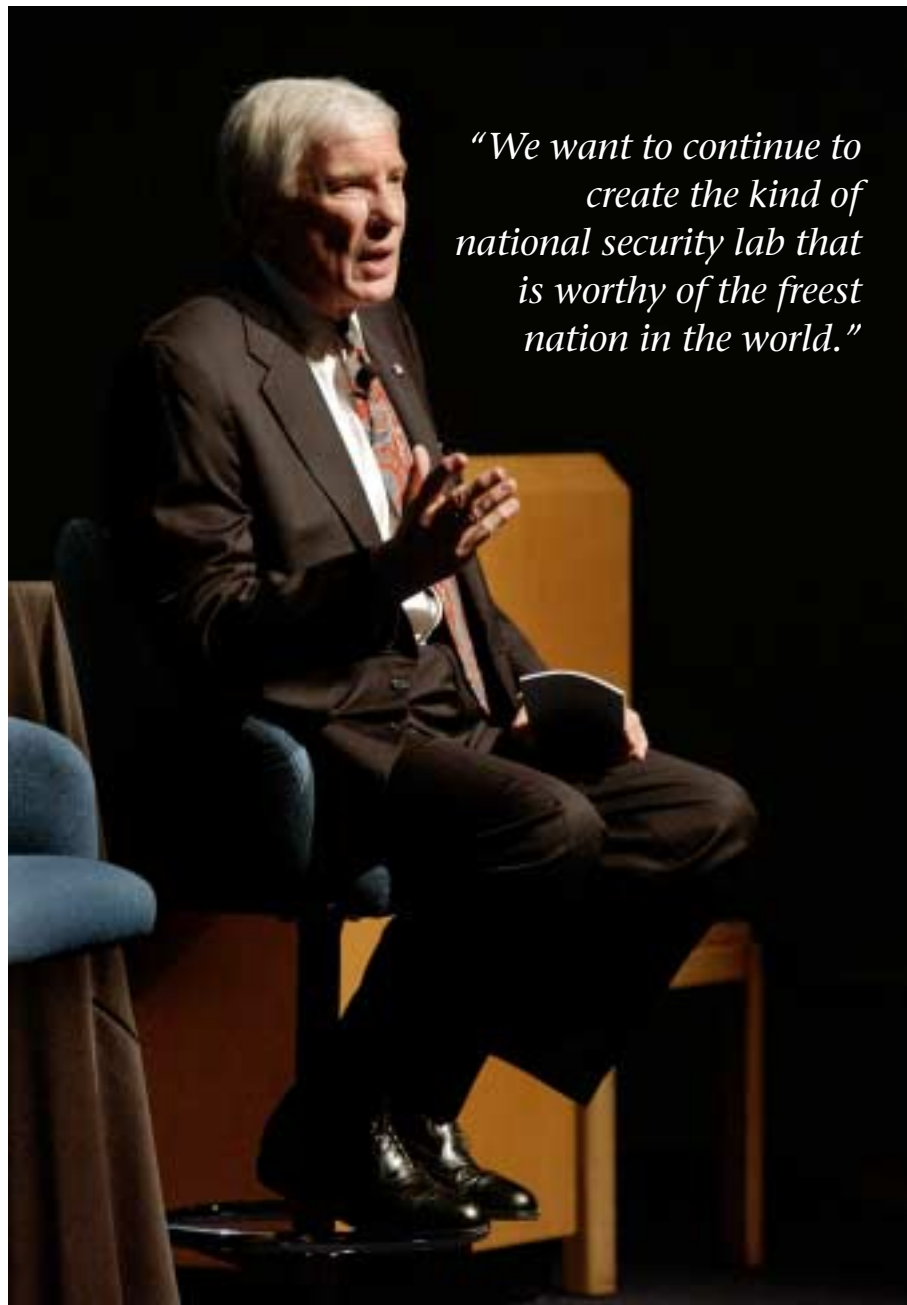


# Paul and Joan upbeat about Sandia's present, future in series of three State of the Labs presentations

**Urgent antiterrorism work, technology advances, strong budget make for a good year at a busy national lab**

By Ken Frazier



*"We want to continue to create the kind of national security lab that is worthy of the freest nation in the world."*

Lab News photo by Randy Montoya

Rising responsibilities in combating terrorism, aiding homeland security, and supporting a possible war with Iraq. . . . A flurry of new technological advances being quickly adapted to urgent applications in national security. . . . A nearly \$2 billion budget this year, the largest ever. . . . A "renaissance" in new construction at the Labs. . . . Thirteen hundred new employees added in the past two years. . . . A proud national lab basking in some noteworthy recent accolades.

All these were themes of the three State of the Labs presentations — one each to employees in New Mexico and California and one to Albuquerque community leaders — given last week by Sandia President and Labs Director C. Paul Robinson and Executive VP and Deputy Director Joan Woodard.

Technology changes quickly, but among those things that "do not change," said Paul in his talk to a capacity crowd of New Mexico employees in the Steve Schiff Auditorium, "are the spirit and culture that is Sandia. . . . We want to continue to create the kind of national security lab that is worthy of the freest nation in the world. . . . There is no question that our work can make a difference."

(Continued on page 6)



SANDIA VP Bob Eagan and Lockheed Martin Executive VP for Technology Services Mike Camardo before the annual State of the Labs address to the community, during which Camardo thanked community leaders for their support during the contract extension process. (Photo by Randy Montoya)

## Sandia Lab News

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# VP Hagengruber, retiring, wins top Singapore award

**Defense advice, partnership agreements make impact on small, high-tech Asian country**

By Neal Singer

It can be touching to learn how much a person's character, as well as his effort, means to others.

At a ceremony Jan. 29, Singapore Defense Secretary Peter Ho awarded retiring Sandia Senior VP Roger Hagengruber that tiny high-tech country's 2003 Defense Technology Distinguished Fellow Award.

"For me," said Ho, "Roger represents all that is good and admirable in American society — a strong sense of decency and honor, a belief that he can make the world a better place."

"When you're at DSO [government defense lab] listening to briefings in Singapore," Roger said, "it feels like you're listening to briefings here. It is energizing."

"Roger has his enthusiasms," said Secretary Ho. "I think one of his enthusiasms is Singapore."

Singapore is an island at the tip of the Malay Peninsula, about the size of Sandia's Tonopah Test Range (15 x 25 miles). Roger's acquaintance with that country began in 1995, when as head of Sandia's national security sector he hosted a Singapore technical delegation at the request of the US Department of Defense.

That island's government had separated from Malaysia in the 1960s to pursue an independent, democratic, capitalist course. It has traditionally been a strong US ally from

(Continued on page 4)

*"For me, Roger represents all that is good and admirable in American society — a strong sense of decency and honor, a belief that he can make the world a better place."*



ROGER HAGENGRUBER may be retiring from his career as a Sandia executive and has just received Singapore's Defense Technology Distinguished Fellow award, but his work on issues of defense policy continues. Here he speaks at the Feb. 20 announcement of a new Office for Policy, Security, and Technology at the University of New Mexico, a collaboration of UNM, Sandia, and Lockheed Martin (Lab News, Feb. 21). He will be its first director. From left are UNM President F. Chris Garcia, Sandia President C. Paul Robinson, and Lockheed Martin Technical Services Executive VP Mike Camardo, Chairman of the Sandia Corporation Board of Directors. (Photo by Bill Doty)

Biodefense is a complex systems problem, Duane Lindner says **3**

Sandia, NNSA break ground on new \$22 million WETL facility at Pantex **4**



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## What's what

Working at Sandia is a treat for me. Really. I'm fascinated by the science and the folks who do it, even though it's a little more than a little beyond me most of the time. As far as I'm concerned, Sir Arthur Clarke summed it up nicely when he said, "Any sufficiently advanced technology is indistinguishable from magic."

For example, I'm fascinated when someone gets a call on a cell phone and, holding it in one hand, thumbs in the instructions to capture the phone number of the caller, a single-digit callback code, and the caller's name. It is more than likely that if my own cell phone rang while I was gawking, slack-jawed, at such a dazzling display of dexterity — not to mention understanding of the gadget and its capabilities — I would fumble the wrong button and actually hang up on whoever I was trying to answer.

I'm not inept, . . . just not exactly ept.

Most of the time, I manage to muddle through and get the job done. Like calibrating the oven temperature on my kitchen range. It began to dawn on me that something was wrong when my daughter came to dinner and made a face and pointed to the still-red part of a meatloaf. Hmmm. . . maybe that's why the green bean casserole was not exactly hot when it came out of the oven a couple of weeks earlier and the whomp biscuits didn't brown in the prescribed time. None of these things had happened before in my old house where I had exactly the same brand and model kitchen range. I won't mention the brand name because I'm one of the 37 Americans who hasn't yet been sued for something, and my mortgage company would like me to remain part of that group.

