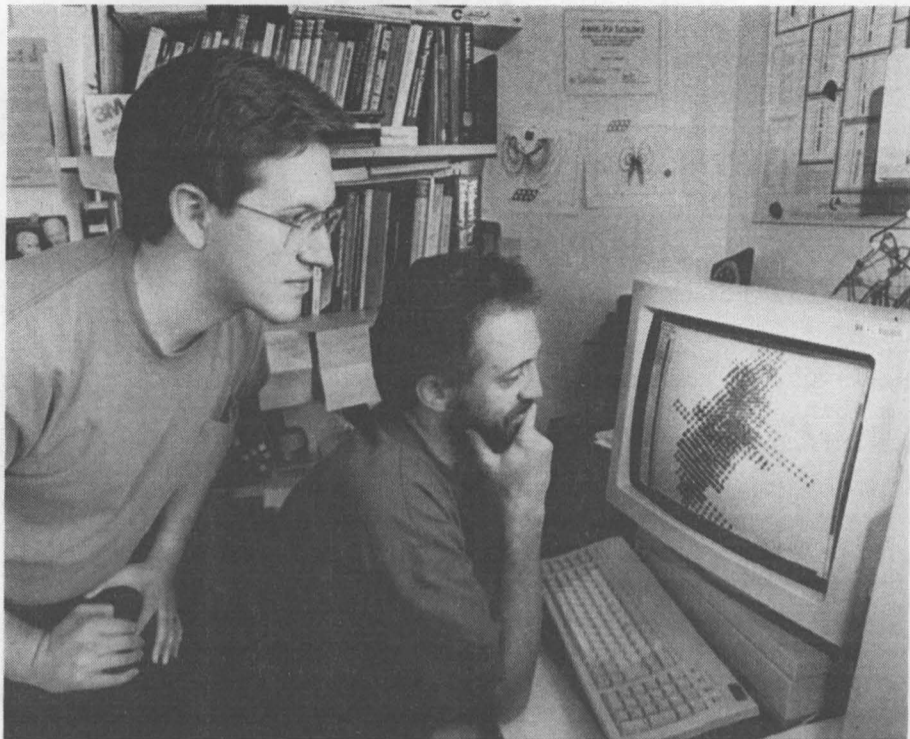


Finding the right fold: Sandians develop speedy method to predict protein structures

Extremely fast computer program quickly approximates a protein's folded structure



PROTEIN PREDICTORS — Bill Hart (1422, left) and Sorin Istrail (1423) ponder their very rapid computer simulation of the approximate shape of an active protein. A method that can shorten the years it may take researchers to determine the shapes of such proteins is the object of worldwide research.

By Neal Singer

Media and Employee Communications Dept. 12620

A protein may have more twists and bends than a bagful of pretzels. To decipher its structure in a laboratory may take years. The lengthy analysis hampers researchers trying to duplicate viruses, hormones and enzymes, or blood, bone, muscle, and skin — all proteins — to help patients regain their health.

Now, the first extremely fast computer program that, within minutes, can mathematically approximate the structure of any protein has been developed at Sandia.

"This is the first algorithm guaranteed to quickly generate a protein structure that somewhat approximates the final folded shape," says computational mathematician Sorin Istrail of Algorithms & Discrete Mathematics Dept. 1423, who with colleague William Hart of Applied & Numerical Mathematics Dept. 1422 developed the algorithm.

Development of the Sandia algorithm was funded by the DOE's Office of Scientific Computing through its Program in Applied Mathematics, and complements Sandia's strong effort to develop algorithms in supercomputing.

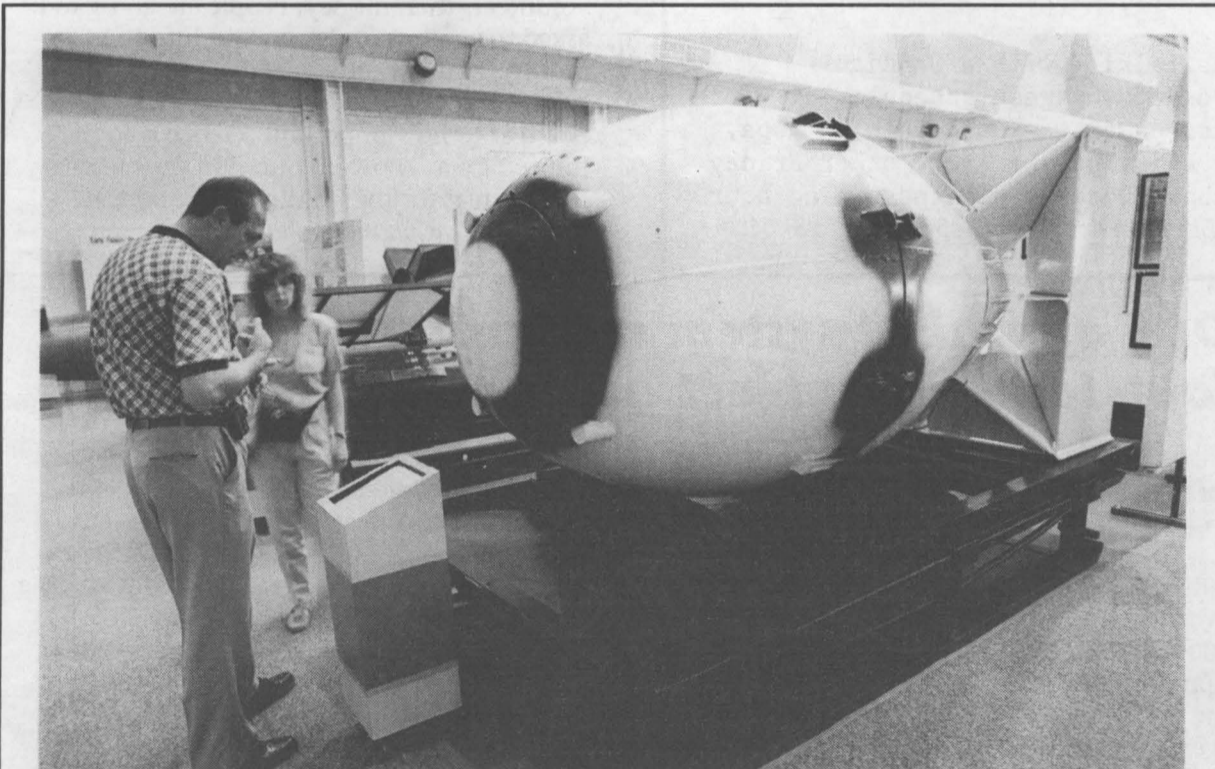
While most objects — shirts, sheets, newspapers, camping equipment —

"This is the first algorithm guaranteed to quickly generate a protein structure that somewhat approximates the final folded shape."

(Continued on page 4)

Sandia National Laboratories **Sandia LabNews** Vol. 47, No. 18 September 1, 1995

Domenici reports to Sandians on budget battles, labs' outlook



EACH YEAR some 200,000 visitors enjoy exhibits, such as this replica of the Fat Man atomic bomb, displayed at the National Atomic Museum on Kirtland Air Force Base in Albuquerque. DOE and its predecessors have operated the museum since its opening in 1969. Now DOE is preparing to transfer management responsibilities for the museum to Sandia. See story on page 4.

Sen. Pete Domenici, R-N.M., noting "we have a lot of serious business to talk about," told a standing-room-only crowd of Sandians Tuesday that DOE and the three "great nuclear deterrent national labs" have, for the time being, survived efforts in Congress to do away with the department and turn the

labs over to the Department of Defense.

But the fight is not over. Domenici, fresh from this year's continuing budget battles as chairman of the Senate Budget Committee, said that for 1996, "DOE is going to be in place, DOE is going to be around, and DOE is going to run the three big nuclear labs."

He disclosed that the Defense Department is going to conduct a one-year study of the way the national labs are run and whether DoD could do a better job. "We have said to DoD, you engage in a one-year study," said Domenici. "You satisfy yourself" about the

For 1996, "DOE is going to be in place, DOE is going to be around, and DOE is going to run the three big nuclear labs."

(Continued on page 5)

Four teams get 'gold' in President's Quality Award process 6

Labs moves quickly to remedy Labor Department audit findings 8



6 Sixty-three high school students spend two busy weeks at Sandia

9 Two Sandians among nation's 'best and brightest' Hispanic engineers

This & That

Nonalcoholic Beers - During his remarks at the Aug. 15 DOE Weapons Recognition awards ceremony, new Sandia Labs Director Paul Robinson expressed some tongue-in-cheek disappointment, saying he had been looking forward to being picked up that morning by Sandia's Defense Programs VP Roger Hagengruber and DP Executive Assistant John Meinhardt (5002), who took Paul and some VIP visitors to the ceremony. Paul said he was looking forward to it because John promised he'd "have beers with him," but it turned out to be Rear Admiral Charles Beers, DOE Deputy Assistant Secretary of Energy for Military Applications and Stockpile Support. Admiral Beers presented the awards to the Sandia recipients. We'll tell you about them in our next issue; the Sandia President's Quality Award winners are featured in this issue (see page six).

I'm glad to report that Paul has a good sense of humor. He - and the rest of us, too - may well need it in the next few years. I wonder if it's too early in Paul's tenure for me to mention that I'm going to judge his early success by how long it takes him to get those infernal ugly yellow butt cans removed from the front of Bldg. 800?

* * *

Truthful panhandler - Speaking of beers, I don't give money to panhandlers, but I might have made an exception if I had seen this refreshingly truthful fellow and his sign, as originally reported in the *Wall Street Journal*: "Hell, why lie? I need a beer."

* * *

How Skunk Works got its name - I mentioned the book *Skunk Works* in the Aug. 4 *Lab News* and said I'd relate how the facility got its colorful name, after those of you who wanted to read about it in the book had that chance. The Burbank, Calif., Skunk Works, originally a Lockheed facility and now Lockheed Martin's, developed the U-2 and Blackbird spy planes, stealth technology, and much more, all under extremely tight security.

According to author Ben Rich, former leader of the Skunk Works, the name is derived from the L'il Abner comic strip by Al Capp. The special Lockheed facility started up in 1943, operating out of a big circus tent next to a foul-smelling plastics factory. At that time in the comic strip, a character regularly made a powerful drink in an outdoor still called "the skonk works," throwing in old shoes and dead skunks to give the brew its powerful kick. Because the Lockheed place smelled so bad, a designer working there answered the phone, "Skonk Works" one day. Soon most of the workers were calling it that, and the name stuck. As explained in a footnote in the book, "In 1960, Capp's publisher objected to our use of Skonk Works, so we changed it to Skunk Works and registered the name and logo as trademarks."

* * *

Depressed workweek schedule - I was talking with a Sandian recently who referred to the Labs' "depressed workweek schedule." I said, "You must mean the optional compressed workweek schedule." "Nope, I mean depressed," he replied. "I really enjoy having every other Friday off, but then I get depressed thinking about working all those nine-hour days for the next two weeks." - Larry Perrine (845-8511, MS 0129)

'I believe in your missions,' Rep. Bill Baker tells Sandians

Congressman Bill Baker (R-Calif.) came to Sandia/California last Friday to report on "What's Up in Washington" and take questions from a roomful of more than 100 Sandians in the 912/121 conference room (also videolinked to Sandia/New Mexico).

The congressman heralded the work of the 104th Congress led by a Republican majority focused on fulfilling its 100 day "Contract with America." He also explained the plan for balancing the national budget over a seven-year period.

"We want to stimulate creativity and productivity at the local level and you are a part of that," he told the Sandians. "We want to see that the [national] laboratories are more independent. We want to work together to spend those scarce research dollars more effectively."

Appreciates cooperative research

"I appreciate the national defense perspective as well as the budding CRADA [cooperative research and development agreement] programs that combine all the expertise we once had in military affairs, and bring it to bear on projects like preventing breast cancer." He applauded Sandia's cooperative research program with the Bay Area Rapid Transit District (BART), calling it "just one more story of how we can use what was once military strength, moving it to the private sector to make things better. . . . We are grateful to you and for the CRADA process that brings together all the forces of the economy, whether it is a local transportation district or General Motors [referring to work done at the Combustion Research Facility]."

Asked about the role of the national labs in education outreach with the impending budget cuts, Baker said, "It is going to be more volunteers than money. People are going to be asked to go more and more out into the community, and not only introduce what you do here at the labs, but also to bring kids on board as to how important science is to their future." To a follow-up question asking what the future is for the funding of schools, he

(Continued on next page)

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LOCKHEED MARTIN

DOE appraisal system recognizes seven 'outstanding' subject areas at Sandia

Thirty-eight Sandians have been honored for their contributions to Sandia's successful scoring in a DOE appraisal process.

The DOE/Sandia Appraisal System was jointly developed by DOE and Sandia in 1990 to satisfy the requirements of DOE Order 5000.2B requiring a Multiprogram Laboratory Appraisal. The DOE Kirtland Area Office uses the system to annually appraise Sandia's management of specific milestone activities in four general areas: Institutional Management, Programmatic Performance, Operations Support Performance, and Administrative Performance.

