

Labs-developed blast-suppression foam would be put to use in future chem, bio, or dirty bomb scare

Labs team wants to equip nation's first-responders with right set of foam tools to react to a range of scenarios

By John German

If US authorities ever found in our midst a ticking terrorist bomb laced with chemical, biological, or radiological materials, the on-scene response team likely would reach for a foam developed at Sandia years ago.

The foam, studied and tested extensively at Sandia and the Nevada Test Site in the 1980s to support federal emergency response operations, is similar to common firefighting foams but is specially designed to trap radioactive particles thrown into it by the detonation of a so-called "dirty bomb."

The foam also suppresses an explosive blast by absorbing the force of the shock wave within its chemically engineered bubble structure.

A bonus feature of the Sandia foam — one that might come in handy in today's terror-conscious world — is its ability to envelop chemical or biological aerosols in its aqueous bubble structure, thereby thwarting a terrorist's plan to sicken or kill many people or render an area unusable by dispersing contaminants over a wide area, says Bill Rhodes (5817), manager of the Sandia team evaluating the foam for such applications.

Chem-bio-rad containment

Typically a tent or bag would be placed over a suspect bomb and then filled with the foam. Then, if the device detonated, observers would hear a thump and see the tent collapse into a wet mass,

rather than hearing a loud bang and seeing the flash, smoke, and pressure wave that would accompany an unmitigated bomb.

The foam is available to first-responders from ChemGuard, Inc. (Mansfield, Texas) under the brand name Aqueous Foam Concentrate-380 (AFC-380).

Few agencies at the local and state level are aware of it, however, says Paul Johnson (5817).

That means it might not be within the reach of the on-scene teams that would need to deal with a suspect device in a timely manner, before it goes off.

It might be days, certainly hours, before federal responders could get to the scene. And if they don't have the foam concentrate, tents, and spraying equipment with them, the chances of foaming the device in a timely fashion are diminishingly small, he says.

But much can be done at Sandia to put the foam into the hands of first-responders all over the country, says Bill.

The foam-generation equipment needs to be optimized to the needs of
(Continued on page 4)



BLAST FOAM — Weldon Teague, left, and John Fulton (both 5817) fill up a room with a blast-mitigation and chem-bio-rad-containment foam a Sandia team wants to put into the hands of first-responders.
(Photo by Randy Montoya)

VP Lynn Jones answers questions, touts IES successes

VP 7000 Lynn Jones talks about the Integrated Enabling Services (IES) Strategic Services Unit, which she heads, in Rod Geer's article on pages 6 and 7.



Sandia ready to support UN inspection teams to Iraq if called upon

Sandia is compiling a list of engineers and scientists who are willing and able to serve as technical advisors to the United Nations inspection teams now preparing to enter Iraq in search of evidence of Saddam Hussein's programs to develop weapons of mass destruction (WMD).

"The Labs is ready to respond to the NNSA and the US government in any way we can to support this inspection regime," says Dave Nokes, VP for National Security and Arms Control Div. 5000. "If we're called upon, we'll be ready."

Sandia has supported UN inspection teams before, providing technical expertise and equipment and on-the-ground technical advisors to forward teams in Iraq during the early and mid 1990s (*Lab News*, Sept. 20).

The United Nations Security Council last Friday accepted a resolution submitted by the United States requiring Iraq to allow the resumption of UN inspections or face severe consequences.

As in the past, says Dave, Sandia is ready to provide assistance from Sandia's home locations or by sending technical advisors to Washington or Iraq.

During the last month, Labs officials have been surveying Sandians with a variety of skills and asking for volunteers to support the inspection.

(Continued on page 5)

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Concurrent Design and Manufacturing program completes its second year of failure-free weapon component deliveries

By Bill Murphy

Here's a little thought experiment for you. Imagine you're doing something innocuous, routine, humdrum. Let's say you're mowing your lawn. Not too many things to remember in order to get it right:

- Make sure there's gas in the mower. Check.
- Don't strain your back when you pull the starter rope. Check.
- Go back and forth in straight lines; keep oil in the machine; empty the clippings bag before it gets too full and chokes off the engine; watch your toes! Check, check, check, and check.

Now go out there and mow that lawn. But here's the catch: mow it without making any mistakes. Make sure everything — and that means *everything* — is done to perfection (your significant other just hates it when you clip the grass an eighth of an inch too short). You did it? No mistakes. Are you sure? Okay. Now do it again. And again. And again. In fact, do it 9,000 times —

without ever making the slightest little error.

All of a sudden that simple job of mowing the lawn begins to sound a bit daunting.

All of which serves to highlight the scope of the achievement of the Product Realization Teams (PRTs) in Sandia's Concurrent Design and Manufacturing program. The PRTs just celebrated the completion of a second year of failure-free delivery of thousands of components for the nation's nuclear weapons stockpile.

And we're not just talking about mowing the lawn here; we're talking about the zero-defect delivery of some of the most complex devices ever contrived. That's an impressive achievement in itself; what's even more significant, says CDM Program Manager Cesar Lombana (14011), is that the program's zero-failure-rate delivery of components has saved the nuclear weapons complex — that is, the taxpayers — millions of dollars. You see, every failure in a delivered component launches a Significant Finding Investigations, or SFI. As the SFIs

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Sandians help shape the future of fusion energy by participation in international study at Snowmass 4

TVC to open technology commercialization offices in California, Nevada, Northern New Mexico 8

Some 200 Sandia volunteers pitch in to help 'Make a Difference' to Albuquerque-area community 9



What's What

A crew from the television show *America's Most Wanted* was in Albuquerque Oct. 25 to film Chris Cherry (5932) and some of his cohorts from the FBI and the Albuquerque Police Department bomb squad demonstrating what they all do for a living – blow things up and keep things from blowing up.

With cameras rolling, APD bomb tech Mike Heister approached one of the demo bombs in his protective suit. The charge had some real oomph, and it produced a fireball and concussion that blasted Mike over onto his back and ignited a spot of fire on his fire-proof suit. The producer loved it, shouting to the cameraman to “keep rolling, keep rolling!”

Mike said he didn't know about the fire on his suit until hearing his colleagues yelling at him to roll. But all's well that ends well, and it all ended well, with *America's Most Wanted* getting some unexpectedly good dramatic footage.

Watch here or the *Sandia Daily News* for an announcement of the show's run date – probably in December.

* * *

Technical staff member Regina Lee Hunter (6804) flashed the memory of her humanities courses at her colleagues recently, winning an office debate about the meaning of “NB,” which announces the little dose of humor at the end of the external news section of the *Sandia Daily News*.

She called to ask about it and when told it means *nota bene* – Latin for “mark well,” and “used to call attention to something important” (according to Mr. Merriam Webster) – uttered a triumphant little *nota bene* of her own. With clear disdain, she said her colleagues had suggested some more pedestrian meanings, including News Brief, Nugget from Bartlett's, Next to the Bottom, and – my own favorite – No Brainer.

Regina didn't say it, but I bet she was gloating: “It's good to be queen!”

* * *

Until you've worked in a news organization, you can't really know about the fringe players all around us. Here's an unedited example – with the name removed – that popped into the e-mailbox recently.

“I . . . have been gravely injured by Nuclear Research being conducted by the US Department of Energy.

“A Silicon Neuron Device was implanted into my persons without my knowledge of consent and is being used to torture me by mean of Satellite Ionizing Radiation energy.

“Burn are throught out all parts of my body, this Research is being done on me every day.

“Microwave Satellite icon induced pain and torture.

“I would like for someone at your facility to contact me.

“Because in the future I will be contacting the FBI.”

We passed. Better the FBI than us.

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

Ted Gold to brief Sandians on Defense Science Board study on countering terrorism

Sandians are invited to a briefing on results of a Defense Science Board study on special operations and joint forces in support of countering terrorism. This will be one of the first opportunities anywhere to hear the study recommendations.

The talk Monday, Nov. 20, 9:30 a.m. MST in the Steve Schiff Auditorium (with live video feed to Sandia/California, Bldg. 904 auditorium) is by study task force co-chairman Ted Gold, director of the Joint Advanced Warfighting Program at the Institute for Defense Analyses and himself a former Sandian.

The talk is hosted by Executive VP Joan Woodard. California Laboratory VP 9000 Mim John was a study participant.

The Defense Science Board established the task force in January at the request of the Pentagon. The Pentagon asked the task force to provide insight and recommendations on how DoD can strengthen its capabilities to conduct military operations against asymmetric adversaries. These types of operations are exemplified by the recent campaign in Afghanistan and include, but are not limited to, military operations against terrorist organizations and states harboring and abetting

At a glance

Who:

Ted Gold, Joint Advanced Warfighting Program, Institute for Defense Analyses

What:

Briefing on counterterrorism findings

When:

Monday, Nov. 20, 9:30 a.m. MST

Where:

Steve Schiff Auditorium

California, too

Live video to Sandia/CA, Bldg. 904 Aud.

terrorist cells and military operations to destroy or deny use of weapons of mass destruction. The Pentagon asked the task force to identify new or enhanced operational capabilities that would enable more effective and efficient conduct of these types of missions.

Gold is a member of the Defense Science Board, DoD's Threat Reduction Advisory Committee, and for a four-year term was chairman of DoD's Ballistic Missile Defense Advisory Committee. His recent DSB activities include chairing studies of coalition warfare, rapid force projection, modeling and simulation, the transnational chemical and biological warfare threat, and cruise and ballistic missile defenses. He is also a former deputy assistant to the Secretary of Defense responsible for chemical warfare deterrence and biological warfare defense programs.

Gold had a 20-year career here at Sandia before his government service. He held a variety of technical and management positions, most with the safety, security, reliability, and control of nuclear weapons. He also designed weapon survivability, safing, and fuzing systems, led many system analysis efforts, did research in weapon effects, managed a computing and programming center, and developed energy technologies.

For further information contact Pat Eicker, director of DoD Center 15100. Pat says in addition to giving his talk, Gold will hear from a range of Sandians about the Labs' strategic direction concerning the global war on terror.

Take Note

Retiring and not seen in *Lab News* pictures: Lawrence Guttke (10843), 15 years; Danny Miles (2953), 18 years.

Congratulations

To Cathy Ottinger (6415) and David Farnum, married in Jonesborough, Tenn., Sept. 19.