I called the appliance company, whose maintenance guy told me he'd be happy to come over and fix it for me for \$60 or so, or I could buy a \$3 oven thermometer at Wal-Mart, look up the calibration instructions in the manual that came with the stove, and fix it myself. I opted for the latter.

So, on a recent evening, with friends coming for dinner the next evening, I finally dug out the manual, put the thermometer in the oven, and began trying to understand the 200 or so words describing the oven-calibration procedure. The temperature was obviously not high enough, so did it mean adjust upward to increase the actual temperature, or downward to make the digital display reflect the real temperature in the oven? Not clear. At least to me. So I called my son-in-law, who's a nuclear engineer at another nearby national lab (I won't mention that brand name, either) and after a brief discussion of the possibilities, we agreed the adjustment should be made downward. And as my son-in-law signed off, he said, sagely, "Of course, if that doesn't work, just adjust it the other way."

Now, I wouldn't say it was a blinding flash of revelation — more of an eyes-blinking-wide-open startlement — but it did reveal to me a glimpse of the mysterious process of technological development: If it doesn't work this way, try it that way.

Magic.

\* \* \*

A few people wrote about naming buildings instead of numbering them. More about that another time, but one whose message vanished from my e-mail file (another technological mystery) was clear. He favors names over numbers, but only if they're short. He liked honoring Steve Schiff by naming the auditorium for him, but said he still refers to it as the TTC because writing or saying "Steve Schiff Auditorium" takes more time and space than "TTC."

Guess that would limit us to one-syllable names.

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

## Pace VanDevender, Julia Phillips elected AAAS Fellows

Sandia Directors Julia Phillips and Pace VanDevender have been elected Fellows of the American Association for the Advancement of Science (AAAS). Both were elected in the Physics section.

Julia, Director of Physical and Chemical Sciences Center 1100, was cited "for seminal research on growth and properties of magnetic, superconducting, and optical thin films and for the leadership in the management of interdisciplinary research."

Pace, now Executive Staff Director 12100 but formerly director of the Pulsed Power Sciences Center, was cited "for leadership in directing the planning and construction of the Pulsed Power Facility at Sandia National Laboratories, which has pioneered new ground in fusion technology."

The AAAS, with 134,000 members and 272 affiliates, is the world's largest general science organization. Election as a Fellow of AAAS is an honor bestowed upon members by their peers. Fellows are recognized for meritorious efforts to advance science or its applications.

## Original segments begin on Sandia video monitors

If you caught a glimpse of something new this week as you passed by the various video monitors set up throughout the Labs, here's what's happening.

A series of short, little segments — most only two to three minutes long, some even shorter — about various aspects of life and work at Sandia began airing Monday on the monitors of the Sandia video network. Video Services Dept. 12610 is preparing them.

Three new segments will air each week, each several times a day throughout the week, usually at 27, 40, or 57 minutes after the hour. CNN Headline News will remain on the monitors otherwise.

There will be various segments on such things as "In the News," "Life at the Labs," "Blast from the Past" (old Sandia films and videos), retirees talking about their Sandia careers, tech trends, employees at work, and interviews with Sandia leaders.

This week's segments include "Life at the Labs: Z-Beamlet" and an interview with VP 16000 Gerry Yonas about the Advanced Concepts Group. The interviews are the one exception to the two-to-three-minute length. They run about 10 minutes.

Myra Edaburn of 12610 is the executive producer of the series. Various members of 12610 are producing specific shows. John German (12640) will conduct the interviews.

"These are the first programs created specifically for the [Sandia video] network," says 12610 Manager Judy Hubbard. "It is a new way to get info out to employees. We're going to try some new things and see what people like."

The *Sandia Daily News* will keep you updated on upcoming programs and times.

## Third annual Biological Threat Reduction Conference to be held in Albuquerque

A conference titled "Unified Science and Technology for Reducing Biological Threats and Countering Terrorism: Strategy and Ground Truth — Defining the Road Ahead" will be held at the Wyndham Hotel, 2910 Yale SE, on March 20-21.

The program was arranged by Sandia physician and Brig. Gen. Annie Sobel (5907, NM Air National Guard). The conference is chaired by former Sandian Robert Duncan, associate dean for research at UNM.

Vice Adm. Richard Carmona will present the keynote talk, "Perspectives on Preparedness from the US Surgeon General."

Sponsored by four national laboratories (including Sandia), UNM, and Texas Tech, the conference will address the underlying science, implications to strategic analysis and policy, and operational effectiveness of homeland security.

More information: <http://coffee.phys.unm.edu/BTR>. For registration, contact Deborah Cole at 505-272-7215 or [dcole@unm.edu](mailto:dcole@unm.edu).

## Sandia LabNews

### Sandia National Laboratories

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**LOCKHEED MARTIN** 

## 'Your Thoughts, Please' asks what shouldn't be said

A widely respected employee communications newsletter, *The Ragan Report*, recently wrote about a Florida company that produced a new workplace training video called "Sex to Religion — and Everything in Between."

It contained a section called the "Top 10 things you shouldn't say in the workplace." That listing contained comments that could be and are construed as being insensitive by some — but certainly not all — to disabilities, age, gender, religion, and national origin or heritage.

That article has prompted the latest "Your Thoughts, Please" question, which you can answer by clicking on the "Your Thoughts, Please" link on the Sandia NewsCenter Web page at [www-irn.sandia.gov/newscenter/news-frames.html](http://www-irn.sandia.gov/newscenter/news-frames.html).

That new question: What are some things you feel should never be uttered in the office? For example, a comment like "What are you, senile or something?" could be considered an age-disparaging comment. Or, "These numbers don't sound kosher to me" may reveal a religious prejudice.

Responses to this question are due by March 31. They'll be posted on the site shortly thereafter.

## Sympathy

To Carol Skaggs (6132) on the death of her father, Willam McElvaney (ret.), in Albuquerque, Jan. 17.

# Biodefense is topic of business incubator conference

*Intelligence, detection, response all part of a complex systems problem, says Duane Lindner*

By Nancy Garcia

Duane Lindner (8101), Deputy Director of Chem/Bio Programs, took a big-picture view of biodefense in a talk at a recent conference on life sciences in Livermore.

"It's a complex systems problem," he told listeners at the conference organized by the Tri-Valley Technology Enterprise Center of Livermore. "Detection, while very important, is really only part of an overall defense system. After something goes off, you really have to know what you're going to do next. Any defense system really requires people. The best detector systems in the world are worthless unless you have people who are knowledgeable and know how to respond."

That said, he added that sensitivity of detection is all-important and systems studies can recommend valuable sensitivity thresholds. Detection advances are sometimes announced for devices that detect agents at a level that can "often kill in less than a second," he noted. "Having a detector that will go off after something kills you is not very helpful."

Duane characterized the range of biodefense activities as broadly spanning intelligence ("the best response is making sure it doesn't happen"), detection, and response (including decontamination, restoration, and forensics to identify attackers). Sensors can be useful at many phases of an attack, he added.

In the case of a clandestine attack, the release could show up first either in sensors or in the public health system. Medical surveillance could tip that an attack has occurred by recognizing clusters of early-warning symptoms. "The question is," Duane said, "how do I use people as my 'detector array'? Sensitivity and selectivity are exquisite, but signal acquisition is difficult. The trick here is, can you recognize patterns? And privacy concerns become very significant."

In a complete detection strategy, he said, environmental detection would complement medical surveillance. Facilities monitoring systems, such as Sandia's bio-detection testbed being deployed now in airports, plus wide-area monitoring systems such as those developed at Lawrence Livermore and Los Alamos national laboratories,

are complementary parts of an environmental detection system. An ideal detector would have high sensitivity, a low false-alarm rate, and operate quickly and inexpensively. In addition to chemical warfare agents, it could detect toxic industrial chemicals, other toxins, bacteria, and viruses.

Sandia's  $\mu$ ChemLab, a miniaturized chemical analysis system, is being developed to "put a lab-capable instrument in the hands of a relatively inexperienced user by hiding all the complex analysis," Duane said. The research team is currently demonstrating the possibility of detecting signatures of viruses within minutes, as opposed to the standard daylong analysis.

Sandia is also developing systems for remote sensing of clouds to determine characteristics that might indicate the presence of bio threat agents. This standoff detection is particularly useful for military decision-making, in which troops might don protective gear or take evasive action if a threat is indicated, even without specific identification of the threat.

For civilian settings, Sandia is also developing response strategies for airports and subway systems, Duane said, where inexpensive actions such as changing evacuation plans could significantly reduce the number of casualties during an attack. As a longer-term solution, systems analysts are also designing and evaluating comprehensive defensive architectures for facilities and cities.

Much of the analysis has its roots in the 1995 sarin attack in Tokyo subway by Aum Shinikyo that left 12 dead and 5,500 injured.