The system is based on a jointly negotiated agreement that defines specific objectives and milestones to be appraised at the end of each fiscal year. This approach includes designating owners of each area from Sandia and DOE and negotiating milestones and metrics.

A special recognition ceremony recently honored subject-area team members. As part of the ceremony, then Sandia Executive VP Jim Tegnalia and acting DOE Area Manager Mike Zamorski presented plaques to each team, and the 38 team members each received certificates. Elizabeth Gonzales-Pimentel of Contract

Management Department 10103 says all employees should be aware that the quality work they perform at Sandia either directly or indirectly contributes to the DOE/Sandia Appraisal System subject-area activities and the Sandia end-of-year score assigned by DOE.

"The appraisal system is a vigorous one involving extensive documentation," she says. "Given the scrutiny of DOE's appraisal, the stretch goals of the milestones, and the narrow rating band, the achievement of an 'Outstanding' is praiseworthy."

The "Outstanding" rating is an equivalent score of 96 percent to 100 percent. The next lower score, "Excellent," is an equivalent score of 86 percent to 95 percent.

The following are the Sandia subject-areas that were identified as "Outstanding" by DOE:

FY92 - W88/MK5 activity

FY93 - Occurrence Reporting; Waste Isolation Pilot Plant (WIPP); Laboratory-Directed Research and Development (LDRD); Technology Transfer

FY94 - Non-Nuclear Consolidation Management; Institutional Planning; Technology Transfer

'Straight-Line' monitoring project lets remote users peer into nuclear storage facilities

'Fast Track' demo at scattered sites displays monitoring benefits

By Nancy Garcia

California Reporter

With a few clicks on a computer screen in California, Sandian Brad Mickelsen can peer into an underground storage room lined with drums of nuclear material at the Pantex Plant in Amarillo, Texas, where he recently installed sensors and a surveillance camera.

These storage magazines were already outfitted with devices to signal whether the door is open. Their doors are barricaded by boulder-size stones that must be moved by forklift before anyone can enter. But as part of a project Brad manages from the Advanced Systems Engineering Dept. 5371, the remote detection hardware has been installed to demonstrate enhanced safety, security, and verification capabilities.

Dubbed "Straight-Line," the project was started by Sandia Defense Programs Division 5000 VP Roger Hagengruber to solve the need for nuclear weapons material accountability at the end of the Cold War.

Rather than relying solely on records of what has been placed into a seemingly impenetrable room, Brad says, accountability measures can now include continuous monitoring within the room. Sensors detect motion, temperature, radiation dose emitted, and total cumulative dose emitted. Also, fiber optic loops on top of the drums indicate whether the seal has been broken.

The video camera in the magazine takes pictures periodically and can also snap an image upon the request of a user based in

another state or country. For instance, someone might request a photo if information displayed on his or her computer screen indicates a change in status in the storage area. The camera also captures an image in response to such occurrences as the door opening or the fiber optic seal being broken on a container. The computer program signals users about any unusual circumstances.

Encrypted data

All the information is encrypted and verified as it is recorded. The sensors transmit the data via radio waves to a computer outside the magazine that is powered by photovoltaic cells and an array of car batteries. From there, the encrypted information can be sent to users on site for real-time oversight. The information, especially archived records, can also be sent over the Internet to official monitors in other states or overseas.

For ease of use, the monitoring system includes a point-and-click computer interface that shows the geographic location of each monitored site and the layout within the magazine.

Brad had previously worked on intelligent



HANDS-ON — Brad Mickelsen (5371) installs sensors inside a storage magazine at the Pantex Plant. They provide continuous monitoring of the room.

container systems, and folded that background into this project, which has been under way 18 months. Contributors from a half-dozen centers in California and New Mexico have developed the demonstration. Besides having been installed on 20 containers at Pantex, the system has also been set up for demonstration purposes in a mock storage room at the Cooperative Monitoring Center in Albuquerque, as well as a mock storage room at Sandia/California. The group is discussing installing the system at the Nevada Test Site too.

This demonstration of Straight-Line, called Fast Track, will use sites around the country as a test bed for optimizing cost and performance during the next fiscal year.

Safety/security too

Other remote monitoring systems include CAVIS, the Continuous Automated Vault Inventory System, which is used to monitor stored nuclear material for accountability purposes. Also, Sandia participates in the DOE-sponsored MIMS project (Modular Integrated Monitoring System), which uses multiple communication links to track material and processing. A project such as Straight-Line might tie into a larger system such as MIMS, Brad says.

Although international treaty verification is the main purpose for the project (which, by molding together existing technologies, takes a "straight line" to a solution), the system also demonstrates safety and security benefits, Brad says. A single system can be used for treaty verification and to ensure caretakers that the material is in place, unaltered, and stable.

In this way, he says, it is "the first distinct attempt" at Sandia to join international and domestic needs into one system. From Albuquerque, the project has been assisted by Sandians working for both Center for Nuclear Security Systems 5800, which typically addresses domestic concerns, and Monitoring Systems and Technology Center 9200, which advises other countries. Electronic Subsystems Center 2300 has also played a significant role.

Overall, some 39 Sandians from New Mexico are contributing to Straight-Line. Another 22 from California are participating. Nearly a dozen people at the Pantex Plant and Tri-Lab office in Amarillo have assisted. Help has also been provided by staff from DOE field offices and Allied Signal in Kansas City.

Sandia California News

(Continued from preceding page)

answered, "I would like to get the federal government out of education. We should return the power to the states."

Now that the Soviet Bloc is dissolved, Baker said, the main concern is that "we will turn our backs on preparedness as we did after World Wars I and II. We know that China has given Iran nuclear help; Iraq has been building nuclear plants several times — once the Israelis took care of the problem, the second time we had to do it. . . . We must have a great base of knowledge. That's what SDI [the Strategic Defense Initiative] has been all about — Brilliant Pebbles and all that technology for watching our neighbors." He added, "We have to be prepared, and that's what 15 percent of the [US] budget is going for — to make sure

technologically we are superior to everyone. . . . If we fall asleep and become number 2 or 3 we will have war, and will probably be the losers."

He was critical of the expensive Superfund cleanup program. "It has collected money all over the world and lawsuits that claim it is somebody's else's fault. It is cheaper for them to go to court and stay there for life than clean up the mess." He said new legislation has been introduced to more clearly define the process.

In concluding, Baker said he was proud to represent Sandia and its district in Congress. "For the first time in 25 years you have a person in Congress who believes in your missions, all of them!"

On Saturday morning Baker held a breakfast in Concord featuring House Majority Leader Dick Armey of Texas as the keynote speaker. After that Baker and Armey — as well as Rep. Richard Pombo (R-Calif.) — visited Lawrence Livermore National Laboratory for briefings on non-proliferation, arms control, international security, defense, and nuclear technologies. Sandia Deputy Director John Crawford also took part in the discussions.

— Barry Schrader



REP. BILL BAKER talks to Sandians during an employee dialogue session last Friday.

Sandia will assume management of Atomic Museum

DOE, Labs now making final preparations for transfer

DOE's Albuquerque Operations Office is preparing to transfer to Sandia its longtime management responsibilities for the National Atomic Museum.

The museum, located on Kirtland Air Force Base in Albuquerque, is the nation's largest unclassified repository for artifacts of the Atomic Age (see "The National Atomic Museum"). It has been operated by DOE, and DOE's predecessors, since the museum's opening in 1969.

DOE/AL initiated the transfer primarily because its management believes the museum would benefit from Sandia oversight, says Deborah Payne (12670), Labs Program Manager for Protocol and Community Relations. The new arrangement mirrors other museum operations within DOE, including the Bradbury Museum (operated by Los Alamos National Laboratory) and the American Museum of Science and Industry (operated by Oak Ridge National Laboratory).

A few vacancies expected

Two project teams — one at DOE and one at Sandia — began developing a feasibility study and transfer plans in May. The Sandia team, chaired by Deborah, included representatives from Laboratories Services Div. 7000, Business Management and Chief Financial Officer Div. 10000, and Human Resources Div. 3000.

She expects the official transfer to occur sometime early in the new fiscal year, possibly in October. At that time, the museum director

will begin reporting to her.

The seven full-time DOE employees who staff the museum have been given the option of

The National Atomic Museum

The Sandia Atomic Museum was opened to the public in 1969 under the Defense Atomic Support Agency Administration and transferred to the Energy Research and Development Administration (DOE's predecessor) in 1976. The National Atomic Museum Act of 1991, signed by President Bush, established it as the nation's official atomic museum.

In recent months the museum has remodeled and added several new exhibits, including an authentic B-29 Superfortress that serves as the museum yard's centerpiece.

Other noteworthy displays include replicas of the Fat Man and Little Boy atomic bombs, histories of atomic energy development and the Manhattan Project, the American flag that flew over the Trinity Site, a B-52 nuclear bomber, and several US intercontinental ballistic missiles and cruise missiles.

The museum draws some 200,000 visitors a year. Admission is free.

becoming new Sandia employees or being transferred to other positions within DOE. Any vacated positions may be filled from within Labs' ranks.

DOE/AL's public information reading room, now located at the museum, will not be transferred to Sandia but instead will be moved to a new location. The reference book section will remain on site. The museum shop will continue to be managed by the National Atomic Museum Foundation.

Labs top executives are pleased about the proposal, says Deborah, because the National Atomic Museum may provide an opportunity to showcase many of Sandia's technical achievements.

"As a result of our national security mission, Sandia has a lot of resources and expertise relevant to the museum's charter," she says. "We hope to raise awareness of our historic role and current missions through the museum's large number of visitors."

Joni Hezlep, the museum's current director, says Sandia can provide technical expertise, human resources support, exhibit support, and publicity never before available to the museum.

"This new relationship will help the museum improve and grow," she says. "We're pleased with Sandia's interest."

The museum would, however, maintain an appropriate balance of Sandia- and non-Sandia-related exhibits. "It will remain, first and foremost, a national institution devoted to preserving and displaying the nation's nuclear heritage," says Deborah. — *John German*

Protein folds

(Continued from page 1)

are inoperative until unfolded, scientists agree that only when a protein folds is it able to act. Born in a biological cell as an inert chain of amino acids, a protein folds into a complex pattern. The curves of its final shape, as well as the molecules that form them, help determine the sites in the body at which the protein can dock and interact.

Parachuting into the area

"For us, exactness isn't such an important issue," Sorin says. "Current protein-folding software can use our approximate structures to define a starting point for a more refined folding process, and thus avoid much of the cost of starting a great distance from the eventual outcome."

The new algorithm acts as a kind of airlift for computational scientists, parachuting them in at a significant distance up a research trail that winds through a maze of possible but improbable folds before arriving at a protein's final shape.

Says Bill, "This research into biological macromolecules will help to rapidly devise antitoxins and antidotes against chemical and germ warfare, and fabricate better, lighter-weight materials to protect troops against cold, wet, and radiation." Extensions of the method also should expedite research into organic electrical conductors. These are grown from large molecules called polypeptides and incorporate nonstandard amino acids.

The new algorithm acts as a kind of airlift for computational scientists.

The new algorithm is so quick, even on a desktop computer, because the number of computational steps it requires is three times the number of amino acids in the protein, whatever its length — a factor of increase called linear.

This contrasts with most current folding algorithms, for which the number of steps increases exponentially with the length of the protein. To compute the structure of a large protein with these algorithms could take a supercomputer longer than the age of the universe.

The algorithm's logic is based on a model of protein folding developed by Ken Dill, direc-

tor of the Center for Statistical Physics of Macromolecules at the University of California at San Francisco.

The mathematical perspective of the Sandia researchers, Dill says, has generated "a new technique and a different outlook."

"It's as though you want to deliver a package to a certain address in Oklahoma," he says. "The Sandia method is like a rocket. In a very short amount of computer time, they can send their package through outer space to Oklahoma" — though not, he notes, to the precise

(Continued on next page)

How the Sandia algorithm works

Ken Dill of the University of California at San Francisco used a square lattice as a frame on which to portray the changing shape of proteins as they folded in an aqueous solution. He included the assumption that hydrophobic amino acids, which dislike water, moved away from the fold's surface and toward its center. New contacts between these originally distant amino acids were interpreted to mean, physically, that a more stable protein shape had been created, and computationally, that the energy state of the folding string model had been lowered.

A protein's final, most stable shape therefore should correspond to the model's lowest energy state.

To more quickly approach this lowest energy state, the Sandia algorithm categorizes hydrophobic amino acids according to their even or odd position in the protein sequence, theoretically snips the protein chain at roughly its midpoint, and joins sequences of even hydrophobics on one half the string with odd hydrophobics on the other half, somewhat like a zipper joins

sequences of compatible rungs. Hydrophobic amino acid sequences too jumbled to connect with their opposite numbers in this process are pressed out of line to remain outside the core of the protein.

