delegation are visiting the labs to get a better sense of their capabilities, as well as current and future areas for Homeland Security-related R&D.

The three NNSA labs have been rigorous in taking a unified "tri-lab" approach to their dealings with DHS (see "McQueary likes tri-lab effort," on page 4).

T.J. Allard, who heads up Sandia's Homeland (Continued on page 4)

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Labs' 10-year Ombuds program evolving from dispute resolution to conflict management

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What's what

Unless you were in a trance or a deep cave – or in California – you know President and Mrs. Bush were in Santa Fe last weekend – Laura Bush for a National Dance Institute of New Mexico performance by 500 youngsters, and both she and the president for a little R&R with old friends.

A presidential visit always generates security preparations – checking and securing travel routes, ensuring the availability of medical facilities, and all sorts of other stuff that most of us wouldn't ever think about. Part of that "other stuff" is, of course, assessing the possibility of protests, who might be involved, whether they are likely to be peaceful or turn confrontational, and whatever else could go into the mix.

Santa Fe does have a few peace protesters (does that *really* need to be said?) and some consultation established a route they were expected to line to protest, and the number likely to show up. It was all expected to be reasonably peaceful – they being "peace" protesters, and all that. But because being dragged away and arrested is considered the mark of a successful protest, Police Chief Beverly Lennen offered a peaceful option – Santa Fe being the "City Different," and all.

If you had a party to go to, or didn't want that pesky New Mexico wind to tousle your hair, or needed to carry water to the silvery minnows, or something else – but wanted to make a statement against Bush administration policies – you could contact the police beforehand and reserve an arrest.

C'mon! . . . it's Santa Fe! You can reserve a table at a restaurant, or a time to get your or your dog's hair cut, or a tee-time, or a massage in herb-infused water (I made that last one up – probably). Hey! . . . I'm like, this is cool! I'm, like, solid with ya, dude! But there's this guy who's gonna talk about his cosmic wormhole trip to Altair 4, and I can't miss that, so I'm gonna call the cops and register. I'm with ya, dude!

* * *

Oh, and by the way, a few weeks ago we were informed that we could no longer use the 1-411 or the (Area Code) 555-1212 directory services to find outside telephone numbers. Trying to check on the "reserve-an-arrest" concept, and not having the Santa Fe Police Department phone number handy, I tried 'em anyway. Sure enough, they don't work.

So, I called the Sandia locator to explain the dilemma and find a solution. My brief explanation was answered by a resigned sigh, to which I replied, "I bet you're getting a lot of calls about this, aren't you?"

"Oh, yeah," she answered, with another sigh. But gamely, she suggested possible lines of inquiry, all of which I told her I had already tried, with no luck. She was sorry she couldn't help, she said, and suggested I let the group that eliminated the directory service know about the problem.

I called the Telecommunications Operations group and got a voicemail message referring me to another phone number. I called it and found myself connected to the Sandia Voice Information System. Not needing to check my voicemailbox or change my voicemail greeting or do any of the other things SVIS offered, I just hung up the phone.

I called the now-cut-off-from-Sandia outside directory service on my cellphone and got the number I needed.

There may be a disconnect in this disconnection of directory service, don't you think?

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

Shooter ID Kit, risk assessment methods earn tech transfer awards

The Federal Laboratory Consortium for Technology Transfer (FLC) last week recognized two Sandia commercialization efforts with 2003 Awards for Excellence in Technology Transfer.

The annual awards recognize successful projects by federal laboratory employees to transfer government-developed technology to commercial industry. A panel of experts from industry, state and local governments, academia, and the federal laboratory system judge the nominations.

Sandia was a recipient of two of the 22 Awards for Excellence given by the FLC this year. The awards were presented May 7 in Tucson, Ariz., during the FLC's annual national meeting there.

One award presented to Sandia and Law Enforcement Technologies, Inc. (LET), of Colorado Springs recognizes a collaboration to develop a product that gives law enforcement officers the ability to quickly identify, right at a crime scene, individuals who have recently fired or handled a gun.

LET funded Sandia to develop and test an approach to packaging a laboratory chemical detection technique in a small, inexpensive, and reliable field test kit. Sandia licensed the technology to LET in November 2001.

The product, called the Instant Shooter ID Kit, already has helped police identify the perpetrators in dozens of homicides and has resolved uncertainties about the shooters in several suicide investigations.

Police departments in 75 cities are using the kit. The US military also is exploring use of the kits for identifying terrorists in urban and rural areas.

LET market analyses predict a distribution of more than 30,000 kits next year with gross sales of more than \$500,000.

The other award recognizes Sandia's effort to adapt its security expertise to the challenge of preventing terrorists from exploiting vulnerabilities in US critical infrastructures.

Sandia developed a family of risk-assessment methodologies (RAMs) that can be used by owners and operators of dams (RAM-D), power transmission systems (RAM-T), and water distribution systems (RAM-W) to identify and correct vulnerabilities at their facilities.

Sandia also developed a unique licensing strategy and designed "train the trainer" courses to make the methodologies available to owners and operators in a timely fashion.

Sandia has executed 80 RAM licenses and many more are pending.

Numerous government and industry partners collaborated with Sandia on RAM development.

The FLC, organized in 1974 and formally chartered by the Federal Technology Transfer Act of 1986, promotes and coordinates technology transfer efforts by creating an environment that facilitates the rapid movement of government-developed technologies into the US economy. More than 700 federal labs and centers and their parent agencies are FLC members. — John German

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Employee death

Roland Phillips, Tonopah Test Range Dept. 15421, died April 25 after a long illness.

He was 48 years old.

Roland had worked at Sandia since 1987 as an electromechanical technologist.

He is survived by his wife, Janice, and sons Terry, Victor, Bret, Dallin, and Kyle.

Feedback

Q: Why do departments at Sandia send out such long, annoying surveys? I understand the importance of customer focus and wanting to know what people like and where improvements could be made. Surveys can be a valuable tool, but let's be reasonable. I did not respond to the two most recent surveys I received because one was six pages long and the other four pages long, both with a dizzying number of check-boxes. Are there any corporate guidelines for surveys? Is there a resource at Sandia who could assist in survey design?

A: Boy, do we agree. And, yes, there are corporate guidelines coming. In fact, we're a few weeks away from publishing a standard for customer surveying within the IES (Sandia's infrastructure services, aka Integrated Enabling Services) that provides both guidelines and help with survey design.

Most service providers are very concerned about focusing on the customer — which is good. A common way of getting customer feedback is by surveying — which, if not done rea-

sonably, can annoy them. The new standard will require a review by a team of individuals prior to the distribution of a survey by any of the IES service providers. The team, which includes a staff member from Sandia's Reliability and Human Factors Group with excellent insights into survey design, will focus on length, appropriateness, type of questions asked, overlap with other surveys, etc. In addition, the standard will include guidelines that identify other tools that the service provider can use to determine how well customer expectations are being met without necessarily using a customer survey. Sometimes we ask questions for which we already have answers.

You are right to say surveys can be valuable tools if used right. They can provide the service provider with information to make decisions to improve service to the customer. We hope this new standard will eliminate unnecessary surveying, while providing a structure and process for those service providers that do need to use surveys. Thanks for the input. — Lynn Jones (7000)

Labs co-host Homeland Security Executive Summit

By Nancy Garcia

Following the recommendation of a Homeland Security Task Force created by Rep. Ellen Tauscher after 9/11, a daylong Homeland Security Executive Summit was held in April at Lawrence Livermore and Sandia national laboratories for medical and emergency responders, industry leaders, and elected officials. Focused on making the Bay Area a model of preparedness, the summit addressed federal responsibilities, first responders, and emerging local and national initiatives.

"It is vitally important that we knit together this state so the rest of the country can follow us," Tauscher remarked. She co-hosted the event along with the National Guard, Sandia, Lawrence Livermore, and other organizations. Participating agencies included the US Department of Homeland Security, Federal Bureau of Investigation, Federal Emergency Management Agency, California Office of Homeland Security, California Office of Emergency Services, California Highway Patrol, and the California Space Authority.

Tauscher described how the morning of Sept. 11, 2001, she sent her congressional staff home and had her daughter picked up from school before the plane hit the Pentagon. "We all felt tremendously responsible, and vowed that we would never allow this to happen again," she said. "We knew that the world had been turned on its head, and that the world of asymmetry was going to be with us forever."

The new Department of Homeland Security, which merges the work of 22 federal agencies, was "desperately needed, but very hard to do," she added. "It took well over a year to create." Her web



SHOW AND TELL — Div. 8000 VP Mim John brought props demonstrating Sandia accomplishments to her talk at the recent Homeland Security summit.

(Photo by Frank Nuñez)

site points out that the legislation, which she helped co-author, was initially introduced before 9/11, a period she said was marked by a sense of forboding, but without context for the vague fear and paranoia.

Those early worries also struck researchers at the national labs. In her remarks at the summit, California Laboratory VP Mim John

recalled participating in a 1997 Defense Science Board summer study of the transnational threat, in which the board pushed for the Department of Defense to work with the National Guard to coordinate with local emergency response agencies.

Mim said that in the Labs' role of focusing on the hardest national security problems, "we very naturally gravitated to worrying about terrorism." She displayed μ ChemLab, the hand-held chemical analysis system designed to detect chemical or biological threats, and a can "that looks like your average household cleaner" but whose label announces it is "a formulation for the mitigation and decontamination of weapons of mass destruction." The Sandia-developed foam is now available from two suppliers.

Other Sandia projects include analyzing defense of cities; investigating health surveillance; potentially monitoring of urban areas; advising border authorities; and recommending monitoring and response plans for transit facilities, including the San Francisco International Airport.

"One of the funnest things we got to do was get in right before the terminal opened and do a simulated release," said Mim, who formerly led Sandia's Chemical and Biological Defense and Demilitarization Program.

Sandians Howard Hirano (8101) and Ron Stoltz (12122) participated in the breakout sessions in the afternoon of the summit. Conference attendees focused on detection and preparedness, response, and the economic impact of homeland security on cities and towns. A report of findings and recommendations from the summit will be released this summer.

Sandia CaliforniaNews

Sandia's electronic US savings bond campaign makes saving effortless

There is no better time to start saving for tomorrow than today. Sandia's annual bond campaign begins May 19 and ends June 6.

Changes in the US Treasury Department make this year's campaign a totally electronic campaign. There will be no national or state campaigns, no awards program, and no tracking of company participation.

Savings bonds earn competitive, compounded, and variable interest rates with monthly accruals. Interest earnings are exempt from state and local taxes, and the Federal tax is deferred until the bond is redeemed or until it stops drawing interest at 30 years. You may even be able to avoid federal income taxes if you use your earnings to pay for qualified higher-education expenses.