By the time the post-9/11 anthrax attacks rolled around, Duane said, "we were heavily involved in doing systems studies of attack scenarios and timelines." These analyses aid development of information-gathering and decision-



SPEAKING ABOUT BIODEFENSE, Deputy Director Duane Lindner addressed a crowd at a Life Science business partnering conference last week in Livermore. (Photo by Randy Wong)

## **Sandia** California News

making schemes, such as the "war-gaming" exercise that emergency response directors can train on in Sandia's Weapons of Mass Destruction-Decision Analysis Center. Ideally, a response plan will minimize casualties, and quickly restore key facilities to minimize economic and social disruption.

Among restoration resources is Sandia's "decon foam," which helped rid facilities on the East Coast of surface anthrax contamination. Quantities ordered from a commercial licensee by the military have now been shipped to the Middle East, Duane said.

Ultimately, he concluded, research and development into biodefense at national laboratories will rely on the involvement of industry to be applied widely throughout society.

### **Spotlight on Sandia**

## **FY03 first quarter report of Sandia's financial health**

Here is the FY03 first quarter report of Sandia's financial health. Frank Figueroa, VP 10000 and CFO, and his folks in Controller's Center 10500 (Indirect Financial Management Dept. 10508) maintain these charts to show Sandia's financial status in various areas. The charts are derived from the latest revenue, cost, and affordable FTE projections generated by the SBUs/SMU for Mission Council (January for the FY03 projections).

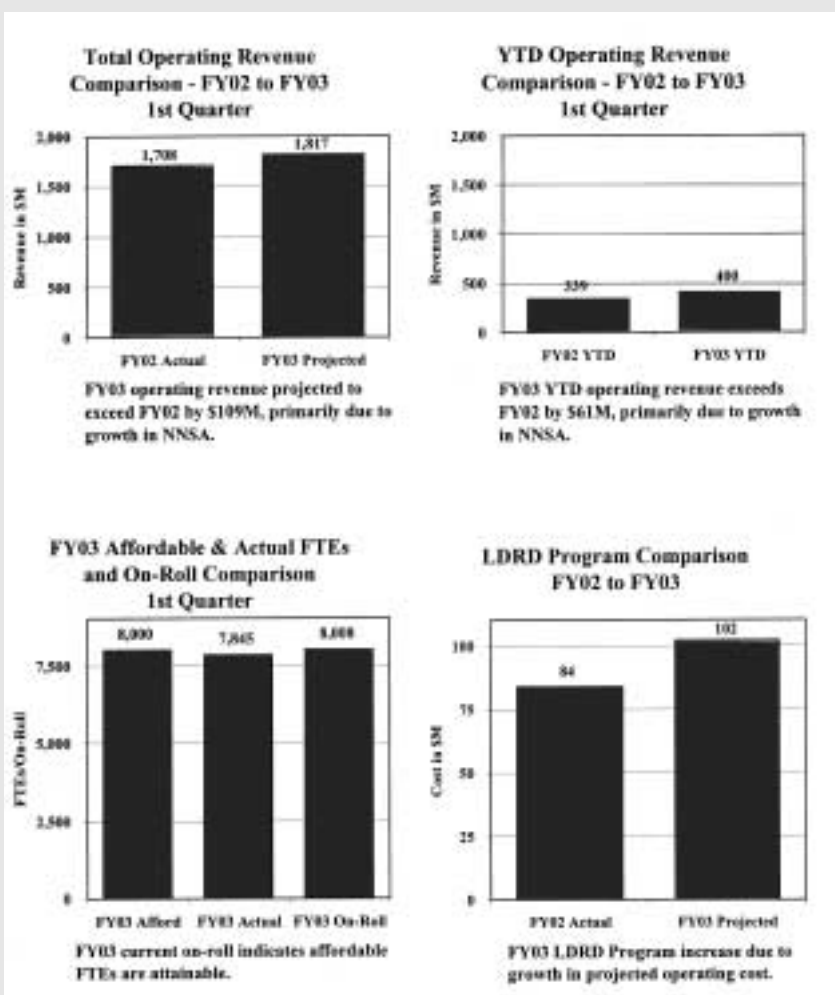
The first chart (top left) compares Sandia's total operating revenue projection for FY03 to actual FY02 revenue. The current revenue projection exceeds last year's actual revenue by \$109 million, primarily due to growth in NNSA.

The second chart (top right) compares Sandia's FY03 operating revenue received year-to-date to FY02. Currently, revenue received this year exceeds last year's revenue by \$61 million, again due primarily to growth in the NNSA, and also to late receipt of funding last year.

The third chart (bottom left) shows Sandia's affordable FTEs (full-time equivalents), actual FTEs, and the adjusted on-roll count. Currently, the on-roll count indicates that actual FTEs should basically match up with affordable FTEs.

The fourth chart (bottom right) highlights a different aspect of Sandia's financial health each quarter. For this report, the chart shows the change in Sandia's LDRD program from FY02 to FY03. The \$18 million increase in LDRD is primarily due to growth in projected operating cost from FY02 to FY03 and LDRD increasing from 5.3 percent to 5.5 percent of that cost.

These charts are updated and published each quarter. They are intended to keep you informed of the Labs' financial health. If you have any questions, please contact Waylon Ferguson at 844-3057 or Robin Reeves at 845-9990.



# Hagengruber

(Continued from page 1)

the days of aggressive communism in Asia to the war on terrorism.

"When we reciprocated [a visit] in 1997, we were impressed with what we saw," says Roger. He recalls a prosperous country of 3.5 million people with a strong commitment to science and technology and the desire to convert its government defense lab (DSO) into a semi-governmental lab like Sandia.

"The DSO people are well-educated — often in the best US universities — and are encouraged to be innovative, just like our people are," says Roger. "But because they have so much fewer people, I felt that the mixture of a larger lab of wide breadth, like ours, with a smaller innovative lab would be good for Sandia."

Singapore is the second largest container port in the world, with 17 million containers passing through it a year checked with the most modern sensors. "Our positive relations offer us defense in depth for Homeland Security for the US," says Roger.

The remarkable little country — whose Air Force, Roger says, could defend itself very well against Malaysia's and Indonesia's — also has a carrier base that supports US ships, and without equivocation supported the US-led war on terrorism. (For training, Singapore maintains a wing of F-16's in New Mexico on a continual basis.) Though its population is 80 percent Chinese, the official language of the island is English.

Roger saw Singapore also as a good test site for critical infrastructure solutions being tested in the US. "It's a very complex and modern tiny country," he says, listing its extensive water system, huge airport, large shipping port, and comprehensive banking system. Essentially all water, food, and energy come from outside of the coun-

try. "I saw they could make important and innovative partners with us in areas that are important to US security," Roger said.

He served, with the blessing of the US ambassador and DOE, as the US representative for Singapore's Ministry of Defense (MINDEF) as it restructured the DSO laboratory. He helped negotiate a memorandum of understanding between Sandia and DSO, Singapore's equivalent lab of approximately 1,000 researchers, that paralleled the existing MOU between DOE and Singapore's Department of Defense.

*"There's a certain difficulty in leaving a place I love. You can't be here forever, I know that. But some of the things you start may go on for a long time. They have to be robust enough to survive one person's departure."*

For two years, Roger helped privatize their labs, and thus a number of Sandia management and organizational concepts found their way into the way DSO now works. Among his various interactions with DSO, Roger provided mentoring sessions to encourage strategic thinking by DSO's bright young staff members, and encouraged interactions that have produced technical relationships with Sandia.

"I don't do anything that's not in the interest of my country, my government, and Sandia," Roger said, "but I think my country has been well-served by this agreement. Sandians can now have a chance to experience parallel technical

environments in an Asian context at the beginning of a century in which Asia will be increasingly important."

The Singapore Defense Technology Fellowship lasts until 2005. In addition to new duties at the University of New Mexico, where he will be the first director of a new Office for Policy, Security, and Technology (*Lab News*, Feb. 21), Roger will travel each year to Singapore to lecture, consult, and review and discuss the latest technical achievements of the little country.

"There's a certain difficulty in leaving a place I love," Roger said, speaking of his early April retirement from Sandia. "You can't be here forever, I know that. But some of the things you start may go on for a long time. They have to be robust enough to survive one person's departure." Among these, he lists — in addition to his Singapore experience — Sandia's mentoring and knowledge preservation programs, and



its arms control and intelligence programs.

"I was fortunate enough to be at Sandia when a lot of new things started or dramatically changed. I tried to give encouragement — sometimes leadership or vision — to those programs and the people involved. I tried to do that in Singapore as well. I hope the programs will continue, and will transcend the passage of any individuals." As for his award, Roger says, "I was deeply honored for myself, but also for Sandia."

Roger mentions "the great efforts of John Meinhardt and Bill Knauf to support these interactions." Joan Woodard will coordinate interactions after Roger leaves.

## First dirt turned over for new WETL facility at Pantex site

Ground has been broken at the Pantex site in Amarillo, Texas, for the new Weapons Evaluation and Test Laboratory.

The 30,000-square-foot building, seen in an architect's rendering below right, will cost \$22 million and house more than \$90 million worth of highly specialized equipment when it is completed in 2004.