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Ken Frazier, Editor 505/844-6210

Bill Murphy, Writer 505/845-0845

Chris Burroughs, Writer 505/844-0948

Randy Montoya, Photographer 505/844-5605

Nancy Garcia, California site contact 925/294-2932

Contributors: Janet Carpenter (844-7841), John German (844-5199), Neal Singer (845-7078), Larry Perrine (845-8511), Howard Kercheval (columnist, 844-7842), Will Keener (844-1690), Iris Aboytes (Milepost photos, 844-2282), Rod Geer (844-6601), Mike Lanigan (844-2297), Michelle Fleming (Ads, 844-4902)

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LOCKHEED MARTIN

The next Lab News

Note to all Sandians: The Nov. 29 *Lab News* will be printed on its normal schedule, but because of the four-day Thanksgiving break (the Labs is closed Friday, Nov. 29, for Energy Conservation Day), copies will be distributed to you on the following Monday (Dec. 2).

Employee death

Patricia Sandoval of Industrial Hygiene and Safety Programs Dept. 3122 died Oct. 31.



PATRICIA SANDOVAL

She was 46 years old.

Pat began her Sandia career in 1974 as a student intern and became a full-time employee in 1979. She managed the Explosives Information System and was a key member of the explosives safety team.

Pat is survived by her son, Lyonel Candelaria.

Recent Patents

Paul Galambos (1769), Frank Peter (2614), Kevin Zavadil (1832), and Richard Givler (9114): Micromachined Fluid Ejector Systems and Methods Having Improved Response Characteristics.

Jill Glass (1843), Scott Nicolaysen (2613), and Edwin Beauchamp (1843): Strengthening and Design of a Controlled Fracture Prestressed Glass Rupture Disk and Interface.

LOCKHEED MARTIN

Public policy dean deems war on terrorism 'incomplete'

Michael Nacht gives Truman lecture, sees long path ahead countering terrorism

By Nancy Garcia

In Sandia/California's second Truman distinguished lecture, "The War on Terrorism – How are We Doing?" Michael Nacht, dean of the University of California, Berkeley's school of public policy, drove home the point that the future, to coin a phrase, isn't what it used to be.

Nacht serves with Division 8000 VP Mim John on the Defense Department's Threat Reduction Advisory Committee, chairing its counter-terrorism panel. From 1994–97, he was assistant director for strategic and Eurasian affairs in the US Arms Control and Disarmament Agency.

Overall, Nacht said, the United States is "passing (the war on terrorism), but not acing the course, and the course is incomplete." He doesn't envision any eventual announcement of victory, but a 30- to 40-year period of coping with both traditional and



PROGRESS REPORT — Dean Michael Nacht of the University of California, Berkeley's Richard & Rhoda Goldman School of Public Policy receives a plaque and congratulations from Division 8000 VP Mim John following delivery of the site's second talk in Sandia's new Truman Distinguished Lecture series.

(Photo by Randy Wong)

"Adaptive learning" in the game of conflict means that our adversaries are sure to keep us guessing as we prepare to face threats. "We really are in terra incognita," Nacht said. "We can't possibly anticipate all the threats."

But one clue that might have been better noticed at the time was the inspirational message to the Muslim world that Ayatollah Khomeini sent by overthrowing the US-installed Shah of Iran. Nacht said Khomeini simply recorded audiotapes "while sitting on a rug in Paris" and roused the people to rise up against a ruler who was viewed as "the pinnacle of US lackey-ism" — a ruler who never even made a symbolic religious pilgrimage during his reign because "he preferred to ski St. Moritz than to go to Mecca."

Nacht termed the newly proposed federal agency for homeland defense "understandable and well-intentioned." Abroad, he believes the country rates a "B-minus" in the war on terrorism — chiefly because the terrorist leaders have eluded us.

"Historians have asked how many people would have been saved if Hitler had been

killed," he said, "and the answer is, 'a lot.' People are not interchangeable." Osama bin Laden was a symbolic, charismatic leader who excelled at franchising terrorism, Nacht pointed out. "All he had was some money and some ideas, and look what he's done."

There has been some question lately whether a post-Saddam Iraq should undergo an imposition of democracy similar to that in Japan after World War II. Nacht feels the president would exercise his congressional mandate to use force in Iraq whether or not the United Nations had passed a resolution in support of that.

But he still thinks a build-up and full-scale war would put US citizens at home and abroad in harm's way by tending to incite a strong desire for action against us.

Overall, he sees destructive power broadening in range and targets changing in nature. "Weapons of mass destruction include 'apples, oranges, and kumquats' (nuclear, chemical, and biological)," he said, and have evolved to include weapons of mass effect as well, such as cyberattacks on information infrastructures.

If a would-be enemy such as Saddam were caching chemical or biological weapons under civilian structures — say, schools, mosques, and hospitals — then how to destroy those shielded caches without unleashing that destructive power becomes a question in itself.

At the same time, Nacht said, the value of nuclear weapons as a deterrent and their utility to destroy necessary targets are both in question now. "Ideas like deterrence, I believe, are highly suspect in this world." And on the intelligence front, generations of experts have specialized in the former Soviet Union, but the corollary has not yet taken place with respect to newer threats.

In the final analysis, Nacht called for US support for a new curriculum and cramming to complete the counterterrorism course successfully. Looking to unrest in the Muslim world in particular, he said, "We don't know zilch, and we'd better learn."

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novel threats. "I don't think we're going to know when it's over," he said. "It'll just peter out."

The nature of threats has shifted with the end of the Cold War to our country being viewed as both a "hyper-power" and consequently, a "hyper-target." In addition to traditional adversaries, there are regional problems in which we are involving ourselves, and the non-state problem, be it al Qaeda or attacks that raise suspicions of terrorism.

"The number of concerns we must consider has hugely mushroomed and it makes it a very difficult challenge for us," he said. "These questions are hard. Einstein said, 'I don't do politics, it's too hard . . . None of us is clairvoyant, and I'm certainly not.'"

Nacht does not expect the past to be repeated, but instead, anticipates "the unexpected is most likely to occur . . . whatever we thought was the most probable is the least likely."

Genomics pioneer Craig Venter visits Sandia, gives Truman lecture about excitement of mapping the human genome

Brandishing some of the maverick ways that led to one of the most important scientific milestones of recent times — mapping the human genome — Craig Venter told a Sandia audience Tuesday of how he and his team beat the odds.

What made it all possible was fast computing that only emerged during the late 1990s, bold and innovative sequencing techniques, and personal determination that he and his team could crack the code in a few years.

His talk was part of the Truman Distinguished Lecture Series that periodically brings distinguished scientists and engineers to the Labs to talk about their work. Sandia President Paul Robinson introduced Venter, and Michael Cieslak, Director of Materials and Process Science Center 1800, presented him with the Truman lecture medal.

Venter is the former president of Celera Genomics who has recently formed two not-for-profit organizations to study the ethics and social implications of genetic technology. He was president of Celera when Sandia executed a cooperative research and development agreement (CRADA) with the company in 2001.

Besides giving the lecture, Venter spent all day Tuesday at Sandia learning about the Labs' science and technology programs. Giving him presentations were VP 1000 Al Romig, Grant Heffelfinger (1802), David Womble (9214), Rob Leland (9220), George Davidson (9200), Don Cook (1900), Susan Brozik (1744), Dave Haaland (1812), Neal Shinn (1114), George Bachand (1141), and Glenn Kubiak (8705).

Venter and several hundred colleagues mapped the human genome by doing something most scientists didn't think was possible — shred DNA, sequence each of the millions of tiny fragments, and reassemble the sequences in their proper order. Within a year the Celera Genomics Sequencing

Team sequenced the human genome (2.9 billion base pairs) and published the work (in the Feb. 16, 2001, *Science*) simultaneously with the parallel effort by the public International Human Gene Mapping Consortium, which published its results at the same time in *Nature*.

It all happened faster than almost anyone had believed possible.

Although mapping the human genome required dealing with a genome size of 3 billion base pairs and reading 27 million sequences, the projects showed that we humans have fewer genes — 26,000 to 39,000 — than most scientists had expected. This makes simplistic associations of one gene, one protein, one function far from reality, Venter said. Many mysteries remain, and how genes are expressed or turned on or off is crucial. He said genes only represent a small fraction of the genetic code, and the gene density varies tremendously throughout the genetic code.

"We're in the early descriptive phase of biology," Venter said. "I argue that 99 percent of the discoveries in biology are yet to be made."

The human genome contains powerful evidence of our past evolution, he said. Some genes can now be tracked back to a billion years ago in earlier organisms. Whole blocks of genes simply moved around during millions of years of evolution, he said.

Venter also spoke of the need for ever more powerful computational capabilities.

We have 250 terabytes of genomic data now, he said, and it's growing exponentially. For proteomics — mapping proteins in the same way — we will need petabyte capabilities, he said, and for future personalized medicine making full use of genomic information, exabyte databases will be needed. We have no way of achieving that now.



CRAIG VENTER, with circular map of the human genome above him, gives the Truman Distinguished Lecture. (Photo by Bill Doty)

Sandians help shape the future of fusion energy

By Chris Burroughs

Several Sandians, including Mike Ulrickson (6428) and Craig Olson (1600), have helped shape the future of fusion energy and extended Sandia's Z machine into the fusion energy area.

They were among 280 scientists from the United States and the international fusion community who attended the second Snowmass Fusion Summer Study in Snowmass, Colo., this summer (July 8-19, 2002), assessing the major next steps in fusion energy research.

The report resulting from the meeting will be studied by the DOE Fusion Energy Science Advisory Committee (FESAC) to form a strategy to go forward with fusion projects for the US. The report will also be reviewed by a committee of the National Academy of Sciences. A final strategy will be recommended by both entities to the DOE Office of Science early next year — in time to influence the 2004 fiscal year.

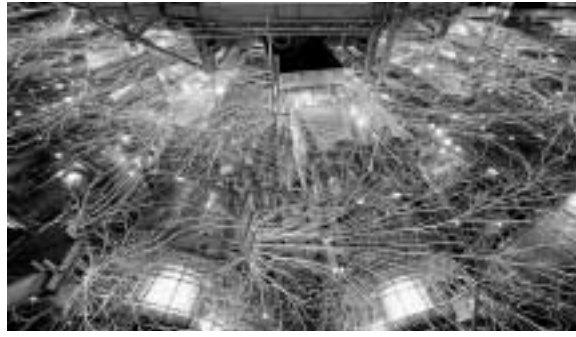
"The result might mean a change in direction for our department or a thrust in a different area," says Mike, Manager of Fusion & Structural Technology Dept. 6428. "The future of fusion hinges on what the DOE Office of Science decides."

"The clear presence of the z-pinch approach to fusion energy at Snowmass marks the potential start of a significant effort to extend the impressive single-shot results of Z to a repetitive concept for fusion energy," says Craig, Scientific Advisor for Pulsed Power Sciences Center 1600.