In addition to the well-known Series EE Savings Bond, the inflation-indexed I Bond is also available. The I Bond earns an adjustable rate that keeps your savings growing over and above inflation for up to 30 years. This means a rising cost of living will not erode your purchasing power. The EE Savings Bond offers market-based rates. You can choose how you want your money to grow. Effective May 1, I Bonds earn 4.66 percent; EE bonds, 2.66 percent. Rates change May 1 and Nov. 1 of every year.

For many years Sandia has been recognized by the Treasury Department for the number of bonds purchased based on percentage participation. This tradition has become a part of our culture of service to our nation.

Don't wait; sign up now. Signing up is made easy by using Sandia's electronic payroll process at <http://www-irn.sandia.gov/bonds/>. If you have any questions, call Juanita Sanchez at 844-1307. More information about US savings bonds is available at www.treasurydirect.gov.

Coming to California . . .

Wall of Fame highlights women of Sandia



IN HONOR OF WOMEN'S HISTORY MONTH, the Sandia Women's Action Network sponsored a traveling Wall of Fame display to acknowledge the vital roles Sandia women are playing in their professions, their communities, and their personal lives. Here Anna Trujillo of the NNSA Sandia Site Office (left) and Katelyn Shewnack, a student intern in 11000, check out the display when it was up in the Bldg. 800/802 corridor. The display provides information on Sandia women and quick snapshots of some of the many accomplishments women made in 2002. The exhibit will tour the Labs over the next few weeks — it is now in the Advanced Manufacturing Processes Laboratory — including a trip to Sandia/California. (Photo by Bill Doty)

McQueary visit

(Continued from page 1)

Security Office, says he was pleased with the quality of the interaction with the DHS delegation.

"It was a great visit," he says. "We covered exactly what we needed to with them. I think we hit a home run with what we covered."

In brief overview remarks, Labs Director C. Paul Robinson noted that Sandia has been involved in issues closely related to homeland security for a number of years. It has, since the mid-1990s, actually organized its business units to reflect R&D activities in many areas with direct homeland security applications.

McQueary, in turn, noted in opening remarks that he and his team view Sandia as a "systems" lab, with a tradition of being able to tackle challenges from a broad-based systems level, considering all the pieces of the puzzle at the same time. He indicated that DHS and his Office of Science and Technology are committed to a long-term relationship with the labs.

Dave Nokes, VP 5000, and T.J. conducted the walk-through briefing/tour for the DHS delegation of Sandia's recently updated Homeland Security exhibit room in Bldg 810. The exhibit has been reorganized, T.J. says, "to reflect more of how outside folks look at the work instead of how we look at the work." The exhibit room, in fact, is now organized to coordinate with the DHS's own organizational structure. Thus, as you walk from exhibit to exhibit, you move through areas that correspond to the DHS under-secretariats: Borders and Transportation Security; Information Analysis and Infrastructure Protection; Emergency Preparedness and Response; and Science and Technology.

Sandia bomb-disablement guru Chris Cherry talked the visitors through a series of live demonstrations on the Bldg. 810 mall of explosives sniffing, bomb disablement, and explosion containment technologies. The demonstrations were similar to those conducted for DHS Secretary Tom Ridge during his February 2002 visit, with real-world first responders from the Albuquerque Police Department participating (see "APD bomb squad 'spoiled' by Sandia technology," below.)

It turned out the state and local interactions were particularly important to Parney [Albright] and Chuck [McQueary]," T.J. says. "They understand that everything they do has to have meaning at the state and local level, so seeing the involvement of APD turned out to be very impressive to them. And so I went further and explained that that's just one piece. We talked about the workshop we did last fall, the joint workshop we did with Los Alamos National Lab, and the one we're doing in October.

We really have had a significant engagement with first responders. And [before the visit] they just didn't understand that. They were really 'wowed' that we had the interfaces, the relationships with the state and local guys."

APD bomb squad 'spoiled' by Sandia technology

When Sandia bomb disablement expert Chris Cherry wanted to do a live demonstration of key technologies during the visit by Department of Homeland Security delegation, he turned to a familiar source for some help: the Albuquerque Police Department.

In showing off technologies for sniffing out explosives, disabling bombs, and containing the release of toxins in a chem/bio explosion, Chris used first responders from the APD bomb squad.

Among those who participated in the demonstration on the Bldg. 810 mall: Sgt. Mike Heister, Officer Steve Chester, and Det. Jim Galloway.

Heister and Chester say the Labs-developed technologies they showed off for DHS Under Secretary Charles McQueary aren't just laboratory marvels; they are real tools — tools "we use every day," as Heister puts it.

Chris says Sandia has been working with APD on bomb-disablement technologies for



FROM BOMB TO HEAP OF EVIDENCE — Sandia bomb disablement expert Chris Cherry (left) shows remains of a Centennial Park-style bomb mock-up to Charles McQueary (center), the Department of Homeland Security's Deputy Secretary for Science and Technology. Using Sandia technology, first-responders can disable bombs while preserving critical evidence.

(Photos by Randy Montoya)

As a result of the visit, T.J. says, he thinks it is possible that DHS may request the Labs to accelerate work in certain areas.

"I got a call after the visit from Holly [Dockery (5350), a Sandian on "loan" to DHS in Washington], and she anticipates that as a result of the visit, DHS is going to come back with a request to accelerate many of our technologies. We have to be careful not to pin them down, but things like the radiation-detection technologies and MicroChemLab — those are examples of things that they might want to ramp up. I think they're going to want to take some of these technologies and move them more quickly to the field. And that's good. That's just what we should be doing."

McQueary, clearly impressed with what he saw both at Sandia and Los Alamos, said the Science and Technology directorate at DHS is in a catch-up mode relative to the work already ongoing at the NNSA labs.

Says T.J., "What he means is that the Labs are out in front; we've spent more time on these challenges, so we're moving faster than S&T is. But his message was, 'Don't slow down. We'll catch up to you; don't slow down.' I thought that was a compliment, that, Hey, you guys are doing the right thing, so keep moving."

more than a decade. Over the last several years, says Sgt. Heister, "The tools we've been getting from Sandia are getting more efficient, easier to use."

"Before we started working with Sandia," says Chester, "We didn't have anything. Now, we always have state-of-the-art equipment. Our jobs are much safer, and we're more effective. We're kind of spoiled. Let's just say we're very fortunate to be located here."

Heister says the APD bomb squad has earned a national reputation, thanks in large part to its involvement with Sandia. "We're definitely seen as a test-bed."

Chris sees the APD team as important colleagues in his effort to get his tools in the hands of first responders. "We have them [Chester and Heister] on no-fee contracts so they can travel with us [to events like the Operation America programs for bomb squads from around the nation]. They're doing a lot of the training now."

McQueary likes tri-lab effort

The visit by DHS Under Secretary for Science and Technology Charles McQueary and his delegation — including Plans, Programs, and Budget Director Parney Albright and Office of the National Laboratory Director Michael Burns — offered a perfect forum to roll out the tri-lab concept. That's the idea under which the three NNSA labs — Sandia, Los Alamos (LANL), and Lawrence Livermore (LLNL) — present a unified position in their interactions with DHS. The concept, under which a Tri-Lab Council will deal directly with DHS on key issues, is designed to eliminate turf protection, duplication of effort, red tape, and confusion about channels of communication.

When the DHS team visited LANL on May 1, notes Sandia Homeland Security Office chief T.J. Allard, "We were there and Lawrence Livermore was there." Likewise, when the DHS delegation moved on to Sandia on May 2, representatives from LLNL and LANL were there, too.

"One of the things we did up at Los Alamos," says T.J., "was to present the Tri-Lab model that we've come up with (*Lab News*, April 4). At dinner Thursday night — Paul [Robinson] hadn't been with the group at Los Alamos, so he didn't know what they had seen — Paul asked them, 'So what was the highlight of your day today?' And Chuck [McQueary] said, 'The highlight? The Tri-Lab Model. That's going to make my job a lot easier.'"

It was important to McQueary, T.J. says, to see that the labs have come together.

"In fact, the Los Alamos guys, to their credit, did a great job throughout the day of bringing up Sandia. You know: Sandia's doing this. Sandia's taking the lead on that. And this was Los Alamos doing it. And we did the same thing. I was really pleased at how well Los Alamos did that, and we found out that was without prompting.

"The bottom line is, we did reaffirm the wisdom in DHS choosing the NNSA labs to be their national lab."

As a result of the successful DHS visit, T.J. says, "I think we're ready to start down the path of the specifics of how to do business with each other. We're going to start shifting into areas like how do you move money; how do you get programs into the labs. We're moving from the high-level dialogue to the nuts and bolts of implementation.

"One of the things we wanted to make sure of," T.J. says, "was that we reaffirmed the decision [by DHS] to use the NNSA national labs as the DHS national lab. And I think he [McQueary] went away with that. DHS could have tried to start from scratch, to build their own lab from the ground up. And also, Chuck [McQueary] comes from an industry background; he could have said, 'Look, I'm just going to pull stuff from industry;' But I think he sees that the Labs are doing things that he couldn't get from industry."



CHRIS CHERRY (left) shows DHS's Charles McQueary (right) a component of a bomb mock-up, explaining how Sandia's technology can disable the device. Standing beside McQueary is DHS official Parney Albright.

MESA gets DOE go-ahead to construct all buildings

By Neal Singer

It's early to call the MESA project a success, since it hasn't yet been built. But in the most recent climax to a remarkably orderly series of review-and-approval steps dating back four years, the Sandia MESA team now has received official approval from DOE to begin construction of its Microfab, Microlab, and Weapons Integration Facility (WIF) — the entire set of buildings that constitute MESA proper.

"We turned in our engineering design last Nov. 14 and requested permission to start main construction," says Don Cook (1900), director of the MESA center. "I thought we'd get permission to start one building and have to come back later for the rest."

Sandia had been authorized to spend \$113 million — enough to begin construction on the Microfab and Microlab — but the 'okay' to begin all buildings was a bonus.

"We haven't committed on placing a construction contract for WIF since we don't have '04 money yet, but we hope to place the con-

MESA awards contract

Sandia awarded the MESA MicroFab construction contract this week to M.A. Mortenson — Advanced Technologies Group (ATG), a Tempe, Ariz., based company, for \$54,174,000. The bid was full and open competition, advertised nationally in *Federal Business Opportunities*, with six proposals received. Mortenson was determined to be the best value after being ranked high technical and offering the low price. Mortenson does not have a local office in Albuquerque but has spent significant time and effort developing a subcontracting plan focusing on both small and New Mexico business opportunities. Mortenson intends to subcontract 82 percent (\$44,422,680) to New Mexico based businesses and 30 percent (\$16,252,200) to small businesses including disadvantaged, Hub Zone, and woman-owned firms.

tract in June '04," Don says.

