

Explore! Exploit! LDRD program funds, stimulates high-risk, leading-edge research

Innovative program has rich track record; awards highly sought

By Neal Singer

Lab News staff

Hotly sought-after Sandia awards that allow Labs researchers to pursue projects they've originated, in technical areas broadly defined by upper management, have a history that stretches back at least to the end of World War II, when funding percentages for lab-suggested research were much higher.

"The idea has always been to grant authority where it'll do the most good," says Chuck Meyers (4523), Manager of Sandia's Laboratory Directed Research and Development (LDRD) program.

"It's hard for people not in the front lines to know where the leading edge of research is going."

Notifications of 166 LDRD project proposals funded for fiscal year 1997 went out Aug. 23 to principal investigators and project managers.

While the LDRD program's percentage of the operating budget — 6 percent, or nearly \$70 million — is expected to remain unchanged for 1997, and is up from its low point of 2.5 percent (\$22 million) in 1991, some think the program's results are good enough and its awards in enough demand to

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"The idea has always been to grant authority where it'll do the most good."



LEADING-EDGE RESEARCH — Lloyd Irwin (1276, formerly 6219) conducts a photo cell laser test at Sandia's Photovoltaic Device Measurement Lab. The work supports twin LDRD projects intended to improve high volume manufacturing processes for large-area photovoltaic devices and to reduce lifecycle costs for photovoltaic systems. LDRD supports many ongoing investigations. (Photo by Randy Montoya)

Employees to pay more for health benefit beginning in January

Beginning Jan. 1, Sandia non-represented employees will pay more for their health coverage benefit — how much more will depend on the employee's base salary. (Applicable increased rates are being negotiated with represented employees.)

The increases in premium sharing have been a long time in coming. There are several "drivers" moving Sandia toward a higher employee share of health premiums. Consistent with a Sandia commitment to DOE to significantly reduce laboratory overhead costs, Executive VP John Crawford says, it is necessary to look at ways of reducing health benefits costs — a \$50 million-per-year overhead expense. That means that in addition to negotiating for the best possible health benefits rates, it is necessary to extend the existing employee premium-sharing policy. Also, benchmark data gathered via surveys of DOE facilities and private enterprises support a move to a higher employee share of health costs — a national trend in both the public and private sector.

According to Jann Levin, Manager of Health & Work/Family Benefits Dept. 3343, the new health premium-sharing plan will take a three-tiered approach: Employees earning \$50,000 a year or less will pay 10 percent of the cost of health insurance; those in the \$50,001-\$100,000 range will pay 15 percent; those making more than \$100,001 will pay 20 percent. This tiered structure is consistent with the Lockheed Martin approach.

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Sandia LabNews

 Sandia National Laboratories

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Sandia President's Quality Awards recipients announced

Evaluation 'bar' raised compared to previous years

In the most rigorous evaluation process yet in its four-year history, four teams earned Silver Awards in the annual Sandia President's Quality Award (PQA) process. In addition to the Silver Award winners, 10 teams earned Turquoise Awards and three gained Special Recognition Awards.

The PQA program is based on the Malcolm Baldrige National Quality Awards criteria and principles. Labs President and Director C. Paul Robinson will present the awards at 1:30 p.m. Tuesday, Oct. 22, during a PQA ceremony at the Technology Transfer Center auditorium (Bldg. 825). The event will be simulcast to Sandia/California's Combustion Research Facility auditorium at 12:30 p.m. PDT.

No Gold Award winners were selected this year, compared to the four selected last year. The lack of Gold winners doesn't indicate quality is slipping at Sandia, though, says Allison Kane (Process and Performance Improvement Dept. 4022), coordinator of this year's PQA criteria.

The fact is, she says, "the bar for these awards is raised each year." That's because the criteria for the PQA, like Baldrige, get tougher and tougher over time — an intrinsic characteristic of the process.

"A turquoise award winner one year is not guaranteed a turquoise award level in the future," she says.

Other reasons for no Golds: The criteria this

(Continued on page 6)



3 Combustion Research Facility sets course for next century with Phase II plans

8 New integrated job structure on track for introduction in July 1997

This & That

Consolidating communicators - To save money on space charges and to improve communication among our groups, more folks in Public Relations and Communications Center 12600 have moved into the new (this spring) Communications Center Bldg. 811, north of Bldg. 800. Everyone who was on the fourth floor of 802 is now in 811, including yours truly. I've moved so many times in the past two years that my colleagues stuck me with a new nickname: Ping-Pong Perrine. We're waiting to determine whether packing us closely together will form a critical mass, or critical mess, of communicators. Monday's *Weekly Bulletin* will list 811's new occupants, room numbers, phones, etc.

* * *

Spell-checker chuckles - I mentioned in the Aug. 16 issue that my spell checker suggests an alternate word for the name Rodney: "rodent." After reading that, Bill Suderman (7572) sent a message saying he wishes his manager would stop confusing his last name with the alternate suggested by the e-mail spell checker. Bill thinks his workload might drop off considerably. (Not-so-subtle hint: The mythical fellow who uses this particular alternate name has been known to change clothes in a phone booth and leap tall buildings.) Anyone else have amusing alternate names suggested by spell checkers?

* * *

Nifty number finder - Here's one of the handiest free features that I've found yet on the World Wide Web. It's called "Switchboard" and it provides listed telephone numbers (and addresses) for businesses and individuals throughout the US. It's much faster than calling long-distance information, and for unique or unusual names you don't even need to include the city or state. To test the system, I entered my name and hit the search key. Within five seconds, the system found the phone numbers and addresses for 14 Larry Perrines scattered around the US. Some phone numbers aren't available through this service, but Sandia does get charged for calls to long-distance information, so try Switchboard when you need a number. It's fast and free - a good combination. Switchboard's URL: <http://www.switchboard.com>.

* * *

California peeves - A Sandia/California employee sends a pet peeve: folks in New Mexico who schedule Monday morning meetings that require Californians' attendance. "We sure appreciate the opportunity to travel on our weekends because our Albuquerque brethren just didn't think," he says. "We also like those 7 and 8 a.m. [Mountain time] video conferences - it gives us in the Pacific time zone a chance to get to work before that nasty sun comes up." Good points.

* * *

I'm just the columnist - As much as I appreciate your comments, criticism, and occasional kudos, I'll mention again that I no longer edit the *Lab News*. As shown in the box at the lower left of this page, Ken Frazier edits the paper. If you have column comments or possible column material, I'm the guy to contact. All other *Lab News* comments and story ideas should go to Ken. Thanks.

Larry Perrine (845-8511, MS 0129, lgperri@sandia.gov)

Hispanic Heritage Month planned for Sept. 15 - Oct. 15

As part of national Hispanic Heritage Month, Sandia's Hispanic Leadership and Outreach Committee is presenting "A Celebration of Diversity: Hispanic Heritage Month at Sandia," Sept. 15 to Oct. 15.

The celebration's theme is the cultural and ethnic diversity of Hispanics. "We all speak a common language and share cultural heritage, but we have many countries of origin, a wide ethnic mixture, different accents, and different customs," says Gloria Chavez (7000), who chaired the planning of this celebration.

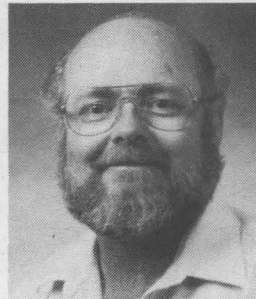
The month's events were planned to focus on these different origins and cultures, including those of Mexico, Chile, Spain, even Ireland. The art, food, and folklore of these and other cultures will be included in this exploration of what it means to be Hispanic.

On Sept. 18, a group of Sandians will give a panel discussion on Hispanic cultures and the "Tapatios" dancers will perform in Bldg. 825 from 11:30 a.m. to 1 p.m. On Sept. 26, Jose Armas, who has written for the *Albuquerque Tribune*, will give a talk on "What's a Hispanic?" in Bldg. 825, noon-1 p.m. The history of Hispanics in New Mexico will be traced on Sept. 30 with a talk by E. A. Mares, also in Bldg. 825, 11 a.m.-12 noon. On Oct. 8, the president of New Mexico Institute of Mining and Technology, Daniel Lopez, will speak about "Hispanics in the Next Century" in Bldg. 822A/B, noon-1 p.m. Three panelists will discuss "The Latino Connection" in international business relations in the Bldg. 823 breezeway, noon-1 p.m., Oct. 9. The challenges facing "The New Hispanic Woman" will be discussed by three New Mexico women, also in Bldg. 823's breezeway, noon-1 p.m. on Oct. 10.

The month-long celebration will close with a fiesta at the Coronado Club with Hispanic foods, Andean flute music, Spanish flamenco guitar, and the Miguel Caro dance troupe on Oct. 15, 11 a.m.-1 p.m.

The Hispanic Leadership Outreach Committee and all the celebration organizers invite all Sandians and their families to the month's events. Call Gloria Chavez at 845-8737, Berta Rodriguez at 844-0537, or Linda Carillo at 844-9152 for more information or call up http://www.hris.sandia.gov/Org/3600/3611/hhm_96.html on your Web browser.

Employee death



LARRY CHOATE

Larry Choate of Strategic Re-Entry Systems Dept. 2151 died suddenly Aug. 23.

He was 49 years old.

Larry was a Distinguished Member of Technical Staff and had been at Sandia since 1975.

He is survived by sons Robert and Scott.

Sympathy

To Olivia Moya (3344) on the death of her mother, Soledad Moya, in Santa Fe, Aug. 17.

The *Lab News* is printed on recycled paper and can be recycled again along with regular white office paper.



Congratulations

To Theresa and Scott (7571) Schrader, a daughter, Emily Savannah, Aug. 31.

