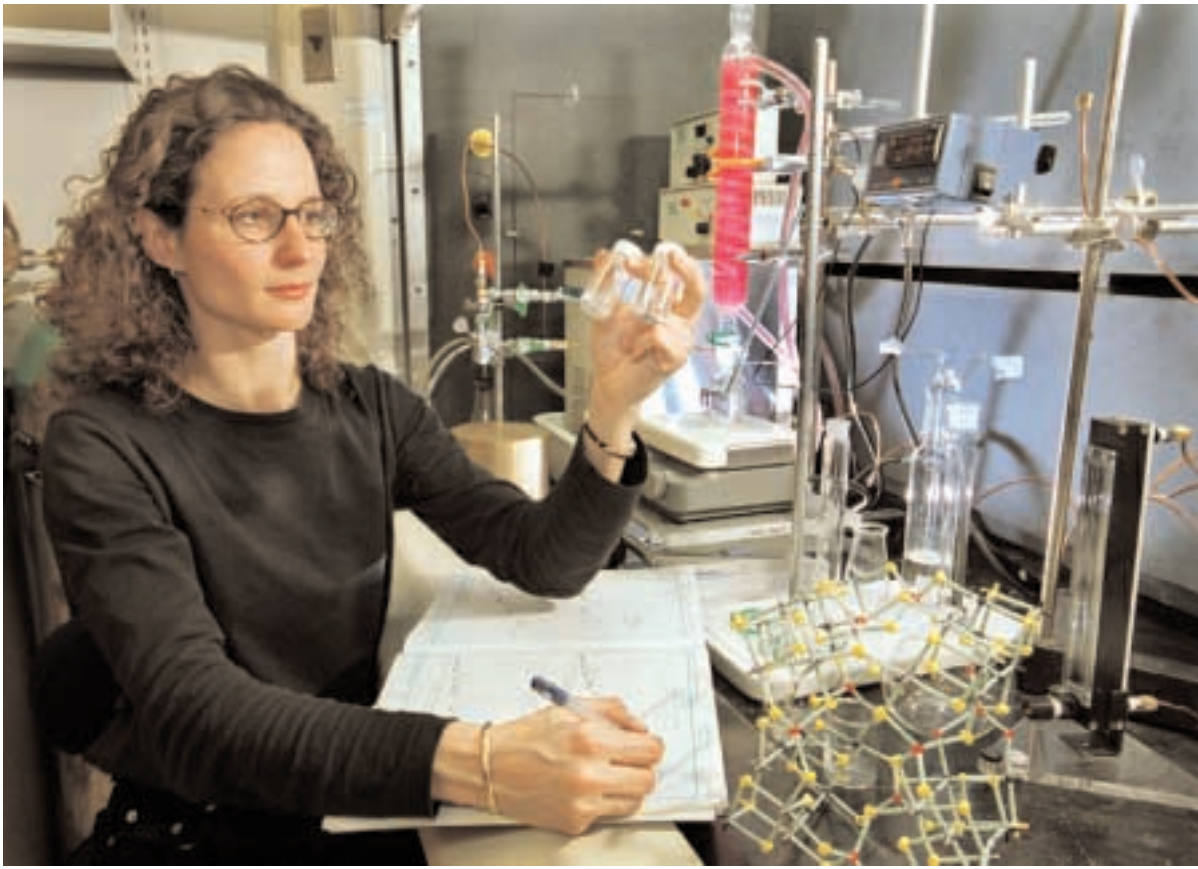


Molecular traps could snare problem chemicals from DOE tanks, purify industrial process streams

Labs discoverers lend Sandia name — Sandia Octahedral Molecular Sieves — to a new class of ion catchers

By John German



ION CATCHER — Tina Nenoff examines vials of recently crystallized SOMS powder. (Photo by Randy Montoya)

Researchers studying ways to capture radioactive chemicals swimming in a sea of hazardous waste have created a new class of molecular cages that, like lobster traps, let certain species in while keeping others out.

The new microporous materials, named Sandia Octahedral Molecular Sieves (SOMS) by their Sandia discoverers, could help purify industrial process or waste streams or filter out valuable chemicals for reuse.

They also show particular promise for helping clean up the nation's most pressing environmental problem, 53 million gallons of warm, radioactive muck inside 177 underground storage tanks at DOE's Hanford, Wash., site — the byproduct of 50 years of nuclear weapons production. (See "DOE's underground storage tanks" on page 5.)

The new SOMS are extremely selective for strontium-90, one of the two most prevalent radioisotopes in the Hanford tanks. In lab tests the SOMS trapped 99.8 percent of strontium-90 ions in parts-per-million concentrations from solutions containing chemically similar and highly abundant sodium ions, says Sandia principal investigator Tina Nenoff of Environmental Monitoring & Characterization Dept. 6233.

The Sandia team is collaborating with

(Continued on page 5)

Sandia LabNews

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Nuclear weapons SBU supports aggressive hiring to replace essential people

A big change from last year's DOE budget reallocation uncertainties

By Howard Kercheval

A year after the grim early-morning budget-shortfall meetings of January 2000, Senior VP Tom Hunter (9000) says he's breathing much easier when he looks over the spreadsheets for Sandia's nuclear weapons groups this January.

Reallocation of funding within DOE in late 1999 left Sandia — as well as Los Alamos and Lawrence Livermore — scrambling well into 2000 to avoid staff reductions and keep the vital national security work on track.

For Sandia, the problem was cobbling together a plan to keep everything functioning with about \$50 million less than originally budgeted — about \$35 million of which had been destined for the Labs' nuclear weapons work.

But, says Tom, "We have a brighter picture today than we have had in the most recent past. We have real growth in the budget in fiscal year 01."

That was not the case at the beginning of planning for FY01, however. Initial planning had the budget declining in total dollars from the previous year, and FY00 had been less than FY99.

"But we worked with DOE and they were sup-

ported by Congress, so we were able to get FY00 back near the level where it had been in '99," he says. "That allowed us to avoid any workforce impacts at the laboratory during Fiscal Year 00."

And the FY01 budget appropriation is greater than the previous year and includes not only the final design money for MESA (Microsystems and Engineering Sciences Applications) as a construction item, but also funding to keep work in key areas like pulsed power and microelectronics on-course.

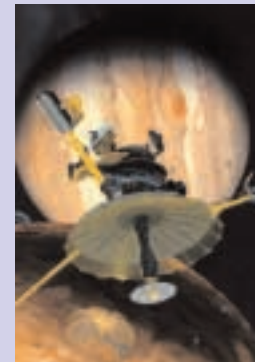
The '01 budget includes about \$60 million more than the '00 version, he says.

That increase led to changes in thinking about how to hire for thin areas of the Laboratories supporting the Nuclear Weapons Strategic Business Unit (NWSBU), much of which he outlined in a standing-room-only Steve Schiff Auditorium presentation in November about the unit's work. The presentation was SRO also at Sandia/ California and a couple of other Sandia/New Mexico sites via videolink.

The bottom line, Tom said in a subsequent *Lab News* interview, is that "we need to be aggressive about adding to the work force. The current on-

(Continued on page 5)

Sandia/Galileo connection



Some 2,000 radiation-hardened microchips developed at Sandia for the Galileo spacecraft now orbiting Jupiter have helped NASA study the giant planet and its moons in unprecedented detail. Click to read Ken Frazier's articles about this great science success story. (Launches .pdf file.)

'Good neighbor Sandia' helping state's small businesses on variety of technical problems

By Larry Perrine

The word is spreading rapidly among New Mexico's small businesses that Sandians are often able and eager to lend their expertise to help them solve technical problems. Even better news for the businesses: Up to \$10,000 worth of assistance per year is free to qualified firms, thanks to a unique arrangement between Sandia and the State of New Mexico.

Now a little more than six months old, the Sandia-run New Mexico Small Business Assistance (NMSBA) program is funded by the state, which "forgives" Sandia up to \$1.8 million/year in state gross receipts taxes in return for providing that much help to small businesses (see "How unique program got started . . ." on page 4).

"Enthusiasm for this new program is tremen-

(Continued on page 4)

Rewarding people-management skills takes on a higher priority

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Power Sources team redesigns, produces batteries in record time

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Sandians support flight tests for missile defense programs

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Campus Execs: 16 deans, faculty visit labs from N.C. university

This & That

Bricks, wines, & highway signs - These are just a few products that Sandians are helping small businesses with in several ways under the New Mexico Small Business Assistance (NMSBA) program that began last year. Funded under a new state law that Sandia encouraged, the program "forgives" Sandia up to \$1.8 million a year in gross receipts taxes in return for providing technical advice and assistance to small businesses throughout the state. Program manager Vic Chavez (1302) says participating Sandians and small-business people are enthusiastic about the new program, and he's looking for more Sandians who have some time and expertise to help small businesses solve problems. Read all about it beginning on page one. It's easy to read and understand ... I wrote it and I don't know many big words.

* * *

W and the four C's - I try to avoid writing anything about politics and politicians that could be considered partisan, but I'll bet most citizens - regardless of political affiliation or agenda - endorse one section of President George W. Bush's Jan. 20 inaugural address: "Today, we affirm a new commitment to live out our nation's promise through civility, courage, compassion, and character." It seems like our nation has for years been losing ground in some of these "four C's" - particularly civility - and I hope we all work together to reverse that.

* * *

Not exactly immediate assistance - One day last month was "update-your-answering-machine-message day" or something like that. I was very tempted to remind one Sandia manager of that after I phoned him and got his voicemail greeting that he was out but that I could punch zero to get "immediate assistance" from his secretary. I punched zero and got another message ... that the secretary was *on vacation all week*. It's one thing for a fellow Sandian to hear something like this, but I really shudder thinking about the impression it gives our outside customers.

* * *

Poor-spelling paranoid on drugs? - Several of us who have our e-mail addresses linked for public access from major Sandia External Web pages get some interesting messages. Here's one Tech Library Services Manager Susan Stinchcomb (9615) received recently (verbatim): "if a person thinks they are monitored with servalance michs cameras ect. how can I find them and have them removed. im sure this is ilegal but if I can't find them I can't prove it." Susan - wisely, I believe - decided to ignore that one.

* * *

Silly surfin' - Here's an interesting Web site I found recently: www.coworkerhints.com. For \$10, that site will send an anonymous letter to any coworker about a bad habit or hygiene problem you find disgusting or offensive, including bad breath, nose picking, foot odor, excessive perfume/cologne use, leaving work early and, yes, even flatulence. (I thought twice before including this item, but knowing how frugal Sandians are, I doubt that you'll part with ten bucks just to send me an anonymous message about my only two bad habits - excessive generosity and working too hard.) - Larry Perrine (845-8511, MS 0165, lgperri@sandia.gov)

Sandians' generosity recognized by United Way of Central NM

Sandia employees' surpassing \$2 million in charity giving received a standing ovation at the annual United Way of Central New Mexico recognition luncheon at the Sheraton Old Town Hotel on Jan. 24. Total area-wide giving to United Way of Central New Mexico totaled \$11,100,000, which will go to local health and human service agency programs.

This is the second year that Sandia has raised more than \$2 million. Total contributions are at \$2,127,010, which includes \$108,000 raised for last spring's Cerro Grande fire relief, LEAP contributions of \$214,404, and \$10,645 from remote sites. The contribution total for the 1999 campaign was \$2,002,723.

Sandia Director and President C. Paul Robinson accepted the Million Dollar Roundtable award on behalf of Sandia employees. Sandia was also awarded an Employee Campaign Per Capita Award for companies with 1,000+ employees, with giving at \$260 per employee.

Mike McClafferty (14404), 2000 Employee Contribution Plan Chairman, and Juanita Sanchez (12640), ECP Project Coordinator, each received special recognition awards for their work on behalf of the United Way 2000 campaign. Other Sandians recognized at the awards luncheon include Don Carson (12600), incoming Chairman of the United Way of Central New Mexico Board of Directors; Chief Schwyzer (7136), Sandia Loaned Executive to United Way during the 2000 campaign; Mike McClafferty, as a member of the 2000/2001 United Way Campaign Cabinet; Sandia's ECP Campaign Co-Champions Al Romig (VP 1000) and Lenny Martinez (VP 14000); and Sandia's unions, Office and Employees International Union Local 251, International Security Police Association Local 7002, and the Metal Trades Council.

Sympathy

To Lana Everett (12610) on the death of her father, Henry Davis, in Hurley, N.M., Dec. 31.

To Mike Lanigan (12640) on the death of his mother, Margaret Lanigan, in Bend, Ore., Jan. 7.

To Lee Cunningham (12630) on the death of his sister, Jeanne Cunningham Mook, in Redlands, Calif., Jan. 21.

To Nancy Garcia (8528) on the death of her mother, Mary Malich, in Pleasant Hill, Calif., Jan. 15.