Sandia has been working on fusion since the 1960s. Mike's department currently has about 10 people devoted to studying plasma-facing components for magnetic confinement fusion research. The Pulsed Power Center, under Jeff Quintenz, Director, and Keith Matzen, Level II Manager of 1670, currently has about 150 people devoted to high-energy density physics and inertial confinement fusion research on Z for the weapons program.

During the Snowmass conference, the two major approaches to fusion energy were discussed. One is magnetic fusion energy in which a large-volume plasma of low density deuterium/tritium fuel is heated to more than 100 million degrees and held in place by powerful magnetic fields. Mike, together with Dennis Youchison (6428), participated in the magnetic fusion discussions.

The other approach is inertial confinement fusion energy, in which small fuel capsules containing a small volume of high-density deuterium/tritium fuel are heated and compressed rapidly by intense energy pulses, and held together briefly by their own inertia. Craig, along with Keith Matzen (1600), Roger Vesey (1674), Steve Slutz (1674), Tom Mehlhorn (1674), Charles Morrow (64150), and Tina Tanaka (6428), participated in the inertial fusion energy discussions.



SANDIA'S Z machine will play a role in the future course of fusion research. (Photo by Randy Montoya)

Magnetic fusion energy

Some 230 people participated in the magnetic fusion discussions, and advocates of three different burning plasma devices presented their cases. A burning plasma is one in which the energetic alpha particles produced in the deuterium/tritium fusion reactions dominate the plasma behavior. The three devices are all tokamaks — the Russian name given to a particular magnetic field configuration shaped like a donut. The three devices are:

- **IGNITOR** (developed in Italy): The smallest and the one that could achieve burning plasma fastest. It offers the opportunity for the early study of nonstationary burning plasmas aiming at ignition.

- **FIRE** (developed at Princeton Plasma Physics Laboratory): It has the capability of longer pulses. It would allow the study of burning plasma physics in conventional and advanced tokamak configurations under quasi-stationary conditions and would contribute to plasma technology.

- **ITER** (developed internationally): The largest device is capable of achieving steady-state conditions and integrates burning plasma physics and technology.

"We weren't permitted to say which type we liked best or which one we would endorse, but ITER has the greatest capabilities and is the boldest step," says Mike.

ITER would cost \$5 billion or more and would be built outside the US, possibly in France, Japan, or Canada. ITER has been supported by a comprehensive research and development program.

Sandia researchers worked on ITER between 1992 and 1998, and since 1998 have been working on FIRE.

The scientists attending the meeting concluded that the study of burning plasmas is at the frontier of magnetic fusion energy science and that a burning plasma device must be the next step.

Inertial fusion energy

Some 50 people participated in the inertial fusion energy discussions. Inertial fusion energy already has a burning plasma experiment under

construction — the National Ignition Facility (NIF) at LLNL. NIF, a multibillion-dollar facility, has been under construction for several years and is scheduled to show ignition and modest energy gain in exploding fusion targets during the next decade. However, NIF uses glass-laser technology that can be used only in single-shot experiments. For fusion energy, the process must occur repetitively, and three major approaches to achieving this repetitive operation were discussed at Snowmass.

Just as in the magnetic fusion sessions, advocates of the three different approaches to inertial fusion energy explained the development paths needed for each approach to achieve fusion energy. Particular emphasis was on the next large step, an Integrated Research Experiment, for each approach. The three approaches are:

- **Laser inertial fusion energy:** Uses a repetitive, efficient, laser driver that injects laser beams onto a small fusion target at the center of a "dry-wall" chamber. The targets explode, and the energetic neutrons produced deposit their energy in a liquid blanket just outside the first wall of the chamber. This energy would then be used to drive turbines to produce electricity. For this approach, new lasers are being developed, but they are presently at very low energies.

- **Heavy-ion fusion:** Uses multiple high-energy heavy-ion beams, which are aimed and focused onto a small fusion target at the center of a "thick-liquid wall" chamber. The target explodes, and the energetic neutrons produced deposit their energy in the thick-liquid wall inside the structural chamber wall. For this approach, high-current heavy-ion accelerators are being developed, but they are presently at low energies and low currents.

- **Z-pinch inertial fusion energy:** Uses a pulsed-power very-high-current pulse to drive a multiwire z-pinch to produce a very intense X-ray source that in turn compresses and heats a small fusion target. A Recyclable Transmission Line (RTL) couples the accelerator to the fusion target, which is at the center of a thick-liquid wall chamber. The RTL is vaporized, and is recycled, so a new one is inserted for each shot. For this approach, fusion targets are already being developed on the Z accelerator at Sandia at very high current levels (20 megaamperes), and it is expected that high yield fusion targets will work with currents of about 60 MA.

Scientists attending the inertial fusion energy portion of the summer study concluded that all three approaches to fusion energy show promise and should be explored further for the next several years.

"Since z-pinches are the 'new player' in fusion energy, it was pleasing to essentially hear universally at this Snowmass conference that 'lasers, heavy ions, and z-pinches' are the options for inertial fusion energy," says Craig.

Foam

(Continued from page 1)

first-responders — local firefighters, mostly, on limited budgets and with little time for training. Thus, the gear needs to be inexpensive and easy to use.

And lightweight, adds Bill. Firefighters might need to pump the foam up to a high elevation to fill a large tent, climb a ladder with a tank strapped on, or fill a third-story room from outside. Extremely lightweight pumps, hoses, and containers are needed.

"It doesn't sound like tough science, but you need lightweight materials and reliable designs," he says.

Also, while the foam's blast-suppression and rad-trapping effects are well characterized, Sandia has yet to study adequately its ability to capture chemical and biological particles dispersed in a blast. Variations in foam structure, densities, and neutralizing additives might be considered for response to a broader range of suppression needs.

"Although we know it's effective, its ability to trap these aerosols is not fully tested," he says. "We'd like to quantify these capabilities."

Moreover, a wider variety of terrorist bomb-scene scenarios needs to be studied, and a suite of tents, cones, bags, and other coverings created



BLAST TESTS without foam mitigation (top row) and with foam mitigation (bottom row) show differing dispersals.

and evaluated for each situation.

Currently, a limited number of configurations are available — essentially a few sizes of tents and cones for different-sized explosive charges, and a fillable bag for hanging over the sides of buildings to keep particles from escaping through windows.

DOE and the FBI have sponsored evaluation

of the foam in recent years, although the project currently is idle.

Sandia team members include Fred Harper (5817), Marvin Larsen (5854), Paul, and Bill. Others who have made major contributions to the foam's development include primary developer Pete Rand (ret.), Ed Graeber (ret.), Kermit Goettsche (ret.), and Billy Marshall (2552).

CDM Program

(Continued from page 1)

mount up, so do the costs. It's neither cheap nor easy to find out why a component designed to function flawlessly for years in the most lethal machines ever built has malfunctioned. So, the fewer SFLs the better.

The story of the CDM effort is a story of hard-won success. As Cesar notes, DOE's decision in 1991 to close down some of its weapons production capability and fold those functions into Sandia (among other facilities) marked a full-circle return for the Labs.

In its early days, when it was still Z Division of Los Alamos Scientific Laboratory, Sandia had a significant manufacturing role. The stockpile was small then, and the manufacturing was not unlike producing unique one-off pieces for very specialized devices.

After the Soviet Union developed its bomb and launched the Cold War arms race that occupied the subsequent 40 years, it became clear to US policy makers that an independent production capability — able to industrialize the weapons-making process — was going to be needed. The weapons industrial base grew to a scale capable of producing thousands of increasingly complex devices each year.

Now fast-forward to the other end of the Cold War era and the accompanying treaty-based agreements to limit and then reduce the size of the stockpile. DOE decides to ramp down the complex; under the new stockpile management paradigm the manufacturing requirements of a smaller stockpile would be transferred to Sandia and other facilities. (Los Alamos, Pantex, Savannah River, and Kansas City also received new manufacturing/product delivery roles.)

There was some skepticism in the complex as to whether the new approach would work. And early experience seemed to demonstrate that there was indeed, much to be skeptical about. Mistakes were made; the learning curve was steep. And you can be sure that there were a few old hands in the complex who were saying to themselves, "I told you so."

But realistically, DOE had no choice; there was no going back. The complex had to be scaled back, but without losing any functionality.

Sandia made a critical personnel choice at about this time: it brought in as manufacturing VP Lenny Martinez, a manufacturing top gun who earned his stripes at Digital Equipment Corporation when DEC was still a high-flyer in the high-tech sector.

Lenny knew manufacturing; studied it and savored its principles the way chess legend Gary Kasparov studies books on arcane end game strategy. He understood the special requirements of a high-consequence, low-volume, high-complexity manufacturing capability and launched steps to implement the capability at Sandia.

He hired key staff — eventually including such leaders as Kathleen McCaughey, John Sayre, Cesar Lombana, and others — established proven quality principles, and worked to ingrain them into the Labs' manufacturing culture. He set expectations higher than even DOE's own demanding requirements and rewarded success. Success came, but not without a fight.

Iraq teams

(Continued from page 1)

tions, he says.

Because of the thought given in recent years to the possible use of chemical, biological, and nuclear weapons by terrorist groups, the scientific community, including the NNSA labs, are better equipped today to detect weapons of mass destruction and their "footprints" than they were before, says Dave.

"We have more types of sensors that detect more types of signals, and with more equipment that is tailored to use in the field," he says.

— John German

"We are going to be the best production program in the complex; we're going to do things no one has ever done before. We will not accept product failures."

Under the CDM approach, product realization teams work with (mostly) private vendors to produce Sandia-designed components to DOE/NNSA-established standards.

While not all of Sandia-supplied components fit the CDM model — notably neutron generators, and certain microelectronic components, which are actually manufactured at Sandia — most Sandia supplied components in the modern

stockpile are produced through a design-to-buy approach, which is the heart of the CDM program.

There are 17 PRTs involved in Sandia's Concurrent Design and Manufacturing effort, with responsibility for weapons components ranging from actuators, thermal and special batteries, to igniters, gas generators, capacitors, magnetics, frequency devices, and electronic components. These components, many previously manufactured by now-closed production agencies, are now concurrently designed and manufactured in a partnership among Sandia, manufacturers across the nation, and the remaining production agencies at Kansas City, Pantex, Savannah River, and Los Alamos. A separate product realization team coordinates the process for each component family. Since 1992, when the program started, the PRTs have overseen the delivery of more than 40,000 components.

Before it found ultimate success, however, the Sandia manufacturing effort hit its share of snags.

"There wasn't a year between 1992 and 2000 where we didn't have failures," says Cesar. "There are just so many ways that something can go wrong in components of the complexity we're dealing with." Because of persistent problems, there appeared to be a chance that Sandia could lose its CDM manufacturing capability entirely — to Kansas City or some other facility.