Though imperfect, the method creates enough contacts to lower the protein's energy state to at least three-eighths of the energy of the optimal protein fold. For example, if the optimum's energy is -8, then the Sandia algorithm creates a protein folding that has energy less than or equal to -3.

"We believe that the relatively small percentage of the energy range we're excluding contains a large percentage of the total number of possible folds," says Bill Hart (1422). "Empirical evidence indicates lots of possible folds with energy close to maximum but very few with energy close to the folded state."

Biologists believe that the folded state of a protein is unique, and that there are very few forms possible for a protein to assume in its lowest-energy states. Otherwise, the same protein could fold into multiple forms.

Domenici

(Continued from page 1)

labs — that they are being run efficiently, they meet national security missions, they are doing their cleanup work expeditiously.

He said the study "is going to say to all of us and Congress" whether the DoD can run the labs, "and if they have found the way to do that right." If not, he says, he would expect the labs to stay within DOE.

"I believe we will come out of this with a pretty good bill of health."

(In brief comments to reporters afterwards, Domenici said he doesn't think DoD wants the job. "I don't think the DoD truly wants to be the maintainer and protector of the [nuclear weapons] stockpile," while also carrying out its central military responsibilities.)

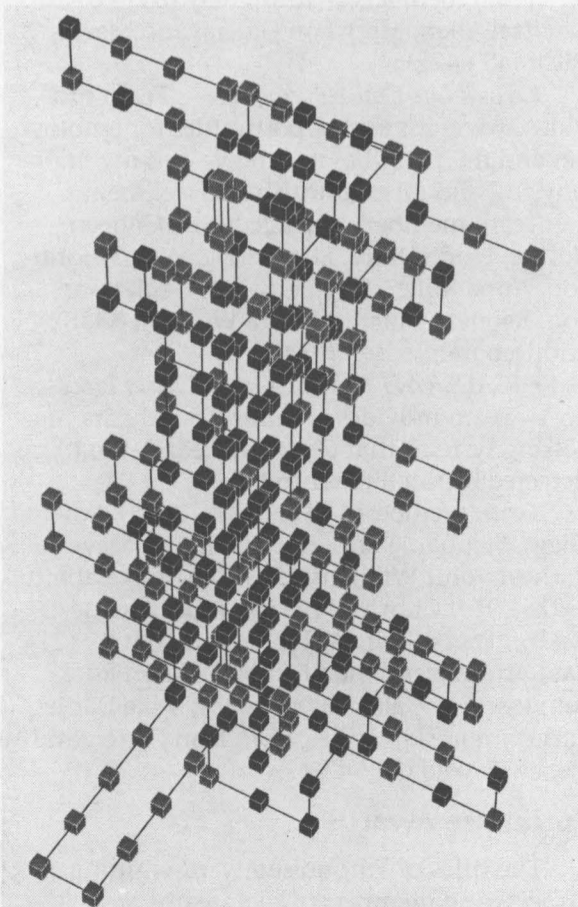
Domenici said DOE, to fend off the attacks, must continue to become more efficient and to find ways to reduce rules and regulations "that tie everybody's hands." He said he expects that DOE will do so — that it will demonstrate new

(Continued from preceding page)

address." Their method is very fast at getting to fairly compact structures, but not to the one right answer."

Sorin and Bill are now working with Dill and his colleagues, who have developed computer techniques for predicting the structure of proteins with up to 90 amino acids. Using the Sandia supercomputer — the fastest in the world — to combine the two sets of algorithms should make possible the discovery of protein structures with more than 100 amino acids, the low-end range for human proteins.

According to Jonathan King, a molecular biologist at the Massachusetts Institute of Technology, "It's not just the computational advance but the biochemical insight [Sorin and Bill] incorporated. This means their simplifications, which allow rapid computations, may correspond to processes actually used by proteins as they fold."



QUICK-FOLD — In less than one second, the Istrail-Hart algorithm folds a protein — Triosephosphate Isomerase — into a shape that closely resembles its final conformation.

efficiencies, including more streamlined management that reduces overhead and bureaucracy.

"I believe we will come out of this with a pretty good bill of health."

"My goal is to keep [the nuclear deterrent labs] with the DOE," said Domenici. He said he believes that will probably happen. If DOE does less micromanagement, and "you do your part," he said, "we've got a great future."

The occasion for Domenici's talk was a town meeting with Sandia employees at the Tech Transfer Center auditorium, also televised live to Sandia/California. Domenici spoke for 35 minutes, then took questions for 20 more. He was introduced by new Sandia Lab Director C. Paul Robinson who said Domenici has had "an absolutely impressive" year. "We're delighted with the work you're doing on our behalf and on behalf of the nation," Paul said.

'A great state of flux'

Domenici noted that DOE, the laboratory system, and the three nuclear labs are "in a great state of flux. A very significant transition is in progress," he said. The labs are being buffeted by changes resulting from the end of the Cold War, the dissolution of the Soviet Union, and a "major, major event in fiscal policy: the general consensus that we should balance the budget sooner rather than later."

He said getting the nation's economic house in order is of extreme importance to the long-term future of the nation. He spoke passionately about the need to balance the budget, to reduce personal borrowing and increase savings, and to reform the current income tax system, "which is antigrowth, antisavings, and complicated beyond belief. We've got to throw it away." Yet he said any reformed income tax must be moderately progressive, not regressive, unlike the proposed "flat tax."

"We have to make Americans change in a



SENATORIAL PRIVILEGE — Sen. Pete Domenici (center) greets new Sandia Labs Director C. Paul Robinson (right) and Deputy Director John Crawford outside Bldg. 825 prior to Domenici's town meeting with Sandians Tuesday.

cultural way their attitude toward savings." He said he plans to promote legislation to encourage people to spend less and save more. "They won't be taxed on what they save."

In other major points, Domenici said once the defense authorization and the defense appropriations bills are completed and signed, the national labs will have a new and "exciting" mission of science-based stockpile stewardship tied tightly to their capabilities and the defense needs of the nation. For the next 20 to 30 years, he said, they will have responsibility for monitoring, maintaining, and assuring the safety, reliability, and effectiveness (including replacement of essential parts) of 4,000 to 5,000 nuclear weapons.

In somewhat of a surprise disclosure, Domenici said he believes he will eventually be able to support a comprehensive test-ban treaty. (The three weapons lab directors have said that with a program of above-ground simulations they can assure the integrity of the stockpile without underground testing. See "Paul Robinson, other DOE lab directors support nuclear test ban" below.) He said this change in his position depends on the national labs getting full support for their program of science-based stockpile stewardship, including weapons-simulation testing to ensure the reliability of the stockpile. Another proviso is the necessity to reserve the right to go back to testing if supreme national interest requires it to ensure stockpile safety. — Ken Frazier

Paul Robinson, other DOE lab directors support nuclear test ban

Science-based Stockpile Stewardship is 'soundest approach'

Lab Director Paul Robinson and the directors of DOE's other two nuclear weapons labs have assured the Clinton administration that the integrity of the US stockpile can be maintained through Science-based Stockpile Stewardship, without actual weapons testing.

Paul joined Los Alamos Director Sig Hecker and Lawrence Livermore Director Bruce Tarter in responding to the President's Aug. 11 announcement that the US will forego even very small scale hydronuclear testing to maintain the stockpile.

He says Sandia can meet its obligations through use of major laboratory pulsed-power facilities such as Hermes and Saturn, which can simulate the outputs of nuclear explosions without requiring actual tests. The challenge, he says, is to carry forward this approach for all aspects of nuclear weapons design and assurance.

"The Science-based Stockpile Stewardship

approach represents the soundest approach of which we are aware to ensure a safe and reliable stockpile without carrying out nuclear tests," Paul said in response to the announcement. "I am particularly satisfied with the President's safeguards initiatives to ensure that the laboratories' capabilities to carry out their stewardship roles will not be eroded.

"The foundation of our capability has always been the competent experts on whom we rely — it is crucial that we maintain the ability to keep these experts immersed in the relevant technologies that are so unique to nuclear weapons systems.

"We must provide the critical facilities and tools that are needed for this purpose in order to ensure that this nation's nuclear weapons meet the same standards of safety and reliability which the country has relied upon in the past and on which it will rely in the future."

This year's Sandia President's Quality Awards announced; entries, achievement levels up

Top-level Gold Awards bestowed for first time this year

An important milestone was reached in this year's Sandia President's Quality Awards (PQA), announced this week. Four Gold Awards, the highest level in the PQA process, were granted. This was the third year of the PQA process and the first in which Gold Awards were bestowed.

The PQA is based on the Malcolm Baldrige National Quality Award criteria and principles.

The actual awards will be presented by Lab Director Paul Robinson at a PQA ceremony in the Technology Transfer Center (Bldg. 825) Oct. 31. The ceremony will be telecast live to Sandia/California.

"The PQA program is a meaningful tool Sandians can use to assess their work and find opportunities to improve it," says Vicki Northington of Corporate Quality Excellence Dept. 12909, who participated in this year's program and will coordinate it next year. "It is an excellent way to measure customer focus, process management, and results."

The number of nominations was up again this year: There were 86 the first year, 110 last year, and 120 this year. Awards went to 17 teams, and six others were selected for special recognition.

Vicki says 43 Sandians who had been trained in Malcolm Baldrige and PQA criteria volunteered to score nominations; 20 of them participated last year.

There were no Gold Awards the first two years, but four this year; five Silver Awards the first year, 10 last year, and six this year; 11 Turquoise Awards the first year, five last year, and seven this year; 12 Special Recognition awards the first year, 11 last year, and six this year.

Team member names and organization numbers or company names in the following list of winners are those submitted with nominations.

Gold Awards

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



FAREWELL, AL — Does Al Narath seem just a little too happy here? We hope it's not solely because he's now relieved of his six-year burden as Sandia's President. Al shares a light moment with Virgil Dugan, long-time Executive Staff Director and now Director of the new Laboratory Effectiveness Program Management Center, at an informal "farewell" reception Aug. 17. The reception marked Al's departure from Sandia, which he joined in 1959, to become President of Lockheed Martin's new Albuquerque-based Energy and Environment Sector.

- *Active Ceramics Team* — Met goals and requirements of DOE assignment to establish production readiness for the three neutron generator power supply active ceramics (the current stack, voltage bar, and rod) and provide active ceramics to the neutron generator development program. (1994 Silver Award winner)

Team members — Paul Lemke (2400), Sandra Chavez, Steve Lockwood, Roger Moore (all 2476), Bernice Abeita (2476-1), Johnny Moya, Mike Romero (both 2481-3), Rick Pike, Tim Scofield, Jim Tichenor (all 2561), and Pat Appel (14508).

- *Sandia/New Mexico's 1995 Earth Day Festival* — Planned and produced Sandia's activities celebrating the 25th anniversary of Earth Day by focusing on creating awareness for environmental responsibility and motivating and educating attendees to participate actively in protecting the environment. (1994 Silver Award winner)

Team members — Fran Stohl (6212), Vickie Gutierrez (7513), Robyn Davis, Nancy Leishman, Maria Walsh (all 7572), Jim Fish (7581), David Chavez (7617-2), Lonnie Trujillo (7809-4), Jessica Busselle (DOE/KAO), and Christine Tuttle (KAFB).

- *Small Business Initiative Technical Assistance Program* — As part of a multi-DOE-lab program, Sandia's technical assistance effort provides limited rapid access to lab resources in the form of technical consulting, training, testing, and equipment use, as well as dissemination of information on funding sources supporting technology commercialization at small businesses. (1994 Special Recognition)

Team members — Tom Brennan, Joanna Chavez, Kim Ford, Barbara Jordan, Kevin Murphy, Leland Traylor (all 4221), Mike Birnbaum, Linda Huggins, and Subra Subramanian (all 8800).

- *Low-Residue Soldering Industry Collaboration* — Sandia and nine organizations from industry and the military collaborated to evaluate an environmentally friendly low-residue soldering technology that eliminates cleaning, particularly with ozone-depleting chemicals.

Team members — Dennis Huffman (2314), Dennis Anderson, Ronald Iman (both 6613), Mark Shireman (Alliant Techsystems), Gary Becka, Carol Krska (both AlliedSignal), Terry Munson (Contamination Studies Laboratories), Robin Sellers (Electronics Manufacturing Productivity Facility), Thomas Carroll, Mahendra Gandhi (both Hughes Electronics), Gary Falconbury, Roger Nickell (both Naval Air Warfare Center), Robert Burrell, Jeffrey Koon, Barbara Waller (all Texas

Instruments), Mark Siewers (US Air Force Material Command), and David Carlton (US Army Missile Command).

Silver Awards

Silver Award winners, with a brief description of their projects and team members, are:

- *GPS Satellite Global Burst Detector* — Team provides two components of nuclear detonation detection systems on Global Positioning System satellites. (1994 Silver Award winner)

Note: Those not on last year's award-winning team will receive awards at the Oct. 31 ceremony; others will be recognized but will not receive another award.