The project already has placed a construction contract for a temporary road, east of Hardin, to ease traffic around the construction site. The construction contract for the Microfab begins in May, and the Microlab in September, of this year.

Meanwhile, after a slow start, demand for space for personnel and equipment in the mock-up WIF building, located in Research Park outside the Eubank Gate (*Lab News*, March 7), "has far exceeded our ability to house them," says Don. "The desire of people to work with analysts, weapons designers, and microtechnologists in a new way, with lowered organizational boundaries, has become intriguing for Sandians."

Sandia's biggest construction project ever, MESA is expected to fashion a new, possibly more effective way of working together for researchers under its wing. Among the \$462.5 million project's goals is to hasten the day when microstructures perform effectively in high-surety situations.

Testing

(Continued from page 1)

Sandia-designed subsystems and components are then reassembled into a "testbed" that is transported to the WETL for testing. Testbeds are designed so they replicate the configuration of the weapon to the extent possible without nuclear systems. Non-nuclear subsystems and components are kept intact in the testbed so testers can determine how they function together as a complete system.

"We're looking for defects and anomalies," Oscar says.

He gives the example of an electrical subsystem that might consist of several components. Contact corrosion may have occurred that causes the subsystem to not function properly. If the subsystem is totally dismantled, the corrosion may be scraped off and go away. As a result, the reassembled subsystem would work and the problem would be missed.

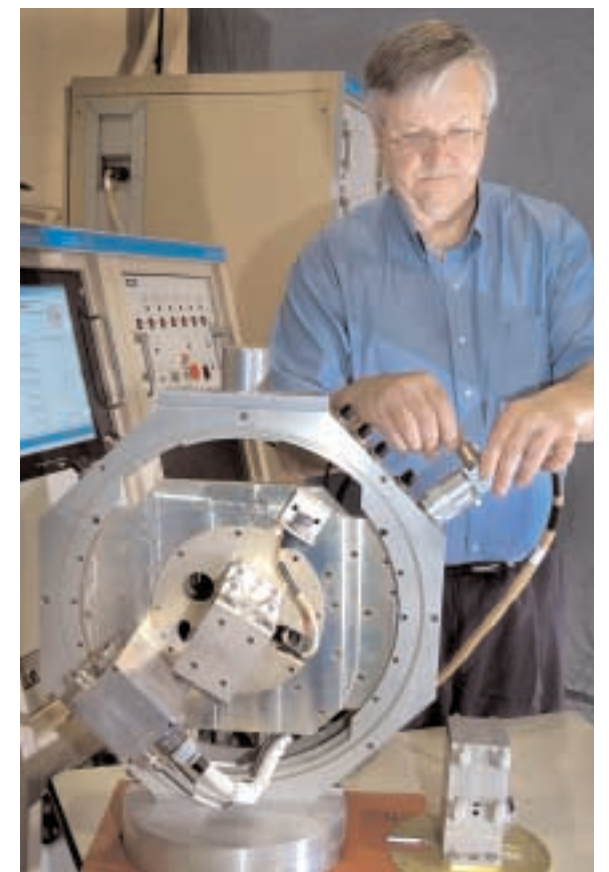
Many of the testers at WETL are old, some

dating back 30 years. Consequently, they do not take advantage of modern technologies, such as fast computers, that can provide a richer suite of information about weapons needed by weapon engineers to gauge their functionality.

One tester instead of three

"Our mission is to design, develop, and deliver the next generation of STE," says Roger Lizut, Manager of the newly formed New Systems Testers Dept. 2956, which was broken off from Dept. 2955. "The new STE will provide improvement in two ways — efficiency and effectiveness. The efficiency is achieved by combining the functionality of similar weapons into an integrated STE. For example, the first new STE will test the W76-0, W76-1, and the W88. By having one tester instead of three, we reduce total cost for operation and maintenance. Effectiveness is realized by incorporating an expanded suite of tests that will provide data to better understand the current, and possibly, future, state of health of the weapon system."

Building new testers starts with a "require-



RICHARD FITAK runs tests with the W80 Command Disable System tester. (Photo by Randy Montoya)

Senior officials of newly restructured NNSA Sandia Site Office tour Sandia



NOT AN EMERGENCY! — During a tour of Sandia's Emergency Operations Center, Mike Knazovich, Manager of Emergency Management Dept. 3115, shows some equipment to Patty Wagner, Deputy Manager of the National Nuclear Security Administration's new Sandia Site Office. Also on the tour was Gary Schmidtke, safety and health team leader. Wagner and SSO colleagues — including Site Manager Karen Boardman — have been making a series of tours of Sandia facilities. Changes to NNSA's field organization structure that went into effect at the end of 2002 created the Sandia Site Office (formerly called the Kirtland Area Office), headquartered in Bldg. 802, for overseeing Sandia (*Lab News*, Jan. 24). The site offices report directly to NNSA headquarters in Washington.

(Photo by Randy Montoya)

ment-gathering phase."

"Engineers from throughout the Labs with different interests — systems engineers, component designers, nuclear safety, quality, human factors, independent surveillance assessment — get together and make up a wish-list of what the tester could do," Oscar says. "Coordinated by a systems evaluation engineer, we then distill that list down to essential requirements that are achievable."

Working from a set of B-series drawings (test requirements) and component specifications, engineers from Departments 2955 and 2956 design testers that will be able to meet the test requirements.

Toward the end of the process they use actual components to make sure the tester works.

Prior to completion of the testers, WETL technicians are brought in to train on the STEs and to work with the design staff in the final debugging and development of operations procedures. After they are checked out, the systems are shipped to the WETL.

Roger notes that the two departments' work is critical.

"Our work in maintaining current testers and implementing new generation testers is important to the Stockpile Stewardship Program," says Roger.

Labs' conservation team curtails water waste

But reductions have slowed; 'Better to find ways to cut back now than wait for a crisis'

By John German

For decades Albuquerqueans believed they were sitting on an ocean of an aquifer.

Not so, according to a decade's worth of hydrology studies.

As one of Albuquerque's major water users, Sandia/New Mexico's facilities and maintenance people for some time have been doing their part to curtail the site's water use.

But it's not easy, says Malynda Aragon (10862) of Sandia's water conservation team.

Chilled water cools laboratory equipment. De-ionized water washes microchip wafers. Toilets flush. Sprinklers gush. And evaporative coolers evaporate.

In streams and trickles, the New Mexico site's water use adds up — to the tune of 450 million gallons in calendar year 2002, Malynda says.

Steps forward and back

Sandia/New Mexico uses some 1.2 million gallons of water every day, on average. That's about 120 gallons for every on-site employee and contractor, every day.

Until last year, the numbers were coming down. Due to conservation efforts undertaken largely by Sandia's Facilities organization and occupants of Bldg. 858 (*Lab News*, June 6, 1997), total annual water use dropped from 465 million gallons in 1995 to 371 million gallons in 2001.

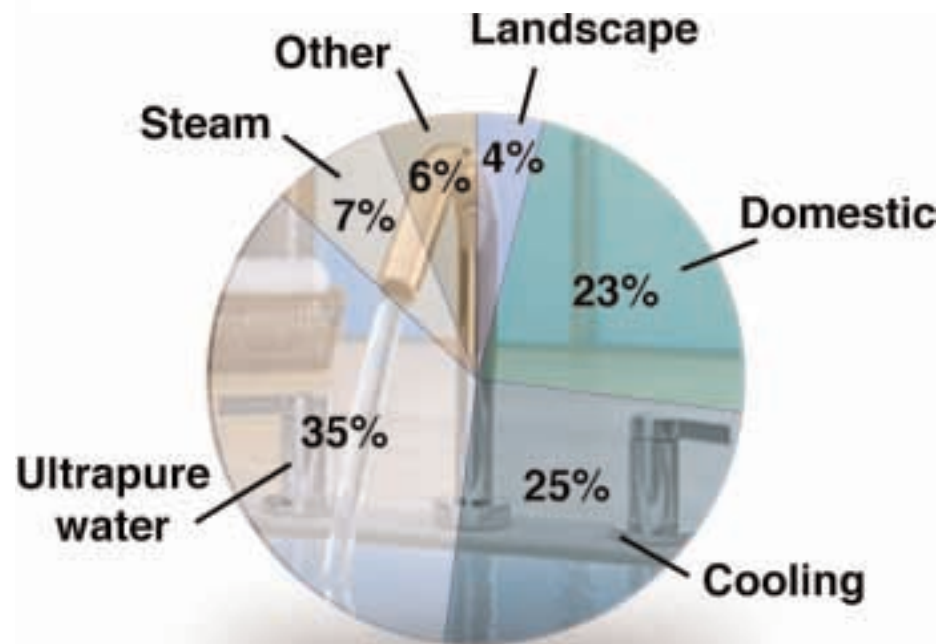
But in 2002, most of those hard-won reductions were lost.

"Last year was a difficult year for water conservation at Sandia," she says.

Don't wait for a crisis

Unusually hot and dry summer weather and the consequent increase in demand for landscape watering and evaporative cooling needs upped the totals. Lots of construction at the site contributed too. And with more than \$1 billion in new construction planned over the next several

2001-2002 Sandia water audit



(Illustration by Janet Carpenter)

WATER USE PROFILE for Sandia/New Mexico, based on an audit of water consumption in 2001 and 2002.

years, reclaiming the 2001 reductions is going to be a challenge, she says.

But there is little choice, she points out.

In 1996 Sandia entered an agreement with Kirtland Air Force Base, the Department of Energy site office, and the City of Albuquerque that each organization would reduce its total water use by 30 percent by 2004, as compared to 1995 figures.

The 2001 tally amounted to a 20 percent savings from the 1995 baseline.

"We were almost there," she says.

But in 2002, Sandia/New Mexico was back to a 3 percent total reduction.

And the going could get tougher, she says.

Sandia has been asked to develop a drought management plan just as the City of Albuquerque and Kirtland have done. If drought conditions

worsen, water use could be suddenly and strictly curtailed. Landscaping might get browner, and vehicles might stay dirtier so that critical lab operations can continue.

"Better to find ways to cut back now than wait for a crisis," says Malynda.

All-out offensive on water waste

All is not lost, however.

Working with several Labs organizations, the Facilities and pollution prevention teams have been quietly laying the groundwork for an all-out offensive on water waste.

New irrigation control systems with modern-day smarts are being installed at the New Mexico site, she says. Already new controllers have been installed in Areas 1 and 4.

Once all the newfangled controllers are installed, a simple weather station will be incorporated into the system that will monitor temperature, wind conditions, and recent precipitation to automatically determine whether a watering cycle should proceed or be skipped.

Computerized valves already installed detect pressure-drops that indicate broken sprinkler heads or

leaks in the system and send radio signals to a central irrigation computer, which alerts maintenance staff of the problem.

Once the system is finalized, it could save as much as 8 million gallons a year, she says.