"As a program," Cesar says, "we simply weren't as good as we could be."

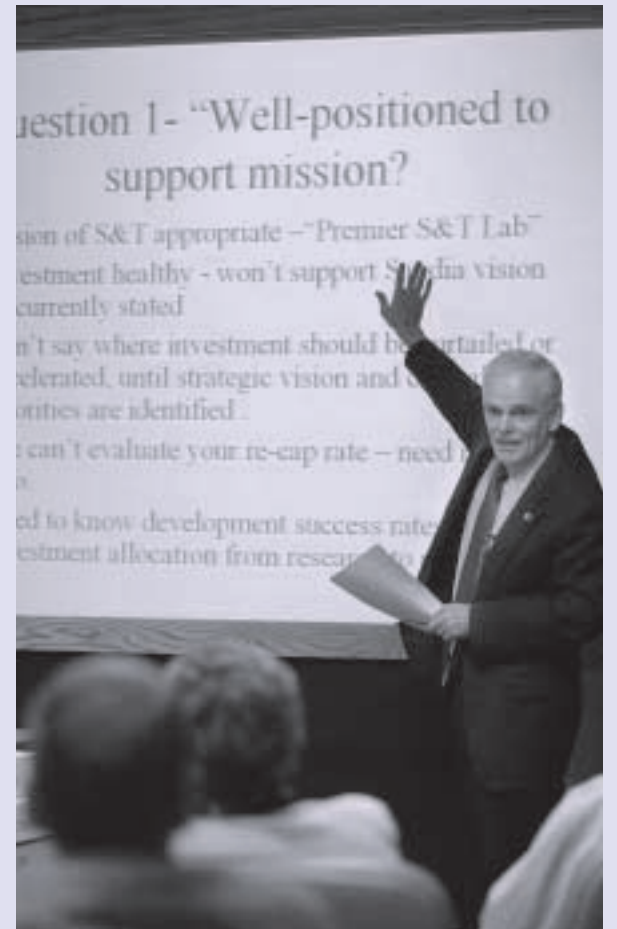
With its very future on the line, he says, a commitment was made in the CDM program and among the PRTs: "We are going to be the best production program in the complex; we're going to do things no one has ever done before. We will not accept product failures."

With the completion of a second year of failure-free delivery, the product realization teams have delivered on that commitment they made to themselves — and to Sandia.

Sandia Science and Technology External Advisory Board meets for first time



THE FIRST-EVER MEETING of the newly formed Sandia Science and Technology External Advisory Board brought together a blue-chip delegation of advisors last week to review Sandia's strengths and weaknesses in S&T research and development. Organizations represented on the Board include Lockheed Martin, Motorola, NIST, the Potomac Foundation, Caltech, Harvard, the T.J. Watson Research Center (IBM), Mellon Institute, LANL, Radiance Technologies, UNM, and DOE/NNSA. After two full days of briefings on Sandia's S&T efforts, STEAB co-chairman Mal O'Neill, VP and Chief Technology Officer with Lockheed Martin (in photo at right) offered a Board perspective on Sandia's work. "You have a lot to be proud of," he said. "Your science and technology program is world class. We [STEAB] just want to make it better." In photo above, Labs President C. Paul Robinson, left, and Science and Technology VP Al Romig make notes during O'Neill's comments. The STEAB has agreed to meet again in approximately six months. (Photos by Randy Montoya)



VP Lynn Jones: IES, getting things done easier, the 20 percent solution, and Sandia's vision for the future

By Rod Geer

This is the third in a series of *Sandia Lab News* articles that focus on Sandia's operational units, discussing current programs, challenges, and plans. When the series was conceived, Sandia had four Strategic Business Units and two Strategic Management Units. Since that time the Integrated Enabling Services (IES) Strategic Services Unit (SSU) has been established with VP Lynn Jones (7000) at its helm.

The IES SSU folds together all IES activities in a manner much as the SBUs and SMUs congregate and organize the Labs' "mission work." (See *Lab News*, July 12, page 6, or <http://www-irn.sandia.gov/organization/sbu/sbu.htm> and <http://www-irn.sandia.gov/organization/smu/smu.htm>.)

The SSU consists of about 3,000 Sandians from organizations such as human resources, ethics and audit, information systems, the library, legal, finance, procurement and logistics, benefits and health services, facilities, safety and security, and public relations.

The IES SSU web page can be found at <http://www-irn.sandia.gov/IES>.

Here is an interview with Lynn Jones:

Lab News: Lots of people at Sandia feel immersed in the IES initiative, but others, we hear, feel as if they're in the dark about what's going on.



"So this effort is all about redefining how the IES SSU partners with internal Sandia mission customers to provide integrated and aligned services that enable them to be more agile in responding to Sandia's customers, to greatly enhance their productivity, to significantly decrease the hassle of getting things done around here, and to, without question, be worth the cost. We call these our Big Four Critical Success Factors."

vision for Sandia. Within the infrastructure part of Sandia, we regularly ask ourselves how we can help assure that our nation gets the best-value technical solutions to national and global security problems for each dollar spent. Our strategic planning shows the future will require much more rapid response to a quickly changing set of challenges. That means we must assure our lab is agile enough to anticipate and respond quickly to those most challenging problems, just as we — Sandia as a whole and those of us in the IES organizations — were asked to respond to post-9/11 and anti-

tomers to provide integrated and aligned services that enable them to be more agile in responding to Sandia's customers, to greatly enhance their productivity, to significantly decrease the hassle of getting things done around here, and to, without question, be worth the cost. We call these our Big Four Critical Success Factors.

LN: What do you expect this will mean to individual Sandians no matter their job or position?

Lynn: Finding out how to get things done will be a lot easier. Getting things done will have much less hassle associated with it, the total cost of services and support will likely decrease, and some services that people have had in the past may change or disappear as a result of our balancing overall needs of the Labs.

LN: IES has brought with it myriad new terms. Please explain the major ones.

Lynn: The fundamental change with IES is that we have put in place a Program Matrix Structure for determining what support and services we will provide, for sizing them, and for funding them. The IESO is the program office. We have five IES directors who serve as Program Leaders and a slew of hard-working managers who serve as Work Package Owners. We refer to the IES line organizations as Home Base Organizations. These include 3000, 10000, 11000, and 12100, 12600, 12800, the Integrated Information Services centers 9300, 9500, 9600, and in California 8500 and 8900.

Mission Workers generally is shorthand for people who work directly on products and projects that go out the Sandia door to an external customer.

LN: There also have been many Valuation Panel meetings. What are they all about?

Lynn: One of the most useful and time-consuming actions we've taken has been our Valuation Process. Here each of our five IES programs — called Future Work and Capabilities; Physical Assets; Human Resources, Information, and Business Systems; Sustaining Environment; and California Site — formed a Valuation Panel of customer VPs, directors, and managers. Their job: review services included in their program and provide feedback on the relative value of the various services, on requests work package owners made for funding increases or changes in their services, and on the quality of these services today from the perspective of the panel.

LN: Under this new way of doing business who will really dole out budget dollars to IES organizations?

Lynn: The program leaders will fund services with my final approval.

LN: What about these High-Leverage Projects that have been mentioned around the Labs?

Lynn: The IES is bringing about change in three time scales. Implementation of the new program structure and processes will be completed by Sept. 30, 2003, but our customers will feel the impact of these changes over the next few years. We are implementing six High-Leverage Projects that address vital customer needs, with a completion timeframe of months. Our customers should experience the improvements during FY03. These are Customer/Service Interface, Infrastructure Response Team, Get/Reapply Space, Get/Reapply

(Continued on next page)



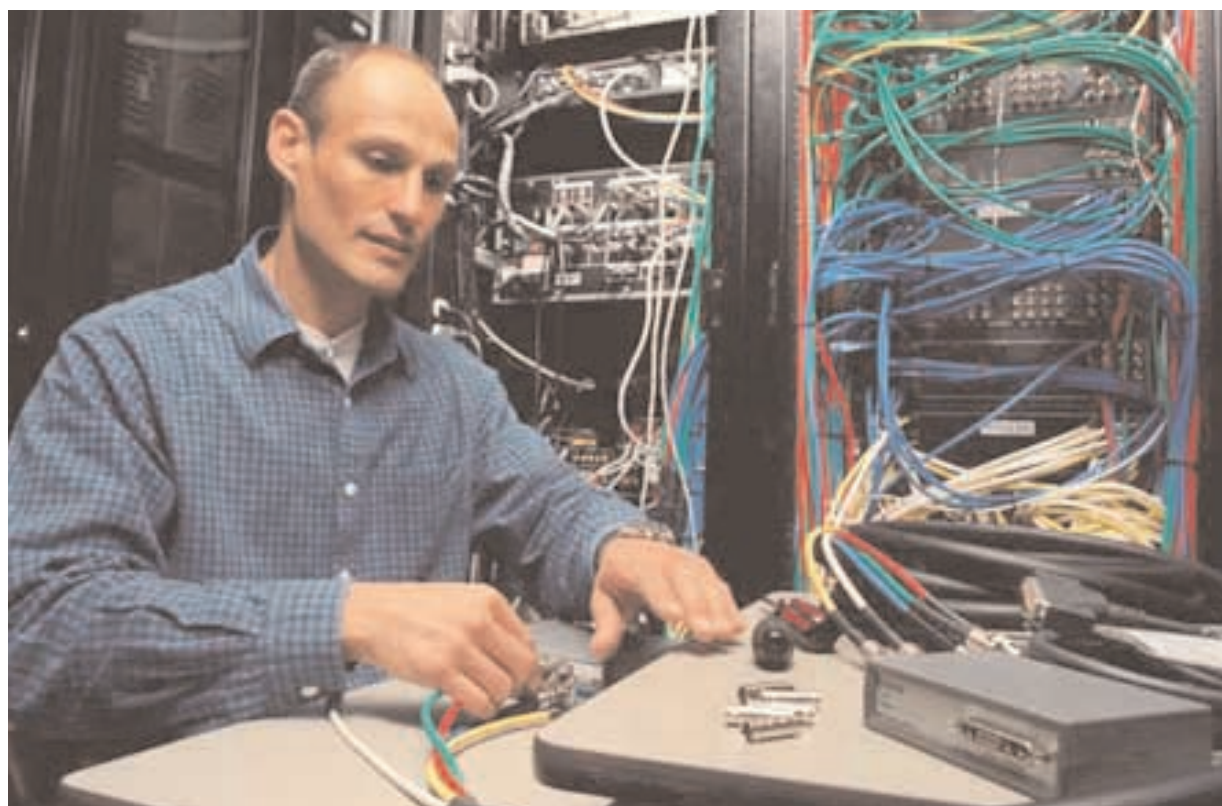
"The Labs spends taxpayer dollars to produce high-quality technical solutions to the biggest national and global security problems. A 20 percent increase in productivity means that the nation and our customers at the Labs would get 20 percent more of those high-quality technological solutions for the dollars spent here."