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For the first time, employees get own, early State of the Labs presentations Feb. 14, 15 Meeting with community to follow Feb. 22

For the first time since the advent of the annual State of the Labs presentation - traditionally targeted toward an audience of local business, community, and government leaders - Sandians will get the chance for a preview with a specially tailored session for them.

Delivered jointly by Labs Director Paul Robinson and Deputy Director Joan Woodard, the presentation at Sandia/California will be Wednesday, Feb. 14, at 8:30 a.m. in the Bldg. 904 (CRF) Auditorium. They'll take the Steve Schiff Auditorium stage at Sandia/New Mexico on Thursday, Feb. 15, at 9 a.m.

"It's important that Joan and I share this information personally with our Sandia communities before we go outside with it," Paul explains. "That's why we've made this change."

Although the theme of both the employee- and community-focused presentations is "Launching the 21st Century," the Feb. 14 and 15 versions will provide additional background on last year's thorough strategic planning initiative conducted by LLT, and its development of redefined corporate core values, core purpose, and "highest goal."

During that strategic planning, the Labs' leadership team basically decided to up the ante. Instead of seeing itself as just a "national security laboratory" the new - and highest - goal is to "become the laboratory that the US turns to first for technology solutions to the most challenging problems that threaten peace and freedom for our

nation and the globe."

"With this vision," says Paul, "all of our business areas - nuclear weapons, nonproliferation, emerging threats and energy and critical infrastructures, as well as our base in science and technology and manufacturing - have a focus. This focus will benefit Albuquerque, Central New Mexico, and the Tri-Valley area in many ways."

State of the Labs addresses began in 1994 and have been held yearly, generally while the New Mexico State Legislature is in session. This year's event for the community will be the evening of Thursday, Feb. 22, in the Steve Schiff Auditorium.

Information available on promotion by bid and selection for non-exempt employees

Detailed information regarding the process, roles, and responsibilities for managers who are posting jobs they need filled - especially those who have non-exempt candidates for exempt positions - and information for candidates for those positions can be found at: http://www-irn.sandia.gov/HR/Compensation/post_and_bid.htm.

For more information contact Ashley McConnell, Compensation Analyst, Dept. 3545. This document will be a Corporate Process Requirement in the near future.

Valuing good people-management skills at Sandia

Latest Employee Attitude Survey results raised awareness of issue

By Bill Murphy

The vast majority of Sandia managers are exemplary individuals, laboring mightily to do a difficult — one might say thankless — job. Regrettably, there is a perception “out there” — on the line, in the trenches — that good people-management skills are not rewarded as fully as many Sandians think they should be.

According to Employee Attitude Survey data collected in 1999, just 17 percent of Sandians agreed with the statement, “Managers who demonstrate good people-management skills are consistently recognized and rewarded.” Similar concerns were expressed in the 1999 Ethics Survey.

When Human Resources Div. 3000 VP Don Blanton shared those survey results with the Laboratory Leadership Team (LLT), the perception — accurate or not — was troubling enough that LLT created a special group to look into the matter.

(Don notes that the attitude survey results shouldn't be interpreted as suggesting that most Labs managers aren't good at managing the “people” side of their jobs. They are, he says. Rather, Don says, the message of the survey is that senior management must do a better job of encouraging, recognizing, and rewarding those skills.)

Bruce McClure (3526), who worked on the issue as part of a small team along with Don and LLT members Lenny Martinez, recently retired Ethics Director Miguel Robles, and others, notes that the team conducted focus group meetings with staff and managers to determine whether, in fact, the perception was justified. In addition to Bruce, Don, Lenny, and Miguel, the group also included just-retired HR VP Charlie Emery, Sandra Barnes (3000), Char Wells (3525), Karen Gillings (3545), and Pat Smith (8500).

As they probed deeper into the subject, they found that good people-management skills, while identified as a component of the Manager's Roles and Responsibilities, were not emphasized or articulated clearly enough.

Meanwhile, at about the time the focus groups were being conducted, Executive VP Joan Woodard charged the Human Resources Division 3000, Center 1700 Director David Williams, and Center 15200 Director Pat Eicker to formalize a list of roles and expectations for management.

“One of the key elements of that document is people-management skills,” notes Bruce. “So we saw this [focus group process and subsequent follow-up] as an opportunity to really work on all these issues, to get the word out more about this aspect of a manager's roles and expectations, to deal with the findings of the Ethics Survey, and also to address the attitude survey concerns, because they seem to mesh.”

Staff members who participated in the focus groups — from Divisions 1000, 6000, and 14000 —

Patting each other on the back: A good model

Bruce McClure, who has spent a good deal of time over the last few months studying the issue of how Sandians relate to each other, says he's found a gem of a model of interpersonal relations in National Security and Arms Control Div. 5000.

“There's a lot of activity there, in terms of rewarding each other,” he says. “We [the team analyzing Sandia's policies and practices regarding good-people management skills] drew on information from Division 5000.

“They had templates that guided decision-making. . . . They had basically this notion — and I think there's sort of an undercurrent here of what we're advocating — that in fact any one person at Sandia can reward or recognize any other person.

“The traditional flow [in a reward model] is down the hierarchy. In fact, there was no reason on earth why it should be that way. If for instance we're colleagues and you do a really great job and I'm affected by it or I appreciate it, there's nothing wrong with me sending you a thank-you note. It's as simple as that. Or buying you lunch. Or, being more formal, at a staff meeting I could make up a certificate and say, ‘Hey, I really appreciate it; I want to thank you for the work you did.’ Likewise, you could do the same for your boss. Anyway, that's what we're pushing for.”

“Everyone can play a role in ensuring that good people-management skills are recognized and rewarded, but, more importantly, everyone can play a role in ensuring they are practiced,” says Bruce.

“Ultimately, finances are truly the limited resource. So the question becomes: Are you going to spend some of that limited resource to reward good people-management skills? That's the test, and that's where we're headed.”

defined good people-management skills as consistency, being a good listener, building teams, helping folks develop their careers — in short, “no surprises, common sense stuff, about what you'd

expect, but we wanted to make sure we were all talking about the same things,” says Bruce.

Managers agreed with the broad definition of what constitutes good people-management skills, Bruce says. But “in general,” he adds, “the sense [among managers in the focus groups] was that people-management skills aren't highly valued. These were seen as skills that were, you might say, noteworthy only in their very conspicuous absence.”

Managers, Bruce says, perceived that “if you were an absolutely dreadful manager of people, then you might have to deal with some repercussions. If you were a dreadful manager of people and you didn't get the work done, then you're gonna be in trouble. But if you could actually get your work done, you could probably get away with being a pretty poor people manager.”

The good news, Bruce says, is that the 1999 Employee Attitude Survey raised an issue which, upon close study, proved to be quite legitimate. Legitimate enough, indeed, that good people-management skills have been folded into the conceptual framework of the Labs' Management Roles and Responsibilities and recognized as a critical element of the Labs Total Rewards strategy. (In that context, employees are assured that their managers are held accountable for their people-management skills.)

Also, due to the team's work, Labs' senior management became convinced that the issue was important enough and credible enough that good people-management skills are now incorporated as a basic expectation on every manager's Performance Management Form.

Bruce acknowledges that the Labs needs to “walk the talk” and provide tangible rewards for good people-management skills. And speaking of “walking the talk,” Sandia's senior management wants employees to know that rewarding and recognizing good people-management skills is a 360-degree process — everyone has a stake in acknowledging and rewarding their colleagues who display the traits that characterize those skills (see “Patting each other on the back,” this page).

“We have the annual performance and compensation review and should use that process to reward good people-management skills and other things. We have all kinds of already existing award programs; we could use these as mechanisms. We also have just-in-time [spot award] processes. We're advocating using the systems that are there and specify: If I'm a director and I've got a manager who's really worked well with a group, has done a really good job developing their folks' careers, or whatever, let's reward 'em.

“Ultimately, finances are truly the limited resource. So the question becomes: Are you going to spend some of that limited resource to reward good people-management skills? That's the test, and that's where we're headed.”

Rick Stulen named Director of Materials & Engineering Sciences Center

Rick Stulen has been named Director of Materials & Engineering Sciences Center 8700 at Sandia/California, effective Feb 2. Rick will oversee a center of nine departments and some 150 people. He succeeds Mike Dyer, who is retiring this spring after 25 years at Sandia.

For the past three years Rick has been the chief operating officer of the Extreme Ultraviolet Lithography (EUVL) Virtual National Laboratory con-



RICK STULEN

Sandia California News

sortium and deputy director of the Science Based Engineering and Technology Center at Sandia. He joined Sandia in 1976. His early work included research on the physics of surfaces carried out at the Stanford Synchrotron Radiation Laboratory, where he served on the Executive Users Committee and later held a similar position at the Advanced Light Source at Lawrence Berkeley National Laboratory (LBNL).

In 1984 he was promoted to manager of Sandia's Surface Science and Chemical Physics Department. In 1989 he started a new research program focused on extreme ultraviolet lithography in collaboration with AT&T Bell Labora-

tories and in support of DOE's technology transfer initiative. In 1995 he was named the EUVL technical champion for the Semiconductor Industry Association lithography working group. The next year he helped organize the EUV Virtual National Laboratory (VNL), composed of scientists and engineers from Sandia, Lawrence Livermore National Laboratory, and LBNL. Now this program has become the largest 100-percent industry-funded program in the DOE complex and is a model for managing complex projects.

During his 25 years at Sandia Rick has published more than 100 papers in his field and in 1999 received the prestigious NOVA Award for Technical Excellence from Lockheed Martin. He earned his bachelor's degree in physics from the University of Michigan and PhD in solid state physics from Purdue University.

Small business

(Continued from page 1)

dous," says Vic Chavez, Manager of Regional and Small Business Partnering Dept. 1302. "This is a great way for Sandia to give something back to the small businesses in our state that have long supported us and helped us succeed.

"Sandia technical staff members are eager participants," he continues. "Once they hear about the program, they want to help our small businesses. Although the program is still in its infancy, we already have several staff members who have helped on multiple projects."

One such staffer is Terry Smith of Computer Applications for Manufacturing Dept. 14111, who has completed interesting projects with two small businesses and is now working with a third. The completed projects are with:

- **P&M Signs** in Mountainair, which needed help refining an assembly for making highway signs out of recycled materials including plastic milk jugs and ground-up juniper wood. The company is now working with New Mexico State University on "downstream processes" for manufacturing and marketing such signs as an alternative to traditional aluminum signs. Among other benefits, P&M believes its signs are potentially less hazardous to vehicles and their occupants when vehicles collide with them.

- **Radco** of Roswell, which currently sells dog-shaped picture frames at shows around the country, needed help to quickly turn a sketch of a cat into a production mold for making a similar product for cat fanciers.

"These sure aren't your run-of-the-mill types of jobs Sandians normally do," Terry says, "but the small businesses are glad to get our help and enthusiastic. Helping them is personally satisfying and fun at the same time."

Projects all over the state map

Projects are about as varied as small business itself in New Mexico. Here's a short sampling of firms and descriptions of assistance requested as of December 2000, along with primary Sandia technical contacts:

- **Estes International Farm and Truck Supply**, Roswell. Mechanical revision to the cooling system of a front-end loader to eliminate airborne contaminants collecting in the cooling system. Lothar Bieg (14184).

- **Law Enforcement Technologies, Inc.**, Corrales. Assistance incorporating autonomous vehicle operation techniques into a law enforcement tool application. A. Keith Miller (15252).

- **Ponderosa Valley Winery**, Ponderosa. Identify or develop a solvent or adhesive to patch pin holes in an inflatable tube used in winemaking process. Howard Arris (14172).

- **TPL, Inc.**, Albuquerque. Technical assistance to provide photolithography facilities for thin film electrode technology investigation.



FAR-OUT ASSISTANCE! — Even though they may be small businesses, many such firms in New Mexico are involved with high technology. Albuquerque's Applied Technology Associates (ATA) recently worked with Sandia's Dan Gregory (9125) under the NMSBA program. Sandia helped ATA perform flight qualification and flight acceptance vibration tests for a future space mission on a GOES (Geostationary Operational Environmental Satellite).

Judith Ruffner (1846).

- **Lava Block & Brick**, Belen. Perform thermal testing to evaluate insulation characteristics of new construction material made from lava aggregate. James Nakos (9134).

- **Applied Technology Associates (ATA), Inc.**,

Labs' upper management supports NMSBA program

The NMSBA program has lots of support from Sandia's upper management, says program manager Vic Chavez. "VPs Bob Eagan (6000), Al Romig (1000), and Lenny Martinez (14000) are particularly strong supporters and encourage people in their groups to work with us."

Lenny says the program is filling a real need in New Mexico. Data gathered several years ago show that 95 percent of firms operating in the state are small businesses and that 46 percent of the state's workers are employed by them. But small businesses tend to fail more frequently than large ones, throwing people out of work. There were 645 business failures in 1997.

