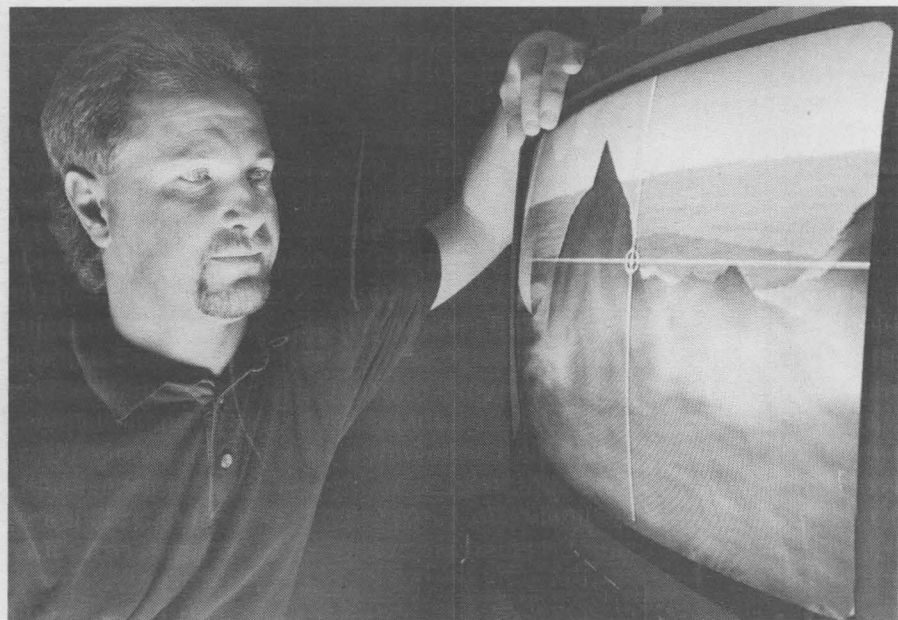


# Science landscape may aid US intelligence services, funding agencies, researchers, and eventually libraries

Program charts science's structure, dynamics by visualization of science citation data



**MAPPING SCIENCE** — David Johnson (9223) keeps an eye on the shifting peaks, valleys, and trails of Sandia's new Science Landscape prototype. The mountain range shown is built from citation data compiled from analytic chemistry papers published from 1986-1996. The program can help visualize research areas of increasing and decreasing scientific interest. (Photo by Randy Montoya)

By Neal Singer

Lab News Staff

Imagine the large-scale structure of science displayed as a landscape. That big mountain range with colorful peaks, ridges, and valleys is physics. Chemistry is a range off in the distance, and in another direction is, say, biology. Trails linking ranges are composite sciences like nuclear chemistry or molecular biology.

The first phase of this unique science landscape has been constructed at Sandia. The view — formed by algorithms fed citation data from technical articles — originally was conceived to help US intelligence agencies more easily track the thrust of research in countries hostile to the interests of the United States. The complex data-management scheme can use open scientific literature to make visible the movement of nuclear and other military technologies across industries, countries, and regions.

An expanded program being made available to funding agencies, civilian scientists, and eventually (in scaled-down form) local libraries to quickly find information about science is expected to pay for itself from licensing fees.

The expanded program will allow managers of funding agencies to watch peaks, ridges, hills, and trails change contour and definition on a year-by-year basis, indicating research areas of increasing or diminishing scientific interest — information helpful in determining which grant applications to fund, in what overall areas to invest for research and

(Continued on page 7)

## Sandia VP 'owners' breathe life into strategic objectives

By Bill Murphy

Lab News Staff

A vision of Sandia's future came vividly to life last week when eight VPs shared their ideas about how the Labs' strategic objectives (*Lab News*, July 19) position Sandia to continue to be a vital science and technology leader in the 21st century.

Each of the eight objectives — four "what-we-will-do" and four "how-we-do-it" goals — has a VP owner. During a two-hour session on Oct. 3 and a similar session scheduled for Oct. 10, each VP owner discussed the significance of his or her objective and how it fits into a larger vision of the Labs as a synergistic whole.



JOHN CRAWFORD

In introducing the Oct. 3 session, Executive VP John Crawford noted that Sandia has been involved in the strategic planning process for six years and has learned that you don't start over with a clean slate each

year, but always build on what has gone before. Sandia's strategic objectives, John says, are built on six bedrock issues that underpin the organization. They are:

- Our mission is and will remain "exceptional service in the national interest."
- We are a national security laboratory.
- Our corporate values are enduring.
- Our core competency is science and technology.
- Our focus is on the customer.
- We always meet all our commitments and we value our present customers.

After briefly reviewing each of the eight objectives, John challenged the standing-room-only audience of 450 Sandians at the TTC and another 100 attendees in California (linked via real-time video) to:

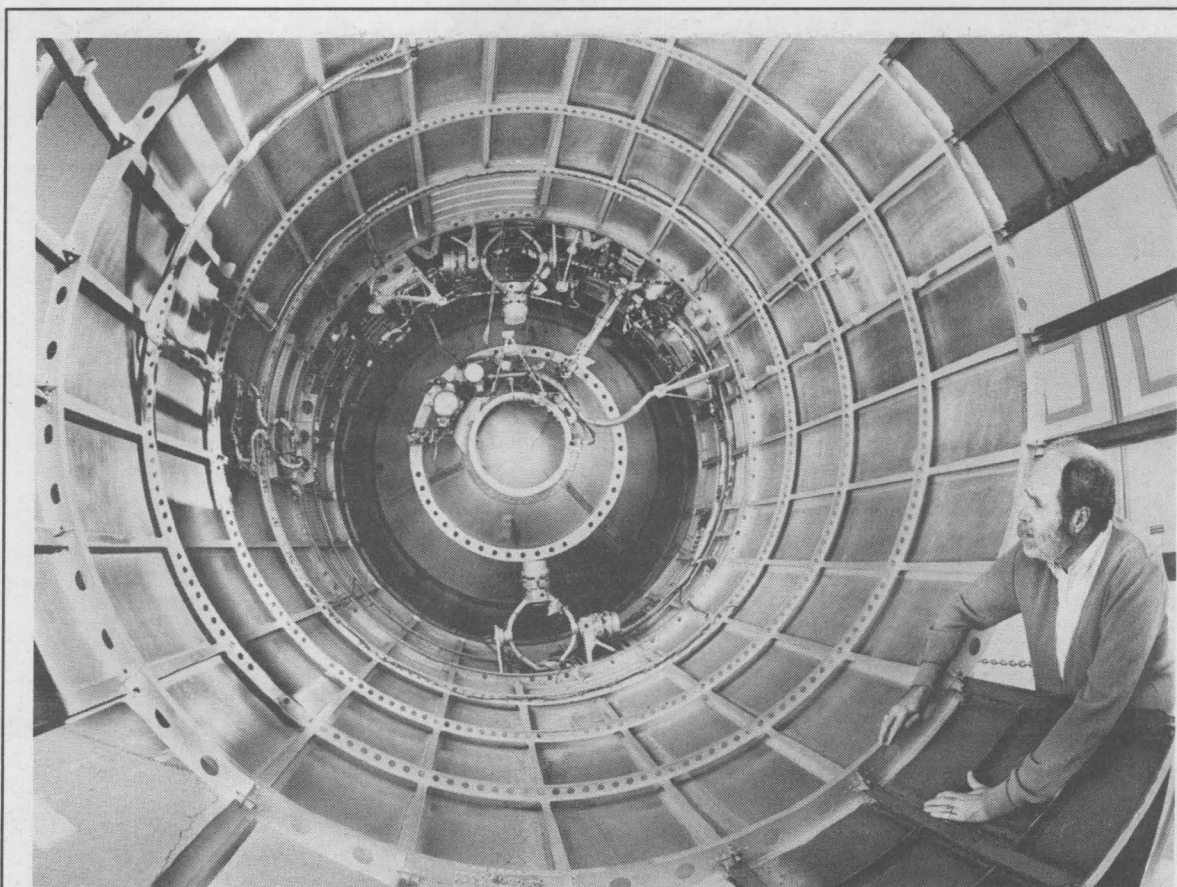
- Imagine what the Labs would be like if we

(Continued on page 4)

# Sandia LabNews

Vol. 48, No. 21 October 11, 1996

Sandia National Laboratories



**NEW AND IMPROVED MUSEUM**— National Atomic Museum historian James Wadell (12660) inspects the insides of the Titan II intercontinental ballistic missile now on display at the museum's outdoor exhibit area. The museum's primary exhibit areas reopened Oct. 1 following a two-week closure for renovations. The aim of the remodeling project was to arrange the exhibits chronologically and to put the US nuclear weapons program into historical perspective. Story and photos on page 6.

3 Biomass-energy project may burn Chernobyl legacy

8 Book Fair inaugurates this year's ECP campaign

9 E&E Sector brings 'system of labs' concept closer to reality

# This & That

**Our 'new' museum** - The newly remodeled National Atomic Museum, which Sandia now operates for DOE, reopened last week. I urge you all to check it out soon. Our photos and story on page 6 give you an early look. The sobering nuclear bomb casings from more than a half century of nuclear history are still a central focus, but now they and the other materials are presented as a series of cohesive, chronologically arranged exhibits. I particularly like the addition of *Life* magazine covers, magazine ads, newspapers, and other illustrations that give a flavor of the times. Kudos to everyone in National Atomic Museum Dept. 12660 and also to all those in Facilities, DOE, and Lockheed Martin who helped. Protocol Manager and Acting Dept. 12660 Manager Deborah Payne says she is proud and also somewhat amazed. The whole project from concept to fruition took only three months.

**Here's a document we like** - It was a welcome sight - the new *Sandia Directory* (our internal phone book, with its organizational as well as alphabetical listings) on our desks Monday of last week. It has been a long time coming. I guess only a year had elapsed since the last directory (it seems longer), but this has been an eventful year, full of organizational change. We really had no easy way to find new organizations' names and their staff members in any sort of functional context. Oh, I know the alphabetical listing of Sandia's 8,000 people is on the Internal Web, and that's now a delight to use - fast and up to date. But if you are anything like me, you want to see how various departments and centers and the people in them relate to each other. This is a vast, complex place, and anything that helps you visualize such interrelations - such as the new directory - is a help. Budget constraints made it difficult to produce a phone book this year. Those difficulties continue, but a variety of other options are being looked at for future years.

**Don't take me literally** - The most consistently misused word in the English language must be "literally." The misuses make for some amusing double takes. I heard a CNN film critic say last year that some actors talked until they were "literally blue in the face." On a local TV newscast last November, I heard reference to a man who "literally covered the state with bad checks." But my favorite was on an NFL football telecast a few years back when I heard the sportscaster describe a particularly athletic tackle: "He literally screwed him into the ground." You'd think that would make all the highlight films.

- Ken Frazier

## Tom Picraux named Director of Physical and Chemical Sciences Center

Tom Picraux has been named Director of Physical and Chemical Sciences Center 1100.

Tom has worked in the field of materials physics since joining Sandia in 1969 as a member of the Radiation Effects Physics Department. In 1986, he was promoted to Manager of the Ion Implantation and Radiation Physics Research Department. Other departments Tom has managed include Ion Implantation and



TOM PICRAUX

Microsensors Research, Ion-Solid Interactions and Surface Sciences, Semiconductor Physics, and Nanostructure and Semiconductor Physics. He has also served as program manager for defense programs in Center 1100.

He has a BS in electrical engineering from the University of Missouri and an MS and PhD in engineering science from CalTech. Tom studied physics at Cambridge in 1965-66 under a Fulbright Fellowship.

Tom received the E. O. Lawrence Award in 1990 for the development of ion channeling and related ion-beam techniques leading to new advances in materials science. He received Basic Energy Sciences Material Science Awards in 1985, 1992, and 1994. Tom is a fellow of the American Physical Society and a member of the Materials Research Society (past president), IEEE, the American Vacuum Society, and the American Association of the Advancement of Science. He is also a member of the National Research Council's Solid State Sciences Committee.

## Flu shots available soon at Medical Clinic

The Sandia/New Mexico Medical Clinic will again provide influenza immunizations (flu shots) free to Sandia employees at the following times and locations:

- Oct. 28-Nov. 1 Bldg. 956 7:30 a.m.-3:30 p.m.
- Nov. 4-8 Bldg. 831 (Medical) 1-3 p.m.
- Nov. 11-15 Bldg. 831 (Medical) 1-3:30 p.m.