How do you explain to the uninitiated what this effort is all about?

Lynn Jones: This effort is tied directly to our

terrorism initiatives.

So this effort is all about redefining how the IES SSU partners with internal Sandia mission cus-



KEEPING THE VDC FIT — Tony De Sousa of Visualization and Data Services Dept. 8963 carefully wires video cables at Sandia/California's Visualization Design Center in the basement of Bldg. 912. The center's large super-high-definition video screen is a key and versatile tool for California-based weapons workers during, for instance, regular design reviews and briefings to important external customers. (See the Sept. 20 *Lab News*, page 3, for more about the VDC.)



WE DELIVER — Robert Walkney of Receiving and Mail Services Dept. 10263, a component of Integrated Enabling Services, sorts packages at the Labs' shipping and receiving facility. At the time this photo was taken, Robert had just celebrated his 23rd year with Shipping and Receiving. (Photo by Randy Montoya)

Lynn Jones

(Continued from preceding page)

People, Integrated Moves, and Governance Changes. And we are working "sore thumbs" issues that come up and need attention now. These are usually addressed in days or weeks.

LN: Who really decided to start the IES initiative, which is a little more than a year out of the gate?

Lynn: Back in the fall of 2000, Frank Figueroa, Don Blanton, Pace VanDevender, Pat Smith, Les Shephard, and I [all then members of Sandia's Infrastructure Council] decided that if we were to give the Labs all that it needed to succeed we had to change how we manage our infrastructure. We commissioned a team — the ISES or Infrastructure System Engineering Study team — to look at Sandia's infrastructure from a system engineering perspective. In August 2001 that team made its recommendations for change to the Labs' Infrastructure Council. After some additional meetings, particularly some that included all infrastructure directors, Joan Woodard and Paul Robinson agreed with the recommendations and we were launched Oct. 1, 2001.

LN: How much does the IES initiative cost?

Lynn: That answer comes in two parts. First, the budget for the IES initiative was \$1.8 million in FY02. In FY03, it's up to \$2 million. In FY04, it should decrease by about 25 percent due to moving from start-up to operational status. This covers the Division 7000 individuals within the IESO, matrixed support, and consulting. It's also important to acknowledge costs, as you've asked, for the

"I sleep very well! But that doesn't mean there aren't some big hurdles ahead. The main one is to be darned sure changes really add value for customers and service providers alike. It is so easy to get a cool idea and get very bureaucratic about implementing it and look up somewhere down the line to find a monster!"

entire IES initiative. That's estimated at \$5 million for each fiscal year, FY02 and FY03. That should begin to drop in FY04, as well. This estimate includes what I've already spelled out plus the associated effort put in by individuals who have responsibilities within the IES SSU. That means people like program leaders, work package owners, customer focus groups and the like.

LN: As the IES initiative leadership team steps back to assess first-year accomplishments, what most pleases you?

Lynn: What gives me a lot of joy is to see IES folks increasingly integrate services like IIS [Integrated Information Services] and Facilities, and what's been going on to create an integrated moves process. And then there's the new integrated travel process.

LN: What parts of this effort still keep you up at night with worry?

Lynn: I sleep very well! But that doesn't mean there aren't some big hurdles ahead. The main one is to be darned sure changes really add value for customers and service providers alike. It is so easy to get a cool idea and get very bureaucratic about implementing it and look up somewhere down the line to find a monster! I also worry that the superb men and women of the IES may perceive that all this change means what they've been doing for years is no good. That is just not true. We have been doing a very fine job in providing support and services to our Lab. But

we believe that by working as an integrated strategic services unit, we'll be able to do even more and be even more valuable.

What we're really doing is structuring IES for the future. That will position us to be even more valuable to the Labs.

LN: Isn't the IES initiative really a budget-cutting exercise all dressed up in fancy words?

Lynn: This is not an initiative whose purpose is to cut budgets! It's an initiative designed to play an important role in the corporate goal to improve Labs' productivity by 20 percent over the next five years. It is fair to say that some IES-organization budgets will end up shrinking, others will remain the same, and others will increase. We will stop providing some services and will provide new ones, all in our effort to align the services we provide with those that are of highest value to our mission customers.

The Valuation Process is one big tool to help sort out the highest-value services. Our program structure focuses on understanding the total cost of providing those highest-value services and then using industry comparisons, benchmarking, standards, and other tools to assure ourselves that Sandia is paying no more than it should for each of these enabling services.

LN: Explain a bit more about what you mean by increasing Labs productivity by 20 percent.

Lynn: The Labs spends taxpayer dollars to produce high-quality technical solutions to the biggest national and global security problems. A 20 percent increase in productivity means that the nation and our customers at the Labs would get 20 percent more of those high-quality technological solutions for the dollars spent here.

LN: So, if this IES implementation is a two-year effort does that mean Organization 7000 as it's structured and populated today will fold up shop sometime next year?

Lynn: When this new approach to providing Sandia's infrastructure was recommended back in August of 2001, we also recommended that I spend full time in the beginning. IESO will not fold up shop on Oct. 1, 2003, but I do expect to have taken on some line management responsibility in addition to my program leadership of the IES SSU.

LN: And finally, if you could have your Sandia colleagues remember just three things after reading this, what would they be?

Lynn: I'd go to our overall vision statement: One Team Delivering the Whole Job. To me this means one Sandia team — mission and services — working in real partnership, delivering — all of us with a focus on our national security mission — the whole job, which means not being satisfied with OK service, but reaching for the highest value we can provide to our nation, and within the IES, teaming to deliver the highest value we can provide to our mission customers.



SECURITY POLICE OFFICERS Jessica Montoya and Carlos Gonzales (both 3114), part of Sandia's Integrated Enabling Services team, pitch in to help provide post-9/11 base security on Kirtland Air Force Base. (Photo by Randy Montoya)

TVC to open technology commercialization offices in California, Nevada, Northern New Mexico

NNSA contract provides funding to extend successful Lockheed Martin-backed model to other labs

By Bill Murphy

From now on, when someone refers to Technology Ventures Corporation as a "model program" of its kind, they won't be talking in purely figurative terms.

TVC is a model program — literally, officially. With a new \$1.5 million contract — in the form of a cooperative research and development agreement (CRADA) — from the National Nuclear Security Agency to adopt its business model to NNSA facilities in Los Alamos, N.M., the Nevada Test Site (near Las Vegas, Nev.), and Livermore, Calif., TVC moves to the very front of the class among organizations designed to move technologies from national laboratories to the marketplace.

The CRADA stems from efforts that originated with Sen. Pete Domenici, R-N.M., who has long recognized the substantial and unique role

"For the first year, we spent our time defining how we would make this model work. And subsequently, I think it's fair to say that our success has exceeded people's expectations."

that TVC has played in advancing the New Mexico economy over the past decade.

TVC model has worked well

"I want to thank Sen. Domenici for leading the effort for this funding," says TVC president Sherman McCorkle. "I look forward to the opportunity to augment the great work going on at these other facilities to create private sector jobs."

In addition to Domenici's leadership role in helping secure the funding, key support was offered by Sen. Jeff Bingaman, D-N.M., Sen. Harry Reid, D-Nev., Rep. Ellen Tauscher, D-Calif., and Rep. Heather Wilson, R-N.M.

Lockheed Martin established TVC in 1993 as a nonprofit subsidiary. Its role was to foster technology commercialization by working with potential entrepreneurs from publicly funded research labs, helping them secure venture capital for their technology-based start-ups. According to McCorkle, the TVC proposal was one of the key distinguishing elements, along with its plan for increasing diversity opportunities in the Labs, that tipped the balance in Lockheed Martin's favor when DOE awarded it the contract to manage Sandia after a 44-year run by AT&T.

The \$1.5 million award from NNSA (with the



JOBS CHAMPS — Technology Ventures Corporation President Sherman McCorkle, right, and TVC business operations chief Randy Wilson discuss logistics for the 2003 TVC Equity Capital Symposium during a strategy session in McCorkle's office at the Lockheed Martin building, across the street from the "new" Albuquerque Isotopes stadium.

potential for up to \$3 million in FY03, pending Congressional approval) is explicit recognition that the TVC model has worked — and worked well. With its infusion of new funds, TVC will open staffed offices in Los Alamos, Livermore, and Las Vegas to become more proactive in identifying and moving to market the labs' most commercially viable technologies. McCorkle emphasizes that the new TVC offices will augment — and not compete with — existing commercialization efforts at the NNSA labs.

"We don't get into licensing of IP [intellectual property], we don't get into royalty payments or patents. We help technology-based businesses secure equity capital," McCorkle says. "Our function will be complementary to existing commercialization efforts at the other labs, just as it has been at Sandia."

Raising capital is heart of TVC success

The TVC model is simple, really. And, as McCorkle says, it hasn't changed "one iota" since TVC's inception more than nine years ago: You identify the most promising technology-based business start-ups you can find. (A lot of the entrepreneurs TVC has helped over the years come out of Sandia, but its doors are open to any promising technology start-up.) You work with entrepreneurs, coach them in the ways of the marketplace, help them refine their business model, assist with market research, and, finally, help them find and secure risk investment.

That last — securing investors — is the real heart of TVC and the point and purpose of its sig-

nature event, the annual New Mexico Equity Capital Symposium. That's the forum that gives entrepreneurs a platform for making their "sales pitch" to an audience of professional equity investors from across the nation.

Based on the proven model, TVC since its inception has played an instrumental role in the formation of more than 5,600 jobs in the region. It has helped attract some \$330 million in equity capital investment. Even more telling — and potentially significant for New Mexico's economy — is the fact that, as McCorkle notes, when TVC was formed there wasn't a single venture capital firm operating in New Mexico. Now there are 11 such firms with staffed offices in the state. And that means there's a better-than-ever chance that innovative New Mexico start-ups will attract the attention of the folks whose business it is to identify and invest in speculative business propositions.

"One of the unique things about TVC, and one of the key reasons for our success," McCorkle says, "if that we believe that we have two customers — the entrepreneur and the investor. And we act on that belief. Since we're not-for-profit, both our customers know that we're not trying to sell them anything except success."

Lockheed Martin deserves huge credit

"This was a new concept when we started," says TVC Business Operations Director Randy Wilson, who has been with TVC side-by-side with McCorkle since the beginning. "For the first year, we spent our time defining how we would make this model work. And subsequently, I think it's fair to say that our success has exceeded people's expectations. I'm proud of what we've accomplished. The next challenge is to create the same success at the other NNSA labs. I look forward to it."