Welcome

Nebraska - Robert Rhoades (5336)

Sandia LabNews

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LOCKHEED MARTIN

Trinity Site tour Oct. 5



The National Atomic Museum is sponsoring a tour of the Trinity Site, where the world's first atomic bomb was detonated, on Saturday, Oct. 5.

Trinity Site facts:

- The Trinity Site on White Sands Missile Range is open to the public only twice a year.
- The 21-kiloton explosion on July 16, 1945, marked the end of the Manhattan Project and the start of the Atomic Age.
- Visitors can see "ground zero," Jumbo, Trinitite, and the Schmidt-McDonald ranch house.

How to get tickets:

Tour buses leave the National Atomic Museum at 6:30 a.m. and return by approximately 4 p.m. Cost of the tour is \$25. Tickets are available at the Museum store; call for more information: 284-3242. All profits go to further the Museum's educational goals.

Pre-tour presentation:

Former Sandia weaponeer and Trinity test eyewitness Robert Henderson will give a pre-tour presentation about the test at the Museum on Oct. 3 at 7 p.m. Admission is free to tour ticket holders and \$2 for others.

Experts attend workshop to help chart course for Combustion Research Facility Phase II

Combustion research needs and opportunities forecast by scientific community

By Nancy Garcia

California Reporter

Fifteen years after its construction, the Combustion Research Facility has received funding from Congress to provide additional space and new research capabilities. The \$26.8 million project will add an office wing and 21,000 square feet of lab space to the existing facility.

"This gives us the opportunity to put in place state-of-the-art capabilities to address critical scientific and technical issues as we enter the next century," says Bill McLean, Director of Combustion & Physical Sciences Center 8300.

DOE's Office of Basic Energy Sciences (BES), which sponsors the expansion, considers the research center "a highly successful user facility," says Bob Gallagher, Manager of Industrial & Environmental Programs Dept. 8366. As a user facility, the CRF has about 45 permanent scientists and engineers who collaborate with more than 100 other users each year from industry or universities (including postdoctoral fellows). The users spend anywhere from a few weeks to a year or more at the facility.



FRAMING THE FUTURE — VP Tom Hunter (right) and DOE's Bob Marianelli converse in the auditorium lobby during a break in the CRF Phase II workshop this summer.

As plans for CRF II proceeded, the DOE sponsor and Sandia management sought input from outside users on appropriate user-oriented capabilities to be included in the expanded facility. Some 40 people from the combustion research community met with an equal number of Sandians for two days in June to chart out future research activity and equipment needs.

Their recommendations will help guide and hone decision-making over the next few months, says Bob, who oversaw the workshop. The recommendations can also be used in approaching new sponsors, both in DOE and in other federal agencies.

Will have 15 to 18 new labs

Director of the BES Chemical Sciences Division Bob Marianelli, who attended both days of the June workshop, suggested retaining flexibility in the basic structure of most of the approximately 15 to 18 new labs that will be created within the already constructed inside shell.

For instance, users suggested providing portable diagnostic equipment, such as for laser-induced fluorescence and CARS (coherent anti-Stokes Raman spectroscopy). Originally, the CRF was created through the inspiration of Dan Hartley (now VP of Laboratory Development Division 4000) when lasers were large and costly; the existing labs were organized to shunt in beams from a couple of high-quality lasers when needed. Some modern laser sys-

tems are small enough that portability is now possible instead.

Attendees broke into subgroups to make suggestions that touched upon improving other capabilities in diagnostics, modeling, chemistry, industrial applications, high-pressure combustion, and new programs. Outside experts chaired each subgroup.

Sandia California News

Bob Sawyer, a professor at the University of California, Berkeley, researcher at Lawrence Berkeley National Laboratory, and current president of The Combustion Institute, and Charles Westbrook of Lawrence Livermore National Laboratory co-chaired the subgroup on new programs, in which attendees urged continuing the user facility concept.

No other place like it

"They told us the CRF is unique," said Bob Gallagher, and that "there really isn't any other place in the world where we integrate so many capabilities under one roof. That's true today, and it'll be even more true tomorrow when we have Phase II."

The CRF initially emphasized experimentation, but modeling — especially modeling of turbulent reactions, requiring high-performance computing capabilities — may be increasingly emphasized, he said. In fact, users suggested dedicating some staff to computer science support roles to allow modeling researchers (both Sandians and visitors) to concentrate their efforts on combustion phenomena.

California site VP Tom Hunter noted in his remarks at the workshop that the CRF has an international reputation in linking fundamental understanding with real-life applications in national security and energy security. For instance, work in optical diagnostics supports nonproliferation efforts, and chemical research supports stockpile stewardship.

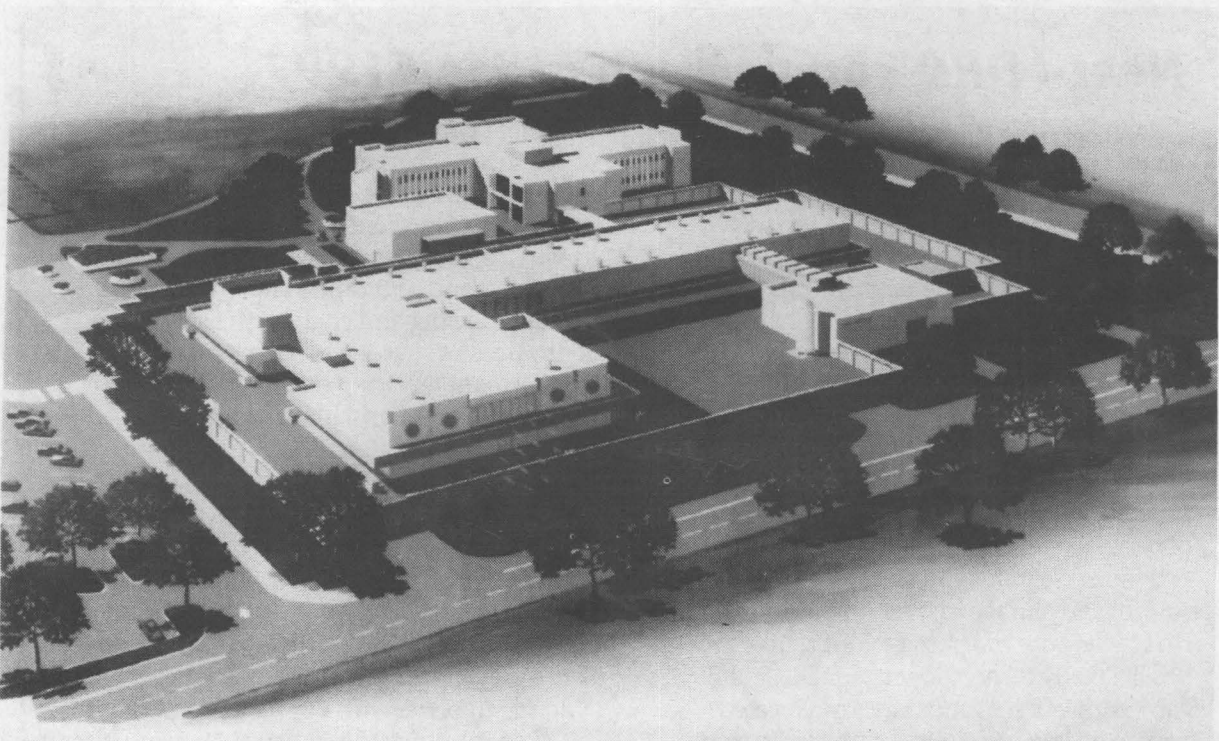
Combustion & Physical Sciences Center 8300 Director Bill McLean traced the evolution of research at the CRF over the last 15 years.



OFFICE REDUX — Breaking ground for a new office wing to extend out behind the existing CRF offices are, from left, Henry Meyer and Don Babcock of Page Construction, Human Resources & Site Operations Center 8500 Director Pat Smith, and Combustion & Physical Sciences Center Director Bill McLean.

Studies in combustion chemistry, optical diagnostics, and reacting flow have led to current activities in which researchers have been able to measure the air-fuel ratio in engines on the fly; have conducted field trials of process monitoring diagnostics in full-scale steel plants; and have been able to make time-resolved observations of molecular isomerization for the first time.

Other distinguished guests at the workshop included Bob Lucht of the University of Illinois and Mitch Smooke of Yale University, both former CRF researchers; former CRF Directors Dan Hartley and Peter Mattern (later Director of Center 1100 and just recently retired); and retired Sandian George Fisk, a former manager at the CRF who had worked on Phase II planning.



PHASE II VIEW — This artist's rendition shows the Combustion Research Facility as it will appear when the new office wing is constructed (the right-hand wing of the back complex). The shell of the new laboratory space had already been constructed at the left of the complex in front.

LDRD program

(Continued from page 1)

merit an even bigger investment, which currently is prohibited by law.

Researcher interest is obvious. For FY97, 1,321 ideas were submitted. From these, 348 applicants were asked to submit proposals. Only 166 received funding. "Had we the money, we would have awarded more," says Chuck.

Funded 14 of 19 R&D 100 winners

The case for the importance of the results of LDRD research is also strong.

•Fourteen of 19 of the R&D 100 Awards won by Sandia since 1993 have been Sandia LDRD-supported.

•Many of Sandia's breakthroughs have originated from or been supported by LDRD projects, such as VCSELS (vertical cavity surface emitting lasers), the mesh generation paving algorithm, hydrogen sensors, and FASTCAST, which reduces weapons-component design time.

•Raw data from the Philadelphia-based Institute for Scientific Information tabulating the number of times scientific papers from 136 leading research institutions have been cited in later research — a measure of the significance of the papers — shows the impact of Sandia

DOE multiprogram labs out-citation academia

The Laboratory Directed Research and Development Program's expertise in science citation studies paid dividends with a fast response to assertions in the influential journal *Science* that because the quality of research was higher in universities than in government labs, research monies should be more favorably skewed to universities.