Reclaiming and recycling

Building maintenance and Facilities are working with laboratory owners to eliminate "once-through" chilled water systems for equipment cooling in favor of closed-loop systems that reuse the water.

The MESA facility now under construction could avoid the use of an additional 117 million gallons a year with an improved de-ionized water plant featuring built-in efficiencies, including cooling towers (evaporative coolers) serving MESA facilities that use reclaimed water gleaned from wafer-cleaning operations in Bldg. 858.

New buildings, and some older buildings, are getting xeriscaped grounds with more granite than grass.

Meters are being installed on many larger buildings so Facilities can get a sense of which buildings are big water users.

And Facilities is considering installing low-flow urinals, toilets, and faucets when old ones need to be replaced.

Look for opportunities

What can you do?

"It's easy to see water waste," says Malynda.

Watch for broken sprinkler heads and malfunctioning or leaky faucets, toilets, and water fountains.

Be on the lookout for puddles that might indicate a leaky or overflowing evaporative cooler or an errantly directed sprinkler.

All water waste concerns can be reported to Telecon+ at 844-4571.

"In other words, be our eyes and ears," says Malynda.

And as minor as it might sound, don't double flush if possible. It adds up to something meaningful, she says.

If you operate a lab, look for opportunities.

"Don't run a system 24/7 if it can be shut down for periods of time, such as overnight," she says.

In Bldg. 860, Facilities and building occupants are working together to install a closed-loop cooling system will cost Sandia \$5,000 and might save 38,000 gallons a year.

"If customers feel they have a process that could be more efficient, let Telecon+ know," says Malynda. "We can be a resource."

Sandia volunteers open young minds to science



SCIENCE FAIR VOLUNTEER — Karen Robinson, a former Sandian, gets the whole picture on how night vision works from Rebecca Schoeny, a fifth grader at Collet Park Elementary. Karen coordinates the school's science fair along with conducting several science programs at the school. (Photo by Randy Montoya)

Sandia bonelike microscaffolding may benefit patients

Robotically created bone nursery could offer new era for surgeons

By Neal Singer

In an operating room in Carle Hospital in Urbana, Ill., on May 7, with scientists from the University of Illinois and Sandia looking on, Dr. Michael Goldwasser, an oral and maxillofacial surgeon, fitted a highly unusual prosthetic device into the mouth of an elderly woman who had lost most of her teeth and along with it, much of the bone of her lower jaw.

The purpose of the fitting was to see whether the implant had been accurately designed, from its overall shape down to inclusion of a nerve groove.

"If it had fit like a sock on a rooster, our method wouldn't have worked," Goldwasser said. Observers said it fit like a glove.

If approved by the FDA for testing, the scaffoldlike structure — a layered mesh stronger than bone, yet porous — would substitute for a portion of the mandible, or lower jaw, until healthy, newly grown bone and blood vessels could weave their way through it.

The ceramic scaffolding would reduce the pain, recovery time, and chances of infection of those needing bone replacements in the jaw, as well as skull, spine, or other bony areas. It is built mainly of hydroxyapatite, a material already approved by FDA for bodily implants, so approval of the new device could be swift. Sandia has applied for a patent.

The woman was reportedly pleased to be part of an experiment that might benefit humanity, because the quality of fit would determine whether scientists and doctors using computer programs, modern communications, and machines a thousand miles from each other could produce a prosthetic device that would fit seamlessly in a patient's sensitive mouth — or, for that matter, skull or spinal vertebrae — without the manufacturers ever seeing the patient.

But because the device's strength and permeability have been studied only *in vitro* (in the lab), the woman had then to endure the standard method of bone replacement, which by comparison seems almost medieval. This involves cutting a several-square-inch piece of bone from her pelvis, which is then power-sawn and drilled into the correct shape right in the operating room, a process that takes about an hour and leaves the patient with the job of healing pelvis as well as mouth.

"Surgeons and patients would love to elimi-

nate both the retrieval and implant preparation processes," says Sandia scientist Joe Cesarano (1843), whose team fashioned the new implant. "This test showed we can make artificial porous implants prior to surgery that will fit perfectly into the damaged region. The reconstructive procedure would then only require attaching the implant and closing the wound."

A short course on bone implants

Ideally, says Goldwasser, a surgeon would use the patient's own bone to minimize rejection by the body after trauma or tumor removal has left an absence of bony architecture in face or skull. Harvesting bone, however, creates new problems. Not only is a new area of patient discomfort opened but the time of operation and amount of anesthetics are increased. These raise the risks of complications in the operation and in healing. "We could use cadaver bones," he says, "but then we face risks of rejection by the host and of possible transfer of disease."

The body may also dispose of the foreign bone prematurely by absorbing it.

"What we want," Goldwasser says, "is a method by which I can see a patient in Illinois, transmit X-ray information to someone who can make a substitute part that would have the porous properties that would allow bone to grow into it, yet be strong enough for normal function. Here, this would mean mastication and appearance."

With the aid of UI bioengineering professor Russ Jamison and graduate and Sandia summer student Jennifer Dellinger, who were



BONDED TO THE BONE — Joe Cesarano displays skull model with mesh-like scaffolding growth medium attached to jawbone. (Photos by Randy Montoya)

experimenting with the growth of bone across porous surfaces and needed a more regularly porous substrate than those found in nature, he learned of a device at Sandia that could do the job.

The Sandia device: Robocasting converts liquefied ceramic to simulated bone

The Sandia patented process called Robocasting, led by Joe Cesarano (1843), was conceived and built to fashion defense components out of ceramics in a process that permitted manufacture of specialty parts in a way no ordinary mold or machining procedure could achieve. Situated on a truck, it could make replacement parts on a battlefield, instead of carrying millions of parts onto a site.

Controlled by a computer program, the machine dispenses liquefied ceramic pastes, like toothpaste squeezed from a tube, to form shapes of varying complexity along a prearranged path.

To create the simulated bone scaffolding, the machine dispensed a hydroxyapatite mixture in a child's Lincoln Log-like arrangement, in cross-laid slivers each about as thick and as far apart as the diameters of 10 human hairs.

"Bone, blood vessels, and collagen love to grow into a structure with pores of that size [500 microns]," says Joe. "The material becomes a hard-tissue scaffold for promoting new bone growth."

The trick in building it, he says, is that "the paste has to be strong enough as it's being laid to set in place without under support."

Sandian John Stuecker (1843) made the paste thicker than normal by increasing the interparticle attractive forces. The changed procedure took about six months to master.

Finally, the scaffolds are embedded in wax and machined to exactly the right shape without splin-



DETAIL shows how mesh-like material could provide a growth medium for new bone.

tering the hydroxyapatite. The wax is subsequently removed.

The University of Illinois connection

But what was that shape, and how was it to be determined?

In part, by the spark of an idea from Goldwasser and the diverse expertise linked together by UI's Russ Jamison.

"One by one, we linked together — even if only electronically at first — the people whom I knew (but unknown to each other) who could bring talent, skill, and passion to the project. None of us working independently could have accomplished the results we have," he says.

Jamison involved computer technologists and

designers Ben Grosser and Janet Sinn-Hanlon at UI's Beckman Institute to encode CAT scan results into a computer program that could be shipped electronically to Sandia, where an interface was created by Michael Saavedra and David Gill (both 14184) to machine the final shape.

Complicating the process was that while a CAT scan could accurately delineate the diseased shape of an existing bone, it could not show what wasn't there: the exact dimensions of what the bone would have looked like, were it healthy. This required the potentially expensive presence of the surgeon Goldwasser working with the computer programmers to create the dimensions of what should be there but wasn't.

"Eventually, if it could be done electronically, it may be a very simple thing and cost-effective," he said.

"There is nothing inherently expensive about either the materials or the process," said Joe.

Using a CAD/CAM method where a surgeon need only sketch the shape needed, a piece might quickly and inexpensively take shape at a remote site.

Benefits include avoidance of longer surgeries, more predictability of outcome, lower health care costs, and reduced risk.

"We'll see if the clinician, the bioresearcher, and the engineer can come up with a method to implement it," Goldwasser said.

At decade mark, Sandia's Ombuds program evolving from dispute resolution to conflict management

By Bill Murphy

As Sandia's Ombuds program — launched in 1992 by then-President Al Narath and modeled on a similar program at Bell Labs — marks more than a decade at the Labs, "it has become an integral part of the culture now," says California ombud Geri Albright. Indeed, the Ombuds program has become so much a part of the Labs' operations, its services so much in demand, that the New Mexico office brought on board a third ombud — Cara Murray — recently to join Wendell Jones and Don Noack. (Geri still operates as the sole ombud in California.)

"Because of the insights we provide to senior management about trends and concerns among employees in the workplace, because we can serve as a sort of early warning system, we're definitely considered a valued corporate asset now," Geri says.

Not that that was always the case. Labs management, to be sure, considered the Ombuds program important right from the beginning. It was started, at least in part, as a response to a US Department of Labor finding that faulted

"It is not a failure of neutrality for me to hold up a mirror and help you see how you might be contributing to your own problem."

the California site for certain workplace-related issues. But many Sandians brought more than a little skepticism to the very idea of an ombuds office.

A range of responses

Wendell Jones, by length of service the senior ombud, remembers those early days: "There wasn't any one response; there was a range of responses," he says. "Some people, clearly, viewed the entire concept as window dressing, pure and simple, without any real value at all — that was one response by some Sandians. Another set of folks — and this is strongly part of our Sandia culture — are folks who view self-sufficiency as the

Don Carson honored by Atomic Museum for 'inspiring vision, sustaining support'



THE EINSTEIN SOCIETY of the National Atomic Museum recently recognized Don Carson, Director of Media Relations and Communications Center 12600, for his inspiring vision and sustaining support of the museum. Don (right) was presented a plaque at the museum's recent Einstein Gala Dinner by Museum Director Jim Walther and President of the Board of Trustees Judith Mead.



SANDIA/NEW MEXICO ombuds Don Noack (left), Wendell Jones, and Cara Murray provide a safe, confidential, independent avenue for dispute resolution and conflict management in the workplace. California ombud Geri Albright is pictured below. The ombuds, in both New Mexico and California, recently marked their 10th year as part of the institutional fabric of Sandia.

highest calling for humans. We have a strong ethic here that we take care of ourselves. It's about individual excellence; it's about testing who are the strongest people.

So some number of people looked at this idea of an ombud program and thought, 'Number one: I take care of myself; I don't ask for help from anybody; I'll never use them;' and, 'Number two: Oh no, another place for the weak whiners to go to try to get somebody to carry their banner for them.'

"Then there were those who might have felt beat up [in the workplace]; they were optimistic. They beat a path to our doors and wanted to get us engaged. Not that their expectations were ones that we could necessarily fulfill, at least not to the extent that they wanted us to 'fix it.'"