Says Domenici: "Since TVC's establishment I've been impressed with their ability to generate results. Their focus on small business start-ups and equity funding is an important addition to traditional partnerships involving larger corporations."

McCorkle, a New Mexico native who has a long track record of involvement in economic development in the state, offers high praise for Lockheed Martin.

"Of course, I'm personally gratified to be involved in a successful enterprise," he says. "But more to the point, I'm thrilled as a New Mexican that we're helping bring high-quality jobs to the state and helping to diversify the economic base."

"I give all the credit to Lockheed Martin. It had the vision to see that this concept could succeed and the willingness to back it up with financial support. I understand that none of this would have happened if it weren't for Lockheed Martin."

Attention entrepreneurs and wannabes — TVC is looking for tech-based start-ups

TVC is seeking business investment opportunities that involve the formation or expansion of a technology-based business in New Mexico, for presentation at TVC's 10th annual New Mexico Equity Capital Symposium. Preference will be given to those opportunities that are based on technology developed or with one of the national laboratories or research universities in New Mexico. For consideration, each opportunity must be described in a complete business plan.

TVC's 10th annual Equity Capital Symposium will be held May 14-15, 2003, in Albuquerque. If your business plan is selected, you will have an opportunity to present your business case at this Symposium. Two business plans must be submitted to TVC on or before

Jan. 6, 2003.

Technology Ventures Corporation is a tax exempt, non-profit, private foundation founded by Lockheed Martin Corporation to facilitate the commercialization of technology developed in New Mexico. To date, TVC has helped form 47 new businesses, create over 5,400 jobs, and secure \$330 million in funding for its client companies. For further information on submitting business plans, contact Technology Ventures Corporation at 505-843-4282.

Mail two copies of your nonproprietary business plan to:

Technology Ventures Corporation
Screening Committee
1155 University Blvd. SE
Albuquerque, NM 87106

Sandia volunteers 'Make a Difference'

Sandia's 2002 Make a Difference Day spread out over parts of three weekends this year, with the help of more than 200 Labs volunteers. The community — and several child-service agencies in particular — benefited from the Sandia efforts as part of the Corporate Outreach Department's (12650) focus on education, says Darlene Leonard, volunteer coordinator.

"Almost every project directly or indirectly benefited children this year. Sandia volunteers are the greatest — they arrive early, work hard, and stay until the job is done and done right," Darlene says.

Part of the legacy of this year's efforts: La Luz Elementary School has new landscaping; there's a US map painted on the playground of Petroglyph Elementary School in partnership with AT&T Pioneers; and Sandia volunteers from Center 14400 constructed a Japanese section of the Sandia Base Elementary School International Peace Garden; Cuidando los Niños daycare has three newly painted and repaired classrooms; and 26 newborn at Kirtland Air Force Base will have baby quilts upon their arrival.

The photos here can show only a few of the projects Sandia volunteers participated in as part of the annual community volunteer effort. Darlene reports 64 new Sandia volunteers participated in this year's programs. Among the 2002 volunteers was nine-year-old Jeffrey Forster, who helped his mother Lucille Forster (10851) on a trail clean-up project. It marked their second year as Make a Difference Day volunteers. "The project was a great opportunity for parents and kids to have fun while sharing responsibilities for making a difference in Albuquerque," says Lucille.

— Will Keener



SPADE WORK — In photo above, Ken Kuzio (10853, left), and Chuck Townsend (14186) help with a fall gardening project to plant bulbs for enjoyment by assisted care residents at a senior facility in northeast Albuquerque.

CEREAL FILLERS — In photograph at left, Kevin Marbach (5735, left) and Janey Carroll (3341) repackaged Frankenberry™ cereal, donated by General Mills, into one-pound bags at the Roadrunner Food Bank. There was a lot of cereal, four 500-pound boxes, to repackage!

RAMPING UP — In photo below, Marlene Brown (6128), Lee Cunningham (12630), and John Lewis (9329) work on a new access ramp at the Albuquerque Indian Center, near Kirtland Air Force Base. The center provides food and aid for children and counseling for their parents.



Civil rights lawyer Morris Dees mesmerizes audience

Civil rights lawyer Morris Dees, who spoke at Sandia last week as part of Sandia's Diversity Leadership Program, says he has met many heroes during his life — and most weren't living in fancy homes in urban America.

One group was some 50 Vietnamese refugees in Baytown, Texas — hard-working new Americans establishing a successful fishing business, which threatened locals. The locals filed a lawsuit to stop the Vietnamese from pursuing their trade. The new Americans turned to Dees, a famous civil rights lawyer, who said if they could prove the locals were involved in a conspiracy they would win and be left alone. Not trusting the American legal system, the Viet-



MORRIS DEES

namese fishermen initially decided not to go along with the suit. Dees met with them and told them if they didn't do this, all their other businesses would be threatened. Finally they agreed and won.

These new Americans were heroes taking a giant leap to trust an alien legal system and won. It wasn't Dees' victory but theirs.

Since graduating from the University of Alabama in the early 1960s, the Alabama lawyer has fought and won many battles to establish the civil rights of Americans. He represented Beulah MacDonald, who lost her son to a Klansman's noose in Mobile in the case that bankrupted the United Klan of America. That 1987 verdict represented the first time a Klan organization had been held liable for the violent acts of its members.

He also told of his bringing down Tom Metzger, head of the White Aryan Resistance, who was held responsible for a murder by skinheads of an Ethiopian immigrant.

Dees mesmerized the near-capacity Sandia audience at the Steve Schiff Auditorium with

stories of his life's work fighting hate crimes around the country. His talk ended to a resounding standing ovation.

But he wasn't finished. Questions from the audience led him to tell about his growing-up years with his uncle who ran a dry goods store in his small Alabama town — a store that let everyone who entered see his uncle's Klu Klux Klan robe in a closet. And about a 12-year-old Dees calling an older co-worker "nigger" and receiving a severe strapping from his father, who told him to never use that word again.

Dees, who lectures throughout the country, is co-founder of the Southern Poverty Law Center (SPLC) in Mobile, which works to uphold the laws won by the civil rights movement and monitor racist activity while tracking more than 600 unauthorized militia units in the United States. For those people unable to attend the session last week, they can either contact Jessica Cardoza (845-0616) to borrow a copy of the video or access the video stream from the Diversity web site at <http://www-irn.sandia.gov/HR/HomePages/3512/3512.html>.

— Chris Burroughs

Feedback

Readers ask questions about 'Impact' and video streaming, unattended packages, personal digital assistants

Q: Today, I read about the new Sandia video newsmagazine "Impact." It sounds like another great way to communicate what's going on at Sandia. But, unfortunately, I doubt if anyone in our organization will ever see it. We never get to see the LM1 videos that Lockheed Martin puts out either. It's been years since I've seen one. We have team meetings sporadically, but these are never presented. I suspect this is the rule, rather than the exception at the labs. It seems that there are few Sandia TV monitors around the labs either to view them. Also, if you are interested in viewing them, you need to know the schedule.

The importance of good communication is stressed on the job. But each one of us represents the labs to the public outside of work. If we all are informed about what the lab does, we can all be better ambassadors. Those of us who read the Sandia Lab News, the Sandia Daily News, and Lockheed Martin Today can keep up with most of what's going on within the corporation. But many folks prefer to watch a video clip rather than take the time to read an article. Eventually, will these videos be available on our desktop through video streaming?

A: Yes! An integrated effort has been underway to investigate the latest video-streaming tech-

nologies, make a recommendation for a video-streaming solution that can be deployed lab-wide, and implement the solution. The team consists of members from Video Services, WebOps, Tech-Dev, Networking, and Education and Training. We are also coordinating with the Knowledge Preservation project. There are team members from both California and New Mexico. The video streaming system will be called Sandia VU, which stands for "Sandia Video to You." The Video Services Department will provide the content for Sandia VU. "Impact" and "LM1" videos will definitely be available for you to view at your convenience at your own desktop, as will other programs of interest. Your question is very timely as Aug. 29 is the date we kicked off the Labs-wide implementation. If you would like to see "Impact" at your desk you can stream it from the Video services homepage at the following address: <http://www-irn.sandia.gov/organization/div12000/ctr12610.html> — Judy Hubbard (12610)

Q: Since 9/11, we have had quite a number of incidents where people have left bags unattended and there have been security alerts because of it. Why doesn't Security evacuate the buildings that are close to these items since they don't know what they may contain? For the last two or three incidents around Bldg. 802, nothing was done to get people out of the building for safety's sake. We actually had a suspicious letter in the office next to ours, and the only thing done was that a security guard kind of blocked off the hallway. What if that letter had contained anthrax or some other type of material? Does Sandia not value its employees anymore? I really don't want to end up like the people in New York.

A: In an effort to minimize the number of emergency responses to unattended bags and personal articles left in the Technical Areas, a Sandia identification tag (similar to an airline baggage tag) has been developed. These tags can be placed on book bags, laptop computer cases, projector carriers, etc. to identify them as belonging to an employee, contractor, or visitor. The tag has a place for contact information to be entered, facilitating contact between emergency responders and the owner of the item. This can expedite positive identification of the item in question. These identification tags can be obtained through your Division Environment, Safety, and Health Coordinator.

Personnel at Sandia have been very vigilant in observing and reporting suspicious items. In each instance there is a response and an assessment to deal with the item appropriately. Everyone's continued vigilance can reduce the potential impact if one of these items turns out to be a credible threat.

— Al West (3100)

Q: A message was sent out by the project lead of the Security Incident Management Program (SIMP) stating that all personally owned Personal Digital Assistants (PDAs) are considered prohibited items and are being confiscated by security personnel during package inspections. There is also an article in the 6/26/2002 issue of the Porcelain Press that says the same thing.

According to section 3.6 of CPR 400.3.10, only PDAs that contain RF-transmitting capability, a modem, a microphone, and/or a camera are considered a prohibited item in Limited and more restricted areas. It would seem, then, that PDAs that do not contain any of those features are not prohibited, and are therefore allowed.

Are the security personnel conducting these inspections aware of the CPR?

I would appreciate clarification of the security policy in confiscating personal PDAs that are not prohibited.

A: The main issues here are the ownership and control of the device, which also extends far beyond PDAs to include all "Personally Owned Electronic Equipment."

Sandia Business Rule CPR400.2.13.10, Information Protection, prohibits the onsite use of personally owned computing equipment.

Sandia Business Rule CPR400.3.10, Prohibited and Controlled Items, also states in section 3.1 Personally Owned Electronic Equipment under Requirements: "SNL and its contractors have the reasonability to provide employees with the necessary equipment to perform their job functions. Thus, there is typically no business reason to bring personally owned equipment into Sandia-controlled premises."