"That assertion was made in the Dec. 1, 1995 issue," says Sandia LDRD program manager Chuck Meyers. "The Feb. 2, 1996, *Science* ran a piece that showed a 6.41 citation rate per article published by multiprogram DOE labs, compared to 5.32 for academics." Sandia's LDRD program had suggested to the Institute for Scientific Information in Philadelphia that it run the comparison and present the results to *Science*.)

Next LDRD competition in May 1997

On Sandia's Internal Web site, the Laboratory Directed Research and Development program issues calls for ideas. The next competition will open in May. The broadly acceptable areas are prepared by ten investment teams who write descriptions based on direction from senior management. The projects run from one to three years.

"We fund only about 7 percent of the ideas received," says Chuck, but there are other advantages in applying: "The rejected proposals get improved and then recycled to other funding sources. It's like submitting a paper to a refereed journal. People read it, say, this looks great but you forgot x, y, and z." Another advantage to querying LDRD first is that by law the program cannot fund a proposal already turned down by DOE. It also can't supplement funds already allocated, "but we can go beyond it, extend the wave front," says Chuck, by funding research proposals further advanced than those applied for.

Ten sample LDRD projects for next year

Here are 10 examples of the 166 LDRD proposals selected for funding in FY97. (The principal investigator's organization number is in parentheses.)

- Quantum Dot Arrays (1152)
- Parallel Computational Chemistry Using Constraints (8117)
- Double Quantum Well Long Wavelength Optoelectronic Devices (1312)
- Capturing Recrystallization of Metals with a Multiscale Material Model (8712)
- Application of Parallel Mechanism Technology to Manufacturing (1484)
- Immersive Computer-Aided Design (9622)
- Mission Surety for Large-Scale Real-Time Information Systems (6641)
- Electrokinetic Immunoaffinity Chemical Sensors (8117)
- Mechanistic Models for Radionuclide Desorption from Soils (6118)
- Enhancing Risk Analysis Using New Mathematical Structures (12331)

LDRD research as 4th in material science, 9th in engineering sciences, and 37th in physics. In overall physical science research, Sandia LDRD ranked in the top 10 percent. Sandia Labs as an entity is 30th in material science, 35th in engineering sciences, 69th in physics, and in the top 50 percent of overall physical science research, based on the papers that Lab scientists could disclose publicly.

According to Sandia President Paul Robinson, "The history of LDRD [in effect] goes back to the earliest days after the Manhattan project. In order to ensure that the nuclear weapons of the United States were always designed by the best and brightest scientists and engineers — and to ensure that these individuals kept at the 'top of their game' — one-



CHUCK MEYERS

third of the R&D monies were made available for laboratory discretionary research. . . . The processes for deciding how to spend these funds were somewhat similar to today's — the technical staff competed for the best ideas to advance the overall weapons science base."

By 1963, discretionary funds had decreased to 20 percent of the total R&D budget, and the rate periodically declined until the 1990s.

Its present limit is "less than an ideal allotment for advanced discretionary research projects," Paul has written. "Because our nuclear weapons technologies are so unique, with less chance to capitalize by adopting breakthroughs from other areas, one should reasonably be arguing that the LDRD should be raised above

the present 6 percent level — not lowered."

Former Sandia president Al Narath, now president of Lockheed Martin's Energy and Environment Sector, in a letter sent Oct. 21, 1995, to Paul Robinson and Sandia Executive VP John Crawford, reemphasized his vision to maintain basic research at 8 percent of the Labs' operating budget "so that the excellence of the Labs' scientific output continues to increase."

Says Chuck, "LDRD is providing an increasing percentage of that basic research figure."

'Most wonderful'

Other charting of LDRD data enable policy makers to view graphically instead of anecdotally the funding shunted to different areas of technology. "In this guise, our research serves as a tool to expand or collapse investments in certain areas of scientific research," says Chuck.

Some Sandians praise the program highly. "The most wonderful money in the world — there's oversight without micromanagement," says Steve Conrad (6416), who used his award from 1993 to 1995 for research in environmental remediation. This year, his research group had sufficient results to be awarded \$1.2 million from a DOE program to fund basic research (*Lab News*, Aug. 30).

Others who have had their funds reduced in mid-project, such as those in biomedical engineering, are not so sanguine, but the reductions are the natural consequence of an upper management that actively manages its investments, says Chuck.

"LDRD projects are not like those of the National Science Foundation or academia," he explains. "It's more like industry investment. We try to fund through the life of the projects, but if the strategic direction of the Labs changes, then we don't re-fund." LDRD awards are reviewed annually.

However, it is relatively rare for the program to terminate funding in the middle of a project that produces positive results. "This year, we funded 87 out of the 90 continuation proposals received. It's a low attrition rate compared to our sister labs," says Chuck. "We really bend over backwards to redirect research into currently acceptable funding directions."

Of the LDRD program's two goals, researchers seem comfortable with the first — explore! — but less comfortable with the second — exploit! — Chuck says. "We expect patents, publications, and work with federal agencies or industry. We also measure impact by means of a citation index" (see "DOE multiprogram labs out-citation academia").

The average award is approximately \$350,000 a year, though it may run as high as \$1.2 to \$2.5 million at the discretion of the laboratory director for technical challenges the Labs strongly want to solve.

In 1977, Congress suggested in Public Law 95-39 that lab directors formalize the idea of employee-initiated research "up to the pilot stage of development," but maintain account-

(Continued on next page)

Health benefit

(Continued from page 1)

Even when the new premium-sharing starts, Sandians will still have one of the lowest employee-share rates among DOE laboratories, based on a recent survey of eight DOE facilities.

Currently, under all Sandia medical plans, Sandians with employee-only coverage pay nothing for health insurance.

Beginning Jan. 1, based on 1996 premiums, employees covered by the Triple Option Plan in the \$50,000-and-under tier with no dependents will pay \$18 per month (10 percent of the \$180 monthly cost of the premium); Sandians with employee-plus-one coverage, who now pay \$17 a month, will pay \$36 (about 10 percent of a \$355 monthly premium); employees with family coverage will pay \$48 per month (about 10 percent of the \$475 monthly premium), compared to a current rate of \$28.

Employees in the \$50,000 to \$100,000 tier and the \$100,000+ tier will pay, respectively, 15 percent and 20 percent of the monthly premium costs (see "Premium sharing by salary tiers" at right). The premiums are payable, at the employee's option, on a pre-tax basis. This approach, while it does come with some caveats, reduces taxable income, slightly reducing FICA, federal, and state taxes.

Sandia offers the Lovelace Health Plan and the Kaiser Foundation Health Plan (in California) as an option to the Triple Option Plan. Individuals who choose to be covered under one of these plans will be charged 10, 15, or 20 percent of the applicable premium. Additional information concerning these rates will be available during the open enrollment period in October.

The survey of DOE facilities found that for employee-only coverage, laboratory employees in various DOE facilities pay anywhere from \$0 (Sandia's current rate) to \$45 per month as their share of health coverage. Under Sandia's

new premium-sharing plan, the \$18 a month a Sandian earning up to \$50,000 will pay for employee-only coverage is less than that paid by all but two of the surveyed DOE sites. A survey of 16 commercial enterprises — companies that participate in Sandia's annual comparative salary survey process — indicates that, when compared to the private sector, Sandia's premium-sharing plan is very competitive. That survey found employee-only premium-sharing ranging from \$0 (Sandia's current rate) to \$68 per month.

Net cost per employee

Jann says several years ago DOE set a goal of having employees in its facilities pay 20 percent of the cost of health premiums — Sandia employees at that time paid no share. Under the terms of Martin Marietta's management contract with DOE, on Jan. 1, 1995, employees began to share a small portion of the health benefit cost for couple and family coverage. Although the Sandia premium-sharing plan did not meet DOE's goal of 20 percent, Jann says that in May of 1993 when Ralph Bonner (10500), B.J. Jones (3000), and Jann went to DOE Headquarters to gain approval for Sandia's low premium-sharing plan, DOE approved the plan because it could be shown that the Labs' net cost per employee was lower than the net per-employee cost among most other DOE contractors. However, Jann says, "we can no longer make the case that our plan costs less to the taxpayers over-

Premium sharing by salary tiers

Here are the monthly premium-sharing costs to take effect Jan. 1, based on 1996 health premium costs:

Up to \$50,000	10 percent premium share
Employee	\$18
Employee plus one	\$36
Three-plus	\$48
\$50,001 to \$100,000	15 percent premium share
Employee	\$27
Employee plus one	\$53
Three-plus	\$71
\$100,001+	20 percent premium share
Employee	\$36
Employee plus one	\$71
Three-plus	\$95

all," because as other DOE sites have negotiated new, more competitively priced health plans and instituted premium-sharing plans they have reduced their net cost to the taxpayer.

Although Sandia's total cost per person is still lower than that of all but two of the survey participants, the net amount covered by DOE is now greater than at four other contractors.

In 1993, for example, one of the most costly contractors was Los Alamos. Since then, Los Alamos implemented a Triple Option Plan with a benefits level below Sandia's Triple Option Plan and increased the employee premium share to 23 percent of the premium (\$38.32/month) for employee-only and \$106.55/month for a family of three or more. Los Alamos' total cost is now slightly lower than Sandia's, and the cost to DOE is now one of the lowest in the complex.

At the time this story was going to press, the premium-sharing approach for retirees was still in discussion with DOE. Information concerning retirees will be provided in a later story.

— Bill Murphy

(Continued from preceding page)

ability by requiring annual reviews and reports.

In 1983, the Packard Report, published by the Office of Science and Technology Policy, wrote that "Almost every laboratory has found that the most important innovation often comes from the scientist's independent ideas or actions." The report recommended that 2 to 10 percent of multiprogram laboratory budgets be used for discretionary, independent research and development.