"This is the context in which we are operating," Lenny says. "It's critical for us to establish regional partnerships for a variety of reasons . . . because of the high mortality rates in small business, we might actually be able to minimize some of the technical exposures that some of the small businesses face."

Albuquerque. Technical assistance to provide angular motion device testing for vibration susceptibility and shock survivability. Dan Gregory (9125).

Although it isn't a primary program goal, ongoing business relationships between the firms and Sandia can come from these projects. Applied Technology could become a Sandia supplier as a result of this project and is even a potential tenant for the Sandia Science and Technology Park, Vic says.

There are two main requirements for the Small Business Assistance program: 1) Participating companies must be bona fide for-profit New Mexico small businesses — generally 500 employees or less, and 2) Sandia can help them through the program only when such help isn't available for a reasonable cost through private sources; in other words, Sandia can't compete with private-sector firms offering similar services. (Several other restrictions are noted in the sidebar below.)

As of Feb. 1, 160 small businesses throughout New Mexico had requested Sandia's help, and 90 projects had been started, with many already completed.

Sandia works through a host of outside organizations throughout the state to inform small businesses about the NMSBA program and explain how the Labs can help them. They include the Association of Commerce and Industry, the Rio Grande Minority Purchasing Council, New Mexico Economic Development Department, Northern New Mexico Small Business Alliance, and many more. Sandia's own Supplier Relations Dept. 10205 also actively promotes the NMSBA program.

Bigger program in future?

Assuming the Small Business Assistance program is judged successful by state businesses and legislators and Sandia management, it could expand in the future, Vic says. Sandia now pays about \$45 million a year in state gross receipts taxes (more than any other entity in the state), and the state "forgives" up to \$1.8 million of that per year through the crediting arrangement. Vic says Sandia may ask the New Mexico legislature to expand the program and amount credited as early as next spring during the 2002 legislative session, but the program must first prove its worth at the current level.

Sandia gives progress reports back to the state periodically through the economic development secretary, and interested state legislators and other officials also follow program progress.

To provide easy access for small businesses, the NMSBA program operates in Albuquerque out of the Lockheed Martin Building on University Ave. Other team members besides Vic include Mariann Johnston, Toni Leon Kovarik, Kim Ford, and Mona Plummer (all 1302).

Small businesses or Sandians wanting additional information about how they can participate in the program can contact the NMSBA office at 505-843-4171, 1-800-765-1678, or e-mail sbpadmin@sandia.gov.

How unique program got started and how it works

The New Mexico Small Business Assistance (NMSBA) program is modeled loosely on the successful DOE/Defense Programs Small Business Initiative. Sandia has since 1993 provided more than 1,500 technical assistances to small businesses throughout the US under that program.

The impetus for starting the new program came about several years ago as a Sandia group was exploring other ways to help New Mexico small businesses that do not qualify under the DOE program, which requires some Defense Programs connection.

NMSBA program manager Vic Chavez (1302) says the group came up with the idea to ask the State of New Mexico to "forgive" Sandia some of its gross receipts taxes in return for helping small businesses throughout the state solve their technical problems. The group included Vic, former Sandia VP Dan Hartley, VP and Chief Technology Officer Al Romig (1000), Corporate Business Development and Partnerships Director Dave Goldheim (1300), and Sandia consultant Fred O'Cheskey.

Other key Sandians and organizations involved in the effort include Gloria Zamora (12123), Chuck Meyers (1030), Larry Greher (11200), and the Controller organization (10500).

"After we refined the idea with the help of various individuals and groups, including the University of New Mexico Bureau of Economic Research, our friends at the Albuquerque Hispano Chamber of Commerce asked State Rep. John Heaton of Carlsbad and State Sen. Roman Maes to introduce it in the legislature," Vic says. "It wasn't easy and it didn't happen overnight, but lots of people warmed to the idea and helped us make it happen."

Helping rural areas is a priority

To encourage helping businesses in rural areas, the act establishing the program (Laboratory Partnership with Small Business Tax Credit Act) limits Sandia to helping Bernalillo County businesses up to only \$5,000 worth of assistance annually, while businesses outside the county can get up to \$10,000 worth of help.

Increasing employment opportunities in rural areas is a priority of many New Mexico political leaders (at the state and national levels), so the NMSBA program fits nicely with that, Vic says. State labor department figures show some counties have double-digit unemployment levels while the state's average unemployment rate is near five percent.

Sandia spends about 35 percent of its tax credit on businesses in Bernalillo County (including Albuquerque), and about 65 percent outside the county. (Vic notes that it costs Sandia more in time and travel expenses to help those outside the county, so outlying projects really do need more funding.)

Dave Goldheim believes strongly that the program is great for Sandia and for state small businesses. "The legislature, governor, and other state government supporters demonstrated leadership and a clear commitment to growing small businesses and stimulating the economic foundation of New Mexico," he says.

Molecular sieves

(Continued from page 1)

researchers from the University of California – Davis (UC Davis), Pacific Northwest National Laboratory (PNNL), the University of Michigan, the State University of New York – Stony Brook (SUNY), and Lawrence Livermore National Laboratory (LLNL).

The work is sponsored by DOE's Environmental Management Science Program, which funds projects that provide options for reducing long-term DOE cleanup costs.

Picky ion catchers

Chemically, a SOMS is a tiny sponge that sucks up divalent cations (atom groups with a +2 charge) into its microscopic pores and snares them at negatively charged bonding sites that have been vacated by ions with weaker charges — a process

DOE's underground storage tanks

Some 280 underground storage tanks at four DOE cleanup sites — Hanford, the Savannah River Site, Idaho National Engineering and Environmental Laboratory, and West Valley Demonstration Project in New York — contain a total of about 90 million gallons of mixed waste.

Estimates put the cleanup tab for the Hanford tanks alone at more than \$35 billion. And the clock is ticking. One-third of Hanford's 177 tanks are leaking.

The most critical wastes present in the Hanford tanks include radioactive isotopes of cesium, strontium, uranium, plutonium, technetium, and their decay products.

The tank waste exists primarily in three forms — sludge, saltcake, and liquid.

NWSBU

(Continued from page 1)

role [workforce] is well below the average we need for this year. Last year we didn't hire so we had attrition and we let our workforce come down to a level that if we just sustained it, would not allow us to do the work. What we need — and what we can afford — is higher than we have had in the last year or so, and so we can afford more people."

But, reminded by last year's struggle to keep everybody working and meet deliverable requirements, Tom is sensitive to political implications and, therefore, circumspect about discussing budget needs.

"We have to be sure we don't present to the Department of Energy or to the Congress an unbalanced view of where we really are, with respect to the budget," he cautions. "We're in pretty good shape. But there are things we still need support for that we don't have and it would be wrong to present a message that everything is fine and everything we have to have to fulfill our role in the weapons program is, in fact, available because this is not true."

Workforce 'for the future'

He did the November presentation, he says, because he and members of his staff thought there had not been sufficient communication about the evolution and the good state of health of the nuclear weapons program. That was leading managers, he believed, to equivocate, leaving them without the confidence "to go out and help us hire a workforce for the future."

Dave Larson (9750), Tom's chief of staff, echoed that concern. "People say the money's at the laboratory, but they spend huge amounts of their time tracking it down, finding out where it is, and keeping their staff informed about it," he says. "But we've got work to do; we don't want large numbers of people investing a lot of time tracking money." The NWSBU has made substan-

called ion exchange. (Home water softeners use ion exchange to remove iron from tap water.)

The SOMS are good ion exchangers because the sizes of openings on their crystalline surfaces can be adjusted precisely by altering the recipes followed to make them. By varying these openings from between 4 and 15 angstroms (an angstrom is one ten-millionth of a millimeter), the researchers are able to select the sizes of ions or molecules that can get into the tunnels, and which can't.

When bound to water molecules in Hanford waste, for instance, strontium-90 is a fraction of an angstrom smaller than the million-times-more-abundant sodium-plus-water molecules. The result: Strontium is let in to the SOMS while sodium is kept out.

"We can tune the pore size and the chemistry of the framework on the nano scale so the SOMS materials capture strontium on the bulk scale very selectively and efficiently, and in all types of environments," says Tina.

Because the SOMS are crystalline and inorganic, they also will stand up to the highly caustic environments found in the tanks.

Furthermore, when heated to about 500°C, the strontium-saturated SOMS collapse into a dense glass-like material called a perovskite, its shrunken pores locking the strontium tightly into its crystalline structure.

Bricks made from densified SOMS are impervious to leaching and stable against high pH, radiation, and heat, which might make them ideal for storage in high-level waste repositories such as the

tial changes to the budget allocation process that should greatly reduce the need for managers to "hunt" for their funding this year.

People are the key to the Labs' future, Tom says, and the current budget allows the NWSBU to afford 60 to 80 people more than last year.

And continuing Dave's point, he says, "We want our managers and staff working on delivering products, supporting our customers, and doing science and engineering. So the whole idea is that time should be spent on real work, not on managing budgets across the whole laboratory."

Agreeing with Dave that the nuclear weapons program is losing about 250 people a year, Tom says, "I don't want to keep repeating that we're in such great shape, but the fact is that affordability is not our problem."

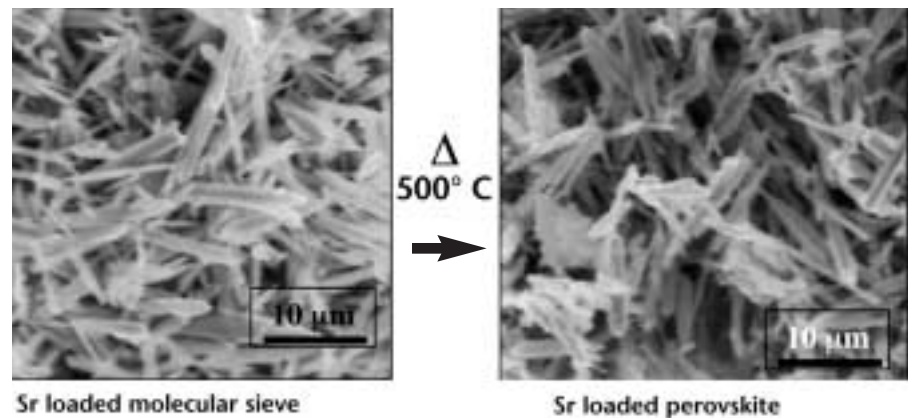
Critical skills goals

There are clear goals in critical skill areas across the nuclear weapons program, he says, and the whole point of his presentation was to point out that people should stop worrying about specific detailed individual requisitions and think, instead, about critical skills and the best people who can be hired.

"To fill those skills in general," says Tom, "there's a big change in philosophy. We aren't going to go out and find somebody for Organization 5211 who does a certain thing. Instead, we're going to hire for critical skills, we're going to bring that person to the laboratory, and only then are we going to worry about exactly where that new person fits. That's an enormous change."

Then, reflecting a moment amid the piles of reports of various sizes on the long conference table and scattered elsewhere around his office, and almost as if he's thinking out loud, he says, "It's really because we didn't hire last year; that's why we're in this situation — because we dipped so low. We've got to build back up right where we were last year, on the average, and the arithmetic is very simple.

"We kept saying, 'Let's don't go back down so much we have to build back up,' but sure enough, that's what we did."



MICROGRAPHS showing strontium-loaded SOMS before (left) and after (right) heat treatment that causes the SOMS structure to collapse into a dense glass-like material called a perovskite, locking in the strontium-90.

planned Yucca Mountain site, where the strontium could be immobilized until its radioactivity decays to safe levels — in perhaps 100 years.

"This unique property gives SOMS the added bonus of being ready for the repository after only minimal processing," she says.

Liquefied tank waste could be pumped through columns containing the SOMS, she says. When the SOMS became fully loaded with strontium-90, they could be removed and densified for disposal.

The Sandians discovered SOMS two years ago while characterizing the ability of another class of materials, crystalline sodium and cesium silicotitanates (CSTs), to selectively capture radioactive cesium-137 from waste streams at Hanford and then densify for long-term storage (*Lab News*, June 10, 1994).

(CSTs, developed in the early 1990s by a Sandia/Texas A&M/United Oil Products team, are now among DOE's preferred cleanup technologies for cesium-137.)

In synthesizing different phases of the CSTs, says Tina, "we came up with an entirely new class of crystalline materials that have no analogs in laboratory production or in nature. Not only are SOMS fascinating as a new material, they possess many useful properties."

Together, cesium-137 and strontium-90 make up about 98 percent of the radioactive constituents in the Hanford tanks. Hanford's tank-waste treatment plans include separating these radionuclides from the waste and disposing of them in a high-level waste repository.

Tina cautions that although the SOMS have been tested on waste simulants, they haven't yet been tested on real waste, and there are several other technologies competing for the strontium-extraction job.