Sandia has operated a WETL facility at the Pantex Plant since 1965. The current WETL is the only facility in the nation that conducts system-level non-nuclear testing on US nuclear weapon systems and components. The



new facility will bring more modern, state-of-the-art diagnostic tools to the weapons surveillance process. Eighteen Sandia employees work at the current WETL facility at Pantex conducting weapons evaluation tests.

The facility plays an important role in NNSA's Stockpile Evaluation Program, which monitors the reliability and safety of US nuclear weapons systems, relying heavily on test and evaluation of samples drawn from the stockpile.

Space will be available to support other activities, including non-nuclear explosive testing, component testing, and static-free rooms for handling devices that are vulnerable to damage from static discharge.

In the photo at top right, Sandia WETL operations manager Ted Frederiksen, left, NNSA Pantex Site Office official Jerry Johnson, Sandia Div. 2000 VP John Stichman, and Carl Durham of BWXT, which manages the Pantex site for NNSA, break ground on the new WETL facility on Feb. 27.



# Trial work arrangements begin for some MESA staff

**Experimental mixing of research and engineering groups to start this spring outside Eubank gate**

By Neal Singer

A new type of communal living for selected Sandians will begin in April, when 70 to 80 researchers and engineers from a variety of Sandia organizations come together at a kind of proxy MESA center at the Emcore building, outside the Eubank gate, to practice what could be described as holistic weapon design.

MESA — the Microsystems and Engineering Sciences Applications complex — is the largest project Sandia has ever undertaken. The experimental move to Emcore — a Sandia spin-off company with industrial space to rent — is an attempt by MESA management to make positive use of the several-years gap until the expected completion of the Weapons Integration Facility (WIF), a major component of the huge complex.

Says MESA Program Director Don Cook, "This experiment in working together [under lease in the to-be-secured building] will help identify the right 'skill' mix to solve problems when modelers, weapons engineers, MEMS designers, computer programmers, and compound semiconductor researchers are rubbing elbows with each other."

In WIF, researchers with a wide variety of specialties are expected to work side by side to solve problems more quickly.

"If this first group can work together productively, we'll have an idea how to populate MESA. If it fails, we'll vary the mix," says Don.

Quipped Michael Callahan (Director 2300), an early participant in the decision to use Emcore, "It's a heck of an idea they came up with. Wish I had thought of it."

## A 'skunk works' activity

In fact, according to Don, it was Michael who suggested establishing a 'WIF prototype' prior to the time the WIF would become available.

"It's common knowledge that researchers and engineers interact most with people with whom they are in closest physical proximity,"

says Don. "E-mail, fax, and phones are wonderful, but being able to bump into people in the hall working on your problems is more wonderful."

Says Director Bruce Walker (2600), "This will be an opportunity to put together people from a number of orgs to work closely in a 'skunk works' type activity, on a theme focused around microsystems surety components. Instead of being spread across many buildings in the tech area, those chosen will have the chance to achieve a higher level of synergy and collaboration."

Fred Sexton (1762 manager), says, "Dislocating people is challenging and won't be without pain. Splitting our group — part remaining where we are, part moving into the prototype WIF facility — means we'll be working hard not to lose contact. But we'll make it work. We have to show we can insert a microsystem into a high-reliability application."

Says David Plummer (Don's Program Director Deputy), "We will make it as easy as possible to make the move to the Emcore building without worrying about what happens at the end. When the MESA WIF is constructed, the group at Emcore will be the first to move in."

"It's only once people trust each other that they talk readily about their work problems," says Don. "So a technical researcher may be able to say immediately to a weapons engineer, 'I know you're counting on this component, but I don't know if we can get it,' or the modeler who's in the building may tell him, 'We don't know how to model this.'"

"All this drives you to identify a problem earlier to expedite its solution, and time — it goes without saying — is an important metric in this work."

Money is currently available to complete the MicroFab — the first building of Sandia's largest project — and to begin building the MicroLab, which will house offices and labs for researchers in compound semiconductors. WIF, if started next year, will take two years to build, so occupancy is three to four years distant.

Emcore's business focus — compound semiconductors — and its Class 1000 clean room and lab spaces are compatible with MESA's objectives.

While some managers will move their offices to the temporary location, others will stay where they are. Staff who come without their managers will have to make the extra effort, says Don, to keep them in the loop.

Emcore occupants may be able to keep their old offices if their managers agree, says Don, but he doesn't advise occupants to do it.

"I doubt it's a good idea. I've had multiple offices in the past and each place thinks you're a fulltime employee with fulltime work right there, but out to lunch for half the time." Still, he says, "for some, the interaction with other people might be too much. They may want to move back."

Managers moving are Fred Sexton, Radiation and Reliability Physics Dept. 1762; Jerry Sleaf, Electromechanical Engineering Dept. 2614; Steve Kempka, Microscale Science and Technology Dept. 9113; and Jon Custer, Microsystems Materials, Tribology, and Technology Dept. 1851. Other managers who will be at Emcore part time include Thom Fischer, BEOL Advanced Packaging Dept. 1745; Jim Redmond, Structural Dynamics Development and Smart Systems Dept. 9124; and Mike Prairie, Thermal/Fluid Experimental Sciences Dept. 9112.

## The half-billion-dollar decision

As Mike Cieslak sums it up, "Sandia has made a half-billion dollar decision that simulation-based design and manufacturing based on microtechnology is the path to the future. I think it's an appropriate gamble to make. First, we're not going to remain in 1960s and 1970s technology in nuclear weapons. Second, the conventional weapon world isn't going to use antiquated technology. So it is where the Labs is going, it will be a prime motivator of the work of the S&T organizations, and it will be where funding is available for S&T organizations to support Sandia's business units."

# Quality New Mexico turns 10 years old this year

Quality New Mexico turns 10 years old this year and celebrations will include a conference March 13-14 featuring an awards ceremony with Gov. Bill Richardson presenting the honors.

"It's been quite a journey to reach this point," says Julia Gabaldon, a Sandia-loaned executive who helped found the organization and serves as its president. "We now have 200 members from all over the state and have many businesses and organizations participating in the quality process."

Quality New Mexico is a nonprofit organiza-



JULIA GABALDON

tion that educates New Mexicans about quality, encourages and rewards quality in business, education, government, and healthcare, and promotes an economic climate to foster and enhance the prosperity of the state. Quality New Mexico administers the New Mexico Quality Awards patterned after the Malcolm Baldrige National Quality Award.

The organization has a \$1.3 million budget, six full- and part-time staff (three are loaned executives), and more than 300 volunteers. It annually sponsors a quality conference that draws some 700 participants from throughout the state.

Quality New Mexico started in the early 1990s as an idea of Julia's then-boss at Sandia, Charles Tapp, now retired, who was manager of the Quality Directorate. He had a vision of creating a state quality award and took his idea to Las

Cruces, where he and Julia met with the deans of the business and engineering schools at New Mexico State University. They formed a partnership to promote quality.

At the same time at a different meeting, Motorola Senior Executive Vice President Chris Galvin challenged New Mexico government, business, and education leaders to make New Mexico "the quality state." He said the first step was sending representatives from the public and private sectors to a quality seminar at Motorola University in Illinois to determine whether similar principles could be applied in New Mexico.

The organization was created in July 1993 and the first awards were given in 1994.

The awards process for the New Mexico Quality Awards follows the Malcolm Baldrige National Quality Awards standards that require a rigorous examination process involving a minimum of 300 hours or review by an independent board of examiners from business, education, government, and healthcare organizations. Three awards are given — the Zia Award (the top award), the Roadrunner Recognition for Progress, and the Pinon Recognition for Commitment.

Julia notes that this year, as usual, several Sandians volunteered their time to Quality New Mexico. They included Daniel Roberts (14011), Karl Ricker (12336), Robert Richards (6851), and Christine Whitley (10253) who were examiners — people who go through the examiner training, work in teams, review applications, and write feedback comments. Gail Willette (9821) was lead judge. Les Shephard (2900) is on the Quality New Mexico Board of Directors and will serve as conference chair for 2004.

Also this year, Sandia Research Park will be honored with the Roadrunner Recognition.

— Chris Burroughs

## Quality New Mexico conference March 13-14

This year's Quality New Mexico Conference, March 13-14 at the Hyatt Regency Tamaya Resort, is expected to attract more than 600 people.

Featured speakers will include nine Malcolm Baldrige National Quality Award Recipients. On March 13 there will be a CEO luncheon to recognize the 2002 Board of Examiners who provided 16,000 volunteer hours to the New Mexico Quality awards program. Monica Armenta of KOB-TV will emcee the luncheon.