In the same year, DOE order 5000.1 set guidelines for exploratory R&D for all the multiprogram laboratories.

Sandia's program began that year

The program was informally managed by vice presidents from Research Division 1000 from 1983 to 1991, including Bill Brinkman, Venky Narayanamurti, and Paul Fleury, as well as by their administrative assistants.

In 1991, the program sought a manager who could combine technical, defense, and business knowledge with a flair for visualizing inventions not yet in existence. Chuck has a masters' degrees in engineering and business from the University of Texas at Austin. He had experience both in Army intelligence in the Middle East and as an engineer-salesman selling Tennessee Valley Authority nuclear power experts on the advantages of wind-generated electricity. He was the man for the job.

"The projects we fund are generally high-risk," he says. "No one knows how they will turn out. We say, in effect, 'We have a problem we have no idea how to solve, can you help us?'"



YOUR HELP REQUESTED! — Sandia's collection of 15 signed and framed Ansel Adams photographic prints — reported missing from a basement closet in Bldg. 802 on Aug. 9 — still have not been recovered. Executive VP John Crawford and Larry Greher (11200) of Sandia's Legal Division are asking for the cooperation of Sandians in the quest. Anyone who may have any information regarding the missing prints is urged to call Pat O'Neill (7437), Sandia Security, at 845-9900 or Adrian Gallegos of the DOE Inspector General's Office at 845-5589. This 1994 *Lab News* photo shows some of the prints with Oscar Goodwin (since retired) of what was then the Printing/Photography/Electronic Imaging Department. (Photo by Randy Montoya)

Quality awards

(Continued from page 1)

year, Allison says, were clearer and less ambiguous than has been the case previously. Also, examiner training was improved and the addition of a judge panel to determine award levels helped assure consistency and integrity in the awards process.

The President's Quality Awards program has several organizational goals, says Jeanne Evans (4022), coordinator of the PQA examination process. The program, she says, helps Sandians gain awareness of quality as a critical element of the Labs' success. The program also fosters an understanding of what it takes to achieve true excellence in performance.

"Its primary focus is not about winning; it's about learning and applying the methods and strategies that build quality teams," she says.

Jeanne notes that although there were no Golds this year, "Sandia did very well considering that last year's award recipients could not apply this year — a stipulation mandated by Paul [Robinson]. Also, there were more awards given per applications submitted than in any previous year [36 percent]."

All told, 17 of this year's 44 nominees earned some form of recognition.

Jeanne says this year's PQA program involved 46 examiners and four judges, all of whom went through extended training in the Malcolm Baldrige program. The judges, she noted had "moved up through the ranks," previously having served as examiners and then senior examiners.

Team member names and project descriptions listed below are those submitted with nominations. Organization numbers are taken from Sandia's Internal Web phone directory, the most timely source of organization data.

Silver Awards

Silver Award winners, with a description of the projects for which they were nominated and team members, are:

International Travel Clinic — The International Travel Clinic (ITC) provides quality medical services to ensure the health and safety of Sandia's international business travelers. The ITC team, through sequence flow charting, brainstorming, and project planning, developed a customer-focused process plan to improve the quality of its services.

Team members — Charmaine DeWerff, Arlene Feltz, Beverly Josephson, Carolyn Olona, and Sara Snider (all 3335); Christine Gonzales, Anita Passman, Patricia DeVivi (all 3333); and Kathleen Weirick (formerly 3333).

Cermet Qualification Evaluation Release Team — The Cermet Qualification Evaluation Release Team (QER) is responsible for identifying and qualifying a supplier for cermet components used in the MC4277 Neutron Tube and delivering the first few lots of parts. Cermets are alumina-molybdenum composites used in the neutron tube assembly as hermetic electrical feed-throughs in alumina parts and as ceramic-to-metal joining interfaces.

Team members — Paul Lemke (1400), Roger Moore (1492), Gerald Smith (1564), Rick Pike (1567), Debra Tricoglou (1567), Jim Brangan (1824), Nancy Morreale (10251), Don Knippel (14301), Dexter Boone (14304), Pat Appel (14308), Dave Van Ornum (1481-2), and a representative from contractor AlSiMag Technical Ceramics.

Strengthening Quality in Schools (SQS) Project — This project assists schools in improving education through the use of modern quality

principles and the Malcolm Baldrige National Quality Award criteria. The SQS Support Team developed a project plan to manage the project; the plan includes a responsibility matrix, work breakdown structure, milestones, Gantt chart, metrics, lessons learned, and customer requirements.

Team members — Laurel Moore, Theresa Apodaca, Jim Clinch, Whitney Wolf, Jennifer Hamrah, Cary Kent (all 4022), Margaret Byrnes (independent contractor), and representatives from the New Mexico Department of Education, Albuquerque Public Schools, Public Service Company of New Mexico, Westinghouse, the New Mexico Association of Community Colleges, and Eastern New Mexico University.

FY97 Spend Plan Tool Development Team — This is a corporate-mandated process used by project and line managers to estimate planned expenditures and resource requirements for the next fiscal year. The Spend Plan Tool Development Team was given a charter to develop an improved software tool based on specific customer requirements in time for development of the FY96 and FY97 Spend Plans.

Team members — Karen Simkins (2211), Jack Hairston (8940), Joe Durham, Linda Jaramillo, Lyle Lininger (all 10403), and Lori Brockway (4813).

Turquoise Awards

Turquoise Award-winning projects and team members are:

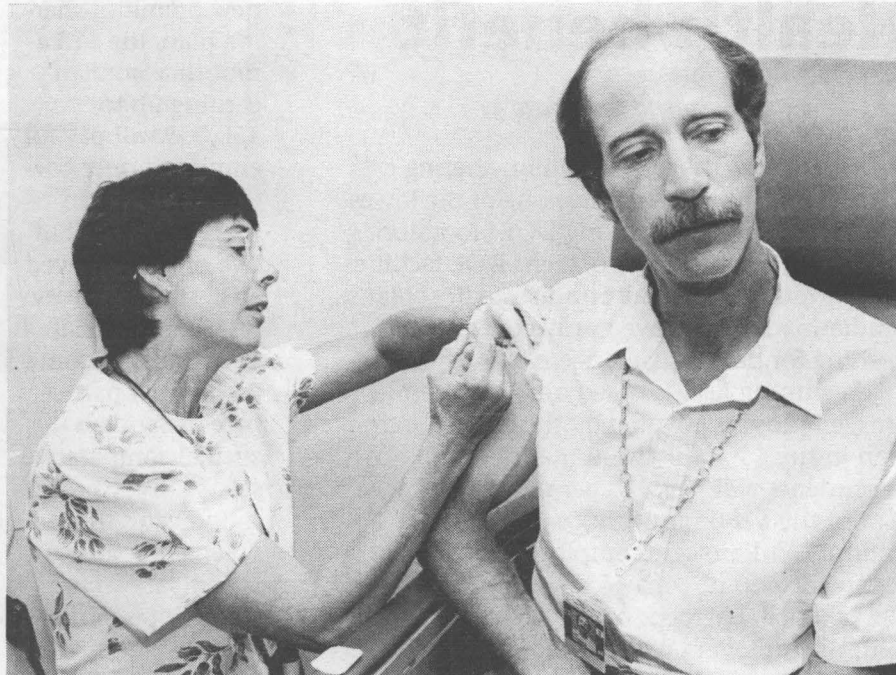
Manufacturing Technologies Center Metrics Process — This team developed a process used to quantitatively collect and evaluate center cost and schedule data. The process distinguishes between Service Center Information System orders that conform to customers' cost and schedule requirements and those that don't.

Team members — Elena Holland and Arba Smith (both 1402), Carla Chirigos (1403), Mabel Pecos (1412), Denise Lawrence (1472), Charmaine Grabowski (1484), Steve Lockwood (1492), Shirley Morris (1471-2), Lavina Clay (1472-2), and Don Odell (ret.).

Sandia's Public Involvement Program — The Public Involvement Program (PIP) helps Sandia and DOE Kirtland Area Office program managers achieve the Labs' operational objective of being a valued corporate citizen by involving the public in Sandia issues that have an impact on the community, listening and responding to the public, and meeting legally mandated and programmatically required public involvement responsibilities.

Team members — Maureen Baca (4022), Richard Bild (6801), Will Keener (7500), Dana Pulliam, Stephen Baca, Arturo Sandoval (all 12650), and Al Stotts (DOE).

MC4380 Neutron Generator Product Realization — The team is responsible for the design, development, and production readiness of the MC4380 Neutron Generator (MC4380 NG) and integrating activities of several sup-



AWARD-WINNING TEAM — Arlene Feltz of Occupational Health Programs Dept. 3335 and a member of the International Travel Clinic team that won a Silver President's Quality Award, administers an immunization shot to J. Lee Schoeneman of Cooperative Monitoring Systems Dept. 5749 in preparation for travel to Moscow. The International Travel Clinic offers a variety of health services for Sandians who travel internationally on official business.

plier product-realization teams. The MC4380 NG will be the first neutron generator to be produced in Sandia's new production facility.

Team members — Ruth Bargman-Romero (1484), Gregg Peevy (1553), Steven Barnhart, Maria Owens, Tim Scofield, Keith Vollmer (all 1561), Jerry Smith (1564), Stephen Montgomery (1567), Gary Kinemond (2151), Nancy Nesbitt (14308), Paul Flores (14309), and Robert Stiers (14482).

Crystalline Silicotitanate Development for Radwaste Applications — A new crystalline silicotitanate for removing radioactive cesium from liquid waste was invented by a Sandia/university team and further developed through a private industry partnership to the point of now being commercially available. The success of this program has led to independent estimates of cost savings of more than \$400 million at Hanford and has led to the product being the only material down-selected by the Tank Focus area for pilot testing with 25,000 gallons of actual radioactive waste.