Technically SOMS are sodium niobium oxide with transition metals such as titanium or zirconium added to give the SOMS their microporosity and ion exchange properties.

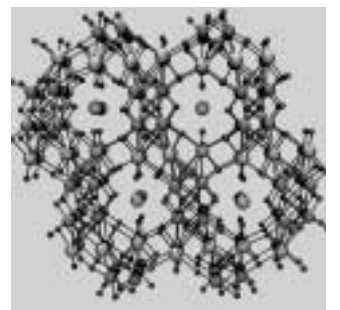
An eye on industrial uses

Although the SOMS team so far has focused on tank waste, the new microporous materials also could trap a variety of materials (such as chromium, cobalt, and nickel) in industrial waste streams.

Once densified to a ceramic they could be useful in microelectronics fabrication and other industries where purification of, or extraction from, liquid process or waste streams is a significant or costly problem.

Sandia already is working with two mining-industry companies on using SOMS to extract and reuse valuable cobalt from copper-mine electro-refinement waste streams.

The SOMS team includes Tina, May Nyman (both 6233), co-principal investigator Alexandra Navrotsky, Hongwu Xu (both UC Davis), co-principal investigator Mari Lou Balmer, Yali Su (both PNNL), Rodney Ewing (U. of Mich.), John Parise (SUNY), and Robert Maxwell (LLNL).



SOMS FRAMEWORK (H₂O excluded) showing tunnels in the crystalline structure.

Center 2500 Power Sources team redesigns, produces thermal batteries for DOE flight tests in record time

Efforts awarded with DOE Weapons Recognition of Excellence Award

By Chris Burroughs

Today members of the Power Sources Technology Group in Center 2500 are going about their business doing research and development work that over the years has produced significant improvements to thermal batteries used in nuclear weapons systems.

But the memory is still with them of a little more than a year ago when they pushed themselves to their limits to redesign and produce a lot of MC3323A batteries in record time to support DOE flight tests.

"We accomplished something we'd never done before in an extremely short time," says Larry Moya (2522), thermal battery team leader.

For their efforts they were recently awarded the DOE Weapons Recognition of Excellence Award and were commended in a December 2000 DOE Quality Assurance Survey Report.

Redesigning a battery and producing a new lot usually takes at least a year and a half — and that's when Sandia works with commercial companies using the latest automated production equipment. But Sandia's thermal battery team — a research and development group that builds batteries without automation — did it in nine months while also working on several ambitious advanced development projects.

In 1992, shortly after a major battery DOE procurement/production complex in Pinellas, Fla., was phased out, DOE requested that Sandia's battery group become a backup facility with the capability to do in-house thermal battery production



LARRY MOYA (2522), thermal battery team leader, holds a sample MC3323A battery that Power Sources Technology Group in Center 2500 produced in record time for DOE.

for the nuclear weapons program. They were to be called upon only if the major suppliers, Eagle-Picher Technologies of Joplin, Mo., and The Enser Corp. of Pinellas Park, Fla., were unable to manufacture thermal battery lots.

Construction of Sandia's production lab was completed in 1997. The thermal battery team successfully produced its first lot of 40 MC4152 thermal batteries for DOE the following year.

"We built those batteries under extreme pressure as well. Budgets were cut towards the end of the program and the schedule was moved up by one month," Larry says (*Lab News*, April 24, 1998). "This was to prove our capability as well as produce required WR product."

Sandia was supposed to produce one lot of batteries a year to maintain the production capability, but due to financial considerations, that plan was dropped.

In March 1999 the group got a call that was to dramatically change their lives for the next nine months. Because of lot failure problems in batteries for a flight test, Sandia was requested by W80 System Engineering to redesign the MC3323A battery and produce 32 units by October 1999.

The primary supplier, Eagle-Picher, could not fit the lot into its schedule. The other company, Enser, could not produce the replacement batteries because it was in the process of moving its facilities.

The task fell to the Sandia backup production lab and the handful of people on the thermal battery production team. Core team members with key responsibilities were Arthur Andazola, Patrick Benavidez, Amelia Sanchez, Joe Garcia, and Frank Soto (all 2522) and Jim Gilbert, Larry Demo, John Guillen, and Frank Lasky (all 2523).

Production staff from Enser who came to Sandia to help build batteries were Rhonda Toy, Patricia Wehinger, Wanda Lawson, and John Brettner. Other groups contributing were Organic Materials Dept. 14172, W80 System Engineering Dept. 2111, Metal Forming, Welding & Explosives Dept. 14181, Reliability Assessment & Human Factors



PELLET COMPRESSING — Joe Garcia (2522) inspects a compressed powder pellet similar to those used in the MC3323A batteries that members of the Power Sources Technology Group in Center 2500 produced and delivered in record time to support DOE flight tests. For their efforts they were recently awarded the DOE Weapons Recognition of Excellence Award and were commended in a December 2000 DOE quality Assurance Survey Report. (Photos by Chris Burroughs)

Dept. 12335, Quality Engineering/Business Practices Dept. 14408, Shipping, Receiving, and Mail Dept. 10263, Materials Characterization Dept. 1822 and DOE/AL.

"Because of the short time frame, we had to do the redesign and production in parallel, which is something highly unusual," Larry says.

Team members began manufacturing those portions of the batteries that were unchanged. At the same time, others were redesigning parts of the batteries that needed to be reconfigured.

The first redesigned prototype was done in a month — by April 1999. By June 1999 sample batteries were sent to the Kansas City Plant and National Testing Systems of Florida for testing. The team completed the redesign and built 72 batteries in nine months. Extras were made to ensure reliability, and the required units as well as additional units to allow the next lot to be moved out by several months were delivered on time in October 1999.

"It was an amazing feat," Larry says. "It took a lot of teaming to make it happen."

Sandia pitches in to help KOB-TV with its Waste to Warmth program

Sandia is joining the community in helping curtail high heating bills for 20 local low-income families. The Waste to Warmth Project coordinated by KOB-TV, Channel 4, Sandia, Enviroactive, and the City of Albuquerque hopes to collect one million pounds of newspapers that can then be converted to cellulose insulation.

Solid Waste Transfer Facility operator Gabe King and the crew in Hazardous and Solid Waste Dept. 7134 are placing five roll-off containers provided by Sandia at sites in the Albuquerque area. When full, the containers will then be taken to Sandia's Solid Waste Transfer Facility, where the newspapers will be sorted and baled for shipping.

Containers will be placed at KOB facilities at 4 Broadcast Plaza SW, Smith's parking lot at Carlisle and Menaul NE, Rio Rancho City Hall, Dan's Western Warehouse at Route 66 and South 14 in the East Mountains, and at the Village Hall in Los Ranchos.

Feedback

Question: Why can't Sandia be treated like its sister laboratories in terms of pensions?

Q: I read with interest and envy the following Daily News article.

"LANL, LLNL get pension boost: Yesterday, the UC Board of Regents approved improvements involving 'age factors' in the University of California Retirement Plan, which covers LLNL and LANL employees. The improvements, retroactive to Jan. 1, 2001, 'will start at 1.1 percent at age 50, increasing increments of .14 percentage points per year to 2.5 percent at age 60, remaining constant thereafter. Overall, the new age factors will be between 1 percent and 20 percent higher than the previous fac-

tors, varying at each retirement age.'"

When will Sandians be able to see such an article about them, and why can't Sandia be treated like its sister laboratories?

A: Sandia is again looking at possible changes to the Retirement Income Plan. Although this process was begun prior to the recent announcement by the University of California of changes to its pension plan, those improvements provide additional concern and reason for improving Sandia's plan. Past history would indicate that this can be a lengthy process. While the University of California can change its retirement plan without DOE approval, any changes to Sandia plans must be approved by Lockheed Martin, its Board of Directors, and DOE. In the event the plan is ultimately improved, such improvements will be applied to individuals who retired while these proposed changes were under serious consideration. — Ralph Bonner (10300)

Sandia target array helps test BMDO's experimental national missile defense radar

By John German

Labs engineers, together with the US Army Space and Missile Defense Command, helped the Ballistic Missile Defense Organization (BMDO) test the limits of a national missile defense radar in September by dispersing into space an array of small objects that to the radar looked something like reentry vehicles (RVs) and deployment debris heading toward Earth.

"Our role was to throw out a lot of interesting stuff for the radar to look at," says Sandia mission project manager Dan Talbert of Targets Dept. 15415.

The Sept. 28 flight was the second in a series of RCT (Radar-Creditable Targets) tests meant to examine the capabilities of the BMDO's most advanced X-band radar, called the Ground-Based Radar Prototype (GBR-P). The GBR-P watched Sandia's carefully orchestrated show from Kwajalein Atoll in the Pacific.

Making a scene

A Minuteman III missile launched from Vandenberg Air Force Base carried an RV-like platform, called a target deployment structure (TDS), that was specially created by Sandia to disperse a grouping of targets into the night sky.

During the flight, six hockey-puck-shaped objects and six croquet-ball-like objects ejected from the TDS, along with six beach ball-sized balloons and one small rigid lightweight replica — essentially a five-foot-high cone that served as an RV surrogate for the mission.

Many of the 20 objects mimicked the way a real RV might appear to the radar. The BMDO



SPIN MOTOR — Mel Krein (15415, left) and Ed Mulligan (2554) prepare to test a new type of solid-fuel spin motor developed specifically for the RCT-2 test by Mel, Mark Grubelich, Ed, and Mark Hagan (2554). (Photo by Randy Montoya)



PREPARING AN RV-like platform called a target deployment structure (TDS) prior to the RCT-2 test were (left to right) Mel Krein (15415), Brian Pardo, Jim Aldaz (both 15413), and Rob Brown (15414). Target objects that look like pucks (top of TDS), balls (left side of TDS), and cannisterized balloons (right side of TDS) are visible.

then used the GBR-P to assess the credibility of each target.

"The RCT-2 target complex provided objects and spatial separations not heretofore available on [national missile defense] flight tests and hence an opportunity for testing GBR-P's acquisition, wide-band tracking, and discrimination functions on a stressing target scene," according to a BMDO test summary.

"From a radar standpoint it was a totally successful mission," says Dan. "Our customer was delighted."

RCT-2 tests Sandia

To create the target scene the BMDO wanted, Labs propulsion experts built from scratch and tested a new type of solid-fuel thrust motor that spun the RV up to one rotation per second and then "despun" it back to near zero, says Dan.

"We went from pencil and paper to delivering a flight-certified spin system in eight months," he says. "It was a small miracle we were able to develop and build the system on time and that it worked so well."

In fact, he says, everything Sandia put on the RV was developed specifically for the test except the rigid light replica. The pucks and balls had never been used before, and their ejection systems were newly designed and tested on the ground. The balloon ejectors were also a new design for the RCT-2 mission.

Sandia's machine shops created the five-foot-tall TDS out of a solid chunk of aluminum that needed a lot of internal and external precision machining, Dan says.

"We were able to go from the drawings straight to the shops," he says. "We would not have been able to deliver without an in-house precision machining capability."

Core team members included lead technician



MINUTEMAN III missile carrying the Sandia-developed TDS lifts off from Vandenberg Air Force Base on Sept. 28. The photo shows the missile flying through burning gases that eject out of the launch hole during ignition. (Photo courtesy of Vandenberg Air Force Base)

Jimmy Aldaz (15413), lead mechanical engineer Robert Brown (15414), project engineer David Foral (15415), lead electrical engineer Martin Imbert (2663), lead mechanical designer Mel Krein (15415), mechanical designer Jacky Martinez (15415), electrical systems engineer C.R. Nidever (ret.), mechanical technicians Brian Pardo (15413) and John Staloni (15417), electrical technician Doug Pastor (2663), and Dan.

About 25 other people from Centers 2500, 2600, 9100, 14100, and 15400 contributed.

KTF supports Jan. 25 Navy launch

Sandians at the Kauai Test Facility (KTF) successfully launched a target rocket Jan. 25 as part of a flight test of an interceptor being developed for the Navy Theatre Wide missile defense system.

The launch of the SM-3 interceptor from the Aegis cruiser USS *Lake Erie* several hundred miles northwest of Kauai was the interceptor system's second test flight.

The Jan. 25 test did not involve an actual intercept; its purpose was to evaluate the SM-3's targeting system by collecting data as the interceptor approached and flew past the target vehicle launched from Kauai — in this case an Orbital Sciences Corp. Target Test Vehicle (TTV) based on a modified M56 motor (Minuteman I second stage).

A team of Sandians spent three weeks at Kauai helping Orbital prepare for the test. During the launch they monitored and operated telemetry systems, countdown computers, tracking antenna, radar, and meteorological equipment. Two dry runs with mock target vehicles were conducted late last year in preparation for the launch.