Team members — Norm Blocker, Paul Phipps (both 9206), Steve Yearout (9212), and Greg Christiansen (9222).

- *Corporate Ergonomics Program* — Fits the job and workplace to the worker by designing work requirements within the worker's physical capabilities.

Team members — Dr. Joe Boyce (3300), Larry Suzuki (3331), Patricia DeVivi, Charmaine DeWerff (both 3333-1), Deborah Mulligan (3524), Hugh Whitehurst (6613), Kevin Babb (7711), Don Bridgers, Nina Stewart-Poppelsdorf (both 7712), Vern Hermansen (7732), Margarita Ferguson, Dwight Miller (both 7733), David O'Brien (7911), and Eric Grose (12323).

- *Safeguards and Security Visitor Access Team* — Team is in the process of reengineering the Badge Office function while it continues daily customer interface.

Team members — Harry Chaney (7400), Larry Baca, Eric Martinez, Laura McCarty (all 7402), Rosemary Baca, Thomas Chaves, Samantha Flores, Melanie Florez, Merikay Hampton, Emma Johnson, Debbie Leon, Anna Lujan, Josephine Roybal, Cathy Sanchez, David Sealey, and Esther Welp (all 7437-1).

- *Direct Containment Heating Issue Resolution Project* — Team is evaluating the risk-significant severe accident direct containment heating issue for the Nuclear Regulatory Commission.

Team members — John Kelly (6414), Michael Allen, Mary Lou Garcia, and Martin Pilch (all 6422).

- *Total Life Concept Program* — Team provides awareness and opportunities for employees and their families to achieve and maintain physical and mental health and well-being.

Team members — Jessie Black, Colleen Bohne, Linda Duffy, Lisa Herzig, Wendy Johnson, Anna Miller, Sara Perovich, Heidi Swanson, Raquel Williams, Debra Wolf (all 3335), and Deborah Jensen (3343).

- *ICADS/GNT Satellite Ground Data Processing* — Team provides satellite ground data processing systems that report nuclear detonations detected by satellite sensors.

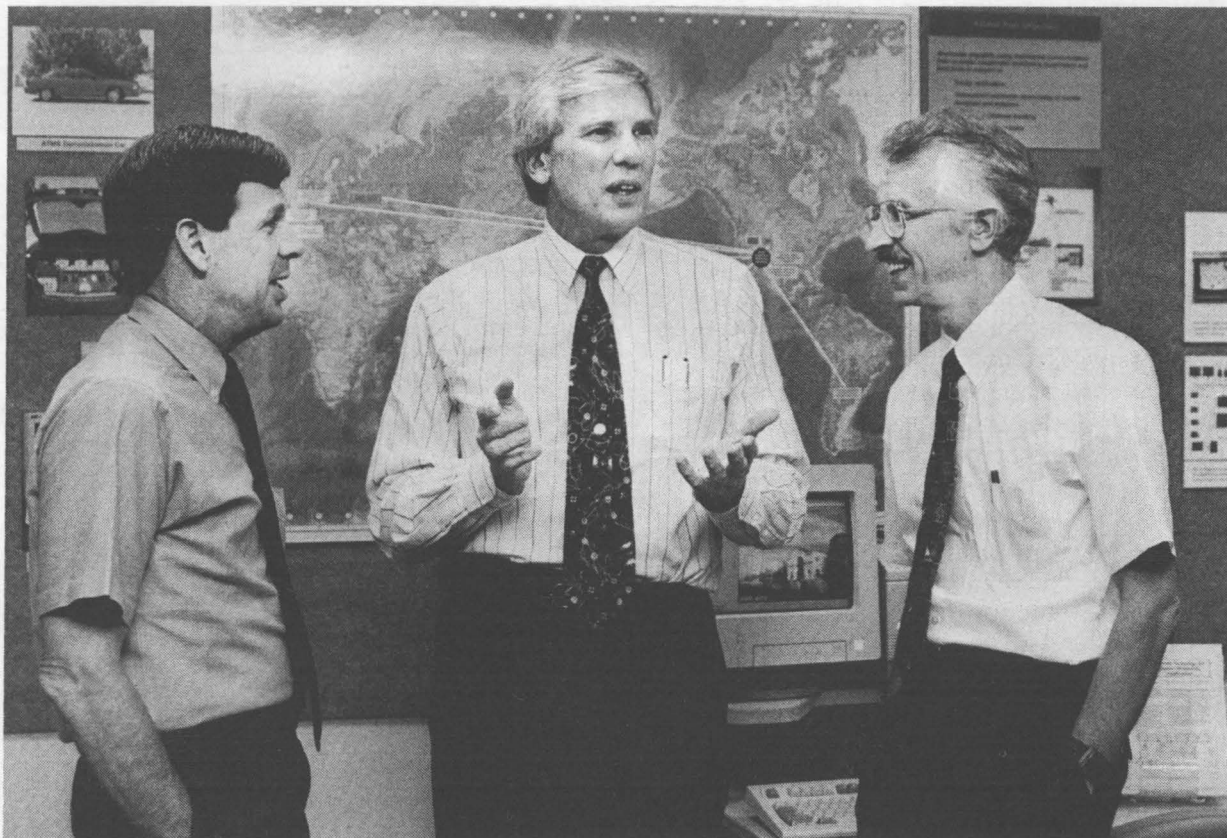
Team members — Sue Kelly (2665), Jane Diggs, Stephanie Eras, Darrell Filkins, Steve Ratheal, John Williams (all 9207), Bob Habbitt (9225), Tim Crawford (9414), Mike Bencoe (9416), Frank Ezell, Walt Huebner (both 9421), Paul Attermeier, Linda Dubbert, Karen Erickson, Joselyne Gallegos (all 9426), Mike Daniels, Earl Dombroski, Neil Horton, Don Porter, and Debee Risvold (all 9427).

Turquoise Awards

The titles of Turquoise Award-winning projects and members of their teams are:

- *Reengineering the Environmental Restoration Project, Phase 2* (1994 Turquoise Award

(Continued on next page)



BIG THREE — The directors of the three DOE nuclear weapons national labs, Bruce Tarter of Lawrence Livermore, Paul Robinson of Sandia, and Sig Hecker of Los Alamos (left to right), gather at Sandia's Cooperative Monitoring Center Aug. 17. It was their first meeting since Paul became Sandia President and Lab Director on Aug. 15. The occasion was a full day of discussions and meetings on nuclear policy, arms control, and non-proliferation with ambassadors from the Arms Control and Disarmament Agency, including Director John Holum, Chief Science Adviser James Sweeney, and Senior Policy Adviser Don Gross. The next scheduled get-together of top representatives of the three labs is next week in Washington. The three lab directors have been invited to testify Sept. 7 at a joint hearing of the House Science Committee's Basic Research and Energy Research subcommittees. Rep. Steve Schiff of New Mexico, Chairman of the Basic Research Subcommittee, has arranged for them to meet with Speaker of the House Newt Gingrich Sept. 8 to talk about the importance of the national labs. Sandia Executive VP John Crawford will fill in for Paul, who will be in France at his daughter's wedding.

! Take Note

The Sandia-sponsored Women's Program Committee needs donations for the Domestic Violence Shelter, supported by the Albuquerque Community Foundation. Items needed include kitchen and household items, office and school supplies, and personal toiletries such as shampoo and conditioner, brushes and combs, toothbrushes and toothpaste, unused makeup, etc. Clothing is not needed now, but large- or medium-size disposable diapers and children's books and toys (except stuffed animals) are always accepted. For more information, call Mary Gallegos (10244) on 845-9491.

The American Diabetes Association is holding "Walktoberfest," a 6.2-mile walk-a-thon, Sunday, Oct. 1, starting 8 a.m. at the Rio Grande Nature Center State Park. Walkers arrange sponsors in advance and all proceeds benefit the American Diabetes Association. For more information, call Caryn Lyons on 266-5716 or 800-254-WALK outside Albuquerque.

"Anne Frank in the World: 1929-1945," an internationally acclaimed exhibit of photos, videos, and a scale model of the secret annex where Anne Frank's family hid from the Nazis, will be at the University of New Mexico's Continuing Education Conference Center, 1634 University Blvd. NE, Oct. 16-Nov. 24. The exhibit, designed to teach the dangers of discrimination and the fragility of democracy, needs volunteers to document and staff the exhibit site, reception desk, office, and bookstore. For more information, call Regina Turner on 244-0614.

PQA achievement levels up

(Continued from preceding page)

winner) — Bob Galloway (6622), Robert Knowlton (6626), Denise Bleakly, Kay Schardein, Dick Thomas (all 7512), Sam Rogers (7513), Paul Aamodt (7581), Chris Aas, Lon Dawson, David Miller, Fran Nimick (all 7582), Sue Collins, Rarilee Conway, Richard Kottenstette, Tony Roybal, Warren Strong, Sharissa Young (all 7584), Cindy Ardito, Caroline Byrd, Dick Fate, Carole Lojek, Jerry Peace, and Dorothy Stermer (all 7585).

Note: Those not on last year's award-winning team will receive awards at the Oct. 31 ceremony; others will be recognized but will not receive another award.

- *Management of Weeks Island Sinkhole Investigations* — Ron Jacobson, Allen Sattler (both 6111), Stephen Bauer, Brian Ehgartner, Tom Hinkebein, Phil Kuhlman, James Linn, Martin Molecke, James Neal, Ray Ostensen, Jim Todd (all 6113), Sandy Ballard, and Glen Barker (both 6114).

- *Shoemaker-Levy 9 Impact on Jupiter* — Mike McGlaun, Allen Robinson, Tim Trucano (all 1431), Mark Boslough, and David Crawford (both 1433).

- *Center 7500 Sample and Analysis Management Process* — Katherine Becker, Ken Brouillette, Angela Chavez, Mica Comstock, Don Cook, Nicholas Durand, Mary Beth Garcia, Michael Gonzales, Kevin Kinney, Daniel McLaughlin, Deborah McLaughlin, Kevin O'Donnell, Douglas Perry, Pamela Puissant, Edward Rankin, John Rose, Douglas Salmi, Kenneth Sansone, Howard Seeley, Carol Skaggs, and Virginia Anne Taylor (all 7513).

- *Corporate Citizenship/Mission Success in Carlsbad* — Joe Archuleta, Olga Archuleta, Paul Brewer, Barry Goldstein, Carla Mewhinney, Janis Trone (all 6700), Andrew Orrell, Susan Pickering,

Richard Sarfaty, Leon Sikora (all 6742), Terry MacDonald, and John Ortiz (both 6743).

- *Division 2000 QC Team* — Ronald Diegle (2012), Robert Bickerstaff (2101), Carol Phelps (2273), Paul Lemke (2400), Carolyn Bucklen (2561), Thomas Workman (2601), and Jean Sena (2707).

- *T1565A Cryptographic Processor* — DuWayne Branscombe, Manuel Contreras, Brian Geery, Dave Gelet, Ron Kulju (all 2612), and Bill Abel (2515).

Special Recognition

Projects and team members receiving Special Recognition are:

- *Performance Management Plan for Represented Employees* — Jane Poppenger (2486-1), Charles Emery (3000), Dave Robertson (3531), Richard Garcia, Jo Titman Ryan (both 3545), Terri Giron-Gordon (3611), John Yip (5102), Bobby Grimes, Lance Miller (both 7435), David Leyva (7818), David Palmer (10220), Jacklyn Adams (12111), and Kenneth Ronquillo (12913).

- *Advanced Exterior Sensor Development Project* — Richard Heintzleman (2341), Duane Arlowe (5821), Douglas Adams, Deborah Fitzgerald, Debbie Lewis, Faye Monaco, Brian Naylor, Cynthia Nelson, Scott Nichols, Stephen Ortiz, Daniel Pritchard, and Patricia Sprauer (all 5838).

- *SmartWeld: A Model-based Process Design System* — Rick Eisler (1434), Steve Gianoulakis (1513), Kim Mahin (1807), Phil Fuerschbach, Gerald Knorovsky (both 1831), Chris Montoya (2784), Steve Kleban, John Mitchiner (both 6913), Ken Hicken (8205), Charles Ray (8272), Barry Hess, Kristin Phillips (both 8715), Jim Lathrop, Artie Ortega (both 8743), and Dave Messink (Intellicorp).

- *A-PRIMED: Agile Product Realization of electroMEchanical Devices* — Don Longcope

(1434), Mike Neilsen (1561), Terri Calton, Ron Jones, David Strip (all 2121), Arlo Ames, Rodema Ashby, Steffen Parratt (all 2122), Irl Vance (2481-2), Terry Smith (2483), Gilbert Benavides (2484), Ken Eras (2643), Neil Davie (2742), Jim Brown (2783), Kathleen Diegert, and Chris Forsythe (both 12323).

- *Crystalline Silicotitanate Development for Radwaste Separations* — Henry Westrich (6118), James Miller, Howard Stephens (both 6212), Norman Brown, Larry Bustard (both 6624), Elmer Klavetter (7585), Rayford Anthony (Texas A&M), and Richard Braun (UOP).