The ombuds weren't there to "fix it" in the sense that many people (mis)understood. Again, Wendell explains: "There was this notion that the ombuds were going to be barrier-busters, champions. That's not what the program is about," Wendell says. "People here never experienced what a highly placed neutral was; they were looking for an advocate. In their minds, our role was supposed to be that we were these newly empowered barrier busters with decision-making authority. If we felt there was an injustice going on, we'd just jump in and right the wrong using our power."

In fact, it is the ombuds' neutrality that has been their strength. By being impartial — and by rigorously protecting that impartiality — the ombuds can be accepted by all parties in a dispute as honest brokers.

Says Cara, who's been an ombud for just over a year, "I've come to realize that neutrality is a real leverage point. When a person comes to an ombudsman, they know their story and they know they're right. They just know there couldn't possibly be any other position. When a neutral person sits with them, hears their story, and does not pass judgment and then sits with someone with the opposing view and does not pass judgment, that starts to open the eyes of both individuals to the possibility that there is another view — and that opens the way to a bigger-picture perspective for everyone involved."

Holding up a mirror

Neutrality doesn't mean total aloofness, though, as Wendell is quick to note. "It is not a failure of neutrality for me to hold up a mirror and help you see how you might be contributing to your own problem. The way we look at it, part of

our role as neutrals is to help people understand how they contribute. We will push people to do a little self-reflection and self-examination. And neutrality in that sense means we give the same encouragement to everybody."

The Ombuds program was not created out of whole cloth at Sandia. In fact, it is built on a tried-and-true framework, the so-called Organizational Ombudsman model, that has been in use in corporate America for more than 40 years. Its anchor points, says Wendell, are that it is independent, confidential, and neutral.

"By reporting to [Executive VP] Joan [Woodard] and [President] Paul [Robinson], we're assured independence. [By corporate policy] we're guaranteed a degree of confidentiality that is a bit bigger than any other corporate official can offer. And as for neutrality, we're prohibited from taking a position on any issue or any conflict. That's how we were structured in the beginning, and it has stayed the same over time."

The model has stayed the same, but the program has evolved and matured over time. Ten years ago, the Ombuds program was largely "reactive." As Geri puts it, "When we started, I'd describe what we did as primarily 'dispute resolution.'"

Typical scenario: Two people were in dispute; an ombud would listen to both sides of the story, perhaps ask some pointed questions, perhaps hold up a mirror to one or both parties so they could see the issue from another perspective, and — hopefully — work to a satisfactory resolution.

Ah, the metrics-keepers might ask of the ombuds, do you resolve every conflict? Well, yes. As ombud Don Noack notes, there is always a resolution; it's just that the resolutions aren't always what one might expect or hope for.

"How many and what types of resolutions occur are not our ombuds metrics. Ombuds simply provide a process, an opportunity for people to understand a tough situation better or differently and then create the most and choose the best options possible for those resolutions," says Don.

"This is a workplace, and we support people in negotiating how they work with each other so they're more productive, get along more effectively, and feel more fulfilled at work. That's one form of resolution. Another form might be that these folks, after an honest and well-intentioned attempt to negotiate, find out that there's really not the space to do that. As they understand each other better, they might agree that the energy is not there to try and pull the relationship through a knothole and make it work. In which case one or both might choose to move somewhere else within Sandia if that gives them a better chance of success. That's resolution, too."

Today, the ombuds strive to be proactive. If the ombuds started out as dispute-resolution experts, these days, as often as not, they're involved in conflict management. As a result, Wendell notes, a director or manager today may come to the ombuds for guidance and help before a brewing storm among their staff erupts into thunder and lightning.

"Over the years," says Wendell, "we've offered dispute-resolution classes, and those have certainly been important, but as often as not, it's a director who comes to us and says, 'You know that ugly problem you helped us with two years ago? I have a sense that if we don't get involved in this one early it might end up the same way. So I told my managers they need to talk to you now.' So, there's definitely this self-learning on the part of management that says, 'The ombuds were of limited help at the end of an ugly situation; next time, I'm going to want to get them involved at the beginning.'"

And Wendell likes that. "It's gratifying to be brought in earlier, to get a shot at something that isn't terminal, that isn't hopelessly broken."



GERI ALBRIGHT

Take your first step toward becoming physically fit

It's easy to get a health assessment, or take a class . . . also, Sandia's Physical Fitness Day is May 21

By Iris Aboytes

"You put your right foot in, you put your right foot out, you put your right foot in and you shake it all about. You do the hokey, pokey and your turn yourself around. That's what it's all about."

These words to a children's song are so familiar, yet sometimes so hard to implement. That is how becoming physically fit starts.

As a child figures out which foot and how to shake, so do we as adults try to figure out for ourselves how to make time for, welcome, and enjoy our exercise. In its quest to have all Sandians physically fit, ¡SALUD!, Sandia's wellness program, offers a fitness assessment that involves no blood test and no stepping on a scale. Before the line begins to form, consider what it is all about.

Although posture is not considered a component of fitness in itself, imbalances in muscular strength, endurance, and flexibility can lead to bad posture, and if bad posture is not corrected, chronic pain and incapacitation may be long-term consequences.

Office workers who spend hours each day sitting hunched over their desks will invariably stand in the position that they have adopted while seated, with their heads jutting forward and their thoracic spines overly flexed with shoulder blades permanently protracted — the kyphotic or hunchback stance.

Now think about the alternative. Call ¡SALUD! and get an assessment from a health professional. He or she will recommend measures that make for a healthier you, right now and in the future.

"Health education, health promotion, fitness is all about health advocacy," says Dr. Larry Clevenger (3300), Sandia's Medical Director. "Our collective goal is not simply to help people be disease free; rather, it is to assist people in fully engaging the concept of health as a set of life choices directed to prevention, early diagnosis, and optimal disease management."

¡SALUD! offers different physical fitness

classes. If you played "Simon Says" as a child, then you have the prerequisite to taking these classes. They are designed for every level of activity. You make the decision about how high you want to go with the level of exercise. "Listen to your body," says health professional Deb Menke (3335). "Only you know how high you can go and what exercise is best for you."

Health professionals can attest that someone might attempt an exercise or nutrition program and give up. That same person tries again the next year, month, or week and it is as though the individual has experienced it for the first time. She then becomes a participant and enjoys what she is doing. Why now? Why not when she first tried? "It's a matter of readiness, timing, and motivation," says Callie Butler (3335). "Don't give up, keep trying. It will all come together."

One of the most common exercises health professionals recommend is walking. All you need is a good-fitting pair of shoes. You can become an adventurer as you plot your own path, or you can enjoy the coolness of the trees in the parade grounds. Your imagination can take you to a sandy beach or a tranquil mountain peak. Either of these will lower your blood pressure, make your heart come alive, strengthen your bones, and pretty much make you feel good about yourself.

When was the last time you danced with your sweetie? If you remember correctly, you used to dance quite a mambo, or was it the swing? If the cheek-to-cheek does not appeal to you, does chasing your little one in the park feel like exercise? If neither of these ring a bell, then go back in your mind and remember what it was that you enjoyed when you were younger and do it!

If you need help getting started, just call the ¡SALUD! health professionals at 505-844-HLTH (4584). They are available to help tailor a program designed especially for you. For more about the ¡SALUD! programs go to <http://www.sandia.gov/health/update/index.html>

This year's Health and Fitness Day is Wednesday, May 21. "We believe our health has a lot to do with the choices we make each and every day. What we eat, how we choose to incorporate physical activity into our daily lives, are seemingly small choices that can have a profound impact on our quality of life," says Linda Duffy, Manager of Occupational Health Programs Dept. 3335. "Our job is to provide information and opportunities to our customers, so that the odds of making healthy choices are much greater. We hope people make a healthy choice on May 21 and join us out on Hardin Field."



¡SALUD!
Employee Health and Fitness Day
Wednesday,
May 21
Hardin Field
Bike to Work 6-8 a.m.
11 a.m.-1 p.m.
Cardio Kickboxing
Foam Roller Stretching
Workstation Workout
Walking
Yoga
Clip the event coupon at
<http://www.sandia.gov/health/update/fitday-coupon.html>
Complete three activities and
redeem the stamped
coupon for an event T-shirt

Recent management promotions

New Mexico

Randy Summers from PMTS, Computational Physics and Simulation Frameworks Dept. 9232, to Manager, Computational Physics Research and Development Dept. 9231.

Randy joined Sandia in 1981. He researched and developed nuclear reactor safety software and led the MELCOR severe accident code project. In 1995, he joined Computation, Computers, Information, and Mathematics Center 9200, where he worked on computational physics research and development. He led the ALEGRA and CTH code development teams.

Randy has a BS in nuclear engineering from the University of Oklahoma. He has an MS and a PhD in the same field, both from the University of Wisconsin-Madison.

Mark Allen from PMTS, Licensing and IP Management Dept. 1304, to Manager, Risk and Reliability Analysis Dept. 6413.

Mark came to Sandia from AT&T in 1984 and joined the Design Information Management Department, initially working on CAD/CAE integration. In 1988, he joined the Security System and Technology Center and worked on projects for the US Army and DARPA. In 1991, he joined Sandia's Corporate Business Development and Part-

nerships Department and helped Sandia build its Licensing, Intellectual Property Management, and CRADA programs.

In the spring of 1997, Mark took an 18-month temporary assignment at the CIA, working in both the Office of Research & Development and the Global Strategic Assessments Group. Upon returning to Sandia in the fall of 1998, he returned to Sandia's Partnerships Department and worked on a variety of special projects, including the AMTEX (American Textiles) Partnership, SIPM (Strategic Intellectual Property Management) Program, and Sandia's equity (taking equity positions in venture-capital backed startups licensing Sandia technology) program and policies.

He has a BS in mathematics from the University of New Mexico, an MS in computer science from the University of Wisconsin, and an MBA and PhD in economics, both from the University of New Mexico.

Max Decker from DMST to Manager of Testers and Experimental Ground Stations Dept. 5743.

Max has worked in Monitoring Systems and Technology Center 5700's remote sensing programs since he joined Sandia in 1990. His work has included embedded software programming, program development support, project manage-

ment, team leader, and system engineering. Most recently he worked as system engineer for the HIFES payload and Multi-spectral Thermal Imager satellite projects.

He has a BS in physics and an MS in computer science, both from Brigham Young University.

California

Kym Lee-Young from PMLS, Benefits and Health Services Dept. 8527, to Manager, Logistics and Procurement Dept. 8523.

Before joining Sandia in May 2002, Kym spent approximately seven years in operations and supplier management with the leading semiconductor and ASIC companies. She has worked mainly in material program management working with research and development, planning ASIC products and servers, corporate employee training and development, and procurement. Kym has a BA in liberal arts from California State University/Hayward and an MA in organization management from the University of Phoenix.