"Successful completion of this experiment was a critical early step in the development of Navy Theatre Wide ballistic missile defense," says Dick Hay, Manager of Kauai Test Facility and Range Interface Dept. 15419. "The target vehicle, ship systems, and interceptor performed as anticipated, and our DoD customers were extremely happy with the results of the operation."

Another Navy Theatre Wide target vehicle launch from Kauai is planned this spring. Sandians involved in the launch include



TARGET VEHICLE (based on a modified Minuteman I second stage rocket motor) lifts off from the Kauai Test Facility Jan. 25. (Photo by Diana Helgesen, 15419)

Wilson Brooks, Hovey Corbin, Norm Corlis, Dick Hay, Diana Helgesen, Alonzo Lopez, Ed Mader, Dean Manning, Mark Montavon, Rod Stanopiewicz (all 15419), Eva Renninger (15414), Andy Jones (15417), Marc Kniskern, Walt Rutledge, Dave Salguero, and Larry Young (all 9115).
— John German

Charlie Emery recounts HR advances, says good-bye

VP and Senior Advisor ends 38-year career as football coach, dean of students, human resources director

By Chris Burroughs

At Charlie Emery's Sandia retirement party Jan. 31, the Vice President and Senior Advisor was joined by friends and colleagues he's worked with at the Labs since he arrived eight years ago with Martin Marietta (now Lockheed Martin) as Human Resources Vice President.

It was a fun event where several of the people and groups who worked with Charlie shared stories about their relationships with him.

Charlie also reflected on a 38-year career that took him from high school and college football coach, to college dean of students, to human resources director.

Along the way, he says, he's learned valuable lessons that aided his ability to deal with people and do better at his work.

As a coach he realized that every player wants to contribute, be part of the team, and be recognized; that playing should be fun; and that players should be helped to realize their full potential through development programs.

As a college dean he learned to recruit the best students and faculty; recognize differences and uncommon background — listen, listen, listen; and be responsive and supportive to personal needs.

And as a human resources director he learned to take time to say "thank you" and "I appreciate you"; listen to those who want to talk with you (every employee wants to be part of the team and belong); and celebrate success.

You can still see his excitement as a college football player at West Virginia Wesleyan College, where he earned his BS degree. After college he worked as a football coach and history teacher at a high school in Warren, Ohio — the heart of football country in the midsection of the US. He later coached college football at Western Michigan University, where he obtained an MA degree; North Park College in Chicago; and Augustana College in Illinois, where he nurtured his "best athlete," Kenny Anderson, who later played starting quarterback for the Cincinnati Bengals. For Charlie's retirement party Anderson sent an autographed picture as a retirement gift.

For another eight years Charlie served as Dean of Students at West Virginia Wesleyan, also obtaining an Ed.D. in Personnel/Higher Educa-



tion from West Virginia University. Almost by accident he fell into human resources work by doing leadership training as a consultant for coal mining companies in West Virginia. "I never really thought about HR as a career, but I eventually realized it was what I wanted to do," he recalls. He joined Martin Marietta in 1980 as a manager and trainer at its Owensboro, Ky., site. He moved on quickly to become director of Human Resources for Martin Marietta facilities in Kentucky, California, and Tennessee. In 1993 when Martin Marietta was vying to serve as Sandia's management and operating contractor, Jim Tegnalia, then head of the proposal team and now Sandia 15000 VP, tapped Charlie to serve on the team. During the bid period, he met all the VPs and managers and decided Sandia was a "special place." Charlie then joined the Labs as Human Resources VP. "When I came in 1993 the Human Resources

Division was 20 percent bigger. There were 225 people in the department with a \$20 million budget," he says. "That's been streamlined to 170 people and a \$16-17 million budget."

Over the years Charlie has had a hand in initiating several human resources advancements intended to make life better for Sandians. He quickly gives credit for the success of these initiatives to Larry Clevenger (3300), Don Blanton (3000), and the dedicated Human Resources staff.

Among some of his initiatives were assisting in establishing the 9/80 workweek; establishing the vacation donation program; initiating the pay-for-performance program in 1998; working with Executive VP Joan Woodard and others on the Women in Management Program; initiating the market comparison in salaries based on R&D industry averages; instituting telecommuting policies; promoting Sandia's diversity program; initiating in 1993 Sandia's first institutional strategic staffing plan; overseeing the voluntary separation program in 1996-97; adding the Integrated Job Structure program in 1997; initiating the mentoring program, which has involved some 1,000 people; formalizing Executive Resource Planning; and helping found the Campus Exec program (see next page).

He says he's most proud of "planting the seeds" for the EDGE Process (Employee Development, Growth, and Education), a career development process he's been working on for the past six months. He strongly believes that all employees should have written individual development plans.

What's next for Charlie?

He and his wife Zoreah, the director of the High Desert Yoga Studio in Albuquerque, recently bought land in Zihawtencjo, Mexico, and plan to build a home in the secluded area on the beach. He has a grandson, CJ, who he loves to spend time with. CJ is going to have a brother in March and Charlie finds that exciting. After a while, he plans to rejoin an old friend and do some work in the commercial business area.

"I like working with people," he says. "It's been fun. I get 'pumped up' by helping people improve and then move on. I hope I can continue to do that."

Photovoltaics Department celebrates 25 years of sunpower at Sandia



PHOTOVOLTAICS CELEBRATION — Some 50 people gathered recently at the Coronado Club to celebrate 25 years of photovoltaics at Sandia. At left is a 1976 photo of a photovoltaic cell array. The photo above shows several people who have been involved in photovoltaics programs viewing a display board of pictures of the program over the years. They are, from left, Paul Klimas, Manager of Photovoltaics and Renewable Energy Systems Dept. 6219; David Hasti (former department manager and now retired); George Samara (1120); and Don Schueler (12141). Don, the department's first manager, recalled working with the National Science Foundation to get the department started in the middle of the 1970s energy crisis. Paul said he and Joe Tillerson, Manager of Photovoltaics Systems Dept. 6218, quickly realized they inherited a national treasure when they took over their positions last year. With new energy problems emerging — witness the California rolling blackouts — Paul says he anticipates photovoltaics will play an even greater role in filling future energy needs.

Sandia Campus Executive Program ready for action

By Chris Burroughs

The time for talk is over and the time for action is here.

So says Chuck Meyers (1030), the new coordinator of the Campus Executive Program.

"We've spent three years building a foundation with deans and others from the participating universities," Chuck says. "We now want to implement what we've been discussing all this time — more joint research, more graduate students coming to Sandia to work as interns and eventual employees, more interaction between the university faculty members and our staff, and more collaboration."

The Campus Executive Program was established in 1997 by Dan Hartley, retired Laboratory Development VP, and Charlie Emery, recently retired Human Resources VP, in an effort to pair Labs executives, called Sandia Cam-



CHUCK MEYERS

pus Execs, with deans from engineering schools across the country. The Campus Execs and deans worked together to figure out ways the universities and Sandia could be partners — both in recruiting top students from the schools to the Labs and in cooperative research.

Sandia, Chuck says, has always valued its relationships with universities — realizing that they are a source of future Labs engineers and scientists and that the universities conduct top-notch

research in areas in which Sandia has specific interests.

In 2000 Sandia spent \$28 million in joint research projects with universities. (Sandia works with 120 universities annually and has 700 active contracts with them.) The Labs has devoted an additional \$15 million a year for graduate student support and university and science outreach.

Chuck and others involved in the program have been looking at creative ways to better leverage that money so that both the universities and Sandia get what they need out of these collaborative arrangements.

"The deans tell us that they want more joint research and more graduate students gaining experience here," Chuck says. "We want to use the universities to help us build our technologies and to recruit the best talent in the country."

The first question is, how do you know which schools have the expertise and the graduate students doing the types of research Sandia requires?

"We pretty much traditionally turned to the major universities with good reputations — the Harvards, Stanfords, and such," Chuck says. "But now we are using a new tool."



GUY DONOVAN, Manager of Accelerator System Operations Dept. 1636 (left), talks about the Z accelerator to visitors from North Carolina A&T. Sixteen people from the university visited Sandia in December as part of the Labs' Campus Executive Program.

The tool, VxInsight™, creates a map of research that Sandia uses to determine what schools are "hot and which are not" in different areas. It is based on data provided by the Institute for Scientific Information tracking science/technical articles in the top 10 percent of scientific journals worldwide.

"It may be that a less-known school has a great department in some technology we are interested in," Chuck says. "We can now think about identifying and collaborating with those departments."

Still, the Sandia Campus Executive Program focuses on many of the major-name institutions, plus a few additional schools due to regional proximity and/or quality of underrepresented student enrollment. (See "Campus Exec program participating schools," next page.)

Relationships and programs with each of the universities vary. Schools like the University of Utah, University of Colorado, and Arizona State, for example, are developing fellowships for doctoral students doing research in areas in which the Labs has an interest. Sandia awards the student a fellowship, and a Sandian is a member of the student's doctoral committee.

"This arrangement has many pluses," Chuck says. "The students know that their fellowships and research are funded by Sandia, making them aware that the Labs might

be a great place to work. With the Sandian on the doctoral committee, the Labs builds up relationships with other professors and with the students and offers direct input in the research direction."

At other universities, Sandia contracts with the institution where the scientists do research. And at yet others, faculty members will take a sabbatical or summer research appointment and come to Sandia for two months to a year to work directly with researchers here or a Labs scientist will go to a university to spend time there.

Chuck says he sees this going even further. "In ten years from now I wouldn't be surprised to see 10 percent of our permanent employees actually working at the universities doing research and telecommuting," he says.

Based on desires from several Campus Executives to make as large an impact as possible on their assigned campuses, a new initiative in Sandia's Staffing Organization is attempting to parlay existing relationships into a more strategic stance.

"We have long-standing relationships at many levels, from the University president's office

(Continued on next page)

North Carolina A&T success story

One of the biggest success stories in the Campus Executive Program is Sandia's relationship with North Carolina A&T State University, a historically black university in Greensboro, N.C.

This past December, 16 faculty members and administrators from the university visited Sandia and toured Labs facilities. They met one-on-one with Labs executives, department managers, and principal investigators to discuss mutual research interests and areas of collaborations.

"It was a real success," says Charlie Emery, who has served as Sandia's Campus Exec to the university for the past three years. "We spent three days with them and shared much information. This demonstrated to us that they had a sincere interest in establishing more research collaborations."

Charlie, former Human Resources VP who recently retired, says the visit grew out of an earlier trip he, Bill Guyton (15300), Ken Holley (3535), and Tom Bickel (9100) made to North Carolina A&T to build relations and see how Sandia and the university could better collaborate.

Replacing Charlie in the role of Campus Exec representative to North Carolina A&T is Bill, Director of Applied Physics & Technical Development Center 15300. He says he sees this as an opportunity to build an even closer relationship with the university — both in collaborative research and as a source for future employees.

"Through the visit we became more familiar with each other," he says. "This type of relationship will move us further into the pipeline for student interns and future employees."

Bill says he has asked several of his principal investigators and program managers to work with faculty from North Carolina A&T to determine where the two institutions can collaborate.

Bill has visited the university twice and will become a member of the Advisory Board of the School of Engineering and the School of Fine Arts, which contains the mathematics department. He is building close relationships with Philip Carey, the university's Dean of the College of Arts and Science and Reza Salami, Professor and Associate Dean for Graduate Research Programs in the College of Engineering.



NORTH CAROLINA A&T VISIT — Dick Perry, Manager of Airworthiness Assurance Dept. 6252, left, talks to Reza Salami, professor and associate dean for graduate and research programs at North Carolina A&T College of Engineering during a December visit of the university officials to Sandia.

The relationship with North Carolina A&T started through a DOE science and technology alliance program in 1989. DOE made funding available for the three weapons labs to build science and technology programs at four minority universities. Sandia worked with North Carolina A&T to establish a doctoral program in electrical and mechanical engineering.

"We've had a great 10-year relationship with the university," says Ken. "We've helped them with curricula and laboratory development for the PhD program. Their students have been involved in our internship programs. We visit their faculty and they come here. We sit on their boards and we provide research opportunities."

Between 1998 and 2001, Charlie Emery established a set of goals and objectives for the relationship. Each year was evaluated to determine successes. Sandia's successes included: 20 student interns and five full-time hires. Four faculty members have come to Sandia for sabbaticals. Also, there have been five Sandia executive visits to the university and three North Carolina A&T executive visits to the Labs.

Feedback program: How to use for best results

Sandians, like everyone else, have a desire to communicate and to be communicated with. Much of this desire is met informally by colleagues, friends, and family. But sometimes this doesn't work. Employees ask significant questions, questions that deserve authoritative answers.