- *Manager's ES&H Job Aid* — Elsa Glassman (3524), Paul Page, Liz-Scott Patterson (both 5500), Suzanne Weissman (6000), Nancy Finley (6901), Sharon Walker (7258), Barry Schwartz (7500), Frank Antonich, Don Joe (both 7733), David Abrahams (8600), and Allison Davis (12150).

! Welcome

New Mexico — Bernard Clifford (9426), Shirley Tarks (9426)

Texas — Michele Caldwell (12324)

Retiree deaths

Mary Wood (75)	1841	July 2
Liveo Olivotti (74)	8412	July 4
Roy Tackett (70)	8445	July 8
Herrick Lauson (63)	2643	July 14
Cecil Fitzgerald (67)	3425	July 24

Organization numbers indicate retirees' positions at the time of retirement and may not correspond to present-day organizations.

Quick conciliation agreement reached with Labor Department after audit shows minor violations

Preparation pays off in a 'mostly positive' audit

The long-awaited federal Department of Labor (DOL) audit of Sandia/New Mexico took far less time than many people expected — four months from the time it was scheduled until it was culminated in mid-July with a conciliation agreement between DOL's Office of Federal Contract Compliance Programs and Sandia. The agreement addressed five problem areas, and the Labs has moved quickly to remedy the problems.

The audit covered many areas, including the Labs' Affirmative Action (AA) Program and all human resources policies and practices, including recruitment, external hiring, internal selections, compensation, involuntary terminations, medical and disability issues, upward movement, benefits, management succession plans, mentoring program, employee and student affirmative action programs, the diversity leadership program, and more.

Violations and remedies

Auditors found violations in five areas, including two technical issues addressing a requirement to post all employment openings (with the exception of executive management positions) with the New Mexico Department of Labor, and posting additional DOL posters throughout the Labs. The remaining issues included three employees not selected for two ASA (administrative staff associate) positions, denial of an opportunity for staff to apply for an MTS (member of technical staff) management position, and base salary compensation differences for nine women and minority employees.

In a conciliation agreement signed by Sandia and the Department of Labor on July 13, Sandia agreed to do the following:

- List all nonexecutive employment openings (those below director level) with the New Mexico Department of Labor.
- Post additional DOL posters throughout the Labs' buildings.
- Ensure that management eligibility requirements will be clarified by including the following statement in all management job vacancy announcements: "Eligibility for promotion to MTS manager positions is based on meeting qualifications specified in the job posting. Either an MLS or MTS staff member meeting the eligibility requirements may be nominated to any MTS or MLS manager position."

Good words from DOL & DOE

Department of Labor Regional Director Joe Garcia said the DOL audit team was impressed by Sandia's Affirmative Action program and the strong commitment of Sandia management to EEO and AA. He said the Labs' diversity leadership program and education outreach program are especially noteworthy.

Felix Ortiz, Manager of Human Resources at DOE/Albuquerque said, "The commitment of the parties from the onset during the on-site review set the tone for the cooperative and responsive nature of the review by Sandia and [DOL's] Office of Federal Contract Compliance Programs officials. This contributed greatly to the expeditious resolutions of findings and recommendations."

(This statement first appeared in the July 31 *Weekly Bulletin*.) Sandia also agreed that all managers will be informed of the policy as well as their responsibility to refrain from discouraging employees to apply for job vacancies.

- Brief all managers regarding promotion/selection policies and procedures, and about their Equal Employment Opportunity (EEO) and AA responsibilities.

- Pay three individuals one-time cash payments equivalent to amounts normally given to employees upgraded to the two ASA positions in question.

- Compensate nine minority and women employees with a base salary adjustment to align their salaries more appropriately with their peers.

The base salary adjustments and one-time payments to the 12 employees totaled less than \$40,000.

Expected for several years

The New Mexico site audit had been expected for several years; serious preparations began about 2½ years ago. The DOL notified Sandia/New Mexico about the audit in mid-March, and it began officially a month later when the Labs submitted many documents to the agency, which examined them before beginning the on-site part of the audit. The documents pertained to Sandia's Affirmative Action Program, hiring and promotion policies, compensation practices, and more.

After the agency examined the documents, nine DOL auditors then visited Sandia/New Mexico for a week in May, checking hiring, promotion, termination, compensation, and other records; talking extensively with Sandia VPs and directors about human resources practices and EEO/AA issues in their groups; and looking into some previously filed employee charges of discrimination.

Linda Vigil-Lopez, Manager of EEO and AA Dept. 3611, is pleased with the results. "Yes, the audit turned up some problems, but all in all we think our preparation, policies, programs, and good-faith efforts combined to show the Department of Labor that Sandia is committed to treating employees and prospective employees fairly and honorably.

"There were definitely some positive outcomes," she continues. "For example, the DOL did not turn up any systemic findings. The problems the auditors found were in general isolated and unusual. Much credit for this goes to the many Sandians who make a real effort to learn and follow our human resources, EEO, and AA policies and procedures."

Management briefings already done

Sandia has already completed briefing New Mexico managers (team supervisors and above). Briefings were held in August for each division.

Diane Nakos (3611), who led the team that planned and then conducted these briefings, says they focused on the managers' responsibilities to ensure fairness in hiring and promotion policies, clarified the policies, provided refresher training on properly documenting employment selections, and discussed corporate EEO and AA responsibilities.

Diane and Linda say many Sandians throughout the Labs worked hard to prepare

for the audit, thereby making it smooth and successful.

"The preparation effort involved managers and employees throughout the Labs, and we had splendid support and cooperation from the Sandia Quality Leadership Council. We especially appreciate the folks at Sandia/California who shared the 'lessons learned' from their audit with us," says Linda. Sandia/California was audited in 1991, and a compliance agreement was signed in February 1992.

Vice President for Human Resources Charlie Emery (3000) says Linda, Diversity Leadership & Education Outreach Center Director Anthony Thornton (3600), the Dept. 3611 staff, Human Resources staff, and managers throughout Sandia deserve much credit for the successful audit. "I'm particularly pleased with the vision and foresight that Anthony and Linda had in setting up the Self-Assessment Work [SAW] teams and in general preparing us to answer many questions. They brought the line organizations together as a team so we presented a unified picture of our EEO/AA efforts to the DOL audit team."

Six SAW teams led by Sandia directors and with members from throughout the Labs were formed last December to review processes, identify problem areas, and make recommendations for improvement. The teams addressed issues regarding internal movement, recruiting, data integrity, workforce planning, and upward movement. They finished their work in March, right before the DOL notified Sandia about the impending audit.

"The successful audit was not only due to the tremendous preparation of the SAW teams and managers, but also to the support we had from Felix Ortiz and Karen Hart of the DOE/Albuquerque Operations office," says Anthony Thornton. "We were also pleased with the spirit of cooperation shown by Joe Garcia, DOL regional director and one of the visiting auditors. "His leadership and management of the entire process was very helpful." (See "Good words from DOL & DOE" for related information.)

Continuing efforts

"We're proud of our audit results," Linda says, "but we realize some problems may continue to occur, and I want to emphasize that employees and managers should continue to voice their concerns about workplace issues that affect them. Sandians are welcome to contact us in the EEO/AA Department, and there are several Sandia resources who may be able to help them first.

"We always recommend that employees discuss workplace issues with their managers first, if they are comfortable doing so. Other contacts for concerned employees include the Labs' personnel representatives, corporate ombuds, and the ethics director. We don't have any shortage of people who are willing to help employees solve problems. I think that's one thing that came through strongly during the audit."

— Larry Perrine (12620)

Sympathy

To Jim Trentham (2663) on the death of his father in Albuquerque, July 17.

To George Kupper (10231) on the death of his father in North Dakota, July 29.

To Bruce Dale (4511) and Patricia Rogers-Dale on the death of their infant son, Ethan Kelby, Aug. 5.

"The problems the auditors found were in general isolated and unusual."

Sandia mentors nurture 63 high school students' budding science careers in DOE program

Sixty-three high school students — 56 from around the US and seven from other countries — recently completed two busy weeks at Sandia participating in the 1995 DOE High School Summer Science Students Honor Program. The program ran from July 16-29 and included an engineering project, a solar car design and race, and mentorship activities:

- Engineering project. Nine teams of students worked four days to design, build, and test wind energy devices that could lift five pounds of sand four feet off the ground.

- Solar car design and race. Students were given solar car kits that contained a photovoltaic panel and motor. They worked in pairs to design their cars' chassis, axles, wheels, and any additional sun-attracting devices; then they raced their cars at an area park.

- Mentorship activity. Students were teamed with Sandia mentors — scientists, engineers, and technicians — who either designed special activities for the students in the mentors' areas of expertise or had students perform actual work on the mentors' Sandia programs. Fifty Sandians served as mentors this year, which approached the goal of one-on-one assignment of students to mentors, says Dominique Foley Wilson of Education Outreach K-12 Dept. 3613, coordinator of this year's program.

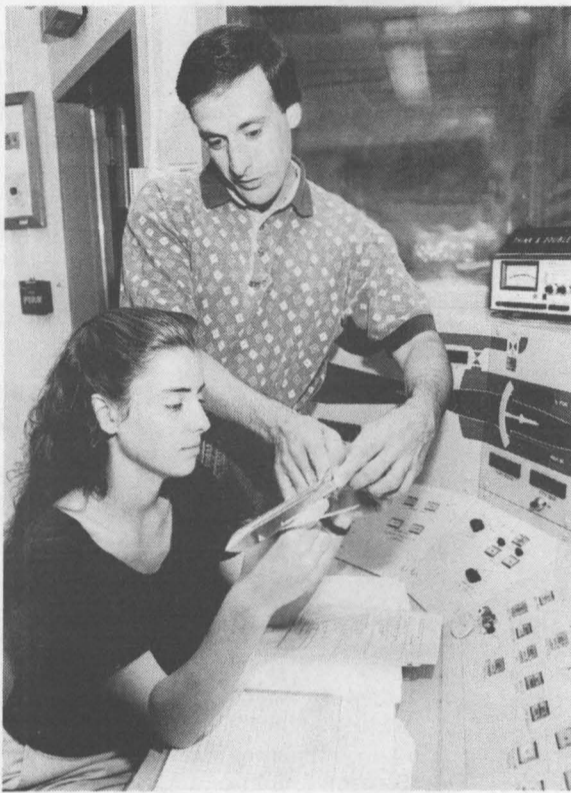
Fine-tuning career choices

Students are not the only ones who benefit from this program, says Dominique. Sandians serving as mentors learn about the students' skills and potential; when the students complete their college training, Sandia will already be acquainted with some of the brightest scientists, engineers, and technicians available.

How students are selected for the program varies from state to state and country to coun-

try. Some are selected after winning their state's Science Fair or Science Olympiad. Others send a packet to their governor's office or state board of education containing letters of recommendation, transcripts, a biography, and a letter stating why they feel they are qualified.

"The students are able to see what resources are available at the national laborato-



VERMONT STUDENT Jennifer Vander Veer, a participant in DOE's High School Summer Science Students Honor Program, learns from her Sandia mentor Vincent Amatucci, of Aerosciences and Fluid Dynamics Dept. 1515, about conducting B61 Program experiments in Sandia's Trisonic Wind Tunnel.

ries and see things they wouldn't ordinarily see in a classroom setting," says Dominique. "Seventy percent of students attending this year's program will be attending their first year of college this fall. This program helps them fine-tune their career choices."

An awards banquet ended this year's program. Sandia Director C. Paul Robinson was the keynote speaker. He advised students on the importance of persevering and stressed the significance of science and technology. James Szenasi, DOE's Deputy Assistant Manager for Energy, Science, and Technology, and his wife Gail delivered the opening remarks. Natalie Olague (3613) and Charlie Emery (3000) delivered awards to mentors for winning mentor proposals, and all students received certificates signed by DOE Secretary Hazel O'Leary.

Honor Program participants are welcome to return to Sandia to work during the summer. Fifteen percent of students who attended the 1993 program and 25 percent of the 1994 students are working for Sandia this summer. After this year's program ended, Dominique says, many of the mentors called and asked if they can get their students back to work for them next year.

Dominique coordinated the mentorship activities and organized the logistics of the visit. She also prepared the students' schedules, which she says were packed with activities from morning until night. Besides working on their Sandia projects, the students visited many local points of interest including Bandelier National Monument, the Bradbury Science Museum, and Sandia Crest.

This was the third consecutive year that Sandia was selected to host the program.

International representation in this year's program included Australia, France, Germany, Italy, Japan, Mexico, and the United Kingdom.

Sandians win Hispanic Engineer National Achievement Awards

This year's winners of awards from the Hispanic Engineer National Achievement Awards Conference (HENAAC), which honors "the best and brightest of our nation's Hispanic engineers and scientists," include two Sandians, one former Sandian, and a Lockheed Martin engineer.