RANDY SUMMERS



MARK ALLEN



MAX DECKER



KYM LEE-YOUNG

Mileposts

New Mexico photos by Michelle Fleming
California photos by Bud Pelletier



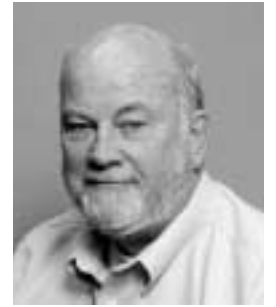
William Paulus
45 5841



Richard Damerow
40 2561



Earnest Roberts
40 1735



Theodore Welton
40 5714



Dale Berg
35 6214



Larry Ellis
35 6502



Hank Witek
35 2910



Grant Bloom
25 2131



Bruce Bowles
25 14409



Glen Gabaldon
25 10268



Robert Gallegos
25 14192



Bob Gregory
25 6531



Patrick Knight
25 5832



Bruce Reavis
25 3121



Larry Bacon
20 15333



Gary Cox
20 9329



Jeffrey Gilkey
20 2338



Paul Nigrey
20 1304



Gregory Poulter
20 1832



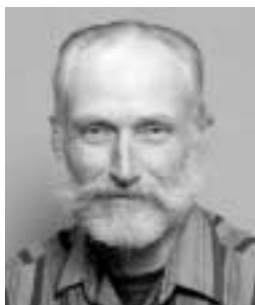
Gilbert Quintana
20 5853



Anthony Sanchez
20 10256



Dan Schmitt
20 5714



Glenn Stone
20 10842



Gary Cable
15 6524



Gordon Chandler
15 1677



Darrell Filkins
15 10511



Stephen Gentry
15 5712



Paul Hooper
15 2111



Debra King
15 14404



Kurt Sorensen
15 2345

Frank Figueroa named one of 50 Most Important Hispanics in Business and Technology

Frank Figueroa, VP for Business Management and Facilities Services 10000 and Sandia's Chief Financial Officer, has been selected as one of the 50 Most Important Hispanics in Business and Technology by *Hispanic Engineer* magazine.

He joins Sandia's Sid Gutierrez (5700), who also was selected as one of the top 50 (*Lab News*, April 18), meaning Sandia this year has two executives on the select list. The magazine calls it "one of the most prestigious honors in the Hispanic professional community."

The magazine says Frank was chosen "based on his progressive leadership responsibilities, achievement in helping to advance access to technology, demonstrated effectiveness in engaging technology within the global market economy, and his contributions to furthering technical literacy within the Hispanic community."

The magazine calls the honor especially significant this year with census data confirming that Hispanics are now the largest minority in the US. Yet while Hispanics make up more than 12 percent of the US population, they are only 4 percent of the science, engineering, and technological work force, wrote *Hispanic Engineer* Editor-in-Chief Tyrone Taborn in his letter of congratulations to Frank. "If young people are to embrace the rewards of education, they need to learn about people like you and see for themselves real examples of success."

"Francisco A. Figueroa joins an elite group who are shaking up America," said the magazine in a news release. "Trailblazers in their own right, they have moved the barriers that traditionally have kept Hispanics out of power and on the fringes of influence."

Frank was born in Del Rio, Texas. His father was a naturalized US citizen from Mexico and his mother was born in Del Rio. He learned from his parents to be proud to be a role model and to outline clear expectations for himself.

He graduated in the top 5 percent of his high school class, then majored in electrical engineering at Texas Tech. After college he was commissioned in the Air Force. He was chief engineer and launch controller for Titan booster and Department of Defense satellite launches at Vandenberg Air Force Base, Calif. He later became USAF Director of Operations at a major DoD satellite operations facility.

After 20 years in the Air Force, Frank joined Martin Marietta Defense Space and Communications in Denver as business/program manager. In 1991 he became business manager for Martin Marietta Ground Systems. He was promoted in 1994 to Vice President and CFO of Lockheed Martin Energy Systems in Oak Ridge, Tenn. He became VP and CFO for Sandia in 1997.



FRANK FIGUEROA

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

MISCELLANEOUS

TODDLER BED, Little Tykes, pink & white, looks like a house, crib mattress size, excellent condition, \$50. Maestas, 836-7336.

SPEAKERS, Infinity RS 5, call for details, \$50. Laiche, 798-1986.

SOFA, w/6 throw pillows, Rowe, purchased at Academy Furniture, excellent condition, paid \$900, asking \$600 OBO. Garcia, 232-2010.

DESK, natural wood, needs some refinishing, 7 drawers, \$23. Locher, 266-2021.

CHAIN SAW, Craftsman, w/carry case, 16-in., 3 yrs. old, extra chain, chain sharpener, oil & gas can, \$70 OBO. Bronkema, 897-4290.

TIMESHARE, 1-bdr., full kitchen, ground floor, beach accessibility, week 42, Carlsbad, Calif., \$5,000. Yip, 294-8124.

METAL CABINET, 6-1/2' x 3' x 2", \$35; coffee table, glass-top, \$60; aluminum chairs, padded, \$10 ea. or 2 for \$16; 19-in. color TV, w/remote, \$35. Garcia, 888-3686.

CAMCORDER, Canon, w/auto zoom, 2 batteries, charger, remote, power cord; VCR, Panasonic, 4-head, both \$200. Hayes, 299-1200.

EVAPORATIVE COOLER PARTS, 3/4-hp, 2-spd. motor, \$15; water pump, \$5. Maloney, 299-4330.

ELLIPTICAL EXERCISE MACHINE, Precor EFX.17, 20 mos. old, excellent condition, paid \$2,100, asking \$1,200 OBO. Thomas, 294-2960.

DISHWASHER, GE, needs water-level switch, all other parts good, free to good home. Stevens, 293-5704.

WINDOWS, insulated glass, 7'-5/8" x 33" x 7/8", tempered, 4 units, \$25 ea. Barnard, 771-4620.

SOLAR AGE PANELS, heated air system, duct work, pre-warmer tank & hot water pump, \$475 OBO. Miller, 897-2515.

DESK, solid oak, kneehole-style, w/2 file & five other drawers, great shape, \$195. Lawson, 828-0555.

WATERBED FRAME, king-size, no mattress, under dresser, headboard, rails, bench, heater, liner, free if you carry. Sears, 821-5606.

VIOLIN, full-size, w/bow, great for beginner, \$225. Hutchinson, 293-8698.

X-BOX, less than 1 yr. old, 2 controllers, 8 games, excellent condition, below value, \$225. Harrigan, 301-0316.

SERVER, Dell PowerEdge 2500 (service code 36153278245), 2 Dell GX450 (code 27719926309), all w/monitors. Kholwadwala, 238-9381.

COFFEE/END TABLE, Ethan Allen Country Crossings, solid maple w/warm finish, new in February, \$600 for both. Alvin, 797-4834.

HORSE, chestnut Arab gelding, 6 yrs. old, 15.1 hands, gentle, friendly, no vices, \$2,800. Johnston, 286-4804.

MUSICAL INSTRUMENTS: Pearl Bell kit, \$200 firm; youth guitar, w/video, \$100. Caton, 281-9420.

COUNTERTOPS, Corian, 2, new, "L"-shaped, paid \$1,800 ea., asking \$950 ea. Baca, 794-7965.

SPRINKLER VALVES, automatic, bronze, 24V, best quality, paid \$65, asking \$25 ea. John, 345-4006.

CAMPER SHELL, fits Chevy S10, blue, fiberglass, sliding screened windows, never used, came w/truck, \$300. Aragon, 301-5515.

RAILROAD TIES, 8 ft., you pick up, 60 @ \$5 ea. Wilcoxon, 296-8295.

SOUTHWEST AIRLINE TICKETS, 2, roundtrip, \$325 ea. Smith, 256-0562.

SEWING MACHINE, antique, treadle, 1885, light wood cabinet, \$250 OBO. Douglas, 281-9843.

CAMERA, Minolta Maxxum 300si, 35mm SLR, 35-70 zoom, 70-210 zoom, excellent condition, Tiltall professional tripod, \$250 all. Ludwick, 296-6447.

TIRES: 4, 32 11.5x15 BFG, all terrains, 50% tread left, \$100 takes all. Jewell, 892-6373.

WOODEN SWING SET, \$25 OBO; wooden play fort, w/slide & monkey bars, \$50 OBO. Cap, 294-2741.

BENEFIT FLEA MARKET, over 200 families, Sat. May 24, 7 a.m.-2 p.m., 21st Century Public Academy, 3100 Menaul. Krivitzky, 254-0280, weekdays.

BARBECUE GRILL, Strutco, propane, needs igniter kit, free; '63 VW Beetle, \$4,325. Vittitoe, 299-9298.

MATTRESS, king-size, waterbed insert, excellent condition, \$75. Padilla, 877-2653.

BUNK BED, pine, w/mattresses, \$100. Sundberg, 294-3231.

TICKETS, 2, Red Hot Chili Peppers, Albuquerque, Sat. June 21, sec 6, row P, 36-37, \$69 ea. Abeyta, 463-5529.

CONTEMPORARY SOFA, excellent condition, \$225; coffee table, solid wood, 2 end tables, \$60 ea., OBO. Hassan, 822-9544.

ROCK, 1+ in., gray/blue, must pick up from front yard, free; treadmill, no electric, \$100. Walters, 857-9767.

WEDDING DRESS, never worn, brand new, size 6, white, lacy, long train, high neckline, \$250. Arviso, 565-0907.

GOLF CLUBS, Spalding, 8 irons, 3 woods; T. Littles Eclipse trainer; Delta 12-in. planer; 2 bikes, 16-in. boy/girl. Hanson, 299-6421.

ALTO SAXOPHONE, Buescher, professional mouthpiece, accessories, case & books, plays great, good condition, \$400 OBO. Kuehne, 281-5446.

UTILITY TRAILER, 4' x 8', plywood covered tilting bed, very new, good shape, \$450. Hesch, 350-9903.

BEDROOM SET, oak, includes dresser, trifold mirror, queen mattress, box spring & mirrored headboard, like new, \$700. Floran, 280-3258, ask for Chris.

REFRIGERATOR, side-by-side, w/ice & water, \$250; 800W microwave, \$20; manual treadmill, \$20; kitchen exhaust hood, \$10. Britanik, 271-2391.

WEIGHT SET, Olympic-style plates & bars, adjustable bench, many accessories, excellent shape, \$150 OBO. Bowles, 804-5863.

TELEVISION, Zenith, 27-in., ~10 yrs. old, w/remote, good condition, will deliver, \$200 OBO. Coombs, 459-6655.

GOLF CLUBS, SS irons, 2-PW, refinished Wilson woods 1,3,4, all 1-in. short, new grips, \$75. Holmes, 292-0898.

COLOR TELEVISION, Magnavox, 19-in., wood grain finish, no remote, not cable ready, \$35. Sanders, 822-1486.