Nurses from the Lovelace Health Plan (HMO) will provide influenza immunizations to dependents of employees, retirees and their dependents, and Sandia contractors and their dependents on Nov. 12, 8 a.m.-noon, and Nov. 13, 1-5 p.m., in the Fiesta Room of the Coronado Club. Note: You must be 18 or

older. These immunizations will be provided free to dependents of employees and to retirees and their dependents who are enrolled in either the Lovelace HMO, the Lovelace Senior Plan, or the Triple Option Plan. To receive the free immunization, Lovelace requires that each recipient present his or her individual Lovelace or TOP ID card. Sandia contractors and their dependents will be charged \$10 per immunization (unless they are covered under the Lovelace HMO and can present a Lovelace ID card).

Call Pat DeVivi (3333) at 844-8945 or the Medical Clinic at 845-8159 for more information.

## ★ Congratulations

To Judy Mattingley (4412) and Tom Howard, married at the Elephant Butte Dam Site, Sept. 13.

To Linda M. Jaramillo (10403) and Lawrence Alfaro, married in Albuquerque, Sept. 14.

To Patricia Clark and Blase Gaude (5931), married in Natchez, Miss., Sept. 21.

## Sandia LabNews

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Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corp., a wholly owned subsidiary of the Lockheed Martin Corp. and a prime contractor to the US Dept. of Energy.

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Published Fortnightly on Fridays by  
Employee Communications Dept. 12640, MS 0165

LOCKHEED MARTIN

## Retiree deaths

Henry Roy (78) .....	3733 .....	July 2
Lucile Brett (97) .....	2419 .....	Aug. 3
Guinevere Cosstick (82) .....	2633 .....	Aug. 4
Ernest Re (83) .....	9743 .....	Aug. 9
Floyd Mastin (72) .....	7133 .....	Aug. 14
Joyce Doyal (71) .....	8250 .....	Aug. 15
John Moore (76) .....	3551 .....	Aug. 15
Shirley Cleary (75) .....	3733 .....	Aug. 15
Donald Grebe (77) .....	1731 .....	Aug. 16
Rudolf Probst (84) .....	7415 .....	Aug. 18
Alfred Schwartz (73) .....	2515 .....	Aug. 18
Ruth Redmond (92) .....	3461 .....	Aug. 22
Ruth Larsen (88) .....	3441 .....	Aug. 23
Perry Higginbotham (84) .....	1832 .....	Aug. 26
Merle Alexander (76) .....	7473 .....	Aug. 26
Paul Stickler (73) .....	5233 .....	Aug. 30
Woodrow Key (83) .....	7431 .....	Aug. 31

## Bert Westwood working on NMSO 'cash crunch'

Bert Westwood might be retired as Sandia Research Div. 1000 VP, but he's not retired from community activities. Bert is currently serving as President of the New Mexico Symphony Orchestra Board of Trustees.

One of his responsibilities is helping put the Symphony back on firm financial footing. "While there are lots of positive things happening for the Symphony these days, including increased concert attendance, contributions, and season ticket holders, cash flow problems continue to plague us," says Bert. "We're looking for at least 3,000 people to donate \$100 to ease the cash crunch."

Even if people can't donate \$100, any size donation is welcome. Contact the NMSO office at 881-9590 for information about supporting the Symphony. Lockheed Martin supports the NMSO with corporate contributions.

# Biomass-fired plant will create electricity while clearing Chernobyl contamination

By Nancy Garcia

California Reporter

Ten years after the world's worst accident involving a nuclear reactor, a private US business and researchers from the United States and Belarus are planning to test a potential way to decontaminate forests north of Chernobyl. The project will evaluate health, environmental, and economic consequences of a pilot biomass power plant designed to burn timber harboring almost all the radioactive residue, and capture radioactivity in the ash.

Belarus, an independent state just north of Chernobyl, received about 70 percent of the radioactive fallout released during the Chernobyl explosion and subsequent fires, which altogether spewed radiation totaling an estimated 200 times the sum of the radioactivity from the bombs dropped on Nagasaki and Hiroshima, says Larry Baxter (8361), a chemical engineer at Sandia's Combustion Research Facility. Regions severely contaminated in the April 26, 1986, accident represent approximately 25 percent of the total area of Belarus. The contamination is concentrated mainly in the heavily forested southeast portion of the country.

Larry's team and researchers at the Institute of Power Engineering Problems, which was part of the Soviet Academy of Sciences under the former Soviet Union, will join with Wheelabrator Environmental Systems Inc. of Hampton, N.H., to build the pilot plant to convert contaminated wood and litter from the forest floor into electrical energy. The wood and "duff" from the forest floor would be burned in this specially designed power plant that is fueled by biomass, or plant matter. Radionuclides, primarily cesium and strontium, would be captured in the ash and disposed of as low-level or very low-level waste, says Bill Carlson, vice president of Wheelabrator's western region.

Wheelabrator, which operates five biomass

and 16 trash-burning plants, is contributing half — \$800,000 — of the \$1.6 million expense for the two-year project. The remaining half is divided equally between Sandia and Belarus. Sandia's money is being provided by DOE's Energy's Initiatives for Proliferation Prevention program, which is intended to deter nuclear proliferation by providing non-weapons-related work to people with scientific and technical expertise in the former Soviet Union. The proposal was formally approved Sept. 18.

The project's risks and benefits will be examined as it proceeds. The pilot could demonstrate a way to remediate contamination and thus reduce health risks posed by ingesting the radionuclides, whose weak radioactive emissions are otherwise easily shielded. A second benefit would be to potentially decrease Belarus' heavy dependence on imported energy, and consequently lessen the economic pressure to build additional nuclear power plants. The power from the biomass power stations is projected to cost less than the current or future average power generation costs in Belarus, providing an economic benefit to the country.

"The prime consideration is to not make the situation worse," says David Brekke (8418), a Sandia health physicist on the project. "If we can't do this in a safe and environmentally sound manner, it won't go." Already, Larry says, Belarus has conducted a feasibility study exploring the use of biomass for electrical energy there. The country lies south of the Baltic Sea, between Poland and Russia, and occupies an area about the size of Utah. It imports roughly 90 percent of its energy, lacking any significant reserves of coal for electrical power plants.

"Biomass-derived power is ideally suited to their society," Larry says. "We think we can produce electricity at a rate lower than the current cost in Belarus."

At Sandia, Larry investigates the use of a variety of biomass fuels, such as wood, straw, fruit pits, and nut shells, for electrical power. "Biomass combustion presents one of the largest potentials for expansion of renewable energy in the United States," he says. Biomass accounts for about 2 percent of the energy used in California, where several companies



RURAL RESIDENTS of Belarus depend heavily on the land for food and fuel, and tend to remain living near their ancestral villages.

## Sandia California News

operate a number of commercial plants, adds Carlson of Wheelabrator.

### A dependence on the forest

Besides the potential for Belarus to gain some energy independence by using biomass, Larry cites the project's humanitarian benefits. Most of the rural residents of Belarus live close to the land and depend on the forest for fuel and supplies. Although it is prohibited, he says some residents do enter the contaminated forests to gather food, such as mushrooms, and collect firewood, which can spread contamination through dispersion of airborne fly ash beyond the forests.

Fallout from the nuclear disaster is showing up in thyroid cancers and leukemia, particularly in children. Although thousands of people were evacuated after the accident, the government can't afford to build new cities to house everyone still living in affected areas (an estimated few million people). In addition, fertile agricultural land is largely unused because of the contamination. Overall, a full three-fourths of the country has been contaminated to a measurable level. One-fourth of that would exceed the US Environmental Protection Agency standards for annual radiation dose by the general population by anywhere from 2-100 times, Larry says. In some regions, experts believe the contamination exceeds the EPA standards by tens of thousands of times.

Under the project, Wheelabrator will experiment with burning uncontaminated duff at its commercial plant in Anderson, Calif., Carlson says, where about 2,000 tons of biomass are burned per day. By contrast, Carlson says the pilot plant in Belarus may burn just two tons of material a day. At Sandia's Combustion Research Facility, Larry and his post-doctoral employees Steve Buckley and Melissa Lunden (both 8361) will model combustion characteristics, determining through computer simulation which plant design would emit the fewest small, hard-to-capture particles.



FORBIDDEN PARADISE — Forests in the southeast part of the newly independent state of Belarus harbor almost all the radioactive residue from the April 26, 1986, Chernobyl nuclear reactor accident.

# VP owners

(Continued from page 1)

realized the vision expressed by the objectives.

- Ask yourselves how you can personally help achieve the vision.
- Ask yourself how your organization can help achieve this vision.
- And last — and maybe the most important — what piece of the action am I willing to be accountable for with or without full control of all the resources.

Following are selected comments from each of the VP owners during the Oct. 3 presentation:

## What we will do — Objective 1

*Ensure that the nuclear weapons stockpile is safe, secure, and reliable and fully capable of supporting our nation's deterrence policy.* Owner:

**Roger Hagengruber, VP Division 5000**

The Labs' mission is to assure our fellow citizens that as long as we have these sobering weapons we will be here to assure that they will serve and not threaten the national interest.

As the management leaves every day, we must ask whether the human expertise and capabilities of this place, which are also entrusted to us, are left in sound condition, able to ensure the integrity of the stockpile and the support of all the missions entrusted to us tomorrow and into the future.

Our mission has brought us a technical expertise, facilities,

knowledge, people, and a sense of service to the nation that is, in fact, the envy of many, and a caring about the security of this nation to all of its threats. . . . All of these things have happened because we have honored that basic stewardship in a creative way.

We can use this time to build a stronger Sandia, with more advanced technology, making nuclear weapons the model of surety, our processes the model for industry — self-surveillance, sensor-rich, model-based approaches to weapons — features of how we will serve the mission of nuclear weapons stewardship, not how it serves us.

If we honor that singular mission accountability as a laboratory — every person — the mission will honor and reward us — every person — as it has over the past 50 years, with the opportunity to engage in the best of science and technology and give all of us the chance to dream of changing the world in every mission we have, including nuclear weapons.

## What we will do — Objective 2

*Reduce the vulnerability of the US to proliferation, use of weapons of mass destruction, and threats of nuclear incidents.* Owner: **Tom Hunter, VP Division 8000**

We have created all the potential to seal our fate. There are thousands of nuclear weapons spread across the globe. In the US alone we have 100 metric tons of plutonium and there are many times that in the former Soviet Union. There are modern and sophisticated methods to produce chemical weapons and there are biological agents which are readily produced and capable of outpacing the ability to produce effective antidotes. . . . I hope I never see the day when our headlines read that we have lost to terrorists or national enemies even one percent of the world's inventory of plutonium or fissile materials. . . .

Another of my greatest fears is that the



TOM HUNTER

legacy for all of those who have worked in the nuclear weapons complex to protect this nation for so many years was that we were perceived to be those who caused environmental damage or had a disregard for the environment. . . . It is in these areas that Sandia can make a difference, but we will only succeed if we are willing to be and to commit the very best. I can think of no other way to express what Sandia can be and has to be for the future than to say "it will be the best place for the best people."

### [Tom Hunter's Four 'Uns':]

The four most critical things we will need to be successful in terms of support.

- 1) We will need to have a commitment to *uncluttered* minds that are not burdened by organizational prerogatives or assumptions about personalities and roles, that are not handicapped by prior successes or blinded by arrogance but that provide and share ideas.
- 2) We will need *unselfish* leaders, who have the judgment to start and the resolve to finish.
- 3) We will need *unencumbered* contributors, which will require that . . .
- 4) . . . We make an *unequivocal* commitment to a lean, crisply operating laboratory, where our energy is spent on the outside and our impact cannot go unnoticed.

## What we will do — Objective 3

*Advance the surety (safety, security, and reliability) of critical global infrastructures.* Owner: **Joan Woodard, VP Division 6000**

This area, as you can see, is very much an event-driven area. . . . The challenge is that we as a country seem to have a hard time responding in a prevention way. . . . I think one of our leadership challenges and one of the opportunities for us as a laboratory is to try to help the country see that, in fact, through technology and other avenues, prevention and protection can be accomplished in this area.

This is not just the energy and environment sector in a new wrapping paper. There is quite a bit of difference between the focus of the past, with the focus on energy independence and the concern over surety of supply of energy and other commodities. Paul [Robinson] and others have used the words "Push the reset button on the energy program," and I've been asked "Gee, does that mean we push reset to zero?" meaning we're going to kill the energy programs at the laboratory?