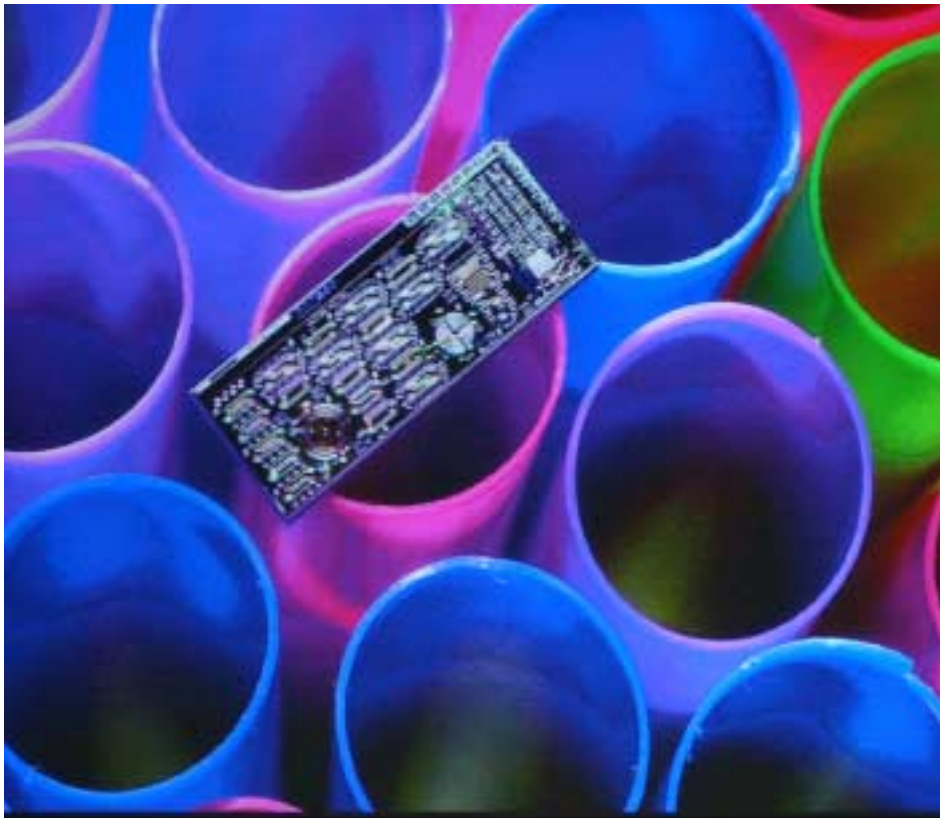
Eight tutorials on the Baldrige Criteria for Performance Excellence for business, educa-

tion, government, health care will be presented from 1:30-4:30 p.m.

The New Mexico Quality Awards Ceremony "Looking Back to the Future" takes place at 7 p.m. Gov. Bill Richardson will present the awards.

On March 14 an executive panel with eight Baldrige Award recipients will discuss "Higher Performance In a Rapidly Changing Business Environment" followed by seven workshops focusing on service, small business, manufacturing, education, government, health care, and presentations by 2002 New Mexico Quality Award Recipients.

# Paul and Joan discuss State of the



LABS PRESIDENT C. Paul Robinson during his State of the Labs remarks discussed Sandia's sensor technology and how it is being applied in the fight against terrorism. In the image above, a Sandia-developed sensor sits atop a stack of soda straws.

(Continued from page 1)

Leading off the community presentation at the Marriott hotel, Sen. Jeff Bingaman, D-N.M., took only two sentences to sum up his take on the Labs: "This is a period of enormous challenge for our country. I for one sleep better at night knowing that we have Sandia and all the capable people of Sandia in meeting these challenges."

Mike Camardo, Executive Vice President of Lockheed Martin Technical Services and also chairman of the board of Sandia Corporation, also spoke at the community presentation. He thanked Paul for "his exceptional leadership," which combined with the world-class work of Sandia researchers has

## More State of the Labs

- TJ Allard discusses Sandia's role in helping with the start-up of the Department of Homeland Security.
- Irena Erteza discusses recent advances in Sandia's synthetic aperture radar technology.

Stories on page 8

brought distinction to the Labs. He said Lockheed Martin was proud of its association with Sandia.

Camardo said Lockheed Martin has contributed \$14 million to statewide projects since it took over management of Sandia in 1993. He also recognized the work of Lockheed Martin's Technology Ventures Corporation, established in Albuquerque

was the talk Abraham concluded: "You do outstanding, outstanding work, and the country is safer because of it. Thank you very much."

Paul began on a somber note, offering thanks and prayers for the "men and women in the armed services ready to sacrifice their lives" in a possible military action against Iraq. "If force is required in Iraq, we stand ready to help in any way we can as well."

To employees Paul added: "A number of Sandians now are in harm's way providing support to the military that we should remember as well."

Paul noted with pleasure the election to the National Academy of Engineering this month of Sandians Al Romig, Jack Jakowatz, and Jim Asay (*Lab News*, Feb. 21). All three have worked in the classified realm, he noted. Jack in particular, said

Paul, "has spent almost all his career in the deepest, deepest of departments" developing synthetic aperture radar to its present advanced state (see "Beyond images" on page 8). Their elections, Paul



PRIOR TO THE STATE of the Labs address to the community, Paul Robinson and Joan Woodard met with the local news media.

that year, in helping find millions of dollars of venture capital for scores of new startup companies based on Labs-initiated technologies.

"We're proud to be a small part of the partnership."

Each session started with a 10-minute video prepared by Video Services Dept. 12610. It highlighted recent work of the Labs and the praise DOE Secretary Spencer Abraham heaped on Sandia in his Dec. 13 Sandia visit announcing renewal of Lockheed Martin's management contract (full text in Jan. 10 *Lab News*). This

said, "should make us all proud."

## Research advances to counter terrorism

Paul highlighted some recent Sandia research advances for the war on terrorism. Here are a few he mentioned:

- The SnifferStar chemical sensor for mounting on a drone and sensitive to both blister and nerve agents (see *Lab News*, Jan. 24, and the special Labs Accomplishments issue of the *Lab News* distributed last week).
- Laser-induced fluorescence sensor that can detect and discriminate biological agents used in bio-weapons.
- Sensors deployed in tests in airports and subways on both coasts are leading to a new generation of sensors to help protect our borders and harbors.
- Sandia is working with the City and Port of Los Angeles and Port of Long Beach to serve as security consultant and project manager for Operation Safe Commerce, to improve the security of maritime commerce.
- Establishment of a Cooperative Monitoring

## Budget, employee levels, hiring, construction all up

After a number of years in which Sandia's staffing levels had diminished, that has been reversed. And Sandia's budget is at an all-time high. Executive VP Joan Woodard gave some details in her State of the Labs presentations:

- "On the budget side, the laboratory is at the \$2 billion a year level." (Charts prepared in conjunction with the presentations show Sandia's total revenue estimate for FY03 at \$1.898 billion and for FY04 at \$2.049 billion.)

- "Over the past two years, we've hired nearly 1,300 new employees. And we expect to continue substantial hiring for the foreseeable future." Said Joan, "I'm very pleased to say that our new generation of Sandians represents the best and brightest of their classes."

- At our two major sites, we now employ about 8,000 people — up from 7,730 in FY02 and a recent

low of about 7,400 in FY01 — with a combined payroll of \$700 million. The FY04 estimate is 8,050. About 350 employees a year are lost through attrition, mostly retirements. The hope now is to keep staffing levels fairly stable.

Construction at Sandia is booming. There is "a real renaissance of construction going on at Sandia," Paul said to a question after the community presentation. He referred specifically to the huge MESA project, funded for \$113 million this year alone, with total funding expected to be \$462 million. He also noted the planned Center for Integrated Nanotechnologies and the Joint Computational Engineering Laboratory, under construction. At the Pantex site, the new Weapons Evaluation Test Laboratory, for testing weapon components, broke ground last week (see "First dirt turned over for new WETL facility" on page 4) and will be completed in 2004.

# Labs with employees, community

ommerce.

- Establishment of a Cooperative Monitoring Center in Amman, Jordan, modeled after the CMC in Albuquerque. It will provide a forum for regional training on non-proliferation technologies, development of new monitoring capabilities, and interactions among scientists, engineers, and policy-makers.

- Work with Cray to build the world's fastest computer, Red Storm. When it comes on line in 2004, it'll be capable of at least 40 trillion operations per second.

- The Extreme Ultraviolet Light (EUVL) consortium, working with industry and other national labs to produce the next-generation tool for making computer chips with feature sizes 100 times smaller than current chips.

- Collaboration with IBM on nanotube transistors with unique characteristics not seen in silicon transistors. These tiny devices are about 2 nanometers, or about 10 atoms, across. They "promise to extend computer power well into the future."

"One of the marvels of Sandia," Paul said, "is that you jump quickly from tera-flops to nanometers, from the incomprehensibly vast to the vanishingly small."

## Nano/biology

Paul also highlighted what he called "our move toward the biological sciences," noting that the 21st century may be "the century of biology." Said Paul: "We're putting together all the major technologies we have in solving biological and health problems. . . . We see a convergence among biological sciences, computation sciences, microelectronics, photonics, micromachines, and nanotechnology."