DECORATIVE STONES, ~70, red, 2 x 5 x 17, free, you pick up. Johnston, 292-7277.

STORAGE SHED, wooden, on skids, 16'1 x 10'W x 8'H, good condition, free, you haul. Arqitola, 796-0430.

DINING TABLE, maple, 5' x 3'6", w/leaves, 2-pc. hutch, excellent condition, \$300 set. Kearns, 898-4122.

PET BARRIER, car/SUV, adjustable, \$45; serger cabinet, \$45; glider/rocker, upholstered, green, \$55. Grumblatt, 294-4738.

SOUTHWEST AIRLINE TICKET, roundtrip, anywhere Southwest flies, w/drink coupons, expires July 2003, \$300 OBO. Johnson, 250-3205.

NAVMAN GPS, for Palm m125 & m500 PDAs, in box, used twice, \$200 new, asking, \$95. Cocain, 281-2282.

TIRES, 4, BFGoodrich, LT235/85R16, all-terrain, T/A, KOs, about half tread left, \$60. Beer, 350-3455.

COMPUTER MONITOR, Emachines model eView17, 17-in. color, 1280x1024 resolution, good condition, \$25. Sinton, 828-9672.

MICROWAVE, Whirlpool, 1000W, white, hardly used, \$45; coffee table, mission style, cherry/walnut, checkered top, \$65. Mercier, 294-9334.

SOFTWARE, OS X, Macintosh, \$400 OBO. Montoya, 453-5789.

POND LILIES, small, white, \$5 ea. Lenberg, 266-8988.

HOT TUB, Caldera, seats 5-6 comfortably, dark-green marble finish, includes gazebo, good condition, \$2,300. Jensen, 892-8761.

TWIN BED SET, clean; clarinet; violin, \$65 ea. Rogers, 323-3615.

TRACTOR, '56 Case VAC, 3-point, 4-cyl., w/blade, runs, but needs work, \$1,600 OBO. Weishuhn, 281-6980.

SOFA, Simmons hide-a-bed, \$325; love seat, custom, tuxedo-style, cinnamon velveteen, \$225; chair, back recliner, multicolor, \$175. Reuter, 884-8347.

ELVIS MEMORABILIA: dolls, decanters, plates, bracelets, pinbacks, framed poster, prints, Perth pewter statuette. Steele, 286-0040.

POWER AMP, Mark Levinson 331 monoblock, Class A, 100W, 100-lbs, \$2,300; Honda lawn mower, push mower, rear bag, \$200. Dobbs, 286-7591.

DINING ROOM SET, oak, w/china hutch, table extends ~6-ft., w/6 chairs, 2 w/arms, excellent condition, \$1,195. Polito, 856-6886.

BICYCLE TRAILER, Burley-style, rear-axle attachment, child seat & cargo, \$250; hamster cages, offer. Mitchell, 301-4386.

WOOD-BURNING STOVE, Country Comfort, airtight, heats 1,400 sq. ft., excellent shape, perfect for home or cabin, \$300. Bachicha, 865-5413.

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 Center, 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.**

TRANSPORTATION

'80 TOYOTA, 4-cyl., AC, 4 new tires & windshield, off-road, solid front axle, plywood bed liner, camper, 116K miles, NADA \$3,075, asking \$1,995. Carroll, 898-9488.

'01 HONDA ODYSSEY EX, loaded, 24,400 miles, excellent condition, \$22,900 OBO. Bui, 858-1934, ask for Bill, after 5 p.m.

'93 DODGE W250 PICKUP, regular cab, 4x4, 5-spd., AC, all records, 99K miles, excellent running condition, \$7,000. Teves, 857-0040.

'88 MERCURY GRAND MARQUIS, great transmission, needs repair on AC, \$2,220; exterior French doors, \$60. Brown, 275-3349.

'95 FORD RANGER XL, V6, 3.0, AT, AC, PW, PS, cruise, w/shell, \$4,500. Nation, 298-5605.

'87 FORD F150, 4x4, Lariat, regular cab, long bed, white, very good shape, \$4,300 OBO. Baldonado, 294-2904.

'89 CHEVY R3500, crew cab, dually, white, 454, AT, Alcoa's, loaded, new brakes, 146K miles, nicest around, \$7,200. Seaburn, 797-8715.

'00 DODGE GRAND CARAVAN, hand-capped-accessible, in-floor ramp system, 20K miles, 8-yr.-financing available, \$32,000. Rickett, 344-4340.

'90 NISSAN MAXIMA SE, sedan, 4-dr., AT, AC, sunroof, new tires, \$3,875. Marquez, 228-4200.

'01 CHEVY SUBURBAN LS, 4WD, AT, 37.1K miles, excellent condition, \$26,000 OBO. Burkinshaw, 237-7416 or 833-5183 after 5 p.m.

'97 FORD F250 XLT, 4x4, HD off-road, 7.3L turbo diesel, AT, camper shell, excellent condition, \$19,500. McBride, 298-2273.

'88 SILVERADO, rebuilt Vortec engine, V8, 4x4, 4-spd., extended cab, long bed, bed liner, metallic blue, \$4,900 OBO. Turner, 839-7335.

'98 NAVIGATOR, fully loaded, 70K miles, excellent condition, \$20,000. Thomas, 899-2905.

'85 FORD F150, 4x4, 351, AT, heavy half, new tires, gooseneck hitch, great work truck, \$4,000 OBO. Otero, 865-4018.

'94 CHRYSLER CONCORDE, 3.5L, V6, loaded, leather, ABS, traction control, trip computer, 74K miles, must sell, \$4,995. Jenkins, 897-1475.

'98 HONDA ACCORD LX, 5-spd., 4-dr., PW, PL, AC, tinted, white, warranty, 47K miles, great condition, \$10,700 OBO. Selever, 440-1951.

'93 MAZDA 626 ES, sedan, 4-dr., leather, faded paint, 96K miles, \$3,300. Jones, 856-1837.

'94 CUTLASS CIERA, 4-dr., AC, PW, new tires, tinted windows, AM/FM/cassette, excellent condition, \$2,795. Polito, 298-3859.

'90 S10 PICKUP, 2WD, 4-cyl., reliable, clean, nice aluminum wheels, tan, 154K miles, \$2,000 OBO. Waddoups, 865-7952.

'96 TOYOTA TACOMA, extended cab, 4-cyl., standard, AC, tilt, stereo, rear slider, new tires, 69,900 miles, \$7,000 OBO. Armijo, 861-1279.

'02 SUBARU WRX, 2.0L, 300-hp, Sti parts, Turbo XS II, clean, many parts, records, warranty, \$21,450 OBO. Kuhns, 250-9667.

'95 DODGE INTREPID ES, FWD, AT, power everything, leather, alarm, sunroof, trip computers, AM/FM/CD/cassette, 108K miles, \$3,500. Taganas, 379-3103.

'95 GMC JIMMY SLT, 4-dr., 4.3, new tires, brush bar, <31K miles, excellent condition, \$8,500. Neiswander, 884-7142.

'86 PORSCHE 944, power sunroof, PW, leather, alarm, CD, burgundy, 90K miles on new engine, \$4,000. Putelli, 867-6653.

'93 GMC SUBURBAN, 4WD, AC, ski rack, bike rack included, 188K miles, very clean, \$10,000. Bechmann, 296-1829.

'91 MAZDA MIATA CONVERTIBLE, 5-spd., AC, AM/FM/cassette, 65K original miles, \$5,500. Roeschke, 238-0362.

'01 DODGE RAM 2500 SLT, 4WD, loaded w/extras, 62,500 miles, excellent condition, \$21,000 OBO. Stevens, 280-2815, ask for Frank.

'96 NISSAN SENTRA GXE, 5-spd., AC, PL, PW, white, 85K miles, excellent condition, \$3,500. Knowles, 332-3321.

'93 TOYOTA TERCEL, 2-dr., 4-spd., manual, AC, AM/FM/cassette, new tires, 120K miles, good condition, \$1,500 OBO. Jamison, 899-1540.

RECREATIONAL

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

OVERHEAD CAMPER, w/jacks, good condition, \$500; rubber raft, seats 2, \$40; refrigerator, \$25, good buy. Chavez, 842-6374.

'01 TOWLITE, AC, stove, refrigerator, shower, dual axle, like new, reduced price, \$12,000. Salazar, 865-6142.

'95 VW EUROVAN CAMPER, 2-burner stove, 3-way refrigerator, sink, garage-able, excellent condition, \$10,500. Opichka, 298-5431.

O'DAY DAYSAILER, 17-ft., fiberglass monohull, drop keel, 25-ft. mast, extra sails/rigging, highlander trailer, all excellent condition, \$2,200. Schaub, 821-7242.

'88 YAMAHA YX DIRT BIKE, 490cc, good condition, call for info, \$1,300 OBO. Harbour, 296-6059.

'99 BAYLINER CAPRI, 24-ft., much better than new, half price, call for details. Krein, 899-8312 or tpkrien@aol.com.

'87 ALLEGRO, 31-ft. basement, Freightliner chassis, reliable engine, generator, new tires, airbags, battery, 58K miles, \$11,500. Kanipe, 281-4255.

'82 YAMAHA XV920J VIRAGO, new Jardin straight pipes, 22K miles, runs and looks good, \$1,000 OBO. Ball, 797-4316.

KAYAK, men's Dagger GTX, whitewater, 2002 design, new, never in water, paid \$1,150, asking \$750 OBO. Patrick, 265-4569.

'82 SUZUKI 125GNI, economical, comfortable for beginners, substantial enough for public roads, 4,400 miles, excellent condition, \$900. Carrejo, 883-7621.

'98 WINNEBAGO ADVENTURER, 32-ft., Chevy 454 Vortec engine, levelers, 2-roof AC, generator, awnings, low mileage. Dyer, 821-5324.

'97 HARLEY FXDS DYNA CONV., silver/black, 10.5K miles, excellent condition, \$14,900. Brown, 294-5545, ask for Laurence.

SAILBOAT, '89 Hunter 23, trailer, 8-hp Nissan LS/OB, 110-135 jibs, at Rock Canyon Marina, \$7,500. Harcourt, 268-0218.

'84 HI-LO CAMP TRAILER, 15-ft., sleeps 4, shower, toilet, sink, stove, refrigerator, heater, AC, very good condition, \$2,000. Smith, 890-5388.

'76 EXPLORER RV, 26-ft., 1,000 miles on rebuilt Dodge 454 engine, very nice condition, \$5,500. Beeson, 286-0565.

MINI BIKE, 3.5-hp Tecumseh engine, runs but needs some work, \$120. Stromberg, 299-8591.

'00 KAWASAKI KLR650, factory stock, second owner, tail bag, tank bag, service manuals, 3,500 miles, \$3,500. Hughes, 281-2854.