Far from it. When I think about pushing the reset button, I think about when I came to the Labs in January 1974, driving across the country, waiting in line for gas as I was driving from Missouri to California to join Sandia — that was a very good indicator of the changes that were going on at that time. The excitement in the Labs at that time and through the 1970s and early '80s, as we were having major contributions to the energy programs, is what I want to recreate. We were setting world records in photovoltaic cell efficiency, we were having a major impact on the drilling industry. Technology was valued, technological advancements were a key part of trying to solve that [energy] problem. The first goal in this [new strategic] objective is oriented and directed

legacy for all of those who have worked in the nuclear weapons complex to protect this nation for so many years was that we were perceived to be those who caused environmental damage or had a disregard for the

toward trying to do that; in fact, to reintroduce the idea that technology advancement in energy surety can make a major contribution.

## What we will do — Objective 4

*Develop high-impact responses to emerging national security threats.* Owner: **Gerry Yonas, VP Division 9000**

The message I want to convey to you is the importance of being able to connect in one place, in a national laboratory, the fundamental science with a system solution. . . .

When all of us met for several months talking about the strategic plan, we spent a lot of time talking to each other about "where's the future?" We divided up into, naturally, two groups. . . . These groups were looked on as the opportunity-oriented people and the threat-oriented people, and we finally came to the conclusion that what we were really talking about is time scale, that there is a bright future out there but in order to get there we have to go through a turbulent period. I sort of took on the role of Dr. Doom and looked at some of the threats the country faces over next few, 10, 15, 20, turbulent years that we will have to pass through if we're going to get to this bright wonderful future.

Everything is connected to everything else and the threats are changing very rapidly and it's very difficult to understand the threat if you're really going to participate, so that's the first requirement — to really understand. The second thing is to propose a system solution; now this is something Sandia should be good at. The third thing is to harness our differentiating science and technology strengths, if we're really going to play a role. And finally, we're going to have to partner. If we're going to find a solution to a complex threat, a system solution, the solution is going to come through a partnership.

What are the threats we're going to deal with? I'm going to oversimplify, but they tend to fall into five categories. They are: 1) Regional conflicts; 2) Peace enforcement, or peacekeeping; 3) Counterterrorism; 4) Information warfare; 5) Legacy of war. . . .

There is a ticket of admission; you have to buy the ticket. And the payment for the ticket of admission is ideas. We need ideas. These are hard problems. We need to see the innovation and creativity to deal with these problems. And if you pay that price, if you buy that ticket, I can guarantee that you'll get a chance to play.

## How we do it — Objective 5

*Excellence is our standard for attracting and retaining people at Sandia and for measuring the performance of teams and individuals.* Owner: **Charlie Emery, VP Division 3000**

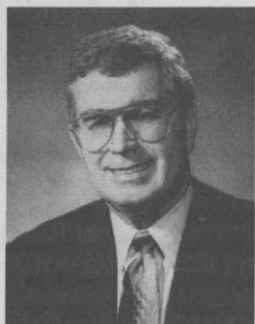
I believe we must continue to work hard on our [management of our] people. People are our key asset, the only unique and unduplicatable asset that we possess. All others can be duplicated.

The leadership challenge for us is to ensure our people operate from a position of power, meaning they must have information to get the job done and must have expectations about performance standards. People must feel included and that their contributions are being valued. . . .

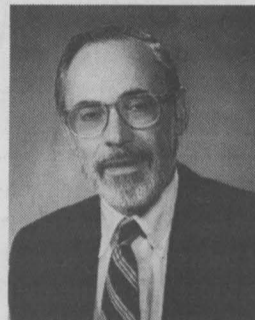
Four key issues identified through the Sandians Perspective surveys:

- 1) Line-of-sight concerns, that is, the connection between each employee and the Labs'

(Continued on next page)



ROGER HAGENGRUBER



GERRY YONAS

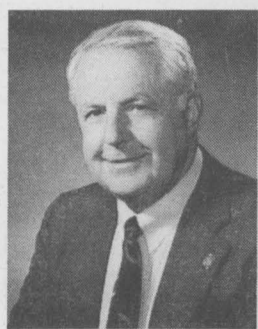


JOAN WOODARD

(Continued from preceding page)  
larger mission.

2) The credibility of management.

3) Management development, the feeling that maybe there are people in management positions who may not want to be there or perhaps were not well prepared to be there. We are hoping that our new classification system will allow us to encourage some people to move



CHARLIE EMERY

into other types of work where they can be the strong individual contributors that they would like to be.

4) Improved accountability, the notion that we all are accountable for what we say we are going to do; our performance is measured by what we plan to do.

There are two points that I'd like to leave with you: First, we can really and truly make our people a great asset if we inform them, give them the preparation and include them, get the most out of all our people, value their contribution.

Second, none of us is as powerful as all of us. We need every individual fully contributing to make Sandia a better team and make sure we stay the premier laboratory in the DOE system.

#### How we do it — Objective 6

*Advance the state of knowledge and apply these advances to the solution of our customers' technical problems. Owner: Bob Eagan, VP Division 1000*

The first and foremost thing that science and technology does for this laboratory is ensure mission success. Our goal is to perform "science with the end in mind."

The other thing that science and technology does is provide a base for developing new customers and meeting the emerging needs of the nation. . . .

Simply meeting the needs of our mission is not enough; our sponsor at DOE, the public, and Congress expect more from this national laboratory. So our participation in the nation's research enterprise — that is, the research conducted by universities, industry, and national laboratories — is a very important element of our program and one that I believe is going to be growing over the years as industrial research continues to erode.



BOB EAGAN

Many areas in our weapons programs and our energy programs are rich in science and technology that has been developed at Sandia. We face now an enormous challenge, particularly in Defense Programs, because testing is no longer allowed and so we need to have new approaches to assure the integrity of the stockpile and we need to do it at a lower cost and with a higher reliability than ever. The approach that we've taken relies very heavily on modeling and model-based simulation and life-cycle engineering. . . . it draws on other research foundations in the laboratories, in materials science. . . . in microelectronics, engineering sciences, and computing. It's the integration of these skills in science and technology that allows us to meet our current customers' mission needs effectively and to meet their future needs as well.

[Sandia's] participation in what is known as the "national research enterprise" is a very

important role for the Laboratories to play, and we in fact have played that role during the era of CRADAs very effectively. We've had hundreds of millions of dollars' worth of industrial partnerships created and have made valuable contributions to a number of industries. Our participation with universities. . . is also a powerful way to enter into the partnership to provide the nation with first-class scientific enterprise. We are doing that and intend to do more of it in the future.

#### How we do it — Objective 7

*Create an infrastructure that is a competitive advantage for our strategic missions. Owner: Lynn Jones, VP Division 7000*

If you think of Sandia as a person, a human being, out creating and interacting and producing and serving in all these different ways, then the infrastructure is Sandia's human body. We've got backbone, skeleton, nervous system, endocrine systems, all these various things that have to work together, so that this "human being," Sandia, can be this creative, serving entity in the world today. It's kind of a stretch, but it's a pretty good comparison, I think.

What we're doing with this objective about infrastructure is acknowledging that Sandia's human body is pudgy, it's out of condition, with a few organs in the wrong places, and there are some disconnects that have got to be fixed, they've really got to be fixed. I mean, that's sort of a down-to-earth way of talking about infrastructure being a competitive advantage for this laboratory, but that's what we're about.

One thing we're not about is trying to get to a place where we can win a Mr. or Ms. America contest. We're not doing reengineering just to be the best 're-engineers' in the world.

The infrastructure objective is really about making sure this infrastructure, this "human body" for the Laboratories, functions in a way that totally and completely enables the Labs to be everything we want it to be in this world of threats, new and emerging, old, familiar, and everything in between.

Over the last few years, quite a bit has been done in this area. . . . to use my analogy, we've lost some weight, we really have toned up a few areas, we've been taking a bunch of vitamins, but there's a lot more to be done. We're in the business of creating a laboratory that works better and costs less. That's it — that's what this objective is all about.

#### How we do it — Objective 8

*Successfully use strategic partnerships in pursuing our missions. Owner: Dan Hartley, VP Division 4000*

You have to develop a constituency for the Laboratories. The Laboratories are under a lot of challenge today in Washington, in the media, everywhere, and it's very, very important that the people who speak for us or about us know what they're saying and have a positive image of the Laboratories.

I've had two opportunities in the past month and a half to testify before Congress about partnerships, and both times, I was overwhelmed. . . by the

testimony by industry partners who were there. Intel was there. Motorola was there. Radiant Technologies was there. These were industries that were speaking up strongly defending the Labs. . . . These industry partners of ours were defending us, and it made me feel really good; that's a challenge for us to maintain.

We have to maintain ourselves as an active participant in the greater R&D enterprise of this country, if not in the world, because that intimacy of interaction allows us to learn from others.

I can't think of a great institution that exists in isolation. Great institutions exist and become great because they partner with others and they share, and I know you want and I want Sandia to be a great institution. . . .

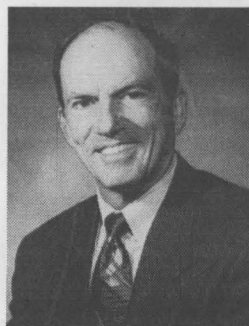
Love, in the corporate sense [according to an AT&T division's statement of corporate values], is when you care as much about the success or failure of your colleague as you do about your own family members. . . . I know I feel that way about a lot of my colleagues, and I feel that way about a lot of you, and I hope you do too. The more we feel that way, the more successful we're going to be.