One of the goals is "programmable microsystems" based on biology, and he noted the observation by Nobel laureate chemist Richard Smalley last year at Sandia that at the most basic level biology begins to look like "wet nanotechnology."

Despite all the new scientific fields and new terms and language Sandians must deal with, said Paul, Sandia's "distinctive work ethic" has not changed. "Our work can make a difference. It can help to change the world for the better. We are each expected to provide exceptional service in the national interest."

## Joan on addressing immediate threats

Joan Woodard picked up on that theme in her presentation: "It's gratifying to come to work every day knowing that what we do is making a difference in providing for the safety and security of the nation." She outlined several examples:

- Sandia has accelerated an effort to develop a standoff biological detection system for giving advance warning of a biological weapon threat.

- The Labs is working to cope with the "two-edged" sword of the "volumes and volumes of data" from new generations of sensors for homeland security and military antiterrorism applications. "Sandia has been working on reducing rivers of raw data into meaningful information — into intelligence. We've produced breakthroughs in computer and heuristic sciences that are now indispensable tools for data analysis."

- The merging of robotics capabilities with sensor technologies, remote video capabilities, and bomb-disablement know-how to develop robots "that can go in and disarm a bomb." She noted that Albuquerque police used a Sandia robot in December after a tragic triple homicide



JOAN WOODARD and Paul Robinson answer questions from the audience following their prepared remarks at the State of the Labs address.

to assess the situation without further risk of life.

- The Gunshot Residue Detection Kit that can help police determine — directly at the crime scenes — if an individual has recently fired a gun.

"And thanks to another Sandia technology," said Joan, "our adversaries are finding it harder to hide from our military forces." She referred to "the fascinating technology" of synthetic aperture radar (SAR, *Lab News*, June 29, 2001), an area where Sandia "has been at the forefront" for 15 years. For some intriguing details about that she introduced SAR researcher Ireena Erteza (see "Beyond images" on page 8).

## Energy, LEDs, and nuclear futures

Joan also talked about Sandia's energy research, especially the "solid state lighting initiative." Its goal is

to establish the fundamental science and technology to replace incandescent and fluorescent lighting with semiconducting light-emitting diodes (LEDs). "The newest LEDs are long-life, bright, and can be made to emit a range of different colors, including something very close to natural sunlight."

She said LEDs could be as much as 10 times more efficient than incandescent and twice as efficient as the best fluorescents, a potential savings of "billions of dollars over the next 20 years in energy costs alone."

The hydrogen economy President Bush spoke of in his State of the Union address has great potential, but there's a possible "Catch-22," said Joan. "The hitch with hydrogen is that it requires a lot of energy to produce." The solution may be "a Sandia-generated vision that is attracting attention nationally," the "global nuclear future." This vision "provides a synergistic, systems-based way of thinking about nuclear energy," she said. "If nuclear energy were to experience a renaissance in this country, there could be clean surplus energy available to produce hydrogen."

All in all, said Joan, Sandia is involved in so



LABS EXECUTIVE VP Joan Woodard in her State of the Labs presentation discussed a number of Sandia's advanced technology projects, including its Grand Challenge LDRD to develop LED-based lighting sources.

## All photos by Randy Montoya

many exciting projects that it is hard to decide "what to present in a forum like this." She urged Sandians to read the new *Lab News* Labs Accomplishments issue — "an amazing read," she said — and the annual report.



SEN. JEFF BINGAMAN, D-N.M., a special guest at the annual State of the Labs community presentation, said he "sleeps better" knowing Sandians are at work meeting the nation's challenges.

# Homeland security, synthetic aperture radar get special attention during 2003 State of the Labs presentation

## Sandia helping shape the new Department of Homeland Security

A new feature of this year's State of the Labs events were short presentations by two younger Sandians, TJ Allard (Org. 50) on homeland security and Ireena Erteza (5912) on synthetic aperture radar (see "Beyond images . . ." at right).

TJ, director of Sandia's homeland security office, outlined the Labs' role in the new federal department. He pointed out that Sandia has been trying to anticipate and guard against terrorist threats for years, at least since the 1972 Munich Olympics attacks. "This is what being a national laboratory is all about — anticipating needs and working on solutions before problems arise so the solutions are available when the country needs them," TJ said.

So Sandia was well prepared on the people side, he said. "We have a wide array of experts."

Since last August, many of them have been working in Washington, helping get the new Department of Homeland Security up and running. Most of Sandia's



TJ ALLARD talks about Sandia's role in the start-up of the Homeland Security Department.

interactions are with the Science and Technology Directorate; others are with the Information Analysis and Infrastructure Protection Directorate. Here's what some of the Sandians are doing:

- **John Vitko** (8100). Defining the Department's biological and chemical defense programs.

- **John Cummings** (1000). Laying out the Department's infrastructure protection science and technology development.

- **Sam Varnado** (6500). Defining the program to use those technologies to assess vulnerabilities and protect the nation's infrastructures.

- **Jerry Allen** (ret.). Putting together the structure of the

Information Analysis and Infrastructure Protection Directorate. Jerry came out of recent retirement to help with this task.

- **Tom Klitsner** (9621). Helping the Department's Security Chief Information Officer put together the information architecture for the Department.

- **Holly Dockery** (5350). Putting together the standards to guide all this work.

TJ said several other Sandians have gone back to Washington recently "to put meat on the implementation plans."

"In short, Sandians have taken on major responsibilities in defining the science and technology aspects of the Department of Homeland Security," said TJ, "— more so than any other laboratory." . . . "It's a big job," and "it's taken them away from families and loved ones," but they are being praised for their quality. He said he is "extremely proud" of them. "In fact," he said, "John Vitko, John Cummings, and Holly Dockery have been asked to take long-term assignments in the Department."

## Beyond images: SAR's precision tracking and mapping

In her presentations to New Mexico employees and to the community, Ireena Erteza offered a glimpse of why there is so much excitement about the capabilities of synthetic aperture radar (SAR). She has worked in Jack



IREENA ERTEZA discusses synthetic aperture radar. (Photos by Randy Montoya)

Jakowatz's Radar Algorithm Development Laboratory Dept. 5912 for the past five of its 15 years. Much other SAR work is in Electronics Systems Center 2300.

SAR is a computed imaging technique, like medical tomography, relying on a "synthetic aperture" created by

flying the device above the target area. Sandia first got started on SAR because of a strong radar hardware heritage for weapons systems. That expertise, based in Center 2300, has been coupled with Sandia's strong signal processing research. That combination, said Ireena, "made it natural for Sandia to become a world leader in SAR systems."

"Through continued steady funding from DOE and an outstanding group of researchers, Sandia has been able to make significant contributions to the national radar community during the past decade and a half," said Ireena. "It is really inspiring to work with this group."

SAR was originally seen only as a day/night, all-weather imager. Sandia has made "significant enhancements to the imaging capabilities of SAR, but more important, we have shown the community that SAR offers much more than just imagery," she said.

The work has resulted in "many significant and unique capabilities" to exploit SAR imagery. In fact, she said the goal is to develop innovative techniques for exploiting SAR imagery, applied specifically to nuclear nonproliferation, arms control, and national security.

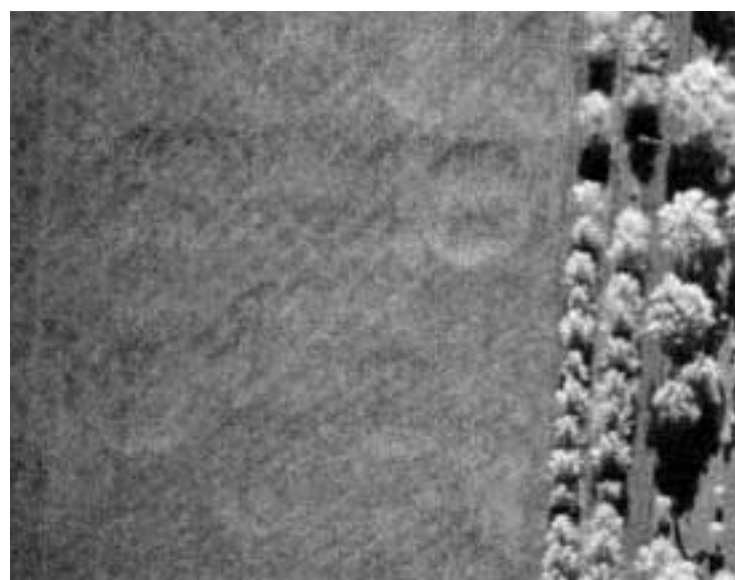
She showed two examples of innovative SAR products produced at Sandia:

**Coherent change detection (CCD).** CCD, developed at Sandia, compares a pair of SAR images taken of the same scene but at different times. "CCD allows us to detect physical changes on the order of a wavelength on the surface of a scene. A radar wavelength is measured in a few centimeters." She showed two SAR images of Hardin Field north of Sandia's Tech Area 1 taken 20 minutes apart. The resulting computed comparison shows the path of a lawn mower and the footsteps of the operator walking around the machine and of two people walking diagonally across the field to lunch (from the bending of the grass). It even reveals the different positions of leaves on the tree caused by the wind. And this is from computed images made from an aircraft flying 10,000 feet up and three miles laterally away.