Sandia's Feedback Program, established in 1973, was designed to address both upward and downward communication at the Labs. Program objectives are to enable employees to question policies or procedures, point out areas of discontentment, and even pat a coworker on the back. Feedback enables management to maintain an atmosphere of candor and credibility throughout the Labs, complement line management's role by answering questions they cannot be expected to answer, learn what employees want or need, obtain suggestions for better ways of doing things, and determine if policies and procedures need changing.

Feedback Q&A

Q: What does an employee do to submit a question or comment?

A: The employee goes to the Feedback page on the Internal Web (<http://www-irn.sandia.gov/corpdata/feedback/fbindex.html>) and completes the electronic submittal form (<http://www-irn.sandia.gov/corpdata/feedback/fdbkform.html>). Feedbacks can also be sent to the Feedback administrator via fax (844-0645), e-mail (jacarpa@sandia.gov), or through the company mail (MS 0165). The mailing envelope must be addressed to "Feedback" so the sender's anonymity can be preserved.

Q: What happens when the question is received?

A: The questioner's anonymity is assured unless he or she elects to be identified. There are yes and no boxes for identification preferences on the electronic form, otherwise preferences for identification should be included on whatever format is chosen for the Feedback question.

When the administrator receives the form or letter, it is printed out and a matching code number is placed on both the letter and a reply envelope. The submitter's name and other personal information is cut from the letter and pasted on the reply envelope. The envelope is

then put in a locked drawer. From this point on, the letter is identified by only the number unless the employee elects to be identified with the question. If the writer has inadvertently included information that could possibly identify him or her, the administrator will, with the employee's understanding, delete such information before it is sent out for a reply.

The administrator may contact the employee confidentially to clarify the question so a meaningful answer can be prepared. The administrator will also inform the employee if he or she is submitting an inappropriate question that can be best addressed through other channels.

Q: Who answers the question?

A: Directors are responsible for obtaining answers from subject-matter experts in their centers. Directors often refer questions to staff members who are more knowledgeable in the subject matter being questioned. Directors then review and sign responses, ensuring management awareness of problems and questions about their centers' services, policies, and products.

Q: Does the administrator influence the question in any way?

A: The administrator reviews each question to be certain it is direct and clearly stated. If it is not, the administrator will discuss it with the questioner to determine what is being asked. Clearly stated questions result in better understanding of what information is being requested.

Q: Does the administrator influence the answer in any way?

The administrator reviews each reply to be certain it answers the question. If it does not, the administrator will discuss it with the responder to agree on a more complete answer. Evasive replies would be detrimental to the integrity of the program.

Q: Are there any questions that are inappropriate for Feedback?

A: Yes. The administrator will return to the sender questions that are not company-related or ones that deal narrowly with the employee's own job. The administrator will encourage the employee to discuss the latter with the line organization.

Einstein returns



EINSTEIN PERFORMER ARDEN BERCOVITZ makes a point during a recent presentation focusing on diversity. His remarks — offered in his Einstein persona and based on Einstein's published writings, public utterances, and modes of thought — focused on using creativity to explore a variety of issues. His visit was sponsored by Sandia's Corporate Diversity Team. (Photo by Randy Montoya)

Q: Will Feedback encourage people to "bypass the boss?"

A: No. It is clearly stated at the top of the Feedback form that "your immediate supervisor is the best source of information about Sandia Laboratories and your work." Feedback is set up to handle questions that the supervisor, in all likelihood, is not equipped to answer authoritatively without considerable research.

Q: Will there be some type of general tally and reporting of Feedback questions?

A: In two ways: (1) Questions and answers of general interest will be published in the *Lab News* and/or the Internal Web at <http://www-irn.sandia.gov/corpdata/feedback/fbindex.html>. (2) There will also be a monthly "box score" report for directors and above covering the number of questions by subject and location. If you would like to receive this report, please contact Janet Carpenter (12640) by phone at 844-7841, by e-mail through jacarpa@sandia.gov, by fax at 844-0645, or by mail at MS 0165.

A Feedback appears on page 6 in this issue. — Ed.

Fog-bound Labs



WINTER SURPRISE — Dense, cold fog greeted Sandians and all Albuquerque residents on the morning of Jan. 24. Here a Sandian trudges past the nearly indistinguishable flagpoles in front of Bldg. 800. The foggy morning was just the beginning of a more than week-long period of cold, snow, and wind throughout much of New Mexico, as real winter returned for the first time in several years. (Photo by Randy Montoya)

Campus Execs

(Continued from preceding page)

to the researchers' lab, Sandians who serve on committees and advisory councils, even former staff now serving as Deans or faculty at several schools," says Lenny Martinez, the Campus Exec for Arizona State and UTEP. "We need to better manage those alliances so they connect into a cohesive strategy that serves both institutions over the long term."

Frank Figueroa, CU-Boulder Campus Exec, adds, "Universities are key to establishing a world-class workforce. By using our research collaborations and our student programs, from internships to graduate fellowships, we can foster the type of top-notch talent that we need for the

Campus Exec program participating schools

Currently 29 schools participate in the Campus Executive Program. They are: Arizona State, Caltech, Carnegie-Mellon, Cornell, Florida State, Georgia Tech, Harvard, Howard, Lehigh, MIT, New Mexico Institute of Mining and Technology, New Mexico State, North Carolina A&T, Purdue, Stanford, Texas A&M, UC Berkeley, UC Davis, University of Arizona, University of Colorado at Boulder, University of Florida, University of Illinois, University of Michigan, University of New Mexico, University of Texas - Austin, University of Texas at El Paso, University of Utah, University of Wisconsin, and Washington State.

Labs. I'm very pleased with the top-to-bottom, end-to-end connections we have forged with the University of Colorado.

Don Blanton, VP for Human Resources, explains that the new initiative will influence how Sandia does business with universities.

"Our relationship is more of a partnership, with both partners in a win-win situation," Don says. "Universities get research dollars, access to the unique research capabilities of Sandia, and training for faculty and students. We gain access to research that supports our mission and an emerging talent pool. Both partners enhance their and the country's competitiveness."

The initiative starts by conducting a full inventory of existing relationships between Sandia and a given university. This includes research collaborations, recruiting efforts, special initiatives, alumni (both Sandians who graduated from the school as well as former Sandians working at the school), intern and co-op students, and graduate fellows. Then an action plan is drawn with input from the school, which includes a shared vision, long-term goals, and short-term objectives.

The Sandia vice presidents and other executives who serve as Campus Execs continually build relationships with their assigned universities, visiting the schools' campuses, and inviting deans and faculty members to the Labs.

For the past two years Sandia hosted Deans' Day in January in which all the deans from the represented universities came to the Labs for tours and dialogue. This year's Deans' Day, which will be renamed University Day, will be held in early August in conjunction with Sandia's annual Student Internship Program Symposium.

"Building these relationships with the deans, their faculty, and their top students is one of the best recruiting tools Sandia has," Chuck says. "Through the Campus Executive Program, we get world-class research and top future employees."

Reconnecting with his roots, Sandia VP Frank Figueroa heads up Hispanic Culture Foundation

Fund-raising arm of National Hispanic Cultural Center of New Mexico aims for \$20-\$30 million

By Bill Murphy

Frank Figueroa, Sandia Chief Financial Officer and VP of Business Management Div. 10000, grew up in modest circumstances in Del Rio and San Angelo, Texas, the son of hard-working parents — his father was a naturalized citizen from Mexico, his mother a Del Rio native whose own parents were naturalized citizens from Mexico.

All the Figueroa brothers — Frank's dad and uncles — ran "mom-and-pop" grocery stores in West Texas, serving a largely Spanish-speaking clientele. Frank grew up helping out at his folk's store, speaking Spanish and English interchangeably.

When Frank left high school, he also left behind the predominantly Hispanic culture that had defined his childhood environment. He excelled in college, earning advanced degrees in astronautics and systems management, even picking up a CPA along the way. He pursued a military and corporate career that would find him in increasingly responsible management roles in one of the world's great corporations, Lockheed Martin. Along the way, the cultural touchstones of his youth receded into memory. It's not that Frank repudiated his roots; not at all. Rather, the demands and geography of his career led him down a different path. Frank went years without speaking very much Spanish, the comfortable second language of his boyhood.

The poet T.S. Eliot once wrote that "... the end of all our exploring will be to arrive where we started and know the place for the first time."

"... and the end of all our exploring will be to arrive where we started and know the place for the first time."



A WEST TEXAS BOYHOOD, where he spoke Spanish and English with equal facility while helping his folks at their "mom and pop" grocery store, made a deep impression on Frank Figueroa, seen here at about age 8.

(Photo courtesy of Frank Figueroa)



SANDIA CFO Frank Figueroa, has been named president of the Hispanic Culture Foundation, the fund-raising arm of the National Hispanic Cultural Center of New Mexico. Here, Frank pauses for a moment during a visit to the Hispanic Cultural Center's expansive gallery, where he viewed the *La Luz* exhibit. *La Luz: Contemporary Latino Art in the United States* is on display at the Center through May 27. Also on display through May 27 is *Nuevo Mexico Profundo: Rituals of an Indo-Hispanic Homeland*, a photo exhibit featuring the work of well-known New Mexico photographer Miguel Gandert. (Photo by Randy Montoya)

Well, something very much like that happened to Frank. A synergy between corporate needs and personal qualifications led to his assignment to Sandia as Chief Financial Officer. As a result, he found himself — if not exactly "home," then in an environment that at the very least had many of the cultural elements that had been part of the

ter is, after all, a national resource, which means fund-raising will be a national or even international effort. And that, he says, opens lots of options.

"Given the growing Hispanic population in the US, and the growing economic power of Hispanics, the time is right and ripe for this to hap-

"Given the growing Hispanic population in the US, and the growing economic power of Hispanics, the time is right and ripe for this [fundraising] to happen. But that doesn't mean it's going to be easy."

home of his youth: a strong and proud Hispanic community, a large Spanish-speaking population, a multi-ethnic, multicultural community. And it was here, in New Mexico, that Frank began reconnecting with his roots.

As part of that reconnection, Frank got involved in the Hispanic Culture Foundation, the nonprofit group that raises funds for the National Hispanic Cultural Center of New Mexico. After two years as treasurer, Frank this year became the organization's president. In that role, he's taken on a tremendous challenge: to help the Foundation raise \$20-\$30 million.

That's a lot of money, he concedes, but says "it'll allow us to complete construction [of the Center, located at 1701 4th St. S.W. in Albuquerque] and create an endowment for our programs."

Other fund-raisers in New Mexico have discovered that it is a state without deep pockets: few corporate headquarters, darn few dot-com billionaires to make those big, sweet million-dollar grants. That daunts Frank, but not too much.

For one thing, the Foundation offers local folks a chance to help fund their Center through such tried-and-true techniques as "buying" personalized bricks used in the expansive plaza at the front of the Center. And then, he notes, the Cen-

pen. But that doesn't mean it's going to be easy."

Frank says he's excited by the Center's aim to celebrate, preserve, and educate about all aspects of Hispanic culture, its past, present, and future. Such resources as a massive genealogical database, historical documents, an exhibit hall, restaurant, theater, and ballroom offer abundant opportunities for people to learn more about their heritage and to formulate hopes about their future.

Frank says he sees a lot of familiar faces from work at Cultural Center activities.

"We're very fortunate," he says, "to have a great number of Sandians who are volunteering to help the Cultural Center, including Cesar Lombana [Manager of MDE Program and Regional Manufacturing Strategies Dept. 14011] on our Board of Directors."

As for Frank, he notes that since his move to New Mexico — just up the Rio Grande from his birth-town of Del Rio, he has established a "deeper, richer connection" with his own roots. He notes that for years, when he talked to his mother on the phone it was mostly in English. Now, he says, "our conversations are entirely in Spanish. It's not something we planned. We just sort of fell into it. It just seemed natural."

Like his involvement in the Foundation. It just seems like the natural thing to do.

Mileposts

California photos by Lynda Hadley
New Mexico photos by Iris Aboytes



Robert Gardner
40 12610



Taz Bramlette
30 8365



Maurice Gauthier
30 14186



Lyle Kruse
30 2565



Raymond Patrick
30 6516



Wayland Bell
25 6525



Robert Brooks
25 1733



Grant Claycomb
25 9511



Gerald Esch
25 9523



Richard Fitak
25 2955



YR Kan
25 8727



William Ling
25 9813



Laurence Lukens
25 2614



Barry Marder
25 1674



Stephen Montgomery
25 2561



Gordon Scott
25 2565



Doug Bammann
20 8726



Butch Cox
20 2334



Brent Haroldsen
20 8118



Darl Patrick
20 9327



Juanita Valdez
20 10268



Gary Yeager
20 7131



Dennis Croessmann
15 5326



Irene Dubicka
15 5941



Loretta Maestas
15 2951



Randy Montoya
15 12640



John Scott
15 7823



Randy Weatherby
15 9142

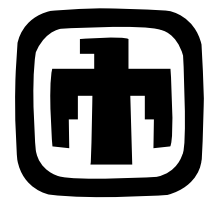
Recent Retirees



Nancy Nelson
42 2994



Eldon (Tex) Rittenbush
39 9411



Ernest Ayers
34 14404



Kenneth Miller
33 16000



Laura Gartling
30 3525



Charlie Emery
20 02



Chuck Madole
15 10255



Connie Nenninger
15 12650

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

MISCELLANEOUS

WOOD/COAL STOVE INSERT, Federal, airtight, cast-iron, good condition, \$100. Wade, 892-1216.