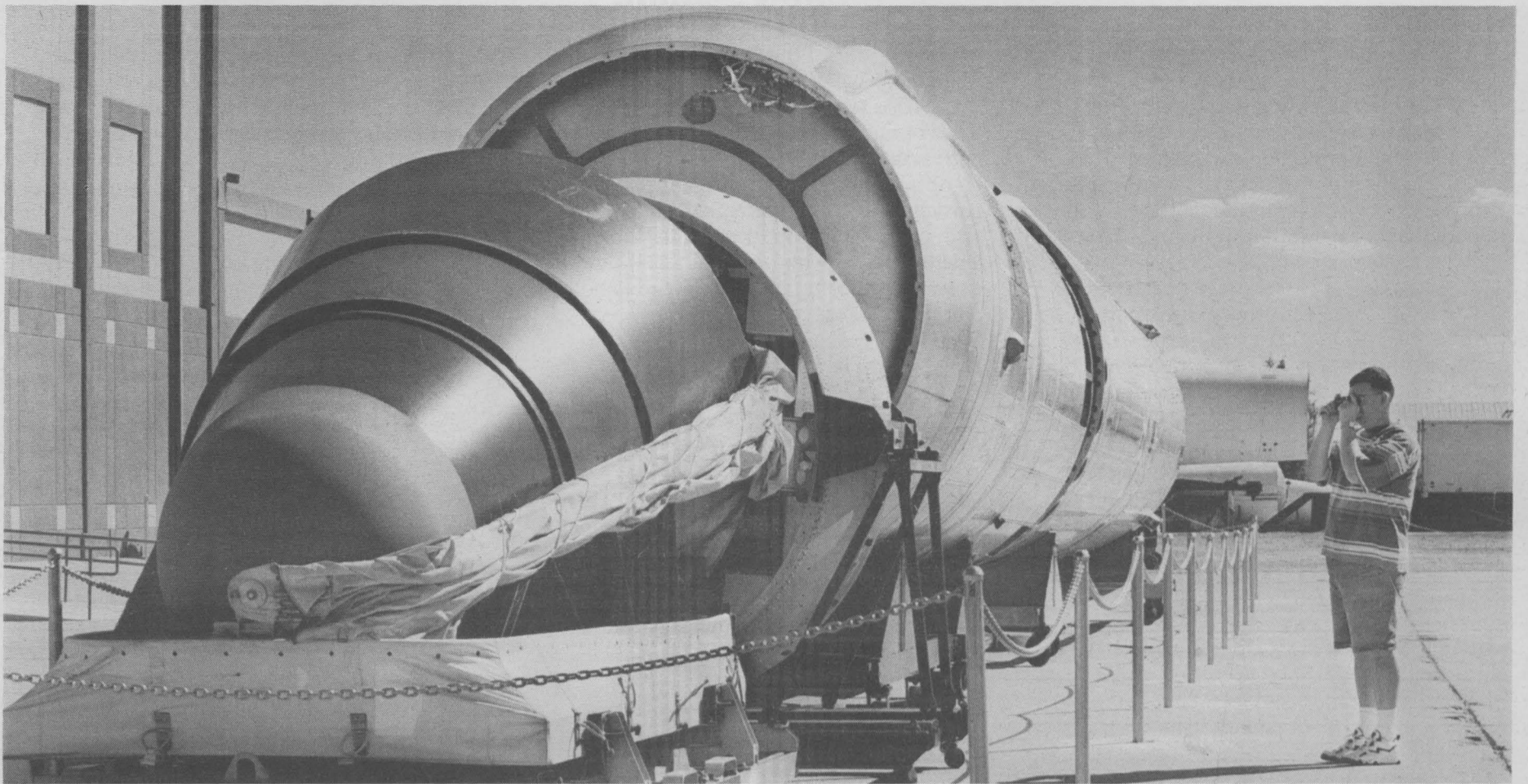
LYNN JONES



GLYNIS PACHECO (right), a member of the second graduating class of the University of Turabo's School of Engineering in Puerto Rico, spent the summer working in Sandia's Fluid Dynamics Laboratory under the mentorship of Lisa Mondy (left) of Energetic and Multiphase Processes Dept. 9112. Sandia founded the undergraduate engineering program at Turabo in 1987 in partnership with the Ana G. Mendez University System, a nonprofit consortium of three Puerto Rican colleges, and the Science and Technology Alliance, a DOE-funded program to increase the number of minority students studying science and engineering by creating or enhancing engineering programs in regions with high minority populations and by pairing American universities with DOE laboratories. Three Sandians, John Otts (4201), Bill Dawes (3600), and Steve Casalnuovo (1313), served as the school's first three deans of engineering, with the first class of freshmen arriving in 1991. Since then, several Turabo students have spent summers at Sandia earning college money and gaining work experience. Glynis (9112), one of two regular, full-time Sandia employees to emerge from Turabo, is attending graduate school at Stanford University this semester with the help of Sandia's One-Year-On-Campus program. Science and Technology Alliance lead lab coordinator Ken Holley of Education Outreach Services Dept. 3613 says Sandia, Los Alamos, and Oak Ridge national laboratories are supporting a variety of undergraduate engineering programs at colleges and universities across the nation with the help of the Science and Technology Alliance — including a consortium of American Indian tribal colleges in Montana, North Carolina Agricultural and Technical State University, and New Mexico Highlands University.



DAN HARTLEY



MUSEUM VISITOR David McCown, a graduate student from Missouri studying the history of science, photographs the Titan II intercontinental ballistic missile (ICBM) now on display in the museum's outdoor exhibit area. The Titan II was the largest silo-based missile ever produced by the US. (Photos by Randy Montoya)

## New and improved National Atomic Museum reopens, features more and better exhibits

### High bay exhibits now 'tell a story'

Some 50 Sandia employees and DOE representatives applauded Oct. 1 as the morning's first two visitors to the National Atomic Museum snipped a ribbon signifying the reopening of the museum's remodeled high bay exhibit area.

The museum's eight staffers, along with a variety of helpers from Laboratories Services Div. 7000 and Public Relations and Communications Center 12600, worked nights and weekends during the two-week remodeling project to bring the high bay facelift to fruition before opening day, says Deborah Payne, acting manager of National Atomic Museum Dept. 12660.

Partitions were constructed, new carpet and lighting systems were installed, a variety of new exhibits were added, and bomb casings were painted and washed. Video kiosks now continuously run films highlighting US

nuclear weapons milestones. Exhibits in the outdoor exhibit area were rearranged to provide space in which to display the museum's Titan II intercontinental ballistic missile.

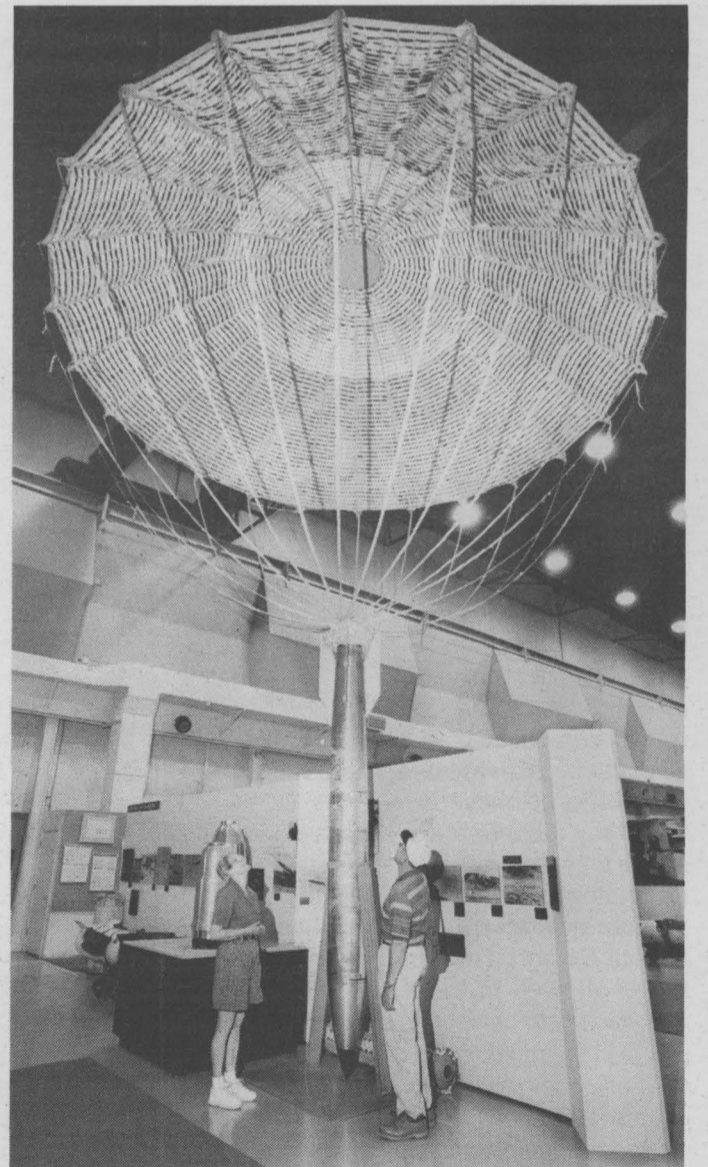
Several early visitors praised the new and improved museum. With exhibits now ordered chronologically, and with additional "historical reference" displays interspersed among weapons-related displays — including old *Life* magazine covers, magazine advertisements, newspaper clippings, and historical photographs — the high bay exhibits tie US nuclear weapons history to societal events.

"The exhibits now tell a story," says Julie Butler, the museum's marketing coordinator.

"The National Atomic Museum is a showcase for Sandia's and Lockheed Martin's commitment to the Albuquerque (Continued on next page)



WORLD WAR II "nose artist" Hal Olsen painted this new display: a replica of the art on *Bockscar*, the B-29 that delivered the Fat Man atomic bomb to Nagasaki on Aug. 9, 1945.



FLORIDA RESIDENTS Mattie and John Gustafson gaze at a B61-3 ribbon-type parachute, now supported by a frame to make it more lifelike. The B61-3 was the highest-performance parachute ever developed by the US, says museum volunteer and longtime Sandia chute researcher Randy Maydew (ret.), who helped beef up the museum's parachute exhibits. It could decelerate the B61 weapon from about 1,400 ft/sec to 60 ft/sec in one second for high-speed, low-altitude laydown drops intended to give the delivery aircraft time to escape. John is retired from the US Strategic Air Command.



THESE *LIFE* MAGAZINE covers help relate late 1950s nuclear weapons milestones to significant events in American history: (left) Willie Mays leads Giants into San Francisco, April 1958, and (right) candidates to be the first American in space, September 1959.

## Landscape

(Continued from page 1)

development, and how to improve investment strategies.

### Flying over science landscape

Researchers using virtual reality techniques can fly over the landscape to see new sub-areas appearing and others merging or separating in perhaps unknown ways. By flying lower, more subcomponents of the region appear, and still lower, titles of the journal articles which form its substance.

Henry Small, chief researcher at the Institute for Scientific Information (ISI) — a Philadelphia-based, for-profit corporation that supplied raw data for the project — said his company is interested in licensing the Sandia software for a worldwide market.

The Sandia landscape prototype became operable in September. The computerized color image is created by newly derived algorithms fed citations from 30,000 articles published in analytic chemistry from 1986 to 1996. By November, a landscape created by collating references from more than 3 million articles published over the last 18 years in a variety of sciences is expected to be organized in a huge supercomputer data matrix. However, most graphics work stations will be able to run subsections of data.

"I suspect that anyone who spent an hour with the tool would discover interesting patterns they were unaware of," says Bruce Hendrickson (9226), principal Sandia researcher on the project. Other project researchers include David Johnson (9223) and University of New Mexico

## Citations chart science as a process

Citations are the collected footnotes that form the list, found at the end of almost every scientific paper, of previously published articles most critical to the current advance. The more citations two articles list in common and the more articles that cite them both, the more likely the research papers have a common focus, and the closer the data points that represent them.

The ISI's Science Citation Index database compiles and tracks all these scientific citations. That is what supplies the data used in Sandia's science landscape prototype.

For example, data points representing research papers in related areas of superconductivity might be close together because their citations probably reference many of

the same previous papers.

Superconductivity and computing papers might have some citations in common. These coalesce into separate clusters in the same mountain range.

Biology papers might show none of the same references and be quite distinct in their own mountain range.

But some biology papers might have a few physics references. The reference point then would be near the biology mountains but not in them, forming a step in a trail between some aspects of physics and biology. The more physics referents, the closer to physics. The more physics/biology papers that follow similar aspects of the subjects, the more obvious the trail, or ridge, or hill on a year-by-year basis.

student Brian Wylie.

"People are looking for a way to make information more accessible from huge data bases. In this case, where are the concentrations of effort in different fields of science?" Small says. "The Sandia system gives an overview, but you can drill down to see details. We've never [before] had a computer system that could deal with this magnitude of data. The software gives you the whole display at your fingertips, and you can interact with it, which would be impossible without that kind of computing power."

### Video demonstrates method

A four-minute video, "Mapping Science," that demonstrates the power of the method will be shown in the fall of 1996 at work-

shops and symposiums on global security, information retrieval, library and information science, and science and technology in the United States, Switzerland, Germany, and Denmark.

The project was funded by Sandia's Laboratory Directed Research and Development program (*Lab News*, Sept. 13). The program finances speculative defense projects at the Labs. It bought use of ISI's database for \$40,000 to help develop the method.

Says Program Manager Chuck Meyers (4523), "We know that science is produced through a network of interactions among researchers. This network and science evolve together. It is this co-evolution that drives the idea that we can portray science as an evolving landscape and can learn much from what we observe.

"The landscape shows the dynamics of the evolution of science and ultimately may help us improve our ability to invest in leading areas."

Traditionally, industries measure their return on research and development from profit from selling a product, but seeing scientific interest in new areas might lead industrial researchers in new directions, says Chuck.

"People from the intelligence community are interested in a more general way because they also get reams of data to analyze," says Bruce. "Organizing these data in a visual way will enable new insights much more quickly."

### How it works: clustering algorithms

The mapping algorithms cluster scientific papers by the number of citations — the number of times they are cited in the reference sections of other scientific papers — that the papers list in common, rather than by their titles or key words. Titles may differ eccentrically and key words have different meanings in different disciplines.

Libraries may choose to use sections of the system because "there will be much more content in even the subsectioned landscape than you can get by using keywords to search for documents," says Bruce.

An early version of the clustering method was developed at ISI under the direction of Small, who generated a pen-and-ink landscape about AIDS research through use of the citation method. "We could see clusters, but it didn't involve computer visualization, only graphs and charts," he said.

Sandia uses a mathematically sophisticated technique to reduce the amount of operating time by making the program proportional to the number of documents — three million — instead of the square of that number. This makes the formerly undoable, doable.



**RIBBON CUTTING** — National Renewable Energy Laboratory employees Karen Thomas and Byron Stafford, the first two visitors to the National Atomic Museum on the morning of Oct. 1, cut a ribbon signifying the reopening of the museum's high bay exhibit area during a ceremony at the high bay entrance as (from left) Deborah Payne, acting manager of National Atomic Museum Dept. 12660; Don Carson, Director of Public Relations and Communications Center 12600; Dave Geary, DOE/AL Director of Public Affairs; and museum historian James Wadell look on.

(Continued from preceding page) community," said Don Carson, Director of Center 12600, during the ceremony. "This remodeling is the first chapter in Sandia's long-range plans for the museum." He credited Lockheed Martin, DOE, and Sandia leadership for their support of the remodeling project and museum.

Sandia's plans include moving the museum to a site off Kirtland Air Force Base. "Everything we have done we can take with us to our new

location," added Julie. The new site has not yet been selected.