**Interferometric terrain mapping.** Here pairs of images are used to determine the heights of objects in a scene. Through a breakthrough in automation of a complicated technique called phase unwrapping, Sandia has been able to build completely automated terrain mapping systems. The aircraft-based system can in a day provide maps of a 30-square-mile area with height data every 3 meters and 0.8 meter relative accuracy.

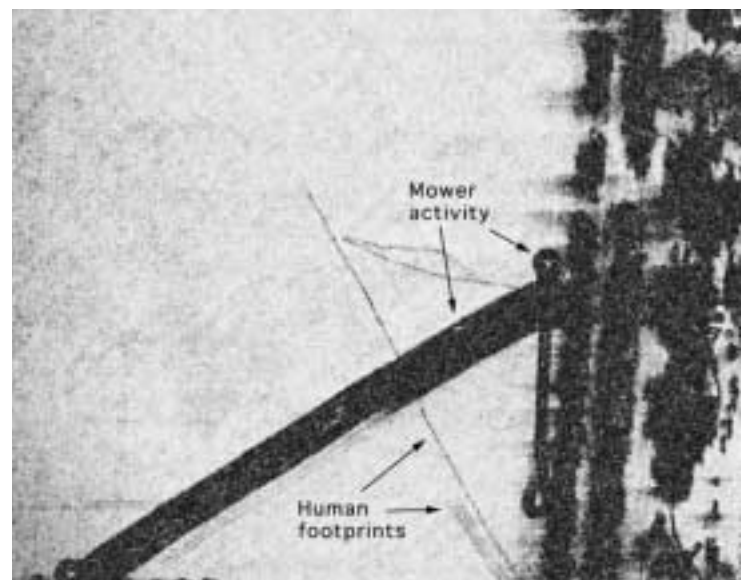
"These high-accuracy maps are critical for security and military mission planning and training," said Ireena. Sandia's new system produces maps that are more than 1,000 times more detailed than current maps that exist worldwide.

Concluded Ireena: "Sandia's SAR program has produced many technical breakthroughs that give our nation information that couldn't be obtained otherwise."



### Coherent change detection with SAR

In her talk at the State of the Labs presentations, Ireena Erteza showed this pair of SAR images of the Hardin Field parade ground obtained 20 minutes apart from an aircraft flying 10,000 feet above. Sandia's SAR coherent change detection technology compares data from the two passes and computes and produces the image on the right revealing (dark areas) changes since the first pass, including a mower's passage, footsteps in the grass, and the movement of leaves. The technology can be useful for both military and civilian applications.





# It's just family business when a Sandian needs help

Father, mother, two kids, a dog is how most people would describe a typical family, or maybe not. Maureen (Mo) Locher of Business Systems Dept. 10852 discovered what a real family is all about.

"Mo has been undergoing treatment for a recurring serious illness the last couple of months," says Mary Beth Tidwell (10852). "She has had a very difficult time with the last set of treatments. Her Sandia friends and coworkers have been driving her to doctor appointments and staying with her during the treatments. She is a special lady. If circumstances were reversed, she would be the one giving her time freely."

Recently Mo had a water leak in her home. After an initial investigation by a plumber, Mo contacted Bernard (Pete) Argo (10863), one of her coworkers. Pete sometimes does small handyman jobs on weekends.

Pete's initial response was "of course" he would do it. "It was for Mo. Mo has never met a stranger," says Pete. "If she did, in two min-



MO LOCHER and Peter Feng talk about water-leak repair at her home. Several Sandians helped install new plumbing — at no charge. Mo says she discovered what a "real family" is all about.

utes they were best friends."

His initial concern was whether concrete was involved. Upon investigation he found out the leak was beneath the front yard. Pete decided that a new line from the water meter to the house would have to be installed. He would get all the materials. What he needed was "human power thrust" (ditch diggers). Back at work Pete shared with his coworkers Peter Feng, Mike Edstrom, and Paul Smith (all 10863) what Mo needed and asked if they would like to help. Without hesitation they all agreed.

The work was done on a Sunday. They all changed their schedules so they could be there at the appointed time. With their shovels in hand they arrived at Mo's house. It took them about five hours to dig the ditch and install new plumbing.

With the new plumbing installed and the grass returned to initial state, Mo wanted to pay for the work. "No," said Pete, "this is not about money; it is about family, 'Sandia family.'" — Iris Aboytes

## Management promotions

### New Mexico

**Jon Custer** from SMTS, BEOL Advanced Packaging Dept. 1745, to Manager, Microsystems Materials, Tribology, & Technologies Dept. 1851.



JON CUSTER

Jon came to Sandia in 1993. In his career, he has worked on new materials for IC fabrication, CMOS and MEMS process integration, and helped Washington State University start a program in manufacturing engineering. Most recently, Jon worked in advanced microsystem packaging.

He has a BSE in electrical engineering and engineering physics from Princeton University and an MS and PhD in material science from Cornell University.

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**Doug Otts** from PMLS, Corporate Products and Services Dept. 10255, to Manager in Business Management and CFO Div. 10000.



DOUG OTTS

Doug has been involved in business management since joining Sandia in 1994. His experience is in procurement, business management, and supply chain management.

He has a BBA in marketing, an MBA, and is a Certified Purchasing Manager.

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**Johann Seamen** from Team Leader, Target Supporting Technologies Dept. 1671, to Manager, Target Supporting Technologies Dept. 1671.



JOHANN SEAMEN

Johann joined the Labs in 1970. He has worked in pulsed power for more than 32 years and helped develop many of the components and technical processes that are used today. He has worked in Z-pinch program development over the past 11 years.

Johann graduated from DeVry Tech.

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**Mark Terhune** from Manager, NNSA NDS Satellite Payloads Dept. 5733, to Level II Manager, Nonproliferation and Materials Control Strategic

Business Unit Deputy, Dept. 5002.

Mark joined Sandia in 1987, and has worked in many different aspects of Sandia's satellite program, including hardware design, development, and system engineering, as well as project, department, and program management.

At the time of his promotion, he was responsible for Sandia's Nuclear Detonation-detection System (NDS) Satellite Payloads program.

Mark has a BS and an MS in electrical engineering, both from the University of Missouri/Rolla.

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**Carl Vanecek** from DMTS to Manager of Integrated Surety Mechanisms II Dept. 2618.

Carl joined Sandia in May 1990. His work has been primarily in surety mechanism design and development.

He has a BS in mechanical engineer-



MARK TERHUNE



CARL VANECEK

ing from the University of Florida and an MS in mechanical engineering from the University of New Mexico.

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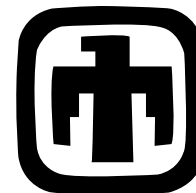
### California

**Christopher Moen** from PMTS to Manager of Fluid/Thermal Modeling Dept. 8728.

Chris joined Sandia in 1994, and has worked in the field of computational fluid dynamics and heat transfer. He has a BS and MS in aeronautics and astronautics, both from the University of Washington, and a PhD in mechanical engineering from the University of California/Davis.



CHRISTOPHER MOEN



## National Response Teams see Labs' first responder technologies



RICHARD SPARKS (5861) shows a K-9 collar camera and portable video monitor to (from left) Steve Hawthorn, Doug Skie, and Dennisses Valdes, all of the Environmental Protection Agency (EPA). The three were among 40 representatives of the federal National Response Teams (NRT) who visited Sandia/New Mexico on Monday to get a glimpse of several emerging technologies for first responders and homeland security. The NRTs, comprising 16 federal agencies, is responsible for readiness, policy, and coordination of federal responses to environmental emergencies, ranging from pollution incidents to terrorist threats to land, air, and water.

# Mileposts

Photos by Michelle Fleming



Ann Riley  
20 1302



Anthony Trujillo  
20 2996



Constance Vanderburg  
20 10800



Lynn Janik Washburn  
20 9208



Donnie Whitehead  
20 6413



John Cresap  
15 14186



James Curtin  
15 10842



Mark Diltz  
15 1735



Mathew Donnelly  
15 14172



William Klein  
15 10016



Terry Litts  
15 15425



Curt Nilsen  
15 8232



Hans Oldewage  
15 3121



Andrew Silva  
15 10844



Martha Trujillo  
15 11200



David Van Ornum  
15 14405



Gregory Vawter  
15 1742



Colleen Wakefield  
15 1769



## Feedback

**Readers ask: KAFB gym — can we use it? What's up with dirt lots west of Medical? Are smokers too close to doors?**

**Q:** My question is about the use of the base gym. Are contract employees allowed to use the base gym just by showing their Sandia identification badge? I was told [on 12/05/02] by the person checking IDs that I had to purchase a pass. Is this true? I'm not using the weight rooms or the workout rooms. I just wanted to use the gym for basketball.