Our security personnel are trained to look for some identification of ownership, such as the Sandia property stickers, DOE property labels, DoD stickers, and the like. If the device lacks those identification markers, the security personnel may confiscate the device or, if you are stopped at a turnstile, require you to return the device to your vehicle.

It is important to read and understand the entire content of both CPRs as there are important restrictions even for Sandia- or government-owned electronic devices.

NOTE: Section 3.6, which you cite, sets forth the requirements for a Sandia-owned or other government-owned PDA, and states the features that are prohibited on Sandia-owned devices.

I hope this helps to clarify our current policy, and if you have any questions, please call Janet Ahrens at 844-3433, Paul Linke at 844-4047, or Del Packwood at 844-4948.

— Al West (3100)

Recent Retirees

Eric Jones
40 1123Jim Crowther
21 9813Linda McLaughlin
19 1846Hugh Bundy
18 3122

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

MISCELLANEOUS

HAWAII VACATION, timeshare, 2 blocks from beach, anytime, \$750. Varoz, 831-6093.

CANTERBURY CRAFT FAIR, 425 University NE, 12/7, 9-5, 12/8, 11-2, crafts, baked goods, food both, free musical performance on Sat. Flores, 247-2515.

CHAINSAW SHARPENER KIT, clamp on type, Oregon brand from Sears, includes separately purchased file set, never used, \$15. Dwyer, 271-1328.

KING-SIZE MATTRESS, fits waterbed frame, pillow-top both sides, 3 yrs. old, excellent condition, \$200 OBO. Widler, 823-2643, ask for Lonnie.

PIANO MUSIC BOOKS, Ellington, Joplin, ballads, country, 20's, 30's, 1 organ, out of print sheets. Bazar, 898-1467.

TELESCOPE, Televue Ranger, w/extras, various eyepieces, Televue & Celestron barlows, Celestron diagonals, all acces. 1/2 mail-order, \$450. Doty, 275-6575, ask for Bill.

GENERATOR, for home emergency power, Robin 6100, plus 2 transfer switches, \$2,000. Hayes, 299-1200.

SOFA & LOVESEAT, Southwest, darker colors, coffee & 2 end tables, \$1,000. Bronkema, 720-1888.

FORMAL DINING TABLE, oblong, seats 10, 6 kitchen chairs, soda-fountain style, \$350 both, negotiable. Thompson, 299-0302.

ELECTRIC SCOOTER, w/seat, 15-mph, 10-mile range, folds to 12-in. high, 300-lbs. capacity, \$295. Hannah, 293-1450.

KAR-KADDY II, 8K miles, \$800; older refrigerator, works well, \$150. Barnett, 281-9056.

POOL TABLE, Olhausen, 8-ft. solid oak, w/gray felt, 3-pc. slate, lifetime warranty, \$3,500. Bonville, 294-6715.

EXERCISE CYCLE, \$125; 5-pc. oak entertainment center, \$800; oak china hutch, table, 6 chairs, \$1,000, 5-pc. sectional w/sleeper, \$1,500, all OBO. Padilla, 292-8936.

PORTABLE DISHWASHER, white/black face, butcher block top, all options, 1 yr. old, rarely used, excellent condition, \$285. Mares, 820-285 or 980-5438.

COMPUTER, IBM Thinkpad, 433 MHz, 14-in. screen, 4.6G HD, 64MB RAM, 56K modem, \$300 OBO. Patrick, 265-4569.

AUTOMOTIVE MANUALS: Saab, '79-'83; Subaru, '70-'86; Datsun, '68-'72, free. McCanahy, 884-5071.

CAMPER SHELL, fits long/wide pickup bed, good condition, needs 1 window glass replaced, free. Nutt, 856-8267.

ELECTRIC CHAINSAW, 3.5-hp, \$45; outdoor metal A-frame swinging bench, w/canopy, \$85. Lucero, 298-1524.

SOUTHWEST AIRLINE TICKET, Rapid Rewards, valid through 9/6/03, drink coupons included, \$300. Roseth, 856-6964.

SEWING/EMBROIDERY MACHINE, Husqvarna Rose, computerized, quilter's kit & foot, manuals, video, seldom used, retails \$2,500, asking \$1,495. Dietz, 284-8244.

MANSSION POST BED, Homelnd pine, 1-yr-old Sealy Posturepedic mattress, matching pine armoire, \$1,500. French, 263-6778.

XBOX, Madden 2003, Halo, monster cable, w/S video connection, 2 controllers, \$240 OBO. Giron, 275-8843.

SOFA SLEEPER, tan, excellent condition, \$200. Nieto, 239-3989.

'85 HOT SPRINGS SPA, seats 6, 110V, great condition, \$500 OBO; outdoor jungle gym, free. George, 798-9329.

FRANK HOWELL SIGNED LITHOGRAPH, "Standing Rock Ceremonial," 77/175, museum framed, appraised \$7,500, asking \$4,999. Cormican, 856-6598.

ANTIQUUE GAS STOVE, Wedgewood, 4 burners, w/griddle, 36-in. wide, good shape, \$550. Jones, 869-3150.

JEWELRY & GEM SHOW, Nov. 23-24, 11 a.m.-5 p.m., UNM Conference Center, 1634 University NE, free admission. Ruffner, 286-1309.

SOUTHWEST AIRLINE TICKET, round-trip, transferable, good anywhere Southwest flies, expires Sept. 2003, just in time for the holidays, \$300. Polito, 856-6886.

SANDER, Sears, 10-in disc, 6x48 belts, 3/4-hp Baldor motor, heavy stand, \$175; Sears 55-gal. shop vacuum, 2 motors, \$90. Bennett, 298-1142.

WASHER & DRYER, good condition, free to charitable organization. Jones, 797-4894.

HP PRINTER, Deskjet 693C, 512KB, built-in RAM, prints on all types of media, excellent condition, \$50. Anderson, 897-2772.

ELECTRIC WASHER & DRYER, GE, heavy-duty, large-capacity, 6 yrs. old, excellent condition, \$250. Cocain, 281-2282.

COUCH, seats 4, beige/earthtones, Southwest style, good condition, \$175; rust velour chair, good condition, \$50. Oberkamp, 292-4366.

TREADMILL, Walkfit, computerized, exercises upper body, not motorized, \$100. Krause, 858-1289.

GAS RANGE & HOOD, Sears, Kenmore, black & stainless, self-clean, auto-timer, clock, \$100 OBO. Plummer, 823-1619.

VIDEO GAME, Turok for Playstation 2, release Sept. 30, 2002, never used, \$25. Heard, 877-3839.

CAMCORDER, Minolta, 8mm, 8X zoom, 12 yrs. old, not used since '89, extra batteries, all cables, book, \$130. Duvall, 881-4406.

NEIL GOLDBERG'S CIRQUE TICKETS, 2, mezzanine, Sat., Nov. 23, 2 p.m., \$50 for both. Scott, 837-9775.

SPANISH SOFA, hand-carved, chair, round coffee table, loose cushions, \$1,000; antique upright player piano, \$1,000. Jacobson, 866-5083.

ESTATE SALE, Nov. 15-17, 8 a.m.-5 p.m., wall art, furniture, rugs, collectibles, handmade Christmas ornaments & more. Aoussat, 292-0119.

CENTRAL AC COMPRESSOR, Carrier, 3/4-ton, used only 1 yr., free. Linebarger, 332-1774.

KING-SIZE WATERBED, includes sheets, frame, headboard, heater, liner, filling & draining kit, patching kit, \$100. Wanya, 275-5431.

TELESCOPE, Orion AstroView 6 EQ Reflector, brand new, \$350 OBO. Simon, 286-6492, www.telescope.com, type in 9827 for search & picture.

SKI RACKS, clamps to roof rails, locking, holds 6 pairs of skis or 4 snowboards, \$25. Fernandez, 822-0377.

LAPIDARY CUTTING MATERIAL, agate, obsidian, etc., free; 6-in. trim saw, \$25. Navratil, 293-5527.

SPANISH LADIES WRITING DESK, antique, French display cabinet, circa 1800s, call for details, make offer. Phelan, 869-6094.

DEPARTMENT 56 TREES/accessories, retired/current styles, new boxed sets, individual pieces, less than suggested retail. Hubbard, 293-2819.

CRAFT FAIR, 11/23 & 11/24, Holy Ghost School, San Pedro between Gibson & Kathryn, bring your gift list! Austin, 256-1563.

SOLAR PANEL GLAZING, & heat absorber raw material, can be used for green house etc. Harrington, 296-8208.

WOOD/COAL BURNING STOVE, Wonder Coal, will deliver to most places, \$200 OBO. Armijo, 522-9762.

MAPLE DESK, w/built-in sewing machine, Kenmore, \$150; custom macramé room divider, photos at SLFCU, \$125. Tate, 298-9512.

FURNITURE: queen bed & mattress set; dresser w/mirror; sleeper sofa, chairs, end tables, lamps, reasonably priced. Van Deusen, 291-8196.

QUEEN-SIZE SLEEPER SOFA, 84-in., earthtone; La-Z-Boy rocker recliner, cinnamon; brass table lamp; floor tray lamp, dark wood, all very good condition. Tafoya, 255-7675.

PC, 75 MHz, color monitor, CD, extra software, Windows 95, MS Works, 812MB HD, 8MB memory, \$125. Schofield, 292-7220.

KING-SIZE WATERBED, Beautyrest, dual waveless flotation system, looks like standard mattress, like new, \$175. Grant, 865-0785.

SOUTHWEST AIRLINE TICKET, roundtrip, good anywhere Southwest flies, expires Dec. 21, 2002, \$300 cash. Sedden, 299-8159.

DOUBLE JOGGING STROLLER, great condition, \$100. Laird, 766-7696.

HANDMADE CHRISTMAS LUMINARIAS, Boy Scout Troop 395 fundraiser, deliver Dec. 7 or 14, \$5/doz., \$12/3 doz. Warrant, 828-3649, ask for Diane, mingfling@aol.com.

CD BURNER, new, \$40; dehumidifier, Kenmore LN, \$45; trash compactor, \$30. Shields, 286-5917.

AIR HOCKEY TABLE, electric, professional size, 10 mos. old, excellent condition, \$150. Kilbane, 922-9025.

How to submit classified ads

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

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

Ad rules

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

"CHERISHED CREATIONS" ARTS & CRAFTS, Wyoming mall, open house, 11/28, 6 p.m.-9 p.m., 11/29-11/30, 10 a.m.-6 p.m., 12/1, noon-5 p.m. Self, 296-4137.