Dave Geary, DOE/AL Director of Public Affairs, said the museum now "is more open, it has more continuity. There has been a lot of good work by a lot of good people, and it shows."

Sandia, Lockheed Martin, DOE, and community dignitaries are being invited to a grand reopening celebration at the museum planned for Nov. 8.

—John German

# Oct. 14 book fair opens '97 ECP campaign

**Sandia goals are total participation, \$1.6 million pledged**

Skip a couple of Cokes a week for a year and shelter a domestic violence victim and two children for a day. Drive by the Dunkin' Donuts store without stopping for coffee a couple of times a week for a year and provide 41 days of day-shelter for a homeless person.

Surprised? "Most of us don't realize how much help we can provide for so little," says Employee Contribution Plan committee member Jackie Kerby Moore (4000). "Just a few dollars a week can mean so much to people who have little or nothing."

The ECP program helps fund five United Way of Central New Mexico program areas targeted at: meeting basic needs, preventing crime and violence, advocating education and literacy, promoting health and wellness, and encouraging social development. In addition, contributors designated more than 300 other (than United Way agencies) organizations or programs to receive all or part of their contributions last year.

Sandia's campaign kicks off Monday (Oct. 14) with a "Reading's Fun" book fair, at which Sandians will be able to buy a wide variety of books at deeply discounted prices. The book fair continues through Thursday (see schedule below); the overall campaign continues through Oct. 30.

Stock will include children's books, reference works, and volumes on cooking, gardening, do-it-yourself projects, and many other topics. Books will be listed at 40-70 percent below publisher's prices and average about \$12; only a couple of titles will be priced at more than \$20.

## SQLC members setting pace

"Literacy is one of the five program areas for United Way this year, so we thought a book fair would be an appropriate way to start our campaign," says committee member Bruce Fetzer (12680). "The book fair will benefit both Sandians and the community. Sandians can get high-quality books at low prices, and based on the volume of sales, new books will be donated to agencies in need."

Setting the pace for a renewal of Sandians' historic high level of ECP giving, all 14 SQLC members signed on and nearly doubled their contributions from last year's level — from their collective 0.63 percent of earnings last year to 1.2 percent this year.

"I am particularly pleased with the SQLC response and as we approach the actual ECP campaign kickoff date, I urge all Sandians to be generous," says Labs Director C. Paul Robinson.

"While Sandians have traditionally provided the single largest source of funding for charitable contributions in our communities, these times of economic uncertainty have restrained our giving over the past couple of years," said Paul. "But such times are precisely when our communities need our commitment and help the most."

"We must all remember that our giving makes an important difference in the lives of many people, including children, and better lives for those who otherwise might not have them makes life better for all of us collectively," he said.

## United Way goal is \$8 million

This year's ECP chairman, Phil Montoya (2501), says the leaders of Sandia's three unions — the Metal Trades Council, Office and Professional Employees International Union, and Independent Security Police Association — are putting extra effort into involving their membership this year.

"The unions are not only an integral part of the Sandia family," says Phil, "their membership represents a significant percentage of the total workforce, and a strong effort on their part will make a great difference in our total ECP results."

The 1997 United Way of Central New Mexico goal of \$8 million was declared Sept. 12 during a community campaign kickoff breakfast at the UNM football stadium parking lot. Chairman Jim Tegnella, president of Lockheed Martin Advanced Environmental Systems and former executive vice president of Sandia, told the breakfasters that community needs "are larger than ever before, and as in each of the last 62 years, we again need your help."

About \$4.5 million will be distributed among United Way member agencies in Bernalillo, Sandoval, Torrance, and Valencia counties, and the bulk of the remainder will go to some 300 agencies designated by contributors.

Among the many things United Way helped support last year:

- More than 2,400 victims of domestic violence received safe shelter.
- 165 people with serious physical or mental disabilities received 12,700 days of care and services.
- 220 latchkey kids received 44,000 days of before-and-after school care and supervision.
- More than 3,000 youngsters were able to participate in summer-long education programs.

## Campaign a paperless process

This year's campaign is 'paperless,' in that



LABS ECP CHAIRMAN Phil Montoya (2501) reads to children at Martineztown House of Neighborly Services during United Way of Central New Mexico's Day of Caring Sept. 12. Phil was among the 110 Sandians who volunteered at three United Way agencies during the daylong, city-wide kickoff event for United Way's annual fund-raising campaign. Labs volunteers performed a variety of chores at Martineztown, St. Martin's Hospitality Center, and Roadrunner Food Bank, including painting, cleaning, and office work. For St. Martin's, a Sandia campaign raised 490 cans of food, 216 toothbrushes, and 324 books, which are being provided to homeless men, women, and children. In all, 115 Albuquerque volunteers helped out during the event.

no one will receive pledge forms. To contribute, call the ECP Line at 845-0070. The system will ask for your Social Security number and PIN for verification of your identity. Your PIN is a four-digit number comprising your birthdate (e.g., if you were born March 9, your PIN would be 0309). Then, just follow the prompts.

"Something we should remember," Phil said, "is that although the amount of money contributed is important, participation is more important. In times of uncertainty, and we're certainly in one of those right now, just knowing that we're all doing what we can to help is, in itself, a very big help."

— Howard Kercheval

## A United Way agency says thanks . . .

Labs Director C. Paul Robinson received a letter recently from Melody Wattenbarger, Executive Director of the Roadrunner Food Bank of New Mexico, praising the 25 Sandia volunteers who painted, sorted food, and did office work at the agency during United Way's Day of Caring Sept. 12.

Roadrunner Food Bank distributes donated food to 200 other nonprofit organizations in New Mexico, including churches, senior centers, low income day care shelters, group homes, adult shelters, and soup kitchens.

An excerpt from Wattenbarger's letter follows:

"One of the greatest pleasures about working at the food bank is the opportunity to work on a daily basis with people of great good will and commitment to society. Our very welcome guests from Sandia quickly rose to the top of that list last Thursday. Thank you so very much for creating the environment where such generosity is part of the daily routine. It is a contribution to our community that is as important as the other, more highly publicized ones. Please know that the efforts of your employees have made an enormous, positive difference in the lives of their fellow citizens."

You like books?  
You will love "BOOK FAIR!"  
Reading's Fun  
**BOOK FAIR**  
is  
our ECP/United Way Kick Off Event

- ✓ Purchase HIGH QUALITY books at DISCOUNT prices!
- ✓ You will be SUPPORTING YOUR COMMUNITY!
- ✓ Pay with Visa, MC, Discover, Check (or post-dated checks)!
- ✓ They make great gifts—and 40% to 70% off publisher's price!

### Book Fair Schedule:

Monday Oct. 14	Tuesday Oct. 15	Wednesday Oct. 16	Thursday Oct. 17
7:30-5:00 Bldg. 800 Lobby	7:30-5:00 Bldg. 800 Lobby	7:30-5:00 TTC Lobby Bldg. 825	10:30-1:30 Coronado Club
11:00-1:00 Cafeteria	7:30-5:00 Area IV, Bldg. 960 Room 113	11:00-1:00 Cafeteria	7:30-5:00 TTC Lobby Bldg. 825



# Sandia, Idaho, Oak Ridge: A 'system of labs' begins to take shape

**Lockheed Martin E&E Sector initiative seeks enhanced efficiency, effectiveness**

By Bill Murphy

Lab News Staff

When the Galvin Commission report landed on Secretary Hazel O'Leary's desk in February 1995, its assertion that the DOE national laboratory system is "oversized for its current mission assignments" resonated with lawmakers and taxpayers and spawned some critical self-examination in the agency.

And when the report suggested that "the laboratories should work more closely as a system, with the goal of enhanced coordination and implementation of complementary strengths," Secretary O'Leary and senior management at the national laboratories took notice. The implication of the Galvin suggestion was clear: closer cooperation among the labs could help avoid duplication of effort, reduce overhead, maximize efficiencies, and — bottom line — get more technical bang for the tax buck.

The Secretary's response to the report, according to Lockheed Martin Energy and Environment Sector VP for Technical Operations Everet Beckner, "was to begin to develop some ideas about a 'system of labs' in which the Department would try to show and develop synergies between the laboratories to accomplish some of the things the Galvin report had commented on."

Taking the "system of labs" from a conceptual stage to a practical reality, however, proved a daunting task for DOE. As Lockheed



EVERET BECKNER

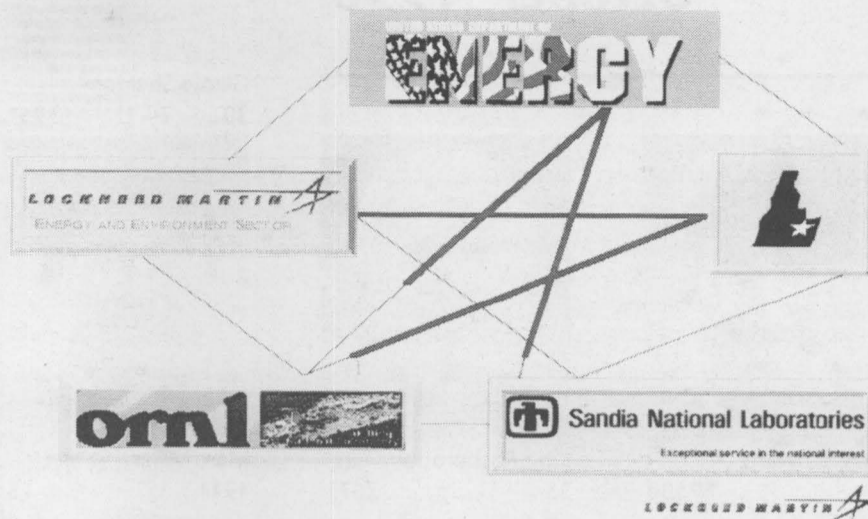
Martin E&E Sector President and former Sandia Labs Director Al Narath has stated: "Given the programmatic and cultural diversity that exists among all of the DOE national labs . . . progress toward realizing an effective system solution comes in inches, despite some significant investment in time and energy."

The Galvin report recognized as much: "We note [it said] that such coordination will be made more difficult to the extent that the laboratories are separated into independently operated not-for-profit organizations."

## Tying Lockheed Martin labs together

Beckner says that in the course of discussions about the concept with Secretary O'Leary, Narath realized that the E&E Sector was perfectly poised to develop a system of labs among the three DOE labs — Oak Ridge National Laboratory, Idaho National Engineering Laboratory, and Sandia — managed by Lockheed Martin. In fact, Beckner says, moving forward the "system of labs" concept among Lockheed Martin-managed labs was one of the first items on Narath's agenda when he became Sector president in August 1995.

When Beckner joined Lockheed Martin as a vice president in February 1996, one of his primary responsibilities was to advance the



system-of-labs initiative. He brought a wealth of experience to the task. He had previously worked at Sandia for 25 years, where he served as VP for Defense Programs, VP for Energy Programs, and Director of Physical Research. After leaving Sandia in 1990, he spent a year as science advisor to DOE Secretary James Watkins, and subsequently served as Principal Deputy Assistant Secretary for Defense Programs at the agency. By the time he arrived at Lockheed Martin, Beckner says, the E&E Sector had already begun to construct a framework upon which a system of labs could be built.

"Al [Narath] had already called the three [Lockheed Martin-managed] lab directors together," Beckner says, "and asked them to put together a working group to develop ideas as to where synergies probably reside in the three labs. He wanted the group to develop ideas on how to get started on making some changes, demonstrating that a single contractor can provide added value over what you might otherwise get if you were looking at these [labs] as stand-alone operations."

## Showing positive value of a 'system'

"In fact, that's just what we've had up until now," says Beckner, "an independent Sandia, an independent Oak Ridge, an independent Idaho. By virtue of the fact that Lockheed Martin now has responsibility for all three of those labs, I think we have an opportunity to develop these ideas [about a "system of labs"] and show the positive value of some encouraged interactions in areas where the labs themselves agree they can make some progress."

After several months of work, in which all aspects of laboratory operations and practices were considered, the "systems of labs" working group identified improved synergy and integrated operations opportunities in the areas of:

- Procurement practices
- Financial systems
- Training
- Environmental management
- Construction
- Technology transfer/licensing
- Advanced manufacturing
- Engineering materials and processes
- High performance computing/networking/modeling
- Environmental research
- Agriculture

As an example of how a "system of labs" (Continued on next page)

## Narath Congressional testimony cites value of a 'system of labs'

E&E Sector President Al Narath in Congressional testimony last year highlighted a key area of technical cooperation, one that demonstrates how a "system of labs" can be extended to include all DOE facilities. "Robotics technology [he testified] is under active development at most of the DOE laboratories. This should not be surprising, because many DOE programs in defense, energy, and environment will employ robotics technology in some way. However, different laboratories emphasize different aspects of robotics engineering depending on their particular responsibilities.