Team members — James Krumhansl (6118), James Miller (6211), Howard Stephens (6200), Norm Brown (ret.), Maher Tadros, Larry Bustard (both 6472), Paul Kuehne (7513), Elmer Klavetter (6685), Robert Dosch (dec.), and two team members from Texas A&M University and UOP.

Facilities Express — The 100-percent customer-funded Facilities Express process helps line organizations remain competitive by modifying facilities in a cost-effective and timely manner so the organizations can meet their organizational objectives and customer needs. Facilities Express provides a package of services that includes design, construction, inspection, and safety reviews, while conforming to all regulations.

Team members — Moss Tallant (7904), Phyllis Lusader (7908), Florian Lucero, David Bailey, Tom Plummer, Linda Chavez, Rob Bevington, Joe Allen, David O'Brien, Rich Sena (all 7911), Erlinda Silva-Sweeney (10242), and five members from Holmes & Narver.

SmartWeld: A Model-Based Process Design System — SmartWeld is a computerized concurrent engineering system that integrates welding knowledge, models, simulation tools, and expert advisers within a virtual manufacturing environment for rapid weld process design and fabrication decision-making.

(Continued on next page)

Crawford, VPs to present Strategic Objectives, FY97 goals

From 10 a.m. to noon on Thursday, Oct. 3, and again on Tuesday, Oct. 8, Deputy Director John Crawford and the eight VP "owner/champions" of the eight new strategic objectives will present them to a cross-Labs audience. Both sessions will be videolinked from the TTC to the CRF auditorium at Sandia/California.

Like the presentations the nine made at the recent Fall Leadership Forum in Angel Fire, the TTC sessions will open with John's discussion of the context and rationale for new strategic objectives in the first place. Then each VP will discuss his/her objective in some depth, including the FY97 operational goals tied to each objective. These goals will, in many cases, need to show up soon in Sandians' Performance Management Forms.

The eight strategic objectives are already being used in making high-level decisions about major program directions and investment levels. As Gerry Yonas (9000) noted in discussing the five "technical" objectives during the August Managers Forum:

- The nuclear weapons objective means that Sandia will be a systems integrator for all US nuclear weapons (contact is Roger Hagengruber, 5000);
- The synergistic missions objective makes nonproliferation and the intelligence work on which it depends a major mission (contact is Tom Hunter, 8000);
- The energy and critical infrastructures objective means "hitting the reset button" on Sandia's energy programs without walking away from commitments to existing customers (contact is Joan Woodard, 6000)
- The "emerging national security threats" objective will focus the Labs on developing

high-impact responses to threats to national security (contact is Gerry Yonas); and

- The science and technology objective means nothing less than a revolution in life-cycle engineering (contact is Bob Eagan, 1000).

Speaking of that revolution in engineering, Gerry recalled what consultant Art Lange said in a TTC presentation in June: "If you pull this

off, you will be doing something not only for this laboratory, not only for your career future. You will, in fact, have impact far beyond what you dream is the scope of your [laboratory's] purpose. And you won't believe how many people are going to be knocking down your door to learn how to copy what you're doing."

—Bruce Hawkinson

Ten 'Conspiracies for Success'

After the strategic objectives and the FY97 operational goals were presented to the directors at the Fall Leadership Forum, the directors were invited to form teams to work toward one or more of them. By the end of the forum, 10 such cross-Labs "conspiracies for success" had emerged.

The directors involved in each one are now working with people across the Labs who would play key roles. For the record, here's a list of the topics and a Large Staff member involved with it:

Create a "virtual organization" to develop counterterrorism technologies (Dori Ellis, 5500).

For neutron generators, define an approach for active ceramic processing and component certification (Bill Alzheimer, 1500).

Develop a corporate qualification/certification program tailored toward specific needs in areas ranging from nuclear weapons to finance (Carol Yarnall, 14700).

Develop a roadmap to meet WPP (Warhead Protection Program) objectives

(Ron Andreas, 2100).

As an early step toward establishing broader Sandia leadership in surety, nationally and internationally, institute a series of "high-consequence surety symposia" (Ray Bair, 1200).

Develop a business plan covering the risk assessment and management area (Nestor Ortiz, 6400).

Examine major infrastructure processes that support and enable direct-funded work to identify the ones with significant potential for improvements in cost effectiveness and customer service/satisfaction (Lynn Jones, 7000).

Implement a California site-support (as opposed to a center-support) rate in FY97 (Paul Brewer, 8800).

Develop a cross-Labs business architecture that is integrated with Information Systems' strategic plan (Ralph Bonner, 10500).

Coordinate the investment of corporate program development funds to promote the strategic objectives (Virgil Dugan, 4500).

(Continued from preceding page)

Team members — Kim Mahin (1807), Phil Fuerschbach, Gerald Knorovsky (both 1833), John Mitchiner, Steve Kleban (both 6614), Barry Hess (8220), Ken Hicken (8240), Jim Lathrop (8743), Artie Ortega (8743), Steve Gianoulakis, Tom Voth (both 9113), Rick Eisler (9234), Chris Montoya (9709), and one member from IntelliCorp.

MC3359A/B Timer Acceptance Testing PRT (Timer EFT PRT) — This team is responsible for the acceptance testing of MC3359A/B timers for the Ensign Bickford Company (EBCo) and is subordinate to the MC3359A/B Timer Product Realization Team. Both teams share the same design engineer and product engineer. The team provides lot-acceptance testing before submission of the lot to DOE for inclusion in the war reserve component stockpile.

Team members — Dennis Pfeiffer (1484), Toby Garcia, Carl Brezowski, Manuel Vigil (all 1553), Deanna Sevier, Danny Gregory, Dave Powers, Dave D'Spain, Vesta Bateman, Larry Demo (all 9742), Pat Appel (14308), and representatives from K-Tech, Geo-Centers, Inc., Tech Reps, and Alliance Tech.

Energy & Environment Sector Business Team (EESBT) — This team serves as a liaison between the sector and the corporation, communicates E&E programs to internal and external audiences, and creates a structured, strategically focused business environment for decision-making. The EESBT voluntarily reduced its staff and operating budget while realigning services to address programmatic changes and lower sector revenue.

Team members — Chris Gutierrez (6400), Jeff Danneels, Teresa Mills, Delvin Nathaniel, Amy Tapia (all 6401), Marge Petersen (6614), and Don Coates (10402).

Commercial Licensing of Sandia's Intellectual Property — From a two-person operation in FY90-93, the commercial licensing operation has grown to seven licensing professionals and four support staff members distributed across three departments. Before FY93, a total of 15 commercial licenses were executed; by June of FY96, commercial licenses quadrupled to 61.

Team members — Gordon Leifeste, Kevin Murphy, Angelo Salamone, Walt Schimmel (all 4211), Joanna Chavez, Vic Chavez (both 4213), Subra Subramanian (8800), and four team members from Tech Reps.

NUPEC and NRC Cooperative Containment Program — The Cooperative Containment Program is sponsored and jointly funded by the Nuclear Power Engineering Cooperation (NUPEC) of Japan and the US Nuclear Regulatory Commission, Office of Nuclear Regulatory Research. The project validates and improves computer codes that could be used to analyze and design steel and prestressed concrete containment vessels.

Team members — Paul Carter, Samuel Key (both 9117), Michael Hessheimer, Dennis Berry, Viola Madrid, Vincent Luk, David Pace, Michael Rightley, Dwight Lambert, Eric Klamerus, Evelyn Northcutt, Daniel M. Ramirez, Raymaynard Davis, John Pantuso, Edward Baynes, Robert Eysers, Yolanda Aragon (all 6403), Gina Rightley (9364), and two members from Anatech and Mactec.

Special Recognition

Projects and team members receiving Special Recognition are:

Manufacturing Infrastructure Development Project — This team leads and coordinates the development, validation, and implementation of the infrastructure that supports manufactur-

ing at Sandia.

Team members — Tom Bomber, Carol Phifer (both 5412), Neil Lapetina, Gary Ferguson, Frank Chavez, Greg Durfee, Paul Flores, Marca De La Porte, and Vieta Crain (all 14309).

Mesa 1 MRP Core Team — The team implemented a Manufacture Resource Planning (MRP) system to aid the establishment of manufacturing infrastructure by learning a new MRP software package, procuring appropriate hardware, developing practices and procedures, and training personnel.

Team members — Debra Conner (3524), Steve Evans, Marsha Urioste (both 4622), Maria Socorro Turkovich (10251), Mark Rule (10252), Kim Gallagher (10402), Ted Bujewski (14308), Bill Hanson, Linda Scott (both 14301), Jorge Hernandez, Gloria Roybal, Todd Schimke (both 14307), J. Anthony Wingate (14308), Bob Stiers (14482), and Eric Detlefs (14483).

Extreme Ultraviolet Lithography — The team, with industrial partners, established a national DOE extreme ultraviolet lithography (EUVL) program with the intent to recapture the US share of the EUVL market.

Team members — David Wheeler (1812), William Sweatt (5725), Kimberly Nguyen (6811), Rodney Nissen, Daniel Tichenor, Avijit Ray-Chaudhuri, Kurt Berger, Steven Haney, Kevin Krenz, Yon Perras, Richard Stulen, and Glenn Kubiak (all 8250). The team also included members from Lawrence Livermore National Laboratory, AT&T, and Intel.

Recent Patents

James Novak (1315): Sensing Roller for In-Process Thickness Measurement.

Integrated job structure process on track for 1997

Job Restructure Team is working to address concerns expressed by pilot participants

By Bill Murphy

Lab News Staff

No "show-stoppers" emerged during the recently completed pilot of the new Technical and MLS Integrated Job Structure, according to Ed Cassidy and Kirsten Randolph of Compensation and Job Evaluation Dept. 3545. As such, they say, plans are moving forward to implement the new integrated job structure (*Lab News*, April 12, 1996, and Nov. 10, 1995) in July 1997. This date was chosen to coordinate the implementation with Sandia's performance year, which also begins on July 1.