Al Bustamante, Manager of Threat/Countermeasures Development & Evaluation Dept. 9816, was selected to receive the Professional Achievement category award.

This award goes to a candidate who is a well-established, upper-level manager with responsibility for a large department and budget who has been in a technical profession for more than five years and "made significant contributions in his or her field."

"Al Bustamante has been a primary contributor to the nation's Ballistic Missile Defense Program for over ten years," says Gerry Yonas, VP of Systems Applications Div. 9000. "Al provided leadership in defining credible threats and countermeasures, thereby helping to define important directions in the Ballistic Missile Defense Program. Prior to that, he was a principal contributor to our hypersonics research, and he has always been a source of motivation within the community."

Al says he's very proud and "overwhelmed" to have been selected for his award.

Hands-on experience

Sandia's other HENAAC Award winner — Robert LaFarge, of Intelligent System Principles Dept. 2121 — was the selection committee's

choice in the Community Service category.

This award goes to a candidate who has demonstrated "leadership in the minority engineering community through volunteer work, contributions, and other activities."

Robert helped form — and still serves as head coordinator for — the educational activity Manos, a DOE-sponsored volunteer event that provides hands-on science and engineering after-school activities for mid-school students in primarily Hispanic areas.

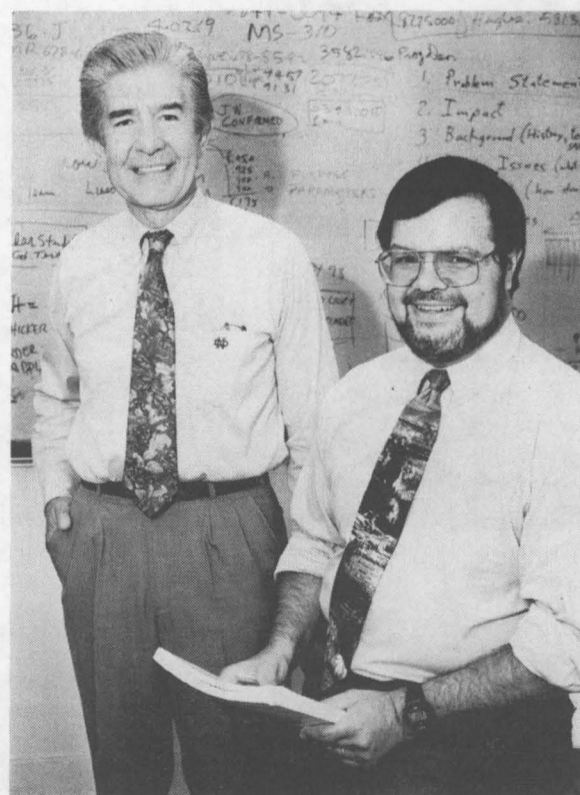
"Manos increases students' interest in pursuing careers in math, science, and engineering," says Robert. Manos is co-sponsored by the Hispanic Leadership and Outreach Committee, for which Robert chairs the Education Outreach Subcommittee. He is also involved with "Upward Bound," a college-prep program to assist economically disadvantaged high school students.

Al and Robert will be honored at an awards banquet Oct. 14 in Houston.

Another HENAAC Award winner, in the category of Outstanding Technical Contribution to Humankind, is former Sandia/California employee Ellen Ochoa, now a NASA astronaut, who in April 1993 participated in a nine-day mission aboard the space shuttle Discovery.

Juan Sandoval, from Lockheed Martin Tactical A/C Systems, was selected Engineer of the Year.

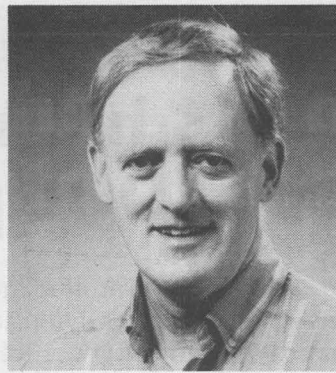
The HENAAC Awards are sponsored by *Hispanic Engineer Magazine*, Rice University, and the University of Houston. Winners are determined by an independent selection committee of representatives from industry, government, and academia.



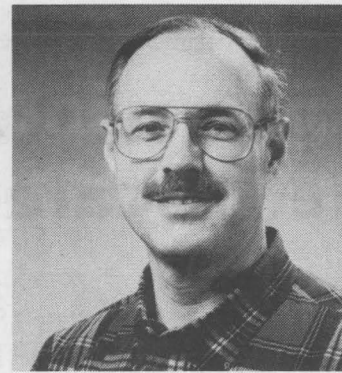
AWARD WINNERS — Al Bustamante (9816, left) and Robert LaFarge (2121) have been selected from about 300 nominees nationwide as winners of the 1995 Hispanic Engineer National Achievement Award. The award honors "the best and brightest of our nation's Hispanic engineers and scientists." Al won in the Professional Achievement category and Robert won in the Community Service category.

Mileposts

September 1995



Carl Pennington 30
2476



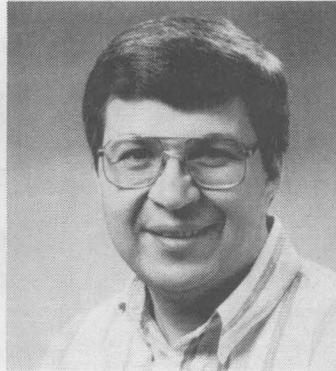
Cal Jaeger 15
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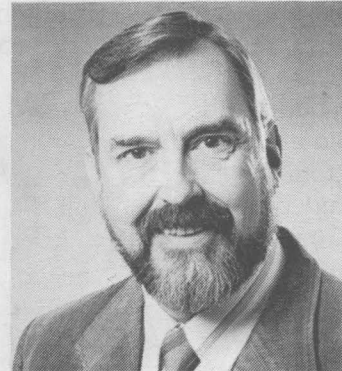
Pat Chisholm 30
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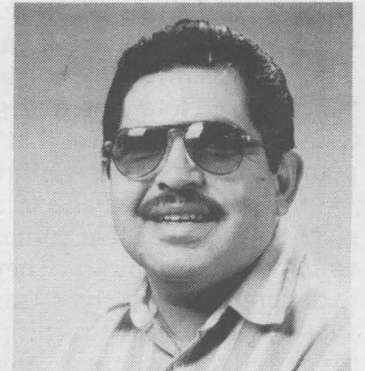
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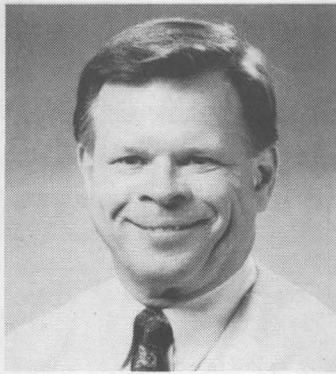
Frank Vigil 15
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Russell Smith 25
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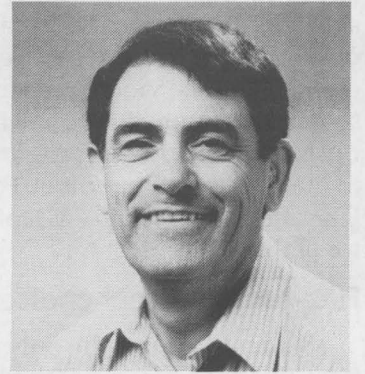
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Don Blanton 20
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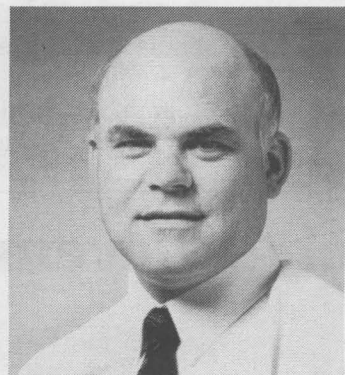
Nicky Whelan 15
7601



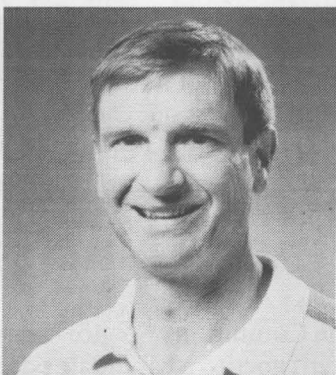
Gilbert Aragon 20
7815



Martin Pilch 15
6422



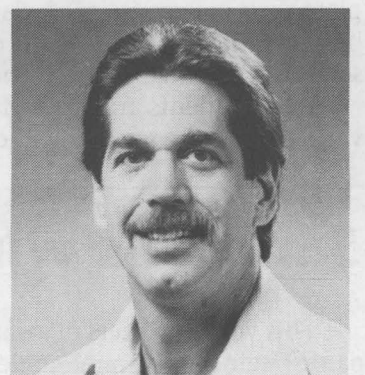
Clint Atwood 20
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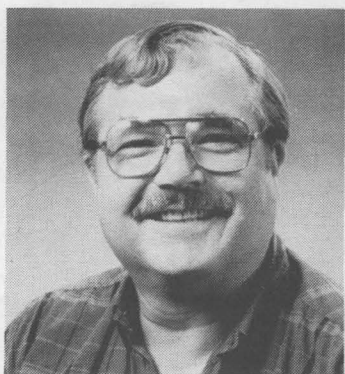
Mike Mundt 15
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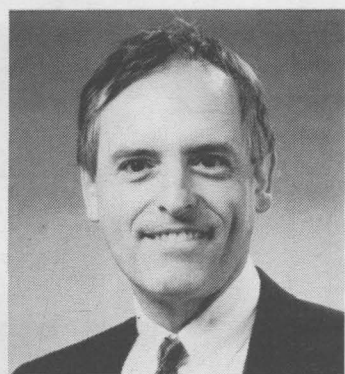
Stephen Gonzales 25
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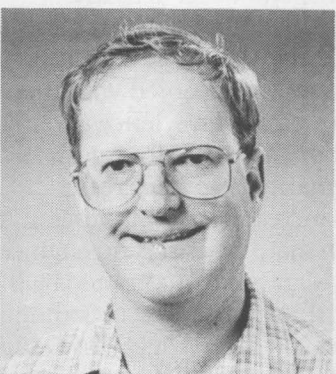
Moss Tallant 15
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Jeff Tingley 25
6219