"Oak Ridge National Laboratory has a very capable program for remote processing of nuclear materials with a human in the control loop. Sandia National Laboratories has a very capable program emphasizing automated intelligent systems to support the Defense Programs' manufacturing needs. It turns out that both these facets of robotics are useful to multiple DOE sponsors, including the offices of Defense Programs, Nuclear Energy, and Environmental Restoration and Waste Management.

"With DOE encouragement, the managers of the robotics programs at Oak Ridge and Sandia organized a collaborative pro-

gram to support the general robotics needs of the Office of Environmental Restoration and Waste Management. The collaboration has benefited DOE customers and leveraged the capabilities of both laboratories. It is now expanding to include other DOE laboratories under a coordinated 'virtual technology center' in robotics. Because of this collaboration, DOE may well have the strongest robotics R&D program in the world."

Narath noted during his testimony that labs integration is becoming more widespread, among Lockheed Martin-managed labs and beyond.

"The integrated nature of the DOE laboratory system is evident in many other areas beyond robotics. The DOE Center of Excellence for the Synthesis and Processing of Advanced Materials brings together several complementary strengths in materials science R&D resident at twelve DOE laboratories. Other virtual technology centers exist in practice and are now being formalized. Plasma technologies, high-performance computing, advanced engineering design and manufacturing, environmentally conscious processes, and superconductive materials are all examples of the rapidly growing synergistic cooperation among laboratories within the DOE system."

# Mileposts

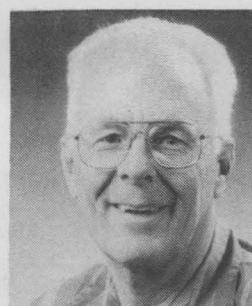
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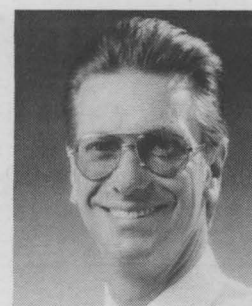
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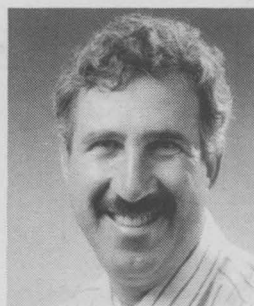
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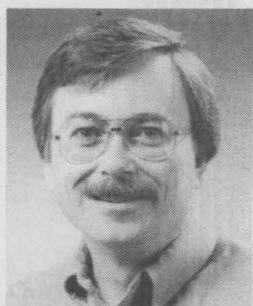
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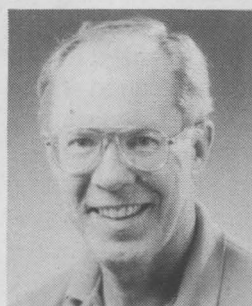
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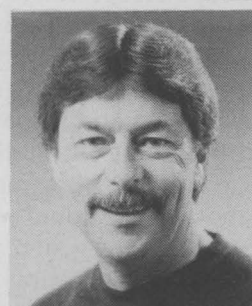
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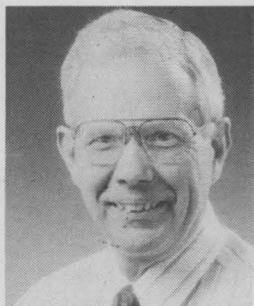
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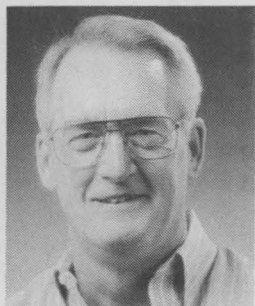
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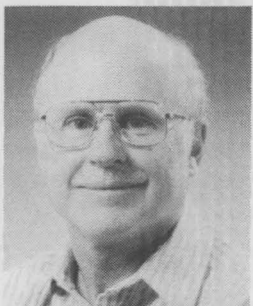
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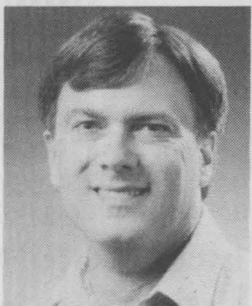
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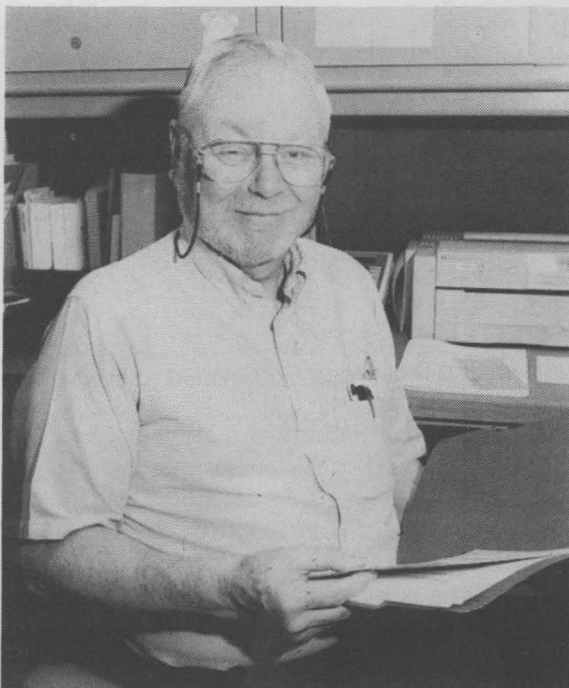
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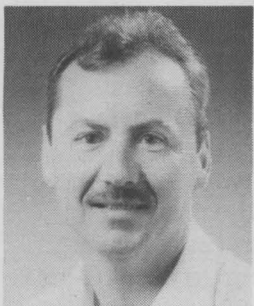
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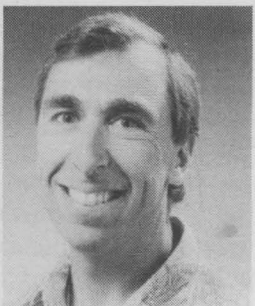
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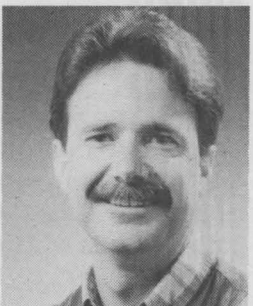
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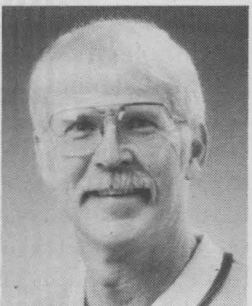
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Greg Nichols  
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Michael Sharp  
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## System of labs

(Continued from preceding page)

approach can improve efficiency and better serve DOE's needs, Beckner talks about the benefits to be gained through use of common financial systems.

"They [the labs] spend a lot of money on these things," Beckner says. "It's not unusual to spend more than \$10 million [on the software and systems maintenance] — these are really expensive systems."

### As many 'systems' as labs

"As far as I can tell, every lab has a different system, is using a different system to report to DOE," he says. "So here's what happens — and I was on the other side of this [i.e., working for DOE] so I know it for a fact — when the department wants or needs financial information from the labs, they get back all kinds of different answers. Sometimes the answer is 'We can't do it.' Or the answer might be 'Here's the way we're going to give it to you and that's the only way we can give it to you.'

"The department then has to put all this together; it just drives them [DOE] crazy, because they end up not being able to give a straight answer to Congress, to the president, to the GAO [General Accounting Office], whoever it is. It's a real problem, and yet the department can't quite face up to forcing the labs to use a common system because they know the next thing that happens is they'll have to pay

for [making] the changes. That would be very expensive. Given the budget environment, you can see that the department is in a tough spot on this issue."

What the E&E Sector has done, then, says Beckner, is ask: Are there things we can do within the financial systems of the three labs to make them more compatible so that they may be more useful to the labs and to DOE?

"We think there are," he says, "and that's one of the key areas we're working on now."

In the technical arena, Beckner says, spheres of closer cooperation are being identified in the cleanup of radioactive waste. Every site, he notes, has some work in the cleanup area, and in many cases they are doing, or trying to do, similar things.

"Well, you really ought to be able to take advantage of that, you ought to share it — in real time, not five years from now in some report."

While the "systems of labs" efforts may sound like basic common sense — sharing resources, avoiding duplication, eliminating, where feasible, the babel of languages spoken — "Believe me, it doesn't happen unless you get some people together and tell them this is what we're going to try to do here," Beckner says.

It is also true, Beckner acknowledges, that the labs "are terribly motivated to be the best, to be obviously the best; and so you do have a hard time getting them to adopt somebody else's practices. They all want to prove they can be better than anybody else. Sometimes that can work to your disadvantage; this is a case of

the better being the enemy of the good.

"We're looking for situations where the presence of Lockheed Martin can help bring things together, can help provide coordination, can help build a system. In the long run, we want to demonstrate added value."

### Keeping the customer happy

Perhaps being able to demonstrate that "added value" will translate down the road into additional DOE M&O contracts, Beckner says. "At the very least, though, by showing added value, we want to be sure that our customer is happy."

Beckner says Lockheed Martin's initiative in the system of labs process could very well spur more aggressive similar efforts among other DOE contractors.

"There is no question," he says, "that this is putting some pressure on the University of California [M&O manager of Los Alamos, Lawrence Livermore, and Lawrence Berkeley labs]. We believe we are showing more initiative in trying to optimize the operation of the labs than they have shown. Ultimately that has to be good for DOE and for the taxpayers."

Developing a "system of labs" is an evolving process, Beckner says. "There's a lot more that we expect to come of it. It's the sort of thing where by rights you'll learn as you go along; you'll uncover other areas where it looks like you should commence other initiatives. We'll only get better at this. I think this is indeed an important activity."

# Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

## MISCELLANEOUS

CLAVINOVA, Yamaha's electronic piano, new \$10,800, used 3 months, ideal for student or professional & apartment dwellers, asking \$6,500. Williams, 856-5722.

SECTIONAL SLEEPER SOFA, large 2 piece, blue/white plaid couch covers, \$125 OBO; queen waterbed frame, coil-spring mattress, storage drawers, \$75 OBO. Ota, 828-3663.

DEPARTMENT 56 COLLECTIBLES, Dickens Village, several retired pieces, prices range from \$30-\$400. Sjaardema, 299-8042.

AUTOGRAPHS, political & entertainment, from the '70s, some deceased. Bieber, 898-3826, call 10 a.m.-10 p.m. only.

SEWING MACHINE, Kenmore, good basic model, many extras, perfect condition, 12 years old, \$65 OBO. Hughes, 296-8940.

HANGING LIGHT FIXTURE, for kitchen/dining table, glass canopy, 4 candle-labra bulbs, 4 years old, \$15. Meeks, 828-9825.

TRAILER HITCH, Class II, 3,500-lb. rating, all hardware included, fits late model Isuzu Rodeo or Honda Passport, \$55. Roseth, 856-6964.

SEGA GAMES: Basketball, \$10, NBA Action 95, \$18, Madden NFL 94, \$13, Nintendo Jordan, Bird \$8, Radracer 2, \$5. Sturgeon, 281-9035.

DINING SET, glass top, white chairs (6), chrome/wood trim, \$250 OBO; Riverside oak rollout desk, \$350 OBO. Hernandez, 857-9233.

MICROWAVE/RANGE COMBINATION, Tappan, white, w/range & microwave, black front, excellent condition, \$300 OBO. Petersen, 275-7467.

DOGLOO, for medium-size dog, perfect condition, \$35; microwave cart, 2 shelves, formica top & closed storage, \$50. Hatch, 281-0543.

CUSTOM GOLF CLUBS, irons 3-PW (like Titliest DCI), steel, \$195; woods 1, 3, 5 (like Big Bertha), graphite, \$175. McCarthy, 296-4490.

PC GAMES: King's Quest VI, Hand of Fate, LucasArts Collection, Quest for Glory II, others, \$10 ea. Hsia, 284-2413.

GUNS, Franchi, 20-gauge automatic shotgun, w/ventilated rib, \$325; Winchester Model 94, 30-30 w/4x Bushnell scope, \$345. Martin, 281-7227.

TRUCK TOPPER, full-size \$100; invisible fence (uses wireless beam), w/extra collar, new, boxed, \$230. DeNinno, 284-2456.