EXECUTIVE DESK, Southwestern, solid pine, 4 drawers, 1 file drawer, \$250. Keahbone, 792-3251.

THE PAINT STICK, w/extras, \$15; white eyelet twin spreads, shams, skirts, used once, \$20. Malcomb, 294-6975.

STOVE, oven doesn't work, needs electrical cord, free; swing set, large, sturdy, you disassemble. Nickerson, 298-5634.

OAK DESK, 7 drawers, \$115; queen bed, \$85; lamp, \$25; Graco high chair & infant carrier/car seat, \$20 ea.; exersaucer, \$15; other baby items. Calvert, 856-6913.

SNOW BLOWER, model E600E, w/2-stage clearing system, large impeller, serrated auger, quick-adjust polymer chute, w/190° rotation, \$450. Cline, 922-8656.

WOOD STOVE, Orley, hearth model, 16-in diameter, 24-in. long, includes Magic Heat extractor, \$400. Zirzow, 281-9896.

ENTERTAINMENT CENTER, fits 32-in. TV, stereo, good condition, \$65 OBO. Zayas, 352-9980.

CONVICT CHICHLIDS, gray w/black stripes, free. Leisker, 293-3075.

Important note about classified ads

Because of the Thanksgiving holiday break, the next issue of the *Lab News* (Nov. 29) will be distributed to employees on Monday, Dec. 2.

Submission deadline for ads for the issue remains unchanged; that is, noon, Friday, Nov. 22.

For complete details about submitting a classified ad, see the rules in the box above.



17-IN. MONITOR, \$75 OBO. Long, 294-4591.

KING-SIZE MATTRESS, Sealy Posturepedic, plush pillow-top, paid \$1,100, asking \$500 OBO. Hogan, 292-8879.

PC MONITOR, 20-in. NEC-P1150, \$100. Celina, 293-3275.

DESK, steel case, large L-shape, ideal for computer & accessories, \$50; canoe, 16-ft., fiberglass, \$75. DeMeza, 291-9216.

TRANSPORTATION

'97 SUBARU LEGACY OUTBACK, AT, AC, PW, PS, green, salvage title, 72K miles, excellent condition, \$9,500. Green, 281-4533.

'99 CADILLAC DEVILLE, loaded, oyster leather, NorthStar, under warranty, dealer serviced only, 39K miles, \$18,600. Turner, 345-1086.

'00 MITSUBISHI MONTERO SPORT LS, 4x4, V6, AT, AC, PS, PW, PL, AM/FM/CD, theft alarm, tinted windows, loaded, 36,500 miles, \$15,800. Duncan, 832-4920.

'95 FORD BRONCO XLT, Elect., 4x4, 5.8L, V8, AT, AC, new tires, 71K miles, must see. Gabaldon, 836-6463.

'96 TOYOTA TACOMA, X-cab, V6, 5-spd., bed liner, tool box, white, 95K miles, well maintained, \$11,200. Henke, 304-3553 or 821-6826.

'01 HYUNDAI ACCENT, 2-dr. hatchback, AC, AM/FM/cassette, 27K highway miles, great shape, \$7,200 firm. Armijo, 319-7305.

'97 CADILLAC ELDRADO, AT, AC, PW, PL, cruise, AM/FM/cassette, cruise, leather, 55K miles, excellent condition, \$13,500 OBO. La Pierre, 298-8026.

'95 LEXUS ES 300, gold, keyless entry, 113K miles, \$9,500. Martinez, 352-6129.

'90 ACURA INTEGRA GS, 2-dr., AT, AC, sunroof, black/tan interior, 120K miles, \$2,250 OBO. Bourdon, 898-3032.

'93 TOYOTA PICKUP, deluxe extracab, 4x4, 5-spd., AC, PS, AM/FM, 100K miles, excellent condition, runs perfect, \$6,900. Medina, 797-0247.

'99 FORD 250, heavy duty, super cab, Power Stroke, tilt, cruise, AC, AT, under 35K miles, \$19,000 OBO. Cardenas, 220-0835.

'93 HONDA DEL SOL, new timing belt, water pump, belts & brakes, AM/FM/cassette, 83K miles, runs great, \$5,500 OBO. Martinez, 821-5112.

'95 JEEP GRAND CHEROKEE LAREDO, 4WD, 6-cyl., AC, PW, PL, AM/FM/CD, cruise, below book \$6,500 OBO. Thoesen, 323-1376.

'96 CHEVY C1500, black, manual transmission, AC, PB, ABS, 52K miles, must see, \$8,900. MacAlpine, 266-1794.

'76 PORSCHE 924, 5-spd., good body, OK interior, needs engine work, 100K miles, \$400. Zurzolo, 898-1175.

'96 TOYOTA 4-RUNNER, 4-dr., 2WD, 4-cyl., AT, PL, cruise, tilt, AM/FM/cassette, white, clean, below book, \$9,450 OBO. Feng, 275-6639.

'98 FORD F250, 3/4-ton, long bed, 351ci, 5-spd., 2WD, 2-in. lift, 33-in. tires, 81K miles, looks good, runs well, \$2,500. Hamberg, 857-9662.

'95 TOYOTA COROLLA, AT, PW, PL, AM/FM/cassette, maroon, \$4,000. Rogahn, 299-2710.

'94 FORD EXPLORER, Eddie Bauer, 4WD, white, 62K miles, excellent condition, \$7,200. Bundy, 821-1846.

'90 MAZDA B2200, X-cab, 5-spd., AC, aluminum shell, 100K miles, \$1,800. Barnaby, 255-7767.

'97 HONDA CRV LX, real time 4WD, AT, AC, blue, alloys, new tires & brakes, maintenance records, 73K miles, excellent condition, \$10,762 OBO. Youngblood, 821-4167.

'97 JEEP WRANGLER, Sahara, like new, 1 owner, low miles, all options, green, soft-top, must see. Pettit, 292-0789.

'92 GMC SAFARI AWD VAN, loaded, SLT package, rear AC/heat, tow package, original owner, \$5,900. Bauman, 980-7600.

'88 FORD F150, long wide, heavy half, w/shell, \$2,900. Lemke, 898-5047.

'95 DODGE NEON, AC, cruise, dual A/B, white, 40K miles, great condition, excellent student car, \$3,200 OBO. Clem, 266-6050.

'89 NISSAN 240SX SE, fastback, 5-spd., AC, PS, cruise, new paint, \$1,900. Holloway, 294-5815.

'80 CHEVY CHEVETTE, 4-cyl., 4-spd., FAC, 4-dr., white, runs good, great student car, \$800. Martin, 869-1212.

'93 FORD TAURUS SHO, loaded, premium sound system, new battery, starter, water pump, Michelin tires, 93K miles, \$4,400 OBO. Lagasse, 856-0857.

'01 HONDA ACCORD COUPE EXVL, V6, ABS, dual side airbags, all power, 6-disc CD, 20K miles, excellent condition, \$18,900. Kercheval, 266-5833.

RECREATIONAL

22-ft. RV, Winnebago Minnie 300, Ford Chassis, 6.8L, excellent condition, low mileage, \$42,000. German, 281-1719.

'92 HONDA NIGHTHAWK 750, black, garaged, passenger backrest/rack, 17K miles, great condition, \$2,500 OBO. Dudley, 271-1413.

'98 WILDWOOD TT, 28-ft., 1 owner, completely self contained, rear queen bed, excellent condition, \$10,000 firm. Pritchard, 299-3543.

REAL ESTATE

1/3+ ACRE, Cenaroca subdivision, close to mountains, open space, hiking, bike trail, \$88,000. Caruthers, 296-5953.

3-BDR. HOME, 2-1/2 baths, 3-car garage, 2-story, Willow Wood home, 1 mile from Eubank gate, \$192,000. Morrison, 293-6652.

WANTED

DOUBLE STROLLER, preferably Graco, in good condition; used flagstone & brick, for landscaping. Brooks, 255-7551.

HOUSEMATE, private, furnished apartment, 4 Hills, mountain views, separate entrance, convenient to Sandia, \$350/mo. Smith, 298-7365 or 292-1976.

RIDE TO DENVER, morning of Dec. 26, will buy gas/lunch. Gabaldon, 897-2817.

GOOD HOME, black male Cockapoo, 3 yrs. old, friendly, needs bigger yard. Haghighatpour, 296-1415, ask for Janelle.

DOWNHILL SKI BOOTS, used, wear size 13 shoe, need size 13 or 14 boot. Young, 281-3495.

HOUSEMATE, responsible female, nonsmoker, 1 acre in Los Lunas, one pet (dog) welcome, \$350/mo., 1/2 utilities. Milliman, 256-5312.

CIVIC-MINDED ADULTS, for Albuquerque Police Department Citizen Police Academy, January class. Wemple, 298-2048.

HOUSEMATE, furnished room, extra storage, computer, internet, bike path, dog, Comanche & Carlisle, utilities paid, \$300/mo. Hanna, 872-9145.

WASHER, dryer, refrigerator, stove, all in good working order, moving to rental w/o appliances. Wilcox, 884-0217.

LOVING HOME, 4-yr. old female tabby, spayed, affectionate, great elderly companion, likes to be only cat. Owen, 286-4546.

LAPTOP COMPUTER, Pentium II or greater, donate to AARP Tax-Aide's free tax service, a charitable organization. Cooper, 281-0950.

STUDENTS, help w/moving, NE Heights locations, weekend after Thanksgiving, hourly rate negotiable & meals. Dubicka, 296-6557.

DEERSKINS, recently skinned, large or medium, w/few holes, need 3 for tanning, will pay. Hays, 836-2099.

POOL TABLE, 8-ft. Kimberly, 293-5835.

LOST & FOUND

FOUND: set of Chevy keys, w/remote device, house key, on bridge heading toward Area 3 & 5. Lioacono, 844-3056, ask for Joyce.

The Laboratory the US turns to first . . .



One team delivering the whole job.

IES
Integrated Enabling Services

 Sandia National Laboratories

"IT TAKES A VILLAGE" can be misused or overused, but it's always appropriately used to describe what's behind Labs' mission-work deliveries to an external customer. And that's the message of this Integrated Enabling Services (IES) poster. In the foreground (left) is Rush Robinett (6200), until recently a long-time Labs robotics/intelligent machines manager, handing over a finished product to an external customer. In the background is the

Sandia "village" that must operate as a team for the mission worker to develop, produce, and deliver a product. That village team, of course, consists of key contributors from the IES organizations: 8500 and 8900 in California, and 3000, 9300, 9500, 9600, 10000, 11000, and 12100, 12600, and 12800 in Albuquerque. For an interview with VP Lynn Jones on the IES initiative, see pages 6-7 inside.