TWO PEDESTAL DESKS, many drawers, including center, walnut wood & metal, 24" x 54" top, excellent condition, \$65. Burstein, 296-0463.

AQUARIUM, 55-gal., wooden stand, air pumps, heater, auto-feeder, beta/breeder condos, underwater-filter panels, bubblers, food, \$155 OBO. Dubicka, 296-6557.

QUEEN BEDROOM SET, white, headboard, dresser, bureau, nightstand, mattress, box spring, \$550; wicker twin headboard, nightstand, \$75; TEMA entertainment center, \$100; rocking chair, \$25. Holt, 332-0582.

FLOOR TILE: saltillo-looking, 12" x 12," grade 4; Italian grade-4 ceramic, 437 sq. ft. Kirk, 281-6668.

ASSORTED ENGLISH SHOW CLOTHES, ladies' size 12 & 14; horse items. Baldo-Pulaski, 345-0432.

TWO UPRIGHT FREEZERS, work well, \$125 ea. Lewis, 294-0766.

NORDICTRACK, Soloflex, & Airdyne bike, make offer on each; Adobe PageMaker 6.5, unused, never registered, \$150 OBO. Fisher, 293-2864.

PLAYSKOOL DELUXE BABY MONITOR, \$25; Lumiscope digital electronic blood pressure monitor, pulse meter, mikeless cuff, \$25. Smith, 299-7151.

ROUNDTrip TRAVEL COUPONS, Southwest Airlines, expiring October 2001, \$295 firm. Wagner, 823-9323.

SOFA, loveseat, & chair, white w/floral print, excellent condition. Garcia, 839-9647.

PLYWOOD, 1/2-in., CDX grade, 8 sheets, new, \$65. Guttman, 888-5114.

SKI RACK, Barcrafters, holds 4 pairs, key-lock security, adjustable, clamps to auto/truck rain gutter, \$45 OBO. Smith, 296-1908.

CIRCULAR SAW, 7-1/4 in., Skillsaw, model 5155, \$40. Brannon, 296-6674.

ANALOG CELL PHONES, w/charger & car adapter, Audiovox MVX502 & StarTAC 3,000, \$30 OBO. Tanner, 265-4429.

DINING TABLE, oak, square, w/4 matching chairs, great shape, \$125. Pouges, 831-2228.

UTILITY TRAILER, made from pickup truck bed, 4' x 6', \$175. Shrouf, 797-3138.

CELL PHONES, (for Sprint PCS) 2 ea., Nokia 2170 digital, \$10; Qualcomm dual-band QCP 2700, \$25; NEC SuperScript 660Plus, 300-dpi laser printer, works great, needs new toner, \$25. Atencio, 897-2189.

MICROWAVE, Emerson, turntable, \$45; round kitchen table & 4 chairs, \$30; papa-san chair & ottoman, \$25. Manginell, 298-3767.

GOLF CLUBS, Hogan radials, 3 through PW, steel shaft, great starter set, \$100. Chavez, 831-3193.

WASHER/DRYER, Maytag, white, excellent condition, \$150 firm. Petersen, 275-7467.

NORDICTRACK, Sequoia model, good condition, \$150 firm. Cline, 286-1108.

MOTORCYCLE HELMET, Shoei RF200, full-face, medium, black, \$75; leather motorcycle jacket, man's large, \$40. Bridges, 298-3767.

TIRES, 5, low mileage, AT, 235/75R15, DOT-W2HL, \$75; hospital bed, \$50; metal, free-standing shelving, \$10. Hartwig, 797-8406.

GIANT SCHNAUZER PUPS, male, top European bloodlines, hard coats, \$800. Blickem, 323-6832.

TWO CABINETS, 28"W, 16"D, 23"H, top shelf, lower storage, perfect for TV/VCR, new \$45 each, sale both for \$50. Cronin, 299-6747.

BUILT-IN BARBECUE GAS GRILL, needs some work, \$35 as is; draperies, 5 sets, \$50 takes all. Hesch, 350-9903.

WASHER, Speed Queen, large capacity, top load, stainless-steel tub, 13 yrs. old, good condition, \$50. Van Deusen, 291-8196.

SLEEPER LOVESEAT, Stearns & Foster, Southwest colors, great condition, \$400. Parker, 828-1576.

FOUR TIRES: new, Firestone Steel Tex, 265x75x16", white letter outline, all season mud & snow, load range "E", \$112/tire new, asking \$55/tire. Dobbs, 281-1958.

CORN SNAKE, tame, 2 yrs. old, w/full spectrum light & heat lamp, \$50. Poulter, 291-0607.

HALF-ARABIAN MARE, 19 yrs. old, \$1,000; Appaloosa breeding mare, 14 yrs. old, registered, easy keepers, good trail horses, \$3,000. Krivitzky, 897-9104.

HOOVER UPRIGHT VACUUM, w/hose & attachments, \$75; Poulan, 16-in. chain saw, \$75; 1,500-watt electric heater, \$20; 16-gal. 4-hp shop vac, \$50. Glivna, 884-5251.

TV, JVC, 27-in., \$25; bicycle, Nishiki man's, 10-spd., \$15; microwave, Amana 30-in. over-the-range, w/exhaust, \$10. Kolb, 271-1775.

SCANNING ELECTRON MICROSCOPE, Hitachi, model 520 S, was operational when taken out of service, \$3,000. Sayers, 877-8094.

BED, queen-size, mattress, comforter, box spring, frame, pine headboard, \$125. Lindsay, 836-4284.

TI-83 GRAPHING CALCULATOR, guide-book, excellent condition, used only 1 semester, \$55. McRoberts, 299-6862.

OAK BOOKSHELVES, 32"W x 48"H, 4/\$25 each; mama-san rocking chair, \$25; GE spacemaker over-range microwave, w/venting fan, \$50. Gruebel, 323-2414.

MANDOLIN, Washburn, w/case, strap, extra strings, instruction books & videos, \$400 new, asking \$250 OBO. Compton, 899-0679.

SKI EQUIPMENT, perfect condition, 120cm poles, Salomon SX82 ski boots 330, \$150; ski suit, \$75; free skis. Adams, 299-6337.

MAC PERFORMA 6400, keyboard, monitor, printer, \$200; Drexel buffet, \$100; glass sofa table, \$25; firetools, \$10. Kepler, 296-0402.

SPOOL OF COAXIAL CABLE, \$30; antique chest-on-chest, needs some veneer repair, \$75; 16-in. Homelite chainsaw, \$75. Rodacy, 293-2668.

LARGE DOGLOO, \$30; mitre saw, \$20; computer parts, AGP video cards, 32X CD drive, cheap. Cocain, 281-2282.

UNIVERSAL MACHINE, Weider 8530, 8 stations, 210 lbs. weight stack, new \$500, asking \$250. McLaughlin, 286-1355.

DINING ROOM TABLE, 39" x 56" w/2 14-in. extensions, china hutch, \$395. Williams, 344-9276.

BED, Invacare, semi-electric home-care hospital bed, excellent condition, \$750. Owyong, 797-4137.

GAS FIREPLACE, peninsula style, 3 sides glass, beveled corners, looks good, barely used, \$2,165 new, asking \$1,100. Errett, 858-1013.

FURNITURE FOR TOTS: Fischer Price port-crib, \$35; Little Tykes table w/chairs, \$15; folding chairs. Baldwin, 856-5309.

SOUTHWESTERN SOFA, \$175; wicker stand, \$50. Harris, 821-3001.

THULE TRUNK-MOUNT 2-BIKE RACK, \$50; '90 Chrysler front-wheel-drive car service manual set, \$25. Ryerson, 296-4479.

BICYCLE TRAINER, CATEYE-1000, w/Schwinn bike, \$10 OBO. Lennox, 821-0474.

LABRADOR, black, 6 yrs. old, neutered male, housebroken, obedience trained, shots, loves people & retrieving. Ellis, 892-5238.

TORSO TRAC 2, barely used, excellent condition, \$75. Schriener, 866-1612.

NORDICTRACK, Sequoia model, good condition, \$150 firm. Cline, 286-1108.

CARPET, 9' x 12'-plus, rose-beige in color, used very little in spare room, practically new, \$50. DiPrima, 275-3479.

CHERISHED CREATIONS ARTS & CRAFTS SHOW, Feb. 9-12, Cottonwood Mall, free parking, free admission, mall hours great, valentine gifts. Self, 296-4137.

GIUITAR, Jackson PS2, Floyd Rose trem., S/S/H pickups, gig bag, like new, \$300. Lash, 883-9661.

LANE SECTIONAL COUCH, w/recliner & sleeper, neutral colors, Southwestern design, \$500. Lippert, 299-6594.

TRANSPORTATION

'97 FORD F-150 XLT, 4x4, off-road, super cab, w/cap, bedliner, trailer hitch, gravel deflector, 52K miles, treader red, excellent condition, \$18,500 OBO. James, 291-9128.

'88 DODGE CONVERSION VAN, AC, PW, PDL, cruise, TV, tinted windows, AM/FM/cassette, good condition, \$4,200 OBO. Fetzer, 281-7353.

How to submit classified ads

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

- E-MAIL: Sandy Smallwood, (sksmall@sandia.gov)
- FAX: 844-0645
- MAIL: MS 0165 (Dept. 12640)
- DELIVER: Bldg. 811 Lobby
- INTERNAL WEB: On Internal Web homepage, click on News Center, then on Lab News frame, and then on the very top of Lab News homepage "Submit a Classified Ad." If you have questions, call Sandy at 284-3704. Because of space constraints, ads will be printed on a first-come basis.

Ad rules

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

'94 TOYOTA PICKUP, 4x4, 1/2-ton, extended cab, custom tires & wheels, 3-spd., AT, w/OD, 3-liter FV6 engine, grill guard, bedliner, tow package, \$10,500. Revels, 344-3033.

'99 DODGE 3500 SLT, quad-cab, 4x4, turbo Cummins, 17.3K miles w/Savannah 5th-wheel, \$53,000. Turner, 450-4412.

'98 SUBARU LEGACY GT, 2.5 liter, 5-spd., sunroof, CD, PW, PL, 39K miles, excellent condition, \$16,200. Curtis, 281-8364.

'93 FORD F250 XLT, extended cab, 4x4, V8, 460, positive-traction rear-end, snug-top shell, carpet kit, custom wheels. London, 281-0296.

'86 DODGE VAN, 15-passenger, rebuilt engine & transmission, tinted windows, comfortable, excellent running condition. Zamora, 864-4647, ask for Richard.

'95 HONDA CIVIC, LX, 4-dr., AT, AC, AM/FM/cassette, PW, 59K miles, new tires, \$5,000. Menge, 296-2872.

'81 JEEP WAGONEER, 100,500 miles, below book, \$1,650. Hardin, 828-1502.

'98 DODGE DAKOTA, 4x4, extended cab, SLT, V6, AT, PW, PDL, tilt, cruise, bedliner, new tires, 53K miles, red, \$14,500. Wavrik, 856-7544.

'85 BMW 325, beautiful champagne exterior, good interior, high miles, cruise, AC, fun car, \$2,800 OBO. Sabo, 924-2154.

'99 SUZUKI VITARA JX, white hardtop, 4WD, 4-dr., AT, fully loaded, w/power everything & keyless entry, excellent condition, less than 2K miles, \$16,950. Baca, 350-1238 or 293-8997.

'88 JEEP CHEROKEE, 4WD, AT, 98K miles, AM/FM, CD player, new tires, great condition, rack, \$4,100. Asbury, 268-3540.

'99 SATURN SW2, 37,500 miles, excellent condition, cranberry, fully loaded, keyless entry, security system, CD player, \$12,500. Rosen, 792-2924.

'95 CHEVROLET TAHOE LT, 4x4, every option, runs perfect, 150K highway miles, first \$19,500 takes it. Sanchez, 866-4225.

'96 TOYOTA 4-RUNNER SR-5,V6, 4x4, excellent condition, AM/FM/cassette/CD, 47K miles, dash/cargo covers, alloy wheels, privacy glass, \$21,900. Hassan, 822-9544.

'62 MERCEDES, UNIM06, low mileage, restored, w/all accessories, unsurpassed 4WD, locking differentials, military vehicle, \$7,900. Johnson, 831-5679.