KING-SIZE MATTRESS, box spring & frame, Sealy Posturepedic, \$200 OBO. Thompson, 292-2877.

LIVING/DINING ROOM SET (w/leather chairs) \$400; cream sectional, \$375; matching chaise, \$200; coffee table, \$175; end table, \$125. Thomas, 899-2905 or 877-8255.

CANON MULTI-PASS C2500, combined fax/color printer/copier/scanner, w/software & cable; only 3 mos. old, barely used, \$385. Kwak, 232-2512.

REFRIGERATOR, Whirlpool, 19-1/2 cu. ft., top freezer w/ice maker, white, great shape, \$275. Allman, 299-2438.

SEWING MACHINE, w/cabinet, zig-zag, excellent condition, \$100. Calloway, 292-5959.

FURNITURE: student's desk, \$50; computer desk (hutch, desk, printer stand), \$50. Campbell, 281-0744.

WEDDING DRESS, \$50; king-size bedroom set, \$450. Underwood, 246-8281.

REFRIGERATOR, dormitory-type, 33 in. high, \$65; computer desk w/hutch, \$35. Zaffery, 294-6768.

RCA COLOR TV, 11-in., w/remote; maple bookcase; dhurie rug; ironing board; 2-piece sectional couch. Kesti, 821-9208.

SECTIONAL SOFA, less than 1-yr. old, w/queen sleeper & end recliners, multicolored, \$1,250 OBO. MacDonald, 865-9562.

TELESCOPE, Celestron 4.5 Newtonian, 250x, Equatorial mount, several lenses & filters, hardwood tripod, over \$900 invested, asking \$600 OBO. Robbins, 292-7355.

FREE GRAVEL, gray, 3/4-1 in. round, first-come, first-served. Vigil, 271-1328.

OSTER CENTER, complete, good condition, \$40; boy's bike, \$10; girl's bike, \$20. Southward, 281-7858.

KNITTING MACHINE, CompuKnit/ST, w/accessories & books, \$600; ACE preschool teacher's manuals, \$100; IBM PC, \$100. Miranda, 293-8644.

JEEP WHEELS & TIRES, for Wrangler or Cherokee, 4 ea., 15 x 7 star alloy wheels, w/215x75x15 Goodyear Wrangler tires, \$800 OBO. Bailey, 281-4766.

OAK DINING TABLE, 42-in. round, w/18-in. leaf, 4 oak chairs, \$160; 14.4K fax modem, \$60. Lanes, 856-6237.

DAY BED, white metal, Posturepedic mattress, excellent condition, \$125. Young, 821-5276.

NATIONAL GEOGRAPHICS, like new, 35 yrs., w/index, '50s-'90s, \$65 OBO. Hayes, 299-1200.

BALLOON FIESTA COINS, 16 coins, '91, '92, '94 & '95, \$4,500/all; balloon cards, 5 boxes, factory sealed, \$500, cash only. Singleton, 299-1613.

WOOD-BURNING STOVE, long-burn capacity; half-pint microwave; girl's mountain bike, 18-spd., \$75; step van. Garcia, 343-8207.

PHOTOGRAPHIC ENLARGER, black/white, Simmon Omega, variable condenser, 2-6 in., lenses, filters, \$200; water softener, automatic, w/salt, \$200. Hall, 284-4339.

SETTEE & END TABLE, all maple, both \$100. Maestas, 299-6514.

LASER PRINTER, Talaris T610, works but needs toner cartridge, paper tray, \$40; HP Laserjets, \$25-\$165. Schkade, 292-5126.

TWO SOLID OAK END TABLES, Lane, \$125; full-size rabbit coat, size 5, \$45; wedding gown, ivory, handsewn, size 5, \$100. Clavey, 292-7667.

TODDLER'S BED, red, metal, \$20; frame/futon, \$35; queen-size bed, mattress, box spring, metal frame, \$50. Chow, 281-9235.

TELEPHONE ANSWERING MACHINES, pre-owned Sandia Labs, several models, \$15-\$30; desk calculators, excellent condition. Chavez, 842-6374.

BELLY DANCE & HAWAIIAN COSTUMES, w/implements, square dance dresses, size 10; household items, camping equipment. Crosby, 294-1717.

WOMAN'S LEATHER COAT, black, worn twice, size 12, street length, belted, zippers, very modern, \$200. James, 298-0709.

MUSIC MAESTRO BOARD GAME of musical instruments, multilevel play, preschool to adult, w/cassette, \$10. Wagner, 823-9323.

ANTIQUATE ATLASES, maps, Harper's Weekly prints, and marbles; 8-ft. boa skin, \$100; 2-in. rattlesnake skin, w/rattles, \$25. Brooks, 255-7551.

OLD PHONOGRAPH (wind-up manophone), works well, \$100; box heater, brick lined, \$55. Carter, 821-6383.

UPRIGHT PIANO, Story & Clark, \$400 OBO; black vinyl sleeper sofa, double, \$100 OBO. Alford, 294-2149.

DEXTER LOAFERS, 2 pair, never worn, all leather, black & mahogany, retail \$70, asking \$60/both or \$35/ea. Underhill, 294-5774.

FLAGSTONE, light tan color, approx. 500 sq. ft., will help deliver in Albuquerque area. French, 856-6126.

ENVIROFIRE PELLET STOVE FIREPLACE INSERT, used 4 months, paid \$2,300, asking \$1,200. Hermansen, 281-3147.

DOG HOUSE, Igloo, for dog up to 100 lbs. like new, hardly used, \$50. Graham, 890-2748.

LEADED CRYSTAL GLASSES, \$85; queen bed, teak headboard, \$100; router, table & bits, \$100; answering machine, \$25. Selleck, 232-4127.

NEC MONITOR, Multisync, 13-in., \$55 OBO; multi-Gym weight machine, almost new, \$75 OBO; man's bike, 22-in., 10-spd., \$45. Chu, 275-9353.

TRUNDLE BED SET, w/foam mattresses, \$75. Roseth, 856-6964.

WOOD STOVE, Lopi, excellent condition, brass doors, etched glass w/coyote scene, \$1,400 new, asking \$750. Black, 281-9016.

REFRIGERATOR, '93 Whirlpool, 18 cu. ft., \$285 OBO; stack washer/dryer, '91 GE, \$325 OBO, moving. Watson, 298-2374.

FIVE ALUMINUM WINDOW AWNINGS, removable, various sizes, \$150/all; teak entertainment center (desk-size, no particle board), \$60 OBO. Newman, 266-6928.

AB ROLLER PLUS, nearly brand new, \$45; Beta VCR tapes, \$2 ea. Simmons, 891-2475.

SUPER NINTENDO SYSTEM, excellent condition, \$89; Panasonic Dot Matrix computer printer, excellent condition, \$99. Anderson, 897-2772.

TWO AUTO/SUV ROOF RACKS, locking, Yakima Towers (gutters), basket, 2 bike trays, \$100; Barreccrafter skis (6 pair), \$30. Schlimme, 293-0304.

TEKTRONIX SOLID STATE SCOPE, Model 321, w/probe, \$75; 3-in. 12V monitor scope, \$15. Meikle, 299-4640.

POLYSTYRENE BOARD INSULATION, 2-in. thick. Moss, 298-2643.

**DEADLINE: Friday noon before week of publication unless changed by holiday. MAIL to Dept. 12640, MS 0165, FAX to 844-0645, or bring to Bldg. 811 lobby. You may also send ads by e-mail to Nancy Campanozzi (nrcampa@sandia.gov). Questions? Call Nancy at 844-7522. 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. No phone-ins.
4. Use 8 1/2" by 11-inch paper.
5. Type or print ad; use accepted abbreviations.
6. One ad per issue.
7. We will not run the same ad more than twice.
8. No "for rent" ads except for employees on temporary assignment.
9. No commercial ads.
10. For active and retired Sandians and DOE employees.
11. Housing listed for sale is available without regard to race, creed, color, or national origin.
12. "Work Wanted" ads limited to student-aged children of employees.

FIREPLACE INSERT, \$200; NordicTrack, \$200. Hughes, 281-7767.

VIOLIN, Suzuki, 1/2 size, excellent condition, \$175; clarinet, good condition, \$125. Aragon, 888-3473.

TWO FENWICK HMG GRAPHITE FLYRODS, Svt. 9'0" & 6wt. 8'6", \$100 ea.; LL Bean rocker, \$100. Altman, 332-3572.

MUZZLE LOADER, Thompson Center Grey Hawk, .54 caliber, all accessories; skis, PRE1600GSP, 195cm, Tyrolia 380 bindings. Jackson, 281-8927.

TWO FOLDING CHAIRS, "Elite," metal frames, \$15 ea; man's boots, size 10, knee-high, rubber; miscellaneous tools. Freyermuth, 299-2053.

GLIDER ROCKER, brown velour, excellent condition, like new, \$75. Dubbs, 299-8350.

CAMPER JACKS, 4-corner mount, ratchet-type, \$100; new master mechanic router/saber saw table, \$25. Palmer, 256-3164.

GOLDEN LAB, male, to a good family, wonderful w/kids, 3-yr. old, neutered, shots current. Martin, 268-5892.

ESTATE SALE, Oct. 11-12, household items, furniture, living room, kitchen, china, pictures, 7920 Bel-lamah NE. Caster, 299-4308.

PIANO, Classic '40s Wurlitzer spinet, blonde wood, ivory keys, w/bench, excellent condition, needs tuning, \$850. Kent, 299-8821.

BROWNING 7mm MAG bolt action rifle, w/3 x 9 Bushnell scope, excellent condition, \$475. Smith, 856-9176.

SKIS, Rossignol Racing Jr., 150cm, \$15; K2 M-E Team skis, 175cm, \$60; Nor-tica Grand Prix boots, size 9, \$50; Nortica 558 boots, size 7, \$15. Van Den Avyle, 898-6474.

PACK-N-PLAY PORTABLE PLAY PEN, Gra-co, \$50; Century Guardian car seat; infant bike helmet; swing; backpack. Bouchier, 266-0323.

DINING TABLE, fruitwood, w/6 chairs, leaf, \$300. Krauss, 828-1368.

SOLAR HOT WATER SYSTEM, 2 collectors, 80-gal. tank, GrummanSun-stream control panel, \$340 OBO. Ludwig, 856-5111, leave message.

## TRANSPORTATION

'93 CHEV. SUBURBAN 1500, 4-wheel drive, loaded, low mileage, \$24,995. Williams, 856-5722.

'85 CADILLAC SEVILLE, FWD, excellent condition, new paint, sharp car, \$3,100. Lyons, 281-9283.

'70 FORD STATION WAGON, Galaxie 500, good condition, mechanically strong, \$700. Lobitz, 821-1509.

'94 GMC SLE, 1-ton turbo diesel, crew cab, dually 4x4, ARE topper, 38K miles, \$28,000 OBO. Kortie, 284-3107.

'87 ACURA INTEGRA, 5-spd., loaded, great condition & mpg, 125K miles (mainly freeway), below book, \$3,700. Davis, 294-1378.

'82 JAGUAR XJ6, excellent condition, must sell, \$6,000 OBO. Sanchez, 899-1579.

'91 MUSTANG LX, PS, PB, AM/FM cassette, PW, PL, 4 cylinder, AT, 90K miles, \$2,750. Kelly, 237-9709.

'88 FORD T-BIRD, turbo coupe, all the bells & whistles, excellent condition. Expander, 293-4108.

'90 ACURA INTEGRA GS, 4-dr., 1 owner, excellent condition, AT, fully equipped, 60K miles, \$9,500. Rand, 299-1048.

'93 MAZDA 626DX, AC, cruise control, PS, 62K miles, \$8,700. Ashworth, 831-5551.

'86 BUICK RIVIERA, 74K miles, Bose sound, touch computer, sunroof, all power, people think it's new. Jacobus, 271-1796.

'89 AUDI 100, loaded, power seats, AM/FM cassette, new tires, very good condition, maintenance records, \$7,500. Harrison, 897-0658.

'90 FORD ESCORT, 2-dr. HB, good condition, AC, AT, new tires, front brakes, timing belt, \$2,950. Goering, 836-0787.

'94 FORD ESCORT LX, green, excellent condition, AC, AM/FM cassette, PS, aluminum wheels, great gas mileage, new tires, \$8,300. Wilson, 452-0019.

'92 TOYOTA TRUCK, X-cab, V6, 3.0L, 5-spd., O/D, AC, many extras, value pkg., silver, \$9,950. Melo, 873-4434.