'87 BAYLINER BASS-STRIKE, Johnson 150 hp, 18-ft., new decks & seats, Motorguide trolling motor, w/Gator mount, fish finder, \$4,000. Weddle, 865-9687.

'02 HONDA CBR600F4i, yellow/black, low miles, great condition, must sell, \$7,500 OBO. Maestas, 298-6293.

'89 JAYCO HUNTER CAB-OVER CAMPER, 9-1/2 ft., AC, heater, refrigerator, oven, stove, bathroom, hydraulic jacks, \$1,850. Thornhill, 298-5641.

'94 AIRSTREAM MH-190, manuals, mileage & service records available, 18,552 miles, excellent condition, \$26,500. Hughes, 299-6674.

'78 GLASTRON, 18-ft., open bow, I/O, includes 470 Mercury motor & Dilly trailer, \$3,295. Drebing, 293-3335.

'98 SPRINGDALE TRAVEL TRAILER, 21-ft., fully contained, AC, w/microwave, like new, \$9,500 OBO. Harrison, 821-9099.

WINDSURFING BOARD, 2 sails, Model Alpha 200AF, for all around fun, \$200. Zirzow, 281-9896.

GYROCOPTER, Brock KB-2, excellent condition, McCullough 90-hp 2-cycle motor, 16 hours, w/trailer, \$8,500. Stanley, 727-320-9650, or stanleys-bythesea@juno.com.

REAL ESTATE

4-BDR. HOME, 1-3/4 baths, 2-car garage, 2,825 sq. ft., huge game room, Comanche/Wyoming, Sandia High School area. Miller, 332-4845.

3-BDR. CONDO, 2-1/2 baths, large greatroom w/fireplace, 1,289 sq. ft., Paradise Hills, immaculate, \$92,000. Wade, 792-0096.

3-BDR. HOME, 2 baths, 2-car garage, ceramic tiles, landscaped, more, near base, \$149,500. Lee, 291-1294.

3-BDR. HOME, 1-3/4 baths, 2-car garage, 1,230 sq. ft., skylights, pitched roof, Lomas/Tramway, \$115,000. Forster, 293-7231.

2-BDR. CONDO, 1-1/2 baths, 2-story, 1,141 sq. ft, Irving/Golf Course, includes all appliances, \$82,500. Lahusen, 463-0422.

WANTED

SUMMER HOUSING, Japanese interns, June to August. Begay, 293-2322.

HOUSE/CAT/PLANT SITTER, June 12-16, Coors/St. Joseph area, near St. Pius High School. Hope, 831-7364.

HOUSE SITTING OR ROOM RENTAL, for summer student, May 18 to July 4, Albuquerque. Gentry, 443-928-4797.

HARMONY PROJECT, community service chorale, alto, tenor & bass positions, rehearsals 7:30 p.m. Mondays, call for audition. Christine, 410-9981, ask for Julie.

MOVING BOXES, moving to first house. Flemming, 268-1840.

SUMMER ROOMMATE, 4-bdr. home, privacy, UNM, Big I area, bike trail & golf course near by, \$600, utilities included. Mattes, 255-2454.

'65-'75 VOLKSWAGEN BUS, good condition. Aragon, 255-8451.

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

USED CAMPING GEAR, donations to needy Boy Scouts by OA Cheyenne Chapter members. Milesosky, 266-5901.

HOTWHEELS, Matchbox, model cars, trucks, motorcycles, built or unbuilt kits, diecast toys, anything automotive-related. Torres, 294-7273.

GOOD HOME, kittens, 6 wks. old, 1 gray & white, 2 yellow & white tabby. Castillo, 323-6270.

LOST & FOUND

LOST: pair of Rayban sunglasses, probably in Bldg. 856, silver frames, 1 nose support missing. Carpenter, 228-3762.

Thunderbird Award winners receive an investment in their future

By Iris Aboytes

Courage, a powerful human spirit, and perseverance, are *riquezas* — “riches” — possessed by this year’s Thunderbird Award winners.

The Thunderbird Awards were created in 1994 by Sandia and Lockheed Martin to reward young people possessing the ability and determination to overcome obstacles. These young people give themselves the opportunity to become tomorrow’s leaders and positive role models to at-risk teenagers. The honor carries with it a \$1,500 check award through the Albuquerque Public Schools Foundation.

Charlotte has been without her mother since she was five years old. She has had to help raise her little sister, who is two years younger. Her life of constant struggle began when her mother left the family. In spite of her aunts living in the vicinity, it was Charlotte who was left to make a home for her and her sister while her father worked nights or was out of town working.

Charlotte was a poor student in middle school but has turned it all around and is currently ranked third in her senior class. Charlotte is working on a four-year plan to attend UNM for her undergraduate degree and then Stanford to get her master’s. Her goal is to become an FBI agent and work as a forensic profiler.

James is a happy-go-lucky student who makes the best of every situation. He always looks at the positive side. James has a rare type of cancer that cannot be treated by radiation or chemotherapy. He is totally deaf in his right ear and his face is not symmetrical. He looks at his own problems with a sense of humor and lets nothing slow him down. He never makes excuses — just perseveres with all his might.

As a freshman he was average (musically). As a senior he has become the top-rated jazz guitarist in New Mexico and one of the top horn players in the state. James carries a 3.5 grade point average.



THUNDERBIRD AWARD WINNER Charlotte, left, from Bernalillo High School, is a role model for her sister Elizabeth, also a BHS student. (Photo by Randy Montoya)

He plans on going to college and majoring in music education or history. He would like to become a teacher and work with kids.

Charles’ struggles in life are mainly attributed to family poverty. His father is totally disabled and is unemployable. His mother stayed home to care for his father. Unfortunately, the situation got even worse when Charles’ mother was diagnosed with breast cancer. Even with the stress and worry, Charles was able to maintain focus in school.

After transferring to evening school from Rio Grande High School, he is in the top 40 percent of his graduating class. Charles is already taking classes at TVI. His ambition is to get a two-year degree in the culinary arts.

These are but three examples of the 21 young people from 11 Albuquerque public high schools, five alternative schools, five outlying schools (Bernalillo, Rio Rancho, Los Lunas, Belen, and Moriarty), and two in Carlsbad who recently received Thunderbird Awards.

“Every year I am amazed at the courage and perseverance of these young people,” says Mike DeWitte, Manager of Corporate Outreach Dept. 12650. “It is a privilege to present Thunderbird Awards to them as both a recognition of their accomplishments and an investment in their future.”

Sandia’s Environmental Restoration Project earns DOE Atlanta Cup award

Top DOE environmental management officials have recognized Sandia’s Environmental Restoration (ER) Project as one of the best of all 26 clean-up efforts under way in the complex.

At an April summit meeting in Mound, Ohio, attended by representatives of 26 DOE environmental sites under the National Focus Team, the team awarded Sandia the Atlanta Cup for its effort. Mike Gardipe, DOE environmental engineer at the Albuquerque Service Center, made presentations on the Sandia project and accepted the award for Sandia, calling it an “incredible accomplishment” for the Sandia group. The work recognized by the award was much more important than the cup itself, he says.

While the Sandia ER team performed well in a recent effort to revise its budget, the award represented “much, much more,” says Gardipe. Top EM officials at headquarters have been involved in a “top to bottom” assessment of all sites over the past few months. “This involves how your project addresses issues, works toward quicker completion, finds ways to be more cost-effective, and is more inventive,” Gardipe says.

During the past few months, the ER team, led by Fran Nimick, Manager of ER Project Office 6132, found a number of substantive ways to reduce costs without allowing the project end date to slip. “That work to define reductions, plan them, and get them into a new baseline on schedule was commendable in and of itself, says Fran. “But the recognition from DOE goes beyond that.”

The award was more remarkable given a headquarters’ preference for the use of incentive-based contracts at cleanup sites. These contracts are generally viewed as giving DOE more “clout” in dealing with contractors. Sandia’s team, with more than 100 Sandians and contractors working together, does not use an incentive contract.

“We have argued that not all contractors are the same, and Sandia has shown us they can do the work cost effectively,” says Gardipe. “For us to win the cup goes in the face of all that [incentive-based contracting] and opens everyone’s eyes up. “We will continue to challenge the team, but to date Sandia has met the challenges. — Will Keener

Former CIA deputy director Thomas Twetten talks May 21 on future of intelligence

Sandians are invited next week to hear Thomas Twetten, former deputy director of operations for the US Central Intelligence Agency (CIA), discuss “The Future of U.S. Intelligence in the Aftermath of 9/11.” Twetten will answer questions following his talk.

The live talk takes place 9:30-11 a.m. MDT Wednesday, May 21, in the CNSAC Auditorium, Bldg. 810, Rm. C117. It will be video linked live to Sandia/California’s CRF Auditorium (8:30-10 a.m. PDT). Twetten’s talk is sponsored by Sandia’s Homeland Security Office.

The former intelligence leader acknowledges that mistakes have been made in U.S. intelligence services and that reforms are needed, but says no evidence has turned up that the services could have predicted the 9/11 attacks.

Twetten served 38 years in the CIA’s clandestine services, rising through the ranks to become the deputy director for operations, commanding the nation’s overseas clandestine intelligence collection. He spent most of his career in Africa, South Asia, and the Middle East.

In 1983, he began five years of leadership in the CIA Near East Division. He worked closely with Washington congressional and executive branch leaders and with other governments to forge a united front in support of the Afghan people. With sacrifices by the Afghans, this effort led to the Soviet decision to leave Afghanistan, ending nearly 10 years of occupation.

In recognition of his leadership, Director of Central Intelligence William Webster picked him to become the deputy of the clandestine service. For nearly six years, he was deputy or the chief of CIA clandestine operations.

During this period, Twetten redirected intelligence resources in support of new democracies in Eastern Europe, supported a coalition of allied forces in the Gulf War, and put new emphasis on fighting international narcotics trafficking, terrorism, and the proliferation of weapons of mass destruction. He was twice awarded the Distinguished Intelligence Medal, the CIA’s highest honor. Twetten retired in 1995.

Retiree picnic set for May 22

The 40th annual get-together (and 33rd picnic) for retirees will be held Thursday, May 22, at the Coronado Club. Members of Large Staff will join retirees and their spouses there.

Time: 11:30 a.m. – 2:30 p.m.

Security guards will direct you to parking areas.

This is an adult picnic and children are not allowed. One guest permitted per retiree.

Further information: Frances Whinery (3341), 844-5677.

Take Note

Retiring and not seen in *Lab News* pictures: **Rupert Byers** (9328), 40 years; **Martin O’Malley** (15333), 26 years; **Thomas Widney** (5324), 23 years; and **Ron Guidotti** (2522), 23 years.

Congratulations

To Delilah (10205) and Adrian Armijo, a son, Adrian Diego, April 11.

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