About 150 Sandia managers from across the Labs participated in the pilot. To test the process and provide feedback, managers used the tools developed by the Technical and MLS restructure team to place just over 1,000 employees in appropriate occupations and levels. The process was strictly a dry run, with no implications for employees beyond the context of the pilot.

When implemented, Kirsten says, the integrated job structure is intended to be more objective and internally equitable, and will provide a closer match to the outside marketplace than the current job classification system.

Pilot test not a rubber stamp

"Most managers were confident that they could make the system work for them," says Ed, 3545 Manager. That's not to say pilot participants simply rubber-stamped the new structure, though. As expected during a pilot phase, problems and concerns with the integrated job structure did surface.

As a result of the pilot, the Technical and MLS restructure team has begun to:

- Refine the criteria used in the level charts.
- Rework the occupation guide to better reflect the work people do at Sandia.
- Define the compensation linkages within the system.

"One of the key issues that emerged during the pilot," says Kirsten, "was a concern that the team would not genuinely respond to manager feedback. I can assure you that the team is committed to making changes to the job structure that will result in a better system for the Labs." In general terms, Kirsten says, the key concepts of the underlying structure were not challenged. Rather, she says, concerns expressed during the pilot were more on the order of: 'The tools need to be refined. . . . You have the wrong occupations. . . . The levels as written are unclear and/or don't accurately describe what would be expected at a given level.' Conceptually, though, there was no groundswell that this is the wrong thing to be doing.

"Administrative managers, for the most part, seemed very pleased with the changes," Kirsten says. "They see a greater parity with our technical population and a less complex system than they have dealt with in the past. They say they feel the level charts are helpful in determining different levels of work for administrative people."

'Real thing' may be difficult

"For all managers, there's a lot of fear about how the system will really be used, particularly in the area of compensation linkages. We must clearly articulate how the new structure will work with our existing compensation system in order for the structure to be accepted."

Kirsten says the pilot showed that, while most managers applied the occupation and level chart data objectively, some were reluc-

tant to reclassify employees if such a reclassification even hinted at a "demotion."

"We had managers say, 'I reclassified my people in the pilot because I knew it was a test of the job structure. When it's the "real thing," it may be more difficult.'"

"As a theme," Ed says, "much of the negativity expressed during the pilot had to do with concern about the ultimate results of the restructure. Without knowing all of the implications, some of the participants were not willing to do anything that would be perceived to "harm" their employees. For some organizations, this resulted in the development of their own standards for classification of staff."

That mindset, says Ed, undermines the credibility and viability of the process and reinforces con-

cerns expressed by many pilot participants regarding consistency across organizations. To address this issue, the Technical and MLS restructure team has added time for Division and senior management review of placement decisions prior to full implementation of the new job structure.

In their talks with senior management, Ed says, Paul Robinson and John Crawford have repeatedly emphasized that "we really need to pull together on these issues." As a result, Ed says, "the Technical and MLS restructure team feels they've received Paul and John's support throughout this process. They're convinced, and I'm convinced, that the new process will help Sandia achieve its mission success."

"As you [the manager] get into it," Ed says, "you'll see that it is a system that is fairly sim-

"We must clearly articulate how the new structure will work."

ple, manager-controlled, and will indeed meet the needs of employees, management, and our [DOE] customer. For staff, I believe a positive result is that employees working in the same occupation will be on the same career ladder. Also, there will be a lot more similarities in process and form between the administrative and technical classifications. This should help diminish concerns about different standards being applied to different sides of the house."

If managers use the level charts as intended, Ed says, and if they have an employee who clearly does not meet the criteria, then essentially it becomes a management issue: Now what?

"For me," Ed says, "that's a signal that the manager needs to work with the individual to bring their contribution up to that level or, on the other hand, to make a judgment that the individual is, indeed, misclassified and it's in everybody's best interest to face up to that."

"It's management integrity that's at stake here. Managers have to be comfortable that all managers are applying the same criteria and facing up to the same hard questions in the same way. . . . The success of the system depends upon the entire management team being willing to apply the criteria in an even-handed way."

Kirsten notes that job structure training for all managers will begin in January 1997, with initial assignment of occupations and levels taking place in the April-May time frame. This will allow time for the overall placement decisions to be reviewed and approved by the Sandia Quality Leadership Council before the July implementation.



Sandia News Briefs

More than 400 teachers expected at Sandia's annual 'Fall Teaching Event'

On Sept. 20-21, Sandia will host its fourth annual Fall Teaching Event for kindergarten-12th grade teachers from throughout New Mexico. The teaching workshops, which emphasize hands-on, inquiry-based instruction in science and math, will be held at Bernalillo High School. More than 400 teachers from public, Bureau of Indian Affairs, and private schools are expected to attend. Workshops will include: Getting into Water — hands-on activities to increase student understanding of the importance of water, including scarcity, pollution, and conservation; Rockets — learning how to integrate rockets and technology into the classroom; Seismic Sleuths — a look at how science, mathematics, and social studies can be applied to reduce earthquake hazards and risk in buildings; Project Atmosphere — hands-on activities relating to clouds and other sky conditions; and Navajo Stick Game — active learning of math skills in one of the first American Indian games of the area. The Fall Teaching Event is cosponsored by the New Mexico State Systemic Initiative in Mathematics and Science Education Program and the Utah, Colorado, Arizona, and New Mexico Rural Systemic Initiative Program. Call 271-4105 for specific schedule information.

Lab News editor Ken Frazier named to distinguished media watchdog group

Lab News editor Ken Frazier (Media Relations and Employee Communications Dept. 12640) has been named to the Council for Media Integrity of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP). The new council includes Nobel Prize-winner Glenn Seaborg, Stephen Jay Gould, Carl Sagan, Sir John Maddox (editor emeritus of *Nature*), Steve Allen, and other eminent members of the scientific and academic communities. The council serves as a watchdog of media portrayal of science and science-related issues and an advocate for accurate treatment of science in the media.

According to Paul Kurtz, chairman of CSICOP, "The irresponsibility of the media in the area of science and the paranormal is a worldwide problem. But it especially applies to the United States, where the media have been distorting science, and, in particular, presenting pseudoscience as genuine science. . . . If the US is to continue to provide leadership and compete in the global economy, then we need to raise the level of scientific literacy and understanding of the general public."

Ken is the 1995 recipient of the American Humanist Association's Humanist Pioneer Award. The award recognized Ken for his contribution to encouraging scientific integrity and debunking pseudoscience as longtime editor of CSICOP's *Skeptical Inquirer* magazine.

National Atomic Museum high bay closed Sept. 16-30; revamped and remodeled exhibit to reopen Oct. 1

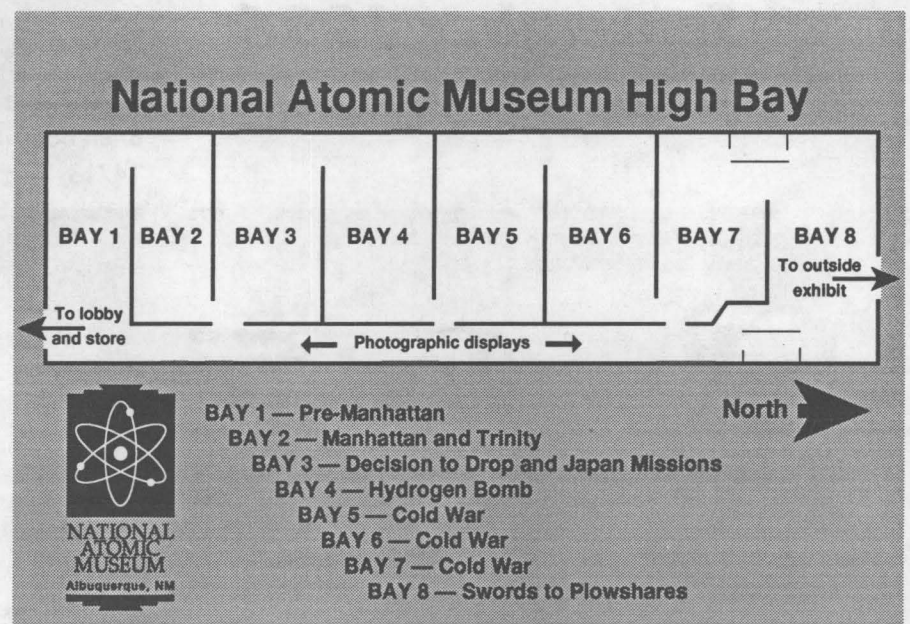
A temporary shutdown of portions of the National Atomic Museum, where nuclear weaponry and historic artifacts of the Atomic Age are displayed, will allow the museum's "high bay" exhibit area to be remodeled and reorganized into what museum marketing and special programs coordinator Julie Butler says will be a more visitor-friendly museum.

The high-bay area of the museum will be sectioned into eight smaller bays, each with its own historical period (see map at right). These small exhibit rooms, each approximately 25x40-feet, will be ordered chronologically and the exhibits will be better transitioned so the total exhibit will "flow better" from beginning to end and provide for a more coherent path for museum tours, she says.

"The idea is to present the history of the Atomic Age to our visitors more effectively, more historically, and more aesthetically," says Deborah Payne (12670), acting manager of the museum. "Right now, there's not much method to the exhibits." Sandia operates the museum for DOE.

A hallway connecting the exhibit rooms along the east boundary of the high bay will contain photographic displays highlighting six historic series of atmospheric nuclear tests. New carpet will be installed in the exhibit rooms, and eight-foot-high removable walls with staggered doorways will separate the rooms. Lighting systems will be added in various display areas during and after the remodeling project.