'91 DODGE 50, white camper, 59K miles, PS, PB, needs clutch, 1 owner, Michelin tires, bought new, \$6,200. Hatcher, 266-0932.

'87 FORD ESCORT GT, new clutch, timing belt, water pump, alternator, 83K miles, runs well, \$2,500 OBO. McGill, 888-0409.

'90 ISUZU SPACECAB PICKUP, 91K miles, very clean. Ross, 821-6366.

'82 CADILLAC DEVILLE 4D, off white, AC, needs minor repairs. Lee, 836-4353.

'90 FORD F150, 4x4, 4-spd., 4.9L EFI, PS, PB, dual tanks, new tires, solid on/off road, \$8,000 OBO. Sauer, 865-7680.

'55 WILLYS JEEP, new upholstery, cloth top, paint, 90% rebuilt, great for hunting, \$3,500 OBO. Wright, 293-9599.

'87 FORD LTD CROWN VICTORIA, 5L V8, 107K miles, excellent condition, \$2,500 OBO. David, 275-2619.

'84 SUBARU BRAT, recently rebuilt motor, less than 5K miles on new motor, \$2,500 OBO. Gonzales, 266-2302.

'94 PLYMOUTH VOYAGER, tan color, 6-cyl., 43K miles, AC, cruise, great shape, must sell, \$12,500 OBO. Webb, 899-9156.

'76 DATSUN B210, "ugly duckling", driven daily, \$500. Pucket, 298-6067.

'86 CHEV. CELEBRITY, 4-cyl., 4-dr., AT, AC, PS, PB, radio, heater, 87,900 miles, good condition, \$2,200. Radigan, 821-0723.

'93 FORD TAURUS GL WAGON, air bags, ABS brakes, AC, PW, PL, cruise, \$7,600. Hart, 291-8774 or 235-8476.

'86 BLAZER S-10, 4WD, 6-cyl., 5-spd., AC, radio, rebuilt motor, radiator, new clutch, new paint, \$4,200. Wavrik, 856-7544.

'89 GRAND PRIX LE, 2-dr., 5-spd., power everything, excellent condition, black w/tinted windows, must sell, \$6,200. Armijo, 839-0223.

'87 MAZDA PICKUP, new brakes, 5-spd., AM/FM, body is rough but runs well, \$1,100. Martin, 296-8154.

'91 CHEV. CAPRICE CLASSIC, V8, fuel-injected, AT, AC, PW, PB, very clean, \$6,100. Dayton, 343-9719.

'89 KAWASAKI DIRT BIKE, KDX200, good condition, \$975, must sell, will negotiate. DiPrima, 275-3479.

BOY'S BICYCLE, 16-in. black Bobcat, 4 years old, paid \$120 new, asking \$35. Garrison, 292-8973.

SUPREME COMPOUND BOW, High Country, new, w/overdraw adjustable sights, 12 game getter arrows, \$300. Jaramillo, 291-8297.

WHITEWATER KAYAK, Prijon Topo-Duo, 2-person, w/2 protect helmets, vests, & Ainsworth paddles, excellent condition, \$900. Bremer, 291-8297.

'84 HONDA V65 MAGNA, excellent condition, 1,100cc, 19K miles, \$3,500. Ortiz, 877-7293, ask for Marcus.

RASCAL 230 3-WHEELER, battery operated, scooter in good condition, \$1,000. Servis, 865-7629.

MITCHELL CABOVER CAMPER, spotless, reconditioned interior, hydraulic jacks, large refrigerator, shower, pot, heater, boat towbar, \$1,950 OBO. Marron, 345-4006.

CABIN RENTAL, Angel Fire, sleeps 6, loft, cable TV, fully outfitted kitchen, microwave, two covered porches, \$200/week. Lagasse, 298-0977.

'83 SPINDRIFT, 17-ft. day sailer, 2-hp Johnson, w/trailer, very good condition, \$2,500 OBO. Bertsch, 292-3462.

WHITEWATER RAFT, 3-person, \$150 OBO. Gough, 822-0090.

BICYCLES, woman's 10-spd., excellent condition, \$40; man's 5-spd., good condition, \$20; both \$50. Neidigk, 822-8247.

## REAL ESTATE

3-BDR. DOUBLE-WIDE MOBILE HOME, walking distance to KAFB, 1,344 sq. ft., 2 baths, fireplace, skylight, appliances, price reduced. Harris, 298-4756.

SIX ACRES, farmland, 12 miles south of Belen in Veguita, NM, price negotiable, must see to appreciate. Cavis, 864-7370.

3-BDR. HOME, New Holiday Park, large backyard, mountain view, walking distance to good schools, \$134,900. Stromberg, 299-8591.

LAND, 3 lots, approx. 1 acre ea., in Placitas, water, power, phone, cable to lots, \$43,000. Ward, 892-1956.

4-BDR. MOSSMAN HOME, 2-1/2 baths, 2,120 sq. ft., living room, formal dining, family room, Sandia High district, \$169,000. Reed, 897-7489.

3-BDR. HOME, 1-3/4 baths, 2,240 sq. ft., den w/wood stove, in-law quarters in back, great location near Coronado Mall, 2 miles from base, \$116,000. Zamora, 384-2853.

SEVEN LOTS, near St. John's, Ariz., purchased in '59, sell for my cost, \$500 each. Locher, 266-2021.

## WANTED

HOME FOR MOLLY, 1-1/2 year old, very affectionate, spayed kitty, up-to-date shots, owner is allergic. Adams, 296-2455.

SILVER-TONE XMAS TREE, artificial, minimum 6-ft. tall, good condition, reasonably priced, for sentimental journey. Russo, 872-1271.

EXHIBITORS, "Cherished Creations," arts & crafts show, Balloon Fiesta, Oct. 11-13, Howard Johnson's Hotel, Lomas & Eubank. Self, 296-4137.

OAK STUDENT DESKS, oak night stands, for kids. Barnette, 861-2450.

UNM LOBO BASKETBALL TICKETS, for 2 together. Stang, 256-7793.

ROOMMATE to share 3-bdr. house, responsible, 25 or older, no pets, \$300 plus utilities. Doran, 255-9321.

TEDDY BEAR, looking for a Christmas teddy bear sold at either Walmart or K-Mart for '91. Pantuso, 865-1597.

TO RENT MEETING ROOM for 150 persons, 3rd Wed. every month, from 7-10 p.m., NMMC. Stamm, 255-2640.

INFORMATION on nature/form of records associated w/loan from BSSPSE savings plan, after-tax contributions before '87. Stevens, 293-5704.

HOUSEMATE, non-smoker, 3-bdr., 2 baths, beautiful home, NE Heights, near Spain/Juan Tabo, \$375/month + utilities. Duan, 299-9059.

MOVING BOXES. Spires, 275-3655.

## LOST & FOUND

LOST: Gold hoop earring, 3/4-in diameter, sentimental value. Trembl, 823-2996.

# Managing change — Rolling with the punches

By Arlene Price

*Sandia clinical psychologist, Dept. 3335*

Every day we are bombarded with messages about the rapid pace of change in the workplace. We hear that rapid change has become the routine reality of work life, that the world of work is in a constant state of flux. But we don't need to be told because we live these things. Change in the world of work typically involves organizational restructuring, shifting priorities and goals, and redeployment of resources, including people.

Job descriptions are changed and may require new skills. Offices are relocated and

coworkers are reassigned to new work locations. Old familiar routines are disrupted and cherished equipment, instruments, and tools may be lost to workplace change. Worry and uncertainty about the future become a part of our daily lives. Change is the name of the game. And it doesn't matter if the changes are positive. All change is stressful because it produces not only the potential for accomplishing new goals but also for the loss of our world as we have known it. Change requires us to adapt to new circumstances.

Reactions to change are varied and sometimes confusing, involving a range of conflicting thoughts and feelings. There may be eagerness to face new challenges, sadness in losing the work we have valued, anger at having to let go of a good situation, and fear in the face of disruption and uncertainty. There may be a yearning for things to get back to "normal," meaning when things stop changing. But "normal" isn't the same anymore.

As it happens, some people are better at adapting to change than others. What is it about them that helps them maintain the calm amidst the storm? Somehow they have some inner qualities that help them stay the course. Researchers have identified a number of key characteristics of the stress-hardy individual — involvement and commitment to work, seeing

## Problems workshop

One of the most important, yet difficult, roles for managers is dealing appropriately with employees who may have personal or substance abuse problems that have a negative impact on workplace attitudes, relationships, and performance.

The Employee Assistance Program (EAP), Sandia's counseling program, is currently offering a training workshop for managers and supervisors called "Substance Abuse Awareness and Managing the Troubled Employee." Its purpose is to help managers recognize and appropriately deal with employees whose personal or substance abuse problems are impairing their performance or peer relationships.

The workshop consists of one three-hour session to be held in the MO-170 conference room. Workshop leaders are Arlene Price and Alan Olster (both 3335), both EAP counselors. Two sessions have been scheduled: Thursday, Oct. 17, 8:30-11:30 a.m., and Thursday, Nov. 7, 1:30-4:30 p.m. Please call Gigi Reynolds (3335), SALUD secretary, at 844-8238 to register.

Please join us for a presentation about managing change. Psychologist Terry Moyers will offer a lecture, "Managing Change: Rolling with the Punches," on Tuesday, Oct. 22 at the Technology Transfer Center (Bldg. 825) at noon. The lecture is designed to help audience members identify both obvious and hidden sources of stress in their lives, particularly related to a changing work environment. Specific strategies for coping with stress will also be provided. The talk is sponsored by SALUD and the Employee Assistance Program. For more information, contact Arlene Price (3335) at 845-8729.

## Coronado Club

Oct. 10, 17, 24, 31 — Thursday bingo night. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

Oct. 11 — Kids' bingo night. Buffet, cartoons, and movies 5-8 p.m., bingo 7-9 p.m. Free hot dog and soft drink for all kids playing bingo. Cost is \$2.50 per child.

Oct. 18 — Tuxedo Junction. "Big Band sound" music and dancing, 7-11 p.m. Prime rib or fried shrimp dinner \$9.95.

Oct. 20 — Sunday brunch buffet, 10 a.m.-2 p.m. \$6.95 all-you-can-eat buffet. Kids 3-12, \$1, under 3 free. Music by Bob Weiler, 1-4 p.m.

Oct. 27 — Kids' Haunted House. 6-9 p.m. Cost: Members, one canned good; guests, \$1.50.

change as a challenge and opportunity, the ability to focus attention on the things that one can control, and asking for help and support from others and feeling a sense of connection to them. These qualities are referred to as the four Cs. There are things that we can do to achieve the same sense of balance.

## 30-year celebration for Organization 5900

Systems Assessment and Research Center 5900 (formerly orgs. 9910, 310, 1250, 1340, 1750, and 5590) has been in existence for 30 years. The Center invites past members to join them in a celebration of these 30 years on Tuesday, Oct. 22, 2:30-4 p.m., at the Sandia cafeteria. For more information, contact Claire Evans, 844-9433.

## Take Note

The 11th annual Prime Time Expo for Seniors will be held Saturday and Sunday, Oct. 12 (9 a.m.-5 p.m.) and Oct. 13 (10 a.m.-5 p.m.), at the New Mexico State Fairgrounds in the Manuel Lujan Building.

## Fun & Games

Tennis — A round-robin doubles tennis tournament is scheduled for Oct. 26-27 at the Coronado Club. Events include men's and women's doubles and mixed doubles. Gift certificates will be presented to winners and runners-up. Drinks and balls will be provided to all participants. SERP and Coronado Club members and military personnel are invited to participate. Round-robin match play format will be used. Participants' guests may play doubles. Entry deadline is Oct. 21. For more information and entry forms, contact the SERP office at 844-8486.

## Road closure contact

A lot of road work and other construction affecting Sandians and contractors driving on Kirtland Air Force Base continues. Full details about road closures and restrictions are published regularly in the *Sandia Weekly Bulletin* (now on the Internal Web only). But if you have questions or want to get updated info directly, the person to call is Lt. John Kays, 377th Civil Engineering Group, at 846-7872.



HISPANICS IN NEW MEXICO — E.A. (Tony) Mares, assistant professor of English at UNM, spoke on this subject during his talk Sept. 30 at the Technology Transfer Center. Attendees learned about the ethnic mixture of Hispanics in New Mexico and where they came from. Hispanic Heritage Month activities conclude Oct. 15, 11 a.m.-1 p.m., with a fiesta at the Coronado Club, featuring food and the Miguel Caro Dancers.