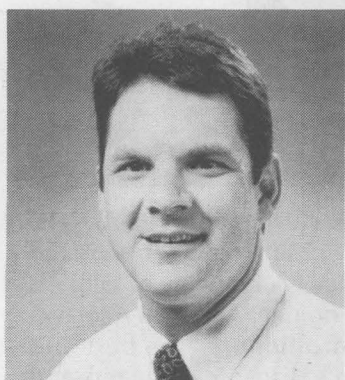
Terry Calloway 15
5912



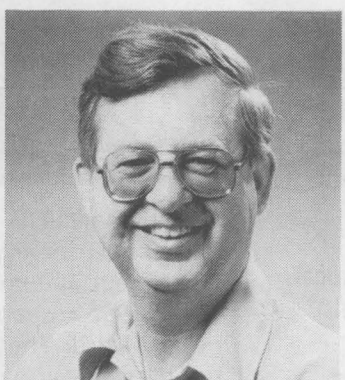
Theodore Simmons 20
7713



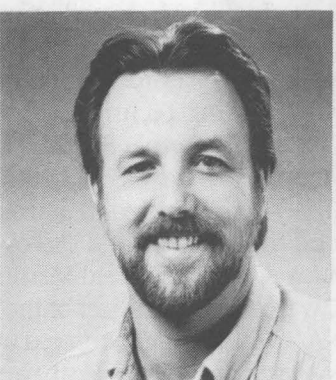
Mary Gilliland 35
1341



Mark Calvin 15
10403



Peter Manley 20
7713



Rik Simmons 15
7914

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified

MISCELLANEOUS

- WHEELBARROW, rubber tire, 3-1/2-cu.-ft. molded-plastic pan, \$25; 25-in. RCA color TV, pecan console, \$80; 22-in. spreader, \$22. Stang, 256-7793.
- EIGHT-TRACK STEREO, \$150; "Manophone" phonograph, \$150. Carter, 821-6383.
- ONAN GENERATOR, 6.5KW, 96 hours, all rem. accs., \$2,200 OBO. Rodriguez, 867-5771.
- METAL DESK, military style, heavy, gray, \$20; lightweight metal desk, brown & beige, \$20. Miranda, 293-8644.
- BABY ITEMS: sleeping bassinet, \$20; bouncer seat, \$15; infant car seat, \$10; electric breast pump, \$200. Umstead, 298-7091.
- WOODSTOVE INSERT, Country Flame, glass door, two blowers, heats 2,000 sq. ft., \$500 OBO. Peery, 281-7233.
- MAHOGANY BED, Thomasville, full-size, w/mattress and innerspring, \$100; Beauty Rest queen mattress, \$100. Farrell, 881-2443.
- ENTERTAINMENT CENTER, 52" x 52", oak w/glass doors, \$175; dual-cassette stereo, \$75; carpet w/pad, 10' x 12', \$150. Williams, 296-4124.
- OAK TABLE & CHAIRS, \$350; twin bed, less than 1 yr. old, \$80; golf clubs, \$20. Jaspersen, 298-1946.
- MULTI-FAMILY GARAGE SALE, Sat., Aug. 19, 7 a.m.-noon, 9601 Apache NE, furniture, books, stereo components, clothes, toys. Clise, 271-2865.
- GOLF CLUBS: Ping Zing iron copies 3-PW, \$150; Big Bertha driver, 10.5 degree w/steel shaft, \$75. McCarthy, 296-4490.
- ANSEL ADAMS PRINTS, set of 4, in black wooden frames, each 27" x 38", \$250/set. Sobel, 281-8792.
- EPSON PRINTER, FX-286 NLQ, \$45; cable, \$7; Epson FX-100, \$25. Dietzel, 294-4702.
- GOLF CLUB SET w/golf bag, full set of Burke irons, wedge, Wilson clubs, \$40 OBO. Norton, 266-3417.
- ELECTRIC DRYER, excellent condition, \$75; IBM PCjr, 640K, color monitor, \$100; Compaq portable 8086, 640K/30M, \$140. Sleefe, 281-4103.
- FORMAL FLOWER-GIRL DRESS, size 12, rose lace over rose satin, matching shoes, \$75. McDuffie, 294-0459 or 263-5578.
- VIDEO RECORDER, Curtis Mathes, w/battery charger & tripod, \$400 OBO. Cartwright, 836-6957.
- CHOICE BURIAL PLOTS, Sunset Park & Sandia Memorial Gardens, bargain price. Babcock, 299-3121, leave message.
- TOOL BOX, small pickup, black, \$60. Heath, 293-7767.
- KLH 80286 SYSTEM, VGA & printer, MS-DOS 4.01, w/games, excellent beginner system, \$600 firm. Bivens, 892-5685.
- SWIVEL CHAIRS, upholstered, gray, \$75/ea.; matching ottoman, \$35; \$170/all 3 pieces, all excellent condition. Baney, 294-8970.
- PLATFORM ROCKER, large, maple, w/arms & thick cushions, like new, \$70. Ré, 298-0290.
- ROADMASTER EXERCISE WALKER, new, w/timer, speed, change, set, select, distance, and calories, \$100 firm. Locher, 266-2021.
- BUNNY FLUTE, good condition, \$200 OBO. Rider, 281-1121.
- TUNTURI TRI-STEPPER, stepper exerciser, excellent condition, paid \$250, asking \$150 OBO. Smith, 275-8185, after 5 p.m.
- WET BAR, light oak, 3-door cabinet w/overhead matching cabinets & wineglass rack, all plumbing, sink, \$750. Dwyer, 271-1328.
- "HOOKED ON PHONICS," just in time for school, used only 3 months, \$100. Ahr, 883-0459.
- SNARE DRUM, Ludwig, perfect for students, \$150 OBO; Bauer inline skates & rollerblade pad set, \$75. Lucas, 255-1401.
- BEDROOM SET, full/queen, dresser, nightstands, immaculate, \$600 OBO; dining set, wrought-iron/glass, Mossman, sun design. Whitman, 266-9313.
- HUSKY-CROSS DOG, abandoned medium-sized female, year old, very loving, housebroken, free to good home. Erdman, 867-3646.
- GOOD, CLEAN FILL DIRT, delivered, great price. Vigil, 345-9590 or 224-8156, ask for Eric Sandoval.
- EXERCISE BICYCLE, Schwinn, \$50. Booker, 299-3554.
- BUNKBEDS, sturdy wood frame, w/mattresses, \$100; 386DX25 motherboard, 3.5 and 5.25 disk drives, make offer. Penn, 883-4195.
- TIRES ON RIMS, four P235/75/R15, mounted on 6-hole white steel rims, \$55. Caldwell, 299-6361.
- DAYBED, cherry wood, w/mattress, like new, seldom used, \$100. Gonzales, 897-9920, ask for Jennifer.
- WOOD-BURNING STOVE, LOPI pedestal, front loading, glass front, used six times, \$600 OBO. Smith, 821-0024.
- EQUILIZER HITCH, 550-lb., never used, \$300 OBO. Patton, 898-3524.
- '94 SPA, 4 seats, 1 lounge, 220 wiring, \$2,500; B/W enlarger, w/stand, 4x6/35mm, \$350. Hall, 298-6856.
- DINETTE SET, glass-tabletop, 4 chairs, \$40; couch, tan fabric, \$20. Kim, 255-0791.
- SOFA BED, queen-size, blue shades, \$200; 60-gal. fish tank, w/stand, \$50. Witkowski, 271-1691.
- RIFLE, Remington 30-06 sling, Weaver 4x, recoil pad, good condition, \$380. Kalinski, 294-1538.
- WASHER/DRYER, Kenmore, heavy-duty, large capacity, look/work great, \$300. Parry, 884-7934.
- BIKE TRAILER; refrigerator; flute w/case; hand-painted wardrobe & halltree for girl's bedroom; '30s hunt table; Falstaff collector's trays. Baldwin, 821-5924.
- TWIN BEDS, good condition, bunkable, wooden head & foot, spreads & mattress pads, new mattresses, \$150. Schreiner, 266-6020.
- THREE WALL MIRRORS, free, 24" x 72", Trail-Eze wind deflector, for pickup when pulling camper, \$30. Ramel, 344-2677.
- MOTORCYCLE HELMET, black, full-face, small (6-7/8 to 7), like new, originally \$150, asking \$75. Cline, 839-9621.
- PRO MIDI SEQUENCER, internal memory, 3-1/2-in. floppy drive, 32 tracks, 16 channels, many other features, \$150. Prins, 867-9440.
- ANTIQUA WOOD STOVE, excellent condition, \$800 OBO. Jaramillo, 296-7516, ask for Joe.
- MOVING SALE, boxes & packing; wood-burning F/A furnace; dryer, \$80; microwave, \$45; couch, bass guitar speakers, other items. Rector, 286-1217.
- COMBAT BOOTS, Army-issue, size 9, \$30; Sony 19-in. color TV, \$60; viola, 3/4-size, w/case, \$190. Geitgey, 856-0829.
- MOVING SALE, Sept. 9-10, 9 a.m., 335 Wagontrain Dr. SE, Rio Rancho, furniture, waterbed, washer/dryer, doghouse. Loiacono, 892-0108.
- FORMAL DRESSES, worn only once, (3): coral, \$50; off-white, \$75; lace, \$50. Gianoulakis, 828-3911.
- CLARINET, Artley, excellent condition, used 1 yr., w/music stand, \$250 OBO. Jessen, 828-2575, after 5:30 p.m.
- TRAILER HITCH, for '85-'95 Chev. Astro, \$50; Disneyland-area coupon book, \$15; legless high chair, \$15. Koepp, 294-7136.
- QUEEN SOFA SLEEPER, \$300; La-Z-Boy recliner, \$150; chair & ottoman, \$100; oak coffee & 2 end tables, \$150. Dobrian, 856-7396.
- '92 ENCYCLOPAEDIA BRITANNICA, 3-vol. dictionary; Compton's Encyclopedia, Children's Encyclopedia, Great Books, '92-'95 yearbooks, \$850 OBO. Danneels, 298-6802.
- PENTEX LENS, K-1000, 35mm, \$75; telephoto lens, \$50; tripler, \$5; slide copier, \$15; flash, \$5. Stamm, 255-2640.
- CRIB, oak, 5-drawer, converts to bed, matching dresser, (will separate), \$650; full sofa sleeper, \$50. Pregent, 281-1414.
- CAMPER TOP, Brahma, white, sliding window, for 6'10" x 4'9" truck bed, \$400. Lanes, 856-7738.
- TRACK LIGHTS, 12, new, almond, w/tracks, \$5 ea., \$50 all; four 10-in. saw blades, \$7.50 ea., \$25 all. Garcia, 293-3937.
- BUNK BEDS, solid wood, used for 1 yr., w/ladder & foam mattresses, \$200. Weiss, 296-1226.
- CUSTOM KING WATERBED, 6 drawers, bookcase headboard, sheets, \$200 OBO; matching dresser & armoire, \$50 ea. OBO. Schafer, 296-0017.
- TEMPERED GLASS, removed from patio doors, two pieces, 76" x 34", free. Magnuson, 821-5330.
- WASHER, heavy-duty, large capacity, \$125; dryer, \$50; roll-a-way bed, \$50. Clements, 828-2741.

DEADLINE: Friday noon before week of publication unless changed by holiday. MAIL TO Dept. 12622, MS 0413, or FAX to 844-0645. You may also send ads by e-mail to Nancy Campanozzi (nrcampa@sandia.gov). Questions? Call Nancy on 844-7522.

Note: The number of ads received is increasing; our space is not. We now limit ads to one per issue. We will also enforce the 18 word limit. Please keep your ads as short as possible.

Ad Rules

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

CAMPER SHELL, aluminum, white, side windows, fits '86 Ford Ranger, 6-ft. bed, \$150; Pioneer CD player, \$70. Tweet, 293-6105.

LOUDSPEAKERS, Design Acoustics D-6, w/stands, \$220; sewing machine cabinet, w/machine, \$150; 25-in. RCA Colortrak 2000 TV monitor, \$375. Stewart, 291-1311.

WASHER & DRYER, GE, electric, white, 8 months old, moving, must sell, \$675. Opperman, 293-9376.

SECTIONAL/COUCH, w/hide-a-bed, & two recliners, beige, quality furniture, \$300 OBO. Hayden, 831-3226.

FRANCISCAN WARE, Hacienda Gold, basic service for 8, many additional pieces; firewood, 1/2-pickup load, \$30. Caskey, 298-6428.

SOFA/SLEEPER, \$275; wetbars, \$100-\$125; stools, \$40; small freezer, \$75; microwave, \$25; baby mattress, \$15; coffee table, \$20. Oishi, 293-9478.

TRANSPORTATION

'86 MERCURY MARQUIS, 3.8L, AC, PS, PW, 53K miles, new paint, original owner, \$2,400. Baird, 296-5149.

'56 CHEV., 210 series, 4-dr., 6-cyl., Powerglide, AT, original, good condition, minor transmission work, \$2,500 OBO. Kircher, 345-6967.

'77 FIAT X1/9, removable top, \$1,950 OBO. Wiseman, 299-7089.

'86 VOLVO 240DL, 155K miles, \$5,000; '77 Porsche 924, 120K miles, \$2,000. Both in good condition. Peercy, 884-3849.

'74 MUSTANG II, mechanically excellent, body & upholstery need TLC, great college car, \$950. Stone, 298-4641.

'79 HONDA ACCORD 30R, original owner, 120K miles, excellent mechanical condition, \$1,200 OBO. Zirzow, 281-9896, Tijeras/Edgewood area.

'94 TOYOTA COROLLA, 4-dr., AC, AT, PS, PL, dual airbags, cassette stereo, 1.8L, 30-35 mpg, 25K miles, \$13,100. Orrell, 857-0729.

'78 CHEV. G20 VAN, Beauville, super condition, AT, V8, 80K miles, seats 8, one owner, \$2,000. Plomp, 296-2647.

'82 HONDA ACCORD, 5-sp., AC, PS, tinted windows, reupholstered, AM/FM, runs well, \$1,995. Sanderville, 836-5538.

'82 MERCURY GRAN MARQUIS, 82K miles, 302 V8, new carb, exhaust system, shocks, good rubber, \$1,200. Snyder, 296-5771.

'84 SUBARU GL, station wagon, 4x4, AC, 108K miles, new tires, one owner, immaculate, excellent condition, \$2,400. Seyfer, 292-0179.

'81 TOYOTA CELICA GT, hatchback, 5-sp., PS, PB, louvers, cruise, 120K miles, interior excellent, runs great. Hatch, 281-0543.

'80 CHEV. TRUCK, Scottsdale 20, camper special, 130K miles, AT, AC, PB, shell, toolbox, excellent condition, \$2,700. Stephens, 294-5388.

'81 SUBARU, economical commuting car, runs well, new brakes, needs some body work, \$900. Briscoe, 899-0617.

'93 NISSAN SENTRA, Limited Edition, excellent condition, AT, AC, AM/FM cassette, below loan value. Smith, 275-8185, after 5 p.m.

'90 JEEP CHEROKEE LAREDO, 4x4, red, V6, AC, tilt, 4-dr., extras, 59K miles, beautiful, \$9,750. Chavez, 861-0712, ask for Kevin.

'85 PLYMOUTH VOYAGER SE, AT, PS, PB, AC, 7-passenger, AM/FM cassette, \$2,100. Williams, 299-3261.

'89 CHEV. CAPRICE CLASSIC, fuel-injected, small V8 (new engine), AT, AC, very clean, \$4,000. Martin, 343-9719.

'70 FIAT, convertible, new tires, runs great, must sell, \$2,200 OBO. Roybal, 296-8493.