**A:** The Kirtland Air Force Base has two types of passes available to Sandia employees and contractors for purchase at the Sandia Laboratory Federal Credit Union located at Wyoming Blvd. And H Avenue:

1. A punchcard with 25 punches or sessions available to the employee for access to the entire facility for \$50.

2. An annual pass that allows access to the entire facility for \$200.

Individuals who wish to join the gym to access any of the services must purchase one of the punch cards available at the SLFCU. Individuals who have an account can debit their account to the CU; those who do not must pay cash.

If you have any additional questions, contact the Base Gym at 846-1102 or SLFCU at 293-0500.

— Larry Clevenger (3300)

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**Q:** What are the plans for the dirt lots west of Medical?

**A:** The dirt lots west of Medical are the preferred site for the Integrated Systems Support Group (ISSG), an NWSBU-sponsored General Plant Project (GPP) to be constructed this fiscal year. Once the GPP is completed, our goal will be to add additional parking in the space that is left. There may be a future need (FY06) to expand this new building to handle personnel in the mobile office complex west of the current vacant lots. If this happens, Facilities would either reuse or demo the trailer complex to the west and possibly use any empty space for additional parking. — Dave Corbett (10800)

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**Q:** Would it be possible to post signs requiring cigarette smokers to stand a reasonable distance away from building doors? Smokers tend to congregate right outside the doors on the south side of Bldg. 891, and I extremely dislike being subjected to their second-hand smoke as I enter the building after going jogging.

**A:** To help improve the environment in our buildings, Sandia has banned smoking in all buildings, and smoking is prohibited by law in all government vehicles. We have located cigarette butt containers in locations where it is reasonable and convenient for the smokers. At this point in time, there are no established distances for smoking outside. If you have an area of particular concern, please contact the Facilities Building Manager (<http://fac-prod.sandia.gov/bldgmgr/listbldg.idc?>) for your particular building, and they will investigate and determine if there is an alternative solution available that meets the needs of all people involved. — Dave Corbett (10800)

## Recent Retirees



Chuck Looney  
40 5734



Dave Larson  
37 9700



Bob Hughes  
36 1744



Jim Moreno  
36 6218



Ralston Barnard  
35 352



Richard Shambo  
22 1418



Karen Smith  
15 2500



Cecilia Zamora  
10 3125



# Hispano Chamber names Sandia, Lockheed Martin, and TVC Corporate Partner of the Decade

By Chris Burroughs

The Albuquerque Hispano Chamber of Commerce named Sandia, Lockheed Martin, and Technology Ventures Corporation (TVC) its Corporate Partner of the Decade by awarding them the first-ever Aguila Award during the chamber's recent annual fund-raising banquet.

The award is for their contributions to the community's businesses, economic development, job training, and education since Lockheed Martin began managing Sandia in 1993.

"We are truly pleased to receive the award," says Lenny Martinez, Sandia VP of Manufacturing Systems, Science, & Technology, who has worked closely with the chamber over the past several years. "The essence of the award is the strength of our partnership as recognized by the chamber. We didn't ask for the award. They chose to recognize us at their most important event of the year."

Says Chamber President and CEO Loretta Armenta: "As part of the Lockheed Martin contract, TVC was formed and the Sandia/Lockheed/TVC team has become one of the Albuquerque Hispano chamber's most dynamic partners. We now share common goals and values that motivate us to work together to solve key issues affecting New Mexico business and the Hispanic community."

Lockheed Martin has contributed more than \$14 million to the state, including \$2 million in grants for math and science academies, a \$1 million grant for the Lockheed Martin Extreme Screen Dynatheater at the New Mexico Museum of Natural History and Science, and more than \$300,000 to the Albuquerque Hispano Chamber. In addition, Lockheed Martin and Sandia have made a concerted effort to provide mentoring programs to small, disadvantaged, and minority businesses interested in working with Sandia. This includes workshops on how to work with Sandia's procurement system.

Sandia has also placed more than \$300 million in contracts in New Mexico in the past fiscal year, with \$223 million going to small and minority businesses.

Among the activities Lenny is most proud of are Sandia's role in making sure the chamber's

newly built Barelás Job Training Center had state-of-the-art communications and classroom technology, sponsoring the immersion of the e-mercado concept, and working with the chamber to ensure success in establishing a science camp for kids at risk through the National Atomic Museum (400 children participated).

New for the coming year, Sandia is helping the chamber develop the "e-mercado," a program that allows small businesses to participate in e-commerce. Those businesses will be able to use the state-of-the-art computer system at the Barelás Job Training Center to become skilled in e-commerce activities.

Armenta says much of the growth of the chamber is directly attributed to the "unique partnership with Lockheed Martin, Sandia, and TVC.

"The new Barelás Job Opportunity Center and the Albuquerque Hispano Chamber building were constructed in 2000 at a cost of more than \$2 million," she says. "TVC President Sherman McCorkle chaired a five-year capital campaign to raise the \$2.2 million for this construction. Lockheed Martin, Sandia, and TVC contributed over \$130,000."

Many Sandians have been members of the Hispano chamber board, leaders of various committees, and participants in a wide variety of chamber initiatives. Currently, Don Carson (12600) is a sitting board member. In exchange,



CORPORATE PARTNER OF THE DECADE — The Albuquerque Hispano Chamber of Commerce recently named Sandia, Lockheed Martin, and Technology Ventures Corporation (TVC) its Corporate Partner of the Decade. At the news conference where the announcement was made are, from left, TVC President Sherman McCorkle, Hispano Chamber 2003 Chairman of the Board Jimmie Trujillo, Chamber President Loretta Armenta, and Sandia VP 14000 Lenny Martinez. (Photo by Randy Montoya)

*"The essence of the award is the strength of our partnership as recognized by the chamber. We didn't ask for the award. They chose to recognize us at their most important event of the year."*

Loretta Armenta and other chamber members support a wide variety of Sandia initiatives with small businesses including carrying a couple of bills before the legislature that enable Sandia to help New Mexico small businesses and support economic development in the state.

## Feedback

**Q:** Could we have a crosswalk put in across N Avenue, from the parking lot to just south of the Schiff auditorium on the west side? It is like NASCAR out there.

**A:** In a continued effort to remind drivers that they are entering a 15-mph zone, we have placed raised pavement markers (buttons) at both ends of N Avenue. In addition, we have also increased the size of the speed-limit signs for visibility. The *Manual of Uniform Traffic Control Devices* (MUTCD) governs placement of crosswalks, and crosswalks are not recommended for this type of application. Crosswalks in this area could lead to a false sense of protection for pedestrians and confusion for vehicle drivers. The driver of a vehicle is responsible for observing the posted speed limits of 15 mph in this area or risk being ticketed by Sandia or USAF Security Police Officers. Pedestrians are responsible for ensuring that conditions are safe for their crossing the street.

— Ed Williams (10849)

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**Q:** Since some of the parking lot west of Bldg. 878 will be lost to a new building, will the parking lot north of the Cafeteria have additional carpool parking spaces added? I know that Sandia has always tried to match the carpool space needs to those of the people who work in the vicinity, so I hope that Sandia will continue to show their support of the environment by supporting carpooling.

**A:** Thank you for reminding us of our commitment to have adequate carpool parking available. Handicap, medical, and second-shift parking will receive priority for parking in the now smaller 878 parking lot. Carpool and visitor parking is the second priority. We will provide additional carpool parking in the 861 and 867 lots to compensate for the lost carpool parking in the 867 lot. We continually monitor carpool space use and adjust periodically to reflect actual use. — Ed Williams (10849)

## Weapon Intern Program senior mentors honored for Exemplary Civilian Service



WEAPON MENTORS HONORED — Senior mentors and staff of the Weapon Intern Program last week were awarded the Exemplary Civilian Service Award by Air Force Brig. Gen. Robert Smolen. The mentors and staff work with participants in the program, sharing the six decades worth of knowledge of the US nuclear weapons program. "These people receiving this medal made history at Sandia and are now giving it to a new generation," Smolen said. He called the Weapon Intern Program a "pinnacle program that helps us preserve the nuclear weapons program for the future." In the left photo, VP 2000 John Stichman, left, and Senior VP 9000 Tom Hunter congratulate Ben Benjamin, one of the medal recipients. Watching are staff members Andy Rogulich and John Hogan (both 2910). In the right photo, Smolen pins the medal on senior mentor Harold Rarrick while Leon Smith, another medal recipient, looks on. Senior mentors and staff who received the award include Leon Smith, Ben Benjamin, Harold Rarrick, Tom Schultheis, Bill Patterson, Hal Walling (all ret.), and Weapon Intern Program staff John Hogan and Andy Rogulich (both 2910).