Several non-weapons-related displays — such as old movie posters, *Life* magazine covers, and newspaper articles about Cold War-era personalities and political issues — will be interspersed with the weapons exhibits so visitors may better understand the historical context in which nuclear weapons-related events occurred.



theater, and south outdoor exhibit area (the nonenclosed area where the B-29 is displayed) will remain open. The museum's Fat Man and Little Boy bomb casings will be moved temporarily to the south outdoor exhibit area. The museum theater is planning special showings of WWII-era movies (see schedule at left) during the high-bay closure.

The remodeled exhibits will be reopened to the public Oct. 1; a "grand reopening celebration" is being planned for sometime in November.

Fun & Games

Tennis — The Coronado Club Men's 3.5 Tennis Team won the Southwestern United States Sectional held Aug. 2-4. This qualifies the team to play in the nationals Oct. 3-6 in Tucson. Team captains are Joe Ruggles (4622) and John Wolfe. Members include Mark Allen (4211), Fred Cericola, Charlie Emery (3000), Barry Schwartz (7500), Ron Short, Jim Van Nest, David Wenger (9577), David Sealey (7437), Rocky Stone, and Gary Porter.

Golf — The Sandia Golf Association held a two-day individual tournament Aug. 2 and 3. Winners were: A Flight — Dale Brandt (2314) and Frank Hansen (6121), tie for first; Randy Rosenthal (2334), second; Jake Romero (4913) third; and Floyd Braaten (1553), fourth. B Flight — Perry Molley (2336), first; Ron Hahn (12361), second; Phil Kahle (2338), third; and Jay Templin (12336) and Duane Dewerff (5903), tie for fourth. Two tournaments remain for the season: Sept. 21, Apache Classic at Inn of the Mountain Gods; and Oct. 4, Ed Salazar tournament at Tijeras Arroyo. If anyone is interested in playing the remaining tournaments, contact Frank Peter (2338) at 844-1763.

Walk-a-thon — "De-feet" diabetes by participating in "Walktoberfest," a 6.2-mile walk-a-thon to help the American Diabetes Association, on Sunday, Oct. 6, 8 a.m.-1 p.m., at the Rio Grande Nature Center in Albuquerque. Diabetes is a serious disease affecting more than 16 million Americans, including 150,000 in New Mexico. Half of the people with diabetes don't even know they have the disease. Untreated, diabetes can lead to blindness, heart disease, kidney disease, stroke, and leg or foot amputations. Currently, there is no cure. Walktoberfest will raise money for research. To sign up as a walker, sponsor, or volunteer, call the American Diabetes Association at 266-5716 or 1-800-254-WALK (outside Albuquerque).

Special showings at the National Atomic Museum theater

Sept. 16-22

9:00 a.m.	The Buff (about the B-52)	20 min.
9:30 a.m.	Trinity: Getting the Job Done	56 min.
10:30 a.m.	Ten Seconds that Shook the World	53 min.
11:30 a.m.	Ten Seconds that Shook the World	53 min.
12:30 p.m.	The Day Tomorrow Began	30 min.
1:00 p.m.	Hiroshima/Nagasaki	21 min.
1:30 p.m.	Nuclear Countdown	27 min.
2:00 p.m.	Ten Seconds that Shook the World	53 min.
3:00 p.m.	Ten Seconds that Shook the World	53 min.
4:00 p.m.	Operation Crossroads	27 min.
4:30 p.m.	Operation Ivy/Mike	17 min.

Sept. 23-30

9:00 a.m.	Half Lives	50 min.
10:00 a.m.	Energy Alternatives: Fusion	26 min.
10:30 a.m.	Ten Seconds that Shook the World	53 min.
11:30 a.m.	Ten Seconds that Shook the World	53 min.
12:30 p.m.	Hitler's Bomb	52 min.
1:30 p.m.	Nature of Radioactivity	20 min.
2:00 p.m.	Ten Seconds that Shook the World	53 min.
3:00 p.m.	Ten Seconds that Shook the World	53 min.
4:00 p.m.	Radiation: Boon or Bane?	17 min.
4:20 p.m.	Food Irradiation	10 min.
4:30 p.m.	Entering the Era of Missiles	16 min.

Feedback

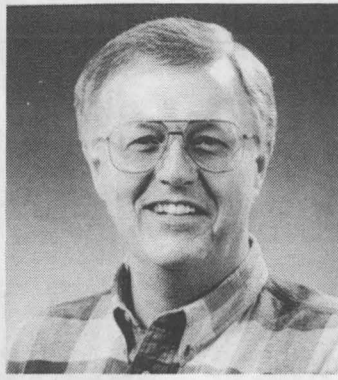
Q: On-line conference room scheduling is a great idea, but its use has uncovered problems. Because of my recent experiences, I am concerned most with the issue of room maintenance. Is anyone responsible for the state of these rooms? I reserved a room for a presentation and the CRS indicated it had the overhead projector I needed, so I was happy. When I arrived for the presentation, I found two overhead projectors, neither with any bulbs and no extra bulbs to fit them. What is one supposed to do next with 40 Sandians sitting there spending money. We had a fellow who found a secretary in a nearby building who had two bulbs so we were functional after wasting only 12 staff hours. At the least, if no one is to be responsible or accountable for individual rooms, there should be an available and identified resource center that can be used by the technical staff when they need to prepare a room for use. Also, any room scheduling system, whether manual or electronic (CRS) should identify that resource and indicate the need to invest pre-meeting time for checking and

maintaining the reserved facility.

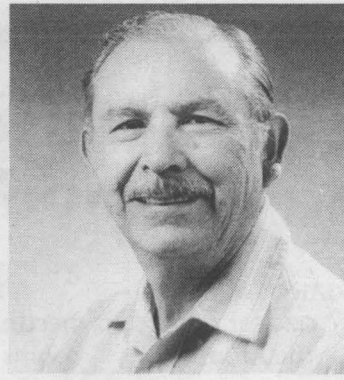
A: Most conference rooms have room managers who are responsible for the equipment and supplies. You can find out who this is in one of two ways. If you select the information option button and then specify a conference room, you get a listing that includes the name of the room manager, a contact phone number, and additional comments that tell, for example, where to pick up the key. This same set of information appears beneath the calendar when you reserve a room. Room managers have the capability and responsibility to keep this data correct. If you have a problem with a conference room, you should contact the room manager you find listed in the Conference Room Scheduler. There are a few instances where nobody has acknowledged responsibility for a room. In this case, the information query will not have a manager name. This would be a good indication that you should check out the room beforehand. Paul Merillat (4800)