'96 CHEVROLET 1500, SILVERADO PICKUP, w/shell,V8, 5-spd., 34K miles, Silverado package, \$11,000. Letz, 293-4525.

'69 CHEVY TRUCK, flatbed, w/stake frame, 327, 4-spd. standard, \$2,500 OBO. Raymond, 286-9450.

'00 DODGE RAM, quad cab, 4x4, short bed, Sport Edition, white, V10, AT, leather interior, aluminum nerf bars & bed rails, bedliner, excellent condition, 11K miles, \$29,000. Carson, 480-6025 or 797-1730.

'97 BMW Z3, red/tan, heated leather seats, great car, \$20,500 OBO. McKenzie, 275-1280.

'98 HONDA ACCORD EX, loaded, everything but leather, 42K miles, \$17,000. Brown, 296-2977.

'90 TOYOTA 4-RUNNER, SR5, V6, 5-spd., AC, gold/tan, 155K miles, runs well, must sell, \$6,700 OBO. Tappan, 341-4175.

'00 TOYOTA XLE SIENNA VAN, AT, loaded, leather seats, video theater, AM/FM/cassette/CD, 11K miles, 6-yr. bumper-to-bumper extended warranty, excellent condition, \$29,000 OBO. Newman, 256-0477.

'99 GMC SIERRA, SLE, 3-dr., 5.2LV8, extended cab, long bed, AM/FM/CD, 21K miles, maroon/gold, \$22,750. Cabe, 771-9202.

'92 JEEP CHEROKEE LIMITED, 4WD, 4-dr., white, all power, leather, one owner, 108K miles, excellent condition, \$6,810 OBO. Feng, 275-6639.

'95 FORD PROBE GT, must see, fully loaded, one owner, 55K miles, great gas mileage, below book value, \$8,200. Gurule, 720-6728.

'89 CHEVROLET CORSICA LTZ, 4-dr., 90K miles, spoiler, looks & runs good. Peters, 294-0363.

'93 TOYOTA PREVIA LE VAN, 4WD, 86K miles, loaded, new tires, transferable warranty, logbook, \$11,100. Mundt, 293-2444.

'94 FORD F250 POWERSTROKE diesel, single-cab, 5-spd., runs great, see at base used car lot, \$9,000. Cox, 869-6217.

'00 TOYOTA 4-RUNNER, 4WD, V6, SR5, AT, all power, CD/cassette, tow package, white, \$24,800. Brown, 262-1998.

'89 PLYMOUTH GRAND VOYAGER, V6, new AT, garaged, one owner, all offers considered. Bentley, 856-7661.

'91 FORD AEROSTAR, 4WD, 7-passenger, all power, original owner, runs great, all maintenance records, excellent condition inside & out, 98K miles, \$4,900. Terhune, 823-6606.

'78 FORD BRONCO SUV, full-size, 2-dr., 4WD, 400 V8, AT, AC, HD suspension, 110K miles, \$4,000. Smith, 898-7787.

'92 PONTIAC FIREBIRD 305, AT, PW, PDL, very low miles, great condition, \$4,750. Waterman, 771-2839.

'97 KIA SEPHIA, 4-dr., AT, AC, PS, PB, cruise, 20K miles, \$6,200. Lenberg, 238-0362.

'99 GMC SUBURBAN SLE, only 7K miles, 4x4, V8 7.4L, 3/4-ton, PS, PW, PL, AC/rear AC, CD/cassette, cruise, custom tires & wheels, \$33,000. Brewer, 293-7192.

'97 F-150 FORD SUPERCAB, 32K miles, 4WD, AM/FM/cassette, 7-yr./70,000 extended warranty, blue book \$18,900, asking \$14,000. Newman, 888-1094.

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3-BDR. HOME, 2 baths, Four Hills, 2-car garage. Hoover, 828-0467.

3-BDR. HOME, 1-3/4 baths, FP, W/D, new stucco, carpet, & paint, shed, garage, near Copper/Tramway, \$105,000. Mignardot, 254-9092.

3-BDR. HOME, 2 baths, 4 yrs. old, 1,844 sq. ft., huge kitchen, mountain views, 23 miles from base, paved roads, natural gas, van pool to Labs daily, \$162,000. Bronkema, 286-0423.

3-BDR. HOME, 2 baths, 2-car garage, 1,200 sq. ft., 1914 Avondale NW, near Unser/Ladera, FSBO, \$108,500. German, 281-1719.

3-BDR. MOBILE HOME, '98 Schultz, 2 baths, excellent condition, Cedar Crest area, \$44,000. Ortega, 352-2597 after 5 p.m.

3-BDR. HOME, 1-3/4 baths, new carpet/tile, approximately 1,300 sq. ft., NE Heights, McKinley/Del Norte school district, cul-de-sac, FSBO, or assumable first-time home buyers (NMFA), \$109,500. Martinez, 872-3081.

FAIRFIELD PAGOSA TIMESHARE: sleeps 8, 2 kitchens, 2 baths, whirlpool, try 2/25-3/4, '01, \$300, sell \$2,300. Robischon, 208-883-7856.

3-BDR HOME, 2 baths, 2,000 sq. ft., large kitchen, formal dining, cul-de-sac, Academy & Moon, \$199,900. Nunez, 823-9203.

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Hollywood spy stuff on display at Atomic Museum

By Bill Murphy

"Chief? Agent 86 here. Ninety-nine and I are over here at the National Atomic Museum, surrounded by more than a million great old movie and TV props and collectibles from Get Smart, the Bond pictures, The Man from U.N.C.L.E. — all those classic spy shows."

"Max, I find that very hard to believe."

"Would you believe Emma Peel's leather trousers from the Avengers TV show and a Secret Squirrel comic book from 1965?"

Okay, so Maxwell Smart, *Get Smart's* Secret Agent 86, exaggerates. The National Atomic Museum doesn't have a million pieces of Hollywood spy memorabilia on display — more like 400 items, hand-picked from the 4,000-piece collection of Danny Biederman, a screenwriter who's been collecting Hollywood sleuth stuff since the 1960s.

The SpyFi collection, as it is called, was first displayed at CIA headquarters in Langley, Va., last year. It makes its public debut on Feb. 10 at the National Atomic Museum. (The CIA display wasn't open to the public. It was within a controlled area, the equivalent of displaying it in Tech Area 1 at Sandia.)

Gadgets, costumes, props, and storyboards from shows such as *The Avengers*, *The Man from U.N.C.L.E.*, and *Get Smart*, and spy movies including *Austin Powers* and many of the James Bond films are all part of this one-of-a-kind private collection.

A self-described "secret agent connoisseur," Biederman not only collects this stuff — he's an expert on it. He even served as a consultant to MGM/Universal in a copyright flap with Sony Pictures over who owns the movie rights to the James Bond franchise.



SECRET AGENT MAN — The suave and sophisticated Tom Salazar of the National Atomic Museum staff appears to be right at home as he poses among some of the props from the upcoming SpyFi exhibit at the Museum. (Photo by Randy Montoya)

The Spy-Fi Archives will be "de-cloaked" on Saturday, Feb. 10, with a special lecture by collector Danny Biederman at 1 p.m. The lecture is open to the public and free with museum admission. The exhibit will be on display through June 2001. The National Atomic Museum is open seven days a week from 9 to 5. Admission is \$3 for adults and \$2 for youths/seniors. Call 284-3243 for more information.

Biederman notes that while Hollywood made up a lot of wildly inventive spy gadgets — think Q's R&D shop in countless James Bond pictures — every now and then, life has imitated art. Modern

wireless communications gear, for example, bears a strong family resemblance to Napoleon Solo's *Man from U.N.C.L.E.* pen communicator and Maxwell Smart's trademark shoe phone. (Both the pen communicator and the shoe phone are part of the Biederman collection.)

Biederman's collection began with a toy model of the Aston Martin driven by James Bond in *Goldfinger* and has grown to include items such as the "tarantula" prop used in a famous scene from the 1962 Bond film *Dr. No*, Agent Jim Phelps' (actor Peter Graves') trousers and shirt from the *Mission: Impossible* TV series, actor Martin Landau's copy of the script for the first episode of *Mission: Impossible*, props and wardrobe from *Our Man Flint*, Dr. Evil's ostentatious pinky ring, dozens of books, comics, props, wardrobe, promotional items of all kinds from *The Wild Wild West*, *The Silencers*, *I Spy* — you name it.

Atomic Museum marketing director Stephanie Lupenski notes that the exhibit represents a chance to boost interest in and attendance to the museum during the winter months when tourism visits fall off. That's consistent with the museum's mandate to be self-sufficient, to pay its own way.

The collection, she says, is "a good fit for the Museum," since it captures much of the spirit that prevailed in the popular consciousness during the Cold War era.

As for concerns that the Hollywood angle is too frivolous for a facility that deals with ultra-serious matters, Museum Director Jim Walther has a ready response. The museum is charged with introducing people to science and technology. For some folks, a display of bomb casings is a draw; for others it may be a display about robotics, or nuclear medicine, or Women in Flight (last year's big Spring exhibit) or Hollywood memorabilia.

Biederman is scheduled to offer a public lecture on Feb. 10, 1 p.m., as part of the grand opening of the display. He says he'll talk about a number of things: how he got started as a collector, how he's tracked down some of the more unusual pieces in the collection, what it was like to work with the real CIA when it wanted to display his collection in Langley, and lots more.

Biederman says he's looking forward to seeing his collection open to the public for the first time, adding that he considers the National Atomic Museum to be "a great venue" for the exhibit.

And, oh, one last important note.

Emma Peel's trousers are part of the display.

Museum celebrates African-American Heritage Month

As part of its celebration of African-American Heritage Month, the National Atomic Museum is hosting a display recognizing "Black Pioneers in the American Southwest." The display is a collection of rare photographs and contemporary paintings by and about African-Americans in the Southwest and Mexico. The display will be on exhibit throughout February. The museum launched its celebration of African-American Heritage Month on Feb. 6 with an opening reception and dramatic presentation, "North Star,"

about coming of age in the South during the Civil Rights movement era. On Feb. 27 the Museum will feature a 25-minute play about George Washington Carver, the scientist who revolutionized farming techniques in the US and taught his students the lessons of compassion and respect for all people. The exhibit and play are presented in conjunction with UNM's African-American Studies Dept. and Sandia's Black Leadership and Outreach Committee. For information, call the Museum at 284-3245.

Don't give up yer daytime jobs



STRIKING A FRIENDLY NOTE — Labs Director C. Paul Robinson and new Kirtland Air Force Base Commander Col. Jan Eakle display their musical talents on the marimba during a reception for the commander at the National Atomic Museum last week.

Sandians offered discount tickets to the hit musical Chicago

By special arrangement with Popejoy Hall, Sandia employees and contractors are offered front-of-line privileges for discount tickets to the New Mexico premiere of the hit Broadway musical, *Chicago*. Priority orders for prime tickets in all price categories are offered for an added Saturday evening performance on May 19 for this award-winning song-and-dance sensation. Mail orders from Sandia employees and contractors for these choice tickets will be processed before tickets go on sale to the public in March. Tickets are offered at a 10 percent group discount. The order form is on the Web for printing and completion off line at www.ovation-series/snl/chicago.htm. Mail the form and your check and the UNM Ticket Office will mail your tickets directly to your home. For information, contact Pam Catanach (12650) at 284-5211 or pcatana@sandia.gov.

Coronado Club

February 8, 15, 22 — Bingo, buffet, and Lounge Hockey Night — watch hockey on the big-screen TV in the lounge area.

Feb. 16 — Kid's bingo; buffet 5 p.m., bingo 7 p.m.; four playing cards for \$1.

Feb. 11 — Sunday brunch; \$12.95/person

Feb. 14 — Valentine celebration; fine dining, entertainment, \$30/couple. Reservations: 265-6791.

Feb. 23 — Western Night; buffet, \$11/person; dancing to the music of Isleta Poorboys.

Limited spaces available

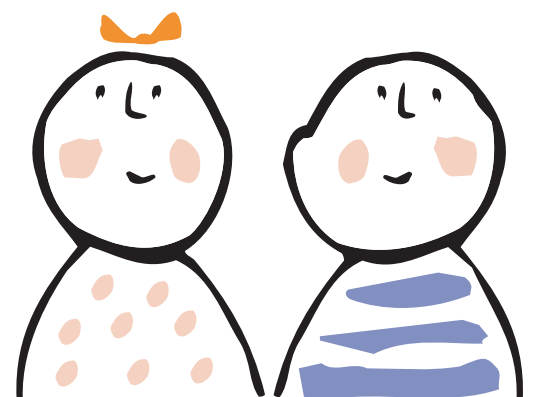
Register now for

Summer Fun Camp

at Sandia Base Elementary School

Call 296-2880 and

leave your address, or stop by the school for a registration packet



www.childrens-choice.org