'93 JEEP WRANGLER, 6-cyl., 5-sp., 4WD, hardtop, excellent condition, \$14,500. Schnetzer, 833-6064.

'94 TOYOTA PICKUP, extended cab, 4x4, 5-sp., 4-cyl., forest green, 22K miles, AM/FM cassette, \$14,900. Naranjo, 877-4013.

'89 PONTIAC GRAND AM SI, 66K miles, power everything, excellent condition, one owner. Semonisck, 851-9620.

'86 VOYAGER SE, good mechanical 500, one owner, AT, cruise. Shagam, 298-2163.

RECREATIONAL

GRAND CANYON FLOAT TRIP, running 9th annual, 5/30-6/7/96, 9 days, collecting names now for November price announcement. Shunny, 265-1620.

'83 HONDA ASPENCADE, the "Phoenix Warrior," customized show bike, w/matching trailer, must see, must sell. Smith, 888-8811.

'93 YAMAHA BANSHEE, w/trailer & extras, \$3,800 OBO. Trussell, 237-2766 (or pager 875-5640), ask for Danny.

MOUNTAIN BIKE, Columbia 18-sp. Gordon, 292-7728.

GIRL'S BICYCLE, 20-in., \$30. Lanes, 856-6237.

ROAD BIKES, man's & woman's, 10-sp., \$65 ea. Klavetter, 299-4299.

UNM MEN'S BASKETBALL TICKETS, '95-'96, section 16, row 31, seats 5 & 6, including parking, \$479. Drebing, 293-3335.

'94 RV, 34-ft., Cruise Air, fully loaded, 5,400 miles, Chev. chassis, must sell. Jones, 856-1837.

SKIS, Rossignol, 180 size, Salomon 777, multi-control bindings, Rossignol boots, size 10, Rossignol poles, all new, \$300 OBO. Marchi, 291-9681.

'92 KAWASAKI, KX-250, low hours, adult-ridden, FMF pipe, Boyesen rad valve, Acerbis handguards, must go, \$1,800. Hoke, 298-6731.

'93 HONDA NIGHTHAWK 250, like new, good beginner's motorcycle, \$1,650; jet ski, 440, stand-up, \$850. Hudson, 281-6978.

SKEET THROWER, spring-driven, excellent condition, \$15. Diegle, 856-5608.

'84 WINNEBAGO CHIEFTAIN, 22-ft., new tires, Chev. chassis 454, new awning, microwave, excellent condition, \$13,500 firm. Cordova, 299-1652.

SUPER NINTENDO, Punchout Video Arcade, \$300 OBO. Ortega, 293-5662, leave message.

ROY CLARK/RODEO TICKETS, Sat., Sept. 23, chairback seats, brought early, can't go, \$13. Wichelns, 268-8773.

TWO KAYAKS, fiberglass, lake/flat water cruisers, \$75 & \$100 OBO; paddle, flotation, & child's wetsuit; sailboard, \$250 OBO. Dixon, 254-1782.

'94 KAWASAKI ZX-9R, mint condition, adult-ridden, 4,035 miles, absolutely the cleanest and best, \$7,500. Hoke, 298-6731.

ROAD FRAME SET, Cannondale, 56 cm, headset, stem, cranks, BB; AMP Research F-2 DH suspension fork, \$200 each OBO. Sartor, 858-2554.

REAL ESTATE

3-BDR. HOME, 2-1/2 baths, LR, FR, backs on open space, spectacular view, heart of Taylor Ranch, \$135,900. Jones, 899-0642.

MOBILE HOME, 1 yr. old, double-wide, 1,365 sq. ft., cathedral ceilings, many factory upgrades, \$60,000. Miller, 831-4541.

'90 TOWNE PARK HOME, gated community, pools, 2-bdr. suites, loft, den, fireplace, 1,850 sq. ft., \$149,900. Hall, 298-6856.

3-BDR. PATIO HOME, NE Heights, exceptional, large corner lot, 1,784 sq. ft., 2-1/2 baths, \$155,900. Seamster, 275-2644.

3-BDR. HOME, 1,250 sq. ft., big corner lot, trees, west side, excellent condition, must see, \$91,000. Harrison, 833-1161.

1.25 ACRES, wooded, Thompson Ridge Estates near La Cueva, NM. Davis, 881-0856.

3-BDR. HOME, 1-3/4 baths, ham antennas, 2-car garage, 2 storage buildings, Mark Twain school area. Arvidson, 256-9388.

NEW SOUTHWEST-STYLE HOME, 2,600 sq. ft., mountain views, radiant heat, paved road, natural gas, CTV, tile, Corrales. Karler, 298-3265.

3-BDR. home, NE Heights, 1-3/4 baths, immaculate, large backyard, great neighborhood, near Arroyo del Oso, Sandia high school district. Miller, 883-0218.

HOME FOR LEASE, 4-Hills, 2,200 sq. ft., available in Oct./Nov., for one year, no smokers/pets, negotiable terms. Shaw, 299-3023.

WANTED

WHITE REFRIGERATOR, w/frost-free top freezer; push-style lawn mower; shovel; outside hose. Baca, 836-5195.

HEAVY-DUTY MANUAL TYPEWRITER, for first grade classroom, donation would be appreciated, working condition please. Ukena, 275-7275.

HUNTING RIFLE, .30-06 or .270-cal., w/wo scope. Menicucci, 842-6330 after 5 p.m.

RADIO REPAIR: need someone to repair small antique radio. Stefanov, 299-7009.

DEAD OR ALIVE: '74 Fiat X-19; Black & Decker twin-blade electric mower. Svensson, 898-3078.

ACOUSTIC GUITAR, full-size camcorder, prefer Panasonic 610 or 710; trumpet or cornet. Weaver, 883-1298.

HOUSE OR TOWNHOUSE, to rent, late September thru Jan. '96, awaiting new house completion, two adults. Beard, 821-0309.

HOUSE CHECKER, reliable person needed to check house, collect mail, newspapers, Menaul/Chelwood area. Hessel, 296-9124.

LARGE WALL UNIT, or bookcase, prefer dark wood (such as cherry), simple design (Shaker); German Shepard puppy, pet quality. Dubicka, 296-6557.

FILM EDITING EQUIPMENT, for 16mm and 8mm film-to-videotape projection system, willing to buy or rent. Jones, 867-2022.

R12 REFRIGERANT, prefer 1-lb. cans. Kidner, 831-2868.

ROOMMATE, share new, 3-bdr. home, north Four Hills, w/1 male & 1 female, both young professionals, \$325/mo. + 1/3 utilities. Jones, 296-2796.

HOUSEMATE, large 4-bdr. home, \$400/mo., non-smoker, no pets, Juan Tabo/Menaul area. Scouten, 299-0413.

BABY/TODDLER CARRIER, for rear mount on bicycle. Torres, 828-1679.

RENTAL, small house or condo, in quiet neighborhood, by single postdoc. Nicholl, 293-2977.

LOST & FOUND

FOUND: dream-catcher earring, water tower parking lot. Dotson, 845-9456.

FOUND: clip-on sunglasses, Giorgio Armani, parking lot near TLC. Lewis, 844-4775.

FOUND: woman's ring, near north entrance to Bldg. 892. Johnson, 844-4356.

Sandia News Briefs

Russian weapons labs sign tech transfer agreement with Sandia

Officials from Sandia, two Russian weapons labs, and Technology Ventures Corporation (TVC) — the nonprofit enterprise established by Lockheed Martin to facilitate technology transfer — signed an agreement Aug. 21 under which Sandia and TVC will assist Russian labs in commercializing selected technologies in the US, and Russian facilities will help commercialize Sandia technologies in Russia.

Russian weapons labs have developed a wide range of highly advanced technologies but have no experience in finding commercial markets for their work. A team of Russians will spend several months in Albuquerque learning the nuts and bolts of technology transfer. Victor Chavez, Manager of Licensing Support and Administration Dept. 4203 and Sandia project leader for the agreement, said the first two Russian technologies selected for initial commercialization efforts will come from a variety of technologies, which include advanced battery designs, unique materials cutting and welding processes, and some "rather interesting" medical technologies.

Biographies of Sandia scientists to be featured at Beijing Conference on Women

The professional biographies of Pauline Ho of Chemical Processing Science Dept. 1126 and Celeste Rohlfing of Combustion Chemistry Dept. 8353 will be featured in a DOE display at the 4th Annual Conference on Women in Beijing Sept. 4-15. The exhibit will include 38 women from across the DOE laboratory complex — seven from DOE Headquarters to be featured for leadership and 31 from nine DOE labs to be featured as outstanding scientists.

Martha Krebs, Director of DOE's Office of Energy Research, plans to be among the estimated 40,000 attendees. For more than 10 years, Pauline has been studying the fundamental mechanisms of chemical vapor deposition — a technology important to the fabrication of microelectronic devices. Celeste specializes in combining chemical physics theory with high performance computing to understand fundamental combustion reactions.

Sandia's Pulsed Reactor III still in operation after 20 years

Sandia's Pulsed Reactor III (SPR III) turned 20 on Aug. 25 and performed its 10,000th operation on July 19. The reactor was designed, constructed, tested, and installed by Sandians for the hostile environment testing program of the Mark IV Arming, Fusing, and Firing System for the Trident missile system. The SPR III is still being used in the hardness assurance field for the Trident II navigational system, for laser optics work for Phillips Lab, and for projects involving various military and commercial satellite communication customers.

"Sandians can take pride in the fact that a machine that was conceived and constructed by Sandians to support a significant military project is still a resource available to military and commercial interests twenty years after its first operation," says Sid Domingues of Nuclear Facilities & Diagnostics Dept. 14621.

Send potential Sandia News Briefs to Lab News, Dept. 12622, MS 0413, fax 844-0645.

Long-term care insurance offered to Sandians

Health & Work / Family Benefits Dept. 3343 will soon be unveiling a new, optional insurance plan at Sandia — Long-Term Care Insurance.

Long-Term Care Insurance helps pay for nursing and support services needed as a result of aging or a disabling accident or illness, says Marlene Vigil (3343). It assists insured people who cannot perform activities of daily living, such as bathing, dressing, or eating. These services are not available through Medicare or most medical care plans, including Sandia's.

During Open Enrollment — Oct. 20-Nov. 9 — nonrepresented, regular full-time and part-time Sandia employees and their spouses will be offered the option to purchase this plan through employee payroll deduction.

The employee's parents and parents-in-law may purchase coverage directly from Mutual of Omaha, the insurer of the plan, at Sandia's group rates. Retirees will be invited to enroll directly through Mutual of Omaha in February 1996, also at Sandia's group rates.

Enrolling in Long-Term Care Insurance is optional, and premiums will be based on the enrolled person's age. Sandians will learn more at pre-Open Enrollment meetings Aug. 28-Sept. 13 and from Open Enrollment materials to be distributed to all Sandians in early October.

Favorite Old Photo



My grandfather, P.S. Curtis, is pictured here in his 1926 Chevrolet truck purchased from the White Chevrolet Co. in Zanesville, Ohio. Grandpa used the truck for his coal and ice business, selling coal by the bushel during the winter months and blocks of ice during the summer. This photo was taken in Zanesville in front of the family home where both my father and I were born. P.S. Curtis is also great-grandfather to Sharon Curtis (10504-1).
— Russ Curtis (7402)

Coronado Club

Sept. 1 — Friday night dinner/dance. \$7.95 all-you-can-eat buffet, 6-9 p.m. Music by Isleta Poorboys, 7-11 p.m.

Sept. 3 — Sunday brunch buffet, 10 a.m.-2 p.m. \$7.95 adult members, \$8.95 guests, \$2.95 for children 4 to 12, free for children 3 and under. Music for buffet by So Rare, 1-4 p.m.

Sept. 4 (Monday) — Labor Day celebration. Members admitted free with C-Club card, guest admission \$2. Low-cost buffet, noon-5 p.m. Pool open 11 a.m.-6 p.m. Kids' games 1-6 p.m. Music for celebration by Bob Weiler and Los Gatos, 2-6 p.m.

Sept. 7, 14, 21, 28 — Thursday bingo nights. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

Sept. 15 — Friday night dinner/dance. \$7.95 all-you-can-eat buffet, 6-9 p.m. Music by Lumbre, 7-11 p.m.

Sept. 17 — Sunday brunch buffet, 10 a.m.-2 p.m. \$7.95 adult members, \$8.95 guests, \$2.95 for children 4 to 12, free for children 3 and under. Music for buffet by Bob Weiler and Los Gatos, 1-4 p.m.

Sept. 22 (Friday) — Kids' bingo night. Buffet, 5 p.m., with cartoons and movies. Bingo starts at 7 p.m. Free hot dog and soft drink for all kids playing bingo.

★ Congratulations

To Vanessa (5407) and Byron Miles, a daughter, Veronica Camille, June 27.

To Mary (6000) and Dave Neale, a daughter, Ashley Nicole, July 31.