Mileposts

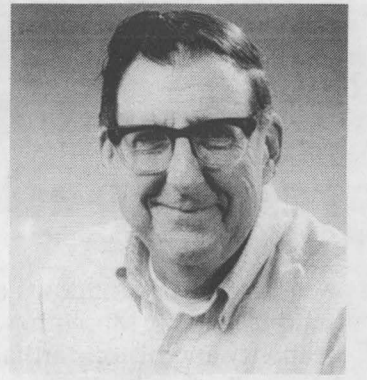
September 1996



Brien Bopp 30
14713



Chuck Martinez 20
9311



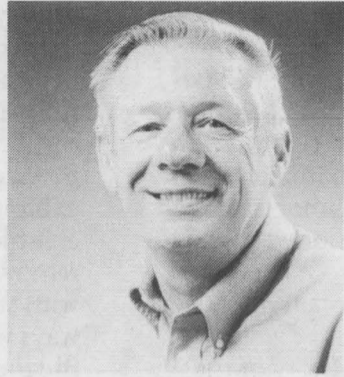
Carl Smith 35
9783



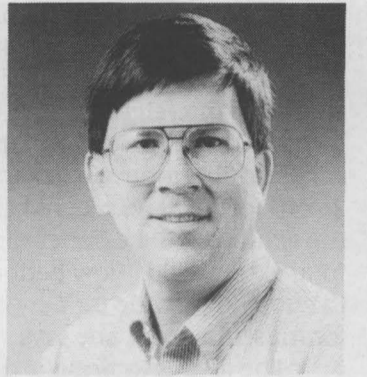
Edward Barkocy 35
2151



Linda McNeil 15
9706



Ray Leuenberger 30
2645



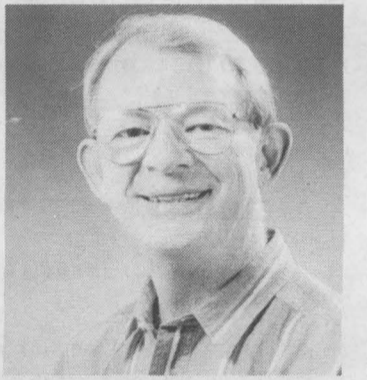
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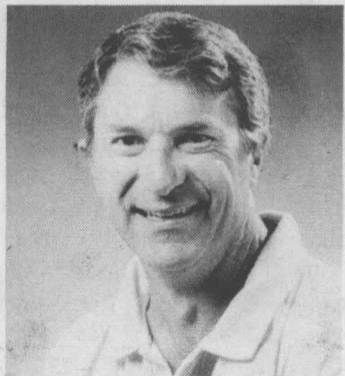
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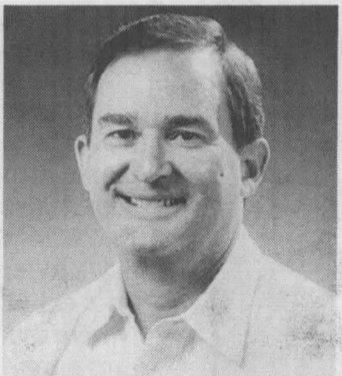
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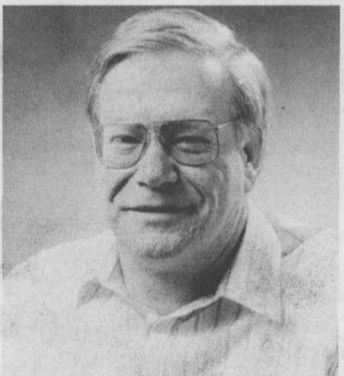
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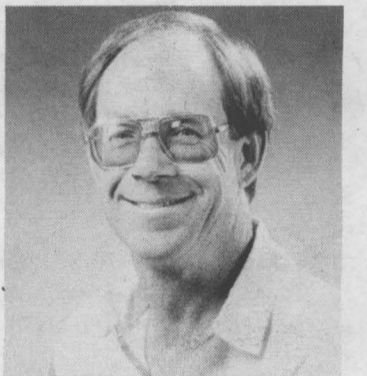
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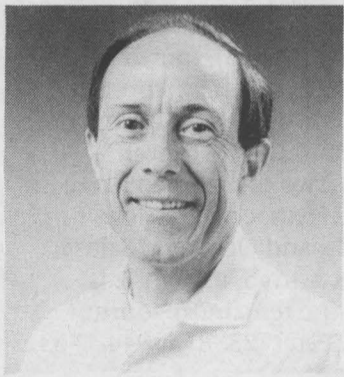
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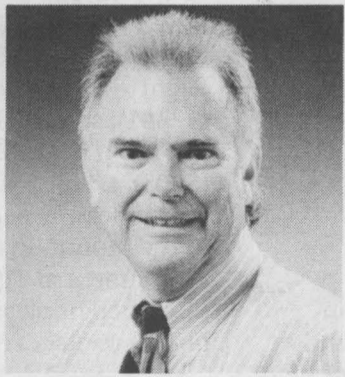
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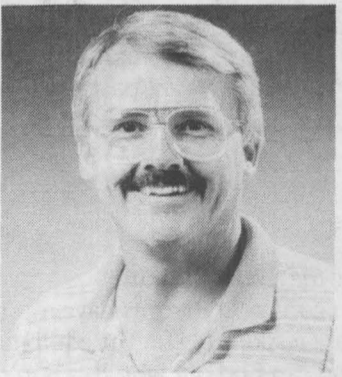
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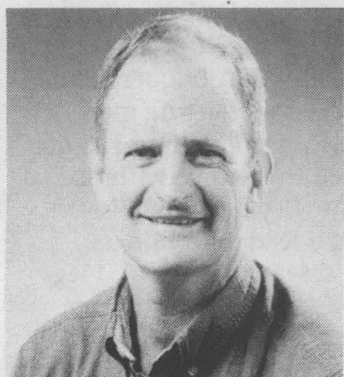
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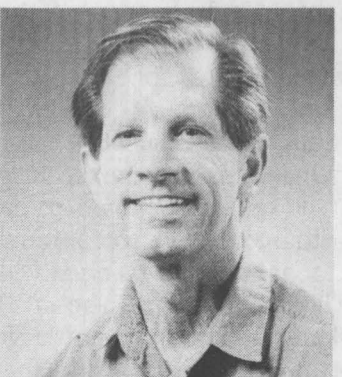
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Jack Jakowatz 20
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Laura Loudermilk 15
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Sidney Domingues 20
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Retired Sandian pays homage to father, brother

His father's memoirs are first in war history series named for his brother

By Philip Higgs

Lab News Intern

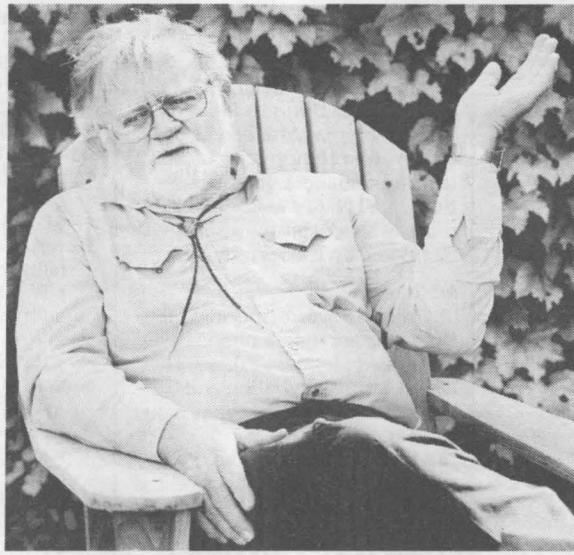
"Somehow, my family seems to be making a name for itself," says Pat Brannen, a former systems analyst with Sandia, and he seems to be right. His father was a hero in World War I, the school house in his boyhood Texas town has been named after his mother, and Pat himself is now engaged in making a name for his older brother as well.

His brother, Carl Andrew Brannen, Jr., was shot down over Japanese waters in May 1945 and never found.

Pat, who retired from Sandia in 1991, is the author of, among other things, "Washed With Tears," an elegy to his brother published in *Collective Heart: Texans in World War II*. The brothers were "especially close," says Pat, writing that his brother "was there when I swallowed the safety pin and it was he who sounded the alarm."

With the help of his sister, Frances Brannen Vick, Pat hopes to repay that boyhood kindness. Fran and Pat have established, with Texas A&M University Press, a series of war histories in their brother's name. To introduce the series, they begin with an older Carl Brannen who fought in an older war.

Carl Andrew Brannen, Sr., was 19 when he left Texas A&M University to join forces with the thousands of other young men going overseas to fight in the Great War. He survived and emerged a member of General Pershing's Honor Guard, a select group of soldiers chosen by the general to represent the American Expe-



PAT BRANNEN

ditionary Forces in ceremonial events throughout Europe.

As a Marine in the 4th Brigade, Carl Sr. fought in every major action of his unit, a brigade nicknamed "devil dogs" by German soldiers. He won five battle stars with the 6th Marine regiment, a unit that saw more action than any other in a war where casualties rarely fell below 5,000 soldiers a week.

While Carl never openly spoke of the war, late in the 1930s he was persuaded to record his memories. It is this stack of pages that the Brannen siblings found in a cedar chest some years later and that now forms the heart of *Over There: A Marine in the Great War*, the first of the C.A. Brannen series of war histories.

"I had probably seen Dad's memoirs before World War II," says Pat. "I think that's how I learned the difference between the army and the Marines." By this Pat reinforces what he writes in his afterword to *Over There*, "Before the Footprints Fade": "Dad and I never had an actual conversation about his World War I experiences."

Any detail missing from the "unusually

taciturn" Carl's memory is filled in by Pat's afterword. To make "connections with the tracks [my father] made," Pat traveled to each of those sites where his father fought and won battle stars: Belleau Wood, Soissons, St. Mihiel, Blanc Mont, and Meuse-Argonne. He describes them all.

"When I go to a historical site — to the battle of Agincourt, say — I want to hear in my mind the clamor of the fighting," says Pat. "Or if I'm studying the Great War, I want directions to the exact spot where the Red Baron was shot down."

The profits from this book will help fund the publication of further histories. "We are hoping this book will be the seed that will start a series of memoirs" in honor of Carl Jr., says Pat.

Over There is annotated by the late war historian Col. Rolfe L. Hillman and military author Peter F. Owen, who provide explanations (and sometimes corrections) to the unedited memory of Carl Brannen, Sr.

Pat will be signing copies of *Over There: A Marine in the Great War* at Borders Books (in Winrock Mall) on Tuesday, Sept. 24, at 7 p.m.

Coronado Club

Sept. 12, 19, 26 — Thursday bingo night. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

Sept. 13 — Mexican Celebration. \$8.95 a la carte buffet 6-9 p.m. Floor show with Miguel Caro Mexican Dancers, 8-8:30 p.m. Music by Lumbre 7-11 p.m.

Sept. 20 — Dinner/dance. \$7.95 a la carte buffet, 6-9 p.m. Music by Coyote Moon, 7-11 p.m.

Sept. 22 — Sunday brunch buffet, 10 a.m.-2 p.m. \$6.95 all-you-can-eat buffet. Kids 3-12, \$1, under 3 free. Music by Star Lighters, 1-4 p.m.

Child care update

Here's the latest information about Sandia's Child Care Project. Results of this summer's child care task force needs-assessment survey (Aug. 30 *Lab News*) were shared with



seven different child care programs, reports Jann Levin (3343), Sandia Child Care Project leader. "KinderCare has backed off somewhat in its interest in building a center near the Eubank gate," she says. "It hasn't shut

the door, but representatives won't be visiting for at least two more months."

Two other chains and four local programs have also been contacted. One of these has expressed interest and is trying to see if it can obtain enough funding to pursue the project.

In the meantime, Shandiin (the DOE facility at Pennsylvania and "M" Street) has given Sandia 46 of the 92 slots in its center. It has extra room to possibly expand if the facility gets too full and funding can be found. Its space for children under two is filled, and the wait for slots is a few months now. The class for two-year-olds has a smaller waiting list and there are still openings in the three- to five-year-olds classes, as well as the new kindergarten class. Call Elizabeth or Chris at 845-5013 for more information or stop by any time to visit.

Kirtland will open a second facility near Carlisle and Gibson in January, adding 200 spaces to the more than 300 now being served. More space will open in the main facility near Texas and Gibson as families move to the new facility, but you should get on the list now if you wish to start in January. Call Jennifer, or anyone else in the main office there at 846-1902.



SOYBEAN HYDRAULICS — Ernie Salas (7614, left) pumps soybean-based hydraulic oil into a grader parked inside Sandia's Motor Pool. Sandia is field-testing the agricultural-based oil in 16 pieces of large equipment for the University of Northern Iowa's Ag-Based Industrial Lubricants (ABIL) Research Program, which developed the new product. ABIL Director Lou Honary discusses with Salas the benefits of the soybean-based oil, which replaces traditional petroleum-based oil.